EXHIBIT 1.1

Lower Yuba River at Daguerre Point Dam

Nature-Like Fishway and Water Supply Facilities

Preliminary Restoration Plan

DRAFT

1. Purpose

The purpose of this proposed Restoration Plan is to improve fish passage on the lower Yuba River at Daguerre Point Dam (DPD) while maintaining present water supply and hydraulic mining debris retention functions of the dam and impoundment. Fish passage will be improved by providing a new Nature-Like Fishway (Fishway) that restores the river's pre-dam flow path around the south end of Daguerre Point and allows fish to bypass the dam.

2. Background

The history of human-made changes to the lower Yuba River near Daguerre Point goes back to the California Gold Rush. Following the discovery of gold in 1848 and rapid exhaustion of near-surface deposits, the deep fluvial gold deposits of the Sierra Nevada foothills were extracted using large-scale hydraulic mining practices. Sluicing of gravels mined from ridgetops in the upper Yuba River Watershed created large tailings deposits that were washed downstream into the lower Yuba River. The Sawyer decision of 1884 prohibited in-stream disposal of hydraulic mining tailings, and in 1893 the California Debris Commission (CDC) was formed to regulate hydraulic mining and to address its impacts on river navigation and flood control within the Sacramento River Basin.

In 1899, after performing initial investigations into building a large debris reservoir at the Narrows site, located about 11 river miles upstream of Daguerre Point, the CDC decided instead to build a series of mining debris impoundment facilities farther downstream. The plan involved building a series of four barrier dams between Parks Bar (located about 6 river miles upstream of Daguerre Point) and Daguerre Point to trap coarse debris within the banks of the river, construct a large settling basin to the south of Daguerre Point to trap fine sediment, cut a flood/overflow channel through Daguerre Point, and to build river training embankments between Daguerre Point and Marysville to confine the river channel.

In October 1904, the CDC completed the first phase of construction of Barrier No. 1, which was 1,200 feet-long by 6 feet-high dam constructed of wood pilings and rockfill capped with concrete located about 5 miles upstream of Daguerre Point. In 1905, the second phase of construction raised Barrier No. 1 to a height of 14 ft. However, during disastrous floods in March 1907, the barrier was washed out allowing an estimated 1.6 million cubic yards of impounded sediment to wash downstream. After the flood, Barrier No 1 was abandoned. Instead, the CDC focused on completing Barrier No. 4 on a rock foundation at Daguerre Point and completing the 1,000 feet-long

flood/overflow channel through Daguerre Point. The original barrier was a 40 feet-wide by three ft-thick concrete slab on bedrock that formed a broad weir at the entrance to the channel.

In 1910, a new hydraulic mining debris impoundment in the river at Barrier No. 4 was created by constructing dredge tailings embankments that diverted the river channel to the north over the new barrier into the new channel through Daguerre Point.

Barrier No. 4 became known as DPD. High flows laden with sediment progressively undermined the new concrete weir causing major failures in 1963 and 1964, which resulted in major reconstruction with a more robust concrete gravity dam and spillway structure that was completed in 1965. The rehabilitated dam was constructed by the U.S. Army Corps of Engineers (USACE). The authorities of the CDC were transferred to the USACE with the abolishment of the CDC in the Water Resources Development Act of 1986.

The present dam is 752 feet long with a 575-foot-long overflow spillway that has a structural height above the dam foundation of about 24 feet and a typical hydraulic height[1] of about 15 feet. The shallow impoundment upstream of the dam is about 800 feet wide and extends about one mile upstream of the dam. The impoundment is hydraulically full and retains an estimated 880,000 cubic yards of hydraulic mine tailings and river sediment.

After its original construction, DPD was reported to be a partial or complete barrier to salmon and steelhead migration because of the lack of functional fish ladders. In 1937, a fish ladder with 8-foot by 10-foot bays and approximately 1-foot elevation difference between bays was installed by the State of California at the south end of DPD, but the ladder was generally ineffective at passing fish. After the South Ladder was damaged by high flows in 1950, the State of California installed two new fish ladders during 1951, with one ladder on each end of the dam. Following further damage caused by flood flows during 1963 and 1964, the fish ladders were partially reconstructed and modified during 1965 by the CDC. These rehabilitated ladders incorporated modifications based on criteria provided at the time by California Department of Fish and Game and U.S. Fish and Wildlife service, including extensions to the downstream ends of the wingwalls and ladders as well as the installation of vertical slide gates (i.e., ladder control gates) at the upstream ends of the ladders. Today, upstream fish passage on the lower Yuba River is constrained by limitations in the design and performance of these 70-year-old fish ladders, which were originally designed to suit Chinook salmon and steelhead, but not green sturgeon or Pacific lamprey.

During the past 20 years, there have been several studies of the fish ladders and options for improving fish passage at DPD. Issues regarding the existing fish ladders

[1]Hydraulic height is the elevation difference between water levels upstream and downstream of the dam.

identified in these studies include narrowness and lack of flow capacity, blockage by debris and sediment, inadequate fish attraction, abrupt 90° turns within the fish ladders, potential velocity barriers at the fish ladder upstream exits, stranding of fish that jump out of the ladders onto the riverbank, and absence of suitable passage conditions for other native species, including green sturgeon (listed as "Threatened" under the Endangered Species Act) and Pacific lamprey.

Yuba Water Agency (YWA) and its member water districts operate three water supply diversions that divert water from the existing impoundment upstream of DPD:

- **South Canal Diversion**[2] located on the south bank of the river about 1,000 feet upstream of DPD supplies Brophy, South Yuba and Wheatland water districts, and Dry Creek Mutual Water Company.
- **Hallwood-Cordua Diversion** located in the north dam abutment supplies irrigation water to Hallwood, Cordua and Ramirez water districts.
- **Browns Valley Diversion -** a small forebay and pumpstation on the north bank of the river about 4,600 feet upstream of DPD that lifts water into a canal that serves Browns Valley Irrigation District.

These facilities rely on DPD to create a stable head pond for diversion of surface water from the river through fish screen facilities into extensive canal systems that serve roughly 80,000 acres of farmland in Yuba County.

3. Project Description

3.1 Overview

The proposed Fishway will improve fish passage on the lower Yuba River at DPD by restoring a historic river channel around Daguerre Point at the south end of the dam.

Figure 1 is a location map. Figure 2 is an annotated aerial view of the site. Figure 3 is an overlay of the proposed Fishway channel on the river channel as it was in 1880 before construction of DPD. Figure 4 shows an overhead view of the proposed Fishway. Figure 5 shows a perspective view of the upstream end of the Fishway, and Figure 6 shows the downstream end.

The Fishway will be designed to improve existing upstream passage for Chinook salmon and steelhead, and to establish new fish passage for green sturgeon and Pacific lamprey.

The project will also improve fish protection and flood protection at existing water supply diversion facilities in the vicinity of DPD. The existing dam and impoundment will remain to retain sediment, protect downstream water quality, and provide a

[2] Also known as the South Yuba-Brophy Diversion.

stable head pond for the three existing irrigation diversions. The existing spillway and channel will also remain to provide an overflow/flood channel.

The proposed concept described below and shown in the figures is the result of preliminary studies based on existing site information. The alignment and design of the Fishway will be refined on the basis of findings of site investigations, environmental/engineering analyses, consultation with resource agencies and discussions with other stakeholders.

3.2 Location and Access

The project site is located on the lower Yuba River at Daguerre Point. The site is located about 9 miles northeast of Marysville and about 11 river miles upstream of the confluence of the Yuba River and Feather River.

Road access to the south bank of the river is via Hammonton-Smartsville Road, Hammonton Road, and a gated gravel access road that heads north through the Yuba Goldfields. Road access to the north bank is via State Highway 20 and a gated gravel road that heads south across private property.

3.3 Nature-Like Fishway

The Fishway will be constructed on the south bank of the Yuba River at Daguerre Point and will follow the historic river channel route around the southern end of Daguerre Point. Flow in the river will be diverted by DPD south into the upstream end of the new channel. The new channel will circle around the south end of Daguerre Point to its outlet at the riverbank just downstream of DPD's spillway apron.

In conjunction with the Fishway, the existing cross-channel from the north bank to the south bank along the upstream face of DPD will be maintained to provide a migratory pathway to upstream habitats, and to provide water input to the upstream and of the Fishway.

During periods of low river flow, all river flow passing downstream of DPD, except for flow required to maintain operation of the existing north fish ladder at the dam, will be diverted into the Fishway. During periods of higher flow, river flow will be shared between the Fishway, the north fish ladder, and the existing spillway channel to accommodate floods and stabilize flow in the Fishway.

The preliminary Fishway layout was developed to meet current fish passage design criteria for Chinook salmon, steelhead, green sturgeon, and Pacific lamprey. The characteristics described below for the preliminary conceptual Fishway layout are not intended as final design features, but rather as preliminary targets to be refined as the Fishway design is further developed.

The preliminary Fishway concept is for a 3,000 foot-long channel, 80 feet-wide at its invert and about 220 feet top width. The targeted minimum operating water depth is 3 ft and maximum operating velocity is 6.4 feet/sec over a planned operating range of river flow in the lower Yuba River at the Marysville Gage of 430 cfs (95% annual exceedance probability) to 7,200 cfs (5% annual exceedance probability).

The preliminary Fishway layout has an overall slope of about 0.5% comprising a series of pools and riffles to replicate a natural river channel and provide resting areas for fish that are swimming upstream. The preliminary channel cross-section comprises a deep central channel with a 20 foot invert width flanked by sloping benches that will create a variable-depth channel, much like a typical river channel.

The left bank of the Fishway (looking downstream) will be formed by an embankment constructed primarily of gravel and sand that is armored with rock, river cobble and bio-stabilization (i.e., use of live vegetation and woody material for bank stabilization) to control scour. A series of root wad vanes will also be provided on the left bank of the Fishway to reduce water velocity and control potential scour. The vanes will also create resting areas for fish swimming upstream. To maintain flood protection of the Yuba Goldfields, the embankment will be constructed to the same height as the upstream and downstream river training embankments.

The right bank of the Fishway will be excavated into the side of the bedrock that forms Daguerre Point. Where possible, excavated rock will be reused for scour protection of potentially erodible parts of the bed and banks of the Fishway. A wide bench along the right bank of the channel will provide road access for Fishway maintenance.

The bed of the Fishway will be either the exposed bedrock surface or substrate comprised of boulders, cobble, rock and gravel to provide a rough, armored bed typical of a steep river channel and similar to other steep river channels in the upper Yuba River Watershed. The boulders will be strategically placed to increase hydraulic roughness of the Fishway and to provide refuge for fish swimming upstream.

Road access to DPD will be maintained by constructing a new bridge across the Fishway on the existing access road alignment from the east. Road access along the training embankment on the south bank of the river at Daguerre Point will be by a new road on the top of the embankment that will form the left bank of the Fishway.

The preliminary alignment and design of the Fishway will be refined based on site investigations, environmental/engineering analyses, consultation with resource agencies, and discussions with other stakeholders.

3.4 Water Supply Diversions

3.4.1 South Canal Diversion

Existing Facility. The South Canal Diversion is located on the south bank of the river upstream of DPD. The diversion facilities are sited on the floodplain between the river and the south river training embankment, so they are subject to inundation during floods.

Inflow from the river is via a diversion channel located about 1,000 feet upstream of DPD that diverts water south to a 450 foot-long pervious fish barrier constructed of river cobble that has a buried geotextile membrane near its upstream face to protect juvenile fish from entrainment.

Flow diverted through the barrier flows into a large head pond between the barrier and the south river training embankment. A sloping gated intake structure on the north side of the training embankment controls delivery of water from the head pond through the embankment via three parallel buried pipelines to the head of the South Canal system. A bypass channel at the downstream end of the diversion channel and barrier returns residual flow and fish to the river upstream of DPD.

Although this diversion structure addressed CDFW fish screening requirements at the time of construction in 1985, these requirements have changed over time, and the pervious rock fish barrier does not meet current NMFS and CDFW screening criteria. Additional issues include predation in the diversion channel and overtopping of the barrier during floods allowing potential entrainment of fish into the canal system.

Since 2005, YWA has studied alternatives to upgrade the fish barrier to meet current fisheries resource agency design criteria. As a result of a series of extensive studies of alternatives, YWA developed a draft environmental impact report for upgrading the fish screens which was published in 2017. However, in 2017 a series of two large floods on the Yuba River caused extensive damage to the diversion facilities sited within the river floodplain, which resulted in curtailment of water diversion during the following irrigation season and necessitated major emergency reconstruction. Changes in the river channel system due to the 2017 floods also resulted in blockage of river flow into the south channel that feeds the south diversion, resulting in further curtailment of water supply diversions in subsequent years until the blockages could be removed.

As a result of a series of subsequent workshops conducted with resource agency and water district representatives, YWA made the decision to relocate the new facility closer to the dam so that it could be founded on rock, be less susceptible to geomorphic changes within the debris impoundment, and improve water supply reliability. It was also decided to change the design of the water intake/fish screen facility to a more robust reinforced concrete structure that was better able to withstand floods and handle floating debris and sediment.

Proposed South Canal Diversion. The proposed Restoration Plan is to further modify the location of the new intake/fish screen facility to the west side (i.e., right bank) of the upstream end of the Fishway. The new structure will be founded on rock on the northeast side of Daguerre Point about 70 ft east of the left abutment of DPD. Road access to the structure will be from Daguerre Point.

The proposed intake/fish screen facility will be a reinforced concrete structure that will be about 215 feet long and contain 10 self-cleaning tee screens[3] designed to meet all current federal and state fish screening criteria. The top deck of the structure will be about 30 feet high above its foundation and about 17 feet above normal water level.

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[3] A modern type of continuously-cleaned fish screen system that features two water-powered rotating cylindrical drum screens that are mounted each side of a central distributor.

Inflow will be through a reinforced concrete intake structure with eighteen openings that will have very slow approach velocities and closely-spaced trash racks to exclude floating debris and large cobble/gravel, safely exclude large fish, and deter juvenile fish from entering the intake. The trash racks will be mechanically cleaned by a travelling trash rack cleaning machine. Bulkhead gates will also be provided to close off the intake openings during the winter flood season to fully exclude sediment from the intake when it is not in use. Internal closure gates will also be provided to control inflow through the intake openings.

Inside the intake structure, screening of inflow for small fish will be accomplished by an array of ten self-cleaning rotating tee screens located in the concrete trough running parallel to the Fishway. Each tee screen will have a capacity of 25 to 50 cfs. The screens will be mounted on vertical rails so that they can be lifted to the top deck of the structure when not in use, or for storage and maintenance during the off season.

Water flowing through the screens will be collected in a buried reinforced concrete manifold along the back of the intake structure that will deliver the screened inflow to the inlet of a large diameter buried discharge pipeline that will cross underneath the Fishway to discharge into the existing head pond just upstream of the existing sloping intake gate structure.

Floating debris, such as vegetation and other small trash, that passes through the trash racks into the concrete trough will be carried by a surface current in the trough to a surface outlet located at the end of the trough. From there, the debris will be continuously flushed downstream of the existing dam through a buried discharge pipe that will pass through the sidewall of the spillway apron.

Sediment that passes through the trash racks will settle to the bottom of the fish screen trough below the fish screens where it will be entrained into a perforated sediment collection and transport pipeline. The pipeline will carry the mixture of sediment and water to the end of the trough, where it will transition to a second buried discharge pipeline that will discharge sediment downstream of DPD.

Under the proposed plan, the existing rock barrier fish screen and appurtenant diversion and bypass channels on the south bank of the river will be decommissioned and the south bank of the river will be restored. In general, this work will involve backfilling the diversion channel, rockfill barrier and bypass channel with material excavated to create the Fishway. The ground surface will be graded to create a sloping riverbank of similar character to the north bank of the river. The top of the restored bank will be high enough to prevent fish being entrained into the existing head pond during floods.

The surface of the south bank will be reclaimed and protected from flood damage with a combination of conventional riverbank protection measures and modern bio-stabilization techniques. Details of the proposed south bank restoration plan will be developed in consultation with resource agencies and other interested parties.

3.4.2 Hallwood – Cordua Diversion

The Hallwood-Cordua Diversion is located on the north bank of the Yuba River at the north abutment of DPD. The diversion has the capacity to divert up to 625 cfs from the river for supply of irrigation water to farms and ranches on the north side of the river.

Two sluice gates in the north dam abutment control diversion of water into two culverts that carry the water through an embankment into a 1,400 foot-long canal to a fish screen facility located within a broader reach of the canal. Outflow from the fish screen flows through a weir used to control water levels at the fish screen before flowing into the irrigation canal system.

The current fish screen system was installed in 2001. The facility is a vee-shaped perforated plate fish screen system that is cleaned by a solar-powered travelling brush system. Bypass flows from the fish screen system, which include entrained fish, are discharged back to the river via a buried pipeline.

Input of water to this facility will be facilitated by maintenance of the existing cross channel located immediately upstream of DPD. Maintenance of this channel is discussed further in Section 3.6.2.

3.4.3 Browns Valley Diversion

This water diversion facility is located on the north bank of the river about 4,200 feet upstream of DPD. The facility diverts up to 80.2 cfs from the river into the BVID canal system.

Water is diverted from a small side channel on the north bank of the river through a flat fish screen facility into a small forebay that supplies the pump station. Water that bypasses the fish screen continues downstream into the reservoir impoundment.

The reservoir impoundment controls the elevation of the riverbed and water surface at the diversion facilities and is therefore essential to the operation of this facility. The proposed retention of the dam and impoundment avoids potential impacts to water diversion at this facility.

3.5 No Daguerre Point Dam Modifications

The Restoration Plan does not include major physical modifications to DPD and its spillway, which are owned by USACE. Diversion of some river flow from the spillway to the Fishway will reduce flow over the spillway, which will decrease upstream water levels. During periods of low flow, which typically occur during late-summer/early-fall, the water surface elevation at the crest of the spillway will be reduced several inches. During periods of higher flow when flow over the spillway is more than through the Fishway, the Fishway will have a very small effect on upstream water surface levels.

The addition of the Fishway on the south bank of the river could be a basis for USACE to determine that the South Fish Ladder is obsolete. Under the Restoration Plan, the

North Fish Ladder will remain in service to provide an alternative upstream passage option for Chinook salmon and steelhead on the north side of the river.

3.6 Operation and Maintenance

3.6.1 Operation

Operation of the Fishway will be straightforward since it has no control gates or other operating equipment. The Fishway will need to be periodically monitored to ensure that it is performing as designed.

The water supply diversions will require the diversion operators to adjust inflow to match irrigation demand, to ensure the number of fish screens operating is correct for the inflow, to oversee cleaning of the trash racks, and to monitor security of the facilities.

3.6.2 Maintenance

The Fishway will require maintenance on an as-needed basis to remove any stranded debris or blockages due to accumulation of sediment. It will also require occasional maintenance of banks or the bed of the Fishway to address scour or erosion. The scope and frequency of this work will depend on seasonal river flow, especially the magnitude and duration of winter floods. In-channel Fishway maintenance work is anticipated to typically be scheduled for late-summer (i.e., August) or early-fall when river flows are low.

Scheduled maintenance of the water supply diversions will typically occur during winter when the demand for irrigation water is lowest. Typical maintenance work is anticipated to include inspection and maintenance of fish screens, trash rack cleaners, trash racks, bulkheads, closure gates, and instrumentation. Scheduled structure maintenance will also be carried out during winter.

Ongoing changes in the network of braided channels and gravel bars upstream of DPD pose a challenge for both water supply diversion and upstream fish passage. Experience has shown that blockage of the north or south river channels with transported mining debris during a flood can curtail water supply during the following irrigation season and obstruct upstream migration of anadromous fish species.

Siting the downstream end of the Fishway close to DPD eliminates a section of river that upstream-migrating fish could get trapped in if they miss the entrance to the Fish. Locating the downstream end of the Fishway near the existing spillway also reduces the risk of blockage of the entrance to the Fishway by sediment and possible channel avulsion[4].

[4] Geomorphic process where a river channel is rapidly abandoned in favor of another steeper channel. This typically occurs on aggrading rivers and river deltas.

Given the history of geomorphic change on the upstream side of DPD, the proposed plan includes the flexibility to carefully carry out as-needed channel maintenance work within the impoundment. Due to weather, river conditions, crop watering needs and fish migration patterns, maintenance work typically needs to be carried out during the short time window between the end of the winter flood season and the commencement of irrigation and upstream anadromous fish migration in Spring.

To protect fish habitat within the debris impoundment and downstream water quality, river channel maintenance work immediately upstream of DPD will include special fish protection measures and environmental best management practices that have been developed over many years of successful collaborative operation and maintenance of the dam, impoundment, water diversion and fish passage facilities.

FIGURES 1-6

1. Location map
2. Annotated aerial view
3. Overlay of the new Fishway channel on the river channel as it was in 1880
4. Overhead view of the Fishway
5. View of the upstream end of the Fishway
6. View of the downstream end of the Fishway

Figure 1 – Location map

Figure 2 – Annotated aerial view

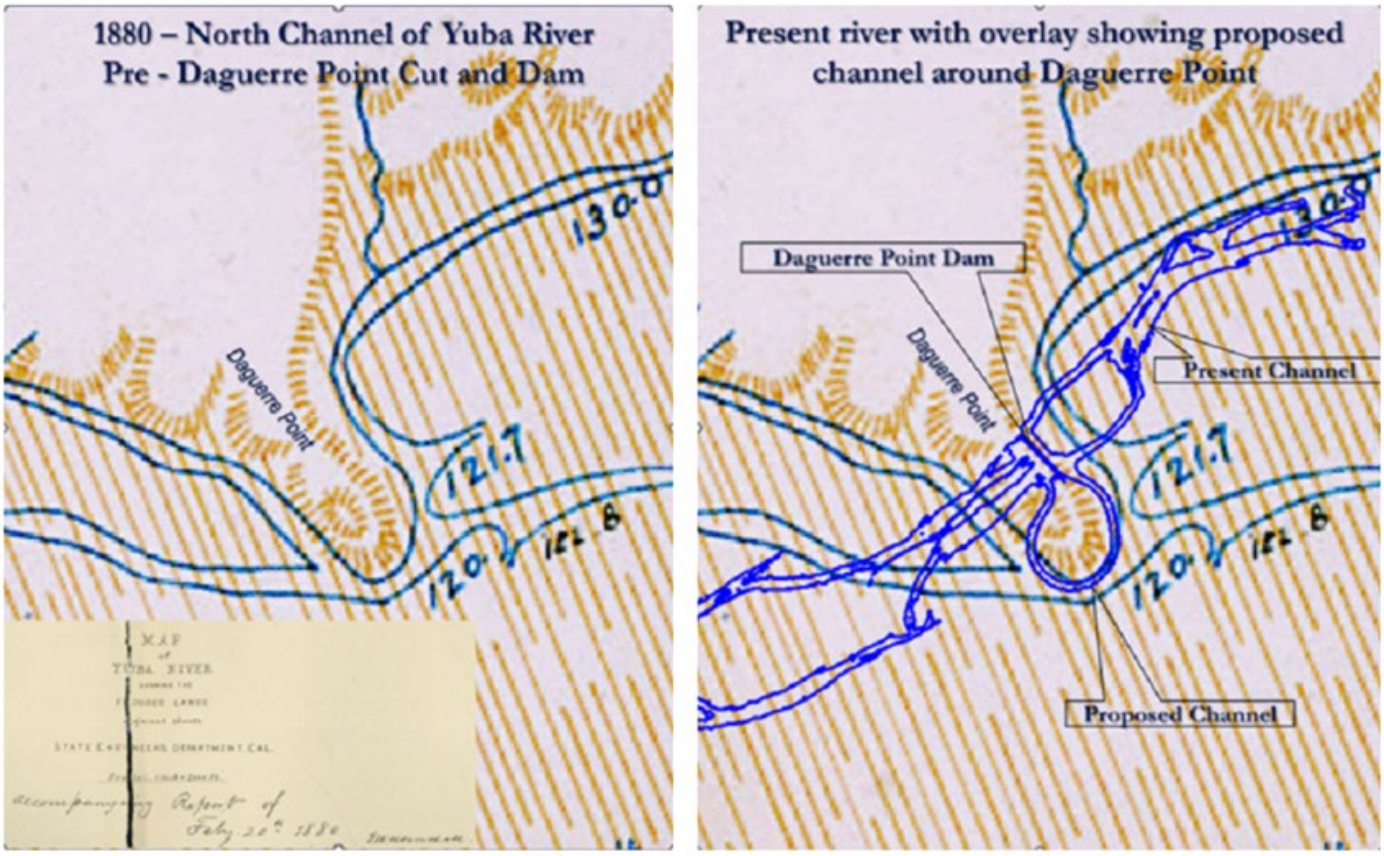

Figure 3 – Overlay of the new Fishway channel on the river channel as it was in 1880

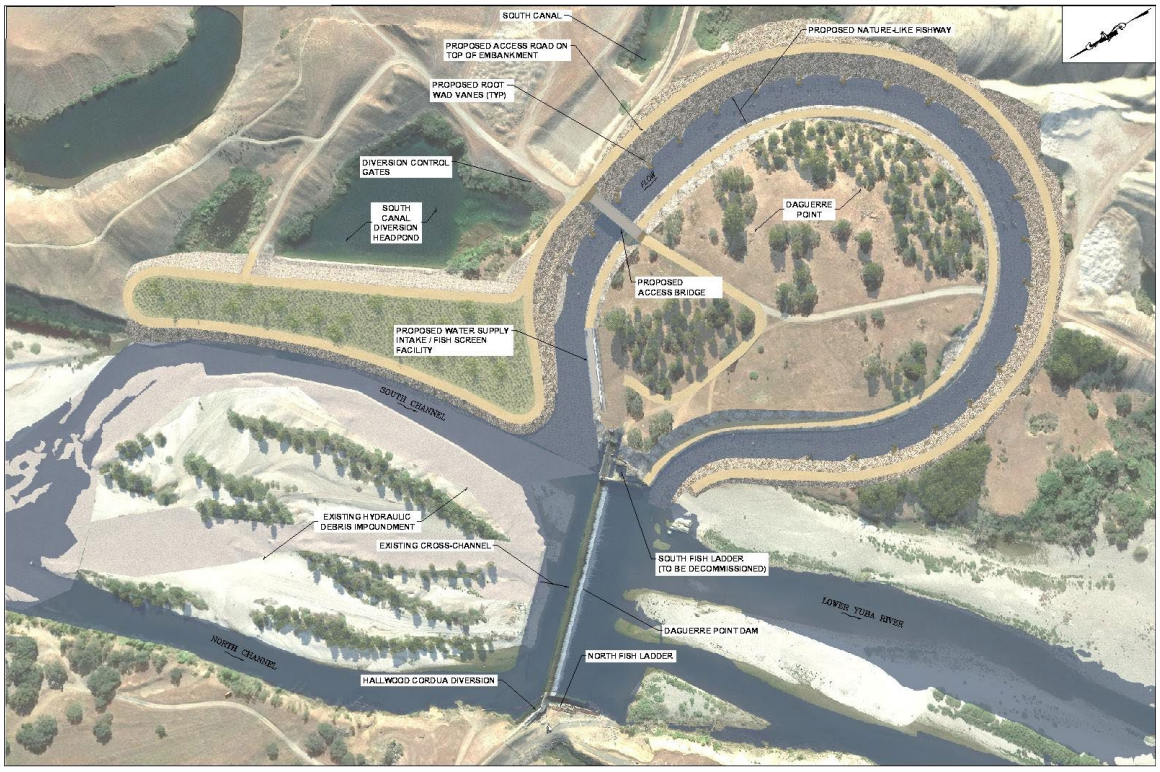

Figure 4 – Overhead view of the Fishway

Figure 5 – View of the upstream end of the Fishway

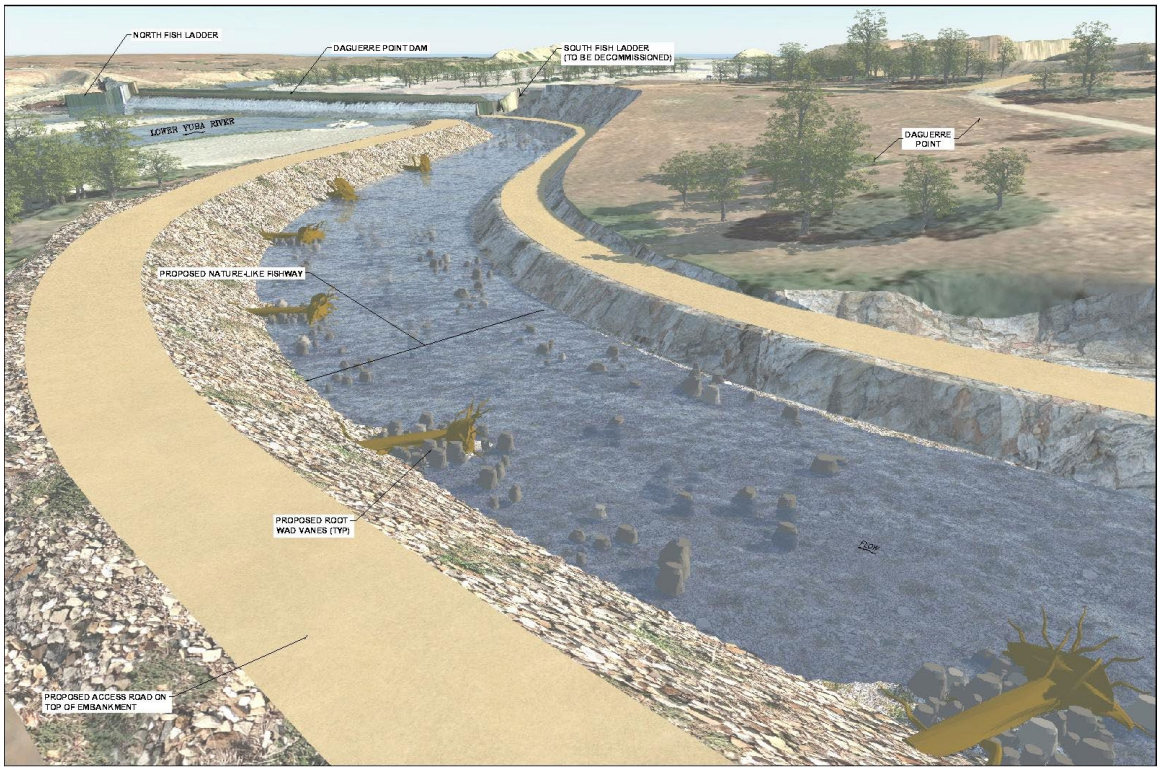

Figure 6 – View of the downstream end of the Fishway