

Staff Report

TO: Central Files

FROM: Tonia M. Tabucchi Herrera, PE, Senior Engineer

DATE: June 2, 2021

SUBJECT: Hemphill Diversion Project (#7032) DEIR Public Comment Period –
Written Comments Received

ENGINEERING

Please find the below attached written comments received during the Hemphill Diversion Project DEIR Public Comment Period.

- SARSAS (April 24, 2021)
- Foothill Water Network (May 15, 2021)
- Water Audit (May 17, 2021)
- County of Placer (May 17, 2021)
- National Marine Fisheries Service (May 17, 2021)

April 24, 2021

Attn:

Jonia M. Tabucchi-Herrera
 Senior Engineer
 Nevada Irrigation District

My name is Robert Hase and I am an NID rate payer and a SARSAS board member.

I am glad to see that this project is moving forward (Hemphill fish passage). I would also hope the NID board will choose Alternative 2 Fish Passage at \$4,343,300.00.

On October 1, 2020 you received a 16 page document from Dept of Fish & Wildlife. The subject of the document is:

Hemphill Diversion Structure Project
 Notice of Preparation
 SCH# 2020090032

On page 7 of 16 the last paragraph of the document states the following:

One alternative discussed at the August 13, 2019 TAC meeting was dam removal and site grade restoration through a nature-like fishway or series of concrete weirs (similar to the Highway 65 Gaging Station Radder) coupled with the installation of conical fish screens at the diversion point to Hemphill Canal.

With the use of concrete pre-fabricated concave weirs we feel there would be better stability to the roughened rock ramp. Also, we feel that fish passage at all water flows would provide for better fish passage.

After reading your EIR report, I was not clear as to the use of concrete weirs or large rocks to form the pools. So, what we are asking you to consider is using pre-fabricated concrete weirs along with large boulders to form the pools. This is similar to the Highway 65 Gaging Station Ladder which has been a huge success for fish passage at all water levels.

Sincerely,
Robert Hane
10680 Kemper Road
Auburn, CA 95603
(530) 885-3005



**SARSAS (SAVE AUBURN RAVINE
SALMON AND STEELHEAD)**

"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has." Margaret Mead

P.O. Box 4269
Auburn, CA 95604
www.sarsas.org

ROBERT HANE
North Ravine Restoration Coordinator
SARSAS Board Member

530-885-3005



**Friends of
Auburn Ravine**
AuburnRavine.org

FOOTHILLS WATER NETWORK



May 15, 2021

Kris Stepanian, Board Secretary
Nevada Irrigation District
1036 West Main Street
Grass Valley, California 95945

Sent via email to stepiank@nidwater.com and via U.S. Mail

Dear Ms. Stepanian:

Friends of Auburn Ravine (FAR) and the Foothills Water Network (Network) respectfully respond to the Draft Environmental Impact Report (DEIR) for the Hemphill Diversion Structure Project (Project) prepared by Nevada Irrigation District (NID).

The Network represents a broad group of non-governmental organizations (NGOs) and water resource stakeholders in the geographic area bounded by the Yuba River, Bear River, and American River watersheds. The overall goal of the Network is to provide a forum that increases the effectiveness of non-profit conservation organizations to achieve river and watershed restoration and protection benefits for the Yuba, Bear, and American rivers and adjacent watersheds.

Preferred Alternative

Among the three Alternatives presented in the DEIR, it is our opinion that Alternative 2 is the best alternative. That alternative would install a nature-like roughened rock ramp within the stream channel to allow unimpeded fish passage, and a vertical screen at the entrance to the Hemphill canal to prevent entrainment of fish into the canal. It is much less expensive than the other alternatives and involves lower risk of construction delays and unforeseeable construction expenses. Operation and maintenance expenses will probably be lower than the other alternatives because all components of the proposed design will be visible and accessible – not buried under fields, roadways, or the streambed as with the other alternatives.

Public Access

Whichever alternative is chosen, provisions for public access to the site should be part of the final design. This should include an interpretive sign, a shade structure, seating, safety railings, and parking. The existing dirt pathway that begins near the Hemphill Diversion and extends along the high bank on the north side of the creek downstream to the old Lincoln dump should be improved. The ancient Native American campground along this trail should be protected from vandalism, and an interpretive sign provided nearby. This area is now within the City of Lincoln and has been designated as future City of Lincoln Open Space in their Village 1 plan.

Fish Passage Monitoring

To obtain reliable data as to the success of the Project, funding for “walk and wade” surveys should be included in the Project. The surveys should be conducted each week upstream from the Hemphill site from mid-October to mid-April (weather and water conditions permitting). The surveys should include counts of salmon, steelhead, and lamprey, their redds, and collection of DNA samples from salmonid carcasses. With professional supervision, the cost for these surveys could be mitigated by using volunteer “citizen scientists” such as the well-trained volunteers that Friends of Auburn Ravine has deployed for the last four years to do such surveys from central Lincoln up to Hemphill Dam. Funding would need to include provisions for liability insurance, survey equipment, safety equipment, and training supplies, etc. UC Davis has recently published a manual for planning such projects: <https://education.ucdavis.edu/featured-pod/new-resources-citizen-science-project-planning>

At the Hemphill site, a secure weather-proof cabinet should be provided on the south bank near the canal entrance to support potential future installation of an in-stream PIT tag monitoring system. The cabinet should be pre-wired to the same circuit breaker panel that will serve the selected water diversion system and contain a dual 15A, 110V power outlet and knock-outs for future installation of conduits, and a mast for a cellular data antenna. Examples of such systems are available on request.

Contingency Plan

The Project should include a Contingency Plan that will provide temporary fish passage and water diversion if Project Completion is delayed beyond October 15 of the year when construction begins.

Thank you for considering these comments on the Draft Environmental Impact Report for the Hemphill Diversion Structure Project. Please contact us if you have any questions.

Respectfully submitted,



**Friends of
Auburn Ravine**
AuburnRavine.org

JH

James Haufler – President
Friends of Auburn Ravine
P.O. Box 1197
Lincoln, CA 95648
(916) 672-9672
projects@auburnravine.org



JSV

Traci Sheehan Van Thull
Coordinator, Foothills Water Network
PO Box 573
Coloma, CA 95613
traci@foothillswaternetwork.org



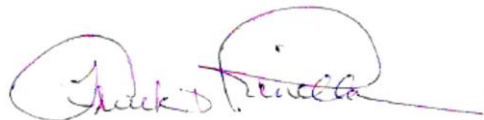
Chris Shutes

Chris Shutes

FERC Projects Director
California Sportfishing Protection Alliance
1608 Francisco St, Berkeley, CA 94703
blancapaloma@msn.com
(510) 421-2405



Ron Otto
Auburn Ravine Preservation Committee
Ophir Property Owners Assoc., Inc.
10170 Wise Road
Auburn, CA 95603
rottoopfir@gmail.com



Frank Rinella
Northern California Federation of Fly Fishers International
Gold Country Fly Fishers
303 Vista Ridge Dr.
Meadow Vista CA, 95722
sierraguide@sbcglobal.net



Jack Sanchez
President and Coordinator
Save Auburn Ravine Salmon and Steelhead
P.O. Box 4269
Auburn, CA 95604
alcamus39@hotmail.com



Melinda Booth
Executive Director
South Yuba River Citizens League
313 Railroad Avenue, Suite 101
Nevada City, CA 95959
(530) 265-5961 x 205
melinda@yubariver.org



Barbara Rivenes
Conservation Committee
Sierra Club - Mother Lode Chapter
909 12th St #202
Sacramento, CA 95814
brivenes@sbcglobal.net



Brian J. Johnson
California Director
Trout Unlimited
5950 Doyle Street, Suite 2
Emeryville, CA 94608
(510) 528-4772
bjohnson@tu.org

Tonia Herrera

From: Kris Stepanian
Sent: Monday, May 17, 2021 11:20 AM
To: Tonia Herrera
Cc: Greg Jones; Doug Roderick; amclure@minasianlaw.com
Subject: FW: Hemphill Diversion Structure

Hello – This email just came in. Please confirm received.

Thank you,

Kris Stepanian

Board Secretary
NEVADA IRRIGATION DISTRICT
(530) 273-6185 ext. 222
(530) 271-6822 - direct

From: Water Audit California <general@waterauditca.org>
Sent: Monday, May 17, 2021 11:15 AM
To: Kris Stepanian <stepiank@nidwater.com>
Subject: Hemphill Diversion Structure

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or on clicking links from unknown senders.

Dear Ms. Stepanian

Water Audit California wishes to express support for the Hemphill Dam diversion structure EIR alternative 2, the fish passage proposal. Our support is subject to the qualification expressed by others that the screening mechanism into the Hemphill Canal must be consistent with the standards of NOAA Fisheries and the California Department of Fish & Wildlife, and subject to their approval.

We congratulate the NID for timeliness of the EIR, the quality of the examination of the alternatives, and note the unusual situation that the best alternative is also the most economical. Finally, we note that addition to the acknowledged benefits of this alternative, that it also provides a potential educational and tourist benefit to the adjacent City of Lincoln. We hope that the NID will in due course use the presence of this structure to introduce the wonders of salmonid migration to the community at large.

Now let's get 'er done!

Respectfully,

William McKinnon
General Counsel
Water Audit California

WATER AUDIT CALIFORNIA - A California Public Benefit Corporation
952 School Street #316, Napa, CA 94559 / phone: (707) 681-5111



May 17, 2021

Nevada Irrigation District
ATTN: Kris Stepanian
1036 Main Street
Grass Valley, CA 95945

via email: stepianiak@nidwater.com

Subject: Hemphill Diversion Structure Project, Draft EIR

Dear Ms. Stepanian:

Placer County appreciates the opportunity to engage at this stage in the process. After reviewing the submitted information, the County offers the following comments for your consideration regarding the proposed project:

Engineering & Surveying Division and Department of Public Works and Facilities

The Draft EIR does not appear to include an impact discussion for the impacts to the floodplain. The Draft EIR should address any impacts to the existing 100 year floodplain resulting from the proposed development improvements within the 100 year floodplain. The Draft EIR should address that Placer County General Plan policy prohibits developing within a flood zone and policy states that the County shall attempt to maintain natural conditions within the 100-year floodplain of all rivers and streams. Discussion regarding compliance with the Placer County Flood Control and Water Conservation District Stormwater Management Manual and the County Land Development Manual should also be included in the Draft EIR.

Flood Control and Water Conservation District

1. Please update section 2.5.1 Regulatory Requirements, Permits, and Approvals to include FEMA as an agency that may require approval of the proposed project. Please also change the Placer County Flood Control and Water Conservation District to Placer County Floodplain Management as the appropriate agency to coordinate floodplain changes.
2. The District has conferred with the Placer County floodplain administrator and determined that a FEMA Flood Insurance Study (FIS) and revised floodplain mapping dated 11/2/18 for Auburn Ravine, which flows within this site, should be considered the most current best available information as this development moves forward. Please provide a hydraulic analysis using the FEMA Auburn Ravine floodplain model to summarize project impacts to the Base Flood Elevations (BFEs) using the Auburn Ravine 1% annual chance discharge rate from the FIS. The hydraulic model for Auburn Ravine is available upon request from FEMA. The District noted that the proposed improvements are located within the FEMA regulatory floodway. Therefore, a no-rise certification is required to be submitted and approved by the Placer County Floodplain Administrator if the project will not result in increases in BFEs. The Floodplain Administrator has indicated that a Conditional Letter of Map Revision (CLOMR) will be required to be submitted to and approved by FEMA if the BFEs are increased and one of the two conditions are met:
 - a. Fill/structures are placed within the regulatory floodway that result in an increase in BFE above 0.00 feet.

- b. Fill/structures are placed within the floodplain that result in an increase in BFE above 1.0 feet.

Thank you again for the opportunity to comment on the Draft EIR for the Hemphill Diversion Structure Project project.

Should you have any questions, please contact Leigh Chavez, Environmental Coordinator at lchavez@placer.ca.gov or 530-745-3077.

Sincerely,



LEIGH CHAVEZ, PRINCIPAL PLANNER
ENVIRONMENTAL COORDINATOR

Second page info here.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

May 17, 2021

Kris Stepanian
Nevada Irrigation District
1036 West Main St.
Grass Valley, CA 95945

RE: Comments on the Draft Environmental Impact Report (EIR) for the Nevada Irrigation District's (NID) Hemphill Diversion Structure

The National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Report (EIR) for the Nevada Irrigation District's (NID) Hemphill Diversion Structure. Staff also attended the online presentation portion of the Public Scoping Meeting held on September 21, 2020, and Technical Advisory Committee (TAC) meetings from 2016-2019.

The proposed EIR includes an analysis of four alternatives, including: no project, riverbank infiltration gallery, fish passage alternative, and a pipeline. We are encouraged by NID's reaffirmation of its longer-term commitment to improve fish passage at Hemphill Dam and the district's willingness to explore efforts to advance that goal and to accept NMFS' comments provided through this public process.

NMFS is responsible for the administration and enforcement of the Endangered Species Act of 1973 (ESA), as amended [16 U.S.C. 1531 *et seq.*] with regard to ESA-listed anadromous fish species and their critical habitat. The proposed activity will directly affect federally threatened California Central Valley (CCV) steelhead (*Oncorhynchus mykiss*) and their designated critical habitat:

California Central Valley (CCV) steelhead distinct population segment (DPS)
Threatened (71 FR 834; January 5, 2006)
Designated critical habitat (70 FR 52488; September 2, 2005)

NMFS' Recovery Plan for Central Valley Chinook Salmon and Steelhead has identified Auburn Ravine as a core 2 population. Core 2 populations are assumed to have the potential to meet the moderate risk of extinction criteria and are dependent populations of secondary importance for recovery efforts. Auburn Ravine is designated CCV steelhead critical habitat. Auburn Ravine provides migration, spawning, and rearing habitat (NMFS 2014). Additionally, Auburn Ravine may also support the following NMFS species of special concern not currently listed under the ESA a portion of the year:

Central Valley (CV) fall-run and late fall-run Chinook salmon evolutionarily significant unit (ESU) (*O. tshawytscha*)



Auburn Ravine also contains essential fish habitat (EFH) for Pacific Coast Salmon.

CCV steelhead are known to use the habitat in the vicinity of Hemphill Dam as rearing habitat and a migration corridor habitat, and likely use nearby habitat in Auburn Ravine for spawning, particularly in the upper reaches (Bailey 2003). Based on the fish community surveys conducted by the California Department of Fish and Wildlife (CDFW) in 2004 and 2005, juvenile CCV steelhead have the potential to rear in this area throughout the year (Navicky 2008). Adult CCV steelhead generally migrate from the ocean to natal spawning grounds from October to May with peak spawning from January through March (Moyle 2002). However, on small streams, such as Auburn Ravine, adult upstream migration is triggered by winter rainfall and increased instream flow. Therefore, NMFS generally expects adult CCV steelhead to be present in Auburn Ravine from December through May. Juvenile CCV steelhead emigrate as smolts between November and May, and peak in March and April (Jones and Stokes 2005).

Water temperatures in Auburn Ravine likely support rearing juvenile *O. mykiss* year-round, including at least part of the irrigation season (Bailey 2003). However, low stream flows in September and October substantially reduce the area of aquatic habitat available. Upstream migrating adult CCV steelhead passage is blocked at Hemphill Dam in most years, except during winter storm (December through March) events (Bailey 2003). Lack of access to upper reaches of Auburn Ravine has substantially reduced the quantity of migration and rearing habitat for CCV steelhead.

The “Salmon Spawning and Water Quality Surveys in Auburn Ravine” report (Helix 2019) suggests, “good water quality conditions suitable for salmonid passage and egg incubation in Auburn Ravine during the 2017 migratory period,” and “...water quality conditions in Auburn Ravine during the 2018 migratory period were suitable for salmonid passage and egg incubation.” The impacts to water quality should be analyzed for each alternative considered in the EIR. Anticipated impacts to temperature and dissolved oxygen should be quantified relative to applicable water quality objectives (from the Central Valley Regional and State Water Quality Control Board) and relevant benchmarks (U.S. Environmental Protection Agency 2003). Alternatives that affect the hydrologic regime of Auburn Ravine should be evaluated to determine their effects on flow conditions for salmonids.

The Auburn Ravine reach we are primarily focused on is characterized by winter storms with spring-recession flows in mid-April, dry season in early June, a fall pulse in later October, and wet season centered in November (Lane *et al.* 2020, Yarnell *et al.* 2015). These functional flows overlap with the mid-April through mid-October irrigation season when the flashboards are installed on top of the dam. Selection of the preferred alternative should consider the functional flows necessary to support salmonid populations. Specifically, early fall storm events are key to attracting Chinook salmon into Auburn Ravine to spawn, stabilized spring flows support development of salmonid eggs and juveniles, and dry season minimum flows support important life history traits, especially for over-summering juveniles.

NMFS recommends that all proposed alternatives meet the 2011 NMFS Anadromous Salmonid Passage Facility Design guidelines (or the most current criteria available) for safe, timely and effective fish passage.

General Comments:

Northwest Hydraulic Consultants, Inc. (NHC) 2021 report titled “Hemphill Diversion Structure and Fish Passage Assessment - Final Report” (NHC-Final Report) states on page 26, regardless of the final fish screen design, we [NHC] recommend conducting a hydraulic analysis of the preferred alternative to understand the hydraulics and sediment transport in and around the screen.

Comment: NMFS is in agreement with NHC’s recommendation to conduct a hydraulic analysis of the preferred alternative.

Disturbance to streambed gravel downstream of the dam can result in long-term effects to aquatic invertebrate prey availability (*e.g.*, species type, abundance, distribution, production) for juvenile salmonids, as a result of being buried/crushed, or displaced downstream. Adverse effects to juvenile fish include reduced growth and survival. Adverse effects can occur to the physical and biological features of CCV steelhead rearing and migration critical habitat, resulting in harm to the species if the areas are filled in with sediment. A long-term effect includes modification of the critical habitat physical and biological features of spawning habitat for CCV steelhead, as well as for Chinook salmon that use the habitat. This effect would occur by allowing the wedge of sediment that will be mobilized by removing the dam, to disperse downstream. This likely resulted in burying and cementing spawning gravel with fine sediments, thereby reducing the quantity and quality of salmonid spawning habitat in the reach downstream of the dam.

Recommendation: For all alternatives being considered, calculate the amount of sediment that would be mobilized by removing/lowering the dam and have it removed and hauled upland or off site (as permits indicate) to minimize adverse effects on the downstream system.

Temporary Diversion During Construction

Temporary diversions are required to meet the same fish passage requirements in NMFS’ Anadromous Salmonid Passage Facility Design document. Where this is not possible, project owners must seek NMFS’ approval of alternate interim fish passage design criteria, and a final interim passage plan.

No Project Alternative:

The No Project Alternative does not meet the main objective of the project, but was included as a requirement of the CEQA Guidelines as indicated on Page ES-3. Further, Page 4-6 and the Northwest Hydraulic Consultants, Inc. (NHC 2021) report states, based on field observations and continuing attempts to plug the dam with concrete, it is likely that another large flood event may further compromise the dam or cause it to fail entirely, given that its foundation is already compromised.

Recommendations: As the existing Hemphill Dam is an obstruction to fish passage and has been evaluated and determined that it could fail entirely in the future, NMFS recommends the No Project Alternative not be selected as the final preferred solution.

Alternative #1:

The Riverbank Infiltration Gallery, in concept, may provide suitable fish passage conditions at a diversion site. However, if improperly sited, failure may occur that results in severe adverse habitat impacts and loss of habitat access in addition to the loss of the diversion. NMFS appreciates the recognition on Page 2-17 in the EIR report regarding prior Agency comments and NID's willingness to address the concerns that have been raised in the past regarding infiltration galleries as an experimental technology.

Page 2-14 states the existing canal inlet will be blocked. Please clarify how the inlet will be blocked and what kind of bank treatment will be applied.

Page 2-14 states the portion of the canal upstream of the new inlet structure would be filled in.

Recommendations: NMFS recommends fish rescue activities be included in the canal to salvage any fish that may be in the system since the inlet to the canal is not screened.

Infiltration galleries are sensitive to a specific set of stream/river conditions, and due to their location, there is a mixing of shallow groundwater and surface water. One mode of infiltration gallery failure is plugging of the overlying porous material, which subsequently reduces the overall effectiveness of the systems by reducing flow capacity, motivating the owner/operator to excavate and replace the buried sections to achieve full diversion rates, thereby impacting habitat.

Given the geologic conditions along Auburn Ravine, and the observed sediment accumulation, plugging of the infiltration gallery is considered likely.

NHC addresses the known heavy sediment load in their report titled Hemphill Diversion Structure and Fish Passage Assessment - Final Report. The report acknowledges fine sediments in the system have the potential of clogging the basin and could require costly maintenance relative to fish screens. This is in line with NV5's Geotechnical Engineering and Hydraulics Report for the Hemphill Diversion Structure dated October 2018 and prepared for NID, as it states on Page 1 that the low gradient of Auburn Ravine lacks the sufficient hydraulic characteristics to transport deposited material over time (NV5 2018). This validates the concern of plugging.

It was stated at an October 23rd meeting with NID and the TAC that the intent was to construct the infiltration gallery and operate it for one year before decommissioning the dam. This raised additional concerns of plugging for the infiltration gallery, as the sediment impounded behind the dam will be transported downstream once the dam is removed. On page 2-17 of the EIR, it states the dam will be removed prior to the construction of the infiltration gallery. NMFS sees this as a positive solution to minimize concerns of initial plugging from the existing volume of sediment built-up behind the dam, but with continued projected bank erosion there is still a concern for long term maintenance regarding the plugging of the facility.

Spawning has also been documented within the area proposed for the infiltration gallery. Operations of an infiltration gallery are generally ceased when redds are in the area, which may result in large periods of non-operation of the facility. The facility may cause take of juvenile

fish if they are present during pumping operations. Take may become more likely if large volumes of sediment blockage cause the gallery to not operate as intended.

Placement of the gallery should be far enough away from the backwater hydraulic effects of existing impoundments so that the maximum available head to drive water into the infiltration gallery is the normal depth of the stream at any given flow without the benefit of check structures. Per NMFS 2011, Section 12.5.1.2, use of temporary or permanent impoundments, such as push-up berms, stacked rock and plastic and other dams to raise the water level, is not allowed.

NMFS places several limitations on the siting and operation of infiltration galleries, as follows but not limited to:

- Major repairs to the infiltration gallery that would disrupt the streambed may not be approved during critical life stages. Performing preventative maintenance, such as backwashing the system on a regular basis, can minimize the need for major repairs. Backwashing or cleaning of the gravel can be achieved by using air or water or both (NMFS 2011).
- Should spawning occur on an infiltration gallery or within the zone of gallery influence to hyporheic flow to the redd, then all diversion and backwashing activities should cease for 90 days or until the eggs hatch, so that the first life stage's biological processes associated with spawning are not interrupted.
- When juvenile salmonids are present at or downstream from the gallery, backwashing should not be conducted.
- All diversions must be conducted in accordance with all laws and authorities on water withdrawals and protections for aquatic species.
- Failed infiltration galleries will not be approved by NMFS to be replaced in kind unless the failure mechanism has been identified and a subsequent design is provided that adequately addresses the failure.
- Scour Depth Limitation is when the porous streambed material has been scoured to the calculated scour depth, or ½ of the original overlying material has been removed., Diversion rate should be reduced or maintenance of the facility is required to bring the level of protection back to original design specifications in consultation with your engineer and NMFS.
- Infiltration galleries should not be operated when the bed has scoured such that streambed material has been scoured to less than 25% of its design thickness, until facility maintenance has replaced the original thickness of overlying material.

Recommendations: NMFS recommends Alternative #1 is not selected due to NHC report findings of known heavy sediment load and fine sediments in the system which are known to have the potential of clogging an infiltration basin. NV5's report supports the concerns documenting the low gradient of Auburn Ravine lacking the sufficient hydraulic characteristics to transport deposited material over time (NV5 2018).

Alternative #2:

In general, NMFS appreciates the inclusion of the Fish Passage Alternative, which includes: the removal of the diversion structure, construction of a nature-like roughened rock ramp instream

fish passage structure, and installation of the preferred flat plate fish screen alternative. Positive barrier screens, like the flat plate screen option, have been shown to have high success rates (typically greater than 98%) at moving juvenile salmonids past intakes with a minimum of delay, loss, or injury (NMFS 2011). NMFS thinks this alternative can provide a beneficial need for fish passage and meet the needs of the District to supply water to its constituents.

Page 2-13 discusses channel incision to be minimal for Alternative 2, but does not provide any qualitative information to be considered.

Recommendations: Please provide information on the determination of minimal channel incision.

Page 2-13 recommends engineered log jams, barbs, or groins placed along channel margins to slow flow along the edge of banks to reduce scour and establish natural vegetation. It is not clear what the material would be for the barbs or groins or the extent of the anchoring of the toes with large rock. Riprap impedes the natural functions of a riverbank or shoreline, as it interrupts the establishment of the riparian zone, or the point of interface between land and flowing water (FEMA 2009). Armoring techniques that allow for interstitial voids in the rocks provide potential predator habitat.

Recommendations: NMFS recommends, in consultation with the resource agencies, to look at practicable alternatives of designing with nature, such as the design guidance found in FEMA's Alternative Techniques to Riprap Bank Stabilization (FEMA 2009) that are becoming widely accepted and used in stream restoration and fish passage projects. Clusters of logs that act like spurs at low flows and weirs at high flows could be one alternative to consider for bank stabilization and regeneration (Photo example below courtesy of OBEC Consulting Inc.).



Page 2-19 proposes to outfall juveniles from the screen bypass system just upstream of the nature like fishway (NLF). Given that the stream experiences low flow during the dry months of the year, it is best to keep the juvenile bypass outfall as close to the point of diversion (POD) as possible to keep the bypass return water in the stream over the NLF.

Recommendations: Consider contouring the upper end of the NLF or one of the areas between the boulder weirs to have a receiving pool with adequate depth and be located in an area where ambient river velocities are greater than 4.0 ft/s during the smolt out-migration. Meandering the low flow fish channel through the NLF can also be an option to create an outfall location and pathway for juvenile downstream migration.

Page 2-21 states the shape of the channel will be determined in a subsequent design phase.

Recommendations: Please include a channelized low-flow fish passage channel within the roughened ramp fishway.

Page 2-21 states to prevent water from entering the canal during non-irrigation season, a gate assembly will be installed near the intake.

Comment: NMFS (2011) calls for gates to be operated either in a fully open or fully closed position (no throttling of the flows) and any gate stems or other adjustment mechanisms must not be placed in any potential path of fish migration. All control gates exposed to fish must have a shroud or be recessed to minimize or eliminate fish contact.

Page 2-21 calls the fish bypass system a fish bypass valve. Closure valves of any type should not be used within the bypass pipe.

Comment: Please clarify if the *bypass valve* term used is just the open juvenile bypass pipe that does not include any valves.

Page 2-21 states that a positive barrier flat plate screen will be installed at the head of the diversion using CDFW or NMFS Criteria.

Recommendation: Please list out criteria that will be used from each reference for fish passage components, so we can ensure it meets guidelines for NMFS' ESA-listed species.

Alternative #3:

The proposed Pipeline Alternative consists of removing the existing Hemphill Dam and taking the diversion water from the existing Auburn Ravine 1 (AR1) diversion at Gold Hill Dam. This would reduce flows within the 6.25 mile section from Gold Hill Dam to Hemphill Dam during the irrigation season from April 15 to October 15, potentially causing an elevating effect on water temperatures. As previously mentioned, the current water temperatures in Auburn Ravine likely support rearing juvenile *O. mykiss* year-round, including at least part of the irrigation season (Bailey 2003). Reductions in flow may result in severe adverse habitat impacts and loss of habitat access due to poor flows, increased temperatures, and degraded water quality.

The NMFS Recovery Plan (Plan) establishes Auburn Ravine as a core 2 watershed where listed species meet, or have the potential to meet, the biological recovery standard for moderate risk of

extinction (NMFS 2014). The Plan identifies installing a fish ladder and screen on the diversion canal at Gold Hill Dam. Fish entrainment into agricultural and municipal water diversions may experience 100% mortality, particularly if no egress route back to the river is provided (NMFS 2011).

Recommendations: NMFS recommends that functional flows, at a minimum of what is currently provided, be continued if this alternative is selected to support salmonid populations. Specifically, spring flows support the development of salmonid eggs and juveniles and dry season minimum flows support over-summering juveniles.

If selected, NMFS recommends that this alternative include a fish screen and ladder on the AR1 diversion at Gold Hill Dam. The screen will minimize the entrainment of juvenile fish into the canal and the fishway would allow upstream migration for adults.

Page 2-25 states that water diverted to the Hemphill Canal via the pipeline would range from an average historic rate of eight cfs to a maximum diversion of 18 cfs.

Comment: Given flows in Auburn Ravine, the removal of 8-18 cfs could be a significant portion of available flow, especially in drought years. Removal of this water from Gold Hill Dam to Hemphill Dam could lead to less available habitat for CCV steelhead, elevated water temperatures, increased turbidity, and greater impacts from pollutants or contaminants.

Page 2-28 states the Hemphill Canal inlet will be removed and the canal filled in.

Question: What will be the bank treatment at the diversion inlet location and what fill material will be used in the canal?

Under Section 3.3.5, Environmental Impacts and Mitigation Measures, Thresholds of Significance, it states that implementation of the proposed Project would have a significant adverse impact on biological resources if it would result in a substantial interference with the movement of native resident or migratory fish or wildlife species. Page 4-17 states a substantial reduction in flows in this reach, especially during drought conditions under Alternative 3, could restrict or limit movements of fish occurring in this reach during the critical summer months, thereby increasing their susceptibility to predation and elevated summertime temperatures and decreasing their foraging success.

Comment: NMFS agrees with this conclusion that Alternative 3 would have potential adverse, unavoidable impacts to fish. When analyzing alternatives, NMFS recommends considering the alternative that provides for safe, timely, and efficient fish passage for both adult upstream and juvenile downstream migration. In the EIR, Alternative #3 was identified as restricting or limiting movements of fish, thereby potentially creating delays in fish migration.

General Conservation Recommendations (for Alternatives 1 through 3)

Temporary bypass pipe outfalls should be designed and constructed to ensure flow energy is dissipated at the outfall end of the pipe to minimize stream channel erosion and provide safe downstream reentry of fish, preferably into pool habitat with cover.

Seepage water from the site should be pumped to a temporary storage and treatment site or into upland areas to allow water to percolate through soil or to filter through vegetation before reentering the stream channel.

When construction is complete, re-water the construction site slowly to prevent loss of surface flow downstream and to prevent a sudden increase in stream turbidity.

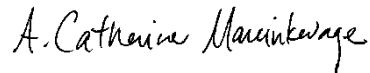
Whenever a pump is used to dewater the isolation area where ESA-listed fish may be present, a fish screen must be used that meets NMFS' Southwest Region Water Drafting Specifications (NMFS 2001).

Provide a longitudinal profile of the stream channel thalweg for 20 channel widths upstream and downstream of the structure to be used in determining potential channel degradation.

We recommend working with the Placer Conservation Authority to determine if this project can be covered by the Placer County Conservation Program habitat conservation plan.

Thank you for allowing us to provide input during this public comment period to ensure the final alternative selected meets safe, timely, and effective fish passage. If you have questions regarding this matter, please contact Jean Castillo at (916) 203-9390 or Jean.Castillo@noaa.gov.

Sincerely,



Cathy Marcinkevage
Assistant Regional Administrator
California Central Valley Office

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