



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

Refer to NMFS No: WCRO-2021-00619

November 30, 2021

Ramon Aberasturi
Regulatory Project Manager
California Delta Section
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens
Fishery Conservation and Management Act Essential Fish Habitat Response for the La
Grange Sluice and Tailrace Channel Improvement Project

Dear Mr. Aberasturi:

After completing the Endangered Species Act (ESA) Section 7 consultation on the La Grange Sluice and Tailrace Channel Improvement Project (on September 28, 2021), HRD staff, the consultant, sent NOAA's National Marine Fisheries Service (NMFS) an email on October 15th, 2021, outlining clarifications and requests about the issued Biological Opinion.

The following are our responses:

1. The Biological Opinion misstated that there would be three coffer dams and we agree that the Biological Assessment states there will only be two coffer dams. This is a lesser impact to the fish, and no changes to the Biological Opinion are needed.
2. After deliberating with other biologists who specialize in acoustic effects, NMFS agrees that acoustic monitoring can be removed from the Terms and Conditions and that the use of 2.104 acres as a measurement is ambiguous. Please refer to reissued Incidental Take Statement that is attached to this letter, regarding the new language.
3. NMFS agrees that the use of "millimeters" is a mistake and the measurement was meant to be milliliters. Please use milliliters in your measurements.
4. The purpose of this Term and Condition is to ensure cobble laden with mercury is not redistributed into the river. Please refer to the reissued Incidental Take Statement attached to this letter with the additional wording that clarifies the purpose and provides options other than testing cobble. Please also note that this Term and Condition now requires that NMFS be informed once a method has been chosen and before it is instituted.
5. The available scientific data suggests, vegetation helps to stabilize disturbed substrate and benefits the disturbed riparian habitat. Any willows that can be planted in the general area will suffice and they do not need to be directly adjacent to the structure.



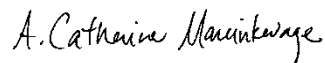
6. It was determined that Essential Fish Habitat would be degraded as a result of the project and we recommend restoring habitat downstream of the action area to help alleviate those effects. It is the U.S. Army Corps of Engineers' (Corps) responsibility to inform NMFS of the recommendations that are or are not incorporated into the project and why.
7. It was determined that Essential Fish Habitat would be degraded as a result of the project and we recommend that the Corps' ensure the regrowth of those willows to help alleviate those effects. It is the Corps' responsibility to inform NMFS of the recommendations that are or are not incorporated into the project and why.

Beyond the corrections noted above, no other changes are proposed to be made to the Biological Opinion. The Biological Opinion remains in effect, including its effective date. Reinitiation of consultation would be required if: (1) The amount or extent of incidental taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this biological opinion; (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat that was not considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

To document the corrections made to the Biological Opinion, this letter and the attached reissued Incidental Take Statement will be included in the record of consultation maintained at the California Central Valley Office in Sacramento, California, and will be uploaded to the public record for the Biological Opinion at the NOAA Library Institutional Repository [<https://repository.library.noaa.gov/welcome>] within two weeks.

Please direct questions to Hilary Glenn, at NMFS's California Central Valley Office via hilary.glenn@noaa.gov, or (916) 200 8211.

Sincerely,



Cathy Marcinkevage
Assistant Regional Administrator for
California Central Valley Office

Enclosure

cc: ARN151422-WCR2021-SA00067

Electronic copy only:

Ramon Aberasturi, USACE, ramon.aberasturi@usace.army.mil

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2.9. Incidental Take Statement

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). “Incidental take” is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

2.9.1. Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

NMFS anticipates incidental take of CCV steelhead in the action area through the implementation of the proposed Project. Because of the proposed timing of the work window for the construction phase of the Project, actual numbers of fish adversely affected by the construction actions are expected to be low. A few adult CCV steelhead are expected to be present during the month of September since this is early in their upstream migration period, and their current low escapement estimates in the Tuolumne River. Juveniles are expected to be more numerous as a greater portion of the work window overlaps with their use of waterways in the action area.

However, while individual fish will be present in the action area, NMFS cannot, using the best available information, precisely quantify and track the amount or number of individuals that are expected to be incidentally taken (injure, harm, kill, etc.) as a result of the proposed action. This is due to the variability and uncertainty associated with the response of listed species to the effects of the proposed action, the varying population size, annual variations in the timing of spawning and migration, individual habitat use within the action area, and difficulty in observing injured or dead fish. However, it is possible to estimate the extent of incidental take by designating as ecological surrogates, those elements of the project that are expected to result in incidental take, that are more predictable and/or measurable, with the ability to monitor those surrogates to determine the extent of take that is occurring.

The most appropriate threshold for incidental take is an ecological surrogate of habitat disturbance of 2.104 acres, which includes the factors causing fish to relocate to other locations downstream, the amount of area from which juvenile fish would be captured, those factors which kill, or cause sublethal physiological ailments, and factors which would temporarily reduce the growth and fitness of individuals using the habitat within the action area.

The behavioral modifications of fish responses that result from the habitat disturbance are described below. NMFS anticipates incidental take will occur during construction and will be limited to the following forms:

1. Incidental take will occur in the form of harm and harassment of holding CCV steelhead adults in the month of September and over-summer rearing CCV steelhead parr. The harassment will originate from construction noise and vibration throughout the work window, starting mid-May until September 30, Monday through Friday, 6 a.m. to 6 p.m. for one season. If noise and vibration levels rise higher than normal background river levels, those CCV steelhead present in the Tuolumne River during construction would alter their behaviors and move away from locations adjacent to the active construction area to some point downstream. Also, because individual fish are difficult to monitor, their individual reactions to the harassment will likely remain undetected, and each fish may react differently. It is more robust to estimate take through the area that will be disturbed, which is the proposed footprint for the project. Take will be considered exceeded if the disturbed area expands beyond the work area outlined in Figure 2 in the Biological Opinion or Figure 4 in the BA.
2. Incidental take will occur in the form of harassment, pursuit, trapping, capturing, handling, wounding, and unintentionally killing parr CCV steelhead during work area isolation, cofferdam dewatering, and fish relocation efforts. These activities are likely to stress, shock, and injure them, resulting in immediate or delayed death, or susceptibility to predation. The number of parr CCV steelhead to be entrapped by cofferdams, driven or captured by nets, handled, and transported for release is expected to be low, but the total number affected will not be known because the primary effort will be to herd fish out of areas to be dewatered or isolated. However, the total amount of area to be isolated, dewatered, and fished for parr is known and limited. The BA estimates that a total of 1.442 acres will be temporarily fished and dewatered (sluice and tailrace channels) and 0.662 acres will be temporarily disturbed, for a total of 2.104 acres (Table 7, (HDR 2020)) in which fish relocation, cofferdam establishment, and/or dewatering will occur. In association with fish relocation activities, it is typically assumed that no more than 3% of captured and handled fish will experience immediate mortality during fish relocation if experienced fish biologists perform the fish relocation and protocols designed to improve fish survival are followed. The amount of incidental take associated with these activities is proportional to the amount of area fished; if more area were fished, isolated, or dewatered, the likelihood of encountering additional steelhead parr increases. Increasing the acreages associated with dewatering, cofferdam establishment, and fish relocation for this project to more than 1.541 acres total will be considered exceeding the expected incidental take levels of this surrogate. Additionally, if more than 3% of total number of CCV steelhead captured and handled in these processes immediately perish or show evidence of fresh external wounds, incidental take will be considered exceeded.
3. Incidental take will occur in the form of harassment to parr CCV steelhead outside of the 1.541 acres described above as water is pumped from behind cofferdams back into the Tuolumne River. The most appropriate threshold for incidental take consisting of fish disturbance and sub-lethal effects associated with elevated turbidity is an ecological surrogate of the amount of increase in turbidity generated by dewatering discharge.

Increased turbidity is expected to cause harm and harass parr through elevated stress levels and disruption of normal habitat use locally when in-water readings exceed 80 NTUs. These responses are linked to decreased growth, survivorship, and overall reduced fitness as described for underwater noise avoidance, up to respiratory distress and reduced gill function. NMFS cannot estimate how many parr steelhead may be affected by elevated turbidity plumes for the reasons outlined in previous incidental take estimates, and also because the turbidity will naturally dissipate but is variable depending on river flow dynamics, leading to more uncertainty. The degree to which juvenile steelhead display adverse reactions (avoidance) to turbidity plumes, however, is relational, so limiting the maximum amount of allowable turbidity in-river will limit negative outcomes for fish. However, the effect area partially overlaps with the disturbance distance surrogate established for incidental take #1. Therefore, water downstream of construction activities are expected to remain under 80 NTUs beyond 30 meters from either the inlet cofferdam or downstream tailrace channel cofferdam. Exceeding 80 NTUs within the identified distances will be considered as exceeding the expected incidental take levels.

4. Incidental take will occur in the form of harm to rearing CCV steelhead as legacy mercury is mobilized due to excavation of cobble from the mid-river bar in the Tuolumne River. CCV steelhead are expected to feed throughout the action area and those that ingest methylmercury would experience sublethal effects like immunosuppression, resulting in reduced growth and reduce individual survivorship probability. NMFS cannot estimate the number of CCV juveniles that may ingest methylmercury within the action area due to project actions, for aforementioned reasons, and also because the transfer of methylmercury up the food web to fish predators is variable and dependent on water flow, water temperature, and bacterial/foodweb activity at the time of inorganic mercury mobilization, and most importantly, on the final amount of inorganic mercury ultimately mobilized into the aquatic environment. The likelihood of adverse aquatic ecosystem outcomes, and outcomes to rearing steelhead, can be predicted with reasonable certainty relative to the amount of elemental mercury in disturbed sediments. Therefore, using the MacDonald et al. (2000) probable effect concentration for mercury in sediments of 1.06 ppm and the State of California's threshold for use of mercury provisions while disturbing areas with elevated mercury concentrations of 1 ppm, such as mine tailings, the sediments and cobble excavated from the mid-river bar is expected to remain at (or below) 1 ppm or 1 milligram per kilogram of inorganic mercury. If these materials contain more than 1 ppm inorganic mercury and are replaced at the disturbed site, incidental take would be exceeded.
5. Incidental take will occur in the form of harm to CCV steelhead through temporary adverse habitat changes in association with the installation of the diversion structure in the mid-river bar. Its installation necessitates excavation of the cobble to construct and place the diversion pipe and inlet/outlet, which is expected to somewhat destabilize the permanent bar feature in the river. NMFS cannot estimate the temporary reduction of habitat functionality and subsequent reductions in growth, survivorship, or fitness that may occur as outcomes associated with destabilized cobble movement. However, the probability that the bar will reorganize loosened cobble, even if replaced, is expected to increase with the amount of cobble excavated from the bar. The BA estimates that

approximately 400 cubic yards of cobble must be excavated from the mid-river bar to install the diversion pipe structure. Exceeding the estimated cubic yardage will be considered exceeding incidental take.

6. Incidental take will occur in the form of harm to CCV steelhead through temporary adverse habitat changes in association with riparian vegetation removal. The most appropriate measurement of harm to CCV steelhead using the riparian zone within the action area is a surrogate of the total amount of area affected by degradation of habitat from vegetation trimming. The removed branches and foliage would have otherwise supported the macroinvertebrate prey of juvenile steelhead and provided limited amounts of shade and habitat cover relative to their occupation in the overall available habitat, which will result in reduced growth and fitness. From aerial work images provided in the BA (Figure 8 of the BA) and area estimations using Google Earth, no more than 0.3 acres of CCV steelhead designated critical habitat will experience vegetation trimming. Trimming vegetation on more than a total of 0.3 acres of CCV steelhead critical habitat will be considered exceeding incidental take. The proposed project describes retaining the roots of the vegetation to ensure trimmed plants regrow onsite, therefore removal of the roots of riparian vegetation will also be considered exceeding incidental take.
7. Incidental take will occur in the form of harm to CCV steelhead through permanent adverse habitat alterations in association permanent occupation of hard artificial structures in designated critical habitat. The persistence of a diversion structure in the channel is expected to change the river flow dynamics locally by becoming a source of water turbulence and scour when interacting with river flows, degrading the rearing, spawning, and migration PBFs in the action area, as long as the structure remains in the designated critical habitat. Degradation of critical habitat PBFs will result in reduced growth and fitness of juveniles, and reduced fitness of adults. At this time it is difficult to predict the severity of outcomes for critical habitat PBFs, but the likelihood of severe consequences is relative to the size of the structure. The applicant estimates that no more than 0.05 acres of CCV steelhead designated critical habitat will experience direct, permanent, adverse effects. Increasing the amount of CCV steelhead designated critical habitat occupied by artificial structures beyond 0.05 acres will be considered exceeding incidental take.

2.9.2. Effect of the Take

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

2.9.3. Reasonable and Prudent Measures

“Reasonable and prudent measures” are measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

1. Measures shall be taken by USACE, its applicant TID, and their contractors to minimize the extent of take of CCV steelhead caused by the proposed action, related to the consequences of the proposed action as discussed in this opinion.
2. Measures shall be taken by USACE, its applicant TID, and their contractors to reduce the extent of harm and alteration to the designated critical habitat of CCV steelhead, related to the consequences of the proposed action as discussed in this opinion.
3. The USACE, its applicant TID, or its contractors, shall prepare and provide NMFS with updates, reports, and plans pertinent to monitoring the impacts to and amount of incidental take of listed species under NMFS jurisdiction, or their ecological surrogates, in the action area.

2.9.4. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Federal action agency must comply (or must ensure that any applicant complies) with the following terms and conditions. USACE or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement reasonable and prudent measure 1:
 - a. The USACE or its applicant TID shall ensure that, through the terms of the issued permits, all contractors and personnel involved with this action will be educated and informed of the Terms and Conditions of this biological opinion and the avoidance and minimization measures described in the project description.
 - b. All proposed and required conservation measures, AMMs, and BMPs shall be adaptively managed with coordination with NMFS staff as they pertain to protecting CCV steelhead throughout the life of the project to ensure their effectiveness. If measures are suspected of not performing as intended or are observed causing greater than expected harm to CCV steelhead, NMFS shall be contacted and the issue discussed until a resolution of the issue is determined and recorded via NMFS technical assistance. The issue shall be resolved and the resolution measure implemented within one week from notification date.
 - c. During the dewatering, cofferdam and isolation barrier installation, and fish relocation activities (i.e., “fish rescue”), the enclosed areas shall be checked for CCV steelhead, according to the recommendations of the lead qualified on-site biologist, but also considering the following:
 - i. NMFS staff shall be notified of any planned fish relocation or salvage activities at least two business days before such activities begin, so that staff can advise these efforts or make a field visit to observe, if deemed necessary.

- ii. Persons performing salmonid captures and handling shall be qualified and experienced juvenile salmonid handlers, and be familiar with the fishing equipment to be used.
 - iii. All gear (nets, seines, buckets, waders, boats, boots, gloves, etc.) to be used in contact with Tuolumne River water shall follow California Department of Fish and Wildlife (CDFW) biological sterilization and disinfection standards prior to use so that pathogens, parasites, chemicals, or nonnative biological organisms are not introduced into the ecosystem (CDFW 2016).
 - iv. If water temperatures in the areas to be dewatered or fished are elevated above $>21^{\circ}\text{C}$ (69.8°F), dewatering and fish relocation activities shall not proceed. Dewatering and fish relocation shall only proceed if water temperatures are 20.9°C (69.6°F) or less.
 - v. If daytime air temperature highs are predicted to be more than 29.4°C (85°F) during the fish relocation, shade shall be provided to cover the fish processing area to minimize heat transfer into water holding containers. At these air temperatures, insulated coolers shall be used in preference of buckets to maintain water temperatures.
 - vi. Water holding fish shall be maintained within $\pm 2^{\circ}\text{C}$ of the temperature of the waterbody the fish were captured from; water holding fish shall not exceed 23°C (73.4°F) at any time.
 - vii. All salmonids shall be held in buckets separate from other types of fishes and be a priority for releasing first and separately from other groups, as possible.
 - viii. Fish shall be held in buckets at low densities, where there is enough room to swim freely, to avoid the effects of overcrowding and further stress on fish.
 - ix. Salmonids shall not be held in containers for more than 30 minutes total.
 - x. CCV steelhead that die during capture and handling shall be placed on ice or frozen until transfer to NMFS or another NMFS-associated entity can occur.
- d. Outside of the initial fish relocation, if any steelhead or salmon is injured or killed within the action area in relation to project activities, the construction shall cease and NMFS staff shall be contacted within 24 hours to assign species identity. This does not apply to the initial fish relocation activities that preceded all other construction activities because a low amount of immediate mortality is expected in conjunction with that set of actions and is part of the incidental take already considered for the project.
- i. If dead, the fish shall be recovered and placed on ice or frozen until transfer to NMFS can occur or another NMFS-associated entity.
 - ii. If injured, the fish shall be gently handled only to take a photograph to enable later species assignment. Then it shall be immediately released back into the

waterbody it was taken in, preferably in a shaded area with overhanging or in-water vegetation. However, the injured individual shall not be pursued if it proceeds to exit the immediate area under its own volition before being photographed.

- iii. Construction shall cease until coordination with NMFS can take place and technical assistance can determine whether the death was related to construction activities or not, and if the death was construction-related but not included in the incidental take identified in Section 2.9.1.
- e. A qualified technician shall conduct water quality monitoring consistent with the Clean Water Act Section 401 Permit for the project (WDID#5B50CR00098).
 - i. Technical Certification Conditions section 5 subheading b:
 - a. Activities shall not cause turbidity increases in surface water to exceed:
 - 1. Where natural turbidity is less than 1 NTU controllable factors shall not cause downstream turbidity to exceed 2 NTUs;
 - 2. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
 - 3. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and
 - 4. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent
 - ii. The turbidity measurement equipment shall be calibrated daily to ensure accurate readings.
 - iii. Turbidity measurements shall be taken and recorded at least once per hour while discharge of pumped water into the Tuolumne River is occurring. An estimate of approximate distance in meters downstream the turbidity reading occurred from the cofferdam location shall also be recorded.
 - iv. A turbidity curtain shall be used to control and settle discharged water if the turbidity surrogate is anticipated to be exceeded 30 meters downstream of the cofferdam location, as informed by the real-time turbidity readings.
- f. The USACE, TID, or their contractors shall take steps to minimize or avoid the introduction of construction-related contamination to the Tuolumne River.
 - i. Measures consistent with Clean Water Act Section 401 Permit for the project (WDID#5B50CR00098) will be implemented onsite to minimize the probability of introducing construction pollution into waterways and to reduce the amount ultimately discharged, should an accidental or uncontrolled discharge occur.

- a. Erosion BMPs shall be installed as proposed and monitored for integrity and effectiveness until the project is complete and they are removed.
 - ii. Accidental spill containment and clean-up materials shall be present at the work location and be accessible to construction crews at all times, to ensure rapid response to events. Materials and available amounts shall be adequate for the machinery and chemicals expected onsite.
 - iii. Equipment shall be checked for leaks and maintained regularly to ensure proper function before entering water channels or traveling over water channels. Equipment to be used stationary for long periods shall have drip pans or absorbent pads placed underneath to catch any and all leaks, especially while operating on the mid-river bar.
 - iv. Equipment shall be cleaned prior to entering the riverbed. Wash water, if used, shall be properly disposed of and not discharged into the Tuolumne River, unless treated through an infiltration basin or some other commensurate measure.
 - v. Refueling, lubrication, and other equipment maintenance activities shall not occur on the mid-river cobble bar. Such activities shall only occur on existing gravel or paved surfaces outside of the ordinary high water mark of the Tuolumne River.
 - a. Containment shall be used during these activities to capture drips, leaks, or small spills, and such materials must be cleaned up and contained for disposal immediately.
 - vi. Material used for fill should be cleaned prior to use in the action area.
 - vii. If contamination is observed on the sand pad created on the mid-river cobble bar (e.g., drips, leaks, or discoloration) after the equipment is removed and construction complete, contaminated sand shall be removed from the bar and disposed of properly offsite.
 - viii. Should an accidental spill or discharge greater than 10 millimeters into the Tuolumne River occur, NMFS shall be contacted within 24 hours with information regarding the event, including type of spill or breach, event duration, estimates on the amount and concentration of materials discharged, description of the immediate response taken by the contractor onsite, and the proposed long-term resolution to avoid such events. Environmental samples shall be taken and documentation made to track the efficacy of containment and clean-up efforts.
- g. No mercury laden gravel shall be redistributed into the river. Below there are three possible methods for accomplishing this goal. Once a method is chosen that method shall be communicated to NMFS before it is carried out.
 - i. Confirming the site gravel is not contaminated through testing: at least one sediment sample shall be taken to measure the concentrations of inorganic mercury in the excavated mid-river cobble bar materials.

- a. The sample(s) of available fine material shall be taken from the lowest excavation point.
- b. The excavated material may be mostly cobble, which is sized too large for a typical sample. In such cases, provisions shall be made to wash a set amount of cobble, filtered down to a standard sample amount that can be tested to determine the inorganic mercury concentration at a ppm level, if finer material cannot reasonably be collected.
- c. The sample shall be sent out and evaluated in a timely manner so that the mercury risk can be known before excavated cobble is replaced into the bar and mercury is mobilized into the aquatic environment.
- d. If mercury concentration is found to be over 1 ppm, the State of California mercury provisions (SWRCB 2018a) shall be observed onsite, and either:
 1. the excavated cobble shall be washed before replacement into the bar and the wash water and removed mercury shall be properly disposed offsite, or
 2. the mercury contaminated cobble shall be removed completely and replaced in-kind with the same amount and size cobble from a clean source.
- ii. Treating the removed cobble as if it is contaminated and washing it before replacing it into the river.
- iii. Removing the excavated cobble from the site, treating it as if it were contaminated, and disposing of it properly. Then using clean cobble at the work site.
- h. NMFS shall be contacted within 24 hours for technical assistance after direct observation that exceedance of an ecological surrogate has occurred, or is suspected of being exceeded.
- i. During construction, cofferdams and isolated areas shall be checked daily by biological monitors for pooled water and fish presence. If fish are discovered, construction activities shall halt and fish relocation and relocation activities shall commence immediately until all fish are captured or several passes of nets do not result in fish. If a steelhead or salmonid is encountered during these proceedings, NMFS shall be contacted immediately for technical assistance. Construction activities shall only begin again after cofferdams and isolation barriers are readjusted so that additional fish relocations are not required and NMFS confirms that incidental take levels were not exceeded.
2. The following terms and conditions implement reasonable and prudent measure 2:
 - a. Riparian vegetation removal shall be minimized to the extent practicable, except for nonnative plant species, which shall be completely removed when encountered. For

larger native plants, trimming of branches to enable site access shall be used in preference over complete clearing and native plants should remain as intact as possible to promote regrowth.

- b. Riparian vegetation not planned for removal shall be clearly marked to ensure those resources are avoided and preserved in the landscape. Markings/tags shall be removed after construction is complete.
 - c. Temporary construction materials and BMPs shall consist of natural biodegradable materials whenever possible and the use of plastic (such as monofilament and Visqueen) shall be minimized to the extent practicable. All materials intended for temporary use onsite shall be removed within 30 days post construction/project completion or at least seven days before the first anticipated rainfall to reduce pollution and trash entering the waterways.
 - d. During the operation stage (post-construction), both inlet and outlet ends of the diversion structure shall be checked and cleared of any accumulated debris before gates are opened. Woody materials found during this process shall be returned to the wetted channel of the Tuolumne River downstream of the inlet of the diversion structure. Unnatural materials (plastics, trash) shall be removed and disposed of properly.
 - e. Any visible damage to or changes of the riffles downstream of the construction area shall be recorded with photos and measured with measuring tapes, and reported to NMFS immediately.
3. The following terms and conditions implement reasonable and prudent measure 3:
- a. A report on the initial fish relocation efforts and results shall be submitted to NMFS within 30 days of conclusion of the activities, indicating the number of salmonids that were handled, the number injured or killed, the transport water quality readings, total time in transport, and the location they were released into (a simple schematic map will suffice).
 - b. A final construction report shall be submitted by December 31st after the completion of construction. This report shall include:
 - i. Construction start and end dates, and number of days worked.
 - ii. The flow release amounts through the MID Hillside Gate through the construction time period.
 - iii. The final total number of salmonids and CCV steelhead observed, captured, or handled throughout the entirety of construction, including a summary of the initial fish relocation, including a tally of CCV steelhead injured or killed during project activities.

- iv. Estimate of the amount of riparian vegetation severely trimmed (total acreage) and the species composition affected. General plant group is sufficient (e.g., willow, oak, cottonwood, nonnative, etc.).
 - v. Summary report of any leaks, spills, or accidental discharges of construction-related materials to the Tuolumne River.
 - vi. Estimated amount of time shotcrete and concrete cured in dry conditions before flows were released.
 - vii. The record of the turbidity readings during discharge, with measurement locations.
 - viii. The record of in-water sound measurements taken roughly 2.104 acres downstream of the construction area.
 - ix. Lab report of inorganic mercury concentrations from the mid-river cobble bar excavation at a ppm level, and final estimate of total cobble excavated to place the diversion structure, and whether any new, clean cobble was placed to supplement removed material.
 - x. Photos of the completed sluice channel and diversion structure.
- c. Updates and reports required by these terms and conditions shall be sent to:

ccvo.consultationrequests@noaa.gov (primary and preferred contact)

or

California Central Valley Office – c/o Monica Gutierrez
 National Marine Fisheries Service
 650 Capitol Mall, Suite 5-100
 Sacramento, CA 95814
Monica.gutierrez@noaa.gov

2.10. Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

- Willow sticks from the vegetation trimming should be replanted in the disturbed area and replaced cobble around the diversion structure to provide future cover for fish near the diversion structure and possibly enhance the stability of the cobble matrix near the structure when under flow. Doing so would help restore the functionality and value of CCV critical habitat adjacent to the diversion structure.

- The USACE and its applicant TID should continue to work cooperatively with other State and Federal agencies, private landowners, governments, and local land management groups to identify opportunities for cooperative analysis, monitoring, and funding to support salmonid and watershed restoration projects and recovery action projects in the action area and beyond, especially projects involving fish passage, or reintroduction of salmonids, above dams into historical habitat extents. Doing so would aid restoration of the functionality of existing critical habitats in general, and improve the resiliency and probability of recovery of CCV steelhead in the region.

2.11. Reinitiation of Consultation

This concludes formal consultation for the La Grange Sluice and Tailrace Channel Improvement Project.

As 50 CFR 402.16 states, reinitiation of consultation is required and shall be requested by the Federal agency or by the Service where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action. An example of when reinitiation of consultation will likely be warranted under 50 CFR 402.16 is if USACE, TID, or their contractors do not adhere to the work window as proposed.