

**State of  
California**

**The Natural Resources  
Agency Department of  
Water Resources**

Incidental Take Permit for the Long-Term  
Operation of the State Water Project: 2020  
Annual Status Report

**ITP No. 2081-2019-066-00-A1**

**January 6, 2021**





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## Attached Associated Documents

**Appendix A.** WY2020 Salvage Data

**Appendix B.** BSPP Sediment and Weed Removal Annual Report

**Appendix C.** Data Comparing the Daily USGS Tidally Filtered Old and Middle River Flow Gauge Readings (USGS OMR) and the Old and Middle River Index Calculations (OMRI) in Water Year 2021.

**Appendix D.** SWP Export Curtailments for Spring Outflow during April and May 2020 (ITP COA 8.17)

## **Purpose of the Annual Status Report**

The purpose of the Annual Status Report (ASR) is to summarize information on the California Department of Water Resources' (DWR's) compliance with the Incidental Take Permit (ITP) for the Long-Term Operation of the State Water Project (SWP), as amended (No. 2081-2019-066-00-A1). While the information in the ASR focuses primarily on Water Year (WY) 2020 after issuance of the ITP (i.e., the period from April 1–September 30, 2020), the report does also include activities up to the present, for some Conditions of Approval (Conditions). As required under ITP Condition 7.2, the ASR includes a copy of the table in the Mitigation Monitoring and Reporting Plan with notes showing the current implementation status of the ITP Conditions of Approval and mitigation measures, as well as a copy of all SWP and Central Valley Project (CVP) salvage data collected from WY 2020 (Appendix A) in addition to other supporting information included in appendices. The ASR, though, does not include reports of inspections and maintenance of fish protective equipment by DWR at the Skinner Fish Facility. Completion of the Delta Field Division Annual Regulatory Report (inspection report) has been delayed this year because of the constraints caused by the COVID-19 pandemic, and the inspection report will be submitted to CDFW as soon as it is completed and becomes available.

In addition, because this is the first ASR for the ITP that was issued March 31, 2020, it is difficult to assess the effectiveness of each partially completed Condition of Approval in avoiding, minimizing, and mitigating Project impacts, as required under Condition 7.2. In future years, as implementation of the ITP progresses, our ability to assess the effectiveness of individual Conditions in protecting the Covered Species that are the subject of the ITP will increase.

Nonetheless, the progress summarized within the ASR for 2020 represents the collective accomplishments of numerous DWR and California Department of Fish and Wildlife (CDFW) personnel, along with partner agencies and non-governmental organizations, in successfully implementing the requirements of the ITP. Implementation of the ITP requirements will, almost certainly, prove beneficial to the protection of Longfin Smelt, Delta Smelt, Winter-run Chinook Salmon, and Spring-run Chinook Salmon in the Sacramento-San Joaquin Delta in the future.

**Table 1 Status of ITP Implementation by Condition of Approval**

Condition	Mitigation Measure	Implementation Schedule	Status
6.1	<p><u>Designated Representative.</u> Within one month of the effective date of this ITP, Permittee shall designate a representative (Designated Representative) responsible for communications with CDFW and overseeing compliance with this ITP. Permittee shall notify CDFW in writing within one month the effective date of this ITP of the Designated Representative’s name, business address, and contact information, and shall notify CDFW in writing if a substitute Designated Representative is selected or identified at any time during the term of this ITP.</p>	<p>Within one month of effective date of the ITP.</p>	<p>The Designated Representative for the ITP was initially identified as Michelle Banonis in an email to CDFW on April 14, 2020. The Designated Representative is currently Lenny Grimaldo, DWR Assistant Environmental Director. His contact information is as follows.            Email: <a href="mailto:Lenny.Grimaldo@water.ca.gov">Lenny.Grimaldo@water.ca.gov</a>            Office phone: (279) 203-9950            Mobile phone: (415) 823-1372            Department of Water Resources            State Water Project            1416 9th Street, Sacramento, CA            Mailing: P.O. Box 942836 Sacramento, CA 94236-0001</p>
6.2	<p><u>Designated Biologist.</u> Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information of a biological monitor (Designated Biologist) within 30 days of the effective date of this ITP. Permittee shall</p>	<p>Within one month of effective date of the ITP.</p>	<p>The Designated Biologist for the ITP was initially identified as Ted Sommer in an email to CDFW on April 14, 2020. DWR submitted resumes of additional Designated Biologists to CDFW for review. Subsequently, several other Designated Biologists have been approved by CDFW as biological monitors according to the terms</p>

Condition	Mitigation Measure	Implementation Schedule	Status
6.3	<p>ensure that the Designated Biologist is knowledgeable and experienced in the biology and the natural history of the Covered Species. The Designated Biologist shall be responsible for monitoring Covered Activities described in Condition of Approval 7.7 to help minimize or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. Permittee shall obtain CDFW approval of the Designated Biologist in writing, and shall also obtain approval in advance in writing if the Designated Biologist must be changed.</p> <p><u>Designated Biologist Authority.</u> To ensure compliance with the Conditions of Approval of this ITP, the Designated Biologist shall have authority to immediately stop any activity that does not comply with this ITP, and to order any</p>	Throughout the term of the ITP.	<p>of Condition 7.7, Barker Slough Pumping Plant Sediment and Aquatic Weed Removal.</p> <p>DWR understands that Designated Biologist Authority includes the authority to immediately stop any activity that does not comply with the ITP and to order any reasonable measure to avoid the unauthorized take of an individual of the Covered Species.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
6.4	<p>reasonable measure to avoid the unauthorized take of an individual of the Covered Species.</p> <p><u>CDFW Access.</u> Permittee shall provide CDFW staff with reasonable access to the Project facilities and mitigation lands under Permittee control, and shall otherwise fully cooperate with CDFW efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.</p>	Throughout the term of the ITP.	DWR is committed to providing CDFW staff with reasonable access to the Project facilities and mitigation lands under DWR control.
7.1	<p><u>Notification of Non-Compliance.</u> The Designated Representative shall immediately notify CDFW in writing if it determines that the Permittee is not in compliance with any Condition of Approval of this ITP, including but not limited to any actual or anticipated failure to implement measures within the time periods indicated in this ITP and the MMRP. The Designated Representative shall report any non-compliance with this ITP to</p>	Throughout the term of the ITP.	DWR, through the authority of the Designated Representative, has immediately notified CDFW in writing when it is has been determined that activities were being conducted that were not in compliance with Conditions of the ITP. Notably, DWR notified CDFW, in writing, within 24 hours, when it was determined that aquatic weed removal activities were being done out of compliance with ITP Condition 7.7 at Barker Slough Pumping Plant.

Condition	Mitigation Measure	Implementation Schedule	Status
7.2	<p>CDFW within 24 hours.</p> <p><u>Annual Status Report.</u>  Permittee shall provide CDFW with an Annual Status Report (ASR) no later than December 1 of every year beginning with issuance of this ITP and continuing until CDFW accepts the Final Mitigation Report identified below. The ASR shall summarize information from the prior water year October 1 through September 30. Each ASR shall include, at a minimum: (1) a copy of the table in the MMRP with notes showing the current implementation status of each Condition of Approval and mitigation measure; (2) a copy of all SWP and CVP salvage data collected from the prior water year; (3) reports of inspections and maintenance of fish protective equipment; and (4) an assessment of the effectiveness of each completed or partially completed Condition of</p>	<p>Throughout the term of the ITP.</p>	<p>This report, the ASR for 2020, summarizes information on progress towards implementation of the Conditions of Approval and mitigation measures of the ITP and provides salvage data for Water Year 2020 and other data as required by the ITP. The current version of the report; however, does not include reports of inspections and maintenance of fish protective equipment by DWR at the Skinner Fish Facility. Completion of the Delta Field Division Annual Regulatory Report (i.e., inspection report) was delayed this year because of the constraints caused by the COVID-19 pandemic and was consequently submitted to CDFW on January 8, 2021.</p>



Condition	Mitigation Measure	Implementation Schedule	Status
7.3	<p>Approval mitigation measure in avoiding, minimizing, and mitigating Project impacts.</p> <p><u>Final Mitigation Report.</u> No later than 45 days after completion of all mitigation measures or 90 days prior to the expiration of this ITP (whichever is sooner), Permittee shall provide CDFW with a Final Mitigation Report. The Designated Biologist shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all ASRs; (2) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating</p>	<p>No later than 90 days prior to the expiration date of the ITP.</p>	N/A

Condition	Mitigation Measure	Implementation Schedule	Status
7.4	<p>Project impacts of the taking on Covered Species; (6) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and (7) any other pertinent information.</p> <p><u>Skinner Fish Facility Operations</u>. Permittee shall work in collaboration with CDFW to ensure essential information on salvage at the Skinner Fish Facility continues to be collected, verified for accuracy and quality, and reported to CDFW. CDFW will provide routine and regular oversight on operations as related to fish identification, handling, care, and transport to maintain appropriate compliance with ITP requirements (see Condition of Approval 8.15). This is both an essential data source for Conditions of Approval 8.1.5,</p>	Throughout the term of the ITP.	Since 2001, CDFW has provided oversight and retained responsibility for the salvage data and reporting process for the Skinner Fish Facility through a series of Interagency Agreements between the CDFW Fish Facilities Unit and DWR's Delta Field Division. Salvage data for the SWP and CVP from WY 2020 are provided in Appendix A.

Condition	Mitigation Measure	Implementation Schedule	Status
7.4.1	<p>8.1.5.1, 8.5.1.2, 8.3.3, 8.4.1, 8.4.2, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, and 8.7 as well as an important performance measure of their effectiveness. In addition, information on daily OMR flows and daily salvage are essential to ensure that the Conditions of Approval in this ITP are implemented effectively. Permittee shall continue to provide daily data sheets with preliminary salvage data from the SWP and CVP fish salvage facilities to CDFW no later than noon the following day, and final data shall be included in each ASR submitted to CDFW (Condition of Approval 7.2).</p> <p><u>Maintenance and Inspection Reporting.</u> Permittee shall submit annual reports that describe regular inspections and maintenance of fish protective equipment at the Skinner Fish Facility that may affect screening and salvage efficiencies to CDFW each year</p>	Throughout the term of the ITP.	As required, DWR reported the inspection and maintenance activities to CDFW within 24 hours of each instance. The annual inspection and maintenance report for Skinner Fish Facility for WY 2020 was still in preparation when the ASR was submitted and was provided to CDFW on January 8, 2021, as soon as it was available.

Condition	Mitigation Measure	Implementation Schedule	Status
7.4.2	<p>as a part of the ASR (see Condition of Approval 7.2). Additionally, each time Permittee inspects or conducts maintenance on fish protective equipment they shall report the activities to CDFW staff assigned to support salvage facility operations (see Condition of Approval 8.15) verbally or via email as soon as feasible, but no later than 24 hours after each instance.</p> <p><u>Skinner Fish Facility Operations Manual</u>. Permittee shall ensure the existing salvage monitoring and reporting program samples no less than 30 minutes every two hours from November 1 through June 30. If the presence of large number of fish or debris may result in the loss of Covered Species in the salvage monitoring process, Permittee may operate to the existing reduced sampling time protocols for such circumstances (see Skinner Fish Facility Operations Manual</p>	Throughout the term of the ITP.	DWR followed the procedures detailed in the Skinner Fish Facility Operations Manual v 2.0. CDFW staff assistance in updating the manual is specified as a task in the forthcoming draft interagency agreement for CDFW Skinner Fish Facility Staff (Condition 8.15). On 9/11/20 and 10/2/20, CDFW and DWR staff held working meetings to define the scope of a new Interagency Agreement for CDFW salvage biologist support to replace an interim agreement signed in November 2020 (Term 7/1/20 to 6/30/21). A first draft of the new agreement was transmitted to CDFW on 1/15/2021 and comments were returned to DWR on 1/28/21. A revised draft was

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	<p>v 2.0 October 19, 2005) and consult with CDFW immediately, or no later than 12 hours after, to discuss options available in real-time to maintain adequate detection of Covered Species when reduced sampling time protocols are being implemented.</p> <p>The salvage process at the Skinner Fish Facility generates one of the largest data sources characterizing entrainment and take of Covered Species with a high amount of sampling effort. Reducing count times greatly reduces the ability to detect fish in the salvage facility sampling process, and often these outages occur concurrent with conditions which may be conducive to entrainment events. The intent of this Condition is to ensure a clear understanding exists between Permittee and CDFW regarding the circumstances in which</p>		<p>transmitted to CDFW on 2/17/21 and comments were returned to DWR on 2/26/21. DWR expects this agreement to have a start date of 7/1/21. Information on the contract will be included in the 2021 annual status report.</p> <p>Since 2009, the standard length of sampling counts at the Skinner Fish Facility has been at least 30 minutes every two hours. During instances of high debris or excessive numbers of fish, sampling is reduced using the existing processes previously developed in collaboration with CDFW for these occurrences. Under the current process, the length of the count is decreased incrementally to maintain a targeted number of fish collected in the count during periods of large numbers of fish. During periods of high debris, count length is reduced at the discretion of the Fish Facility supervisor. In either instance, notification of the reduced count time and the justification is provided on the salvage datasheet that is transmitted to CDFW daily. The proposed new Interagency Agreement for CDFW salvage staffing includes a specific deliverable for CDFW staff to support revision of the current</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>reduced sampling times are necessary and appropriate, as the data collected from the facilities informs real-time operations such as OMR Management (Conditions of Approval 8.3 through 8.8).</p> <p>Permittee shall work with CDFW to update the Skinner Fish Facility Operations Manual and submit a draft updated manual to CDFW by June 30, 2021 for review. The updated draft operations manual shall include a new protocol for the Skinner Fish Facility which describes the decision-making process prior to reducing sampling times and the protocol used to determine whether Covered Species are present during debris removal efforts. Permittee shall work with CDFW to address comments on the draft manual and submit the final revised Skinner Fish Facility Operations Manual to CDFW for approval</p>		<p>salvage operations manual, including collaboration on development of a new protocol which describes the real-time decision-making process for high weed/debris or fish loading at the Skinner Facility while ensuring adequate detections of Covered Species (Winter-run Chinook Salmon, Spring-run Chinook Salmon, Delta Smelt, and Longfin Smelt). This new protocol and decision-making process will be part of the updated the Skinner Operations Manual. The current manual will remain in place until the new manual is vetted and approved by both DWR and CDFW.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
7.4.3	<p>before September 30, 2021. Permittee shall operate the Skinner Fish Facility as described in the final CDFW-approved Skinner Fish Facility Operations Manual no more than 15 days after it is approved by CDFW.</p> <p><u>Continue to Refine Loss Equation.</u> Permittee shall continue to refine the loss equation through annual performance evaluation studies for each component of the loss equation, including but not limited to salvage at the Skinner Fish Facility, pre-screen loss, louver (screen) efficiency, and handling and trucking loss. Performance evaluation studies shall also include post release survival studies on salvaged fish to evaluate loss associated with predation and reduced fitness as a result of the salvage and release process. Permittee shall work with Reclamation, CDFW, NMFS, and USFWS to</p>	Throughout the term of the ITP.	<p>Loss monitoring, including assessing salvage efficiency, is planned from January through June of 2021 utilizing steelhead and Chinook Salmon in conjunction with the predatory fish relocation effort in Clifton Court Forebay (CCF). A report with results from the 2017 water year is also available, reports from 2018 and 2019 are in review, and data collected in 2020 are currently being analyzed. In addition, the alternative loss equation report developed under National Marine Fisheries Service (NMFS) 2009 BiOp Term and Condition 2a can be provided, for reference, upon request. DWR is reviewing this report and is working with consultants to update the loss estimation tool described in the report. DWR will submit a proposal to CDFW in 2021 for refining the loss equation.</p> <p>In regard to assessing loss resulting from</p>

Condition	Mitigation Measure	Implementation Schedule	Status
7.5	<p><u>Winter- and Spring-run Chinook Salmon Monitoring and Science Requirements.</u> To improve understanding of CHNWR and CHNSR population size, life history diversity, migration patterns, survival rates, habitat use, and impacts from water-operations related stressors, Permittee shall initiate, fund, and implement new monitoring and science. This new monitoring and science shall include the</p>	Throughout the term of the ITP.	<p>the release process, analysis of data collected in 2019 to evaluate release site predation has been completed, and a draft report is currently undergoing peer review through the Reclamation Tracy Series report program. We estimate that it will be published as a Tracy series report in 2021 and it will be used to inform further work (proposals to be developed in 2021). Results from a pilot evaluation were published as a technical bulletin in the Tracy Series in 2019 (<a href="https://www.usbr.gov/mp/TFFIP/docs/tracy-reports/tracy-technical-report-2019-2.pdf">https://www.usbr.gov/mp/TFFIP/docs/tracy-reports/tracy-technical-report-2019-2.pdf</a>).</p> <p>DWR's progress toward complying with Condition 7.5 during 2020 is described below.</p>



Condition	Mitigation Measure	Implementation Schedule	Status
7.5.1	<p>elements identified in Conditions of Approval 7.5.1, 7.5.2, and 7.5.3, and shall be combined with existing surveys and data to: 1) continue to build knowledge regarding the biology and life history of CHNSR and CHNWR; 2) better understand potential impacts of Project operations on CHNWR and CHNSR; 3) continue to refine the CHNWR juvenile production estimate (JPE); and 4) develop a CHNSR juvenile production estimate (JPE) and associated operational criteria that may be proposed to replace Condition of Approval 8.6.4 as a part of the AMP (described in Attachment 2) and a subsequent amendment to this ITP.</p> <p><u>Upstream Monitoring During Water Transfer Window.</u> CHNSR are vulnerable to redd dewatering and juvenile stranding when flows in tributaries are increased</p>	Throughout the term of the ITP.	DWR submitted a preliminary draft 2021 Water Transfer Plan to CDFW on September 17, 2020, met to discuss CDFW comments on the preliminary draft on September 23, and submitted the draft plan to CDFW on October 1. DWR has worked collaboratively

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>rapidly to initiate a water transfer, then decreased rapidly following the end of a water transfer. Permittee shall develop a plan to monitor relevant flow rates prior to, during, and after all water transfers and redd distribution, redd dewatering, and juvenile stranding during the Project water transfer window and submit the draft Water Transfer Monitoring Plan to CDFW for approval within six months of the effective date of this ITP. Permittee shall work collaboratively with CDFW to address comments on the draft plan before it is finalized and submitted to CDFW for approval. Permittee shall implement the final Water Transfer Monitoring Plan no more than 30 days after CDFW approval and provide data to CDFW annually thereafter within 30 days of the end of the water transfer window. Additionally, Permittee shall</p>		<p>with CDFW to address comments on the draft plan and anticipates being able to finalize the plan in April or May 2021, prior to the start of the water transfer window.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
7.5.2	<p>notify the Designated Representative as soon as possible, and no more than 24 hours, after each redd dewatering or juvenile stranding event observed as a part of this monitoring program.</p> <p><u>New and Ongoing Monitoring Required to Develop and Establish a Spring-run Chinook Salmon JPE.</u> Within 30 days of the effective date of this ITP, Permittee shall convene a Spring-run JPE Team including experts from CDFW, DWR, NMFS, USFWS, and Reclamation. To further advance collaboration, upon convening, the Spring-run JPE team may invite other experts in fish biology, hydrology, or operations of the SWP and CVP to meetings of the Spring-run JPE Team to assist with discussion and analyses. Permittee shall prepare a draft Spring-run JPE Monitoring Plan in collaboration with the</p>	<p>Within thirty days of the effective date of the ITP.</p>	<p>Condition of Approval 7.5.2 requires the development of a method to provide an annual Spring-run Chinook Salmon Juvenile Production Estimate (JPE) to help manage water project entrainment. This requirement led to a major effort in 2020, the development of a <i>Spring-run Chinook Salmon JPE Science Plan</i>. As a first major step, on December 1, DWR submitted a copy of a draft <i>Spring-run Chinook Salmon Science Plan</i> to CDFW for review and approval.</p> <p>The scientific and management purpose of this document is to outline the research and monitoring that will be needed to meet the goal of developing a Spring-Run JPE by 2025. Once the work plan is reviewed and approved by CDFW (winter 2020), the Spring-run JPE team will implement research and monitoring activities over a</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Spring-run JPE Team that describes monitoring required to inform the development of the JPE prior to December 1, 2020. The plan shall include, but not be limited to:</p> <p>Feather River adult passage monitoring and escapement surveys: Monitoring needed to develop adult spawner abundance estimates from which to derive production estimates. Monitoring includes continuing redd surveys and carcass surveys for CHNSR and collecting genetic samples from all carcasses.</p> <p>Lower Yuba River adult passage monitoring and escapement surveys: Monitoring needed to develop adult spawner abundance estimates from which to derive production estimates. Monitoring includes continuing adult salmonid passage surveys via the Vaki Riverwatcher at Daguerre Point Dam, redd surveys for CHNSR,</p>		<p>four-year period (January 2021 to May 2024), after which a review panel will be organized to examine the initial calculation and the approaches and results. The final JPE approach will be selected based on multiple factors (e.g., feasibility, accuracy, timeliness, management value, scientific value, cost) and subject to CDFW approval (October 2024).</p> <p>The <i>Spring-run Chinook Salmon JPE Science Plan</i> was developed based on multiple steps with input from diverse organizations. For example, with help from Delta Science Program (DSP) and an interagency steering committee, DWR organized a large scoping workshop to solicit input on the current understanding of Spring-run science in the context of the development of a JPE. The workshop was attended by about 300 registrants representing over 50 different organizations. Following the workshop, a Spring-run JPE team was formed to develop the science plan. The team was chaired by DWR and included staff from CDFW, the Bureau of Reclamation, National Oceanic and Atmospheric Administration, and Metropolitan Water District of Southern California.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>upstream of Daguerre Point Dam, and carcass surveys for CHNSR upstream of Daguerre Point Dam. Collect genetic samples from all carcasses.</p> <p>Deer, Mill, and Butte Creek adult passage monitoring and escapement surveys: Monitoring needed to develop adult spawner abundance estimates from which to derive production estimates. Monitoring includes passage surveys via video monitoring stations on Deer, Mill and Butte creeks, carcass surveys, and redd surveys.</p> <p>Feather River rotary screw trap monitoring at RM 61 and 45.8: Monitoring to provide estimates of the number of CHNSR emigrating through the upper limits of the Feather River via two existing rotary screw traps located at RM 45.8 (High Flow Channel RST) and RM 61 (Low Flow Channel RST).</p> <p>Feather River rotary screw trap</p>		

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	<p>monitoring near Beer Can Beach: New monitoring near Beer Can Beach (river mile seven) to provide estimates of the number of CHNSR entering the Delta from the Feather River Basin. Data obtained would be used to integrate all Feather River Basin-origin fish into the JPE. The data obtained can also be used as a point of comparison for reach-specific loss estimates from upstream sites when used in conjunction with acoustic telemetry data.</p> <p>Lower Yuba River rotary screw trap monitoring: Monitoring to provide estimates of the number of CHNSR emigrating through the lower Yuba River via two rotary screw traps located near Hallwood Boulevard. Collect genetic samples on all length-at-date CHNSR. These data can also provide an upstream measurement to assess reach-specific loss estimates in coordination with acoustic</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>telemetry data.</p> <p>Deer, Mill, and Butte Creek rotary screw trap monitoring: Monitoring needed to develop in-season production estimates and provide data on the egg-to-fry survival and emigration timing of yearling and young-of-year CHNSR. Collect genetic samples on all length-at-date CHNSR. These data can also provide an upstream measurement to assess reach-specific loss estimates in coordination with acoustic telemetry data.</p> <p>Tisdale Weir and Knights Landing rotary screw trap monitoring: Monitoring is needed to provide estimates of the number of CHNSR entering the Delta from the Sacramento River Basin. Collect genetic samples on all length-at-date CHNSR. The data obtained can be used as a point of comparison for reach-specific loss estimates from upstream sites. Weir overtopping and</p>		

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	<p>Sutter Bypass activation can influence the detectability of Chinook salmon at the Knights Landing monitoring station. Water entering the Sutter Bypass provides an alternative route in which juvenile salmon are routed around the Knights Landing monitoring station. Monitoring upstream of Tisdale Weir will provide an additional measure of abundance prior to weir influence.</p> <p>Rotary screw trap acoustic tagging monitoring: Monitoring using acoustic tagged fish to provide estimates of loss and timing of yearling CHNSR emigrants in the fall and emigrating young-of-year CHNSR in the spring at all new and ongoing rotary screw traps.</p> <p>Genetic identification of CHNSR to support ongoing and new monitoring and development of a CHNSR JPE: Genetic samples shall be collected from all fish (or a subsample of fish where</p>		



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	<p>appropriate) and analyzed to race to improve identification of CHNSR-sized fish observed during monitoring and better inform migration and production estimates. Permittee shall coordinate with the CDFW Genetics Lab and NMFS Southwest Fisheries Science Center regarding the methodology for collecting and analyzing all genetic samples.</p> <p>Trap capture efficiency studies: Research to guide annual CHNSR JPE calculations using current methods of visibly marking trap captured and hatchery sourced fish including late fall-run and fall-run Chinook salmon. Studies should also include developing trap efficiency models using the paired acoustic tagged (AT)-coded-wire tagged (CWT) releases from Livingston Stone National Fish Hatchery (NFH), Colman NFH, and Feather River Hatchery.</p> <p>A list of the entities that shall</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>receive funding from Permittee to implement required monitoring programs.</p> <p>This list of required monitoring may be modified in the final monitoring plan if approved by CDFW. Permittee shall work collaboratively with the Spring-run JPE Team members to incorporate edits and comments on the draft Spring-run JPE Monitoring Plan while preparing the final plan. After the final Spring-run JPE Monitoring Plan is approved in writing by CDFW, Permittee shall fund and implement required monitoring beginning the calendar year after the effective date of this ITP, according to the timelines specified in the CDFW-approved plan. At a minimum, Permittee shall convene the Spring-run JPE Team quarterly every year following initiation of the final monitoring plan to:</p> <p>Review data obtained from new</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>and ongoing monitoring programs,</p> <p>Review methods used to implement monitoring and recommend adjustments as they deem appropriate,</p> <p>Formulate an approach to calculating a CHNSR JPE, including the following elements:</p> <p>Total in-river escapement,</p> <p>Adult female estimate,</p> <p>Adult female estimate minus pre-spawn mortality,</p> <p>Average fecundity,</p> <p>Total viable eggs,</p> <p>Estimated egg-to-fry survival based on Juvenile Production Index (JPI) at ongoing and new monitoring stations/total viable eggs,</p> <p>Fry equivalents of juvenile production,</p> <p>Fry-to-smolt survival estimates,</p> <p>Number of smolts, and</p> <p>Upper river to Delta survival.</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Request additional monitoring if it is deemed necessary to complete a CHNSR JPE within five years of the effective date of this ITP,</p> <p>Recommend approaches to using the CHNSR JPE and monitoring results as operational criteria to minimize take of CHNSR as a result of Project operations, including operations at the south Delta export facilities, and</p> <p>Evaluate the need to revise and update the plan to incorporate genetic testing of CHNSR when it becomes available.</p>		
	<p>Permittee shall make all raw data acquired as a part of the monitoring program available to members of the Spring-run JPE Team within ten days of a request.</p>		
	<p>Within four years of the effective date of this ITP, and</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>in collaboration with the Spring-run JPE Team, Permittee shall review data collected over the past four years and prepare a draft plan that describes the approach to calculating a CHNSR JPE and long-term monitoring needed to collect the data to calculate a CHNSR JPE annually. Permittee shall submit the draft plan to the Spring-run JPE Team for review and work collaboratively with team members to incorporate their comments into the final draft. Permittee shall submit the final plan to CDFW for approval no more than four years and six months after the effective date of this ITP to ensure that annual calculation of a CHNSR JPE is initiated within five years of the effective date of this ITP. After the final draft Spring-run JPE Plan is approved by CDFW, Permittee shall convene the Spring-run JPE Team annually to provide</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
7.5.3	<p>an annual JPE estimate for CDFW, Reclamation, USFWS, and NMFS and share all data obtained through long-term monitoring programs.</p> <p><u>Winter- and Spring-run Chinook Salmon Science Requirements.</u> Permittee shall initiate, fund, and implement new science to continue to build knowledge of CHNWR and CHNSR ecology and the status of the ESUs. Permittee shall fund and implement the following scientific studies:</p> <p>Pathology Monitoring: Within two years of the effective date of this ITP Permittee shall fund and initiate monitoring to provide information on the source and magnitude of CHNSR loss prior to Delta entry including in-season studies in the Sacramento and Feather Rivers and Delta. Disease has been well documented to be present in the Central Valley and to dramatically reduce production via reduction in</p>	Throughout the term of the ITP.	<p>DWR and CDFW met to discuss scoping for the Pathology Monitoring and Salmon Rearing Habitat in the Bay-Delta elements of Condition 7.5.3 on July 31, 2020. Regarding pathology monitoring, DWR and CDFW agreed to postpone a subsequent more detailed meeting regarding the pathology monitoring until after more detailed plans for the Spring-run JPE had been made.</p> <p>For Salmon Rearing Habitat in the Bay-Delta, DWR and CDFW agreed to consider adding juvenile salmon habitat use as a monitoring element included in CDFW’s Fish Restoration Program monitoring program, implemented under contract with DWR. In 2020, there were two Winter-run entrainment modeling efforts relevant to Condition 7.5.3, both initiated before the issuance of the ITP. First, ICF is working with Metropolitan Water District of Southern California to develop a predictive tool for</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>adult spawners and egg and juvenile mortality.</p> <p>Salmon Rearing Habitat in the Bay-Delta: To inform salmonid impact assessments and restoration activities, the Permittee shall fund research activities to investigate juvenile salmonid habitat use in the Delta, Cache Slough, and Suisun Marsh, and subsequently conduct habitat occupancy modeling beginning no later than three years after the effective date of this ITP. This work shall build upon ongoing work funded by the Delta Conservancy (Identifying Suitable Rearing Habitat for Chinook Salmon in the Sacramento-San Joaquin Delta) and Permittee (Juvenile salmon distribution, abundance, and growth in restored and relict Delta marsh habitats). Data collected through this research will also inform ongoing CHNWR lifecycle modeling and the</p>		<p>Winter-run-sized salmon at the salvage facilities. The effort was started before the issuance of the ITP and has continued throughout the latter part of 2020. The draft model was shared with DFW and others, who provided good suggestions for improvements. In 2020, the authors submitted a manuscript to a regional scientific journal.</p> <p>A second effort was also initiated during the ITP consultation process which is led by DFW. The effort is based on early discussions between DFW and DWR to help anticipate the need for a predictive model to manage winter run entrainment. These discussions led to a new proposal (Dr. Jereme Gaeta, PI) submitted to the Interagency Ecological Program (IEP) as part of the 2021 planning process.</p> <p>DWR and CDFW continue to meet weekly to coordinate about these modeling efforts and other topics. The current plan is for DWR to submit both models for approval as required by this Condition and that each of these models will be tested during upcoming entrainment seasons by the Salmon Monitoring Team (SMT). Therefore, this compliance requirement was met</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>development of a new CHNSR lifecycle model.</p> <p>Spring-run Chinook Life Cycle Model: Beginning five years after the effective date of this ITP Permittee shall fully fund and support the development of a life cycle model for CHNSR. This life cycle model shall be developed and informed by ongoing and new monitoring described in this ITP, along with other available science.</p> <p>Winter-run Chinook entrainment prediction tool: Within thirty dates of the effective date of this ITP Permittee and CDFW will convene a technical team to develop a model focused on predicting Chinook salmon entrainment events at the SWP and CVP salvage facilities. Within one year of the effective date of this ITP a CDFW-approved model developed as a part of this technical team shall be provided to Salmon</p>		relatively early, and continues to be a major focus of work.



Condition	Mitigation Measure	Implementation Schedule	Status
7.6.1	<p>Monitoring Team staff to use as a part of real-time risk assessments alongside other tools described in Condition of Approval 8.1.5.1.</p> <p>Permittee shall work collaboratively with members of the Spring-run JPE Team to review study plans, data, and reports associated with both studies. All final reports documenting the results of these studies shall be subject to CDFW approval.</p> <p><u>Longfin Smelt December Larval Surveys</u>. Permittee shall fully fund at least one additional SLS survey and associated sampling and processing costs to be implemented by CDFW staff between December 1 and January 31, annually. The timing of additional SLS surveys shall be determined each year by CDFW Smelt Monitoring Team staff based on observations of LFS in the Chipps Island Trawl beginning</p>	Throughout the term of the ITP.	This condition was incorporated into the Longfin Smelt Science Plan at the request of the Smelt Monitoring Team, and then submitted to CDFW as a 2020 ITP deliverable to demonstrate DWR's commitment to funding up to two additional SLS sampling events in December each year,.

Condition	Mitigation Measure	Implementation Schedule	Status
7.6.2	<p>on November 1. The additional surveys requested by CDFW Smelt Monitoring Team staff shall use the same sampling methodology as the SLS, however they shall be restricted in spatial extent to the following central and south Delta stations: 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, 919.</p> <p><u>Larval Smelt Entrainment Monitoring.</u> Permittee shall fund and implement a new Smelt Larval Entrainment Program to quantify larval DS and LFS entrainment into CCF. Within ninety days of the effective date of this ITP Permittee shall convene a meeting of CDFW, DWR, USFWS, and Reclamation Smelt Monitoring Team staff to begin planning larval smelt monitoring protocol to fulfill this Condition of Approval. Smelt Monitoring Team staff shall evaluate options to</p>	<p>Within ninety days of the effective date of this ITP.</p>	<p>Shortly after the issuance of the ITP, CDFW and DWR organized a team to identify candidate methods for measuring larval smelt entrainment at the SWP. The team is chaired by CDFW (Felipe LaLuz) and includes multiple agency experts in smelt biology and field sampling methods. The team is making good progress identifying potential methods and ranking each based on multiple factors (e.g., feasibility, management relevance, timeliness). A more detailed summary of the objective of the team and some of the proposed methods is included as a core section of the Longfin Science Plan, submitted to CDFW as a 2020 ITP deliverable.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>conduct additional larval surveys within CCF and immediately outside CCF to better quantify larval entrainment into CCF. Permittee shall prepare and submit a draft monitoring plan to support a test pilot of the Smelt Larval Entrainment Program to participating Smelt Monitoring Team members for review and comment.</p> <p>Permittee shall work collaboratively with Smelt Monitoring Team members to incorporate their edits and feedback into the monitoring plan and pilot program. Permittee shall implement the pilot program within two years of the effective date of this ITP. Permittee shall provide raw data from the pilot program to CDFW and work collaboratively with the Smelt Monitoring Team members to use new information from the pilot program to develop a final</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
7.6.3	<p>monitoring plan within three years of the effective date of this ITP. Permittee shall fund and implement the final CDFW-approved monitoring plan and provide data to the Smelt Monitoring Team after each survey.</p> <p><u>Longfin Smelt Science Program Priorities</u>. Permittee shall convene a meeting of the Longfin Smelt Science Program within 120 days of the effective date of this ITP. The Longfin Smelt Science Program shall include experts from CDFW, DWR, USFWS, and SWP Contractors. Permittee shall prepare a draft Longfin Smelt Science Program research plan in collaboration with the science program members that describes new LFS science needed to improve the understanding of LFS ecology and impacts as a result of SWP and CVP operations prior to December 1, 2020. The plan shall include, but not be limited</p>	<p>Within 120 days of the effective date of this ITP.</p>	<p>The Longfin Smelt Science Plan was submitted to CDFW on November 25 and approved by CDFW on December 8, 2020, as a major milestone in fulfilling Condition 7.6.3. The drafting team for the plan was led by CDFW and included experts from State Water Contractors (SWC), USFWS, MWD, and DWR. The team’s plan is intended to fulfill the requirement of the ITP and provide a framework for Longfin Smelt scientific investments over the next 10 years. Toward this goal, the Longfin Smelt Science Plan has identified seven Priority Areas where scientific investments can produce valuable information for resource managers. After the plan is approved by CDFW, DWR will fund and implement required science and monitoring according to the timelines included in the final science plan. The science plan will be guided by the Longfin Smelt Technical Team, who will</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>to, the following science priorities:</p> <p>A schedule for implementation including deadlines for draft and final reports for each study required.</p> <p>Develop a mathematical life cycle model for LFS, verified with field data collection, as a quantitative tool to characterize the effects of abiotic and biotic factors on LFS populations.</p> <p>New and ongoing monitoring that:</p> <p>Applies equal effort throughout the known spawning and rearing distribution spanning the Delta, Suisun Marsh, Suisun Bay, Napa- Sonoma Marsh and Alviso Marsh in South Bay.</p> <p>Characterizes the distribution and abundance of adult, larvae and juvenile life stages.</p> <p>Facilitates estimates of survival probabilities among life stages.</p> <p>Characterizes changes in</p>		<p>meet at least quarterly each year throughout the duration of the permit to implement projects, track progress, share data and interim reports, and review results and other deliverables.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>abundance and distribution of life stages across a range of hydrologic conditions, including different water year types.</p> <p>Considers revisions to existing IEP monitoring programs to expand the spatial distribution of LFS sampling.</p> <p>Factors that influence LFS population abundance, distribution, and catchability, including vertical migration behavior, water transparency, and other factors that support growth and survival.</p> <p>Complete LFS lifecycle in captivity at the FCCL.</p> <p>Characterize LFS spawning substrate and spawning microhabitat requirements.</p> <p>Improve understanding of LFS spawning substrate distribution in the Delta, Cache Slough, and Suisun Marsh.</p> <p>Improve understanding of adult migration behavior and review the current conceptual model that assumes adult</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>staging is followed by rapid migration into lower salinity water and spawning soon thereafter.</p> <p>Improve the understanding of juvenile LFS outmigration behavior and transport mechanisms for out-migrating fish, as it related to the potential for miscuing resulting in increased entrainment at the south Delta facilities.</p> <p>Permittee shall work collaboratively with the science program members to incorporate edits and comments on the draft Longfin Smelt Science Plan while preparing the final plan. After the final Longfin Smelt Science Plan is approved in writing by CDFW, Permittee shall fund and implement required monitoring and science according to the timelines specified in the final plan. At a minimum, Permittee shall convene the Longfin Smelt</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Science Program quarterly every year following initiation of the final Longfin Smelt Science Plan to:</p> <p>Review data obtained from new and ongoing monitoring programs.</p> <p>Review methods used to implement monitoring and recommend adjustments as they deem appropriate.</p> <p>Review draft results from new and ongoing science.</p> <p>Permittee shall make all raw data and modeling acquired as a part of the Longfin Smelt Science Plan available to members of the Longfin Smelt Science Plan within ten days of a request.</p>		
7.6.4	<p><u>Science to Improve Understanding of Delta Smelt Habitat in the Summer and Fall.</u> There is a need for additional science to further investigate the spatial and</p>	Throughout the term of the ITP.	Although there was no Summer-Fall Action Plan for 2020, DWR has continued to work collaboratively with CDFW and the Delta Coordination Group to develop monitoring and studies for implementation of future Summer-Fall Habitat actions. Activities in



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>temporal distribution of abiotic and biotic factors influencing DS habitat and survival during the summer-fall time period. To study habitat effects on DS survival, Permittee shall work collaboratively with CDFW and the Delta Coordination Group (Condition of Approval 9.1.3.1) to develop and conduct studies during implementation of the Summer-Fall Action Plan, including deployment of the Additional 100 TAF block of water (Condition of Approval 8.19) when it is available as described in the Delta Outflow Operations Plan (Condition of Approval 8.20). The Additional 100 TAF could be deferred in above normal or wet years and redeployed to operate the SMSCG in the summers of dry years, or supplement spring-summer outflow in below-normal years to provide DS habitat and improve DS survival during this critical portion of their life history</p>		<p>2020 included:            Baseline monitoring data was collected in Suisun Marsh, Suisun Bay, and the North Delta to describe conditions in a non-action year. This included water quality, phytoplankton, and zooplankton sampling. Sampling will be similar during an action year.            Three new sondes were installed, one at Tule Red restoration site at the edge of Grizzly Bay, one near the center of Grizzly Bay, and one at the mouth of Montezuma Slough.            Hydrodynamic models were developed to track salinity in the Marsh with various gate actions.            Plans were developed to use caged Delta Smelt at several locations in the Marsh and Rio Vista to test the effectiveness of the action on Delta Smelt health. These were postponed because of COVID restrictions but will be implemented in 2021.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
7.7	<p>(Condition of Approval 8.19). The benefits associated with the Additional 100 TAF block of water shall be evaluated in conjunction with new monitoring in Grizzly Bay (Condition of Approval 9.1.3.3) to better quantify changes in salinity associated with SMSCG operations. This new science shall also facilitate testing and evaluating components of the Delta Smelt Resiliency Strategy by studying outflow effects on DS habitat.</p> <p><u>Barker Slough Pumping Plant Sediment and Aquatic Weed Removal</u>. If Permittee seeks to conduct aquatic weed or sediment removal in the vicinity of the BSPP when water temperatures are likely to be less than 25°C, Permittee shall coordinate with CDFW at least seven days prior to initiating the aquatic weed or sediment removal. Permittee shall provide a written description of the planned</p>	Throughout the term of the ITP.	<p>DWR conducted weed removal out of compliance with the ITP during the period April 1–September 9, 2020. After September 9, Barker Slough Pumping Plant Aquatic Weed Removal has been conducted according to the terms of the ITP.</p> <p>No sediment removal occurred during 2020.</p> <p>See Appendix B for a detailed status update on ITP Condition 7.7 for WY 2020.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
7.8	<p>aquatic weed or sediment removal activities to CDFW including a description of whether activities are planned outside the embayment and the floating booms as shown in Figure 1 in the Project Description. Permittee shall ensure that a Designated Biologist is onsite before, during, and after the planned activities to assess the potential for take of DS or LFS that would not otherwise occur as a result of Project operations and permitted diversions at the BSPP.</p> <p><u>Data Accessibility.</u> Permittee shall provide CDFW with access to all raw data and associated analyses and reports for all monitoring required in Condition of Approval 7 of this ITP and described in the Project Description within 60 days of collection of data or completion of analyses and reports, and otherwise upon request.</p>	Throughout the term of the ITP.	Data management and accessibility have been addressed in each of the deliverables developed as part of compliance with Condition 7 during the year.

Condition	Mitigation Measure	Implementation Schedule	Status
8.1	<p><u>Real-time Operations, Monitoring, and Technical Teams.</u> Permittee shall monitor and manage Project operations in response to risk assessments conducted by collaborative real-time operations monitoring teams that include representatives from CDFW, DWR, USFWS, NMFS, SWRCB and Reclamation.</p>	Throughout the term of the ITP.	All required teams and risk assessments have been convened and functioning since the completion of the ITP. DWR’s progress towards complying with Condition 8.1 during 2020 is described below.
8.1.1	<p><u>Smelt Monitoring Team.</u> The purpose of the Smelt Monitoring Team is to meet weekly beginning November 1 and throughout the OMR management season and implementation of the Summer-Fall Action, or more often as needed, to consider and discuss:</p> <ul style="list-style-type: none"> <li>The status of DS and LFS;</li> <li>DS and LFS survey and salvage data at the SWP and CVP facilities;</li> <li>Delta hydrology;</li> <li>Other pertinent biotic or abiotic</li> </ul>	Throughout the term of the ITP.	The Smelt Monitoring Team (SMT) met during WY 2020 in accordance with terms of the 2009 ITP until the signing of the 2020 ITP on March 31, 2020. From that point on, the SMT provided advice under the 2020 ITP. From April through June 2020, SMT discussion was documented in the USBR assessment, SMT notes, and CDFW Longfin Smelt Notes. Examples of the ITP Risk Assessment were circulated among the SMT during WY 2020. Risk Assessments were posted to the CDFW Water Branch web page in WY 2021. DWR submitted its “2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow” to CDFW on

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>factors;</p> <p>Exposure of DS and LFS to impacts associated with the operation of the CVP and SWP;</p> <p>DS and LFS sensitivity to changes in behaviors of sheltering, foraging, and migration;</p> <p>Results from the CDFW-approved DS life cycle model; and</p> <p>The need to implement changes in operations as described in Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.17, 8.18, 8.19, 8.20, 9.1.3.1 and 9.1.3.2</p> <p>The Smelt Monitoring Team shall include representatives from CDFW, USFWS, NMFS, DWR, SWRCB, and Reclamation. To further advance collaboration, upon convening, the Smelt Monitoring Team may invite, one other expert in fish biology, hydrology, or operations of the SWP and CVP</p>	October 1, 2020.	

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>each from the SWP Contractors and an NGO to participate in specific meetings of the Smelt Monitoring Team and assist with their discussion and analyses.</p> <p>Permittee shall:</p> <p>Convene the first meeting of the Smelt Monitoring Team within three days of the effective date of this ITP and weekly thereafter. In each year, Permittee shall convene the Smelt Monitoring Team meeting weekly, beginning no later than <i>November 1</i> each year, throughout the time frame when Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.7, 8.8, 8.17, 8.18, 8.19, 8.20, and 9.1.3.1 may be initiated, control operations, or off-ramp. Distribute a meeting agenda, with relevant documents and analyses to be discussed (as applicable), to team members at least two working days prior</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>to each Smelt Monitoring Team meeting.</p> <p>Record and distribute regular meeting notes within two working days of each Smelt Monitoring Team meeting to team members for review. Incorporate member comments and post final notes on a publicly available website.</p> <p>Provide an annual written report to CDFW no later than October 1 following the salvage season of approximately October through June. This report shall include a summary of major actions taken during the year to implement Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.7 and 8.8, an evaluation of their effectiveness, and recommendations for future actions.</p> <p>Call for a special meeting of the Smelt Monitoring Team outside the regular weekly schedule, upon request from</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>CDFW or any other Smelt Monitoring Team member. Such meetings shall be scheduled within one working day of receiving a request, and shall be held in a timeframe responsive to the issue(s) warranting the meeting.</p> <p>The Smelt Monitoring Team shall:</p> <p>Provide advice for real-time management of operations to Permittee, CDFW, and WOMT consistent with the Project Description, Conditions of Approval in this ITP, and the applicable ESA authorizations, within one working day of each Smelt Monitoring Team meeting.</p> <p>Meet weekly, or more often as needed, to consider and discuss survey data, salvage data, and other pertinent biotic and abiotic factors and conduct risk assessments (Condition of Approval 8.5.1.2).</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
8.1.2	<p><u>Salmon Monitoring Team</u>. The purpose of the Salmon Monitoring Team is to meet weekly to consider and discuss survey data, salvage data, and other pertinent biotic and abiotic factors as described in Conditions of Approval 8.6.1, 8.6.2, 8.6.3, 8.6.4, and 8.7. The Salmon Monitoring Team shall include representatives from CDFW, USFWS, NMFS, DWR, SWRCB, and Reclamation. To further advance collaboration, upon convening, the Salmon Monitoring Team may invite one other expert in fish biology, hydrology, or operations of the SWP and CVP each from the SWP Contractors and an NGO to participate in specific meetings of the Salmon Monitoring Team and assist with their discussion and analyses.</p> <p>Permittee shall: Convene the first meeting of</p>	Throughout the term of the ITP.	For the purpose of fulfilling Condition 8.1.2, the Salmon Monitoring Team (SaMT) met for a portion of WY 2020 following the signing and implementation of the ITP on March 31, 2020. But, ITP-specific Risk Assessments were not added to the SaMT agenda until WY 2021. From April through June 2020, SaMT discussion was documented in the Reclamation assessment and SaMT notes. Examples of the ITP Risk Assessment were circulated among the SaMT during WY 2020. Risk Assessments were posted to the CDFW Water Branch web page in WY 2021. DWR submitted its “2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow” to CDFW on October 1, 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>the Salmon Monitoring Team within three days of the effective date of this ITP and weekly thereafter. In each year, Permittee shall convene the Smelt Monitoring Team meeting weekly, beginning no later than October 1 each year, throughout the time frame when Conditions of Approval 8.3.1, 8.3.2, 8.3.3, 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.7, and 8.8 may be initiated, control operations, or off-ramp.</p> <p>Distribute a meeting agenda, with relevant documents and analyses to be discussed (as applicable), to team members at least two working days prior to each Salmon Monitoring Team meeting.</p> <p>Record and distribute regular meeting notes within two working days of each Salmon Monitoring Team meeting to team members for review. Meeting notes shall include issues considered, recommendations made, key</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>information on which recommendations were based, and incorporate member comments. Final notes shall be posted on a publicly available website.</p> <p>Provide an annual written report to CDFW no later than October 1 following the salvage season of approximately October through June. This report shall include a summary of major actions taken during the year to implement Conditions of Approval 8.3.1, 8.3.2, 8.3.3, 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.7, and 8.8, an evaluation of their effectiveness, and recommendations for future actions.</p> <p>Call for a special meeting of the Salmon Monitoring Team outside the regular weekly schedule, upon request from CDFW or any other Salmon Monitoring Team member. Such meetings shall be scheduled within one working</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>day of receiving a request, and shall be held in a timeframe responsive to the issue(s) warranting the meeting.</p> <p>The Salmon Monitoring Team shall:</p> <p>Provide advice for real-time management of operations to Permittee, CDFW, and WOMT consistent with the Project Description, Conditions of Approval in this ITP, and the applicable ESA authorizations, within one working day of each Salmon Monitoring Team meeting.</p> <p>Review Project operations in the Delta and the data collected from ongoing monitoring programs annually.</p> <p>Meet weekly, or more often as needed, to conduct a risk assessment (Condition of Approval 8.1.5.1) and consider and discuss survey data, salvage data, and other pertinent biotic and abiotic</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>factors.</p> <p>Estimate the percentage of CHNWR and young-of-year CHNSR that are currently 1) upstream of the Delta, 2) in the Delta, or 3) exited the Delta past Chipps Island.</p> <p>Estimate the risk of entrainment in to the central Delta and the SWP and CVP export facilities and identify factors that influence the entrainment risks such as percent of the population in the Delta, Delta Cross Channel (DCC) gate operations, Sacramento River and San Joaquin River flows and a range of possible OMR flows.</p> <p>As required by Condition of Approval 8.1.4 conduct a collaborative risk assessment and recommend OMR targets to minimize the risk of exceeding 50% or 75% of the single year loss threshold (Condition of Approval 8.6.1) to the WOMT (Condition of Approval 8.1.3) within one</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.1.3	<p>working day of each Salmon Monitoring Team meeting and follow the process outlined in Condition of Approval 8.1.4.</p> <p><u>Water Operations Management Team</u>. Beginning no later than October 1 each year Permittee shall convene the Water Operations Management Team (WOMT) on a weekly basis until the end of OMR management (Condition of Approval 8.8), or the end of implementation of the Summer-Fall Action (Condition of Approval 9.1.3.2), whichever is later.</p> <p>The WOMT shall be composed of manager-level representatives from Reclamation, DWR, USFWS, NMFS, SWRCB, and CDFW with decision-making authority. This management-level team shall facilitate timely decision-support and decision-making at the appropriate level.</p>	Throughout the term of the ITP.	The Water Operations Management Team (WOMT) met during WY 2020 in accordance with terms of the ITP.

Condition	Mitigation Measure	Implementation Schedule	Status
8.1.4	<p>The Smelt and Salmon Monitoring Teams shall report weekly updates, operations recommendations, and risk analyses to the WOMT. Each week the WOMT shall review and evaluate these risk assessments and operational recommendations, discuss potential changes to Project operations, and make final determinations for Covered Species minimization needs and water operations. If WOMT representatives do not achieve a consensus regarding final determinations for Covered Species minimization and Project operations, Permittee and CDFW shall prepare written summaries of their operational recommendations to the Directors for discussion and final decision per Condition of Approval 8.1.4 (Collaborative Approach to Real-time Risk Assessment).</p> <p><u>Collaborative Approach to Real-time Risk Assessment.</u></p>	Throughout the term of	The Salmon and Smelt Monitoring Teams met during WY 2020 in accordance with

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Beginning no later than October 1 (<i>Salmon Monitoring Team</i>) and November 1 (<i>Smelt Monitoring Team</i>) through the end of OMR Management (see Condition of Approval 8.8) the Smelt and Salmon Monitoring Teams shall meet weekly, or more often as required, to consider survey data, salvage data, and other pertinent biotic and abiotic factors and prepare risk assessments as described in Conditions of Approval 8.1.1, 8.1.2, 8.1.5.1 and 8.1.5.2.</p> <p>The Smelt and Salmon Monitoring Teams shall prepare operations advice for the WOMT as required by Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.7, and 8.8, including advice on operations. The Smelt and Salmon Monitoring Teams shall each prepare risk assessments and operations</p>	the ITP.	terms of the ITP.



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>advice. Within each team, staff jointly develop the risk assessment and supporting documentation to accompany operations advice (see Conditions of Approval 8.1.5.1 and 8.1.5.2). DWR and CDFW Smelt and Salmon Monitoring Team staff may conclude different operations advice is warranted, in which case the difference shall be noted and elevated as described in this Condition of Approval.</p> <p>The Smelt and Salmon Monitoring Teams shall communicate their recommendations to WOMT. The WOMT shall then confer and attempt to reach a resolution and agreed-upon Project operations. If a resolution is reached, Permittee shall operate consistent with the decision regarding Project operations from WOMT. If the WOMT does not reach a resolution, the</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.1.5	<p>CDFW Director may require Permittee to implement an operational recommendation provided by CDFW. CDFW will provide its operational decision to Permittee in writing. Permittee shall implement the operational decision required by CDFW. Permittee shall ensure that its proportional share (see Condition of Approval 8.10) of the OMR flow requirement as a part of the operational decision is satisfied.</p> <p><u>Real-time Risk Assessments.</u> The Smelt and Salmon Monitoring Teams (Conditions of Approval 8.1.1 and 8.1.2) shall prepare weekly risk assessments, or more often as required, and operations advice (as required by Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, and 8.7) during their discussions and analyses. The Smelt and Salmon Monitoring</p>	Throughout the term of the ITP.	The Smelt and Salmon Monitoring Teams have been providing risk assessments to the WOMT in a timely fashion. Those risk assessments are located at: <a href="https://wildlife.ca.gov/Conservation/Watersheds/Water-Operations">https://wildlife.ca.gov/Conservation/Watersheds/Water-Operations</a>

Condition	Mitigation Measure	Implementation Schedule	Status
8.1.5.1	<p>Teams shall provide the risk assessments and pertinent supporting information to the WOMT (Condition of Approval 8.1.3) within one business day of each meeting.</p> <p><u>Salmon Monitoring Team Risk Assessments.</u> Salmon Monitoring Team risk assessments shall include, but not be limited to, Components A – F and associated data sources listed below:</p> <p>Assessment of hydrologic, operational and meteorological information</p> <p>Water operations conditions data:</p> <p>Antecedent actions (e.g. DCC gate closure and required actions such as first flush, etc.)</p> <p>Current controlling factor(s)</p> <p>Water temperatures</p> <p>Tidal cycle</p> <p>Turbidity</p> <p>Salinity</p> <p>Water operations outlook data:</p>	Throughout the term of the ITP.	The Salmon Monitoring Team conducted assessments during WY 2020 in accordance with terms of the ITP. Those risk assessments are located at: <a href="https://wildlife.ca.gov/Conservation/Watersheds/Water-Operations">https://wildlife.ca.gov/Conservation/Watersheds/Water-Operations</a>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Meteorological forecast</p> <p>Outages</p> <p>Diversions</p> <p>Storm event projection</p> <p>Projection data:</p> <p>DCC gate status</p> <p>Freeport flows</p> <p>Vernalis flows</p> <p>Old River at Bacon Island (OBI) and Freeport turbidities</p> <p>South Delta Exports</p> <p>OMR</p> <p>Assessment of biological information for CHNWR and CHNSR</p> <p>CHNWR population status data:</p> <p>Adult escapement</p> <p>Redd distribution and fry emergence timing</p> <p>JPE and hatchery releases</p> <p>Distribution of natural CHNWR, Livingston Stone NFH CHNWR releases, and CHNWR in Battle Creek:</p> <p>% of juveniles upstream of the Delta</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>% of juveniles in Delta</p> <p>% of juveniles past Chipps Island</p> <p>CHNSR population data</p> <p>Adult escapement</p> <p>Redd distribution and fry emergence timing</p> <p>Hatchery release (in-river vs. downstream)</p> <p>Distribution of natural and hatchery fish:</p> <p>% of juveniles upstream of the Delta</p> <p>% of juvenile in the Delta</p> <p>% of juveniles past Chipps Island</p> <p>Change in risk of entrainment into the central Delta</p> <p>Change in routing risk of entrainment into the central Delta</p> <p>Comparison to the previous week</p> <p>Assessment of risk of entrainment into the central Delta and CVP/SWP facilities for CHNWR and CHNSR in the</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Sacramento River:</p> <p>Data sources to assess sensitivity to entrainment into the central Delta from the Sacramento River and western Delta:</p> <p>In-Delta distribution of fish</p> <p>Acoustic telemetry, trawls (e.g. Spring Kodiak), EDSM catch, rotary screw traps, seines, and hatchery release notifications</p> <p>Hydraulic footprint</p> <p>STARS model</p> <p>Enhanced Particle Tracking Model (EPTM) (e.g. transitions between regions)</p> <p>Data from new monitoring required in Conditions of Approval 7.5 in this ITP</p> <p>Exposure risk (low, medium, high):</p> <p>Distribution of juvenile CHNWR estimated to be in the lower Sacramento and northern Delta</p> <p>Distribution of juvenile CHNSR estimated to be in the lower Sacramento and northern Delta</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Distribution of hatchery produced salmonids</p> <p>Incorporation of real-time acoustic tracking of AT/CWT fish</p> <p>Anticipated emigration to continue into the Delta</p> <p>Routing risk (low, medium, high):</p> <p>Flows in the Sacramento River predicted with upcoming storm events</p> <p>DCC gate position</p> <p>Prediction of tidal interaction at Georgiana Slough</p> <p>Inflow to Delta from Sacramento River and the interaction of the muting of tidal effects around Georgiana Slough</p> <p>Precipitation in the forecast for the weekend and increasing river flows effects of routing into central and interior delta</p> <p>Overall entrainment risk: Combination of the above two risk assessments in ii and iii.</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>CVP/SWP facilities entrainment risk for CHNWR and CHNSR in the central Delta over the next week:</p> <p>Data sources to assess sensitivity to entrainment into the south Delta from the San Joaquin River and central Delta</p> <p>In-Delta distribution of fish</p> <p>Acoustic telemetry, trawls (e.g., Spring Kodiak), EDSM catch, rotary screw traps, seines, and hatchery release notifications</p> <p>Hydraulic footprint</p> <p>EPTM (e.g., transitions between regions)</p> <p>Data sources to assess sensitivity to entrainment in salvage in the south Delta</p> <p>In-Delta distribution of fish</p> <p>Acoustic telemetry, trawls (e.g. Spring Kodiak), EDSM catch, rotary screw traps, seines, and hatchery release notifications, and salvage monitoring data at the SWP and CVP facilities</p> <p>Trend analysis (historical</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>timing)</p> <p>Survival analysis (e.g. Zeug and Cavallo CWT Model)</p> <p>Tillotson entrainment model, or other entrainment models as they are available</p> <p>EPTM (e.g. transitions between regions)</p> <p>New monitoring required by Condition of Approval 7.5 in this ITP</p> <p>Exposure risk assessments (low, medium, high):</p> <p>Listed Chinook salmon from the Sacramento River basin observed in monitoring sites in the lower Sacramento River and northern Delta (fish at the junction of Georgiana Slough, Mokelumne River, and San Joaquin River confluence).</p> <p>Prediction of flows expected to change due to precipitation events.</p> <p>Salvage trends in relation to OMR</p> <p>Future export modifications</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Reporting OMR/export risk:  OMR -2,500 cfs: LOW  OMR -3,500 cfs: LOW  OMR -5,000 cfs: MEDIUM  OMR -6,250 cfs: MEDIUM-HIGH  OMR -7,500 cfs: HIGH  OMR -9,000 cfs: HIGH</p> <p>Overall entrainment risk:  Combination of the above two risk assessments in iii and iv</p> <p>Annual loss threshold risk  Salvage loss at the SWP and CVP facilities compared to estimated remaining population in Delta and upstream of the Delta</p> <p>Define risk of hitting a threshold, 50%, or 75%, or 100%, and actions to minimize that happening</p> <p>Daily loss thresholds hit and subsequent loss and associated operations</p> <p>Alternative actions, if any</p> <p>Operations scenario</p> <p>Alternative exposure analysis</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.1.5.2	<p data-bbox="380 326 884 586"><u>Smelt Monitoring Team Risk Assessments</u>. Smelt Monitoring Team risk assessments shall include, but not be limited to, Components A – F and associated data sources listed below:</p> <p data-bbox="380 602 877 711">Assessment of hydrologic, operational and meteorological information</p> <p data-bbox="380 727 856 755">Water operations conditions:</p> <p data-bbox="380 771 856 922">Antecedent actions (e.g. DCC gate closure and actions such as integrated early winter pulse protection, etc.)</p> <p data-bbox="380 938 829 966">Current controlling factor(s)</p> <p data-bbox="380 982 703 1010">Water temperatures</p> <p data-bbox="380 1026 548 1053">Tidal cycle</p> <p data-bbox="380 1070 520 1097">Turbidity</p> <p data-bbox="380 1114 499 1141">Salinity</p> <p data-bbox="380 1157 808 1185">Water Operations Outlook:</p> <p data-bbox="380 1201 751 1229">Meteorological forecast</p> <p data-bbox="380 1245 514 1273">Outages</p> <p data-bbox="380 1289 548 1317">Diversions</p> <p data-bbox="380 1333 766 1360">Storm event projections</p>	Throughout the term of the ITP.	<p data-bbox="1182 326 1885 472">The Smelt Monitoring Team conducted assessments during WY 2020 in accordance with terms of the ITP. Those risk assessments are located at:</p> <p data-bbox="1182 480 1885 548"><a href="https://wildlife.ca.gov/Conservation/Watersheds/Water-Operations">https://wildlife.ca.gov/Conservation/Watersheds/Water-Operations</a></p>

Condition	Mitigation Measure	Implementation Schedule	Status
	Projections: Date DCC status Freeport flows Vernalis flows OBI and Freeport turbidities South Delta exports OMR Assessment of biological information for DS and LFS DS population status EDSM LCM Biological conditions (spawned/unspawned) % in Delta zones LFS population status FMWT and Bay Study Change in exposure Comparison to the previous week Assessment of risk of entrainment into the central Delta and CVP/SWP facilities for DS and LFS in the Sacramento River:		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Data sources to assess sensitivity to entrainment into the central Delta from the Sacramento River and western Delta:</p> <p>In-Delta distribution of fish Trawls (e.g. Spring Kodiak, FMWT, SFBS, and EDSM) catch</p> <p>Hydraulic footprint</p> <p>EPTM (e.g. transitions between regions)</p> <p>New monitoring required by Conditions of Approval 7.6.1 and 7.6.2 in this ITP</p> <p>Exposure risk (low, medium, high):</p> <p>Distribution of DS estimated to be downstream of the lower Sacramento and northern Delta</p> <p>Distribution of all life stages of larval and juvenile DS and LFS estimated to be in the lower Sacramento and northern Delta</p> <p>Anticipated onset of spawning movement into upstream Delta habitats.</p> <p>Routing risk (low, medium,</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>high):</p> <p>Flows in the Sacramento River predicted with upcoming storm events</p> <p>Precipitation in the forecast for the weekend and increasing river flows effects of routing into central and interior delta</p> <p>Overall entrainment risk: Combination of the above two risk assessments in ii and iii.</p> <p>CVP/SWP facilities entrainment risk for DS and LFS in the central Delta over the next week:</p> <p>Data sources to assess sensitivity to entrainment into the south Delta from the San Joaquin River and central Delta</p> <p>In-Delta distribution of fish Trawls (e.g. Spring Kodiak, FMWT, SFBS, and EDSM) catch</p> <p>Hydraulic footprint</p> <p>EPTM (e.g. transitions between regions)</p> <p>New monitoring required by Conditions of Approval 7.6.1</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>and 7.6.2 in this ITP</p> <p>Data sources to assess sensitivity to entrainment in salvage in the south Delta</p> <p>In-Delta distribution of fish</p> <p>Trend analysis (e.g., historical timing)</p> <p>Temperature conditions</p> <p>New monitoring required by Conditions of Approval 7.6.1 and 7.6.2 in this ITP</p> <p>Exposure risk assessments (low, medium, high):</p> <p>DS or LFS observed in monitoring sites in the lower Sacramento River, northern Delta, lower San Joaquin River and Sacramento- San Joaquin confluence</p> <p>Daily salvage thresholds exceeded, subsequent loss, and associated operations</p> <p>Recruitment informed by available life cycle model</p> <p>Prediction of flows expected to change due to precipitation events.</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Salvage trends in relation to OMR</p> <p>Future export modifications</p> <p>Environmental surrogates</p> <p>Reporting OMR/export risk:</p> <p>OMR -2,500 cfs: LOW</p> <p>OMR -3,500 cfs: LOW</p> <p>OMR -5,000 cfs: MEDIUM</p> <p>OMR -6,250 cfs: MEDIUM-HIGH</p> <p>OMR -7,500 cfs: HIGH</p> <p>OMR -9,000 cfs: HIGH</p> <p>Overall entrainment risk: Combination of the above two risk assessments in iii and iv.</p> <p>Alternative actions, if any</p> <p>Operations scenario</p> <p>Alternative exposure analysis</p>		
8.2	<p><u>Independent Review Panels.</u> In the event that an independent review panel is convened to review aspects of the Project or AMP, Permittee shall provide drafts of 1) the list of potential</p>	<p>Throughout the term of the ITP.</p>	<p>No independent review panels were convened during 2020.</p>



Condition	Mitigation Measure	Implementation Schedule	Status
8.3	<p>panel participants, 2) the panel charges and associated review questions, and 3) the panel report and findings to CDFW for review at least 20 days before they are scheduled to be finalized. Permittee shall incorporate CDFW comments into the final panel selection and panel charge before they are finalized. Permittee shall facilitate CDFW communication with panelists, as requested, to help address CDFW questions on the draft panel report before a final report is completed. Permittee shall work collaboratively with CDFW to address CDFW comments in the final panel report.</p> <p><u>Onset of OMR Management.</u> From the onset of OMR Management (initiated as described in Conditions of Approval 8.3.1, 8.3.2, or 8.3.3) to the end (Condition of Approval 8.8) Permittee shall maintain a 14-day average OMR index that is no more</p>	Throughout the term of the ITP.	DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
8.3.1	<p>negative than -5,000 cfs, except during OMR Flex operations (see Condition of Approval 8.7) or if a more positive OMR index is required. The OMR index shall be calculated using the equation provided in Hutton (2008). When a more positive OMR index is required by any Condition of Approval of this ITP, except when ending OMR Flex During Excess Conditions (Condition of Approval 8.7), Permittee shall reduce south Delta exports to achieve the new required OMR index within three days of exceeding a threshold or acceptance of flow advice (see Conditions of Approval 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.28.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.7, and 8.8). The new moving average will be calculated beginning no later than the third day moving forward.</p> <p><u>Integrated Early Winter Pulse Protection.</u> Between December</p>	Throughout the term of	DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>1 and January 31 each year Permittee shall reduce south Delta exports for 14 consecutive days to maintain a 14-day average OMR index no more negative than -2,000 cfs, and convene the Smelt Monitoring Team within one day of triggering the following criteria:</p> <p>Three day running average daily flows at Freeport greater than, or equal to, 25,000 cfs, AND</p> <p>Three day running average of daily turbidity at Freeport is greater than, or equal to, 50 Formazin Nephelometric Units (FNU), OR</p> <p>The Smelt Monitoring Team determines that real-time monitoring of abiotic and biotic factors indicates a high risk of DS migration and dispersal into areas at high risk of future entrainment.</p>	the ITP.	Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow” to CDFW on October 1, 2020.
	<p>After maintaining a 14-day</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.3.2	<p>average OMR index no more negative than -2,000 cfs for 14 days. Permittee shall reduce south Delta exports to maintain a 14-day average OMR index no more negative than -5,000 cfs, initiating the OMR Management season, until the OMR Management Season ends (Condition of Approval 8.8).</p> <p>The Integrated Early Winter Pulse Protection Action may only be initiated once during the December 1 through January 31 time period each year.</p> <p><u>Salmonid Presence</u>. After January 1 each year, if Conditions of Approval 8.3.1 or 8.3.3 have not already been triggered, the OMR Management season shall begin when the Salmon Monitoring Team first estimates that 5% of the CHNWR or CHNSR population is in the Delta whichever is</p>	Throughout the term of the ITP.	OMR management began on January 1, 2020, consistent with regulatory requirements. DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
8.3.3	<p>sooner. Upon initiation of the OMR Management season, Permittee shall reduce exports to achieve, and shall maintain a 14-day average OMR index no more negative than -5,000 cfs, until the OMR Management season ends (see Condition of Approval 8.8). In the event that a salmon daily or single-year loss threshold is exceeded (Conditions of Approval 8.6.1, 8.6.2, 8.6.3, or 8.6.4) prior to the start of OMR Management season the requirements in those Conditions shall control operations.</p> <p><u>Adult Longfin Smelt Entrainment Protection</u>. After December 1, if an Integrated Early Winter Pulse Protection (Condition of Approval 8.3.1) has not yet initiated, Permittee shall reduce south Delta exports to maintain a 14-day average OMR index no more negative than -5,000 cfs and initiate OMR Management (Condition of Approval 8.3) if:</p>	Throughout the term of the ITP.	DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Cumulative combined LFS expanded salvage (total estimated LFS counts at the CVP and SWP salvage facilities beginning December 1 through February 28 exceeds the most recent Fall Midwater Trawl (FMWT) LFS index divided by 10, OR</p> <p>Real-time monitoring of abiotic and biotic factors indicates a high risk of LFS movement into areas at high risk of future entrainment, as determined by DWR and CDFW Smelt Monitoring Team staff.</p> <p>When evaluating the possibility of LFS movement into areas that may be subject to an elevated risk of entrainment, the Smelt Monitoring Team shall evaluate catch of LFS with fork length <math>\geq</math> 60 mm by the Chipps Island Trawl (conducted by USFWS) as an early warning indicator for LFS migration movement into the Delta, in addition to other available</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.4.1	<p>survey and abiotic data. The Smelt Monitoring Team shall communicate the results of these risk assessments and advice to the WOMT (Condition of Approval 8.1.3), and operational decisions shall be made as described in Condition of Approval 8.1.4 (Collaborative Approach to Real-time Risk Assessment).</p> <p><u>OMR Management for Adult Longfin Smelt</u>. From the onset of OMR Management (Condition of Approval 8.3) through February 28, the Smelt Monitoring Team shall conduct weekly, or more often as needed, risk assessments (see Condition of Approval 8.1.5.2) and decide whether to recommend an OMR flow requirement between -5,000 cfs and - 1,250 cfs to minimize entrainment and take of adult LFS. The Smelt Monitoring Team may provide advice to restrict south Delta exports for seven consecutive days to</p>	Throughout the term of the ITP.	DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>achieve a seven-day average OMR index within three risk categories:</p> <p>Low risk: OMR between -4,000 cfs to -5,000 cfs</p> <p>Medium risk: OMR between -2,500 cfs to -4,000 cfs</p> <p>High risk: OMR between -1,250 cfs to -2,500 cfs</p> <p>If a risk assessment conducted by the Smelt Monitoring Team determines that a more restrictive OMR flow requirement is needed to minimize take of adult LFS, the Smelt Monitoring Team shall provide its advice to WOMT (Condition of Approval 8.1.3) and operational decisions shall be made following the process described in Condition of Approval 8.1.4 (Collaborative Approach to Real-time Risk Assessment).</p> <p>This Condition will terminate when a high-flow off-ramp</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
8.4.2	<p>occurs (Condition of Approval 8.4.3), or when LFS spawning has been detected in the system, as determined by the Smelt Monitoring Team, or, if there is disagreement and resolution is not reached within WOMT, as determined by CDFW. The Smelt Monitoring Team shall consider results from Additional LFS Larval Sampling (Condition of Approval 7.6.1) to inform its assessment of the start of LFS spawning. After LFS spawning has been observed, Permittee shall implement Condition of Approval 8.4.2 to minimize take of larval and juvenile LFS.</p> <p><u>Larval and Juvenile Longfin Smelt Entrainment Protection.</u> From January 1 through June 30, when a single Smelt Larva Survey (SLS) or 20 mm Survey (20 mm) sampling period exceeds one of the following thresholds:</p> <p>LFS larvae or juveniles found in four or more of the 12 SLS or</p>	Throughout the term of the ITP.	This ITP Condition was not triggered in WY 2020. DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>20 mm stations in the central Delta and south Delta (Stations 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, 919), or</p> <p>LFS catch per tow exceeds five LFS larvae or juveniles in two or more of the 12 stations in the central Delta and south Delta (Stations 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, 919).</p> <p>Permittee shall restrict south Delta exports for seven consecutive days to maintain a seven-day average OMR index no more negative than -5,000 cfs. Permittee shall also immediately convene the Smelt Monitoring Team to conduct a risk assessment (see Condition of Approval 8.5.1.2) to assess the risk of larval and juvenile LFS entrainment into the South Delta Export Facilities, determine if an OMR flow restriction is warranted, and recommend an OMR flow limit between -1,250 and - 5,000</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>cfs. The Smelt Monitoring Team risk assessment and operational recommendation shall be reviewed by the WOMT (Condition of Approval 8.1.3) via the Collaborative Real-time Decision-making process (Condition of Approval 8.1.4). Permittee shall operate to the export restriction and OMR flow target approved through Conditions of Approval 8.1.3 and 8.1.4. Each week the Smelt Monitoring Team shall convene to conduct a new risk assessment and determine whether to maintain, or off ramp from, export restrictions based on the risk to LFS, or until the DS and LFS off-ramp has been met as described in Condition of Approval 8.8 (End of OMR Management).</p>		
	<p>From January 1 through June 30, DWR and CDFW Smelt Monitoring Team staff shall conduct weekly, or more often as needed, risk assessments</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>(see Condition of Approval 8.5.1.2) to assess the risk of larval and juvenile LFS entrainment into the South Delta Export Facilities. As a part of the risk assessment the Smelt Monitoring Team shall recommend appropriate OMR flow targets to minimize LFS entrainment or entrainment risk, or both. The Smelt Monitoring Team shall provide its recommendation to WOMT (Condition of Approval 8.1.3) and use the Collaborative Approach to Real-time Risk Assessment process described in Condition of Approval 8.1.4 to determine if an OMR flow restriction is warranted and determine OMR flow limit between -1,250 and -5,000 cfs. The OMR flow limit shall be in place until the next risk assessment conducted by the Smelt Monitoring Team determines that it is no longer necessary to minimize take or related impacts to LFS, or until</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.4.3	<p>the DS and LFS off-ramp has been met as described in Condition of Approval 8.8 (End of OMR Management).</p> <p><u>High Flow Off-Ramp from Longfin Smelt OMR Restrictions.</u> OMR management for adult, juvenile, or larval LFS as described in Conditions of Approval 8.4.1 and 8.4.2 are not required, or would cease if previously required, when river flows are (a) greater than 55,000 cfs in the Sacramento River at Rio Vista or (b) greater than 8,000 cfs in the San Joaquin River at Vernalis. If flows subsequently drop below 40,000 cfs in the Sacramento River at Rio Vista or below 5,000 cfs in the San Joaquin River at Vernalis, the OMR limit previously required as a part of Conditions of Approval 8.4.1 and 8.4.2 shall resume.</p>	Throughout the term of the ITP.	This ITP Condition was not triggered in WY 2020. DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.
8.5.1	<p><u>Turbidity Bridge Avoidance.</u> The purpose of this Condition is to minimize the risk of</p>	Throughout the term of the ITP.	This ITP Condition was not triggered in WY 2020. DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>entrainment of adult DS in the corridors of the Old and Middle rivers into the south Delta export facilities. This Condition is intended to avoid the formation of a turbidity bridge from the San Joaquin River shipping channel to the south Delta export facilities, which historically has been associated with elevated salvage of pre-spawning adult DS.</p> <p>After the Integrated Early Winter Pulse Protection (Condition of Approval 8.1.3) or February 1 (whichever comes first), until April 1, Permittee shall manage exports to maintain daily average turbidity in Old River at Bacon Island (OBI) at a level of less than 12 FNU. If the daily average turbidity at OBI is greater than 12 FNU, Permittee shall restrict south Delta exports to achieve an OMR flow that is no more negative than -2,000 cfs until</p>		<p>Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>the daily average turbidity at OBI is less than 12 FNU</p>		
	<p>If, after five consecutive days of OMR flow that is less negative than -2,000 cfs, the daily average turbidity at OBI is not less than 12 FNU the Smelt Monitoring Team may convene to assess the risk of entrainment of DS (Condition of Approval 8.1.5.2). The Smelt Monitoring Team may provide a recommendation to WOMT regarding changes in operations that could be conducted to minimize the risk of entrainment of DS (Condition of Approval 8.1.3). The Smelt Monitoring Team may also determine that OMR restrictions to manage turbidity are infeasible and may instead recommend a different OMR flow target that is between -2,000 and -5,000 cfs and is protective based on turbidity and adult DS distribution and salvage to the WOMT for</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>consideration (Condition of Approval 8.1.3). Operational decisions shall be made following the process described in Condition of Approval 8.1.4 (Collaborative Real Time Risk Assessment).</p> <p>Turbidity readings at individual sensors can generate spurious results in real time. Spurious results could be incorrectly interpreted as a turbidity bridge, when in fact the cause is a result of local conditions or sensor error. To assess whether turbidity readings at OBI are attributable to a sensor error or a localized turbidity spike, Permittee, in coordination with Reclamation, may consider and review data from other nearby locations and sources. Additional information that will be reviewed include regional visualizations of turbidity, alternative sensors, and boat-based turbidity mapping,</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>particularly if there was evidence of a local sensor error. Permittee may bring data from these additional sources to the Smelt Monitoring Team for consideration during the development of a risk assessment to be provided to the WOMT for evaluation (Condition of Approval 8.1.3).</p> <p>Permittee shall use the decision-making process described Condition of Approval 8.1.4 (Collaborative Real-time Risk Assessment) to determine if south Delta exports may increase after five-days of OMR no more negative than -2,000 cfs, or to determine that this action is not warranted due to a sensor error or localized turbidity event. Permittee shall implement this action until CDFW is in agreement that the action may be ended or modified.</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.5.2	<p><u>Larval and Juvenile Delta Smelt Protection</u>. If the five-day cumulative salvage of juvenile DS at the CVP and SWP facilities is greater than or equal to one plus the average prior three years' FMWT index (rounded down), Permittee shall restrict south Delta exports for seven consecutive days to maintain a seven-day average OMR index no more negative than -5,000 cfs. Additionally, if the five-day cumulative salvage threshold is met or exceeded, Permittee shall immediately convene the Smelt Monitoring Team to conduct a risk assessment (Condition of Approval 8.1.5.2) and determine the future risk of entrainment and take of larval and juvenile DS. The Smelt Monitoring Team may recommend further restricting south Delta exports to maintain a more positive OMR than - 5,000 cfs. The Smelt Monitoring Team may provide</p>	Throughout the term of the ITP.	This ITP Condition was not triggered in WY 2020. DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>advice for further restrictions within three risk categories:</p> <p>Low risk: Limit OMR between -4,000 cfs to -5,000 cfs</p> <p>Medium risk: Limit OMR between -2,500 cfs to -4,000 cfs</p> <p>High risk: Limit OMR between -1,250 cfs to -2,500 cfs</p> <p>The duration and magnitude of operational recommendations shall be provided to the WOMT (Condition of Approval 8.1.3) and decisions shall be made following the process described in Condition of Approval 8.1.4 (Collaborative Real Time Risk Assessment). When conducting risk assessments to evaluate the risk of entrainment and take of juvenile DS the Smelt Monitoring Team shall evaluate the following information sources, in addition to any other models or surveys they deem appropriate and those listed in Condition of Approval</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>8.1.5.2:</p> <p>Results from a CDFW-approved DS life cycle model. DS recruitment levels identified by the Smelt Monitoring Team using the CDFW-approved life cycle model that links environmental conditions to recruitment, including factors related to loss as a result of entrainment such as OMR flows. In this context, recruitment is defined as the estimated number of post-larval DS in June per number of spawning adults in the prior February-March period.</p> <p>Hydrodynamic models and forecasts of entrainment informed by the EDSM or other relevant survey data to estimate the percentage of larval and juvenile DS that could be entrained.</p> <p>If expanded salvage at the CVP and SWP facilities of juvenile DS exceeds 11 within a three-</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.6.1	<p>day period under this condition, Permittee shall restrict south Delta exports for seven consecutive days to maintain a seven-day average OMR index no more negative than 3,500 cfs. If juvenile DS continue to be salvaged at the CVP and SWP facilities during the seven days of OMR restrictions, then Permittee shall continue restrictions and request a risk assessment by the Smelt Monitoring Team to determine if additional advice and subsequent restrictions are warranted and provide advice to WOMT (see Condition of Approval 8.1.3) and follow the decision-making process described in Condition of Approval 8.1.4</p> <p><u>Winter-run Single-year Loss Threshold</u>. In each year, Permittee shall, in coordination with Reclamation, operate the Project to avoid exceeding the following single-year loss thresholds:</p>	Throughout the term of the ITP.	This ITP Condition was not triggered in WY 2020. DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
Natural CHNWR (loss = 1.17% of JPE)	Hatchery CHNWR (loss = 0.12% of JPE)		Under condition 8.6.1, the natural Winter-run single year loss threshold was equal to the loss of 1.17% of the JPE any single year. 1.17% of the WY 2019 Winter-run Chinook Salmon was 10,003. Loss of wild Winter-run Chinook Salmon, based on the Delta Model length-at-date criteria, occurred at both Delta fish facilities for a loss of 142.9 fish at the SWP and 53.9 fish at the CVP. The total natural Winter-run loss was 196.8 fish (1.97% of the take limit) which was well below the single year loss threshold.
The loss threshold and loss tracking for hatchery CHNWR does not include releases into Battle Creek.	Loss of CHNWR at the at the CVP and SWP salvage facilities shall be calculated based on length-at-date criteria.		Under condition 8.6.1, the hatchery Winter-run single year loss threshold was equal to the loss of 0.12% of the JPE, or 111 hatchery produced juvenile Winter-run Chinook Salmon. As there was no length-at-date loss of hatchery Winter-run Chinook Salmon, loss represented 0% of the take limit and the hatchery juvenile Winter-run Chinook Salmon single year loss threshold was not exceeded.
Annual loss of natural and hatchery CHNWR at the CVP and SWP salvage facilities shall be counted cumulatively beginning November 1 each calendar year through June 30 the following calendar year.	CHNWR shall be identified based on the Delta Model length-at-date criteria. Loss shall be calculated for the South Delta Export Facilities		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>using the 2018 California Department of Fish and Wildlife loss equation (Attachment 6).</p> <p>During the water year, if cumulative loss of natural or hatchery CHNWR exceeds 50% of the annual loss threshold, Permittee shall restrict south Delta exports to maintain a 14-day average OMR index no more negative than -3,500 cfs through the end of OMR Management (see Condition of Approval 8.8). After 14 days of operations to maintain an OMR index no more negative than -3,500 cfs Permittee may convene the Salmon Monitoring Team to conduct a risk assessment (Condition of Approval 8.1.5.1) and determine whether the risk of entrainment and loss of natural and hatchery CHNWR is no longer present. Risks shall be measured against the potential to exceed the next single-year loss threshold. The results of</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>this risk assessment and associated OMR recommendations shall be provided to WOMT according to Condition of Approval 8.1.3 and the decision-making process shall follow the process described in Condition of Approval 8.1.4.</p> <p>The -3,500 cfs OMR flow operational criteria, adjusted and informed by this risk assessment, shall remain in effect until the end of OMR Management (Condition of Approval 8.8).</p> <p>During the water year, if cumulative loss of natural or hatchery CHNWR at the at the CVP and SWP salvage facilities exceeds 75% of the single-year loss threshold, Permittee shall restrict OMR to a 14-day moving average OMR flow index that is no more negative than -2,500 cfs through the end of OMR Management</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>(Condition of Approval 8.7). After 14 days Permittee may convene the Salmon Monitoring Team to conduct a risk assessment (Condition of Approval 8.1.5.1) and determine whether the risk of entrainment and take of natural and hatchery CHNWR is no longer present. The results of this risk assessment and associated OMR recommendations shall be provided to WOMT according to Condition of Approval 8.1.3 and the decision-making process shall follow the process described in Condition of Approval 8.1.4.</p> <p>The -2,500 cfs OMR flow operational criteria adjusted and informed by this risk assessment shall remain in effect until the end of OMR Management (Condition of Approval 8.8).</p> <p>During the water year, if</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>natural or hatchery CHNWR cumulative loss at the at the CVP and SWP salvage facilities exceeds the single-year loss threshold, Permittee shall immediately convene the Salmon Monitoring Team to review recent fish distribution information and operations and provide advice regarding future planned Project operations to minimize subsequent loss during that year. The Salmon Monitoring Team shall report the results of this review and advice to the WOMT (see Condition of Approval 8.1.3). Operational decisions shall be made following the process described in Condition of Approval 8.1.4 (Collaborative Real Time Risk Assessment).</p> <p>If the single-year loss threshold is exceeded, Permittee and Reclamation shall also convene an independent panel to review Project operations and the</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>single-year loss threshold prior to November 1, as described in Condition of Approval 8.2. The purpose of the independent panel is to review the actions and decisions contributing to the loss trajectory that lead to an exceedance of the single-year loss threshold, and make recommendations on modifications to Project implementation, or additional actions to be conducted to stay within the single-year loss threshold in subsequent years.</p> <p>Permittee shall, in coordination with Reclamation, continue monitoring and reporting salvage at the at the CVP and SWP salvage facilities. Permittee and Reclamation shall continue the release and monitoring of yearling Coleman National Fish Hatchery (NFH) late fall-run and yearling CHNSR surrogates. The Salmon Monitoring Team shall use reported real-time salvage</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.6.2	<p>counts along with qualitative and quantitative tools to inform risk assessments (see Condition of Approval 8.1.5.1).</p> <p><u>Early-season Natural Winter-run Chinook Salmon Discrete Daily Loss Threshold</u>. To minimize entrainment, salvage, and take of early-migrating natural CHNWR Permittee shall restrict south Delta exports for five consecutive days to achieve a five-day average OMR index no more negative than -5,000 cfs when daily loss of older juveniles (natural older juvenile Chinook salmon and yearling CHNSR used as a surrogate for CHNWR) at the SWP and CVP salvage facilities exceeds the following thresholds:</p> <p>From November 1 – November 30: 6 older juvenile Chinook salmon</p> <p>From December 1 – December 31: 26 older juvenile Chinook salmon</p>	Throughout the term of the ITP.	<p>DWR submitted its “2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow” to CDFW on October 1, 2020.</p> <p>These thresholds were not in effect for the water year 2020, since the ITP wasn’t in effect until March 31, 2020.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
8.6.3	<p>All natural older juvenile Chinook salmon juveniles shall be identified based on the Delta Model length-at-date criteria. Loss shall be calculated for the South Delta Export Facilities using the equation provided in CDFW (2018) (Attachment 6). This Condition of Approval may be modified through the process described in Condition of Approval 8.6.6 and an amendment to this ITP.</p> <p><u>Mid- and Late-season Natural Winter-run Chinook Salmon Daily Loss Threshold</u>. To minimize entrainment, salvage, and take of natural CHNWR during the peak and end of their migration through the Delta. Permittee shall restrict south Delta exports for five days to achieve a five-day average OMR index no more negative than -3,500 cfs when daily loss of natural older juveniles at the SWP and CVP</p>	Throughout the term of the ITP.	<p>DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.</p> <p>Under condition 8.6.3, the following daily maximum loss thresholds were in effect for the water year 2020:</p> <ol style="list-style-type: none"> <li>1) January 1–January 31: 54.29</li> <li>2) February 1–February 28: 84.72</li> <li>3) March 1–March 31: 124.82</li> <li>4) April 1–April 30: 43.35</li> </ol>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>salvage facilities exceeds the following thresholds based on the JPE reported in January of the same calendar year:</p> <p>January 1 – January 31: 0.00635 % of the CHNWR JPE</p> <p>February 1 – February 28: 0.00991 % of the CHNWR JPE</p> <p>March 1 – March 31: 0.0146 % of the CHNWR JPE</p> <p>April 1 – April 30: 0.00507 % of the CHNWR JPE</p> <p>May 1 – May 31: 0.0077 % of the CHNWR JPE</p> <p>All natural older juvenile Chinook salmon juveniles shall be identified based on the Delta Model length-at-date criteria. Loss shall be calculated for the South Delta Export Facilities using the equation provided in CDFW (2018) (Attachment 6). This Condition of Approval may be modified through the process described in Condition of Approval 8.6.6 and an</p>	5) May 1–May 31: 65.83	<p>As the ITP was not in effect until March of 2020, the January and February thresholds were not in effect for the 2020 water year. The daily loss thresholds were not exceeded for the month of March, April, and May for the WY 2020.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
8.6.4	<p>amendment to this ITP.</p> <p><u>Daily Spring-run Chinook Salmon Hatchery Surrogate Loss Threshold</u>. To minimize entrainment of emigrating natural juvenile CHNSR from the Sacramento River and tributaries, including the Feather and Yuba rivers into the channels of the central Delta, south Delta, CCF, and the Banks Pumping Plant, Permittee shall restrict exports based on the presence of hatchery produced CHNSR surrogate groups at the CVP and SWP salvage facilities. CHNSR surrogate groups shall consist of all in-river fall- and Spring-run surrogate release groups of Chinook salmon from the Coleman National Fish Hatchery, Feather River Hatchery, and the Nimbus Fish Hatchery.</p> <p>Each water year between February 1 and June 30</p>	Throughout the term of the ITP.	The Daily Spring-run Chinook Salmon Hatchery Surrogate Loss Thresholds was not yet in effect during WY 2020. Nevertheless, DWR and CDFW met several times throughout the summer of 2020 to discuss and inform CDFW’s development of the “Water Year 2021 Implementation Plan” (as discussed below under COA 8.6.5).

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Permittee shall reduce south Delta exports for five consecutive days to achieve a five-day average OMR index no more negative than -3,500 cfs when:</p> <p>Feather River Hatchery coded wire tagged (CWT) CHNSR surrogates (includes both spring- and fall-run hatchery release groups) cumulative loss at the at the CVP and SWP salvage facilities is greater than 0.25% for each release group, OR</p> <p>Coleman National Fish Hatchery and Nimbus Fish Hatchery CWT fall-run release groups cumulative loss at the at the CVP and SWP salvage facilities is greater than 0.25% of the total in-river releases for each release group.</p> <p>This Condition of Approval may be modified through the process described in Condition of Approval 8.6.6 and an</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
8.6.5	<p>amendment to this ITP.</p> <p><u>Funding for Spring-run Hatchery Surrogates</u>. Permittee shall provide at least \$72,000 one- time start-up costs per hatchery and \$150,000 of additional funding each year for each hatchery to CDFW to support the following hatchery surrogate release group protocol to enable implementation of Condition of Approval 8.6.4:</p> <p>100% CWT for each hatchery in-river surrogate release group</p> <p>Unique CWT for each hatchery in-river surrogate release group to allow differentiation among groups at the salvage facilities</p> <p>At least two hatchery in-river surrogate release groups per hatchery, per year</p> <p>Permittee shall provide sufficient funding to ensure that all hatchery surrogate</p>	Throughout the term of the ITP.	<p>DWR and CDFW met several times throughout the summer of 2020 to discuss and inform CDFW’s development of the “Water Year 2021 Implementation Plan.” Coordination between DWR and CDFW, including hatcheries, in planning and preparing for hatchery releases to be used as surrogates was discussed during the meetings. In separate discussions, DWR and CDFW met with representatives of the U.S. Fish and Wildlife Service to discuss planned releases from Coleman National Fish Hatchery and determine which release groups could serve as Spring-run surrogates in the Water Year 2021 Implementation Plan.</p> <p>For water year 2021 implementation, CDFW and DWR agreed that if contingencies were to arise, CDFW could request funding from DWR to meet the requirements of Condition of Approval 8.6.5.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
8.6.6	<p>release groups can be produced in addition to annual production releases.</p> <p>Locations and times of year for in-river surrogate releases shall be developed to best represent natural juvenile CHNSR migration into the Sacramento River and Delta.</p> <p>Permittee shall provide technical support and guidance to CDFW, as needed, to inform CDFW's development of its annual plan for in-river surrogate releases. CDFW's annual planning includes specifying the number of fish included in each release group, and the timing and the locations of in-river releases.</p> <p><u>Evaluate Proactive Salmon Entrainment Minimization During Real-time Operations.</u> When a new Chinook salmon entrainment model is developed and approved by CDFW as required by Condition of Approval 7.5.3, it shall be</p>	Throughout the term of the ITP.	In 2020, there were two Winter-run entrainment modeling efforts relevant to Condition 7.5.3, both initiated before the issuance of the ITP. First, ICF is working with Metropolitan Water District of Southern California to develop a predictive tool for Winter-run-sized salmon at the salvage facilities. The effort was started before the

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>evaluated during real-time operations for two water years by the Salmon Monitoring Team (Condition of Approval 8.1.2) as a part of their weekly risk assessments (Condition of Approval 8.5.1.1). If Permittee and CDFW agree that the new entrainment model provides a more proactive approach to minimizing CHNWR entrainment and loss, while providing the same level of protection as Conditions of Approval 8.6.2 and 8.6.3, Permittee may request an amendment to the ITP to modify or replace Conditions of Approval 8.6.2 and 8.6.3 with salmon entrainment thresholds based on the entrainment model.</p> <p>When a CHNSR JPE is approved by CDFW and implemented (see Condition of Approval 7.5.2), Permittee and CDFW staff shall work with the Spring-run JPE Team to</p>		<p>issuance of the ITP and has continued throughout the latter part of 2020. The draft model was shared with DFW and others, who provided good suggestions for improvements. In 2020, the authors submitted a manuscript to a regional scientific journal.</p> <p>A second effort was also initiated during the ITP consultation process which is led by DFW. The effort is based on early discussions between DFW and DWR to help anticipate the need for a predictive model to manage winter run entrainment. These discussions led to a new proposal (Dr. Jereme Gaeta, PI) submitted to the Interagency Ecological Program as part of the 2021 planning process.</p> <p>DWR and CDFW continue to meet weekly to coordinate about these modeling efforts. The current plan is for DWR to submit both models for approval as required by this Condition and that each of these models will be tested during upcoming entrainment seasons by the Salmon Monitoring Team (SMT).</p>

Condition	Mitigation Measure	Implementation Schedule	Status
8.7	<p>evaluate minimization provided by Condition of Approval 8.6.4. Permittee may request an amendment to the ITP to modify or replace Conditions of Approval 8.6.4 and 8.6.5 with CHNSR entrainment minimization measures that incorporate new information gleaned from the new monitoring and CHNSR JPE.</p> <p><u>OMR Flexibility During Delta Excess Conditions.</u> Permittee may increase exports to capture peak flows in the Delta during storm-related events (hereafter OMR flex) when:  The Delta is in excess conditions, AND  QWEST is greater than 0, AND  A measurable precipitation event has occurred in the Central Valley, AND  Permittee, in coordination with Reclamation, determines that the Delta outflow index indicates a higher level of outflow available for diversion</p>	Throughout the term of the ITP.	OMR Flexibility During Delta Excess Conditions was not implemented during WY 2020.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>due to peak storm flows, AND  None of the following  Conditions of Approval are  controlling Project operations:  8.3.1, 8.3.3, 8.4.1, 8.4.2,  8.5.1, 8.5.2, 8.6.1, 8.6.2,  8.6.3, and 8.6.4, AND  Risk assessments conducted by  the Salmon and Smelt  Monitoring Teams (Conditions  of Approval 8.1.5.1 and  8.1.5.2) indicate that an OMR  more negative than -5,000 cfs  is not likely to trigger an  additional real-time OMR  restriction (Conditions of  Approval 8.3.1, 8.3.3, 8.4.1,  8.4.2, 8.5.1, 8.5.2, 8.6.1,  8.6.2, 8.6.3, and 8.6.4), AND  Cumulative salvage at the CVP  and SWP facilities of yearling  Coleman NFH late fall-run  Chinook salmon (as yearling  CHNSR surrogates) is less than  0.5% within any of the release  groups, AND  Risk assessments conducted by  the Salmon and Smelt  Monitoring Teams determines</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>that no changes in spawning, rearing, foraging, sheltering, or migration behavior as a result of OMR Flex operations beyond those anticipated to occur through operations described in Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, and 8.6.4 are likely to occur.</p> <p>If, during OMR flex operations, any of the following conditions occurs, Permittee shall reduce south Delta exports to achieve a 14-day average OMR index no more negative than -5,000 cfs, unless a further reduction in exports is required by another Condition of Approval. The more positive OMR index shall be achieved within 48 hours of the occurrence of the condition, and the 14-day moving average shall apply from that point forward.</p> <p>Risk assessments conducted by the Salmon and Smelt</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Monitoring Teams (Conditions of Approval 8.1.5.1 and 8.5.1.2) indicate that an OMR more negative than -5,000 cfs is likely to trigger an additional real-time OMR restriction (Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, and 8.6.4), OR</p> <p>Cumulative salvage at the CVP and SWP facilities of yearling Coleman NFH late fall-run Chinook salmon (as yearling CHNSR surrogates) exceeds 0.5% within any of the release groups, OR</p> <p>A risk assessment conducted by the Salmon or Smelt Monitoring Teams identifies changes in spawning, rearing, foraging, sheltering, or migration behavior as a result of OMR Flex operations beyond those anticipated to occur through operations described in Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2,</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.8	<p>8.6.3, and 8.6.4, OR Operational restrictions described in Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, and 8.17 are required.</p> <p><u>End of OMR Management.</u> Permittee shall operate the Project to meet the requirements included in Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, and 8.6.4 to ensure that entrainment and take of Covered Species is minimized during the OMR Management season through June 30, or until the following species-specific off-ramps occur: LFS and DS: Daily mean water temperature at CCF is greater than 25°C for three consecutive days. CHNWR and CHNSR: More than 95% of CHNWR and CHNSR have migrated past</p>	Throughout the term of the ITP.	OMR management ended on June 30, 2020. DWR submitted its "2020 Smelt and Salmon Monitoring Teams Annual Report Supplement to U.S. Bureau of Reclamation 2020 Seasonal Report for Old and Middle River Flow" to CDFW on October 1, 2020.



Condition	Mitigation Measure	Implementation Schedule	Status
8.9.1	<p>Chippis Island as determined by the Salmon Monitoring Team, AND</p> <p>Daily average water temperature at Mosssdale exceeds 22.2°C for 7 non-consecutive days in June, AND</p> <p>Daily average water temperature at Prisoner’s Point exceeds 22.2°C for 7 non-consecutive days in June.</p> <p><u>Construct and Operate a Salmonid Migratory Barrier at Georgiana Slough.</u> A salmonid migratory barrier at Georgiana Slough is expected to provide a higher probability of survival for emigrating juvenile CHNWR and CHNSR that encounter the Sacramento River- Georgiana Slough junction and reduce entrainment of emigrating CHNWR and CHNSR into the central and south Delta. Permittee shall construct and operate a salmonid migratory barrier at Georgiana Slough within three years of the</p>		<p>DWR and CDFW met to discuss scoping for this ITP Condition on July 31, 2020. DWR will hold the first action-specific team meeting for Conditions 8.9.1 and 8.9.2 in March 2021.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>effective date of this ITP. This timeline shall be subject to Permittee attaining required state and federal permits. If permits are not obtained within 2.5 years after the effective date of this ITP, Permittee shall confer with CDFW to determine a timeline for permit acquisition and construction of the migratory barrier.</p> <p>Permittee shall develop a Georgiana Slough Migratory Barrier Operations Plan and associated operating criteria in collaboration with CDFW, USFWS and NMFS to maximize benefits to migrating CHNWR and CHNSR. Permittee shall prepare a draft Georgiana Slough Migratory Barrier Operations Plan and submit it to CDFW, USFWS, and NMFS at least 120 days before beginning construction and deployment of the barrier. Operation of the Georgiana Slough Migratory Barrier shall</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.9.2	<p>not commence until the final Georgiana Slough Migratory Barrier Operations Plan and associated criteria are approved in writing by CDFW.</p> <p>Permittee as part of the AMP shall continue pilot investigations to refine the understanding of barrier efficiency and benefits to Covered Species in coordination with CDFW, NMFS and USFWS. This ITP does not provide take authorization for construction of the migratory barrier at Georgiana Slough. Permittee shall submit a separate 2081(b) application for incidental take authorization associated with construction of the barrier.</p> <p><u>Evaluate Benefits of Salmonid Guidance Structures at Sutter and Steamboat Sloughs.</u> Fish guidance structures near the junction between the Sacramento River and Sutter and Steamboat sloughs are</p>	Throughout the term of the ITP.	DWR has completed initial studies on effectiveness of guidance structures at Sutter and Steamboat sloughs and will discuss the results of those studies during the first action-specific team meeting for Conditions 8.9.1 and 8.9.2 to be scheduled for early 2021.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>expected to provide a higher probability of survival for emigrating juvenile CHNWR and CHNSR by increasing the proportion of juveniles that enter Sutter and Steamboat sloughs and minimizing the proportion of juveniles that migrate into the central and south Delta.</p>		
	<p>Within two years of the effective date of this ITP, Permittee shall use SDM, in collaboration with CDFW, NMFS, and USFWS, to evaluate a range of potential approaches to designing and operating fish guidance structures near Sutter and Steamboat sloughs. Permittee shall submit a draft report documenting the results of the SDM process and associated implementation recommendations to CDFW, NMFS, and USFWS within three years of the effective date of this ITP.</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.10	<p><u>SWP Proportional Share</u>. Due to the historically coordinated operations of the SWP and CVP, joint operational criteria related to OMR flows and export restrictions have been developed for SWP and CVP that assume coordinated implementation by Permittee and Reclamation. Conditions of Approval 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.7, 8.8, and 8.17 set out such operational criteria that assume coordination by Permittee and Reclamation to meet the criteria and that are subject to the process set out in this condition.</p> <p>During the term of this ITP there may be instances when operational requirements stated in or determined by these Conditions of Approval are different from operational requirements of the applicable ESA authorizations, which</p>	Throughout the term of the ITP.	DWR operated to the SWP Proportional Share for the first 10 days of April 2020, as described under Condition 8.17, Export Curtailment for Spring Outflow (see Appendix D).

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>govern operations at the CVP as well as the SWP. If an operational restriction required by this ITP, pursuant to one or more of the Conditions of Approval listed above, is more restrictive than the then-controlling operations required by the applicable ESA authorizations, Permittee shall take the following steps to meet its proportional share of the operational criteria stated or determined by the Condition of Approval(s) at issue:</p> <p>Permittee is legally bound, both statutorily and through agreements with the Bureau of Reclamation, not to utilize State facilities (including the CCF, Banks Pumping Plant, the California Aqueduct, and the SWP share of San Luis Reservoir) or allow third parties (including the CVP) to use State facilities in a manner that would result in a violation of law, including the operational criteria stated in or</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>determined by Conditions of Approval 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.7, 8.8, and 8.17 of this ITP.</p> <p>If prohibiting the use of state facilities for CVP purposes will not result in conditions that meet the operational criteria stated in or determined by the Condition of Approval at issue, Permittee shall provide CDFW with a written estimate of the total allowed exports at both the SWP and CVP facilities that would be required to meet the operational criteria stated in or determined by the Condition of Approval at issue.</p> <p>Under Excess Conditions: Based on the written estimate prepared under paragraph 2 of this condition, Permittee shall reduce exports at the Banks Pumping Plant to 40% of the estimated total allowed exports that would be allowed if both the SWP and CVP were operating to meet the</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>requirement stated in or determined by the Condition of Approval at issue.</p> <p>Under Balanced Conditions: Based on the written estimate prepared under paragraph 2 of this condition, Permittee shall reduce exports at the Banks Pumping Plant to 35% of the estimated total allowed exports that would be allowed if both the SWP and CVP were operating to meet the requirement stated in or determined by the Condition of Approval at issue.</p> <p>Excess and Balanced Conditions are defined in Section 1.4 of the Project Description. The SWP shares of allowable exports in Step 3 above are defined based on the SWP share of exports during excess and balanced conditions described in the 2018 COA Addendum. This condition in combination with other</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
8.11	<p>Conditions of Approval required by this ITP are intended to further satisfy Permittee’s obligations pursuant to CESA. If the COA is revised after the effective date of this ITP, Permittee shall notify CDFW per Condition of Approval 5.</p> <p>Permittee shall not be required to reduce exports below 600 cfs, the minimum required to health and safety standards.</p> <p><u>Ongoing comparison of OMR Index to Tidally Filtered OMR.</u> The United States Geological Survey (USGS) Tidally Filtered Method to calculate OMR flow is defined in the NMFS 2009 BiOp and uses values reported by the USGS for the Old River at Bacon Island and Middle River at Middle River monitoring stations. Permittee shall continue to calculate and report OMR as estimated using the USGS Tidally filtered Method in all risk analyses conducted as a part of the</p>	Throughout the term of the ITP.	DWR has continued to calculate and report OMR as estimated using the USGS Tidally Filtered Method in all risk analyses conducted as a part of the Smelt and Salmon Monitoring Teams and reported to the WOMT, in addition to OMR flows as calculated using the OMR Index. Data comparing the daily OMR Index and USGS Tidally Filtered OMR over Water Year 2020 are provided in Appendix C.

Condition	Mitigation Measure	Implementation Schedule	Status
8.12	<p>Smelt and Salmon Monitoring Teams and reported to the WOMT, in addition to OMR flows as calculated using the OMR Index. Permittee shall provide raw data for the daily OMR Index and USGS Tidally Filtered OMR and a report comparing the estimates over the prior water year annually as a part of the ASR (Condition of Approval 7.2).</p> <p><u>Barker Slough Pumping Plant Longfin and Delta Smelt Protection</u>. Permittee shall operate the BSPP to protect larval LFS from January 15 through March 31 of dry and critical water years. Permittee shall operate to protect larval DS from March 1 through June 30 of dry and critical years. If the water year type changes after January 1 to below normal, above normal or wet, this action will be suspended. If the water year type changes after January to dry or critical, Permittee shall operate</p>	Throughout the term of the ITP.	Until March 31, 2020, CESA coverage for State-listed species was still governed by the 2009 Incidental Take Permit (2009 ITP). During the mid-March Smelt larval survey, three Longfin Smelt were detected at station 716. Pursuant to Condition 5.3 of the 2009 ITP, this detection triggered a pumping reduction at Barker Slough Pumping Plant (BSPP), and CDFW issued advice on March 17, 2020. On March 18, 2020, DWR notified WOMT of this trigger and intent to reduce pumping at BSPP. This action was implemented until March 31, 2020. Because of the timing of the action relative to the ITP implementation, there was no opportunity to implement the Longfin protection; however, there were no

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>according to this Condition of Approval.</p> <p>From January 15 through March 31 of dry and critical water years, Permittee shall reduce the maximum seven-day average diversion rate at BSPP to less than 60 cfs when larval LFS are detected at Station 716. In addition, in its weekly meetings from January 15 through March 31, the Smelt Monitoring Team shall review LFS abundance and distribution survey data and other pertinent abiotic and biotic factors that influence the entrainment risk of larval LFS at the BSPP. When recommended by the Smelt Monitoring Team, and as approved through the decision-making processes described in Conditions of Approval 8.1.3 and 8.1.4, Permittee shall reduce the maximum seven-day average diversion rate at BSPP according to the advice</p>		<p>Delta Smelt collected at station 716 during 2020. Delta Smelt protection was not triggered in 2020.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>provided by the Smelt Monitoring Team.</p> <p>From March 1 through June 30 of dry and critical water years, Permittee shall reduce the maximum seven-day average diversion rate at BSPP to less than 60 cfs when larval DS are detected at Station 716. In addition, in its weekly meetings from March 1 through June 30, the Smelt Monitoring Team shall review DS abundance and distribution survey data and other pertinent abiotic and biotic factors that influence the entrainment risk of larval DS at the BSPP (including temperature and turbidity). When recommended by the Smelt Monitoring Team, and as approved through the decision-making processes described in Conditions of Approval 8.1.3 and 8.1.4, Permittee shall reduce the maximum seven-day average diversion rate at</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	BSPP to less than 60 cfs.		
	The DS requirements described in this condition may be adjusted to align with USFWS requirements to minimize take of DS through an amendment to this ITP.		
8.13	<u>Water Year Type Definition.</u> All references to water year type in this ITP shall be defined based on the Sacramento Valley Index unless otherwise noted.	Throughout the term of the ITP.	Noted.
8.14	<u>Clifton Court Forebay Aquatic Weed Control Practices.</u> Permittee may apply Aquathol K and copper-based aquatic pesticides, as needed, from June 28 to August 31.	Throughout the term of the ITP.	The Clifton Court Aquatic Weed and Algal Bloom Management actions on June 28-29 and July 28-29 were within the work window described in ITP Condition 8.14. In addition, DWR conferred and notified CDFW, NMFS, and USFWS regarding a November 3 treatment operation at Clifton Court Forebay that was outside of the summer treatment window. The November 3 treatment was successful in treating aquatic weeds.
	Permittee may apply Aquathol K and copper-based aquatic pesticides, if necessary, prior to June 28 or after August 31 if the average daily water temperature within the CCF is greater than or equal to 25°C,		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>and if DS, LFS, CHNWR and CHNSR are not at additional risk from the treatment, as confirmed by CDFW, NMFS and USFWS. Before applying aquatic pesticides outside of the June 28 to August 31 time frame, Permittee shall notify and confer with CDFW, NMFS and USFWS to determine whether ESA- or CESA-listed fish species are present and at risk from the proposed treatment.</p> <p>Permittee may apply Aquathol K and copper-based aquatic pesticides, outside of the June 28 to August 31 timeframe and when the average daily water temperature in the CCF is below 25°C only as approved by CDFW and subject to the following conditions. Permittee shall:</p> <p>Close the CCF radial gates for 24 hours after Aquathol K application is completed, unless CDFW determines that</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>rapid dilution of the herbicide would be beneficial to reduce the exposure duration to Covered Species present within the CCF.</p> <p>Monitor the salvage of Covered Species at the Skinner Fish Facility prior to the application of the aquatic herbicides and algaecides in the CCF. If salvage of Covered Species occurs Permittee shall confer with CDFW prior to initiating aquatic weed control.</p> <p>Close the radial intake gates at the entrance to the CCF for at least 24 hours prior to the application of Aquathol K and copper compounds pesticides to allow fish to move out of the targeted treatment areas and toward the salvage facility and to minimize the possibility of aquatic pesticide diffusing into the Delta.</p> <p>Close the radial gates for a minimum of 12 and up to 24 hours after treatment with Aquathol K and copper</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>compounds to allow for the recommended duration of contact time between the aquatic pesticide and the treated vegetation or cyanobacteria in CCF, and to reduce residual endothall concentration for drinking water compliance purposes. Permittee shall not open radial gates until a minimum of 36 hours (24 hours pre-treatment closure plus 12 hours post-treatment closure).</p> <p>Close the radial gates prior to the application of peroxide-based algaecides to minimize the possibility of the algaecide diffusing into the Delta. Permittee may reopen the radial gates immediately after treatment with peroxide-based algaecides.</p> <p>Ensure that aquatic herbicides are applied by a licensed applicator under the supervision of a California Certified Pest Control Advisor. Apply aquatic herbicides and</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>algaecides by boat or by aircraft.</p> <p>Apply aquatic herbicides by boat using a subsurface injection system for liquid formulations and a boat-mounted hopper dispensing system for granular formulations. Applications shall start at the shoreline and move systematically farther offshore, enabling fish to move out of the treatment area.</p> <p>Use helicopter or aircraft for aerial application of aquatic herbicides during times when wind speeds are less than 15 mph to prevent spray drift.</p> <p>Restrict application to the smallest area possible (no more than 50% of the CCF at one time) that provides relief to SWP operations or water quality.</p> <p>Collect water quality samples to monitor copper and endothall concentrations within or adjacent to the treatment area, per NPDES permit</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.15	<p>requirements, before, during and after application. Additional water quality samples may be collected during the following treatment for drinking water compliance purposes.</p> <p>Measure dissolved oxygen concentration prior to and immediately following application within and adjacent to the treatment zone</p> <p><u>Skinner Fish Salvage Facility CDFW Staff.</u> To support implementation of Conditions of Approval 7.4, 7.4.1, 7.4.2 and 7.4.3 Permittee shall fully fund two existing Environmental Scientist and one new Senior Environmental Scientist Specialist CDFW staff positions to work collaboratively with DWR Skinner Fish Salvage Facility staff starting on July 1 in the same year this ITP becomes effective. Permittee shall work collaboratively with these CDFW staff to ensure that they</p>	Throughout the term of the ITP.	On 9/11/20 and 10/2/20, CDFW and DWR staff held working meetings to define the scope of a new Interagency Agreement for CDFW salvage biologist support to replace an interim agreement signed in November 2020 (Term 7/1/20 to 6/30/21). DWR expects this new agreement to be in place by 7/1/21.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>have the access and information needed to perform their duties and discuss roles and responsibilities relative to existing DWR facility staff. CDFW staff duties will include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>Receive daily salvage data from the SWP and CVP fish salvage facilities,</li> <li>Conduct salvage data QA/QC,</li> <li>Train salvage facility staff,</li> <li>Monitor salvage facility operations,</li> <li>Work collaboratively with DWR staff to develop a revised Skinner Fish Facility Operations Manual v 2.0 October 19, 2005 (see Condition of Approval 7.4.2),</li> <li>Review annual salvage reports,</li> <li>Receive notifications regarding inspections or maintenance of fish protective equipment,</li> <li>Work collaboratively with Permittee to develop a new protocol which describes the</li> </ul>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>decision-making process prior to reducing sampling times, Engage in real-time decision making to determine whether reduce count times are needed and measures to ensure adequate detection of Covered Species during reducing count times, and</p> <p>Conduct special studies to refine estimates of entrainment, expanded salvage, and loss (see Condition of Approval 7.4.3)</p>		
	<p>Permittee shall provide reasonable access to the Skinner Fish Salvage Facility for the three CDFW staff identified in this Condition of Approval.</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.16	<p><u>Relationship Between the Adaptive Management Program and This ITP.</u> The Adaptive Management Program (Attachment 2, AMP) shall be used to consider and address scientific uncertainty regarding the Bay-Delta ecosystem, Covered Species ecology, and to inform the understanding of minimization of take and impacts of the taking associated with the operational criteria in this ITP. The AMP may result in recommendations regarding operational components described in Conditions of Approval in this ITP, and consequently Permittee may request amendment of this ITP based on new information developed through new science and monitoring (Condition of Approval 5) and according to the amendment standards and processes identified in CESA's implementing regulations. The AMP shall be used to build</p>	<p>Throughout the term of the ITP.</p>	<p>An Adaptive Management Team (AMT) was formed consisting of two designated representatives each from DWR, CDFW, and the SWC. The AMT has identified key adaptive management tasks and timelines associated with specific Actions in the ITP, which will be important to consider as part of the Adaptive Management Program (AMP). The AMT agreed that individual adaptive management plans should be developed for specific Actions that are subject to adaptive management to best guide an Action through an adaptive management cycle.</p> <p>Some of these individual adaptive management plans have been drafted for specific actions (e.g., operations of the Suisun Marsh Salinity Control Gates) and others are still being developed. These individual adaptive management plans are a key part of the overarching AMP as outcomes from them will help inform scientific understanding of Covered Species and evaluate potential changes in the ITP's operational criteria. The AMP contained within the ITP (i.e., Attachment 2 of the ITP), will continue to serve as the foundation for adaptive management under</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>scientific understanding of Covered Species and evaluate potential changes in the operational criteria in this ITP. The AMP (Attachment 2) describes this structure and steps associated with adaptive management in more detail.</p> <p>The AMP does not govern real-time operations. Recommendations of the AMP shall not commit Permittee or CDFW to a definite course of action related to ITP amendments. The AMP shall not modify CDFW's discretionary decision-making as set out in the Conditions of Approval, CESA, or CESA's implementing regulations.</p> <p>Condition of Approval 5 describes circumstances when CDFW anticipates that Permittee may request an amendment to this ITP in the future, including amendments that may be requested in</p>		<p>the ITP, and the AMT is currently discussing some approaches to bolster that document.</p> <p>Finally, the AMT has been in discussions with the Delta Science Program (DSP) who are willing to help provide facilitation and peer-review support during the 4-year review cycle for several ITP Actions. As these reviews are an integral part of the AMP, the AMT is working to ensure the necessary resources are available to complete these reviews.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	response to recommendations from the AMP.		
8.17	<p><u>Export Curtailments for Spring Outflow</u>. As described in Sections 1.5 and 3.17 of the Project Description, as part of the Voluntary Agreement process, Permittee and its SWP Contractors have proposed a reduction in SWP exports to protect outflows in the spring time period. Each year, following the finalization of the March forecast, Permittee will confer with CDFW regarding export reductions from April 1 to May 31. If in any year</p>	Throughout the term of the ITP.	<p>The San Joaquin River Year Type was Critical at the start of April 2020. From April 1 through April 11, the proportional share of SWP exports were less than 40% of Vernalis flow. The 31-day pulse flow period specified in Decision 1641 began on April 10 and lasted through May 10. From April 12 through May 7, SWP exports were such that the combined CVP and SWP exports were less than or equal to Vernalis flow (all parameters calculated as a 3-day running average).</p> <p>On May 8, the hydrologic year type for the San Joaquin River watershed was re-</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>during the term of this ITP, Permittee and its SWP Contractors identify in a written operations plan, submitted to CDFW following the March forecast, and throughout April and May conduct SWP export reductions pursuant to the Voluntary Agreements that are consistent with the SWP export reductions required by this Condition, then the Voluntary Agreement implementation may satisfy the reductions required to meet this Condition.</p> <p>The following shall be implemented by Permittee during any year in which SWP export reductions pursuant to the Voluntary Agreements are not identified and conducted as described in the preceding paragraph. Permittee shall operate the Project during the spring each year to restrict exports and enhance Delta outflow.</p>		<p>classified as Dry based on updated hydrologic information. Therefore, beginning on May 10, with the change in year type, the allowable proportional share of SWP exports changed to 40 percent of half of Vernalis flow, or 600 cfs. But because of dry hydrology, Vernalis flow never exceeded 3,000 cfs in May, and SWP exports were less than 600 cfs from May 8 to May 31.</p> <p>The operations data shown in Appendix D demonstrate that Condition 8.17 (Export Curtailments for Spring Outflow) was met in April and May of 2020 by limiting SWP exports in accordance with the terms described in the ITP.</p>



Condition	Mitigation Measure	Implementation Schedule	Status
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Permittee shall reduce exports from April 1 to May 31 each year to achieve the SWP proportional share (Condition of Approval 8.10) of export reductions established by the ratio of Vernalis flow (cfs) to combined CVP and SWP exports, scaled by water year type, to provide incidental spring outflow. In a critically dry year, the ratio of Vernalis flow to CVP and SWP combined exports shall be 1 to 1. In a dry year, the ratio of Vernalis flow to CVP and SWP combined exports shall be 2 to 1. In a below normal year, the ratio of Vernalis flow to CVP and SWP combined exports shall be 3 to 1. In an above normal or wet year, the ratio of Vernalis flow to CVP and SWP combined exports shall be 4 to 1<sup>1</sup>. In wet years SWP export curtailments required by this Condition of Approval for spring outflow in April and May is limited to 150

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>TAF. The ratio of Vernalis flows to export reductions is intended to serve as an operational mechanism to achieve the Delta outflow required by this Condition of Approval for minimization of the Covered Activities' impacts to Covered Species.</p> <p>For purposes of this Condition of Approval only, the Joaquin Valley "60-20-20" Water Year Hydrologic Classification and Indicator as defined in the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (SWRCB 2006) is used.</p> <p>Permittee shall not be required to restrict operations as described above under either of the following circumstances: If the three-day average Delta outflow is greater than 44,500 cfs, then Project operations</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>shall not be controlled by this Condition until the flows drop below 44,500 cfs on a three-day average.</p> <p>Permittee shall not be required by this Condition of Approval to restrict exports at the Banks Pumping Plant below its minimum health and safety exports of 600 cfs.</p> <p>The ratios used to establish export restrictions by water year type are a tool that incorporates San Joaquin River inflows while also allowing for a high outflow offramp of 44,500 cfs, which is expected to be driven by inflow from the Sacramento River. Spring export curtailments are intended to augment Delta outflow during a critical time in the life history of all four Covered Species. When April and May Delta outflow is augmented salinity in Suisun Bay is reduced and central Delta productivity is dispersed</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>westward, improving habitat for both Delta and longfin smelt. At the upper end of managed flows when X2 is in San Pablo Bay, export curtailments help maintain this favorable location and sustain food web productivity and other conditions for improved longfin smelt recruitment in San Pablo Bay. Reductions in outflow during such conditions could restrict longfin smelt nursery habitat upstream to less favorable habitat in Carquinez Strait. Augmenting spring outflow through export curtailments improves migratory conditions for CHNWR and CHNSR by reducing Covered Activities' impacts on routing and through-Delta survival. Maintaining a higher Delta outflow during this time period will also provide a proactive approach to entrainment minimization that is expected to reduce CHNWR and CHNSR</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>routing into the central and south Delta and minimize loss of all Covered Species at the SWP export facility. Additionally, increases in Delta outflow are associated with increased food web transport to, and productivity in, Suisun Bay.</p> <p>Immediately following the SWRCB's adoption of final Voluntary Agreements Permittee, SWC and CDFW will meet and confer to review the Project in light of the final form of the Voluntary Agreements. Consistent with Condition of Approval 5, CESA, and CESA's implementing regulations, the Permittee and CDFW, in consultation with SWC and as appropriate depending on the results of that review, may replace the ratio of Vernalis flows to exports used as an operational mechanism to determine spring outflow volumes in this condition of</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.18	<p>approval, based on the final Voluntary Agreements and as part of such amendment process.</p> <p><u>Potential to Redeploy up to 150 TAF for Delta Outflow.</u>            Permittee shall curtail exports at the Banks Pumping Plant to maintain the SWP contribution to spring Delta outflow as required by Condition of Approval 8.17 from April 1 to May 31.</p> <p>If approved in writing by CDFW, Permittee may increase exports at the Banks Pumping Plant between April 1 and May 31 above what would otherwise be allowed by operating to Condition of Approval 8.17. When making the determination about whether to approve an increase in exports CDFW will weigh the benefits of increasing exports to bank water for other purposes against the risk of entrainment</p>	Throughout the term of the ITP.	ITP Conditions of Approval 8.18 and 8.19 describe blocks of water that, under certain conditions, shall be made available to supplement spring, summer, or fall Delta outflow at the discretion of CDFW. Each year, beginning no later than February 1, DWR is required to begin development of a Delta Outflow Operations Plan to facilitate the planning, accounting, and reporting of these Conditions of Approval. DWR is required to submit a Delta Outflow Operations Report by October 31 that provides daily operations information throughout the duration of the implementation of the Delta Outflow Operations Plan. Because of the March 31, 2020, issuance of the ITP, DWR did not develop a Delta Outflow Operations Plan in 2020 and therefore did not prepare a Delta Outflow Operations Report.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>of Covered Species or impacting Covered Species habitat during that water year.</p>		
	<p>If an increase in Project exports is approved by CDFW in April and May, the increase in the volume of water exported during this time period, up to 150 TAF (hereafter Spring Outflow Block), shall be accounted for by Permittee and available for use by CDFW after March 1 of the next water year, except if the following year is critical. The Spring Outflow Block is in addition to the water required to achieve criteria in Table 9-A in Condition of Approval 9.1.3.1 and the Additional 100 TAF Block (Condition of Approval 8.19). Condition of Approval 8.19, Delta Outflow Operations Plan and Report, describes the required planning, accounting, and reporting process that shall be used by Permittee, in</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>collaboration with CDFW, each year following a water year in which CDFW approves an increase in exports during April and May. CDFW is most likely to approve an increase in exports for the purpose of building a Spring Outflow Block in wetter water years.</p> <p>In wet water years Permittee may export no more than 30 TAF above what would be allowed by operating to Condition of Approval 8.17. This 30 TAF is intended to offset the water required to operate SMSCG for 30 days during summers of dry years that follow a below normal water year as described in Condition of Approval 9.1.3.1, Table 9-A. The timing and magnitude of exports to capture 30 TAF in a wet year shall be described in the Delta Outflow Operations Plan (Condition of Approval 8.20) to avoid sharp reductions in Delta</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>outflow during April and May that may increase take of Covered Species as a result of entrainment into the central and south Delta.</p> <p>In addition, Permittee shall provide a Spring Outflow Block Report to CDFW by August 1 of the same water year in which the increased exports are approved by CDFW. The Spring Outflow Block Report shall quantify the increase in Project exports, account for the water available in the Spring Outflow Block, and include the following daily information from April 1 through May 31:</p> <ul style="list-style-type: none"> <li>Delta outflow</li> <li>Delta conditions (excess vs. balanced)</li> <li>Total exports at Banks Pumping Plant</li> <li>Jones Pumping Plants</li> <li>OMR index</li> <li>San Joaquin inflow</li> </ul>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Flow at Freeport</p> <p>Controlling factor each day and associated SWP allowable exports</p> <p>Estimated daily exports at Banks Pumping Plant from April 1 – May 31 of that year that would have occurred if all SWP operations remained the same except exports were restricted by operating to Condition of Approval 8.17</p>		
	<p>Permittee shall address comments and questions from CDFW on the draft Spring Outflow Block Report before it is finalized and submitted to CDFW for approval, no later than October 31.</p>		
	<p>The following water year, Permittee shall adjust operations of the Project to provide the Spring Outflow Block (as specified in the CDFW-approved Delta Outflow Operations Plan, Condition of</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.19	<p>Approval 8.20), unless that water year is critical. The Spring Outflow Block shall be stored in Oroville Reservoir and will be subject to spill if redeployed to the following year.</p> <p>Permittee shall ensure that the water provided by the SWP achieves the defined purpose in the CDFW-approved Delta Outflow Operations Plan by dedicating the Spring Outflow Block of water to outflow for the duration of this ITP through agreements with downstream water users, a term-limited Section 1707 dedication as provided under the California Water Code, reliance on Term 91 conditions as enforceable by the SWRCB, or other means to ensure the water is not diverted for any intended use other than Delta outflow.</p> <p><u>Additional 100 TAF for Delta Outflow</u>. To provide benefits to DS or LFS during a critical part</p>	Throughout the term of the ITP.	ITP Conditions of Approval 8.18 and 8.19 describe blocks of water that, under certain conditions, shall be made available to

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>of their life histories Permittee shall operate the project to provide a flexible block of water to enhance Delta outflow during the spring, summer, or fall months. Permittee shall provide 100 TAF of water to supplement Delta outflow (Additional 100 TAF) as approved by CDFW. Permittee shall provide the Additional 100 TAF of water subject to the following conditions:</p> <p>This water may be used in June through September of wet and above normal water years, and the October immediately following, to supplement Delta outflow in addition to flow required to meet the criteria in Condition of Approval 9.1.3.1, Table 9-A, and improve DS habitat.</p> <p>As approved by CDFW, the Additional 100 TAF of water available in a wet or above normal water year may instead be deferred and redeployed in the following water year to</p>		<p>supplement spring, summer, or fall Delta outflow at the discretion of CDFW. Each year, beginning no later than February 1, DWR is required to begin development of a Delta Outflow Operations Plan to facilitate the planning, accounting, and reporting of these Conditions of Approval. DWR is required to submit a Delta Outflow Operations Report by October 31 that provides daily operations information throughout the duration of the implementation of the Delta Outflow Operations Plan. Because of the March 31, 2020, issuance of the ITP, DWR did not develop a Delta Outflow Operations Plan in 2020 and therefore did not prepare a Delta Outflow Operations Report.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>supplement Delta outflow during the March through September time period, or the October immediately following the end of that water year. The Additional 100 TAF shall be provided in addition to outflow required to meet the criteria in Table 9-A of Condition of Approval 9.1.3.1 in that following year, except if the following year is dry. The Additional 100 TAF is not required to be provided if the following water year is critical as determined by the May forecast with planning beginning in February each year as described in Condition of Approval 8.20, Delta Outflow Operations Plan and Report.</p> <p>The Additional 100 TAF shall be stored in Oroville Reservoir and will be subject to spill from Oroville Reservoir if redeployed to the following year.</p> <p>The Additional 100 TAF from a wet or above normal water year may be deferred only to</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>the following water year, or the October immediately following the end of that water year.</p>		
	<p>Permittee shall provide the Additional 100 TAF as described in the CDFW-approved Delta Outflow Plan (Condition of Approval 8.20). In determining the use of the Additional 100 TAF, CDFW and Permittee will plan for the possibility that the following year is dry and this water would be needed to operate the SMSCG for 60 days during the June – October time period. Sixty days of SMSCG operations in the summer of a dry year is anticipated to require an additional 60-70 TAF of Delta outflow to ensure that other Project operating requirements (including Delta salinity standards) are met. CDFW anticipates that another high-priority use of the Additional 100 TAF, if deferred and redeployed to the following</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.20	<p>year, would be to supplement outflow in the spring of below normal water years.</p> <p>Permittee shall ensure that the water provided by the SWP achieves the defined purpose in the CDFW-approved Delta Outflow Operations Plan by dedicating the 100 TAF to outflow for the duration of this ITP through agreements with downstream water users, a term-limited Section 1707 dedication as provided under the California Water Code, reliance on Term 91 conditions as enforceable by the SWRCB, or other means to ensure the water is not diverted for any intended use other than Delta outflow.</p> <p><u>Delta Outflow Operations Plan and Report</u>. Conditions of Approval 8.18 and 8.19 describe blocks of water that shall be made available to supplement spring, summer or fall Delta outflow at the</p>	Throughout the term of the ITP.	ITP Conditions of Approval 8.18 and 8.19 describe blocks of water that, under certain conditions, shall be made available to supplement spring, summer, or fall Delta outflow at the discretion of CDFW. Each year, beginning no later than February 1, DWR is required to begin development of a

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>discretion of CDFW. Additionally, Condition of Approval 9.1.3.1 describes a requirement to operate the SMSCG during above normal, below normal, and dry water years and operate to an X2 standard in September and October of wet and above normal water years. Each year, to facilitate the planning, accounting, and reporting of these Conditions of Approval, Permittee shall:</p> <p>Develop and operate to a Delta Outflow Operations Plan:</p> <p>Beginning no later than February 1, work collaboratively with CDFW to develop a draft Delta Outflow Operations Plan that describes:</p> <p>The amount of water available to supplement Delta outflow associated with the Additional 100 TAF (Condition of Approval 8.19) and Spring Outflow Block (Condition of Approval 8.18).</p> <p>The timing and volume of water to be made available on</p>		<p>Delta Outflow Operations Plan to facilitate the planning, accounting, and reporting of these Conditions of Approval. DWR is required to submit a Delta Outflow Operations Report by October 31 that provides daily operations information throughout the duration of the implementation of the Delta Outflow Operations Plan. Because of the March 31, 2020, issuance of the ITP, DWR did not develop a Delta Outflow Operations Plan in 2020 and therefore did not prepare a Delta Outflow Operations Report.</p>



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>a daily basis between March 1 and October 31 associated with the available blocks of water.</p> <p>Anticipated Project operational actions (e.g. export restrictions or storage releases) that would be taken to ensure the available blocks of water supplement Delta outflow.</p> <p>An accounting of how and when each available block of water would be used to supplement Delta outflow in addition to water required to operate to X2, SMSCG operational criteria, or other controlling operational criteria as required in Table 9-A and Condition of Approval 9.1.3.2.</p> <p>Ongoing coordination with CDFW throughout deployment of the available blocks of water to evaluate operations relative to the requirements described in the Final Delta Operations Plan.</p> <p>Permittee shall work collaboratively with CDFW on an ongoing basis after</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>February 1 to update the draft Delta Outflow Operations Plan based on refinements in understanding of Covered Species status and distribution, Project operations, and hydrologic and temperature forecasts.</p> <p>Submit the draft Delta Outflow Operations Plan to CDFW no less than 15 days prior to the start date of operational requirements described in the plan and incorporate CDFW comments and edits into the final plan no less than five days prior to the start of operational requirements described in the plan.</p> <p>Operate the Project consistent with the final CDFW-approved Delta Outflow Operations Plan.</p> <p>By October 31, submit to CDFW a draft Delta Outflow Operations Report that includes the following daily information throughout the duration of the implementation of the Delta Outflow Operations Plan that</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	year: Delta outflow Total exports at Banks Pumping Plant Total exports at Jones Pumping Plant OMR index USGS Tidally Filtered OMR flow San Joaquin inflow Flow at Freeport Flow on the Feather River immediately below Thermalito State and federal share stored in San Luis Reservoir Releases from the following reservoirs: Nimbus Keswick Oroville Whiskeytown Jersey Point salinity Salinity at Belden's Landing Flow as measured at Lisbon Weir Delta outflow controlling factor each day and associated		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>allowable SWP exports</p> <p>Minimum required Delta outflow that would be required to meet applicable controlling standards</p> <p>Documentation of the volume and timing of the Additional 100 TAF and Spring Outflow Block planned to be used in that year according to the CDFW-approved Delta Outflow Operations Plan</p> <p>Depiction of operations that would have occurred during the timeframe outlined in the Delta Outflow Operations Plan for that water year if the available blocks of water and the Summer-Fall Action had not been implemented. This depiction shall include estimates of all required hydrologic data points used to quantify actual operations during the same time period</p> <p>Incorporate CDFW comments and edits into the draft Delta Outflow Operations Report and submit it to CDFW for approval</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
8.21	<p>before December 1.</p> <p><u>Drought Contingency Planning.</u>  On October 1, if the prior water year was dry or critical, Permittee, in coordination with Reclamation, shall meet and confer with USFWS, NMFS, SWRCB, and CDFW to develop a drought contingency plan to be implemented if dry conditions continue into the following year. On February 1 if dry conditions continue, Permittee shall submit the drought contingency plan to CDFW and shall update the plan monthly based on current and forecasted hydrologic conditions. If dry conditions continue, Permittee shall regularly convene this group to evaluate hydrologic conditions and the potential for continued dry conditions that necessitate implementation of measures identified in the drought contingency plan for the current water year. By February 1 of each year</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
9.1.1	<p>following the development of a drought contingency plan, Permittee shall submit a report to CDFW on the measures employed during the previous year, including an assessment of their effectiveness.</p> <p><u>Tidal Wetland Habitat Restoration for Delta Smelt.</u>            Within 6 years of the effective date of this ITP, Permittee shall site, design, restore, and conserve 8,000 acres of DS tidal wetland habitat as compensatory mitigation to expand the diversity, quantity, and quality of DS rearing and refuge habitat in the tidal portions of the Delta and Suisun Marsh. This requirement is carried forward from the compensatory mitigation obligation originally established in the 2008 BiOp and associated CDFW consistency determination.</p> <p>Permittee shall site, design, restore, and conserve an</p>		<p>Highlights of progress during WY 2020 include the following:</p> <p>590.54 acres of Longfin Smelt credits were awarded by CDFW for Tule Red.</p> <p>Wings Landing completed construction (credits are in progress) (257.82 acres of anticipated credits).</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>additional 396.3 acres of DS tidal wetland habitat as compensatory mitigation for increased diversions at the BSPP.</p>		
	<p>Permittee shall coordinate with USFWS and CDFW during the process of site selection and restoration design for HM lands intended to serve as compensatory mitigation for impacts to DS habitat. HM lands and restoration designs shall be informed by the specifications and habitat crediting process described in the 2012 <i>Fish Restoration Program Agreement Implementation Strategy</i>, the <i>Draft 2008 FWS BiOp Delta Smelt Crediting Decision Model Guidelines</i>, and the <i>Draft 2008 FWS BiOp Delta Smelt Crediting Decision Model</i> (Guidance for Smelt HM Lands Suitable for Compensatory Mitigation, Attachment 4). All DS tidal wetland habitat</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
9.1.2	<p>restoration shall be subject to approval by CDFW.</p> <p><u>Habitat Restoration for Longfin Smelt</u>. Within 6 years of the effective date of this ITP, Permittee shall site, design, restore, and conserve 800 acres of LFS mesohaline habitat and 396.3 acres of LFS tidal wetland habitat as compensatory mitigation to expand the diversity, quantity, and quality of LFS rearing and refuge habitat in the tidal portions of the Delta and Suisun Marsh. The requirement to restore and conserve 800 acres of mesohaline habitat is carried forward from the compensatory mitigation obligation originally established in the 2009 ITP issued by CDFW for take of LFS.</p> <p>Permittee shall coordinate with CDFW during the process of site selection and restoration design for HM lands intended to serve as compensatory</p>	<p>Within 6 years of the effective date of this ITP.</p>	<p>Highlights of progress during WY 2020 include the following:</p> <p>Wings Landing completed construction (credits are in progress) (257.82 acres of anticipated credits).</p> <p>Lower Yolo Ranch began construction (completed in October 2020) (1732.8 acres of anticipated credits).</p>



Condition	Mitigation Measure	Implementation Schedule	Status
9.1.3	<p>mitigation for impacts to LFS habitat. HM lands and restoration designs shall be informed by the specifications and habitat crediting process described in the 2012 <i>Fish Restoration Program Agreement Implementation Strategy</i>, the <i>Draft 2008 FWS BiOp Delta Smelt Crediting Decision Model Guidelines</i>, and the <i>Draft 2008 FWS BiOp Delta Smelt Crediting Decision Model</i> (Guidance for Smelt HM Lands Suitable for Compensatory Mitigation, Attachment 4) and adapted for the specific habitat requirements of LFS, as approved by CDFW. All LFS mesohaline habitat restoration shall be subject to approval by CDFW.</p> <p><u>Delta Smelt Summer-Fall Habitat Action.</u> The DS summer-fall habitat action (Summer-Fall Action) is intended to benefit DS food supply and habitat, thereby contributing to the recruitment,</p>	Throughout the term of this ITP.	Progress in implementing terms of Condition 9.1.3 is summarized below under the individual sub-components of Condition 9.1.3.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>growth, and survival of DS. The FLaSH conceptual model<sup>2</sup> states that DS habitat should include low-salinity conditions of 0 to 6 parts per thousand (ppt), turbidity of approximately 12 FNTU, temperatures below 25°C, food availability, and littoral or open water physical habitats. The highest-quality habitat in Suisun Marsh and Grizzly Bay includes areas with complex bathymetry, in deep channels close to shoals and shallows, and in proximity to extensive tidal or freshwater marshlands and other wetlands. The Summer-Fall Action will provide the aforementioned habitat components in the Suisun Marsh and Grizzly Bay through a range of actions by water year type to improve water quality and food supplies.</p> <p>As described in Sections 1.6 and 3.9.2 of the Project</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Description, proposals under the Voluntary Agreements may be implemented in a way that complements the Delta Smelt Summer-Fall Habitat Action by providing summer outflow during above normal, below normal, and dry water year types, in a manner that is equivalent to or greater than the flow needed to achieve the standards described in Conditions of Approval 9.1.3.1 and 9.1.3.2 for Permittee.</p> <p>Permittee shall implement SMSCG operations as described in Conditions of Approval 9.1.3.1 and 9.1.3.2 through its operations, including through reducing its exports at Banks Pumping Plant.</p>		
9.1.3.1	<p><u>Summer-Fall Action Plan</u>. Each year Permittee shall initiate the process to develop a plan to operate the Project, achieve criteria described in Table 9-A and requirements in Conditions</p>	<p>Throughout the term of this ITP.</p>	<p>Given the timing and dry hydrology in 2020, there was no specific requirement for a summer-fall action this year; however, Delta Coordination Group (DCG) activities have been one of the major efforts since the issuance of the ITP. The DCG team was</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>of Approval 8.19, 9.1.3, and 9.1.3.2, and implement additional actions, as available, including monitoring, science, and food enhancement actions to enhance DS habitat (Summer-Fall Action Plan). As a part of this annual planning and implementation process, reports documenting summer-fall operations and results from monitoring (including Condition of Approval 9.1.3.3) and scientific investigations (including Condition of Approval 7.6.4) shall be used to better understand DS habitat during the summer-fall time period and investigate the way in which SWP-CVP operations interact with the full range of components of DS habitat. The planning process will investigate the extent to which providing flow and low salinity conditions of various volumes and locations improves the quality and quantity of DS habitat and food</p>		<p>formed by the US Bureau of Reclamation and includes representatives as indicated in ITP Condition 9.1.3.1. Some of the major activities of the group included the following:</p> <p>Guidance Document: The DCG put together a Guidance Document to outline the team’s organization, goals, and planning process. There was substantial input from the State team (DFW and DWR) to make sure that the Guidance Document reflected the needs of the ITP.</p> <p>Decision Making Process: The team worked collaboratively to develop a decision-making process (PROACT) that will be used in subsequent years to identify actions.</p> <p>Modeling: The DCG met multiple times with consultants and agency modeling experts to identify modeling needs for future decision making.</p> <p>Reporting: Again, there were no specific summer-fall actions in 2020; however, there was substantial research, monitoring, and analysis. Some major deliverables included:</p> <p>Publication of the results of the 2018 Suisun Marsh Salinity Gate pilot action in Plos ONE.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>in the summer and fall, and whether DS survival, viability, and abundance improves in response to the Summer-Fall Action. The planning process shall also consider tradeoffs between actions to benefit DS and effects on other Covered Species. For example, the planning process shall include consideration of the potential for CHNSR juvenile stranding in upstream tributaries associated with reservoir releases.</p> <p>The Summer-Fall Action Plan shall be developed based on hydrologic, operational, and temperature forecasts using the best available modeling to plan SMSCG operations (Table 9-A in the ITP) to maximize the number of days that Belden’s Landing three-day average salinity is equal to, or less than, 4 ppt in all but dry years following below normal years. In a dry year following a below normal year the Summer-Fall</p>		<p>This analysis is an important baseline evaluation that will help inform future actions.</p> <p>Publication of the data from the 2018 SMSCG pilot action on an Open Data website (EDI). To promote transparency and future evaluations, the project team posted all data from the pilot SMSCG action.</p> <ul style="list-style-type: none"> <li>o 2020 Monitoring Data. Reclamation is leading a DCG effort to summarize the available data from 2020 field monitoring. The report focuses on hydrology, water quality, and some basic biological data that is currently available. This will provide valuable “no action” data that can be used as a comparison against future years.</li> </ul>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Action Plan shall be developed to maximize the number of days that Belden’s Landing three-day average salinity is equal to, or less than, 6 ppt. CDFW anticipates that a three-day average salinity of 4 ppt at Belden’s Landing (or 6 ppt in dry years following below normal years) may be met by operating the SMSCG intermittently throughout the summer-fall. The required days of SMSCG operations (Table 9-A) need not be on consecutive days. As a result, this action is likely to extend beyond the required number of days of SMSCG operations to maximize benefits to DS. Project operations shall be consistent with the operations described in the Summer-Fall Action Plan from June – October each year. Permittee shall meet and confer with CDFW within thirty days of the effective date of this ITP to determine actions to implement June – August to</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>improve Delta smelt habitat to the maximum extent feasible, including the possibility of operating the SMSCG. The requirements described in this Condition shall begin with the 2021 water year.</p> <p>Permittee shall:            Within 30 days of the effective date of this ITP, convene a Delta Coordination Group (two representatives each from DWR, Reclamation, USFWS, NMFS and CDFW and one representative each from the CVP water contractors and SWP water contractors) to select a SDM model and complete initial model runs (and annual model runs thereafter) testing various approaches to satisfying environmental and biological goals, based on the criteria described in Table 9-A, monitoring and science, and additional actions, if available, such as DS food enhancement</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>actions (see Section 3.9.1 in the Project Description and Section 5.3.3 in the FEIR).</p> <p>Distribute a meeting agenda to group members at least four working days prior to each Delta Coordination Group meeting.</p> <p>Record and distribute regular meeting notes within two working days of each Delta Coordination Group meeting to group members for review.</p> <p>Incorporate member comments and post final notes on a publicly available website.</p> <p>Before April 15, develop a draft Summer-Fall Action Plan in collaboration with the Delta Coordination Group accounting for forecasted hydrology and temperatures over the summer and fall that describes:</p> <p>How planned operations are expected to meet the criteria in Table 9- A based on the anticipated water year type;</p> <p>Planned operations of the</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>SMSCG if the group anticipates an above normal, below normal, or dry water year, including whether the SMSCG operations are anticipated to be conducted pursuant to the Voluntary Agreements or by Permittee independently;</p> <p>A schedule for applying the Additional 100 TAF as described in the CDFW-approved Delta Outflow Operations Plan, if applicable;</p> <p>Planned studies and monitoring during the planned Summer-Fall Action Plan to improve understanding of DS summer-fall habitat and survival during this time period (see Conditions of Approval 7.6.4 and 9.1.3.3);</p> <p>A schedule for regular meetings and coordination between CDFW and Permittee throughout the implementation of the Summer-Fall Action Plan each year;</p> <p>Habitat conditions expected to be achieved through use of the</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>Additional 100 TAF (Condition of Approval 8.19) as described in the CDFW-approved Delta Outflow Operations Plan to supplement Delta outflow during the spring, summer, or fall and further improve DS habitat conditions beyond those required through operations criteria governing X2 and SMSCG operations included in Table 9-A;</p> <p>Hypotheses to be tested through ongoing monitoring and scientific investigations, the suite of actions and operations conducted to test the hypotheses, and the expected outcomes; and</p> <p>Information learned from data and prior year Summer-Fall Action Reports.</p> <p>Submit the draft Summer-Fall Action Plan to the Delta Coordination Group and work collaboratively to address comments and prepare a final report no later than May 15.</p> <p>No later than December 31</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>annually, Permittee shall submit a draft Summer- Fall Action Report to the Delta Coordination Group that:</p> <ul style="list-style-type: none"> <li>Synthesizes results from abiotic and biotic monitoring conducted during the prior summer-fall season;</li> <li>Synthesizes results from actions conducted as a part of the Summer-Fall Action Plan including scientific research and additional summer-fall food actions;</li> <li>Describes Project operations (including south Delta exports and dates of SMSCG operations) implemented to comply with the final Summer-Fall Action Plan for the prior water year;</li> <li>Includes all raw data from monitoring efforts conducted as a part of the Summer-Fall Action;</li> <li>Includes the criteria required in Table 9-A and summaries of monitoring data demonstrating</li> </ul>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>whether criteria were met through planned operations. Submit a final Summer-Fall Action Report to the Delta Coordination Group that incorporates comments and edits from CDFW prior to February 28 each year.</p> <p>Each year, the Delta Coordination Group shall: Collaboratively assess forecasted hydrologic conditions, precipitation and temperature forecasts, and review available information regarding the distribution and abundance of DS and LFS prior to March 15.</p> <p>Use a SDM model to analyze the environmental and biological goals based on the criteria described in Table 9-A, proposed DS food enhancement summer-fall actions (see Section 3.9.1 in the Project Description and Section 5.3.3 of the FEIR), and make</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>predictions regarding the potential outcomes for various implementation scenarios. This structured decision-making process shall be used to inform the Summer-Fall Action Plan prepared each year.</p> <p>Review draft Summer-Fall Action Plan prior to May 1.</p> <p>Collaboratively review available monitoring data and results from scientific studies following the completion of a Summer-Fall Action.</p> <p>Review the draft Summer-Fall Action Report and provide comments to Permittee to assist in developing a final report prior to February 28.</p> <p>Use the results from prior year reports to inform the subsequent SDM modeling exercise and develop future Summer-Fall Action Plans.</p> <p>The Summer-Fall Action shall be included in the Four-Year Reviews under the Adaptive</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
9.1.3.2	<p>Management Program (Attachment 2), including the SDM model used to develop the annual Summer-Fall Action Plan.</p> <p>If, in a given year, CDFW does not approve the Summer-Fall Action Plan developed by the Delta Coordination Group, CDFW may develop a new Summer-Fall Action Plan, consistent with the parameters of Conditions of Approval 8.19, 8.20, 9.1.3, 9.1.3.1, and 9.1.3.2 and Table 9-A, and submit it to Permittee prior to June 1. Permittee shall operate the Project consistent with the CDFW-developed Summer-Fall Action Plan beginning June 1.</p> <p><u>Summer-fall Delta Smelt Habitat During Successive Dry Years</u>. Permittee shall operate the Project to enhance DS summer-fall habitat as described in Conditions of Approval 9.1.3.1, except if the</p>	Throughout the term of this ITP.	There has not been a need to implement this Condition yet.

Condition	Mitigation Measure	Implementation Schedule	Status
9.1.3.3	<p>current water year is dry and was preceded by a dry or critical water year. If a dry water year was preceded by a dry or critical water year, Permittee shall confer with CDFW prior to April 1 to collaboratively develop a plan for June through October to enhance DS habitat to the maximum extent practicable. Permittee shall evaluate their ability to operate the SMSCG during the June – September time period and implement other appropriate actions to enhance DS habitat.</p> <p><u>Improved Monitoring in Grizzly Bay</u>. Permittee shall convene the Smelt Monitoring Team within 60 days of the effective date of this ITP to collaboratively develop a draft Grizzly Bay Monitoring Plan to identify and implement three additional monitoring stations and improve measurement of temperature, salinity, turbidity, and other relevant abiotic</p>	Throughout the term of this ITP.	Addition of new monitoring stations in Grizzly Bay is underway by DWR. The proposed approach was summarized in a complete SMSCG Monitoring Plan that was submitted to DFW and reviewed by many other groups, including IEP.

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>factors in areas expected to be influenced by planned operations of the SMSCG in the summer and fall. At least one of these new stations shall be sited in the western margin of Grizzly Bay near the mouth of Montezuma Slough. Permittee shall submit the draft Grizzly Bay Monitoring Plan to CDFW and the IEP Science Management Team (SMT) for review and comments. After CDFW and IEP SMT review, Permittee shall prepare a final Grizzly Bay Monitoring Plan to deploy, maintain, and fund these additional monitoring stations within nine months of the effective date of this ITP and submit the final Grizzly Bay Monitoring Plan to CDFW for review. If approved by CDFW, Permittee shall implement the final Grizzly Bay Monitoring Plan and incorporate data from new monitoring stations into annual Summer-Fall Action data</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
9.1.4	<p>collection, planning and reporting processes within one year of the effective date of this ITP.</p> <p><u>Rio Vista Estuarine Research Station</u>. Permittee shall provide 66% of the total funding required during the term of this ITP to construct the Rio Vista Estuarine Research Station (RVERS) to provide long-term support for Bay-Delta science and research to enhance the understanding of Covered Species ecology. RVERS shall be constructed in conjunction with the USFWS Fish Technology Center, a research facility for cultured fish and a potential future home for Delta smelt refuge populations.</p>	Throughout the term of this ITP.	<p>Highlights of progress during WY 2020 include the following:</p> <p>Establishment of Rio Vista Estuarine Research Station Educational Outreach Program for Delta community.</p> <p>Development of a Request for Proposals package. Currently, future agency tenants are providing input to DGS and STANTEC to develop performance criteria for the proposed facility.</p>
9.2.1	<p><u>Mitigation for Impacts Associated with Project Operations**</u>. Permittee shall provide funding toward at least one restoration project annually, identified in coordination with CDFW,</p>	Throughout the term of this ITP.	<p>DWR and CDFW, initially, met to discuss this Condition on August 31, 2020.</p> <p>DWR developed a list of potential projects and followed up to discuss specific projects on September 15.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>NMFS, USFWS, Reclamation and other entities undertaking restoration and enhancement in the Sacramento River watershed. Permittee shall make its first funding payment toward one or more approved restoration projects no later than April 1, 2021. A funding commitment for a larger project that extends over multiple years will satisfy the annual funding requirement if approved by CDFW. Permittee shall fund a total of \$20,000,000 for restoration projects over the term of the ITP as approved by CDFW. The selected restoration projects shall provide one or more of the biological benefits described below to either CHNWR or -CHNSR, or both species, in the Sacramento River watershed upstream of the Delta, subject to CDFW's approval and determination that the funding required by this Condition, on the whole,</p>		<p>DWR submitted a minor amendment request that included a 6-month extension on funding the first project in accordance with this Condition to April 1, 2021. A primary reason for the minor amendment request was to provide ample time to select an appropriate project for funding under this Condition. CDFW issued the ITP amendment on October 19, 2020.</p> <p>Additional follow-up discussions were held on October 26 and November 14 to narrow down the list of potential projects.</p> <p>A meeting was convened on December 16 to learn more about the Willow Bend Project on the Sacramento River.</p> <p>Next DWR and CDFW team meeting is scheduled for January 5, 2021.</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>will result in benefits to both species, as compensatory mitigation for impacts associated with Project operations. Larger restoration projects may be carried over multiple years. Restoration projects shall align with CHNWR and CHNSR recovery needs and be guided by information in the Salmon Resiliency Strategy.</p> <p><i>Biological Benefits of Improved Juvenile Upstream Rearing Habitat:</i> Channelization of rivers to manage flood risk and convert wildlife habitat to agricultural use has eliminated 95% of riparian and floodplain wetland habitat in the Central Valley. Historically, these habitats benefited rearing CHNWR and CHNSR by providing increased primary productivity and prey availability, refuge from predators, respite from high flows, and efficient locations to</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>feed. These benefits allow for increased growth of juvenile CHNWR and CHNSR, which may be reflected in higher adult return rates. Remaining riparian and floodplain wetland habitat in the Sacramento and San Joaquin river basins is largely unavailable for rearing juvenile CHNWR and CHNSR due to the reduced frequency and duration of seasonal over-bank flooding.</p> <p>Restoring connectivity of floodplains with adjacent streams increases the available habitat that is inundated with the frequency and duration of suitable floodplain rearing habitat. This connectivity with adjacent streams is critical to provide volitional entry and exit for rearing juveniles that cue migration based on the hydrograph of the river. Projects to improve rearing habitat for juvenile salmonids are limited in scope by</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>engineered leveed waterways, but primarily include breaching or setbacks of levees to create bench habitat. These habitats provide shallow water foraging and refuge habitat for rearing juveniles. Other projects include channel margin enhancement that focuses on improving channel geometry and restoring riparian, marsh, and mudflat habitats on the water side of levees. Similar to breaching and setbacks of levees, channel margin enhancement is expected to increase rearing habitat through enhancement and creation of additional shallow water habitat that will provide foraging opportunities and refuge from unfavorable hydraulic conditions and predation.</p> <p>Restoring juvenile rearing habitat is intended to increase habitat diversity and complexity, which can lead to</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p data-bbox="380 277 825 423">population resiliency during times of increased temperatures and water demands.</p> <p data-bbox="380 488 879 1408"><i>Biological Benefits of Improved Adult Passage:</i> Passage barriers exist in many forms, including low-flow road crossings, bridges, flow control structures, and dams. Many of these structures require minimum flows to allow passage; however, flows are often limited due to high water demands. Each in-water structure within the Sacramento and San Joaquin river basins can cause delays in upstream passage for CHNWR and CHNSR. CHNWR and CHNSR may sustain injuries or experience pre-spawn mortality due to stress as they attempt to navigate barriers. Loss of upstream spawners can lead to a reduction in genetic diversity as well as a decrease in</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p data-bbox="380 277 695 315">juvenile production.</p> <p data-bbox="380 370 884 1404">The decline in CHNWR and CHNSR populations increased following the construction of major water project facilities and development projects in the mid- 1900s. Many of these projects impede or completely block upstream migration of CHNWR and CHNSR to historic cold-water spawning and rearing habitats. This has led to a reduction in available spawning habitat (e.g., suitable spawning and egg incubation temperatures and flow) and has increased competition and hybridization between CHNSR and CHNFR. As a result of reduced spawning habitat CHNWR and CHNSR are more vulnerable to serious effects of elevated, and potentially lethal, temperatures during egg incubation that can occur in most years. The frequency of increased temperatures is expected to</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>increase with increased water demands and climate change, necessitating the evaluation of passage above known barriers.</p> <p>Improving fish passage throughout the Sacramento and San Joaquin river basins will reduce migratory delays and loss of adult CHNWR and CHNSR at barriers and can enhance ecosystem function through improved habitat connectivity.</p> <p>After consulting with Reclamation, USFWS, and NMFS, Permittee and CDFW shall work to collaboratively select the restoration projects to be funded to restore and enhance either CHNWR or CHNSR, or both species, spawning and rearing habitat on the Sacramento River and its tributaries. CDFW acknowledges that planning, environmental review, and permitting may be necessary</p>		



Condition	Mitigation Measure	Implementation Schedule	Status
	<p>for restoration project implementation and funding under this Condition of Approval may be used for these project development activities. In some cases, implementation may be in the form of funding a restoration project in whole or in part to supplement restoration projects being implemented by others, when appropriate and approved by CDFW and when CDFW determines that funding under this Condition of Approval will ensure additive benefits to the species, that would not occur in the absence of Permittee's contribution. However, under no circumstances shall any funds under this Condition of Approval be used to fund any other regulatory permitting requirement other than those established in this ITP. Final allocation of this funding shall be subject to CDFW approval each year.</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
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If, as described in Section 1.6 of the Project description and as part of the Voluntary Agreement Review (Section 3.13.9), the Voluntary Agreements are approved and Permittee, or its SWP Contractors acting on Permittee's behalf, conduct habitat restoration for CHNWR and CHNSR, Permittee and CDFW shall collaborate to review the Project in light of the final form of the Voluntary Agreements. Consistent with Condition of Approval 5, CESA, and CESA's implementing regulations, Permittee and CDFW will utilize results from the review to consider whether the Voluntary Agreements' implementation modifies the scope or nature of the Project, or the circumstances under which it is implemented, to an extent that warrants a permit amendment.

\_\*\*Language updated in 2020

Condition	Mitigation Measure	Implementation Schedule	Status
9.2.2	<p data-bbox="380 277 638 310">ITP amendment</p> <p data-bbox="380 321 852 435"><u>Implement the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project.</u></p> <p data-bbox="380 440 884 1398">Within 6 years of the effective date of this ITP Permittee shall implement the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project (Salmonid Habitat and Fish Passage Project). The objective of the Salmonid Habitat and Fish Passage Project is to enhance floodplain rearing habitat and fish passage in the Yolo Bypass by implementing the Project as described in in Alternative 1 of the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Final EIR/EIS. This project will benefit CHNWR, CHNSR, Central Valley steelhead, and the Southern DPS of North American green sturgeon to benefit CHNWR, CHNSR, Central Valley steelhead, and the Southern DPS of North American green sturgeon.</p>	<p data-bbox="915 321 1150 472">Within 6 years of the effective date of the ITP.</p>	<p data-bbox="1178 321 1892 781">DWR is planning to begin site preparation construction efforts in the Fall of 2021 and complete construction the following year for the Yolo Bypass Salmonid Habitat Restoration and Fish Passage (Big Notch) Project. DWR began conducting monthly multiagency coordination meetings with CDFW, CVFPB, CVRWQCB, SWRCB, USACE and USFWS in May 2020. Project permit applications were submitted in June 2020 and are on track to be received by August of 2021. Below are project milestones:</p> <p data-bbox="1178 841 1289 873">Design</p> <p data-bbox="1178 889 1772 922">35% design completed — May 2020.</p> <p data-bbox="1178 938 1772 1003">Geotechnical design data collected — November 2020.</p> <p data-bbox="1178 1019 1843 1084">65% plans and specifications — February 15, 2021.</p> <p data-bbox="1178 1101 1591 1133">Final design — July 2021.</p> <p data-bbox="1178 1149 1304 1182">Permits</p> <p data-bbox="1178 1198 1881 1230">Monthly multiagency coordination meetings</p> <p data-bbox="1178 1247 1205 1279">—</p> <p data-bbox="1178 1295 1346 1328">May 2020.</p> <p data-bbox="1178 1344 1881 1377">Permit applications submitted — June 2020.</p> <p data-bbox="1178 1393 1871 1425">Received 401 Water Quality Certification —</p>

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>The first objective of the Salmonid Habitat and Fish Passage Project is to increase the availability of floodplain rearing habitat for juvenile CHNWR, CHNSR, and Central Valley steelhead. This action can also improve conditions for Sacramento splittail and Central Valley fall-run Chinook salmon. Specific biological goals include:</p> <ul style="list-style-type: none"> <li>Improve access to seasonal habitat through volitional entry</li> <li>Increase access to and acreage of seasonal floodplain fisheries rearing habitat</li> <li>Reduce stranding and presence of migration barriers</li> <li>Increase aquatic primary and secondary biotic production to provide food through an ecosystem approach</li> </ul>		<p>September 2020.  Delta Stewardship Council Consistency Determination Certification  — January 2021.  CDFW 1600 and ITP —  February 2021.  USACE 404 and 408 —  August 2021.  CVFPB Encroachment Permit — August 2021.  Real Estate  Completed real estate due diligence planning —  September 2020.  Begin real estate acquisition process —  January 2021.  Construction  Site preparation —  September 2021.  Begin construction — May 2022.</p>
	<p>The second objective of the Salmonid Habitat and Fish Passage Project is to reduce</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>migratory delays and loss of fish at Fremont Weir and other structures in the Yolo Bypass. Specific biological goals include:</p> <p>Improve connectivity within the Yolo Bypass for passage of salmonids and green sturgeon</p> <p>Improve connectivity between the Sacramento River and the Yolo Bypass to provide safe and timely passage for:</p> <p>Adult CHNWR between mid-November and May when water surface elevations in the Sacramento River are amenable to fish passage</p> <p>Adult CHNSR between January and May when elevations in the Sacramento River are amenable to fish passage</p> <p>Adult California Central Valley steelhead in the event their presence overlaps with the defined seasonal window for other target species when elevations in the Sacramento River are amenable to fish</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p>passage</p> <p>Adult Southern DPS green sturgeon between February and May when elevations in the Sacramento River are amenable to fish passage.</p>		
	<p>Primary Project activities include the construction of a notch in Fremont Weir located in the Northern Yolo Bypass, including the construction of the following features:</p> <p><i>Intake channel:</i> The intake channel shall connect the Sacramento River to the proposed headworks structure at the appropriate elevation to facilitate an upstream fish passage facility for adult fish and for passing rearing habitat flows and juvenile salmonids.</p> <p><i>Headworks structure:</i> The headworks structure shall bisect the existing Fremont Weir on the east side and would control the diversion of Project flow from the</p>		

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	<p>Sacramento River into the Yolo Bypass. It would also serve as the primary upstream fish passage facility for adult fish and the primary facility for passing rearing habitat flows and juvenile salmonids into the Yolo Bypass. The components of the headworks shall include a concrete control structure, an upstream vehicular bridge crossing, and a concrete channel transition, which transitions the rectangular sides of the control structure to the side channel slopes of the transport channel.</p> <p><i>Transport channel:</i> The transport channel shall serve as the primary facility for upstream adult fish passage between the existing Tule Pond and the headworks structure. It would also serve as the primary channel for conveying juvenile salmonids and rearing habitat flows from the headworks structure to the existing Tule Pond.</p>		

Condition	Mitigation Measure	Implementation Schedule	Status
	<p><i>Downstream channel improvements:</i> Improvements shall be made to the existing channel that extends from the Tule Pond outlet to the beginning of Tule Canal. The improvements would be made to facilitate upstream adult fish passage between the existing Tule Canal and Tule Pond.</p> <p>The location of each of these facilities is described in Alternative 1 in the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Final EIR/EIS. The project also includes a supplementary fish passage structure located on west side of Fremont Weir.</p>		

Not included: 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.4, 9.4.1, 9.4.2, 9.4.3, 9.4.4, 9.4.5, 9.4.6, 9.4.7, 9.4.8, 9.4.9, 9.4.9.1, 9.4.9.2, 9.4.9.2.1, 9.4.9.2.2, 9.4.9.2.3, 9.4.10, 9.5.





