Attachment 3

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)
CALIFORNIA ENDANGERED SPECIES ACT

INCIDENTAL TAKE PERMIT NO. 2081-2023-054-00-A1

PERMITTEE: **California Department of Water Resources**

PROJECT: **Long-term Operation of the State Water Project in the Sacramento-San Joaquin Delta**

PURPOSE OF THE MMRP

The purpose of the MMRP is to ensure that the impact minimization and mitigation measures required by the Department of Fish and Wildlife (CDFW) for the above-referenced Project are properly implemented, and thereby to ensure compliance with section 2081(b) of the Fish and Game Code and section 21081.6 of the Public Resources Code. A table summarizing the mitigation measures required by CDFW is attached. This table is a tool for use in monitoring and reporting on implementation of mitigation measures, but the descriptions in the table do not supersede the mitigation measures set forth in the California Incidental Take Permit (ITP) and in attachments to the ITP, and the omission of a permit requirement from the attached table does not relieve the Permittee of the obligation to ensure the requirement is performed.

OBLIGATIONS OF PERMITTEE

Mitigation measures must be implemented within the time periods indicated in the table that appears below. Permittee has the primary responsibility for monitoring compliance with all mitigation measures and for reporting to CDFW on the progress in implementing those measures. These monitoring and reporting requirements are set forth in the ITP itself and are summarized at the front of the attached table.

VERIFICATION OF COMPLIANCE, EFFECTIVENESS

CDFW may, at its sole discretion, verify compliance with any mitigation measure or independently assess the effectiveness of any mitigation measure.

TABLE OF MITIGATION MEASURES

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
GENERAL PROVISIONS					
1	Designated Representative. Within 30 days 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 30 days of 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.	ITP Condition # 6.1	Within 30 days of the effective date of this ITP	Permittee	
2	Designated Biologist(s) and/or Biological Monitor(s). Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information of the Designated Biologist(s) and Biological Monitor(s) within 30 days of the effective date of this ITP. Permittee shall ensure that the Designated Biologist(s) and Biological Monitor(s) are knowledgeable and experienced in the biology and natural history of the Covered Species. The Designated Biologist(s) and Biological Monitor(s) shall be responsible for monitoring Covered Activities described in Condition of Approval 7.6 to help minimize and fully mitigate 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(s) and Biological Monitor(s) in writing before starting Covered Activities described in Condition of Approval 7.6 and shall also obtain approval in advance, in writing, if the Designated Biologist(s) or Biological Monitor(s) must be changed.	ITP Condition # 6.2	Within 30 days of the effective date of this ITP	Permittee	
3	Designated Biologist Authority. To ensure compliance with the Conditions of Approval of this ITP, the Designated Biologist shall immediately stop any activity that does not comply with this ITP and/or order any reasonable measure to avoid the unauthorized take of an individual of the Covered Species. Permittee shall provide unfettered access to the Project Site and otherwise facilitate the Designated Biologist in the performance of his/her duties. If the Designated Biologist is unable to comply with the ITP, then the Designated Biologist shall notify the CDFW Representative immediately. Permittee shall not enter into any agreement or contract of any kind, including but not limited to non-disclosure agreements and confidentiality agreements, with its contractors and/or the Designated Biologist that prohibit or impede open communication with CDFW, including but not limited to providing CDFW staff with the results of any surveys, reports, or studies or notifying CDFW of any non-compliance or take. Failure to notify CDFW of any non-compliance or take or injury of a Covered Species as a result of such agreement or contract may result in CDFW taking actions to prevent or remedy a violation of this ITP.	ITP Condition # 6.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
4	Education Program. Permittee shall conduct an education program for all persons employed or otherwise working at the BSPP, CCF, SMSCG, and the Skinner Fish Facility before performing any work. The program shall consist of a presentation from the Designated Biologist that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in this ITP. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the Project Area. Permittee shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the Project Area. Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.	ITP Condition # 6.4	Throughout the term of this ITP	Permittee	
5	Covered Activities Training Documentation. The Designated Biologist(s) and Biological Monitor(s) shall maintain training documentation on-site in either hard copy or digital format throughout the term of the ITP at the BSPP, CCF, SMSCG, and Skinner Fish Facility. Documentation shall include a copy of this ITP with attachments and a list of signatures of all personnel who have successfully completed the education program. Permittee shall ensure a copy of the training documentation is available for review at each site upon request by CDFW.	ITP Condition # 6.5	Throughout the term of this ITP	Permittee	
6	Trash Abatement. Permittee shall initiate a trash abatement program within six months of issuance of this ITP, and shall continue the program for the duration of the ITP. Permittee shall ensure that trash and food items are contained in animal-proof containers and removed, ideally at daily intervals but at least once a week, to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.	ITP Condition # 6.6	Within six months of the effective date of this ITP	Permittee	
7	Hazardous Waste. Permittee shall immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. Permittee shall properly contain and dispose of any unused or leftover hazardous products off-site.	ITP Condition # 6.7	Throughout the term of this ITP	Permittee	
8	CDFW Access. Permittee shall provide CDFW staff with reasonable access to the Project 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.	ITP Condition # 6.8	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
9	Refuse Removal. Upon completion of Covered Activities, Permittee shall remove and properly dispose of all weeds and sediment removed as a part of Project Activities.	ITP Condition # 6.9	Throughout the term of this ITP	Permittee	
MONITORING, NOTIFICATION, SCIENCE AND REPORTING PROVISIONS					
10	Notification of Non-Compliance. The Designated Representative shall immediately notify CDFW if 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/or the MMRP. The Designated Representative shall follow up within 24 hours with a written report to CDFW describing, in detail, any non-compliance with this ITP and suggested measures to remedy the situation.	ITP Condition # 7.1	Throughout the term of this ITP	Permittee	
11	Annual Status Report. 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. Each ASR shall summarize information from the prior water year October 1 through September 30 and 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 inspection and maintenance of fish protective equipment including equipment at Skinner Fish Facility, BSPP, and RRDS; (4) an assessment of the effectiveness of each completed or partially completed Condition of Approval in avoiding, minimizing, and mitigating Project impacts; (5) all available information about Project-related incidental take of the Covered Species; and (6) information about other Project impacts on the Covered Species.	ITP Condition # 7.2	Throughout the term of this ITP	Permittee	
12	CNDDB Observations. The Designated Biologist shall submit all observations of Covered Species outside of SWP salvage operations to CDFW's California Natural Diversity Database (CNDDB) within 60 calendar days of the observation and the Designated Biologist shall include copies of the submitted forms with the next ASR.	ITP Condition # 7.3	Throughout the term of this ITP	Permittee	
13	Final Mitigation Report. No later than 45 days after completion of all mitigation measures, 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) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation	ITP Condition # 7.4	No later than 45 days after completion of all mitigation measures	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and (8) any other pertinent information.				
14	Mitigation Status Report. Ninety days prior to the expiration of this ITP, Permittee shall provide CDFW with a Mitigation Status Report. The Designated Biologist shall prepare the Mitigation Status 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) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) 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 (8) any other pertinent information. This report may satisfy the Final Mitigation Report requirement of Condition of Approval 7.4 if all mitigation measures have been completed at the time of its submittal and approval by CDFW.	ITP Condition # 7.4.1	90 days prior to the expiration date of this ITP	Permittee	
Skinner Fish Facility and Clifton Court Forebay Operations.		7.5			
15	Facility Outages and Reporting. To ensure long-term reliability of facility operations, Permittee may conduct annual full facility outages at the Banks Pumping Plant, Skinner Fish Facility, and CCF, consisting of up to one-week, anytime between the last week of April through mid-May (Spring Maintenance and Inspection; Condition of Approval 8.14.1), a one-week outage anytime between the last week of June through the first week of July (Herbicide and Algaecide Treatment; Condition of Approval 8.14.2), and a one-week outage anytime in October (fall herbicide treatment; Condition of Approval 8.14.2). Permittee shall submit an annual schedule to CDFW for review prior to any scheduled outages and notify CDFW two weeks prior to initiating any scheduled outages at the Banks Pumping Plant, Skinner Fish Facility, and CCF. Permittee shall work collaboratively with CDFW to address comments when developing a full facility outage plan. If Permittee needs to deviate from the annual schedule, Permittee shall provide an updated schedule to CDFW for review and consideration 30 days prior to the planned outage. Following completion of the annual schedule, Permittee shall submit to CDFW written documentation describing compliance with the final schedule (Condition of Approval 7.2).	ITP Condition # 7.5.1	Throughout the term of this ITP	Permittee	
16	Skinner Delta Fish Protective Facility Improvement Process. To refine the Skinner Fish Facility fish sampling procedures and infrastructure for improvements in accuracy and reliability of data and fish survival, Permittee shall submit a draft Debris Management Effectiveness Study Plan to CDFW for approval within one year of the effective date of this ITP. The Debris Management Effectiveness Study Plan shall include a timeline for study completion and shall be designed to monitor the continued implementation of fall herbicide	ITP Condition # 7.5.2	Within one year of the effective date of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	application to CCF and to evaluate its effectiveness on debris management procedures. The Debris Management Effectiveness Study Plan shall also include a structured decision-making (SDM) process with participation from Permittee, CDFW, USFWS, and NMFS to be used for alternatives development and design criteria development to further improve sampling procedures and infrastructure at the Skinner Fish Facility. Within 60 days of receiving CDFW review of the draft plan, Permittee shall address CDFW comments and finalize the Debris Management Effectiveness Study Plan for CDFW approval and implementation. If the outcomes from the Debris Management Effectiveness Study Plan identify feasible additional improvements for sampling procedures or infrastructure that require further development and/or prioritization, Permittee shall implement the SDM process identified in the Debris Management Effectiveness Study Plan to develop requirements for additional improvements, including design criteria and/or procedures to implement the study recommendations (e.g. alternative methods of managing fish counts during periods of heavy debris and/or large numbers of fish). At the conclusion of the SDM process, Permittee shall submit the SDM recommendations to CDFW for review and approval. Permittee shall implement SDM recommendations within two years of CDFW's approval. In the interim, the historical count length reduction procedures for managing heavy debris and/or large numbers of fish will be used.				
Barker Slough Pumping Plant Maintenance.		7.6			
17	Biological Monitoring of Maintenance Activities. Permittee shall provide a Biological Monitor to observe and collect information on Covered Species during all maintenance Covered Activities associated with the BSPP. Biological Monitors are required for Conditions of Approval 7.6.2, 7.6.3, and 7.6.4 as further described in those conditions. At a minimum, biological monitoring shall consist of (1) a collection of a water sample from the BSPP forebay within one day of scheduled maintenance activities (e.g., at the Barker Slough water quality station or in front of the BSPP fish screens) for later eDNA analysis, or (2) the inspection of the removed aquatic vegetation or sediment for Covered Species, or (3) both. Permittee shall provide the results of the eDNA analysis in the summary of the maintenance activities each year. Permittee shall submit an annual summary report of data collected by the Biological Monitor(s) and shall include summaries of the maintenance activities conducted each year to CDFW in accordance with the ASR (Condition of Approval 7.2). After the first annual reporting process, Permittee may meet with CDFW, USFWS, and NMFS to discuss continued monitoring of BSPP maintenance activities. Changes to the minimum requirements for biological monitoring shall be subject to CDFW approval.	ITP Condition # 7.6.1	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
18	Fish Screen Aquatic Weed Raking. Permittee may conduct aquatic weed management at the BSPP fish screens year-round using a weed rake, consisting of an aluminum frame with grappling hooks, lowered by a boom truck. Permittee shall have a CDFW approved Biological Monitor on site during weed raking activities to monitor for the presence of Covered Species when the volume of aquatic vegetation removed is more than 3 cubic yards per day and if either of the following conditions occur: • A larval (< 25mm fork length) DS or LFS is detected in the most recent survey at 20-mm Survey station 720, or • A juvenile Chinook Salmon or steelhead (as an indicator of Chinook salmon presence) is collected in Yolo Bypass Fish Monitoring Program (YBFMP) sampling, specifically: o (November-December) Collection of juvenile Chinook Salmon or steelhead in the most recent seining at YBFMP sites BL 1-5 (located in the Lower Yolo Bypass toe drain). The YBFMP seining at sites BL 1-5 is conducted biweekly year-round; o (January-June) Collection of juvenile Chinook Salmon or steelhead within the past five days in the YBFMP rotary screw trap (located in the Lower Yolo Bypass toe drain). The YBFMP rotary screw trap is operated on weekdays from January 1 through June 30.	ITP Condition # 7.6.2	Throughout the term of this ITP	Permittee	
19	Aquatic Weed Harvesting. Permittee may conduct aquatic weed management in the BSPP forebay year-round using a boat-mounted aquatic weed harvester. Permittee shall have a CDFW approved Biological Monitor on site during weed harvesting activities to monitor for the presence of Covered Species when the volume of aquatic vegetation removed is more than 3 cubic yards per day and if the following condition occurs: • A juvenile Chinook Salmon or steelhead (as an indicator of Chinook Salmon presence) is collected in YBFMP sampling, specifically: o (November-December) Collection of juvenile Chinook Salmon or steelhead in the most recent seining at YBFMP sites BL 1-5 (located in the Lower Yolo Bypass toe drain). The YBFMP seining at sites BL 1-5 is conducted biweekly year-round; o (January-June) Collection of juvenile Chinook Salmon or steelhead within the past five days in the YBFMP rotary screw trap (located in the Lower Yolo Bypass toe drain). The YBFMP rotary screw trap is operated on weekdays from January 1 through June 30.	ITP Condition # 7.6.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
20	Sediment Removal. Permittee may conduct sediment removal in the trap and concrete apron in front of the BSPP fish screens and in the pump wells behind the BSPP fish screens using a suction dredge. Sediment removal from within the pump wells may occur as needed, year-round. Permittee shall have a CDFW approved Biological Monitor onsite during BSPP sediment removal activities in the trap and concrete apron to monitor for the presence of Covered Species if either of the following conditions occur: • A larval (< 25mm fork length) DS or LFS is detected in the most recent survey at 20-mm Survey station 720, or • A juvenile Chinook Salmon or steelhead (as an indicator of Chinook Salmon presence) is collected in YBFMP sampling, specifically: ○ (November-December) Collection of juvenile Chinook Salmon or steelhead in the most recent seining at YBFMP sites BL 1-5 (located in the Lower Yolo Bypass toe drain). The YBFMP seining at sites BL 1-5 is conducted biweekly year-round; ○ (January-June) Collection of juvenile Chinook Salmon or steelhead within the past five days in the YBFMP rotary screw trap (located in the Lower Yolo Bypass toe drain). The YBFMP rotary screw trap is operated on weekdays from January 1 through June 30.	ITP Condition # 7.6.4	Throughout the term of this ITP	Permittee	
21	South Delta Temporary Barriers Project Reporting. Permittee shall obtain written approval from CDFW prior to full operations of the South Delta Temporary Barriers Project each year. Full operations commence after the last of the flap gates at either the Middle River Barrier, Old River Barrier, or Grant Line Canal Barrier is untied and all flap gates of the barrier are tidally operated. If CDFW does not approve full operations, Permittee shall maintain intermediate operations of the barriers, leaving one flap gate on each barrier tied open and not subject to tidal operation. Permittee shall not raise the weir elevation of the Middle River, Old River, or Grant Line Canal barriers for stage maintenance by one foot on or after June 15, unless approved by CDFW.	ITP Condition # 7.7	Throughout the term of this ITP	Permittee	
Longfin Smelt Monitoring and Science Requirements.		7.8			
22	Longfin Smelt Science Program. Permittee shall, in coordination with Reclamation, implement science activities identified in the 2020 LFS Science Plan (LFSSP) and this ITP through the term of this ITP; including the development of a mathematical life cycle model in addition to other identified science priorities. The LFS Technical Team will provide technical guidance regarding the LFS Science Program science activities as described in the LFSSP. Updates to the LFSSP shall be subject to CDFW approval before they are	ITP Condition # 7.8.1	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	finalized and implemented. The life cycle model will be used as a quantitative tool to characterize the effects of abiotic and biotic factors on LFS populations. Additional LFS science and monitoring informed by the life cycle modeling efforts will be implemented, as needed through the AMP (Attachment 4).				
23	Winter- and Spring-run Chinook Salmon Monitoring and Science Requirements. 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, as a part of the AMP (Attachment 4), shall initiate, fund, and implement new and ongoing monitoring and science. This new and ongoing monitoring and science shall include the elements identified in Conditions of Approval 7.9.1, 7.9.2, 7.9.3, 7.9.4, 7.9.5, 7.9.6, and 7.9.7 and shall be combined with existing surveys and data to: (1) continue to build knowledge regarding the biology, ecology, 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 JPE and associated operational criteria that may be proposed to replace or augment Condition of Approval 8.4.5 as a part of the AMP (Attachment 4) and a subsequent amendment to this ITP.	ITP Condition # 7.9	Throughout the term of this ITP	Permittee	
24	Alternative Loss Estimation Pilot Study. Permittee shall, as part of the AMP (Attachment 4) and in coordination with Reclamation, further refine the parameters of the Alternative Loss Equation software tool for estimating CHNWR and CHNSR loss at the SWP and CVP export facilities by developing an Alternative Loss Pilot Study Implementation Plan to implement the tool in parallel with current loss estimation methods (2018 CDFW loss equation; Attachment 8) and incorporate SDM principles to prioritize loss parameter studies and performance evaluation studies. The goal of the Alternative Loss Estimation Pilot Study is to provide a more accurate estimate of CHNWR and CHNSR loss, and loss parameters, at the SWP and CVP export facilities while understanding the utility of an alternative method relative to the existing method. Within six months of the effective date of this ITP, Permittee shall, in collaboration with Reclamation, conduct a knowledge transfer and methods workshop for the Alternative Loss Equation software tool with participation from Permittee, CDFW, Reclamation, USFWS, NMFS, SWP Contractors, and CVP Contractors. Following the knowledge transfer and methods workshop, Permittee shall, in coordination with Reclamation, establish the Alternative Loss Equation Technical Team, a subteam of the Central Valley Fish Facility Review Team, including but not limited to representatives from Permittee, CDFW, Reclamation, USFWS, and NMFS. Within six months of the knowledge transfer and methods workshop, Permittee shall, in coordination with the Alternative Loss Equation Technical Team, develop and submit a	ITP Condition # 7.9.1	Within seven years of the effective date of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	draft Alternative Loss Pilot Study Implementation Plan to the Alternative Loss Equation Technical Team for review and comment. The draft Alternative Loss Pilot Study Implementation Plan shall include: (1) pilot study design; (2) SDM process outline; (3) procedures and timelines for implementing the pilot study and SDM process; (4) target species including CHNWR and CHNSR; (5) interim, draft, and final reporting protocols and meeting schedules; and (6) an assessment of multiple parameters to account for loss including but not limited to, salvage facility outages during louver cleaning or mechanical failures and post-release survival studies for salvaged fish. Within four months of receiving Alternative Loss Equation Technical Team review, Permittee shall submit the final draft Alternative Loss Pilot Study Implementation Plan to the Central Valley Fish Facility Review Team, SaMT, and CDFW for review. Within one month of receiving Central Valley Fish Facility Review Team, SaMT, and CDFW review, Permittee shall finalize the Alternative Loss Pilot Study Implementation Plan for implementation and submit to CDFW for approval. Permittee shall, in coordination with the Alternative Loss Equation Technical Team, implement the Alternative Loss Estimation Pilot Study and complete a prioritization of the pilot study recommendations, including assessments of multiple loss parameters, through SDM procedures, for further implementation. The Alternative Loss Equation Technical Team may utilize an independent peer review to support the SDM process. Within 18 months of CDFW approval of the final Alternative Loss Pilot Study Implementation Plan, Permittee shall, in coordination with Reclamation, implement the Alternative Estimate Pilot Study and submit the prioritized pilot study recommendations to the AMSC for approval. Within seven years of the effective date of this ITP, Permittee shall complete the implementation of the prioritized pilot study recommendations to provide more accurate estimates of CHNWR and CHNSR loss at the SWP and CVP export facilities. Permittee shall, in coordination with Reclamation, update the loss estimation with refinements to the loss estimation parameters and obtain approval by CDFW.				
25	Winter-run Chinook Salmon Machine Learning Model Development. Permittee shall, as part of the AMP (Attachment 4) and in coordination with Reclamation, support and fund the continued refinement of the Winter-run Chinook Salmon Machine Learning Model for use during real-time operations to inform the SaMT and implementation of this ITP. The continued refinement of the Winter-run Chinook Salmon Machine Learning Model will require the established Winter-run Chinook Machine Learning Interagency Team to incorporate genetic-based run-identification loss and monitoring data of CHNWR currently available. The Winter-run Chinook Machine Learning Interagency Team will also develop a CHNWR distribution model to explicitly predict daily juvenile CHNWR migration timing in the Delta using historical long-term monitoring data and environmental variables for SaMT to use by 2026 (Condition of Approval 8.1.2, Attachment 4). The Winter-run Chinook Machine Learning Interagency Team shall develop a modeling	ITP A1 Condition # 7.9.2	Throughout the term of this ITP Develop a CHNWR distribution model by 2026	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	framework that integrates a >10-year dataset of genetically classified CHNWR has been compiled since the development of the Winter-run Chinook Salmon Machine Learning Model. A revised model incorporating these genetic data shall be developed based on the framework used during the development of the existing Winter-run Chinook Salmon Machine Learning Model. Specifically, a new model will be developed using biotic and abiotic variables upstream of the south Delta to predict salvage one or more weeks prior to salvage occurring. In addition to the real-time assessment tool, the Winter-run Chinook Machine Learning Interagency Team shall also provide modeling outputs from the Winter-run Chinook Salmon Machine Learning Model and associated OMR Conversion Tool to SaMT for the implementation of Condition of Approval 8.4.4 to this ITP.				
26	Spring-run Chinook Salmon Juvenile Production Estimate. Permittee shall, as part of the AMP (Attachment 4) and in coordination with Reclamation, support and fund the continued development of a CHNSR Juvenile Production Estimate (CHNSR JPE) framework for SWP and CVP tributaries and the Delta, and from the framework, propose a CHNSR JPE Plan by 2026 for implementation, including an approach for modeling a CHNSR JPE and the monitoring program to support that approach. The CHNSR JPE Plan shall incorporate independent peer review and will be the basis for consideration of any updated entrainment minimization measures described in Conditions of Approval 8.4.5 and 8.4.6 to this ITP. The process to develop the framework and CHNSR JPE Plan shall continue the ongoing effort to develop a CHNSR JPE initiated in 2020 and outlined in the CHNSR JPE Science Plan, the CHNSR JPE Interim Monitoring Plan, the CHNSR JPE Run Identification Research and Initial Monitoring Plan, the CHNSR JPE Data Management Strategy, and the CHNSR JPE Decision Charter. In 2025, Permittee shall: • In coordination with the CHNSR JPE Modeling Subteam and with guidance from the CHNSR JPE Core Team, develop a suite of initial CHNSR JPE models based on available CHNSR data and provide the models to the CHNSR JPE Core Team for review. • Support the efforts of the CHNSR JPE Core Team to develop a CHNSR JPE framework, composed of the selected CHNSR JPE models and the monitoring program required to provide data to calculate an annual CHNSR JPE. • Coordinate with the AMSC and the CHNSR JPE Core Team, to charter and convene an independent peer review panel to provide feedback on the CHNSR JPE Core Team's recommended CHNSR JPE framework. In 2026 Permittee shall: • Following the independent peer review, and in consideration of independent peer review feedback, prepare a draft CHNSR JPE Plan in collaboration with CDFW,	ITP Condition # 7.9.3	Develop a CHNSR JPE framework by 2025 Submit final CHNSR JPE Plan to CDFW and NMFS by 2026 Provide an annual CHNSR JPE estimate and implement the final CHNSR JPE Plan by 2027 Evaluate and implement changes to the CHNSR JPE model suggested by independent peer review (if applicable) by 2030	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	USFWS, and NMFS that describes the approach to calculating a CHNSR JPE and the monitoring and special studies needed to collect the data to calculate a CHNSR JPE annually. The draft CHNSR JPE Plan shall be guided by the CHNSR JPE Core Team SDM process and CHNSR JPE framework recommendation, and by the independent peer review panel's feedback on the CHNSR JPE framework. • Submit the draft CHNSR JPE Plan to the CHNSR JPE Core Team for review and work collaboratively to incorporate CHNSR JPE Core Team comments into the final CHNSR JPE Plan. • No later than six months after the independent peer review, Permittee shall, in coordination with Reclamation, submit the final CHNSR JPE Plan to CDFW and NMFS for review and approval. • Convene the CHNSR JPE Core Team and subteams identified in the CHNSR JPE Science Plan to provide an annual CHNSR JPE estimate, implement the final CHNSR JPE Plan (including monitoring), and ensure all data obtained through long-term monitoring programs are stored in a publicly accessible repository. • Support the efforts of the CHNSR JPE Core Team to evaluate the minimization provided by the Spring-run Chinook Salmon Protection Action and Surrogate Annual Loss Thresholds (Condition of Approval 8.4.5). • Following the evaluation, Permittee, CDFW, Reclamation, and NMFS will meet to consider development of a new or modified Spring-Run Chinook Salmon Protection Action and Surrogate Annual Loss Thresholds (Condition of Approval 8.4.5). Such consideration will be informed by: 1) the final CHNSR JPE Plan 2) independent peer review panel feedback on the CHNSR JPE framework; 3)historical CHNSR monitoring data; 4)new data obtained from the monitoring and special studies needed to collect the data to calculate the CHNSR JPE: (5) CHNSR JPE Core Team review of Condition of Approval 8.4.5; and (6) other relevant information (e.g., implementation of Conditions of Approval 7.9.5 and 7.9.6). Any new or modified CHNSR OMR minimization measure Permittee proposes shall: • Take into account the limitations of the initial CHNSR JPE approach to calculate the CHNSR JPE; • Be an interim approach to be refined as the CHNSR JPE approach evolves and the CHNSR Life Cycle Model (Condition of Approval 7.9.4) is completed; • Anticipate future iterations and refinements of the CHNSR JPE approach; and • Rely more on monitoring data than salvage data from the SWP and CVP export facilities. In 2027, Permittee shall: • In coordination with Reclamation, implement changes to monitoring if recommended through the SR-JPE Core Team SDM process, approved by				

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	CDFW and NMFS through appropriate take authorization for monitoring activities, and informed by stakeholder participation from non-SWP or CVP tributaries. • Support the SR JPE Modeling Subteam to continue to develop and refine the CHNSR JPE model by integrating new data once available and adjusting the modeling approach in collaboration with the CHNSR JPE Core Team and in response to SDM processes conducted by the CHNSR JPE Core Team. As changes are made to the CHNSR JPE Permittee shall consult with CDFW regarding the potential need for an amendment to this ITP (Conditions of Approval 5, 8.4.6). In 2028, Permittee shall: • Coordinate with the AMSC and the CHNSR JPE Core Team, to consider chartering and convening an independent peer review panel to provide feedback on the CHNSR JPE model. In 2029 and 2030, if an independent peer review is convened pursuant to the AMP, Permittee shall: • Convene the CHNSR JPE Core Team to review independent peer review panel feedback, and the CHNSR JPE Core Team will use SDM to evaluate and implement changes to the CHNSR JPE model.				
27	Spring-run Chinook Salmon Life Cycle Model. Permittee shall, as part of the AMP (Attachment 4) and in coordination with Reclamation, support and fund the development of a CHNSR Life Cycle Model (CHNSR LCM) consistent with this Condition of Approval for the purpose of informing management actions to improve Central Valley CHNSR population status. Permittee shall, in coordination with Reclamation, establish an interagency management team (CHNSR LCM Management Team) including representatives from Permittee, CDFW, Reclamation, USFWS, and NMFS, to define the specific management issues and objectives to be addressed by the CHNSR LCM. The AMSC may serve in place of a distinct CHNSR LCM Management Team, if approved by CDFW and NMFS. Because of the close link between the CHNSR LCM and CHNSR JPE development through a shared use of historical and newly generated data, the CHNSR JPE Core Team will be responsible for guiding the development of the CHNSR LCM to address the management objectives. The CHNSR JPE Core Team will also be responsible for determining whether the required modeling can be accomplished through an update of one or more existing Central Valley Chinook Salmon modeling efforts, such as the CHNSR JPE, the NMFS CHNSR life cycle model, and the CVPIA Science Integration Team salmon life cycle models. The CHNSR JPE Core Team will use SDM principles when appropriate. The CHNSR JPE Core Team will develop and submit a CHNSR LCM Modeling Plan and timeline to the CHNSR LCM Management Team for approval, and guide implementation of the plan. To facilitate open communication between the lead life cycle modeler and agency	ITP Condition # 7.9.4	Implement final modeling plan by 2027 Recommend an initial CHNSR LCM by 2028 Evaluate and implement changes to the initial CHNSR LCM suggested by independent peer review (if applicable) by 2030	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	staff, Permittee shall establish a CHNSR LCM Modeling Subteam including, but not limited to, representatives from Permittee, CDFW, Reclamation, USFWS, and NMFS. Throughout the process to develop the CHNSR LCM and implement the CHNSR LCM Modeling Plan, the lead life cycle modeler will collaborate with the CHNSR LCM Modeling Subteam through regular meetings to solicit feedback and integrate that feedback into model development iteratively, in a manner similar to the CHNSR JPE Modeling Subteam described in Condition of Approval 7.9.3 to this ITP. In 2025, Permittee shall, in coordination with Reclamation, assemble the CHNSR LCM Management Team and begin coordination with the CHNSR JPE Core Team on the development of the CHNSR LCM. In 2026, Permittee shall, in coordination with the CHNSR JPE Core Team, develop and submit a draft CHNSR LCM Modeling Plan and timeline to the CHNSR LCM Management Team for approval, and guide implementation of the final, approved CHNSR LCM Modeling Plan. Also in 2026, Permittee shall, in coordination with Reclamation, establish the CHNSR LCM Modeling Subteam for coordination between the lead life cycle modeler and the CHNSR JPE Core Team. In 2027, the CHNSR LCM Modeling Subteam shall convene regular meetings to implement the final CHNSR LCM Modeling Plan and to solicit and incorporate feedback on model development. In 2028, CHNSR LCM Modeling Subteam will, under the guidance of the CHNSR LCM Management Team and CHNSR JPE Core Team, recommend an initial CHNSR LCM. Also in 2028, the AMSC will, in coordination with the CHNSR JPE Core Team and the CHNSR LCM Management Team, consider chartering and convening an independent peer review panel to provide feedback on the initial CHNSR LCM. In 2029 and 2030, if an independent peer review is convened, the CHNSR JPE Core Team and the CHNSR LCM Modeling Subteam will review independent peer review panel feedback, and the CHNSR JPE Core Team will use SDM to evaluate and implement changes to the initial CHNSR LCM.				
28	Salmon Delta Occupancy, Distribution, and Survival Studies. Enhanced monitoring of juvenile Chinook Salmon movement through the Delta, paired with environmental data, will provide a more comprehensive understanding of Delta occupancy and survival, including specific areas that may be more frequently utilized for rearing and contribute to higher survival rates. These data will inform real-time management of Project operations and will support elements of the AMP (Attachment 4), such as the development of a CHNSR LCM and a CHNWR migration model. Additionally, these data may aid in the development of habitat restoration projects focused on improving quality of and connectivity between juvenile Chinook Salmon rearing areas in the Delta.	ITP Condition # 7.9.5	Submit draft study plan to CDFW within one year of the effective date of this ITP Convene the working group quarterly	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	Permittee shall continue to implement annual regional juvenile Chinook Salmon survival studies within the Delta for the duration of this ITP including the Georgiana Slough Salmonid Migratory Barrier Effectiveness Studies (Condition of Approval 7.9.6) and studies associated with the Alternative Loss Estimation Pilot Study (Condition of Approval 7.9.1). This may also include Yolo Bypass salmonid studies, Sutter and Steamboat sloughs studies, and updates to ECO-PTM. The objective of these studies is to evaluate juvenile Chinook Salmon reach-specific survival, behavior, and route entrainment within the Sacramento River and Delta (including the south Delta). To continue to successfully implement these studies, Permittee shall: • Secure an acoustic receiver network in the Sacramento River and Delta; • Provide real-time and retrospective modeling of the data obtained from the receiver network; • Secure a source of natural-origin or hatchery-origin Chinook Salmon from the Sacramento River basin and acoustically tag them prior to release in the Sacramento River; and • Convene a new working group comprised of representatives from Permittee, CDFW, Reclamation, USFWS, and NMFS to expand the acoustic receiver network and prioritize co-location of physical and biological data collection with the goal of forecasting entrainment rates, Delta occupancy timing and distribution, and reach-specific survival based on a combination of real-time acoustic telemetry data, mark-recapture survival modeling, and predictions of through-Delta survival in specific anticipated environmental conditions, consistent with Advancement 3 of Johnson et al. (2017). To support implementation and collaboration, the working group will: • Collaborate with the Interagency Telemetry Advisory Group (ITAG) on the integration of new real-time acoustic receiver arrays into the current receiver network to optimize coordination of a system-wide acoustic telemetry system in the Sacramento-San Joaquin Delta; • Investigate other ways to improve monitoring of juvenile Chinook Salmon rearing, routing, and through-Delta survival such as increased PIT tagging and monitoring. PIT tag monitoring could be incorporated for fish too small for acoustic tagging to better understand rearing and migration of fry through the Delta. Within one year of the effective date of this ITP, Permittee shall, in coordination with the new working group, submit a draft study plan to CDFW for review and approval. Within four months of receiving CDFW review, Permittee shall, in coordination with the new working group, finalize the draft study plan and obtain CDFW's written approval for implementation. At a minimum, Permittee shall convene the new working group quarterly every year to review and revise annual study plans, discuss study progress, and review data gathered from occupancy, distribution, and survival studies.		throughout the term of this ITP		

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
29	Georgiana Slough Salmonid Migratory Barrier Effectiveness Studies. Permittee shall, as part of the AMP (Attachment 4) and in coordination with the implementation of Condition of Approval 8.11.1 to this ITP, continue annual effectiveness studies through the duration of this ITP to refine the understanding of Georgiana Slough Salmonid Migratory Barrier efficiency and benefits to CHNWR and CHNSR. Permittee shall also consider the potential to gain information regarding impacts of barrier operations on adult CHNWR and CHNSR migration when designing studies. Studies shall be complimentary to, or integrated with, the WS Science Plan (Condition of Approval 7.10.1) to provide additional information regarding potential impacts to WS migration. At a minimum, Permittee shall convene the Guidance Structure Evaluation Working Group quarterly every year to continuously refine annual study plans, discuss study progress, and review data gathered from annual effectiveness studies. The Guidance Structure Evaluation Working Group shall include, but not be limited to, representatives from Permittee, CDFW, Reclamation, USFWS, and NMFS. Within one month of the effective date of this ITP, Permittee shall provide CDFW and the Guidance Structure Evaluation Working Group the current water year annual study plan supporting the Georgiana Slough Salmonid Migratory Barrier Monitoring Plan. For each subsequent water year, Permittee shall provide CDFW and the Guidance Structure Evaluation Working Group with a draft annual study plan for review by February 1. Permittee shall work with CDFW and the Guidance Structure Evaluation Working Group to incorporate comments on the draft study plan and shall submit the final study plan to CDFW for approval no later than July 1. Permittee shall implement the finalized annual study plan the following water year. All modifications to the study plan shall be approved by CDFW. Permittee shall provide data to CDFW and the Guidance Structure Evaluation Working Group as requested during the operation of the Georgiana Slough Salmonid Migratory Barrier to support real-time operations. Permittee shall provide data through the National Oceanic Atmosphere Administration Environmental Research Division Data Access Program (NOAA ERDDAP) data server or equivalent if approved by CDFW. Permittee shall present all data collected for effectiveness studies to the Guidance Structure Evaluation Working Group for review prior to its use in informing other Conditions of Approval to this ITP or the AMP (Attachment 4). By October 1 each year (Condition of Approval 8.11.1), Permittee shall, in coordination with the Guidance Structure Evaluation Working Group, submit to CDFW annual reports documenting Georgiana Slough Salmonid Migratory Barrier operations and effectiveness studies, including available retrospective modeling of the data. Permittee shall, in coordination with the Guidance Structure Evaluation Working Group, submit to CDFW and the Guidance Structure Evaluation Working Group a triennial report documenting Georgiana Slough Salmonid Migratory Barrier operations and effectiveness	ITP Condition # 7.9.6	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	studies, including retrospective modeling of the data over different hydrologic conditions.				
30	Rapid Genetics Support. Permittee shall fully fund one new CDFW Research Scientist 3 position and one half of an existing CDFW Environmental Scientist position to support genetic monitoring and science associated with SWP operations including: • Continued collaboration on collection, interpretation, and application of genetic data to help inform the new CHNSR JPE and application of the CHNSR JPE; • Verification of results obtained from laboratories conducting real-time salvage identifications; • Collaboratively develop methods for identification of San Joaquin River Restoration Program Chinook Salmon juveniles collected at salvage facilities or in Bay-Delta monitoring programs; • Genetic identification of Chinook Salmon across the diversity spectrum in the Central Valley and the development of collaborative strategies to protect life history diversity; • Applications of parentage/kinship analysis for detection of unmarked, unfed hatchery-origin juvenile Chinook Salmon; • Standardization of genetic methods across laboratories conducting Central Valley Chinook Salmon studies; • Coordinate the collection, archiving, and dissemination of salmonid tissue samples; and • Design studies, collect, and analyze data to assess population attributes of CHNSR. This work will support implementation of real-time OMR minimization measures (Conditions of Approval 8.2.1, 8.4.3, 8.4.4, and 8.4.5) and CHNSR monitoring and science measures (Conditions of Approval 7.9.3 and 7.9.4). Funding for these positions shall be available no later than July 1 subsequent to the effective date of this ITP. Rapid genetic analyses for CHNWR currently rely primarily on GT-seq, however as science advances during the term of this ITP a new method may be used instead of GT-seq, if approved by CDFW.	ITP Condition # 7.9.7	By July 1, 2025	Permittee	
White Sturgeon Monitoring and Science Requirements.		7.10			
31	White Sturgeon Science Program. Permittee shall continue to convene the WS Science Program. The WS Science Program shall include representatives from Permittee and CDFW and allow for participation by USFWS, NMFS, Reclamation, and SWP Contractors. A primary goal of this effort is to inform management of WS and to identify potential additional management actions that could improve its status. Permittee shall prepare a draft WS Science Plan, in collaboration with CDFW, that describes new science needed to improve the understanding of WS ecology, stressors, and impacts as a result of SWP	ITP Condition # 7.10.1	Submit draft science plan by July 12, 2025	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	operations and submit to CDFW for review by July 12, 2025. The WS Science Plan shall include, but is not limited to, the following science priorities: • A schedule for implementation including deadlines for draft and final reports for each study required; • A plan for development of a mathematical life cycle model for WS, verified with field data collection, as a quantitative tool to characterize the effects of abiotic and biotic factors on WS abundance and distribution, including major mortality events due to harmful algal blooms; • New and ongoing monitoring that: o Characterizes the distribution and abundance of adult, sub-adult, juvenile, and larval life stages; o Collects necessary data to develop a future life cycle model including somatic growth as well as estimates of survival probabilities among life stages; o Characterizes changes in abundance and distribution of life stages across a range of hydrologic conditions, including varying ranges of X2 and water year types; o Considers revisions to existing IEP monitoring programs to expand the spatiotemporal distribution of sampling; and o Addresses factors that influence WS catchability and gear efficiency; • Improved understanding of WS spawning, egg development, and rearing habitat distribution and use in the spawning rivers, Delta, and Suisun Marsh; • An entrainment and residency program to quantify WS entrainment and residency in CCF and to better understand factors that may contribute to WS entrainment and residency in CCF; • A WS salvage prediction tool for generating a near-term forecast of the probability of future salvage designed to inform real-time operations; and • Quantification of the lethal and sublethal impacts of harmful algal blooms on WS to support the WS life cycle model development. The WS Science Plan may also include the following actions: • Development of a genetic management plan to support the use of cultured WS fish for research purposes; • Improved understanding of the genetic diversity within California WS; and • WS-specific studies of fish screen efficiency at Skinner Fish Facility and loss within CCF. Permittee shall work collaboratively with the WS Science Program and consider edits and comments on the draft WS Science Plan while preparing the final plan. The final WS Science Plan shall be submitted to CDFW within one year following submission of the draft				

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	plan, for approval by CDFW. After the final plan is approved in writing by CDFW, Permittee shall fund and implement required monitoring and science according to the timelines specified in the final WS Science Plan. The final WS Science Plan may be periodically updated by Permittee or CDFW to reflect updated science priorities or new information, and the updated plan will be submitted to CDFW for approval. Permittee, in coordination with CDFW, will develop an annual funding plan for implementing science plan elements. At a minimum, Permittee shall convene the WS Science Program quarterly every year following initiation of the final WS Science Plan to: • Review data obtained from new and ongoing monitoring programs; • Review methods used to implement monitoring and recommend adjustments as they deem appropriate; and • Review draft results from new and ongoing science. Permittee shall make all raw data and modeling acquired as a part of the WS Science Plan available to members of the WS Science Program on a mutually agreeable timeline.				
32	Larval White Sturgeon Salvage Monitoring and Reporting. Permittee shall implement larval WS monitoring in salvage at the Skinner Fish Facility to identify the presence of WS larvae > 20 mm. Larval WS salvage monitoring data shall be provided to CDFW according to existing methods of salvage data transmission for all other Covered Species.	ITP Condition # 7.10.2	Throughout the term of this ITP	Permittee	
33	Notification of Take or Injury/Damage of White Sturgeon. Permittee shall immediately notify the Designated Biologist if a WS is otherwise found dead or injured within the vicinity of the Project. The Designated Biologist or Designated Representative shall provide initial notification to CDFW by contacting the CDFW Bay-Delta Region Stockton Office at (209) 234-3420. The initial notification to CDFW shall include information regarding the location, species, and number of WS found dead or injured and the ITP Number. Immediately following notification to CDFW, Permittee shall coordinate with Tracy Fish Collection Facility staff to explore the possibility of relocating the injured WS and rehabilitating it at the CVP facility. Following initial notification, Permittee shall send CDFW a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the WS or carcass, and if possible, provide a photograph, explanation as to cause of death or injury, and any other pertinent information.	ITP Condition # 7.11	Throughout the term of this ITP	Permittee	
34	Data Accessibility. Permittee shall provide CDFW with access to all raw data and associated analyses and reports for all monitoring required in Conditions of Approval 7, 8 and 9 of this ITP and described in the Project Description within 60 days of collection of data, processing of samples, or completion of analyses and reports, and otherwise upon request.	ITP Condition # 7.12	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
35	Independent Review Panels. In the event that an independent review panel is convened to review aspects of the Project or AMP (Attachment 4), Permittee shall provide drafts of (1) the list of potential 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 panel selection and panel charge before they are finalized.	ITP Condition # 7.13	Throughout the term of this ITP	Permittee	
Minimization Measures: The following requirements are intended to ensure the minimization of incidental take of Covered Species and related impacts of the taking in the Project Area during Covered Activities. Permittee shall implement and adhere to the following conditions to minimize take of, and impacts of the taking on, Covered Species:					
36	Real-time Operations, Monitoring, and Technical Teams. Permittee shall monitor and manage Project operations in response to risk assessments conducted by collaborative real-time operations monitoring teams that include representatives from Permittee, CDFW, Reclamation, USFWS, NMFS, and the State Water Board.	ITP Condition # 8.1	Throughout the term of this ITP	Permittee	
37	Smelt Monitoring Team. The purpose of SMT is to meet and review hydrologic, SWP and CVP operational, fishery, and water quality data, and provide opportunities for engagement and discussion among biologists and operators on relevant information and issues associated with the Project and risk assessments. SMT shall include representatives from Permittee, CDFW, Reclamation, USFWS, NMFS, and the State Water Board. Permittee shall make all raw data and modeling utilized as part of SMT available to CDFW within ten days of a request.	ITP Condition # 8.1.1	Throughout the term of this ITP	Permittee	
38	Salmon Monitoring Team. The purpose of SaMT is to meet and review hydrologic, SWP and CVP operational, fishery, and water quality data, and provide opportunities for engagement and discussion among biologists and operators on relevant information and issues associated with the Project and risk assessments. SaMT shall include representatives from Permittee, CDFW, Reclamation, USFWS, NMFS, and the State Water Board. Permittee shall make all raw data and modeling utilized as part of SaMT available to CDFW within ten days of a request.	ITP Condition # 8.1.2	Throughout the term of this ITP	Permittee	
39	White Sturgeon Monitoring Team. The purpose of WSMT is to meet and review hydrologic, SWP and CVP operational, fishery, and water quality data, and provide opportunities for engagement and discussion among biologists and operators on relevant information and issues associated with the Project and risk assessments. WSMT shall include representatives from Permittee and CDFW. Permittee shall make all raw data and modeling utilized as part of WSMT available to CDFW within ten days of a request.	ITP Condition # 8.1.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
40	Water Operations Management Team. WOMT will coordinate on overall SWP and CVP operations to oversee the implementation of various real-time provisions for the Project. The purpose of WOMT is to discuss and resolve SWP and CVP operational questions and technical issues, as requested or elevated from technical teams, and to elevate unresolved operational issues to the Directors of Permittee, Reclamation, CDFW, USFWS and NMFS. WOMT will develop a charter to describe membership and process. WOMT will coordinate with the SHOT as needed on operational issues and decisions that have implications for both of their respective purviews, including but not limited to Drought Toolkit implementation and the HRL asset management. WOMT will meet weekly during the OMR flow management season (October–June), and otherwise as needed. Any agency can request a WOMT meeting outside of the OMR season for discussion or elevation items. For OMR Management, Permittee shall, in coordination with Reclamation, provide SWP and CVP operational outlooks and assessments on a weekly basis to WOMT, SMT, SaMT, and WSMT. Permittee shall provide WOMT the opportunity to review and discuss any applicable drought and dry year actions from the Drought Toolkit or other relevant drought planning documents. For all other assessments or elevation issues, supporting materials will be provided to WOMT by designated representatives of the applicable technical teams.	ITP Condition # 8.1.4	Throughout the term of this ITP	Permittee	
41	Collaborative Approach to Real-time Decision Making. Beginning no later than October 1 through the end of OMR Management (Condition of Approval 8.6), SMT, SaMT, and WSMT shall meet as described in Conditions of Approval 8.3.1, 8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.7, and 8.5 or more often as required, to consider survey data, salvage data, and other pertinent biotic and abiotic factors and provide input on risk assessments as described in Conditions of Approval 8.1.6.1, 8.1.6.2, and 8.1.6.3. SMT, SaMT, and WSMT shall share and discuss all available biological, abiotic, and operational information to inform discussions in the WOMT as required by Conditions of Approval 8.3.1, 8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.7, and 8.5. SMT, SaMT, and WSMT shall communicate the information shared and perspectives to WOMT as described in Conditions of Approval 8.3.1, 8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.7, and 8.5. Permittee and CDFW SMT, SaMT, and WSMT staff may conclude different operations are warranted, in which case the difference shall be noted and elevated as described in this Condition of Approval and Condition of Approval 8.1.6. 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 WOMT does not reach a resolution, the Director of DWR, in coordination with the Regional Director of Reclamation as appropriate (proposing agency or agencies), shall confer with CDFW, USFWS, and NMFS Directors/Regional Administrators to determine if there is an alternative action that will be mutually agreeable. If consensus is reached,	ITP Condition # 8.1.5	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	Permittee shall implement the alternative action. If the Directors do not reach a resolution on operations, Permittee shall meet and confer with Reclamation to prioritize alignment between the SWP and CVP operations, in consideration of operational and regulatory constraints affecting either project, and shall identify their recommended action within two days, providing a written explanation of the nature of the dispute. Any director may request a follow-up Directors' meeting if necessary. Within two days after receiving the recommended action for SWP from Permittee, the CDFW Director may disagree with the action requested by DWR and require Permittee to implement an operational decision provided by CDFW in writing. Permittee shall implement CDFW's operational decision. Once a decision has been resolved following any of the procedures described above, Permittee shall designate a representative or representatives to communicate the decision to regulatory and operating agencies, as well as other interested parties that have expressed interest in the decision.				
42	Real-time Information Sharing Process. Permittee shall provide scheduling, SWP and CVP operations forecast, and relevant hydrologic monitoring and modeling information on Monday of each week to SMT, SaMT, and WSMT agency staff. SMT, SaMT, and WSMT shall convene as required by Conditions of Approval 8.3.1, 8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.7, and 8.5, or as needed, for technical conversation prior to WOMT meeting and shall discuss all relevant data, including data that becomes available after the Monday distribution. All information intended for discussions in WOMT shall be provided and discussed in SMT, SaMT, and WSMT prior to discussion in WOMT.	ITP Condition # 8.1.6	Throughout the term of this ITP	Permittee	
43	Smelt Monitoring Team Role. Agency team leads: (1) notify their agency's WOMT representative(s) if a Reclamation Proposed Action or ITP identified threshold or protective action is or will be met; (2) provide input on any risk assessment prepared by Reclamation and Permittee as required by Conditions of Approval 8.3.1, 8.4.2, and 8.5; and (3) discuss and document differing perspectives (i.e., non-consensus) on the relevant assessments and Conditions of Approval. If there is an operational issue that SMT cannot resolve, the agency representatives will compose an email to WOMT summarizing the elevation topic and any supporting information and recommendations. Each of the agency representatives are individually responsible for communicating the issues and any background information to their WOMT representative.	ITP Condition # 8.1.6.1	Throughout the term of this ITP	Permittee	
44	Salmon Monitoring Team Role. Agency team leads: (1) notify their agency's WOMT representative(s) if a Reclamation Proposed Action or ITP identified threshold or protective action is or will be met; (2) provide input on any risk assessment prepared by Reclamation and Permittee as required by Conditions of Approval 8.4.3, 8.4.4, 8.4.5, and 8.5; and (3) discuss and document differing perspectives (i.e., non-consensus) on the relevant	ITP Condition # 8.1.6.2	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	assessments and Conditions of Approval. If there is an operational issue that SaMT cannot resolve, the agency representatives will compose an email to WOMT summarizing the elevation topic and any supporting information and recommendations. Each of the agency representatives are individually responsible for communicating the issues and any background information to their WOMT representative.				
45	White Sturgeon Monitoring Team Role. Agency team leads: (1) notify their agency's WOMT representative(s) if a trigger in Condition of Approval 8.4.7 is or will be met; (2) provide input on the risk assessment and advice developed to document the technical discussion; and (3) discuss and document differing perspectives (i.e., non-consensus). If there is an operational issue that WSMT cannot resolve, the agency representatives will compose an email to WOMT summarizing the elevation topic and any supporting information and recommendations as required by Condition of Approval 8.4.7. Each of the agency representatives are individually responsible for communicating the issues and any background information to their WOMT representative.	ITP Condition # 8.1.6.3	Throughout the term of this ITP	Permittee	
46	Chartering Real-time Operations Teams. Permittee shall, in collaboration with Reclamation, develop charters for the SMT, SaMT, WSMT, and WOMT. Team membership, roles, and processes shall be described in team charters. Some teams may already have charters in place which will continue to be followed until they are reviewed and replaced in the future. These charters may be supplemented by guidance documents which further elaborate roles, responsibilities, and processes for the SMT, SaMT, WSMT, and WOMT. Permittee shall update these guidance documents as needed by mutual agreement. Drafts of all team charters and guidance documents shall be submitted to CDFW for review. After CDFW comments are incorporated, final team charters and guidance documents shall be subject to CDFW approval.	ITP Condition # 8.1.6.4	Throughout the term of this ITP	Permittee	
47	OMR Action Response Timing. Unless a more immediate response is required by a Condition of Approval in this ITP, Permittee shall adjust exports within three days of an event that requires an OMR index, to enable efficient power scheduling. Once an OMR action is triggered as a result of Conditions of Approval of this ITP, Permittee shall not increase exports, except as has been scheduled prior to the trigger's occurrence and with prior notice to WOMT, in a manner that would make projected OMR more negative. Permittee shall conduct export reductions to meet the requirements of the Conditions of Approval using the normal scheduling procedure. Combined projected exports, export scheduling, and OMR will be discussed at WOMT each week. The intent of this Condition of Approval is that combined project south Delta exports will not increase the risk to protected fish species after an OMR trigger is met.	ITP Condition # 8.1.7	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
48	OMR Index Calculation. Permittee shall calculate the OMR flow index that will be used to determine export limitations, as described in the sections below, using the equation provided in Hutton (2008). Permittee shall provide CDFW with the variables used to calculate OMR index changes as related to implementing Conditions of Approval of this ITP upon the request of CDFW.	ITP Condition # 8.1.8	Throughout the term of this ITP	Permittee	
49	OMR Averaging Period. Permittee shall ensure the required average of the OMR Index is met by the last day of the averaging period included in any Condition of Approval that requires an action for a specified number of days, after initiating operational changes in response to the OMR trigger.	ITP Condition # 8.1.9	Throughout the term of this ITP	Permittee	
Early OMR Management.		8.2			
50	Natural-origin Winter-run Chinook Salmon Early Season Weekly Loss Thresholds. To minimize entrainment and loss of early-migrating natural-origin CHNWR, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -5,000 cfs for seven consecutive days, when the genetically verified 7-day rolling sum of CHNWR loss, calculated daily, exceeds the following thresholds (see calculation details and survival variables in Attachments 2 and 6): • From November 1 through November 30: Product of November Multiplier and the Red Bluff Diversion Dam juvenile CHNWR brood year passage total at the end of the second biweekly period in October, whereby the November Multiplier is: November Multiplier = $0.0011 \times 0.25 \times Survival_{Fry\text{-}to\text{-}Smolt} \times Survival_{Smolt}$ • From December 1 through December 31: Produce of December Multiplier and the Red Bluff Diversion Dam juvenile CHNWR brood year passage total estimated at the end of the second biweekly period in November, whereby the December Multiplier is: December Multiplier = $0.0021 \times 0.25 \times Survival_{Fry\text{-}to\text{-}Smolt} \times Survival_{Smolt}$ If the 7-day rolling sum of CHNWR loss, calculated daily, is exceeded during a period of reduced exports, Permittee shall, in coordination with Reclamation, continue to adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -5,000 cfs, until seven days after the most recent	ITP Condition # 8.2.1	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	exceedance. Loss shall be calculated for the south Delta export facilities using the 2018 CDFW loss equation (Attachment 8). Permittee shall, in coordination with Reclamation, initially adjust exports in response to meeting the thresholds above based on length-at-date identification of natural older juvenile Chinook Salmon. If genetic analysis of natural juvenile Chinook Salmon observed in salvage at the SWP or CVP subsequently indicates that any given Chinook Salmon is not a genetically confirmed CHNWR, that fish will not count toward the loss threshold exceedance, and continued export adjustments pursuant to the OMR limit may not be required. While a new, more rapid genetic method, SHERLOCK, undergoes field testing, both it and the current genetic method, GT-seq, shall be used to determine the final identification. In the event that SHERLOCK and GT-seq provide different run assignments, the results from the GT-seq method shall be used to determine the final run assignment for the purposes of implementing Condition of Approval 8.2.1. If a fish is not genetically identifiable or if genetic identification is pending, then the Delta model length-at-date criteria shall be used to classify the race of the juvenile Chinook Salmon in salvage for the purposes of implementing Condition of Approval 8.2.1.				
51	Onset of OMR Management. The OMR Management season starts: 1) any time after December 1 after an Adult Longfin Smelt Entrainment Protection Action is implemented (Condition of Approval 8.3.2), 2) if Condition of Approval 8.3.1 is triggered (i.e., immediately following completion of the First Flush Action), or 3) any time after December 20 if the turbidity threshold in Condition of Approval 8.3.3 is reached. If neither Condition of Approval 8.3.1, nor Condition of Approval 8.3.2, nor Condition of Approval 8.3.3 initiates OMR Management season, the OMR Management season starts automatically on January 1. From the onset of OMR Management Permittee shall, in coordination with Reclamation, adjust south Delta exports to maintain the OMR index on a 14-day running average no more negative than -5,000 cfs until the end of the OMR Management (Condition of Approval 8.6) except during Storm Flex operations (Condition of Approval 8.5) or if a more positive OMR index or different averaging period is required.	ITP Condition # 8.3	Throughout the term of this ITP	Permittee	
52	First Flush Action. To minimize SWP and CVP influence on the movement of DS and subsequent entrainment and salvage of adult DS, Permittee shall, in coordination with Reclamation, adjust south Delta exports for 14 consecutive days, anytime between December 1 and the last day of February, to maintain a 14-day average of the OMR index no more negative than -2,000 cfs within three days of when the following criteria are met: • Three-day running average of daily flow at Freeport is ≥ 25,000 cfs, and • Three-day running average of daily turbidity at Freeport is ≥ 50 Formazin Nephelometric Units (FNU).	ITP Condition # 8.3.1	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	These criteria shall use data from the CDEC Sacramento River at Freeport station (FPT). The First Flush Action may only be initiated once each water year. The First Flush Action is exempt from the high-flow offramps as described in Condition of Approval 8.3.2. Permittee and Reclamation, through WOMT, may prepare an assessment to initiate the First Flush Action early if real-time monitoring of abiotic and biotic factors and salvage prediction models indicate the First Flush Action is likely to be triggered (i.e., within two to three days) and DS salvage is possible. Readings at individual turbidity sensors or localized groups of turbidity sensors can generate spurious results in real time. To avoid triggering an OMR flow action during a sensor error or a localized turbidity spike that might be caused by local flows or a wind-driven event, Permittee and Reclamation will consider and review data from other locations. In the event that the 3-day running average of daily turbidity at Freeport is ≥ 50 FNU, and Permittee and Reclamation believe that a First Flush Action is not warranted based on additional data sources, Permittee may, in coordination with Reclamation, provide the additional data to SMT and request they convene to confirm criteria will be met because of increased precipitation rather than sensor error or localized turbidity spike. If it is determined through WOMT that there is a sensor error or a localized turbidity spike, Permittee may, in coordination with Reclamation, take no additional action with CDFW approval and provide the supporting information to CDFW and USFWS within 24 hours.				
53	Adult Delta Smelt Entrainment Protection Action. If, after a First Flush Action (Condition of Approval 8.3.1) or after December 20, whichever occurs first, the daily average turbidity remains at or becomes elevated to 12 FNU or higher at each of three turbidity sensors in the OMR corridor, creating a continuous bridge of turbidity from the lower San Joaquin River to the SWP and CVP export facilities, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 5-day average of the OMR index that is no more negative than -3,500 cfs until the daily average turbidity in at least one of the three turbidity sensors is less than 12 FNU for two consecutive days, thereby indicating a break in the continuous bridge of turbidity. The three turbidity sensors applicable to this Condition of Approval are Old River at Franks Tract near Terminous (OSJ), Holland Cut (HOL), and Old River at Bacon Island (OBI). If the three turbidity sensors remain over 12 FNU at the end of a High Flow Offramp (below) or any time after five consecutive days, then Permittee and Reclamation, through WOMT, may prepare an assessment to determine if another Adult Delta Smelt Entrainment Protection Action is warranted based on continued entrainment risk following the period of elevated flows and whether DS distribution has shifted downstream, as informed by available quantitative tools and real-time data. The Adult Delta Smelt Entrainment Protection Action may be offramped when the daily average San Joaquin River flows at Vernalis are greater than 10,000 cfs. While offramped, the OMR index will be managed to no more negative than -5,000 cfs on a 14-day average.	ITP Condition # 8.3.2	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	The Adult Delta Smelt Entrainment Protection Action shall be immediately reinstated when the daily average San Joaquin River flows at Vernalis drop below 8,000 cfs. If the three turbidity sensors remain over 12 FNU at the end of a High Flow Offramp or any time after five consecutive days, then Permittee may, in coordination with Reclamation, through WOMT, prepare an assessment to determine if another Adult Delta Smelt Entrainment Protection Action is warranted. Any evaluation shall be based on continued entrainment risk following the period of elevated flows and whether DS distribution has shifted downstream, as informed by available quantitative tools and real-time data. The Adult Delta Smelt Entrainment Protection Action ends when the 3-day continuous average water temperatures at Jersey Point or Rio Vista reach 53.6°F.				
54	Adult Longfin Smelt Entrainment Protection Action. To minimize entrainment and salvage of adult LFS, Permittee shall, in coordination with Reclamation, adjust south Delta exports if cumulative water year salvage of LFS with fork length ≥ 60 mm at the SWP and CVP salvage facilities exceeds the salvage threshold calculated using the following formula: Salvage threshold = (Age 1 + LFS Index/20) + 1 The Age 1 + LFS Index is calculated using age 1+ fish captured in the mid water trawl from the full San Francisco Bay Study sampling area . The Age 1 + LFS Index is additive for the months of August, September, October, November, and December. If December data are not available at the start of this action period, then the August to November threshold shall be used until the December data are available and the complete Age 1 + LFS Index is calculated. If the above salvage threshold is exceeded between December 1 and the end of February then Permittee, in coordination with Reclamation, shall adjust south Delta exports to achieve one of the following requirements depending on when the salvage threshold was exceeded: • From December 1 to the start of the OMR Management season, Permittee, in coordination with Reclamation, shall adjust south Delta exports to achieve an OMR index no more negative than -5,000 cfs on a 7-day average for seven consecutive days and then, initiate OMR Management Season. During the 7-day period, Permittee may request that WOMT convene and determine if initiation of OMR Management season is warranted. If WOMT determines initiating OMR Management season is not warranted, OMR Management season does not begin at the conclusion of the 7-day period. If salvage of Longfin Smelt ≥ 60 mm continues following the 7-day period when the OMR index is no more negative than -5,000 cfs, then Permittee and Reclamation, through WOMT, may prepare an assessment to determine if additional Longfin Smelt Entrainment Protection Action is warranted based on continued entrainment risk, as informed by available	ITP Condition # 8.3.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	quantitative tools and real-time data. WOMT may determine if OMR Management Season should be initiated. If WOMT does not meet, then Permittee shall, in coordination with Reclamation, initiate OMR Management season. • From the start of the OMR Management Season to the end of February, if OMR Management was initiated by a different Condition of Approval, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve an OMR index no more negative than -3,500 cfs on a 7-day average for seven consecutive days. If there is additional salvage of LFS ≥ 60 mm following the 7-day period when the OMR index is no more negative than -3,500 cfs, then Permittee, in coordination with Reclamation, through WOMT, shall prepare an assessment to determine if additional Longfin Smelt Entrainment Protection Action is warranted based on continued entrainment risk, as informed by available quantitative tools and real-time data.				
Additional Real-time OMR Management.		8.4			
55	Larval and Juvenile Delta Smelt Protection Action. To minimize entrainment and salvage of larval and juvenile DS, the Larval and Juvenile Delta Smelt Protection Action starts upon the end of the Adult Delta Smelt Entrainment Protection Action (Condition of Approval 8.3.2). Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -5,000 cfs when the average Secchi disk depth in the most recent survey is > 1 meter. The Secchi disk depth shall be calculated as the average measurement from all sampled stations on the San Joaquin River upstream of Jersey Point and stations south of the lower San Joaquin River. If the average Secchi disk depth in the most recent survey is < 1 meter, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -3,500 cfs until the average Secchi disk depth has increased to > 1 meter. Permittee shall, in coordination with Reclamation, operate to the appropriate OMR index given the latest average Secchi disk depth until the end of OMR Management (Condition of Approval 8.6). When the daily average Sacramento River flows at Rio Vista are > 55,000 cfs, or the daily average San Joaquin River flows at Vernalis are > 8,000 cfs, then the Larval and Juvenile Delta Smelt Protection Action is offramped. While offramped, Permittee shall, in coordination with Reclamation, manage south Delta exports to achieve an OMR index no more negative than -5,000 cfs on a 14-day average. Permittee shall, in coordination with Reclamation, immediately reinstate the Larval and Juvenile Delta Smelt Protection Action when either the daily average Sacramento River flows at Rio Vista is < 40,000 cfs or the daily average San Joaquin River flows at Vernalis is < 5,000 cfs. Rio Vista flows are	ITP Condition # 8.4.1	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	calculated from the Dayflow equation and reported in the daily DWR Delta Hydrologic Conditions Report.				
56	Larval and Juvenile Longfin Smelt Protection Action. From January 1 through the end of OMR Management (Condition of Approval 8.6), if: • The seven-day average QWEST is < +1,500 cfs, and • Larval and juvenile LFS catch in the most recent Smelt Larval Survey (SLS) or 20-mm Survey at stations 809 and 812 exceeds the catch threshold set by the age 1+ LFS Index (see Table 3 for catch thresholds) Permittee, in coordination with Reclamation, shall adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -3,500 cfs for seven days to minimize entrainment and salvage of larval and juvenile LFS. Permittee, in coordination with Reclamation, through WOMT, may prepare an assessment to determine if the 7-day action can be adjusted or offramped based on larval and juvenile LFS entrainment risk, as informed by available quantitative tools and real-time data. If offramped, the Larval and Juvenile Longfin Smelt Protection Action shall later be retriggered if conditions warrant. When the daily average Sacramento River flows at Rio Vista are > 55,000 cfs, or the daily average San Joaquin River flows at Vernalis are > 8,000 cfs, then the Larval and Juvenile Longfin Smelt Protection Action is offramped. While offramped, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve an OMR index no more negative than -5,000 cfs on a 14-day average. Permittee shall, in coordination with Reclamation, immediately reinstate the Larval and Juvenile Longfin Smelt Protection Action when either the daily average Sacramento River flows at Rio Vista is < 40,000 cfs or the daily average San Joaquin River flows at Vernalis is < 5,000 cfs. Rio Vista flows are calculated from the Dayflow equation and reported in the daily DWR Delta Hydrologic Conditions Report. If the water year cumulative juvenile LFS salvage at the SWP and CVP salvage facilities exceeds 50% of the average annual salvage observed from 2009 through the water year preceding the current water year, then Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index of -3,500 cfs for 14 days. If the water year cumulative juvenile LFS salvage at the SWP and CVP salvage facilities exceeds 75% of the average annual salvage observed from 2009 through the water year preceding the current water year, then Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index of -2,500 cfs for 14 days. If salvage of larval and juvenile LFS continues following the 14-day period where the OMR index is no more negative than -2,500 cfs, then WOMT may request Permittee and Reclamation to prepare a risk assessment through the SMT on an appropriate OMR	ITP Condition # 8.4.2	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	index through the end of OMR Management (Condition of Approval 8.6). Consideration of the inclusion of LFS abundance metrics in these salvage triggers will be addressed under the AMP (Attachment 4).				
57	Winter-run Chinook Salmon Annual Loss Thresholds. To minimize entrainment and loss of juvenile CHNWR, Permittee shall, in coordination with Reclamation, adjust south Delta exports to manage the OMR index to avoid exceeding the following annual loss thresholds: • Natural-origin CHNWR Loss Threshold: 0.5% of JPE • Hatchery-origin CHNWR Loss Threshold: 0.12% of JPE JPEs and annual loss thresholds will be calculated for natural-origin CHNWR, for hatchery-origin CHNWR from Livingston Stone National Fish Hatchery (LSNFH) released into the Sacramento River near Redding, and for LSNFH hatchery-origin CHNWR released into Battle Creek. The JPE for natural and hatchery-origin CHNWR is calculated by the JPE Subteam annually, consistent with Attachment 2, and is described in the yearly recommendation letter produced by the JPE Subteam and transmitted to NMFS and CDFW. NMFS and CDFW issues an Annual JPE Letter, with the JPE Subteam recommendation included as an enclosure to the letter, to Permittee and Reclamation. Hatchery releases of CHNWR are tracked individually, and Permittee shall sum cumulative loss, confirmed by coded wire tag (CWT), across release groups with the same JPE and annual loss threshold. Permittee shall calculate loss for the south Delta export facilities using the 2018 CDFW loss equation (Attachment 8). Permittee shall count annual loss of natural and hatchery-origin CHNWR at the SWP and CVP salvage facilities for each brood year, starting July 1 of the calendar year through June 30 of the following calendar year. If cumulative loss of either natural or hatchery-origin CHNWR in a brood year exceeds 50% of the annual loss thresholds, then Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -3,500 cfs for seven consecutive days. If a CHNWR is salvaged during the 7-day action, the action will be extended for another seven days. At the conclusion of the action, Permittee, in coordination with Reclamation shall revert to the weekly distributed loss threshold until the 75% threshold is reached or throughout the end of the OMR Management season (Condition of Approval 8.6). If: • The cumulative loss of either natural or hatchery-origin CHNWR in a brood year exceeds 75% of the annual loss thresholds, and • The Winter-Run Chinook Salmon Machine Learning Model and associated OMR	ITP Condition # 8.4.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	Conversion Tool predict that a change in the OMR index to -2,500 cfs will shift the model output to a classification of CHNWR absence with a minimum probability of absence prediction of 0.559 for 1 of 30 sub-models for any of the seven most recent prediction days. These prediction values are calculated based on historical detections of length-at-date CHNWR and will be updated once genetic analysis of CHNWR is fully adopted (Condition of Approval 7.9.2). Then, Permittee shall, in coordination with Reclamation, adjust south Delta exports to maintain a 7-day average of the OMR index no more negative than the -2,500 cfs for seven consecutive days. Once 75% of the annual loss threshold is exceeded, each CHNWR observed in salvage shall trigger another operation to a 7-day average OMR index no more negative than -2,500 cfs for seven consecutive days, if the Winter-Run Chinook Salmon Machine Learning Model and associated OMR Conversion Tool predict that a change in the OMR index to -2,500 cfs will shift the model output to a classification of CHNWR absence with a minimum probability of absence prediction of 0.559 for 1 of 30 sub-models for any of the seven most recent prediction days. After May 1, Permittee, in coordination with Reclamation, through WOMT, may prepare an assessment to determine if the action is still warranted pending relevant biological and hydrological information. If the cumulative loss of either natural or hatchery-origin CHNWR in a brood year exceeds 100% of the annual loss thresholds, then Permittee shall, in coordination with Reclamation, immediately convene SaMT to review recent fish distribution information and operations and provide advice regarding future planned SWP and CVP operations to minimize subsequent loss during that year. The SaMT shall report the results of this review and advice to WOMT (Condition of Approval 8.1.4). Operational decisions shall be made following the process described in Condition of Approval 8.1.5. If either annual loss threshold is exceeded, Permittee shall, in coordination with Reclamation, also convene an independent panel to review SWP and CVP operations and the annual loss thresholds prior to November 1. The purpose of the independent panel is to review the actions and decisions contributing to the loss trajectory that led to an exceedance of an annual loss threshold, and make recommendations on modifications to SWP and CVP operations, or additional actions to be conducted to stay within the annual loss thresholds in subsequent years. Permittee shall convene such a panel within six months of the issuance of this ITP to review actions and conditions in water year 2024. Permittee shall, in coordination with Reclamation, restrict south Delta exports in response to meeting the above thresholds based on the initial length-at-date identification of natural-origin older juvenile Chinook Salmon and the thresholds described above. If genetic analysis of natural-origin older juvenile Chinook Salmon observed in salvage at the SWP or CVP subsequently confirms that any given Chinook Salmon is not genetically identified as				

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	a CHNWR, that fish will not count towards the loss threshold exceedance, and continued export restrictions pursuant to the OMR index limit may not be required. While the new rapid genetic method, SHERLOCK, undergoes field testing, both it and the current GT-seq method shall be used to determine the final identification. In the event that SHERLOCK and GT-seq provide different run assignments, the results from the GT-seq method shall be used to determine the final run assignment for the purposes of implementing Condition of Approval 8.4.3. If a fish is not genetically identifiable or if genetic identification is pending, then the Delta model length-at-date criteria shall be used to classify the race of the juvenile Chinook Salmon in salvage for the purposes of implementing Condition of Approval 8.4.3.				
58	Natural-origin Winter-run Chinook Salmon Weekly Distributed Loss Thresholds. To minimize the potential for a disproportionate impact of entrainment and loss on any single week of natural-origin juvenile CHNWR present in the Delta, Permittee shall, in coordination with Reclamation, manage the OMR index based on a natural-origin CHNWR weekly distributed loss threshold. The natural-origin CHNWR weekly loss threshold is a product of the weekly percentage of natural-origin CHNWR present in the Delta, scaled to 100% (Table 4, Column E), and 50% of the natural-origin CHNWR annual loss threshold (Condition of Approval 8.4.3). If the weekly distributed loss threshold is exceeded on any single day by the 7-day rolling sum of natural-origin CHNWR loss, then Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -3,500 cfs for seven consecutive days until seven days after the most recent exceedance. Permittee shall calculate loss for the south Delta export facilities using the 2018 CDFW loss equation (Attachment 8). If the natural-origin CHNWR JPE is not available at the start of OMR Management season (Condition of Approval 8.3), then the Red Bluff Diversion Dam brood year total from the most recent bi-weekly period shall be used and applied as described for early season management (Condition of Approval 8.2.1) to the annual loss threshold until the final natural-origin CHNWR JPE is available. The CHNWR JPE surrogate is calculated using the following formula: Natural-origin CHNWR JPE Surrogate = Red Bluff Diversion Dam juvenile CHNWR brood year passage total estimated from the most recent biweekly period x SurvivalFry-to-Smolt x SurvivalSmolt Permittee shall, in coordination with Reclamation, adjust south Delta exports in response to meeting the below natural-origin CHNWR weekly thresholds based on the initial length-at-date identification of natural-origin older juvenile Chinook Salmon and the thresholds described below. If genetic analysis of natural-origin older juvenile Chinook Salmon observed in salvage at the SWP or CVP subsequently confirms that any given Chinook Salmon is not genetically identified as a CHNWR, that fish will not count towards the loss	ITP Condition # 8.4.4	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	threshold exceedance, and continued export restrictions pursuant to the OMR index limit may not be required. While the new rapid genetic method, SHERLOCK, undergoes field testing, both it and the current GT-seq method shall be used to determine the final identification. In the event that SHERLOCK and GT-seq provide different run assignments, the results from the GT-seq method shall be used to determine the final run assignment for purposes of implementing Condition of Approval 8.4.4. If a fish is not genetically identifiable or if genetic identification is pending, then the length-at-date identification shall be used to classify the race of the juvenile Chinook Salmon in salvage for the purposes of implementing Condition of Approval 8.4.4. Weekly thresholds shall be based on historical distribution (Table 4, Column E) of genetically identified CHNWR from water years 2017 through 2021 and will change every week (e.g., January 1-7, January 8-15). After the conclusion of the OMR Management season each summer, Permittee and Reclamation, through SaMT, shall compare weekly Delta entry and exit information to determine if the presence data were distributed similarly to the historical distribution data. The results of this review will be utilized as a part of the AMP to implement the Winter-run Old and Middle River Flows Management Adaptive Management Action (Attachment 4 and Condition of Approval 7.9.2). Table 6. Historical (Water Years 2017 – 2021) presence of natural-origin CHNWR entering the Delta (Column B), exiting the Delta (Column C), present in the Delta (Column D = Column B - Column C), and present in the Delta scaled to 100% (Column E) for each week of OMR Management (Column A).				
59	Spring-run Chinook Salmon Protection Action and Surrogate Annual Loss Thresholds. To minimize entrainment and loss of juvenile CHNSR, Permittee shall, in coordination with Reclamation, restrict exports based on the presence of hatchery-origin CHNSR and associated yearling late fall-run and young-of-year fall-run Chinook Salmon surrogate groups at the SWP and CVP salvage facilities. Permittee shall, in coordination with CDFW, Reclamation, USFWS, and NMFS through the SaMT, select CHNSR yearling and young-of-year surrogate groups. Yearling CHNSR surrogates shall be selected from late-fall Chinook Salmon in-river release groups from the Coleman National Fish Hatchery. Young-of-year CHNSR and associated surrogate groups shall be selected from fall- and spring-run Chinook Salmon in-river release groups from the Feather River Fish Hatchery and Coleman National Fish Hatchery. From November 1 through the end of the OMR Management season (Condition of Approval 8.6) each water year: 1) if a cumulative loss threshold for a surrogate release group is exceeded in November or December, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -5,000 cfs for seven consecutive days; and	ITP Condition # 8.4.5	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	2) if a cumulative loss threshold for a surrogate release group is exceeded after the onset of OMR Management (Condition of Approval 8.3), or on or after January 1 through the end of OMR Management or June 30, whichever comes first, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -3,500 cfs for seven consecutive days. The cumulative loss threshold for CWT CHNSR surrogate groups at the SWP and CVP salvage facilities is greater than 0.25% for each release group: • Yearling CHNSR surrogates: WOMT, with input from SaMT, shall select three in-river releases of late fall-run Chinook Salmon from Coleman National Fish Hatchery from November through February to use as yearling CHNSR surrogates. Input from SaMT may include a proposal with several alternatives. If three in-river releases appropriately distributed from November through February are not achievable in a given year because of hatchery limitations, then an alternative plan shall be developed to ensure the adequate characterization and minimization of natural-origin yearling CHNSR can still be achieved that year. This plan shall be subject to CDFW approval. • Young-of-year CHNSR surrogates: WOMT, with input from SaMT, shall select six in-river releases comprised of CHNSR and fall-run Chinook Salmon from the Feather River Fish Hatchery and fall-run Chinook Salmon from the Coleman National Fish Hatchery from March through May to use as young-of-year CHNSR surrogates. Input from SaMT may include a proposal with several alternatives. If six in-river releases appropriately distributed from March through May are not achievable in a given year because of hatchery limitations, then an alternative plan shall be developed to ensure the adequate characterization and minimization of natural-origin young-of-year CHNSR can still be achieved that year. This plan shall be subject to CDFW approval. Loss shall be calculated for the south Delta export facilities using the 2018 CDFW loss equation (Attachment 8). The surrogate methods are intended to be an interim measure that may be replaced with a measure as described in Condition of Approval 7.9.3 and the AMP (Attachment 4) for natural-origin and hatchery-origin CHNSR. Permittee shall, in coordination with Reclamation and SaMT, use real-time monitoring data, relevant tools, and new science gained through ongoing efforts to develop a CHNSR JPE and LCM to inform weekly risk assessments (October through June) for natural-origin juvenile CHNSR. If the risk assessment or WOMT representatives identifies a more positive OMR flow may be needed to minimize take of natural-origin juvenile CHNSR, WOMT may consider a more positive OMR flow requirement.				

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
60	Improve Salmon Entrainment Forecasting During Real-time OMR Management. By 2028, Permittee shall, in coordination with CDFW, Reclamation, and NMFS, use best available science and information gained from the application of the Winter-run Chinook Salmon Machine Learning Model (Condition of Approval 7.9.2), new data (e.g., SR JPE monitoring, Winter-run Action Plan), population information, non-physical barrier effectiveness, and other tools to develop a CHNWR minimization measure for SWP and CVP export facilities that relies on improved forecasts of entrainment risk, while providing the same or better levels of protection as Conditions of Approval 8.2.1, 8.4.3, and 8.4.4 of this ITP. Permittee shall consult with CDFW regarding the need for an amendment to the ITP (Condition of Approval 5) to modify or replace Conditions of Approval 8.2.1, 8.4.3, and 8.4.4 with CHNWR minimization actions that do not solely rely on salvage, based on results from this effort and the AMP (Attachment 4). In 2026, consistent with Condition of Approval 7.9.3 to this ITP, Permittee shall, in coordination with CDFW, Reclamation, and NMFS, use best available science and information gained from the development of the initial CHNSR JPE to develop a new minimization measure for SWP and CVP export facilities that relies on improved forecasts of entrainment risk, while providing the same level of protection as Condition of Approval 8.4.5 of this ITP. Permittee shall consult with CDFW regarding the need for an amendment to the ITP (Condition of Approval 5) to modify or replace Condition of Approval 8.4.5 with CHNSR minimization actions that do not solely rely on salvage, based on results from this effort and the AMP (Attachment 4).	ITP Condition # 8.4.6	Develop a new CHNSR minimization measure by 2026 Develop a new CHNWR minimization measure by 2028	Permittee	
61	White Sturgeon Entrainment Protection Action. To minimize entrainment and salvage of WS, Permittee shall convene WSMT the following business day if the following conditions are observed: • Young of year WS have been detected in at least one of the following north or central Delta survey stations in the last 90 days: 20mm Survey stations 705, 707, 711, or 716, or Bay Study Survey stations 751, 760, or 761, and • The mean total exports over the last 90 days are greater than, or equal to, the exports defined by the following equation: $Exports_{90-day\ average} = 14{,}296.76 + \ -0.41 Vernalis\ Flow_{90-day\ average}$ Upon convening, WSMT will review all available information to develop an assessment of the risk of further entrainment and salvage of WS including: • Data from new and ongoing science and monitoring; • Biological modeling and data analysis;	ITP Condition # 8.4.7	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	• Hydrologic data, SWP and CVP exports and operations, and hydrologic model outputs; and • Available information to estimate residence time in CCF. Within WSMT, Permittee and CDFW shall jointly develop the risk assessment and supporting documentation to inform discussions and considerations of operational actions in WOMT. Input from all Permittee and CDFW WSMT members shall be included in the risk assessment, and any potential differences shall be noted and elevated as described in Conditions of Approval 8.1.3, 8.1.4, 8.1.5, and 8.1.6.3. If a risk assessment conducted by the WSMT, or Permittee or CDFW WOMT representatives, determines that an action is needed to minimize take of WS, operational decisions shall be made following the process described in Condition of Approval 8.1.5. The WSMT shall convene as necessary throughout the water year.				
63	Evaluate and Develop Alternative White Sturgeon Entrainment Minimization During Real-time OMR Management. By 2027, Permittee shall, in coordination with CDFW, use best available science and information gained from the WS Science Program (Condition of Approval 7.10.1) to develop an alternative approach to minimizing WS entrainment and salvage at the SWP and CVP export facilities that refines Condition of Approval 8.4.7 based on new knowledge and understanding of WS. This alternative approach shall incorporate estimates of WS loss in CCF as informed by the WS Science Plan (Condition of Approval 7.1o.1). Permittee shall consult with CDFW regarding the need for an amendment to the ITP (Condition of Approval 5) to modify or replace Condition of Approval 8.4.6 with WS minimization actions that do not solely rely on salvage, based on results from the WS Science Plan (Condition of Approval 7.10.1) and the AMP (Attachment 4).	ITP Condition # 8.4.8	Throughout the term of this ITP	Permittee	
63	Storm Flex. During OMR Management, Permittee may, in coordination with Reclamation, through WOMT, prepare an assessment to evaluate operating to a daily average OMR index no more negative than -6,250 cfs, to capture peak flows during storm-related events. Such operations may be requested to occur between the start of OMR Management, and either the Larval and Juvenile Delta Smelt Protection Action onramp (Condition of Approval 8.4.1) or the last day of February, whichever occurs first, to capture peak flows during storm-related events when: 1. The Delta is in excess conditions as defined in the COA; and 2. QWEST is greater than +1,500 cfs; and 3. X2 is < 81 km; and 4. The daily average turbidity at OSJ, HOL, and OBI sensors are < 12 FNU at each	ITP Condition # 8.5	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	station; and 5. A measurable precipitation event has occurred in the Central Valley; and 6. Permittee, in coordination with Reclamation, determines that the net Delta outflow index indicates a higher level of outflow available for diversion due to peak storm flows; and 7. None of the following Conditions or Approval are controlling SWP and CVP operations: Conditions of Approval 8.2.1, 8.3.1, 8.3.2, 8.3.3, 8.4.2, 8.4.3, 8.4.4, 8.4.5, and 8.4.7; and 8. Cumulative loss at the SWP and CVP export facilities of yearling Coleman National Fish Hatchery late fall-run Chinook Salmon (as yearling CHNSR surrogates under Condition of Approval 8.4.5) is less than 0.5% within any of the release groups. If the criteria above are met, WOMT shall decide whether to request that Permittee and Reclamation use estimates of the real-time distribution of Covered Species from SMT, SaMT, and WSMT, as well as particle tracking modeling and prediction tool output to assess potential Covered Species entrainment risk differences under OMR index scenarios of -5,000 and -6,250 cfs. If the assessment indicates that no additional Conditions of Approval for the upcoming week are likely to be triggered, Permittee may, in coordination with Reclamation, bring a request back to WOMT for approval to operate to an OMR index no more negative than -6,250 cfs. Permittee, in coordination with Reclamation, shall update the assessment no less than weekly. If, during approved operations of Storm Flex, conditions indicate a Condition of Approval is likely to be triggered, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 14-day average of the OMR index no more negative than -5,000 cfs, unless a further reduction in exports is required by another Condition of Approval. If a Condition of Approval is triggered, Permittee shall, in coordination with Reclamation, cease Storm Flex operations and implement the controlling Condition of Approval within 48 hours. WOMT shall re-evaluate Storm Flex decisions weekly.				
64	End of OMR Management. Permittee shall, in coordination with Reclamation, meet the requirements included in Conditions of Approval 8.2.1, 8.3, 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.4.4, 8.4.5, and 8.4.7 to ensure that entrainment and take of Covered	ITP Condition # 8.6	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	Species is minimized during OMR Management through June 30, or until the following species-specific thresholds occur: • DS and LFS: o Daily mean water temperature at CCF (CDEC station CLC) is ≥ 25°C for three consecutive days. • CHNWR and CHNSR: o Daily mean water temperature at Mossdale (CDEC station MSD) is > 22.2°C for seven days (does not have to be consecutive) in June; and o Daily mean water temperature at Prisoner's Point (CDEC station PPT) is > 22.2°C for seven days (does not have to be consecutive) in June.				
65	SWP Proportional Share. Due to the historically coordinated operations of the SWP and CVP, joint operational criteria related to OMR flows and south Delta export restrictions have been developed for SWP and CVP that assume coordinated implementation by Permittee and Reclamation. Conditions of Approval 8.2.1, 8.3, 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.5, and 8.6 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 of Approval. During the term of this ITP there may be instances when operational requirements stated in or determined by the Conditions of Approval listed above or Conditions of Approval 8.4.7 and 8.12 are different from operational requirements of the applicable ESA authorizations, which 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 including Conditions of Approval 8.4.7 and 8.12, 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: 1) Permittee is legally bound, both statutorily and through agreements with 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 determined by Conditions of Approval 8.2.1, 8.3, 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.7, 8.5, 8.6, and 8.12 of this ITP. 2) 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(s) of	ITP Condition # 8.7	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	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(s) of Approval at issue. 3) 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 requirement stated in or determined by the Condition(s) of Approval at issue. 4) 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(s) of Approval at issue. Excess and balanced conditions are defined in Section 1.4 of the Project Description. The SWP shares of allowable exports are defined based on the SWP share of exports during excess and balanced conditions described in the 2018 COA Addendum. This Condition of Approval in combination with other Conditions of Approval required by this ITP are intended to further satisfy Permittee's obligations pursuant to CESA. If the 1986 COA as amended in 2018 is revised after the effective date of this ITP, Permittee shall notify CDFW per Condition of Approval 5. Permittee shall not be required to reduce exports below the SWP COA share of combined SWP and CVP exports of 1,500 cfs, the minimum required to meet health and safety standards. Based on the 2018 COA addendum the Permittee identified its minimum exports as 600 cfs.				
66	Water Year Type Definition. All references to water year type in this ITP shall be defined based on the Sacramento Valley "40-30-30" water year hydrologic classification index as defined in the Bay-Delta Plan, unless otherwise noted.	ITP Condition # 8.8	Throughout the term of this ITP	Permittee	
67	Ongoing Comparison of OMR Index to Tidally Filtered OMR. The United States Geological Survey (USGS) Tidally Filtered Method to calculate OMR flow is defined in the 2009 NMFS Biological Opinion and Conference Opinion Long-term Operations of the Central Valley Project and State Water Project 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 reports as a part of SMT, SaMT, and WSMT and reported to WOMT, in addition to OMR flows as calculated using the OMR Index. Permittee shall provide CDFW raw data for the daily OMR Index and USGS Tidally Filtered OMR and a report comparing	ITP Condition # 8.9	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	the estimates over the prior water year annually as a part of the ASR (Condition of Approval 7.2). Permittee shall, in coordination with CDFW, convene a technical team, including but not limited to representatives from Permittee, CDFW, Reclamation, USFWS, NMFS, and the State Water Board to review both the USGS Tidally Filtered Method and the OMR Index calculation to determine if improvements are needed to better quantify OMR flow. If Permittee and CDFW agree on an improved method for calculating OMR flow, Permittee may request an amendment to the ITP to modify or replace the existing OMR Index used in real-time OMR Management.				
Barker Slough Pumping Plant Delta Smelt and Longfin Smelt Protections.		8.10			
68	Barker Slough Pumping Plant Larval Delta Smelt Protection. Permittee shall operate the BSPP to protect larval DS from March 1 to June 30 of dry and critical water years according to the details below. If the water year type changes after March 1 to below normal, above normal, or wet, this Condition of Approval will no longer be in effect. If the water year type changes after March 1 to dry or critical, Permittee shall operate according to this Condition of Approval. From March 1 to April 30 of dry and critical water years, if catch of larval DS (<25 mm fork length) in the 20-mm Survey at station 718 exceeds 14% of the total catch of larval DS across the Cache Slough area of the north Delta (20-mm Survey stations 716, 718, 719, 720, 723, 724, and 726), then Permittee shall operate to a maximum 7-day average diversion rate at BSPP less than 60 cfs. From May 1 to June 30 of dry and critical water years, if catch of larval DS (<25 mm fork length) in the 20-mm Survey at station 716 exceeds 5% of the total catch of larval DS across the Cache Slough area of the north Delta (20-mm Survey stations 716, 718, 719, 720, 723, 724, and 726), then Permittee shall operate to a maximum 7-day average diversion rate at BSPP less than 100 cfs.	ITP Condition # 8.10.1	Throughout the term of this ITP	Permittee	
69	Barker Slough Pumping Plant Larval Longfin Smelt Protection. Permittee shall operate the BSPP to a maximum 7-day average diversion rate at BSPP less than 100 cfs to minimize entrainment of larval LFS from January 1 to March 31 of dry and critical water years. If the water year type changes after January 1 to below normal, above normal, or wet, this Condition of Approval will off-ramp. If the water year type changes after January 1 to dry or critical, Permittee shall operate according to this Condition of Approval.	ITP Condition # 8.10.2	Throughout the term of this ITP	Permittee	
Minimization of Winter- and Spring-run Migration into the Interior and South Delta.		8.11			

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
70	Install and Operate the Georgiana Slough Salmonid Migratory Barrier. Permittee shall continue the annual installation and operation the Georgiana Slough Salmonid Migratory Barrier at Georgiana Slough in accordance with this Condition of Approval, the CDFW approved Georgiana Slough Salmonid Migratory Barrier Operations Plan, the AMP (Attachment 4), and 2022 ITP for the Georgiana Slough Salmonid Migratory Barrier Project (ITP No. 2081-2021-102-03) for the duration of this ITP. 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 interior and south Delta. From November 1 through November 15, Permittee shall conduct testing and commissioning of the Georgiana Slough Salmonid Migratory Barrier. If in a given year Permittee provides requests to not conduct testing and commissioning of the barrier from November 1 through November 15 to preserve the integrity of the barrier, Permittee shall submit a justification to CDFW by October 31, for CDFW's written approval. From November 16 through November 30, Permittee shall operate the Georgiana Slough Salmonid Migratory Barrier annually when the daily Knights landing Catch Index or Sacramento Catch Index is greater than or equal to 3.0 older juvenile Chinook Salmon. Permittee may suspend operations after three days of operation if the daily catch index at both the Knights Landing and Sacramento monitoring sites is less than 3.0 older juvenile Chinook Salmon for two consecutive days. From December 1 through April 30, Permittee shall operate the Georgiana Slough Salmonid Migratory Barrier. From May 1 through May 31, Permittee shall operate the Georgiana Slough Salmonid Migratory Barrier, unless Permittee provides annual justification for not operating the barrier given juvenile CHNWR and CHNSR outmigration timing patterns and CDFW approves in writing. During annual operations, Permittee may interrupt operations temporarily for maintenance or monitoring studies if approved in writing by CDFW. During annual operations, if an unplanned outage occurs Permittee shall submit a notification and schedule for resolution of the outage in writing to CDFW within 24 hours of the outage. Permittee shall submit any modifications to the Georgiana Slough Salmonid Migratory Barrier Operations Plan to CDFW for review and written approval.	ITP Condition # 8.11.1	Throughout the term of this ITP	Permittee	
71	Evaluate Benefits of Salmonid Guidance Structures at Sutter and Steamboat Sloughs. Permittee, in collaboration with the Guidance Structure Evaluation Working Group, conducted a preliminary evaluation of the potential benefits of salmonid guidance structures at Sutter and Steamboat sloughs to improve through-Delta survival as a	ITP Condition # 8.11.2	Re-convene the working group within six months	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	requirement of the 2020 ITP for the Long-term Operation of the SWP in the Sacramento-San Joaquin Delta (ITP No. 2081-2019-066-00). Under Condition of Approval 7.9.5 to this ITP, Permittee shall implement regional survival studies within the Delta to evaluate Chinook Salmon survival, behavior, and route entrainment. Permittee shall use information gained from Condition of Approval 7.9.5 to this ITP and feedback from the Guidance Structure Evaluation Working Group to continue developing tools to assess further actions to improve Chinook Salmon through-Delta survival. Within six months of the effective date of this ITP, Permittee shall re-convene the Guidance Structure Evaluation Working Group, including representatives from Permittee, CDFW, Reclamation, USFWS, NMFS, and SWP Contractors. With support from the Guidance Structure Evaluation Working Group, Permittee shall address CDFW's comments and initiate and complete sensitivity analyses defined by CDFW in its comments to the draft Sutter and Steamboat Slough Guidance Structure Evaluation Report. Within two years of the effective date of this ITP, Permittee shall submit an updated draft Sutter and Steamboat Slough Guidance Structure Evaluation Report to CDFW for review. Within four months of receiving CDFW's review, Permittee shall update the evaluation report and submit the final Sutter and Steamboat Slough Guidance Structure Evaluation Report to CDFW for approval. Within one year of finalizing the evaluation report, Permittee shall reassess actions to improve Chinook Salmon through-Delta survival (potentially through increased routing into Steamboat Slough) using tools developed and refined through the Sutter and Steamboat sloughs evaluation effort and propose actions for CDFW's approval. Consideration shall be given to actions that will complement the Georgiana Slough Salmonid Migratory Barrier, including flexibility in utilizing the Georgiana Slough barrier at upstream locations dependent on hydrologic conditions.		of the effective date of this ITP Submit an updated draft report to CDFW within two years of the effective date of this ITP		
72	Spring Delta Outflow Implementation. This condition of Approval is intended to augment Delta outflow during a critical time in the life history of all five Covered Species. When March, April and May Delta outflow is augmented, salinity in Suisun Bay is reduced and central Delta productivity is dispersed westward, improving habitat for both DS and LFS. At the upper end of managed flows when X2 is in San Pablo Bay, reservoir releases and export curtailments help maintain this favorable location and sustain food web productivity and other conditions for improved LFS recruitment in San Pablo Bay. Reductions in outflow during such conditions could restrict LFS nursery habitat upstream to less favorable habitat in Carquinez Strait. Augmenting spring Delta outflow through a combination of increased releases from reservoirs and export curtailments improves migratory conditions for CHNWR, CHNSR, and WS by reducing Covered Activities' impacts on routing and through-Delta survival. Reducing exports during this time period to maintain a higher Delta outflow will also provide a proactive approach to entrainment minimization that is expected to reduce CHNWR, CHNSR, and WS routing into the central and south Delta and minimize	ITP Condition # 8.12	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	loss of all Covered Species at the SWP export facility. Additionally, increases in spring Delta outflow are associated with increased food web transport to, and productivity in, Suisun Bay. Permittee shall provide spring Delta outflow to minimize impacts to Covered Species as a result of Project operations. Permittee shall implement Condition of Approval 8.12.1 as a continuation of the existing spring export curtailment as accounted for in the ratio of Vernalis flows (cfs) to combined SWP and CVP south Delta exports (cfs) during water years when the HRL is not implemented. Permittee shall implement Conditions of Approval 8.12.2 and 8.12.3 during water years when the HRL is implemented consistent with those Conditions of Approval. If the State Water Board adopts a final HRL, Permittee and CDFW will immediately meet and confer to review the Project in light of the final form of the HRL (Condition of Approval 5).				
73	Spring Delta Outflow Via Export Curtailments. The following shall be implemented by Permittee during any water year in which SWP export reductions and flow purchases pursuant to the HRL are not identified and conducted as described in Condition of Approval 8.12.2. Permittee shall operate the Project during the spring each year to restrict exports and enhance Delta outflow. Permittee shall reduce exports from April 1 to May 31 each year to achieve the SWP proportional share (Condition of Approval 8.7) of export reductions established by the ratio of Vernalis flow (cfs) to combined SWP and CVP exports, scaled by water year type, to provide incidental spring outflow. In a critical year, the ratio of Vernalis flow to SWP and CVP combined exports shall be 1 to 1. In a dry year, the ratio of Vernalis flow to SWP and CVP combined exports shall be 2 to 1. In a below normal year, the ratio of Vernalis flow to SWP and CVP combined exports shall be 3 to 1. In an above normal or wet year, the ratio of Vernalis flow to SWP and CVP combined exports shall be 4 to 1. In wet years SWP export curtailments required by this Condition of Approval for spring outflow in April and May are limited to 150 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. For purposes of this Condition of Approval only, the San Joaquin Valley "60-20-20" water year hydrologic classification and indicator as defined in the Bay-Delta Plan (SWRCB 2006) is used. Permittee shall not be required to restrict operations as described above under either of the following circumstances: • If the 3-day average Delta outflow is greater than 44,500 cfs, then Project operations shall not be controlled by this Condition of Approval until the flows drop below 44,500 cfs on a 3-day average.	ITP Condition # 8.12.1	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	• 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. 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. If HRL is approved by the State Water Board during the term of this ITP in a manner that is consistent with the requirements described in Condition of Approval 8.12.2, Permittee is not required to implement this Condition of Approval 8.12.1 in critically dry or wet years while HRL is being implemented.				
74	Spring Delta Outflow Via the Healthy Rivers and Landscapes Program. As described in Sections 1.5 and 3.3 of the Project Description, Permittee and its SWP Contractors propose a reduction in SWP south Delta exports to protect and augment Delta outflows between March through May of dry, below normal, and above normal water year types. Additionally, Permittee shall provide 50 TAF of Delta inflow that is dedicated to Delta outflow in March of dry, below normal, and above normal water years. Permittee shall make these flows available, which Permittee may facilitate through upstream land fallowing, and resulting reservoir releases to be passed through for Delta outflow. Permittee may provide flows in April or May, if approved by CDFW. Permittee shall also provide SWP south Delta foregone exports in April and May of dry, below normal, and above normal water years. Water volume requirements are described in Table 5 below. Permittee may deploy a portion of the export reduction flows in March or June if approved by CDFW. For purposes of implementation of this Condition of Approval, Permittee shall adhere to the 90% exceedance forecast in March, the 75% exceedance forecast in April, and the 50% exceedance forecast in May of the Sacramento Valley “40-30-30” water year hydrologic classification index as defined in the Bay-Delta Plan to determine the water year type and associated flow volume requirements (Table 5). SWP exports at Banks Pumping Plant are not required to be reduced below 600 cfs to implement this Condition of Approval. If Permittee has operated consistent with the CDFW approved Delta Operation Plan (Condition of Approval 8.12.3) and has not fully deployed the foregone export Delta outflow by May 31, Permittee shall continue to reduce SWP south Delta exports, to forego exports of any remaining unstored flows, to the maximum extent practicable on a daily basis to deploy the remaining Delta outflows by the end of June.	ITP Condition # 8.12.2	Throughout the term of this ITP	Permittee	
75	Planning and Reporting Implementation of Spring Delta Outflow Via the Healthy Rivers and Landscapes Program. Condition of Approval 8.12.2 describes blocks of water that shall be made available to supplement spring Delta outflow as a part of the HRL, with seasonal timing at the discretion of CDFW, during years when the HRL is implemented. Each year	ITP Condition # 8.12.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	the HRL is implemented, to facilitate the planning, accounting, and reporting of Condition of Approval 8.12.2, Permittee shall: 1) Develop and operate to a Spring Delta Outflow Operations Plan: • Beginning no later than January 15, work collaboratively with CDFW to develop a draft Delta Outflow Operations Plan that describes: o The timing and volume of water to be made available on a daily basis between March 1 and May 31 associated with the blocks of water in Table X (Condition of Approval 8.12.2). o Anticipated Project operational actions (e.g. export restrictions and water made available through land fallowing and reservoir releases) that would be taken to ensure the available blocks of water supplement Delta outflow. o 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 other controlling operational criteria. o Ongoing coordination with CDFW and the WOMT throughout deployment of the available blocks of water to evaluate operations relative to the requirements described in the Final Delta Operations Plan. • Permittee shall work collaboratively with CDFW on an ongoing basis after January 15 to develop and 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. • Permittee shall 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. • Operate the Project consistent with the final CDFW-approved Delta Outflow Operations Plan. • Upon implementation of the CDFW approved Spring Delta Operations Outflow Plan, each week DWR will provide a 7-day forecast of the daily volume of water that will contribute to the blocks of water defined in Condition of Approval 8.12.2. The actual volumes from the previous week's forecast will be trued up the following week.				

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials

	2) 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 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 allowable SWP exports
	• Minimum required Delta outflow that would be required to meet applicable controlling standards
	• Documentation of the volume and timing of the blocks of water required to be deployed in Table 5
	• Documentation of the reference operation including a 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 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.
	3) Incorporate CDFW comments and edits into the draft Delta Outflow Operations Report and submit it to CDFW for approval before December 1.				

76	Consultation Regarding Deployment of Spring Outflow Via the Healthy Rivers and Landscapes Program. Permittee shall meet with CDFW at the beginning of each month (March, April, May, and June) to determine if HRL volume commitments met through export reductions and/or upstream releases match targets established in the Delta Outflow Operations Plan. In the event that actual flow deployments are under or above planned	ITP Condition # 8.12.4	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	targets, CDFW will determine if the Delta Outflow Operations Plan may be adjusted in real-time to meet outflow volumes in Table 5. Deployment of HRL Delta outflow via foregone exports of unstored flows in the spring shall occur between March and June each year. Initiating deployment of foregone exports of unstored flows in April results in conditions most consistent with baseline, however this approach has a risk of not fully deploying flows by the end of June each year. Initiating deployment of foregone exports of unstored flows in March is expected to create conditions in May different from baseline, but results in a reduce risk of not fully deploying flows by the end of May each year. Recognizing these tradeoffs, Conditions of Approval 8.12.2, 8.12.3, and 8.12.4 include requirements to conduct initial planning for flow deployment, and regular check ins throughout the spring season. In the event that flows required by Condition of Approval 8.12.2 are not deployed in full within the March – June time period Permittee shall meet and confer with CDFW before September 30 to develop a schedule for the deployment of remaining flows in the subsequent water year, or in the next water year with the same Sacramento Valley Index water year type as the year in which flows were not fully deployed. Permittee shall submit the draft schedule to CDFW for review and approval. Permittee shall implement the CDFW-approved schedule. Before Condition of Approval 8.12.2 is implemented, CDFW and Permittee shall develop a plan and potential alternative approach, for CDFW approval, to address situations when the water year type is not identified for flows in HRL in March and April, then shifts to a water year type identified in HRL in May or June, and flow volumes required are not deployed in full. The plan shall consider 1) the reasons for the shortfall and 2) a comparison of HRL flow deployment to flow deployment that would have occurred under Condition of Approval 8.12.1 that spring. Permittee may propose alternative actions to subsequent deployment of remaining flows that achieve equivalent, or better, biological value to Covered Species after CDFW and Permittee meet and confer, for CDFW approval. In addition to within-season and annual coordination with CDFW, Permittee shall meet and confer with CDFW every three years that Condition of Approval 8.12.2 is implemented to evaluate the deployment of the flow volume commitments in Table 5 above and compare them to the volumes of Delta outflow that would have been achieved by operating to Condition of Approval 8.12.1. If CDFW determines that the flow volumes achieved through deployment of Condition of Approval 8.12.2 are not equivalent to flow volumes that would have been generated through implementation of Condition of Approval 8.12.1, on average, Permittee will meet and confer with CDFW as described above to determine additional actions needed to compensate for associated impacts.				
77	Skinner Fish Facility CDFW Staff. To support implementation of this ITP, Permittee shall continue to fully fund two existing CDFW Environmental Scientist positions and one existing CDFW Senior Environmental Scientist Specialist position to work collaboratively	ITP Condition # 8.13	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	with DWR Skinner Fish Facility staff through the duration of this ITP. Permittee shall work collaboratively with these CDFW staff to ensure that they have the access and information needed to perform their duties and discuss roles and responsibilities relative to existing DWR facility staff. Permittee shall work cooperatively with CDFW to ensure CDFW staff has access and information to perform duties including but not limited to the following: • Receive daily salvage data from the SWP and CVP fish salvage facilities, • Conduct salvage data and database QA/QC, • Monitor Skinner Fish Facility operations, • Train DWR Skinner Fish Facility staff on fish identification, • Work collaboratively with Permittee to develop and implement a revised written training curriculum for DWR Skinner Fish Facility staff, • Work collaboratively with Permittee to annually review and update the revised Skinner Fish Facility Operations Manual (Section 3.5.2 of the Project Description), • Review annual salvage reports from the SWP and CVP fish salvage facilities, • Receive notifications and provide technical assistance regarding inspections or maintenance of fish protective equipment, • Work collaboratively with Permittee to develop a new protocol which describes the decision-making process prior to reducing sampling times at Skinner Fish Facility, • 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 at Skinner Fish Facility, • Provide technical assistance at Permittee's request with heavy fish and/or debris load management at Skinner Fish Facility, • Participate in the development and implementation of the Debris Management Effectiveness Study Plan to refine the Skinner Fish Facility fish sampling procedures and infrastructure for improvements in accuracy and reliability of data and fish survival (Condition of Approval 7.5.2), and • Participate in the development and implementation of the Alternative Loss Pilot Study Implementation Plan to refine the parameters of the Alternative Loss Equation software tool for estimating CHNWR and CHNSR loss at the SWP and CVP export facilities (Condition of Approval 7.9.1). Permittee shall provide reasonable access to the Skinner Fish Facility for the three CDFW staff identified in this Condition of Approval.				

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
Clifton Court Forebay Maintenance, Outages, and Inspection Procedures.		8.14			
78	Spring Maintenance and Inspection. During spring maintenance and inspection, Permittee shall lower the water level in CCF by closing the radial gates and operating both the Banks Pumping Plant and the Skinner Fish Facility prior to the outage to salvage as many fish as practicable currently present in CCF. Permittee shall initiate the outage at both the Banks Pumping Plant and the Skinner Fish Facility once the minimum operating water level is achieved. During the outage, Permittee shall inspect the CCF cement liner and conduct all planned maintenance at the facilities. Once the CCF cement liner inspection is completed, Permittee shall raise the water level in CCF to the normal operating level by allowing allotments of water into CCF within the constraints of OMR requirements as described in Conditions of Approval in this ITP. Once the Banks Pumping Plant and the Skinner Fish Facility maintenance activities are complete and the CCF returns to the normal operating water level, Permittee shall resume normal Banks Pumping Plant and the Skinner Fish Facility operations.	ITP Condition # 8.14.1	Throughout the term of this ITP	Permittee	
79	Herbicide and Algaecide Treatment. Permittee may conduct aquatic weed and algal bloom management in CCF by applying herbicide and algaecide treatments to CCF consisting of peroxide-based aquatic algaecides applied year-round and Aquathol K and copper-based aquatic compounds applied from June 28 through October 31. Permittee may apply Aquathol K and copper-based aquatic compounds, if necessary, prior to June 28 or after October 31 if the average daily water temperature within the CCF is greater than or equal to 25°C, and if Covered Species are not at additional risk from the treatment, as confirmed by CDFW, USFWS, and NMFS. Before applying Aquathol K or copper-based aquatic compounds outside of the June 28 to October 31 time frame, Permittee shall notify and confer with CDFW, USFWS, and NMFS to determine whether ESA- or CESA-listed fish species are present and at risk from the proposed treatment. Prior to herbicide or algaecide treatment, Permittee shall monitor the salvage of Covered Species at the Skinner Fish Facility. If salvage of Covered Species occurs, Permittee shall confer with CDFW prior to initiating herbicide or algaecide treatment. During herbicide or algaecide treatment, Permittee shall close the CCF radial gates for at least 24 hours prior to treatment to allow fish currently present in CCF to move out of the targeted treatment areas and towards the salvage facility and to minimize the possibility of aquatic herbicide or algaecide diffusing into the Delta. Following herbicide or algaecide treatment using peroxide-based aquatic algaecides, Permittee may reopen the CCF radial gates immediately after treatment. Following herbicide or algaecide treatment using Aquathol K and copper-based aquatic compounds, Permittee shall keep the CCF radial gates closed for a minimum of 12 and up to 75 hours after treatment to allow for the product-recommended duration of contact time	ITP Condition # 8.14.2	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	between the aquatic herbicide or algaecide and the treated vegetation or cyanobacteria in CCF, and to reduce residual endothall concentration for drinking water compliance purposes. Permittee may open the CCF radial gates after a minimum of 36 hours (24 hours pre-treatment closure followed by a minimum of 12 hours post-treatment closure). Permittee shall adhere to the following conditions for herbicide or algaecide treatment in CCF: • Ensure that herbicide or algaecide treatments will be made by a licensed applicator under the supervision of a California Certified Pest Control Advisor and will follow label restrictions; • Ensure herbicides and algaecides will be applied in a manner consistent with the label instructions, with a target concentration dependent upon target species and biomass, water volume and the depth of the CCF not to exceed the following concentrations: o Peroxide-based aquatic algaecides applied up to 10.2 parts per million (ppm) hydrogen peroxide; o Aquathol K applied up to 3 ppm; and o Copper-based aquatic compounds applied up to 1 ppm; • Restrict treatments to the smallest area possible (no more than 50% of the CCF at one time) that provides relief to SWP operations or water quality; • Apply treatments by boat or aircraft; • Apply treatments by boat using a subsurface injection system for liquid formulations and a boat-mounted hopper dispensing system or a helicopter for granular formulations. Applications shall start at the shoreline and move systematically farther offshore, enabling fish to move out of the treatment area; • Apply treatments by aircraft only during times when wind speeds are less than 15 miles per hour (mph) to prevent spray drift; • Collect water quality samples before, during and after treatment to ensure concentrations do not exceed the application limit, per National Pollutant Discharge Elimination System (NPDES) permit required procedures; and • Develop and implement a spill prevention plan in the event of an accidental spill.				
80	Clifton Court Forebay Aquatic Weed Harvesting. Permittee may conduct aquatic weed management in CCF year-round using a boat-mounted aquatic weed harvester. Prior to weed harvesting, Permittee shall ensure that all personnel on site participate in environmental awareness training for special-status species with the potential to occur in the project area. If any wildlife is observed within the aquatic weed removal and disposal areas, Permittee shall halt work immediately, and the wildlife are allowed to move out of the area on their own. Following weed harvesting, Permittee shall stockpile all harvested aquatic weeds on land for transport to a commercial green waste facility or similar facility.	ITP Condition # 8.14.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
81	Relationship Between the Adaptive Management Plan and this ITP. The AMP (Attachment 4) 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 to 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 scientific understanding of Covered Species, evaluate potential changes in the Conditions of Approval in this ITP, and build a knowledge base for future permitting processes. The AMP (Attachment 4) describes this structure and steps associated with adaptive management in more detail. 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. 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 response to recommendations from the AMP.	ITP Condition # 8.15	Throughout the term of this ITP	Permittee	
82	Drought Contingency Planning. In addition to the DRY Team coordination as described in Section 3.13 of the Project Description, on October 1, if the prior water year was dry or critical, Permittee, in coordination with Reclamation, shall meet and confer with CDFW, USFWS, NMFS, and the State Water Board, 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 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.	ITP Condition # 8.16	Throughout the term of this ITP	Permittee	
83	Early Season Natural Winter-run Chinook Salmon Discrete Daily Loss Threshold. From the effective date of this ITP through December 20, 2024 Permittee shall, in coordination with Reclamation, adhere to the following criteria to minimize take of early migrating CHNWR. 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	ITP Condition # 8.17	From the effective date of this ITP through December 20, 2024	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	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: • From November 1 – November 30: 6 older juvenile Chinook Salmon • From December 1 – December 31: 26 older juvenile Chinook Salmon 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 8). From the effective date of this ITP through December 20, 2024, or finalization of a new ROD, whichever occurs first, Permittee shall not be required to implement Condition of Approval 8.2.1 (Natural-origin Winter-run Chinook Salmon Early Season Weekly Loss Thresholds). This Condition of Approval carries forward Condition of Approval 8.6.2 from the 2020 ITP for Long-term Operation of the SWP in the Sacramento-San Joaquin Delta (ITP No. 2081-2019-066-00) and is applicable only for the time period described in this Condition of Approval.				

Compensatory Mitigation: CDFW has determined that permanent protection and perpetual management of compensatory habitat and additional mitigation actions are necessary and required pursuant to CESA to fully mitigate Project-related impacts of the taking on the Covered Species that will result from implementation of the Covered Activities (Attachments 5, 6, and 7). This determination is based on factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, changes in the Project's anticipated take, related impacts of the taking, and minimization measures from the 2020 ITP for the Long-term Operation of the SWP in the Sacramento-San Joaquin Delta (ITP No. 2081-2019-066-00), the duration of authorized Covered Activities, and CDFW's estimate of the protected acreage and additional actions required to provide for adequate compensation.

To meet this requirement, Permittee shall either purchase Covered Species credits from a CDFW-approved mitigation or conservation bank to achieve the acreage requirements described in Condition of Approval 9.1, or shall provide for the permanent protection, restoration, and initial and long-term management and monitoring of Habitat Management (HM) lands described in Condition of Approval 9.1. HM land protection, restoration, monitoring, and management shall be conducted pursuant to procedures and timelines set forth in Condition of Approval 9.1 below and the calculation of the management funds pursuant to Condition of Approval 9.4 below.

Permittee shall include in its ASR, pursuant to Condition of Approval 7.2, documentation demonstrating cumulative HM lands permanently protected (and restored where required) for each Covered Species to date.

Permanent protection, restoration, and funding for perpetual monitoring and management of compensatory habitat must be complete before starting Covered Activities, or, if Security is provided pursuant to Condition of Approval 10 below for all uncompleted obligations, after the effective date of this ITP.

Permittee's implementation of the protection, restoration or perpetual management of HM lands may require separate CEQA evaluation. Because no take authorization is provided through this permit for the HM lands activities, Permittee shall obtain CESA authorization as necessary to implement HM land requirements. All individual protection and restoration projects proposed to achieve the compensatory mitigation required in this Condition of Approval shall be subject to CDFW approval in writing.

Compensatory Mitigation for Delta Smelt and Longfin Smelt.	9.1

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
84	Tidal Wetland Habitat Restoration for Delta Smelt. Within 1.5 years of the effective date of this ITP, Permittee shall complete siting, design, and restoration of 8,396.3 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. These required acres represent a combined total of tidal wetland restoration acres carried forward from two existing compensatory mitigation requirements: • The requirement to restore and conserve 8,000 acres of DS tidal wetland habitat is carried forward from the compensatory mitigation obligation, originally established in the 2008 USFWS Biological Opinion and associated CDFW Consistency Determination (CD No. 2080-2009-007-00). • The requirement to restore and conserve 396.3 acres of DS tidal wetland habitat is carried forward from the compensatory mitigation obligation for take of DS due to increased diversions at the BSSP, originally established in the 2020 ITP for Long-term Operation of the SWP in the Sacramento-San Joaquin Delta (ITP No. 2081-2019-066-00). Permittee shall coordinate with CDFW and USFWS during the process of site selection and restoration design for HM lands intended to serve as compensatory mitigation for impacts to DS habitat. All DS tidal wetland habitat restoration shall be subject to approval by CDFW.	ITP Condition # 9.1.1	Within 1.5 years of the effective date of this ITP	Permittee	
85	Mesohaline and Tidal Habitat Restoration for Longfin Smelt. Within 1.5 years of the effective date of this ITP, Permittee shall complete siting, design, and restoration of 209.46 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 209.46 acres of LFS mesohaline habitat is the remainder carried forward from two compensatory mitigation requirements: • The requirement to acquire, restore, conserve and provide for perpetual management and monitoring of 800 acres of LFS mesohaline habitat take of LFS originally established in the 2009 ITP for California SWP Delta Facilities and Operations (ITP No. 2081-2009-001-03), 590.54 acres of which has been satisfied. • The requirement to restore and conserve 396.3 acres of tidal wetland habitat is carried forward from the compensatory mitigation obligation for take of LFS originally established in the 2020 ITP for Long-term Operation of the SWP in the Sacramento-San Joaquin Delta (ITP No. 2081-2019-066-00). Permittee shall coordinate with CDFW and USFWS during the process of site selection and restoration design for HM lands intended to serve as compensatory mitigation for impacts to LFS habitat. All LFS mesohaline habitat restoration shall be subject to approval	ITP Condition # 9.1.2	Within 1.5 years of the effective date of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	by CDFW.				
86	Delta Smelt Summer-Fall Habitat Action. The Delta Smelt Summer-Fall Habitat Action (Summer-Fall Action) is intended to benefit DS food supply and habitat, thereby contributing to the recruitment, growth, and survival of DS. The FLaSH conceptual model states that DS habitat should include low-salinity conditions of 0 to 6 parts per thousand (ppt), turbidity of approximately 12 NTU, temperatures below 25˚C (77˚F), 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 Habitat 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. Each year Permittee shall develop a plan in collaboration with Reclamation, and subject to written approval by CDFW, to operate the Project to achieve operational requirements described in the bullet below in this Condition of Approval, and implement additional actions, as available, including monitoring, science, and food enhancement actions to enhance DS habitat (Summer-Fall Action Plan). As an outcome of this annual planning and implementation process, reports documenting Summer-Fall Habitat Action operations and results from monitoring and scientific investigations shall be used as part of the AMP (Attachment 4) to better understand DS habitat during the summer-fall time period and investigate the way in which SWP and CVP operations interact with the full range of components of DS habitat. Permittee shall submit drafts of all reports documenting Summer-Fall Habitat Action operations and results to CDFW for review, incorporate CDFW input, and send final draft reports to CDFW for approval prior to finalization. Permittee shall submit a final draft Summer-Fall Action Plan to CDFW by May 15 in each year a Summer Fall Habitat Action is required for written approval prior to implementation of this Condition of Approval. The Summer-Fall Action Plan shall describe the planned implementation of the actions required in this Condition of Approval and the expected hydrologic and biological benefits. The Summer-Fall Habitat Action shall be implemented between June 1 and September 30 of each water year and through October 31 of the following water year. Permittee shall include in the Summer-Fall Action Plan and adhere to the following minimum requirements: • Improve Fall Low-Salinity Habitat (Fall X2): To increase the amount of low-salinity zone habitat for DS in wet and above normal hydrologic year types, Permittee shall, in coordination with Reclamation, maintain a 30-day average X2 ≤ 80 km from September 1 through October 31.	ITP A1 Condition # 9.1.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	• Operate Suisun Marsh Salinity Control Gates: To address effects on habitat for juvenile DS and increase habitat and food access for DS in summer and fall (June through October) in Suisun Marsh and Grizzly Bay during above normal and below normal years, and dry years following wet or above normal years, Permittee shall operate SMSCG for 60 days, to maximize the number of days that Belden's Landing 3-day average salinity is equal to, or less than, 4 practical salinity units (psu), to maximize the spatial and temporal extent of DS low salinity zone habitat in Suisun Marsh and Grizzly Bay. Operation of the SMSCG shall occur between June 1 and October 31 in years which operation of the SMSCG is required. In dry years following below normal years, Permittee shall operate SMSCG for 30 days to maximize the number of days Belden's Landing 3-day salinity is equal to, or less than 6 psu to maximize the spatial and temporal extent of DS low salinity zone habitat in Suisun Marsh and Grizzly Bay. Permittee shall implement SMSCG operations consistent with the CDFW-approved Summer-Fall Action Plan in each year in which an action is required. Permittee shall implement a modified Summer-Fall Action for Water Year 2025 that adheres to the following minimum requirements: • Permittee shall operate to meet the requirements of D-1641 in September 2025 and October 2025 and is not required to meet a monthly average X2 of ≤ 80 km during this time. • Permittee shall operate the SMSCG for 60 days as required for an above normal water year type. In addition, Permittee shall extend the required SMSCG operations for three (3) consecutive days starting from August 23, 2025, and operate the SMSCG on a daily basis starting from September 5, 2025, for an additional seven (7) consecutive days to expand the spatial extent of Delta Smelt low salinity zone habitat in Suisun Marsh.				
87	Delta Coordination Group. The DCG is comprised of two representatives each from Permittee, CDFW, Reclamation, USFWS, and NMFS, and one representative each from the SWP water contractors and CVP water contractors. The DCG may approve conditional attendance by technical representatives when appropriate in a non-voting role. The DCG, may prepare an assessment to propose a gate operation if modeling of hydrological and/or existing D-1641 conditions indicate the action can achieve the same habitat benefits in an equal or better manner within the range of effects analyzed. Subsequently, Permittee, in coordination with Reclamation, may propose operations of the SMSCG for WOMT to consider prior to May 15 of each year a SMSCG action will be required. Permittee shall, in coordination with Reclamation and through the DCG, develop an annual monitoring plan that responds to uncertainties in the performance metrics to evaluate action performance based on a schedule determined by the AMSC. Permittee shall, in coordination with Reclamation, also produce a report that	ITP Condition # 9.1.3.1	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	summarizes monitoring findings and assess action performance based on a schedule determined by the AMSC. The Summer-Fall Habitat Action shall be included in independent reviews under the AMP (Attachment 4).				
88	<u>One-Time Water Commitment for Delta Outflow</u>. Permittee shall deploy a 100 TAF block of water to supplement Delta Outflow in water year 2025 during the summer-fall period, from June through September, to improve DS habitat conditions. The 100 TAF shall be stored in Oroville Reservoir and is subject to spill from Oroville Reservoir if water year 2025 is wet or above normal as determined by the final 50% exceedance forecast on May 10. Beginning on February 15, 2025 Permittee shall coordinate with CDFW to develop a plan for the deployment of the 100 TAF in water year 2025 that is consistent with the biological goals described for the Summer-Fall Action (Condition of Approval 9.1.3). Upon mutual agreement Permittee and CDFW may seek input from the DCG regarding potential planning and deployment of the 100 TAF. Permittee shall submit a draft plan for deployment of the 100 TAF to CDFW by May 15. The final plan shall be subject to CDFW approval.	ITP Condition # 9.1.3.2	In water year 2025	Permittee	

89	<u>Delta Smelt Food and Habitat Enhancement Action.</u> Permittee shall develop and implement a DS Food and Habitat Enhancement Program (Program) to maximize DS habitat suitability and to subsidize food resources for DS within the Suisun Marsh region in 2026, 2027, and 2028. Permittee in collaboration with CDFW shall prepare a Program including specific implementable actions to be taken in each year (2026, 2027, 2028) to both subsidize food resources and improve DS suitable habitat. The Program shall identify site-specific actions, research questions, and monitoring metrics to promote enhanced food resources, habitat suitability and condition, and to assess the efficacy of the localized food and habitat actions. Permittee shall submit the draft Program to CDFW for approval by December 31, 2025. Permittee shall start implementing the CDFW approved final Program no later than June 2026. Updates to the Program for site-specific components to be implemented in 2027 and 2028 shall be submitted to CDFW for approval no later than May 15 in each year they are to be implemented. The Program shall ensure that at least 6,000 kg of Delta Smelt food resources are provided, as demonstrated through an analysis approved in writing by CDFW, within the Suisun Marsh region in each year (2026, 2027, 2028) and include, but not be limited to, the following food web and habitat enhancement components:
	
	• Supplementation of cultured zooplankton between June and October within the Suisun Marsh region.
	  ○ Measuring the efficacy of food supplementation in supporting DS growth and survival compared to surrounding areas.
	  ○ Identifying the best strategies to release food resources from culture facilities into the Suisun Marsh region, while minimizing effects from loss in water quality and increased predation risk.
		ITP A1 Condition # 9.1.3.3	Draft Program to CDFW December 31, 2025
			
			Program Updates to CDFW by May 15, 2027 and May 15, 2028
			
			Implementation 2026 through 2028
			
			Draft Summary Report May 1, 2029
				Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	○ Quantifying the spatial and temporal influence of the released food resources. • Removal of invasive species annually within the North Delta Arc region sufficient to achieve a measurable change in food web resources and/or habitat quality to DS in the immediate vicinity of the action, in conjunction with site-specific monitoring pre- and post-removal. Consideration shall be given to the removal of Arundo, Phragmites, golden mussel, and invasive clam species (Potamocorbula amurensis and Corbicula fluminea). • Site-specific monitoring shall be used to identify the following factors, depending on the species targeted for removal: ○ The effect of Arundo and Phragmites removal on local turbidity levels. ○ The effect of Arundo removal and use of inundated shallow areas for spawning. ○ How the presence of invasive competitors limits DS access to food. It is estimated to cost $1 million dollars annually ($3 million total) to implement the CDFW approved Program starting 2026 and continuing through the summer and fall of 2027 and 2028 to meet food resource targets identified above, improve habitat conditions for DS, and answer identified research questions. Permittee may fund an alternative action to the Program in a given year (up to $1 million) to benefit DS food resources and habitat conditions, if approved by CDFW by May 15 in the given year for which an alternative action would be funded and implemented, if CDFW determines the alternative action would have an equivalent or greater biological benefit than Program implementation in that year. Permittee shall submit a draft report summarizing the findings of the 3-year DS Food and Habitat Enhancement Program efforts to CDFW by May 1, 2029, for approval.				
90	<u>Summer Fall Planning Group.</u> The Summer Fall Planning Group (SFPG) is comprised of two representatives, each from Permittee and CDFW, and one representative from the SWP Contractors. The SFPG may approve attendance by additional technical representatives when appropriate in a non-voting role. Permittee shall convene the SFPG beginning no later than January 2026 to initiate a structured decision making (SDM) planning process to develop a research plan for testing key mechanisms underlying the findings of the USFWS Delta Smelt Life Cycle Model and findings resulting from prior Summer-Fall Habitat Action reports. The goal of this SDM effort will be to identify key research questions that will be prioritized and implemented starting in water year 2026. Results of this research will be communicated to the DCG and used to support the development of the Summer-Fall Action Plan each year, starting in water year 2026.	ITP A1 Condition # 9.1.3.4	Beginning no later than January 2026	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
91	Delta Smelt Supplementation Program. A Delta Smelt Supplementation Program (DS Supplementation Program) is intended to work in conjunction with water management strategies, habitat restoration, and food web productivity enhancements, to support the persistence of DS in the wild. Permittee shall, in coordination with Reclamation, support the development, refinement and implementation of a DS Supplementation Strategy which shall establish the framework, objectives, and timelines for the DS Supplementation Program to bolster the current population of DS and increase the likelihood of achieving a self-sustaining status. Permittee shall fund DS Supplementation Program CDFW staff according to Condition of Approval 9.1.4.1. Permittee shall, in coordination with Reclamation, work through the Culture and Supplementation of Smelt Steering Committee (CASS SC), to continue to collaborate with CDFW and USFWS on the development of the DS Supplementation Program and the DS Supplementation Strategy. The CASS group was created in 2019 and is comprised of participants from Reclamation, DWR, CDFW, and USFWS. This body provides oversight in advancing science-based management activities to secure and stabilize the DS population through a coordinated propagation and supplementation program. The CASS SC shall continue to provide guidance to its three working groups: 1) Captive Propagation Working Group, 2) Research Working Group, and 3) Regulatory Working Group. An update to the DS Supplementation Strategy is expected to be approved by CDFW and USFWS in 2025. Permittee shall, in coordination with Reclamation, CDFW, and USFWS, and subject to necessary state and federal permitting, support implementation of the DS Supplementation Program through a collective management structure consistent with the updated DS Supplementation Strategy and the AMP (Attachment 4). DS Supplementation Program governance will consist of the CASS SC and collaborative technical teams charged with implementation of all aspects of supplementation (Captive Propagation Working Group, Research Working Group, and Regulatory Working Group). DWR shall, in coordination with Reclamation, ensure production ramps up to a minimum of 125,000 fish by water year 2024, a minimum of 150,000 fish by water year 2025, a minimum of 250,000 fish by water year 2029, and a minimum of 500,000 fish by water year 2034 that are at least 200 days post-hatch (dph) or equivalent as informed by CDFW and USFWS. In the event that current DS production estimates indicate a risk that minimum production will not be met in the subsequent year for reasons outside Permittee's control, Permittee shall meet and confer with CDFW to develop a plan to maximize production for supplementation. USFWS and CDFW, in coordination with Reclamation and DWR, will update the Supplementation Strategy to incorporate new findings from the program and update performance metrics used to guide production targets and methods development. A process to evaluate production targets to support supplementation will be developed and implemented no less than annually via the CASS SC. Outcomes of the review may include but are not limited to revisions of annual production numbers, timeline, release methods, monitoring, and genetic management strategies. These findings will be incorporated into	ITP A1 Condition # 9.1.4	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	the DS Supplementation Strategy and will serve as guidance for the program. The DS Supplementation Strategy will also evaluate and address any need for additional facilities and infrastructure improvements to existing facilities and evaluate the benefit of new approaches to maintaining the refugial population of DS while also supporting the updated DS Supplementation Strategy and DS Supplementation Program. Permittee shall, in coordination with Reclamation, collaborate with CDFW and USFWS on the development of additional facility needs, their construction and operation, to meet a production capability of 500,000 DS that are at least 200 days post-hatch, within 10 years of the effective date of this ITP. Such facilities and infrastructure improvements are not Covered Activities of this ITP and could require separate processes for compliance under CESA and CEQA for their construction and eventual operation. To support CDFW's role in the DS Supplementation Program, Permittee shall fund a full-time biologist position (Condition of Approval 9.1.4.1).				
92	Delta Smelt Supplementation Program CDFW Staff. To support implementation of Condition of Approval 9.1.4, Permittee shall fully fund one new CDFW Environmental Program Manager 1 Managerial position to actively engage in scientific research, technical teams, and management teams tasked with implementation of DS Supplementation in collaboration with Permittee, Reclamation, and USFWS, in addition to other agency and non-agency collaborators. This CDFW staff duties will include, but not be limited to, the following: • Conducting scientific research to inform DS Supplementation in coordination with Permittee, Reclamation, USFWS, and interested party scientists; • Providing technical assistance and expertise to plan and implement releases of cultured DS and oversee CDFW staff engaged in releases of cultured DS; • Actively engaging in the design and development of expanded facilities to support DS Supplementation; • Participating in interagency technical teams involved in the implementation of DS Supplementation and Adaptive Management Teams involved in implementation of the long-term operations of the CVP and SWP Biological Opinions and long-term operations of the SWP ITP; • Engaging in the CASS working groups and steering committee (as needed); and • Work collaboratively with Permittee, Reclamation, and USFWS on updating and implementing the DS Supplementation Strategy.	ITP Condition # 9.1.4.1	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
93	Longfin Smelt Refugial Population Establishment and Management. Permittee shall establish a Longfin Smelt Culture Program that will create and maintain a robust, genetically managed captive refugial population for LFS within 10 years of the effective date of this permit. The Longfin Smelt Culture Program shall have two primary goals: (1) Buffer against extinction and; (2) Provide a source of fish for research. The Longfin Smelt Culture Program shall expand upon the efforts initiated within the LFSSP and continue to be guided by the LFS Science Program (Condition of Approval 7.8.1). The governance of the Longfin Smelt Culture Program will implemented by Permittee and CDFW, in coordination with Reclamation and USFWS, while the Longfin Smelt Technical Team, as part of LFS Science Program, will continue to provide technical guidance and expertise to support advancements in LFS captive propagation. Permittee shall fund the Longfin Smelt Culture Program to continue the effort to fully close the LFS life cycle in captivity. Permittee shall also fund the development of a genetic management strategy and plan to implement once the refuge population is established in captivity. Permittee shall then continue to fund and support the genetically managed refugial population, in a manner that will allow for the production of fish for research, as coordinated with the LFSSP, without compromising the genetic integrity of the refuge population. Permittee shall ensure that the Longfin Smelt Culture Program has sufficient facilities and facility infrastructure to allow for varying levels of salinity during propagation and to support sufficient brood stock collection.	ITP Condition # 9.1.5	Within 10 years of the effective date of this permit	Permittee	
Compensatory Mitigation for Winter-run and Spring-run Chinook Salmon.		9.2			
94	Implementation of the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project. By 2026, Permittee shall complete the implementation of the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project. This requirement to implement the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project is carried forward from the compensatory mitigation obligation for take of CHNWR and CHNSR originally established in the 2009 NMFS Biological Opinion and associated Consistency Determination (CD No. 2080-2009-011-00), and the 2020 ITP for the Long-term Operation of the SWP in the Sacramento-San Joaquin Delta (ITP No. 2081-2019-066-00). The objective of the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project is to enhance floodplain rearing habitat and fish passage in the Yolo Bypass by implementing the project as described in Alternative 1 of the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project Final EIR/EIS and subsequent addendums. This project will benefit CHNWR, CHNSR, California Central Valley steelhead, the sDPS of North American	ITP Condition # 9.2.1	By 2026	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials

	Green Sturgeon, and WS.
	
	The first objective of the project is to increase the availability of floodplain rearing habitat for juvenile CHNWR, CHNSR, and California Central Valley steelhead. The project can also improve conditions for Sacramento Splittail and Central Valley fall-run Chinook Salmon. Specific biological goals include:
	
	• Improve access to seasonal habitat through volitional entry,
	• Increase access to and acreage of seasonal floodplain fisheries rearing habitat,
	• Reduce stranding and presence of migration barriers, and
	• Increase aquatic primary and secondary biotic production to provide food through an ecosystem approach.
	
	The second objective of the project is to reduce migratory delays and loss of fish at Fremont Weir and other structures in the Yolo Bypass. Specific biological goals include:
	
	• Improve connectivity within the Yolo Bypass for passage of salmonids and sturgeon, and
	• Improve connectivity between the Sacramento River and the Yolo Bypass to provide safe and timely passage for:
	  • Adult CHNWR between mid-November and mid-March when water surface elevations in the Sacramento River are amenable to fish passage,
	  • Adult CHNSR between January and mid-March when water surface elevations in the Sacramento River are amenable to fish passage,
	  • Adult California Central Valley steelhead in the event their presence overlaps with the defined seasonal window for other target species when water surface elevations in the Sacramento River are amenable to fish passage,
	  • Adult sDPS of North American Green Sturgeon between February and mid-March when water surface elevations in the Sacramento River are amenable to fish passage, and
	  • Adult WS between February and mid-March when water surface elevations in the Sacramento River are amenable to fish passage.
	
	The project includes the construction of a new gated notch in Fremont Weir located in the northern Yolo Bypass and channel that parallels the existing east levee of the Yolo Bypass. The gated notch and channel have the ability to convey flows up to 6,000 cfs, depending on the Sacramento River, to provide open channel flow for adult fish passage, juvenile fish emigration, and floodplain inundation. This alternative also includes a supplemental fish passage facility on the west side of Fremont Weir and improvements to allow fish to pass through Agricultural Road Crossing 1 and the channel north of Agricultural Road Crossing 1.
	
	Permittee shall implement the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project in accordance with its adaptive management and monitoring plan, and				

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	any subsequent revisions.				
95	Feather River Fish Passage and Hatchery Improvements. By July 2025, Permittee shall fund $1 million toward the Sunset Weir and Pumps Project on the Feather River. The objective of the Sunset Pumps Project is to improve fish passage by removing the existing boulder weir, a known migratory barrier to CHNSR, fall-run Chinook Salmon, California Central Valley steelhead, WS, and the sDPS of North American Green Sturgeon, and installing CDFW approved fish-protective screens for the Sunset division and upstream neighboring private diversions to reduce entrainment risk into currently unscreened diversions. By 2026, Permittee shall commit an additional $14 million toward the Sunset Weir and Pumps Project and $4.9 million toward a disinfection system at the Feather River Fish Hatchery. The disinfection system is intended to reduce or remove pathogen contamination for hatchery reared CHNSR, fall-run Chinook Salmon, and California Central Valley steelhead. This requirement to fund $19.9 million in CHNWR and CHNSR compensatory mitigation is carried forward from the compensatory mitigation obligation originally established in the 2020 ITP for the Long-term Operation of the SWP in the Sacramento-San Joaquin Delta (ITP No. 2081-2019-066-00).	ITP Condition # 9.2.2	By July 2025 for an initial $1 million commitment By 2026 for $18.9 million commitment	Permittee	
96	Spring-run and Winter-run Chinook Salmon Climate Change Support. In addition to the mitigation originally established in the 2020 ITP for the Long-term Operation of the SWP in the Sacramento-San Joaquin Delta (ITP No. 2081-2019-066-00) Permittee shall provide $900,000 each year to support projects that address stressors on CHNWR and CHNSR associated with climate change, including drought. Projects that may be considered as a part of this annual process include, but are not limited to: • Broodstock collection, and holding of CHNWR or CHNSR to preserve genetic diversity of the population; • Further improvements to the Feather River Fish Hatchery; • Habitat restoration, or improvements to existing habitat; and • Improve fish passage. To implement this Condition of Approval, Permittee and CDFW will meet annually no later than December 1 each water year beginning in 2025 to discuss projects that could receive funding and prepare a list of high priority projects for consideration. Permittee shall submit the list of agreed-upon projects for review by CDFW no later than January 30. Permittee shall provide funds and support implementation of the project approved for implementation by CDFW in that water year. In any given water year CDFW may decide to carry funds over to the subsequent water year(s) to enable larger investments later, or detract from future years funding to support larger projects in the near term to better focus the funding on climate change stressors of highest priority. Unless otherwise approved in writing by CDFW, projects involving the acquisition restoration, and perpetual management of	ITP Condition # 9.2.3	Throughout the term of this ITP	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	compensatory mitigation lands shall be subject to the requirements of Condition of Approval 9.5 of this ITP.				
97	Compensatory Mitigation for White Sturgeon. Permittee shall, in collaboration with CDFW, continue to convene and fund $150,000 to support the evaluation of potential habitat restoration project(s) within the Sacramento and San Joaquin rivers for WS. The evaluation shall include but not be limited to the scoping of potential restoration projects within the Sacramento and San Joaquin rivers. Permittee shall submit a draft report documenting the results of the scoping process, including associated restoration project recommendations to CDFW by April 12, 2025. Permittee shall work with CDFW to incorporate comments on the draft document and shall submit a final report to CDFW within one year of April 12, 2025 for written approval by CDFW. Permittee shall subsequently develop a plan for additional habitat restoration to offset impacts of Project operations on WS, in collaboration with CDFW. This plan shall rely on the evaluation of habitat restoration projects required by this Condition of Approval, be informed by the WS Life Cycle Model developed as a part of the WS Science Program (Condition of Approval 7.10.1), and include a budget and timeline for restoration implementation. Permittee shall submit a draft plan to CDFW for review by April 12, 2030. Permittee shall work with CDFW to incorporate comments on the draft plan and shall submit a final plan to CDFW by October 12, 2030 for written approval by CDFW. Following CDFW approval, Permittee shall provide $1,900,000 to implement the final plan. Unless otherwise approved in writing by CDFW, projects involving the acquisition, restoration, and perpetual management of compensatory mitigation lands shall be subject to the requirements of Condition of Approval 9.5 of this ITP. As a part of the process to develop and finalize a plan for additional habitat restoration to offset impacts of Project operations on WS Permittee and CDFW shall collaboratively use the WS Life Cycle Model to re-evaluate Project impacts on WS as compared to the analyses used to support this ITP. Permittee, in collaboration with CDFW, may propose adjustments to this funding obligation for WS mitigation based on this updated evaluation of the magnitude and scope of impacts of Project operations on the species, which adjustments may decrease or increase the obligation, with CDFW approval and determination that funding will provide sufficient restoration to continue to meet the full mitigation standard under CESA for this WS. The restoration plan required by this Condition of Approval, shall ensure full mitigation for Project impacts during the time period when the species is a Covered Species under this ITP, which shall include the period in which it is a candidate species. CDFW acknowledges that planning, environmental review, and permitting may be necessary 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	ITP Condition # 9.3	Submit a draft report to CDFW by April 12, 2025 Submit a final report to CDFW within one year of April 12, 2025 Submit a draft plan to CDFW by April 12, 2030 Submit a final plan to CDFW by October 12, 2030	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status/Date/ Initials
	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 WS 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.				