

Attachment B

DEPARTMENT OF FISH AND GAME MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

CALIFORNIA INCIDENTAL TAKE PERMIT NO. 2081-2009-001-03

PERMITTEE: Department of Water Resources

PROJECT: California State Water Project Delta Facilities and Operations

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 Game (DFG) for the above-referenced California Incidental Take Permit (Permit) 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 DFG 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 Permit and in attachments to the Permit, 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 of all mitigation measures and for reporting to DFG on the progress in implementing those measures. These monitoring and reporting requirements are set forth in the Permit itself and are summarized at the front of the attached table.

VERIFICATION OF COMPLIANCE, EFFECTIVENESS

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

TABLE OF MITIGATION MEASURES

The following items are identified for each mitigation measure: Mitigation Measure, Source, Implementation Schedule, Responsible Party, and Status/Date/Initials. The "Mitigation Measure" column summarizes the mitigation requirements of the Permit. The "Source" column identifies the Permit document that sets forth the mitigation measure. The "Implementation Schedule" column shows the date or phase when each mitigation measure will be implemented. The "Responsible Party" column identifies the person or agency that is primarily responsible for implementing the mitigation measure. The "Status/Date/Initials" column shall be completed by the Permittee during preparation of each Status Report and the Final Mitigation Report, and must identify the implementation status of each mitigation measure, the date that status was determined, and the initials of the person determining the status.

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
1	<p>This Condition is not likely to occur in many years. To protect adult longfin smelt migration and spawning during the December through February period, the Smelt Working Group (SWG) or DFG SWG personnel shall provide Old and Middle River (OMR) flow advice to the Water Operations Management Team (WOMT) and to Director of DFG (Director) weekly. WOMT shall provide weekly advice which may include information on other ecosystem and water supply considerations to the Director. The SWG will provide this advice when either: 1) the cumulative salvage index (defined as the total longfin smelt salvage at the CVP and SWP in the December through February period divided by the immediately previous Fall Mid-Water Trawl (FMWT) longfin smelt annual abundance index¹) exceeds five (5); or, 2) when a review of all abundance and distribution survey data and other pertinent biological factors that influence the entrainment risk of adult longfin smelt indicate OMR flow advice is warranted.</p> <p>Based on SWG or DFG SWG personnel OMR flow advice, DFG shall make an OMR flow recommendation to WOMT and WOMT may accept, reject, or revise the recommendation. If WOMT accepts the recommendation, Permittee shall implement the required OMR flow. If WOMT rejects or revises the recommendation, the Director may require an OMR flow and Permittee shall implement the OMR flow required by the Director. Permittee shall ensure the OMR flow requirement is met by maintaining the OMR flow 14-day running average is no more negative than -5,000 cfs and the initial 5-day running average is no more negative than -6,250 cfs. The daily OMR flows used to compute both the 14-day and the 5-day averages shall be the "tidally filtered" values reported by U.S. Geologic Survey (USGS). During any time OMR flows restrictions for the FWS's 2008 Biological Opinion for delta smelt are being implemented, this condition (5.1) shall not result in additional OMR flow requirements for protection of adult longfin smelt.</p> <p>Once spawning has been detected in the system, this Condition (5.1) terminates and 5.2 begins. Condition 5.1, including the OMR requirement, is not required or would cease if previously required when river flows are: 1) greater than 55,000 cfs in the Sacramento River at Rio Vista; or 2) greater than 8,000 cfs in the San Joaquin River at Vernalis, the Condition would not trigger or would cease if triggered previously. If flows go below 40,000 cfs in the Sacramento River at Rio Vista or 5,000 cfs in the San Joaquin River at Vernalis, the OMR flow in Condition 5.1 shall resume if triggered previously. In addition to river flows, the SWG or DFG SWG personnel review of survey data and other pertinent biological factors that influence the entrainment risk of adult longfin smelt may result in advice to WOMT and the Director and may result in a recommendation by DFG to WOMT to relax or cease an OMR flow requirement.</p>	Permit Condition # 5.1	Entire Project	Permittee	

Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
<p>2</p> <p>Mitigation Measure</p> <p>To protect larval and juvenile longfin smelt during the January through June period, the SWG or DFG SWG personnel shall provide OMR flow advice to the WOMT and to the Director weekly. WOMT shall provide weekly advice which may include information on other ecosystem and water supply considerations to the Director. The OMR flow advice shall be an OMR flow between -1,250 and -5,000 cfs and be based on review of survey data, including all of the distributional and abundance data, and other pertinent biological factors that influence the entrainment risk of larval and juvenile longfin smelt. When a single Smelt Larva Survey (SLS) or 20 mm Survey (20 mm) sampling period results in: 1) longfin smelt larvae or juveniles found in 8 or more of the 12 SLS or 20 mm stations in the central and south Delta (Stations 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, 919) or; 2) catch per tow exceeds 15 longfin smelt larvae or juveniles in 4 or more of the 12 survey stations listed above, OMR flow advice shall be warranted.</p> <p>Based on SWG or DFG SWG personnel OMR flow advice, DFG shall make an OMR flow recommendation to WOMT and WOMT may accept, reject, or revise the recommendation. If WOMT accepts the recommendation, Permittee shall implement the required OMR flow. If WOMT rejects or revises the recommendation, the Director may require an OMR flow and Permittee shall implement the OMR flow required by the Director. Permittee shall ensure the OMR flow requirement is met by maintaining the OMR flow 14-day running average no more negative than the required OMR flow and the 5-day running average is within 25 percent of the required OMR flow. The daily OMR flows used to compute both the 14-day and the 5-day averages shall be the "tidally filtered" values reported by USGS.</p> <p>This Condition's OMR flow requirement is likely to vary throughout the January through June period based upon survey results, data analysis, and environmental factors. Based on prior analysis, DFG has identified three likely scenarios that illustrate the typical entrainment risk level and protective measures for larval longfin smelt over the period:</p> <p style="padding-left: 40px;">High Entrainment Risk Period – January through March OMR range from -1,250 cfs to -5,000 cfs</p> <p style="padding-left: 40px;">Medium Entrainment Risk Period – April and May OMR range from -2,000 cfs to -5,000 cfs</p> <p style="padding-left: 40px;">Low Entrainment Risk Period – June OMR -5,000 cfs</p> <p>When river flows are: 1) greater than 55,000 cfs in the Sacramento River at Rio Vista; or 2) greater than 8,000 cfs in the San Joaquin River at Vernalis, the Condition would not trigger or would be relaxed if triggered previously. Should the flows go below 40,000 cfs in the Sacramento River at Rio Vista or 5,000 cfs in the San Joaquin River at Vernalis, the Condition shall resume if triggered previously. In addition to river flows, the SWG or DFG SWG personnel review of all abundance and distribution survey data and other pertinent biological factors that influence the entrainment risk of adult longfin smelt may result in advice to WOMT and the Director and may result in a recommendation by DFG to WOMT to relax or cease an OMR flow requirement.</p>	<p>Permit Condition # 5.2</p>	<p>Entire Project</p>	<p>Permittee</p>	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
3	<p>This Condition to protect larval longfin smelt shall apply January 15 through March 31 of dry and critically dry years, as defined in D-1641 for the Sacramento River. If the Water Year type changes after January 1 to below normal, above normal, or wet, Condition 5.3 will be suspended. If the Water Year type changes after January to dry or critical, Condition 5.3 shall apply. The SWG or DFG SWG personnel shall provide Barker Slough Pumping Plant operations advice to the WOMT and to the Director weekly based on a review of the abundance and distribution survey data and other pertinent biological factors that influence the entrainment risk and detection of larval longfin smelt Station 716. WOMT shall provide weekly advice which may include information on other ecosystem and water supply considerations to the Director. The advice for Barker Slough Pumping Plant's maximum seven day average shall not exceed 50 cfs from January 15 through March 31 of each year after a 5 day notice period is provided by the Director. During the 5-day notification period, the rate of diversion at shall not increase. If WOMT accepts the recommendation, Permittee shall implement the required Barker Slough diversion rate. If WOMT rejects or revises the recommendation within 24 hours, the Director may require a Barker Slough diversion rate and Permittee shall implement the rate required by the Director. This restriction will be removed when larval longfin smelt are not longer detected at Stations 716.</p>	Permit Condition # 5.3	Entire Project	Permittee	
4	<p>To minimize take of longfin smelt at MIDS diversion, in addition to any existing operating rules, DFG shall specify the average intake velocities by August 15 each year in order to adequately protect longfin smelt and, if appropriate, to allow DWR to meet contractual water delivery requirements. Permittee shall maintain this velocity from September 1 to December 31 each year to protect staging and spawning longfin smelt from entrainment until alternative operational criteria are developed from completion of the study below.</p> <p>Permittee shall develop, fund, and conduct a study to confirm that this operation prevents or substantively reduces the entrainment of longfin smelt at MIDS. The study design must be submitted to DFG within 6 months of issuance of this Permit for DFG review and approval. Results of the study shall be provided to DFG as a written report within one year of the issuance of this Permit. If, based on study findings, DFG determines that this operation minimizes take of longfin smelt, Permittee shall operate to this restriction whenever longfin smelt are at risk of entrainment. If DFG determines that 3 fps does not adequately protect longfin smelt from entrainment, the Permittee shall consult with DFG to discuss other operating options that could achieve the required minimization and, after approval by DFG, shall implement an effective take minimization alternative by September 1, 2010.</p>	Permit Condition # 6.1	Within 12 Months or Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
5	<p>To ensure the minimization measures designed to minimize take of the Covered Species are effective, Permittee shall conduct maintenance, inspection and reporting at the Skinner Facility. Permittee shall submit a plan, within 3 months of Permit issuance, detailing the frequency, maintenance, inspection and reporting scope and schedule performed on fish protective equipment that may affect screening and salvage efficiencies. After the plan is approved by DFG, the Permittee shall adhere to the maintenance, inspection and reporting schedule described in the plan. Effectiveness monitoring requirements for these facilities is described below in Condition 8.</p> <p>Permittee shall consult with DFG on projects and actions that will improve the survival rates of longfin salvage at the Skinner Facility. This consultation will produce a list of feasible actions and projects and a plan for implementation of the actions and projects identified within one year of the issuance of this Permit. Upon approval by DFG and compliance with any applicable law including California Environmental Quality Act (CEQA), this plan will be fully implemented.</p>	Permit Condition # 6.2	Within 3 Months of Issuance	Permittee	
6	<p>During the November 1 to June 30 period, the Permittee shall ensure minimization measures to protect longfin smelt are achieved as follows: 1) salvage according to DFG and DWR protocol (see Skinner Fish Facility Operations Manual (v 2.0 October 19, 2005)) when exporting water via the Banks Pumping Plant; 2) timely reporting of unplanned salvage outages; and 3) consulting DFG to plan salvage outages.</p> <p>Notification: For unplanned salvage outages greater than 1 hour, notify the DFG Salvage Biologist (see 6.3.1.1) by phone immediately. If discussion by phone isn't possible, leave a message detailing the source and estimated duration of the outage.</p> <p>Salvage Biologist: (209) 948-7086; (209) 712-8550 Salvage Supervisor:(209) 948-7097; (209) 639-2686 Salvage Manager: (209) 948-3702</p> <p>Consultation: For all planned salvage outages to be conducted for normal maintenance and repair work (e.g., predator clean-outs, normal maintenance procedures, repairs to valves and controls) contact the DFG Salvage Biologist at least 1 business day in advance of outages.</p>	Permit Condition # 6.3	Entire Project	Permittee	
7	<p>Export rates shall not increase during any outage period.</p> <p>To ensure the minimization measures designed to minimize take of the Covered Species are effective, Permittee shall conduct inspection, maintenance and reporting on all of the fish screens at the NBA, RRDS, and Sherman Island diversions during November through June. Permittee shall submit a plan, within 3 months of Permit issuance, detailing the inspection, maintenance and reporting scope and schedule that cover the fish screen and any other components that may affect screening efficiency. After the plan is approved by DFG, the Permittee shall adhere to the maintenance, inspection and reporting schedule described in the plan. Effectiveness monitoring requirements for these facilities is described below in Condition 8.</p>	Permit Conditions # 6.4	Within 3 months and Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
8	<p>To improve overall habitat quality for longfin smelt in the Bay Delta Estuary, Permittee shall fund the acquisition, initial enhancement, restoration, long-term management, and long-term monitoring of 800 acres of inter-tidal and associated sub-tidal wetland habitat in a mesohaline part of the estuary. This condition is intended to provide benefits supplemental to the benefits resulting from the flow requirements described in Condition 5 above. The identification and development of the restoration sites, and development of site-specific management and monitoring plans shall be appropriate to improve habitat conditions for longfin smelt and shall be submitted to DFG for review and approval. The restoration efforts shall begin with the acquisition and planning for restoration of at least 160 acres within 2 years of issuance of this Permit. Subsequent restoration efforts shall restore at least 160 acres every 2 years and all restoration shall be completed by Permittee within 10 years. If longfin smelt are not listed by the Fish and Game Commission at the March 2009 meeting, the inter-tidal and sub-tidal wetland habitat restoration requirement shall be 20 acres for the period from February 23, 2009 to March 6, 2009 and shall be completed by December 31, 2010. These acreages are above and beyond any acres already under development or planned that are required for compliance with any existing CESA permits. Implementation of this may require separate CESA and CEQA consultations to evaluate, minimize and mitigate any restoration effects on other listed species</p> <p>DFG's approval of the Mitigation Lands (Lands) must be obtained prior to acquisition and transfer by use of the Proposed Lands for Acquisition Form or by other means specified by DFG. As part of this Condition, Permittee shall:</p> <p>Transfer fee title to the Lands, convey a conservation easement, or provide another mechanism approved by DFG over the Lands to DFG under terms approved by DFG. Alternatively, a conservation easement over the Lands may be conveyed to a DFG-approved non-profit organization qualified pursuant to California Government Code section 65965, with DFG named as a third party beneficiary under terms approved by DFG.</p> <p>Provide a recent preliminary title report, initial Phase 1 report, and other necessary documents. All documents conveying the Lands and all conditions of title are subject to the approval of DFG, and, if applicable, the Department of General Services.</p> <p>Reimburse DFG for reasonable expenses incurred during title and documentation review, expenses incurred from other state agency reviews, and overhead related to transfer of the Lands to DFG. DFG estimates that this Project will create an additional cost to DFG of no more than \$3,000 for every fee title deed or easement processed.</p>	Permit Condition # 7.1	Within 12 Months	Permittee	
9	<p>DFG's approval of the Mitigation Lands (Lands) must be obtained prior to acquisition and transfer by use of the Proposed Lands for Acquisition Form or by other means specified by DFG. As part of this Condition, Permittee shall:</p> <p>Transfer fee title to the Lands, convey a conservation easement, or provide another mechanism approved by DFG over the Lands to DFG under terms approved by DFG. Alternatively, a conservation easement over the Lands may be conveyed to a DFG-approved non-profit organization qualified pursuant to California Government Code section 65965, with DFG named as a third party beneficiary under terms approved by DFG.</p> <p>Provide a recent preliminary title report, initial Phase 1 report, and other necessary documents. All documents conveying the Lands and all conditions of title are subject to the approval of DFG, and, if applicable, the Department of General Services.</p> <p>Reimburse DFG for reasonable expenses incurred during title and documentation review, expenses incurred from other state agency reviews, and overhead related to transfer of the Lands to DFG. DFG estimates that this Project will create an additional cost to DFG of no more than \$3,000 for every fee title deed or easement processed.</p>	Permit Condition # 7.2	Entire Project	Permittee	
10	<p>All land acquired for the purposes of implementing this Condition shall be evaluated and all appropriate and riparian rights obtained with the land acquisition shall be recorded. All water rights obtained and not necessary for implementation of the long-term management and monitoring plan shall be transferred to in stream beneficial uses under Water Code Section 1707.</p>	Permit Condition # 7.3		Permittee	
11	<p>Permittee shall fund its share of the Interagency Ecological Program to continue the following existing monitoring efforts, all of which are key to monitor the Covered Species response to Project operations and the Conditions of Approval of this Permit. These include sampling of the FMWV, Spring Kodiak Trawl, 20-mm Survey, Smelt Larval Survey, and Bay Study.</p>	Permit Condition # 8.1	Entire Project		

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
12	<p>Permittee shall fund additional monitoring related to the extent of the incidental take of longfin smelt and the effectiveness of the minimization measures. Immediate needs include extension of the time period of the existing smelt larval surveys into April to cover the period of larval presence in the system to measure the effectiveness of the OMR flow requirements for entrainment reduction of longfin smelt larvae. Funds required shall cover additional staff and equipment that are reasonably needed for such monitoring.</p>	Permit Condition # 8.2	Entire Project	Permittee	
13	<p>Permittee shall ensure essential information on salvage at the Skinner Facility continues to be collected and reported. This is both an essential trigger for some of the Conditions of Approval as well as an important performance measure of their effectiveness. In addition, information on daily OMR flows and daily salvage are essential to ensure that the Conditions of Approval are implemented effectively. Such information shall be included in an annual report for the WY (October 1 to September 30) to DFG, provided no later than December 1 of each year, starting in 2010.</p> <p>As described in Condition 6.2, Permittee shall submit reports that document and describe the regular inspection and maintenance at the Skinner Facility performed on fish protective equipment that may affect screening and salvage efficiencies</p> <p>The Permittee shall ensure the existing salvage monitoring and reporting program samples no less than 30 minutes for every 2 hours from December through June. If the presence of large number of fish or debris in the salvage will result in the significant loss of listed species in the salvage monitoring process, DWR shall operate to the existing protocols for such circumstances (see Skinner Fish Facility Operations Manual (v.2.0 October 19, 2005)).</p>	Permit Condition # 8.3	Entire Project	Permittee	
14	<p>Permittee shall develop and implement an effectiveness and performance monitoring program for the fish screens at the NBA, RRDS and Sherman Island diversions that covers the November through June period to ensure the minimization measures required by this Permit are successfully reducing incidental take of the Covered Species. Proper maintenance and performance is critical to ensure screen effectiveness and shall include all pertinent criteria necessary to determine the effectiveness of the screens. A draft plan shall be submitted to DFG for review and approval within 3 months of issuance of this Permit. As part of this plan development, the Permittee shall consult with DFG to determine if the RRDS screens need to be improved and if so to identify how. If improvements to the RRDS screens are identified, then the implementation of these improvements will be part of the program specified above.</p>	Permit Condition # 8.4	Entire Project	Permittee	
15	<p>Permittee shall develop and implement an effectiveness monitoring program for the Skinner Facility that covers the November through June monitoring period to ensure the minimization measures required by this Permit are successfully reducing incidental take of the Covered Species. A draft study plan shall be submitted to DFG for review and approval within 3 months of issuance of this Permit. The Permittee shall continue to work and coordinate with DFG salvage staff to ensure as close to real time information sharing as feasible.</p>	Permit Condition # 8.5	Entire Project	Permittee	

SAA No. _____
Take Authorization No. _____

("CDFG") in the sum of _____ Dollars (\$ _____)
lawful money of the United States of America, for the payment of which sum Principal and Surety hereby jointly and severally bind ourselves and our respective heirs, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

1. Principal has been issued [*include one or both of the following references*: Streambed Alteration Agreement No. _____ ("SAA") pursuant to Fish and Game Code Section 1600 *et seq.*/[*and*] take authorization pursuant to the California Endangered Species Act, Fish and Game Code Section 2050 *et seq.* ("Take Authorization")] for the [*insert name of project*] _____ project (the "Project") on the following described real property in _____ County, California:

[Insert or attach legal description of Project location]

2. [*Include one or both of the following sentences*:] The SAA, which is by this reference made a part of this bond, requires Principal to furnish security to CDFG, in form and amount acceptable to CDFG, to ensure compliance with the mitigation measures contained in paragraph nos. _____ of the SAA (individually and collectively, the "SAA Secured Obligations"); and this bond is executed and tendered to comply with that requirement. The Take Authorization, which is by this reference made a part of this bond, requires Principal to furnish security to CDFG, in form and amount acceptable to CDFG, to ensure compliance with the mitigation measures contained in paragraph nos. _____ of the Take Authorization (individually and collectively, the "Take Authorization Secured Obligations"); and this bond is [*also*] executed and tendered to comply with that requirement.

3. The term "Official Instrument" as used in this Bond shall mean and refer [*include the following terms if both SAA and Take Authorization: individually and collectively*] to [*include one or both of the following terms*: the SAA [*and*] the Take Authorization]. The term "Secured Obligations" as used in this bond shall mean and refer [*include the following terms if both SAA and Take Authorization: individually and collectively*] to [*include one or both of the following terms*: the SAA Secured Obligations [*and*] the Take Authorization Secured Obligations].

4. The Surety, on behalf of itself and its successors and assigns, hereby guarantees and shall be jointly and severally liable for the performance and completion of each and all of the Secured Obligations in accordance with the Official Instrument and Fish and Game Code [*if SAA*: Section 1602] [*if Take Authorization*: Section 2081(b) (2) and (4)] [*if SAA and Take Authorization*: Sections 1602 and 2081(b) (2) and (4)], and agrees to indemnify and hold harmless CDFG from the failure, if any, of the Principal to perform and complete the Secured Obligations as specified in the Official Instrument, subject to the penal sum of this bond.

5. Obligations guaranteed by this bond shall be in effect for the following described real property upon which the Secured Obligations are to be carried out:

[Insert or attach legal description of property on which Secured Obligations are to be performed¹]

6. This bond shall be deemed a term bond, the initial term of which shall be ___ years [*insert term of three years or longer²*], commencing on the date of issuance of the Official Instrument [*or*

¹ See Instruction 4 for further information.

SAA No. _____

Take Authorization No. _____

insert specific effective date] and continuing through [*insert date*] (the “Initial Expiration Date”), after which time this obligation shall be void unless continued by a Continuation Certificate or new bond issued by the Surety for a term not less than the term first set forth in this Section 6; otherwise this bond shall remain in full force and effect, and run concurrently with the term of the Official Instrument, including any modifications or extensions thereof and thereafter until CDFG determines that the Principal has performed and completed all of the Secured Obligations in accordance with the Official Instrument.

The Surety shall notify CDFG at least 90 days prior to the Initial Expiration Date of this bond whether or not the Surety elects to issue either a Continuation Certificate or a new bond, and shall furnish any Continuation Certificate or new bond to CDFG at least 60 days prior to the expiration of the term of this bond. Should the Surety fail to furnish any Continuation Certificate or new bond to CDFG within such period, or elect not to issue either a Continuation Certificate or a new bond, the Principal shall be deemed to be without bond coverage in violation of the Official Instrument. Any such violation of the Official Instrument that continues uncured for 15 days shall constitute a default of the Secured Obligations for which the Surety shall become liable on this bond. Within 30 days after CDFG notifies the Surety of such default the Surety shall tender payment to CDFG of the full amount of this bond. In no event shall the liability of the Surety under this bond be considered to be cumulative; the bond shall not exceed the face amount herein stated, regardless of the number of years or terms this bond is in effect. No liability incurred while this bond is in effect shall be released or reduced by the giving of notice by Surety pursuant to this Section 6.

7. NOW, THEREFORE, if the Principal faithfully performs and completes all of the Secured Obligations in accordance with the Official Instrument, then this obligation shall be void; otherwise, it shall remain in full force and effect beginning on the date of issuance of the Official Instrument [*or insert specific effective date from Section 6*] and extending until:

(a) all Secured Obligations have been completed to the satisfaction of CDFG and the bond is released by CDFG; or

(b) the bond is replaced with a bond or other security in form and amount acceptable to CDFG; or

(c) the Official Instrument has been transferred in accordance with its terms and substitute security has been provided to and approved by CDFG.

8. The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the Official Instrument or to the mitigation measures to be performed thereunder shall in any way affect the Surety’s obligation on this bond, and the Surety hereby waives notice of any such change, extension of time, alteration or addition to the Official Instrument or to the Secured Obligations. Surety further stipulates and agrees that the provisions of Section 2845 of the Civil Code are not a condition precedent to Surety’s obligations hereunder and Surety hereby waives any right or defense to enforcement of this bond which may be provided under that section.

9. The failure of the Principal to fulfill the Secured Obligations in accordance with the Official Instrument shall constitute a breach of the Secured Obligations. In the event of a breach, CDFG shall follow the procedure specified in the Official Instrument to notify the Principal and give the Principal an opportunity to perform the Secured Obligations. The failure of the Principal to perform the Secured Obligations after CDFG has notified the Principal and given the Principal an opportunity to

² See Instruction 8 for further information.

SAA No. _____

Take Authorization No. _____

perform the Secured Obligations in accordance with the procedure specified in the Official Instrument shall constitute a default of the Secured Obligations. The Surety shall become liable on this bond upon a determination by CDFG that the Principal is in default of the Secured Obligations. Within 30 days after CDFG notifies the Surety of CDFG's default determination, the Surety shall at the election of CDFG:

- (a) Agree in writing to perform and complete the Secured Obligations promptly in accordance with the Official Instrument; or
- (b) Tender payment to CDFG all amounts for which the Surety is liable under this bond.

If the Surety does not proceed as provided above then CDFG shall be entitled to enforce any remedies available to it without further notice to Surety. If the Surety proceeds as provided in (b) above and CDFG refuses the payment tendered, then CDFG shall be entitled to enforce any remedies available to it without further notice to Surety.

10. Where the Surety under this bond is two or more companies acting as co-sureties, the obligations of Surety shall be joint and several as well as several for the purpose of allowing a joint action or actions against any or all of the companies comprising the Surety. CDFG may bring suit against such companies, jointly and severally, or against any one or more of them, or against less than all of them, without impairing the rights of CDFG against the other(s). If the Surety under this bond is one company and that company has issued more than one bond for the performance of the Secured Obligations then CDFG may exercise its rights under any one or more of the bonds so issued by the Surety at such time(s) and in such manner as CDFG may determine, without impairing the rights of CDFG under this or any other bond for the performance of the Secured Obligations.³

11. The Surety will give prompt notice to the Principal and to CDFG of any notice received or action filed alleging the insolvency or bankruptcy of the Surety, or alleging any violation of regulatory requirements which could result in suspension or revocation of the Surety's license to do business.

12. In the event that the Surety becomes unable to fulfill its obligations under the bond for any reason, the Surety shall immediately give notice of that inability to CDFG and the Principal. Upon such notice by the Surety, or the incapacity of the Surety by reason of bankruptcy, insolvency, or suspension or revocation of its license, the Principal shall be deemed to be without bond coverage in violation of the Official Instrument and shall furnish CDFG with substitute security acceptable to CDFG within 30 days of such notice by or incapacity of the Surety. *Provided, however,* that if CDFG determines in its sole discretion that exigent circumstances over which Principal has no control (*e.g.*, general unavailability of bonds due to an event of regional, national or international significance) prevent the Principal from furnishing such substitute security within the 30-day period, CDFG may extend the 30-day period or make some other security arrangement with Principal acceptable to CDFG in its sole discretion.

³ See Instruction 7 for further information.

SAA No. _____
Take Authorization No. _____

13. Notice to the Surety or the Principal shall be mailed or personally delivered to the address set forth in the introductory paragraph of this bond. Notice to CDFG shall be mailed or delivered to the following addresses:

California Department of Fish and Game
[Region Name] _____
[Address] _____
[City, State, ZIP] _____
Attn: Regional Manager

California Department of Fish and Game
Office of General Counsel
1416 9th Street, 12th Floor
Sacramento, CA 95814
Attn: General Counsel

IN WITNESS WHEREOF, the Principal and Surety have hereunto set their signatures and seals as of the dates set forth below.

Date _____

(Entity – Permittee [Principal])

(Corporate Seal) By: _____
(Signature of Authorized Individual)

Typed or Printed Name

Title _____

I declare, under penalty of perjury, under the laws of the State of California, that I have executed the foregoing bond under an unrevoked Power of Attorney.

(Surety Company)

By: _____
(Signature of Attorney-in-Fact for Surety)

Typed or Printed Name

Title: _____

Executed in _____ on _____ under the laws of the State of
(City) (Date)

(State)

[Note: Where one signs by virtue of a Power of Attorney for a Surety Company, such fully executed Power of Attorney must be filed with this bond.]

SAA No. _____
Take Authorization No. _____

ACKNOWLEDGMENT OF CORPORATION – PERMITTEE

State of _____
ss.

County of _____

On this ____ of _____, in the year _____, before me, _____ (name and title of officer), personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary's Signature
My Commission Expires: _____

L.S.

ACKNOWLEDGMENT OF SURETY

State of _____
ss.

County of _____

On this ____ of _____, in the year _____, before me, _____ (name and title of officer), personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary's Signature
My Commission Expires: _____

L.S.

NOTE: Please identify the agent acting on behalf of the Surety, if applicable.

Agent _____ Phone _____

Address _____

SAA No. _____

Take Authorization No. _____

INSTRUCTIONS

1. Surety bonds must be in a form approved by the Attorney General. The Attorney General has approved this bond form for use in connection with an Official Instrument (as defined in the bond) issued by CDFG before June 1, 2013 (“Sunset Date”), in the following limited circumstances:

a. The estimated cost to complete the Secured Obligations (including any such obligations to be performed in phases) in accordance with the Official Instrument is a combined total of \$1 million or more; or

b. The U.S. Army Corps of Engineers (the “Corps”) has issued a permit for the Project under Section 404 of the Clean Water Act, and the Corps permit requires a surety bond as financial assurance for the performance of the Principal under the permit.

2. A bond furnished in accordance with Paragraph 1 of these Instructions may continue beyond the Sunset Date until all Secured Obligations have been completed to the satisfaction of CDFG and the bond is released by CDFG.

3. The bond must set forth the correct Official Instrument number(s) at the top of each page.

4. The bond form must be completely filled out and executed, without any blank spaces. The full legal description of the real property on which the Project is located must be set forth in Section 1, or attached, and the full legal description of the real property on which the Secured Obligations are to be performed must be set forth in Section 5, or attached. If a full legal description of the real property on which the Secured Obligations are to be performed is unavailable, CDFG in its sole discretion may, but shall have no obligation to, authorize the use of an alternate form of property description. Any such alternate description must be sufficiently specific and detailed to enable a third party to accurately identify and locate the boundaries of the described real property. Each attachment must be labeled and include the Official Instrument number and bond number at the top of each page.

5. The full legal name and business address of the Principal must be set forth in the space designated “Principal” on the face of the form. The name of the Principal must agree exactly with that shown on the Official Instrument. The person signing the bond must be duly authorized to do so, and must furnish evidence of such authority to CDFG.

6. The full legal name and business address of the Surety must be set forth in the space designated “Surety” on the face of the form. The Surety must be an admitted surety insurer, as defined in subdivision (a) of Section 995.120 of the Code of Civil Procedure, and appear on the list of companies holding certificates of authority as acceptable sureties published by the United States Department of the Treasury. Please refer to the following web sites to determine whether or not a surety meets these criteria:

California Department of Insurance – List of Authorized Insurers

[http://interactive.web.insurance.ca.gov/webuser/ncdw_alpha_co_line\\$.startup](http://interactive.web.insurance.ca.gov/webuser/ncdw_alpha_co_line$.startup)

(choose “Fidelity & Surety” and sort alphabetically)

U.S. Treasury Department – Circular 570

<http://fms.treas.gov/c570/c570.html>

SAA No. _____

Take Authorization No. _____

7. The bond must be for a sum which CDFG reasonably determines shall be adequate for it to perform (directly or through a third party) the Secured Obligations in accordance with the Official Instrument including a reasonable amount to cover administrative and contingency costs. The sum must be stated in words and numerals in the place provided on page one. Principal must furnish a single bond in the required amount unless CDFG in its sole discretion authorizes Principal to provide more than one bond. If the amount of the bond exceeds the Surety's underwriting limits set forth in the U.S. Treasury Department Circular 570 the bond will be acceptable only if the amount which exceeds the specified limit is coinsured or reinsured and the amount of coinsurance or reinsurance does not exceed the underwriting limit of each coinsurer or reinsurer. Any coinsurance or reinsurance agreement must be executed and submitted to CDFG for approval with the proposed bond.

8. The bond shall remain in effect for the term stated in Section 6 (which shall not be less than three years unless CDFG, in its discretion, authorizes a shorter term) and shall not be released until CDFG notifies the Principal that all of the Secured Obligations have been completed in accordance with the Official Instrument or the bond has been replaced with a bond or other security in form and amount acceptable to CDFG. A bond containing a cancellation clause at the option of the Principal or Surety is not acceptable.

9. If the Official Instrument is assigned or transferred to another person (which assignment or transfer shall be subject to the requirements of the Official Instrument), the bond shall remain in effect and shall not be released until new financial assurances have been secured by the successor and delivered to and approved by CDFG.

ATTACHMENT D

IRREVOCABLE "STANDBY" LETTER OF CREDIT

ISSUER:

ACCOUNT PARTY/CUSTOMER:

IRREVOCABLE LETTER OF CREDIT NO.: _____ Dated: _____

TO BENEFICIARY:

California Department of Fish and Game
1416 9th Street, 12th Floor
Sacramento, California 95814
Attention: Director

Dear Sirs:

1. At the request and on the instructions of our CUSTOMER, _____ (Applicant), we hereby establish in favor of the BENEFICIARY, the California Department of Fish and Game (DFG), this Irrevocable Standby Letter of Credit (CREDIT) in the Principal Sum of \$ _____.

2. This CREDIT is and has been established for the sole benefit of DFG pursuant to the terms of the Incidental Take Permit ("Permit") issued by DFG on _____.

3. This CREDIT is intended by the Applicant and DFG to serve as a security device for the performance by Applicant of its obligations under the Permit.

4. Upon any failure by Applicant to comply with conditions of approval of the Permit, as determined by DFG in its sole discretion, DFG shall be entitled to draw upon this CREDIT by presentation of a duly executed CERTIFICATE FOR DRAWING in substantially the same form as Attachment A, attached hereto, at our office located at _____.

5. The CERTIFICATE shall be completed and signed by an "Authorized Representative" as defined in paragraph 12. Presentation by DFG of a completed CERTIFICATE may be made in person or by registered mail, return receipt requested.

6. Upon presentation of a duly executed CERTIFICATE as above provided, payment shall be made to DFG, or to an account designated by DFG, in immediately available funds, at such time and place as DFG shall specify.

7. Funds may be drawn in one or more drawings not to exceed the Principal Sum.

8. If a demand for payment does not conform to the terms of this CREDIT, we shall give DFG prompt notice that the demand for payment was not effected in accordance with the terms of this CREDIT, state the reasons therefor, and await further instructions.

9. Upon being notified that the demand for payment was not effected in conformity with the CREDIT, DFG may correct any such non-conforming demand for payment.

10. All drawings under this CREDIT shall be paid with our funds. Each drawing honored by us hereunder shall reduce, pro tanto, the Principal Sum. By paying to DFG an amount demanded in accordance herewith, we make no representations as to the correctness of the amount demanded.

11. This CREDIT will be cancelled in whole or in part upon receipt by us of a CERTIFICATE OF CANCELLATION, which (i) shall be in the form of Attachment B attached hereto, and (ii) shall be completed and signed by any person purporting to be an Authorized Representative, as defined in the next paragraph.

12. An "Authorized Representative" shall mean one of the following persons: Director of DFG, or the General Counsel of DFG.

13. Communications with respect to this CREDIT shall be in writing and addressed to us at

specifically referring upon such writing to this CREDIT by number.

14. This CREDIT may not be transferred or assigned, either in whole or in part.

15. This CREDIT shall be deemed a contract made under the laws of the State of California.

16. This CREDIT shall, if not cancelled as provided herein, expire no later than _____ of the date of its execution.

THEREFORE, _____

has executed and delivered this IRREVOCABLE STANDBY LETTER OF CREDIT to the BENEFICIARY as of the ____ day of _____, 20__.

CERTIFICATE FOR DRAWING

ISSUER:

ACCOUNT PARTY/CUSTOMER:

IRREVOCABLE LETTER OF CREDIT NO.: _____

BENEFICIARY:

California Department of Fish and Game
1416 9th Street, 12th Floor
Sacramento, California 95814

The undersigned, a duly Authorized Representative of the California Department of Fish and Game (DFG) (as defined in the above-referenced CREDIT), hereby certifies to the ISSUER that:

1. In the opinion of DFG, Applicant has failed to comply with conditions of approval in the Permit.
2. The undersigned is authorized under the terms of the above-referenced CREDIT to present this CERTIFICATE as the sole means of demanding payment on the CREDIT.
3. DFG is therefore making a drawing under the above-referenced CREDIT in the amount of \$ _____.
4. The amount demanded does not exceed the Principal Sum.
5. Sums received shall be used by DFG in accordance with the terms of the Permit.

THEREFORE, DFG has executed and delivered this CERTIFICATE as of the _____ day of _____, 20____.

DEPARTMENT OF FISH AND GAME
OF THE STATE OF CALIFORNIA

By: _____

Title: _____
Authorized Representative

CERTIFICATE FOR CANCELLATION

ISSUER:

ACCOUNT PARTY/CUSTOMER:

IRREVOCABLE LETTER OF CREDIT NO.: _____

BENEFICIARY:

California Department of Fish and Game
1416 9th Street, 12th Floor
Sacramento, California 95814

The undersigned, a duly Authorized Representative of the California Department of Fish and Game (DFG) (as defined in the above-referenced CREDIT), hereby certifies to the ISSUER that:

1. Pursuant to the Permit issued to _____ ("Applicant") and DFG, Applicant has presented documentary evidence of full compliance with the terms and conditions of the Permit, or, the natural expiration of the CREDIT has occurred.
2. DFG therefore requests the cancellation of the above-referenced CREDIT.

THEREFORE, DFG has executed and delivered this CANCELLATION as of the _____ day of _____, 20____.

DEPARTMENT OF FISH AND GAME
OF THE STATE OF CALIFORNIA

By: _____

Title: _____
Authorized Representative

**FINDINGS
OF THE
DEPARTMENT OF FISH AND GAME
FOR THE
INCIDENTAL TAKE PERMIT
FOR THE
OPERATION OF THE STATE WATER PROJECT
FOR THE PROTECTION OF LONGFIN SMELT**

**I.
PROCEDURAL HISTORY**

In February, 2008, longfin smelt (*Spirinchus thaleichthys*) became a candidate species for listing under the California Endangered Species Act (CESA). This action, recommended by the Department of Fish and Game (DFG) and approved by the Fish and Game Commission (Commission), invoked the take¹ prohibitions in Fish and Game Code sections 2080 and 2085.²

During the year-long candidacy period for longfin smelt, take of the species by certain activities, including the operation of the south Delta export pumps and related facilities (pumps) for the State Water Project (SWP) and the Central Valley Project (CVP) by the Department of Water Resources (DWR) and the Bureau of Reclamation (Bureau) respectively, was governed by an Emergency Take Regulation adopted pursuant to section 2084. This Emergency Take Regulation provided, in general, that pumping by the SWP and CVP could be limited if certain triggers were met that put longfin smelt at risk.

During the development and implementation of the Emergency Take Regulation, a great deal of information about longfin smelt was gathered and made public. That information has helped inform DFG's development of the proposed Incidental Take Permit (ITP) that is the subject of these Findings.

The Emergency Take Regulation will expire on February 23, 2009.

Take of all life stages of longfin smelt at the pumps has been documented.³ As a result, since the Emergency Take Regulation will expire, DWR has applied for an ITP.

¹ "Take" is defined in Fish and Game Code section 86 as "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture, or kill."

² Unless otherwise specified herein, all statutory references are to the Fish and Game Code.

³ California Department of Fish and Game (CDFG) 2009. Report to the Fish and Game Commission: A status review of the longfin smelt (*Spirinchus thaleichthys*) in California. 46 pages; Fujimura, R. 2009. Memo report on longfin smelt loss at the State Water Project and the Central Valley Project diversions in the south Delta.

In November 2008, DWR submitted its initial information in applying for an ITP. Since November, additional information has been submitted to DFG for the ITP.

On January 23, 2009, DFG submitted “A Status Review of the Longfin Smelt in California” (Status Review) to the Commission.⁴ The Status Review recommends that the Commission list longfin smelt as a “threatened species” under CESA. A “threatened species” is defined as:

...a native species or subspecies of...fish...that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by (CESA).

The Commission received that Status Review at its February 2009 meeting and it is scheduled for action at the Commission’s March 2009 meeting.

Another important procedural element for the Department’s consideration of this ITP relates to another species of fish, the delta smelt (*Hypomesus transpacificus*). The delta smelt is listed under the Federal Endangered Species Act (ESA) as a threatened species, and is listed under CESA as an endangered species. These two listings both invoke the respective take prohibitions found in the two Acts. As a result of the ESA take prohibition, on December 15, 2008, DWR and the Bureau received a biological opinion (BO) from the United States Fish and Wildlife Service (Service) that governs the take of delta smelt by the combined operations of the SWP and CVP.⁵ With this BO in place, the pumps can continue operating consistent with federal law.⁶

Because of some similarities in the life histories of longfin and delta smelt, longfin smelt obtain some protection from the protective measures specified in the BO. Because the BO was not developed with longfin smelt in mind, however, the measures do not fully protect the species. The protections and deficiencies in the BO for longfin smelt are discussed further below.

II. STATUTORY AND REGULATORY REQUIREMENTS FOR AN ITP

ITPs are governed by Section 2081. That section states, in relevant part:

⁴ California Department of Fish and Game (CDFG) 2009. Report to the Fish and Game Commission: A status review of the longfin smelt (*Spirinchus thaleichthys*) in California. 46 pages.

⁵ U.S. Fish and Wildlife Service. December 16, 2008. Delta Smelt Biological Opinion of the Operating Criteria and Plan for the Coordinated Operations of the Central Valley Project and State Water Project.

⁶ DWR’s take coverage for delta smelt under CESA is the subject of pending litigation. (See *Watershed Enforcers v. California Department of Water Resources* (A117715, A117750, app. pending, ordered consolidated July 6, 2007, proceedings stayed by court order to December 31, 2008.) It is anticipated that DWR will submit the federal BO to DFG for a consistency determination (CD), another form of take authorization permitted by CESA pursuant to section 2080.1. If a CD is issued, it would provide DWR with take coverage for delta smelt in the short run.

(b) The department may authorize, by permit, the take of endangered species, threatened species, and candidate species if all of the following conditions are met:

(1) The take is incidental to an otherwise lawful activity.

(2) The impacts of the authorized take shall be minimized and fully mitigated. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall maintain the applicant's objectives to the greatest extent possible. All required measures shall be capable of successful implementation. For purposes of this section only, impacts of taking include all impacts on the species that result from any act that would cause the proposed taking.

(3) The permit is consistent with any regulations adopted pursuant to Sections 2112 and 2114.

(4) The applicant shall ensure adequate funding to implement the measures required by paragraph (2), and for monitoring compliance with, and effectiveness of, those measures.

(c) No permit may be issued pursuant to subdivision (b) if issuance of the permit would jeopardize the continued existence of the species. The department shall make this determination based on the best scientific and other information that is reasonably available, and shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities.

In addition to this provision of CESA, DFG's issuance of an ITP is also governed by the California Environmental Quality Act (CEQA; Public Resources Code section 21000 *et seq.*).⁷ DFG's implementing regulations for CESA describe the process when DFG acts as either a CEQA lead or responsible agency for an ITP.⁸

In the case of this ITP, DFG is acting as a CEQA responsible agency because DWR, as the lead agency, prepared a Negative Declaration (ND) for the On-going California State Water Project Operations in the Sacramento-San Joaquin Delta for the Protection of Longfin Smelt (Project). That ND was adopted by DWR on February 18, 2009. As a result of its review, DFG has prepared an Addendum pursuant to CEQA Guidelines section 15164. The bases for that Addendum are discussed further below.

Other provisions governing the issuance of ITPs can be found in 14 Cal. Code of Regs. section 783 *et seq.*

⁷ See 14 Cal. Code of Reg. § 783.3.

⁸ *Id.*

III. FINDINGS

CESA Findings

DFG has considered all of the ITP issuance criteria required by CESA in making its decision regarding this ITP, as set forth below:

1. Take is incidental to an otherwise lawful activity (Section 2081(b)(1))

CESA requires that take be authorized only for activities that are otherwise lawful. DWR's operation of the pumps is subject to, among other things, ESA, CESA, the federal Clean Water Act, and the Porter-Cologne Water Quality Act. Rather than specify each statute, regulation or ordinance with which the pumps must comply, DFG specifies as a permit condition that DWR must comply with all applicable laws.

Section 1 provides:

Permittee shall comply with all applicable state, federal and local laws in existence on the effective date of this Permit or adopted thereafter.

The issuance criteria provided above requires DWR's compliance with all of the BO terms. To the extent that DFG needed other measures to meet the CESA issuance criteria, those measures (or modifications of them) have been included as Conditions of Approval for this ITP. (See e.g. ITP sections 7.1, 7.2 and 7.3.)

Based on the foregoing and the information contained in DFG's record in support of this ITP, DFG finds the authorized take will be incidental to an otherwise lawful activity.

2. Impacts of the authorized take shall be minimized and fully mitigated. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall maintain the applicant's objectives to the greatest extent possible. All required measures shall be capable of successful implementation. For the purposes of this section only, impacts of the taking include all impacts on the species that result from any act that would cause the proposed taking. (Section 2081(b)(2))

Each of the elements of this section is discussed in detail below.

- **Impacts of the take, that include all impacts on the species that result from any act that would cause the proposed taking, must be minimized and fully mitigated.**

The impacts of the pumps on all life stages of longfin smelt have been well documented to varying degrees by various studies including the accompanying analysis to the ITP prepared by DFG entitled "Effects Analysis: State Water Project effects on longfin smelt"

hereinafter referred to as “Effects Analysis.”⁹ Not only do the pumps result in the direct mortality of fish when they are entrained (the involuntary movement of fish by flowing water) into the pumps or when they are subject to predation by being drawn into areas like the Clifton Court forebay (Status Review pp. 19-21), but the indirect effects of the pumps also impact longfin smelt, to a lesser degree. (Effects Analysis pp. 49-54.)

The pumps are not the only factors adversely impacting longfin smelt. The Status Review identified several other factors affecting this species, including other water diversions in the Delta (such as several energy production facilities), water pollution, non-native predatory fish species, other exotic species, dredging and sand/gravel mining, commercial fisheries, and scientific research and monitoring. (Status Review p. 14.)

When evaluating the “impacts of the take” DFG often does not have absolute numbers of individuals killed by both direct and indirect causes. DFG uses the best available science depending on the species to determine the impact of a proposed taking. The Delta has been the subject of the decades-long monitoring and short-term research conducted by the Interagency Ecological Program (IEP), a group of government agencies with varying interests in the Delta that work together to understand that system. Most recently, the IEP has been central in studying the Pelagic Organism Decline (POD), the severe decline of many Delta fish species over the last several years. Longfin smelt is a POD species.

Water exports and fish monitoring at the export pumps are a few of the most highly regulated activities in the Delta. Pursuant to various federal and state monitoring requirements, DWR and the Bureau gather detailed data 365 days a year, 24 hours a day, about their respective operations. This monitoring includes counting a sub-sample of the species at the pumps consistent with the best available science. This species monitoring is uniquely comprehensive in scope, intensity and duration. (Status Review p. 19.) The numbers of species removed from water exported at the pumps is known as “salvage.” Salvage represents the minimum take at the pumps.

Salvage is useful information but it does not provide a complete picture of entrainment or loss (i.e., take) because it does not take into account several other factors that impact the entrained fish, such as predation after entrainment but before salvage, fish that are not successfully removed from export water or fish that are below 20 mm long (e.g., the salvage counts do not identify or record fish until they are >20mm in length, which would exclude larvae and small juveniles). (Status Review p. 20.)

For the purposes of the ITP, DFG has estimated loss of longfin smelt at the pumps. Using longfin smelt salvage data and experiments using other fish, such as delta smelt, as proxies, Fujimora (2009) estimated cumulative 1993-2008 longfin smelt entrainment at the SWP was 1,376,432 juveniles and 11,054 adults and that 97.6 % of the entrained juveniles and 95.3% of the entrained adults were lost (killed). (Status Review p. 21; Attachment 3, p. A-5 “Salvage by Life Stage Estimation.”)

⁹ See Status Review; See also California Department of Fish and Game 2009. State Water Project effects on longfin smelt. “Effects Analysis.”

The ITP contains the following measures to minimize and fully mitigate the impacts of the take:

- Imposes flow restrictions in the December through February period to protect adult migration and spawning. These flow restrictions minimize entrainment, improve system processes and flows, and provide more water for habitat.
- Imposes flow restrictions in the January through June period to protect larval and juvenile longfin smelt. These flow restrictions minimize entrainment, improve system processes and flows, and provide more water for habitat.
- Requires certain operational changes at the Morrow Island Distribution Facility (MIDS). This measure will minimize the loss of adult longfin smelt.
- Requires the acquisition, enhancement, restoration, and long-term management of 800 acres of shallow water habitat in areas that would benefit longfin smelt in mesohaline parts of the Delta. Tidal restoration of these areas is expected to increase food production and may improve water temperatures. This measure will help to fully mitigate losses to longfin smelt.

Flow restrictions are an accepted means by which to protect sensitive Delta fish species.¹⁰ The BO discussed above prepared by the Service to protect delta smelt is primarily based on flow restrictions and pumping regimes. It is expected that the BO measures will provide some benefit to longfin smelt, but as previously stated, some different measures are required because of the different life histories of the two species.

DFG's Effects Analysis explains the relationship established between the various flow measures and salvage or entrainment that were used to develop the Conditions of Approval in the ITP and the effect on longfin smelt. (Effects Analysis pp. 12, 15, 16, and 18.) The relationship between flows and entrainment of longfin smelt larvae was made using a particle tracking model where particles are used as proxies for smelt, eggs and larvae. Modeling used 3 years of relatively dry winter-spring hydrology (1992, 2002, 2008) providing varying water conditions and pumping regimes to ascertain the factors influencing particle entrainment that might be regulated to reduce such entrainment. (Effects Analysis pps. 7-10.) The flow restrictions developed help minimize and fully mitigate for the impacts of pumping.

Take of longfin smelt at MIDS has been documented. (Effects Analysis pp. 20-21.) As a Condition of Approval, DWR must minimize take of adult longfin smelt at MIDS by making specific operational changes and monitoring them for effectiveness.

Despite the flow restrictions and operational changes discussed above, DFG believes that the operation of SWP facilities in conformance with the flow restrictions and operational changes required by the ITP will continue to take longfin smelt for which additional mitigation is required. (Status Review p. 20.) Creation of habitat has been a means of compensating for fish losses in the Delta for many years. For example, the agreement commonly known as "4-Pumps" executed on December 30, 1986, used habitat creation to compensate for direct losses of other sensitive species of fish (winter-run and spring run

¹⁰ Fish and Wildlife Service 2008. Formal Endangered Species Act consultation on the proposed coordinated operations of the Central Valley Project and State Water Project. 81420-2008-F-1481-5.

salmon, and delta smelt). The parties to the 4-Pumps Agreement are currently considering an amendment, known as the Delta Fish Agreement¹¹ (DFA), that would include compensation for an entire suite of Delta fishes and that may incorporate some of the provisions of the ITP as measures of the agreement.

It has been documented that the SWP affects habitat.¹² The Conditions of Approval in the ITP that require habitat creation will be carefully monitored to determine the benefit to the species. The acquisitions will be phased over the life of the project and can be modified if the parties agree that the benefits are not being achieved. (ITP section 7.1.) Any habitat restored will be protected in perpetuity. (ITP section 7.2.1.)

Based on the foregoing and other information contained in DFG's record in support of this ITP, DFG finds that the impacts of the take will be minimized and fully mitigated.

- **The measures required to meet this obligation (to minimize and fully mitigate) shall be roughly proportional in extent to the impact of the authorized taking on the species.**

DFG's application of the concept of rough proportionality in this ITP considers the number of individuals taken and the portion of the entire population of longfin smelt impacted by the authorized take. Rough proportionality requires mitigation for all impacts to the species caused by the authorized take, but not for impacts caused by others. This interpretation of the rough proportionality requirement is founded in the language and legislative history of Section 2081(b), the body of takings case law where this concept is also applied, the available scientific information upon which DFG makes its fish and wildlife management decisions, and DFG's practice since 1997.

The language of section 2081(b) states that the measures shall be roughly proportional to the impacts of the take. DFG's interpretation of this concept is consistent with this language. The pumping restrictions and operational measures required as Conditions of Approval of this ITP meet the rough proportionality requirement because they directly minimize and partially mitigate the take of longfin smelt. These measures were developed by calculating the estimated loss of longfin smelt at the pumps and considering the loss numbers in the context of the overall population of longfin smelt. For example, if a species is highly abundant, the number of fish lost might be inconsequential. However, if a species overall population is low, this loss could be significant.

A generally accepted methodology to estimate population size is relative abundance. Relative abundance measures species abundance, based on consistent sampling gear and sampling methods, designed to be comparable to one another across time. Such measures are not equivalent to population size estimates, but are assumed to monotonically vary with population size. Longfin smelt relative abundance has been monitored for decades

¹¹ California Department of Fish and Game and Department of Water Resources 1986. Agreement Between the Department of Water Resources and the Department of Fish and Game to Offset Direct Losses in Relation to the Harvey O. Banks Delta Pumping Plant.

¹² California Department of Fish and Game 2009. Rationale for Effects of Exports.

but only a few efforts have been made to estimate total longfin smelt abundance. Based on unpublished analyses, the United States Fish and Wildlife Service has stated that abundance peaked in the “tens of millions” in 1982 and declined to the “tens of thousands” by 2007. (Status Review p. 14.)

In association with this ITP, DFG has prepared the Effects Analysis. The Effects Analysis describes the portion of the longfin smelt population that is being taken by the pumps. This Effects Analysis resulted from a two-fold assessment. It:

- investigated a suite of hydrological variables for their influence on combined salvage of SWP and CVP to determine which had significant effects, and
- summarized SWP salvage and estimated loss then placed loss in the context of longfin smelt relative abundance (population size).

The Effects Analysis also helps to explain how the Conditions of Approval in the ITP will minimize and fully mitigate this loss or entrainment in the case of larvae.

As to the percentage of the longfin smelt population impacted by the SWP pumps, the Effects Analysis concludes that loss of larvae (based on particle tracking modeling) ranged between 2 and about 10% during low outflow years. (Effects Analysis pp. 28-31.) The SWP pumps are expected to impact a smaller percentage of longfin smelt when river flows surpass 55,000 cfs consistently during the January-March principal hatch period because high flows may distribute larvae outside of the influence of the pumps. (Effects Analysis p. 31.) The number of juvenile and adult longfin smelt lost at the pumps was quite high in some years, but no generally accepted, peer-reviewed estimates of total abundance were available for comparison. Effects of loss of juvenile and adult longfin smelt to SWP pumps are believed to be of the most consequence when loss is high and relative abundance is low.

The minimization and mitigation measures in the ITP will reduce the portion of the longfin smelt population taken, without requiring the minimization or mitigation of any other person or project’s take. The minimization and mitigation measures in the ITP are crafted to ensure that pumping restrictions will take effect, if at all, only when longfin smelt are detected in the zone of influence of the pumps. (ITP section 5.) Moreover, even if longfin smelt enter the zone of influence and the triggering conditions are met, then the process of considering protective measures to reduce take will commence. Restrictions will be set, if at all, at a level calculated to allow the maximum amount of pumping while reducing take.

The pumping restrictions and operational measures will not, however, fully minimize and mitigate the take of longfin smelt—some longfin smelt will still be lost at the pump. Therefore, the ITP requires further measures to mitigate for these losses. The habitat restoration measures of the ITP, which require DWR to restore 800 acres of longfin smelt habitat in specific locations, will provide mitigation that is roughly proportional to the portion of the longfin smelt population that will be taken after application of the other Conditions of Approval.

DFG's interpretation is consistent with the legislative history of S.B. 879, the bill in 1997 that set the current CESA issuance criteria. It was clear that the Legislature intended rough proportionality to be the "ceiling" for the mitigation requirement calling for mitigation to relate only to the impacts of the actual take from a particular project. No permittee was required to "recover" a species--that would go beyond the actual impacts of a particular project. This "recovery" element is specifically required under the Natural Community Conservation Plan Act; not CESA ITPs. (Fish and Game Code section 2800 et seq.)

Further, existing case law has interpreted this concept of rough proportionality in the context of "takings" law in a way that is consistent with DFG's interpretation of this term. As noted by the California Supreme Court, CESA's "rough proportionality" language mirrors the constitutional standard used in takings jurisprudence.¹³ The federal Takings Clause mandates that "when a government requires a dedication of land in exchange for a development permit, it must . . . 'make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development.'"¹⁴ Thus, in both CESA and the takings context, the rough proportionality requirement is meant to prevent the "[g]overnment from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."¹⁵

DFG's interpretation of the concept of rough proportionality is consistent with the general scientific information available to it to make permit-related decisions. DFG cannot calculate the impact of a particular project in proportion to all other projects that take the species. DFG cannot quantify all of the adverse impacts on each species that is the subject of an ITP and then assign appropriate percentages to those impacts. Whether dealing in the aquatic or the terrestrial environment, it is virtually impossible to quantify all of the things that cause the take of a species. For example, DFG knows that climate change may be adversely impacting species (Status Review p. 30) but it is an entirely different matter to require that this impact be known precisely and quantified for an ITP to be issued. This would require DFG to have far more scientific information on each species than it currently does--science that would require many years and millions of dollars to develop—assuming it was even possible to do so.

Finally, DFG has been relying on this concept of rough proportionality to meet the CESA issuance criteria for the many ITPs it has issued since 1997.

Based on the foregoing and other information contained in DFG's record in support of this ITP, DFG finds that the measures required to meet the obligation to minimize and

¹³ *Env'tl. Prot. and Info. Ctr. v. Cal. Dept. of Forestry and Fire Prot.*, 44 Cal.4th 459, 510 (2008).

¹⁴ *Id.* (citing *Dolan v. City of Tigard*, 512 U.S. 374, 391 (1994)).

¹⁵ *Ehrlich v. City of Culver City*, 12 Cal.4th 854, 880 (1996).

fully mitigate are roughly proportional in extent to the impact of the authorized taking on the species.

- **Where various measures are available to meet this obligation (to minimize and fully mitigate), the measures required shall maintain the applicant's objectives to the greatest extent possible.**

The applicant for this ITP is DWR. Based on DFG's work with DWR in developing the ITP and the information submitted as part of DWR's application for the ITP, DFG understands that the applicant's objective is the following: to provide flood control and water for agricultural, municipal, industrial, recreational and environmental purposes.

There are various measures available to minimize and fully mitigate the authorized take. Most of these measures involve pumping restrictions at various times of the year with varying degrees of restriction. Various implementation procedures are also available for deciding when to impose these restrictions (e.g. the measures could be automatic if longfin smelt are detected in locations making them vulnerable to the pumps, or they could be set based on a discussion/decision process).

The most direct way to minimize take of longfin smelt would be to impose pumping restrictions more severe than those that the ITP imposes. However, to rely solely on such restrictions, pumping would have to be reduced to such an extreme level that water deliveries would be virtually halted, particularly at certain times of the year. In order to maintain the Project's water delivery objectives, DFG determined it was appropriate to allow DWR to pump, thereby taking longfin smelt but mitigating that take through habitat restoration.

Based on the foregoing and other information contained in DFG's record in support of this ITP, DFG finds that among the various measures available to minimize and fully mitigate the impact on longfin smelt from the authorized taking, the measures required in this ITP maintain the applicant's objectives to the greatest extent possible.

- **All required measures shall be capable of successful implementation.**

DFG has concluded that all of the measures required in this ITP are capable of successful implementation. As previously stated, flow and other operational restrictions have been the most common means used to protect sensitive Delta fish species from the impacts of the pumps.¹⁶ These restrictions were also the measures stated in the Emergency Take Regulation for protecting the longfin smelt during the 12-month candidacy period should DFG have found that such protections were necessary. The ITP's operational measures have been tailored, after consultation with DWR, to meet the operational constraints of the pumps. For example, DFG understands that DWR cannot make immediate adjustments to pumping levels. For this reason, DFG allows DWR to meet flow

¹⁶ See U.S. Fish and Wildlife Service December 16, 2008. Delta Smelt Biological Opinion of the Operating Criteria and Plan for the Coordinated Operations of the Central Valley Project and State Water Project.

requirements based on 5- or 14-day running averages. These and other details of the Conditions of Approval allow the measures related to flow restrictions to be capable of successful implementation.

Finally, the habitat restoration elements of the ITP are capable of successful implementation. Habitat restoration has long been proposed to benefit Delta fish species. (See previous discussion about the 4-Pumps Agreement.) For example, DWR has recently released the draft environmental document for the Dutch Slough Wetland Restoration Project that will recreate nearly 1,200 acres of native habitat for Delta fish species and provide public access to the Delta shoreline. It is anticipated that restoring tidal influence to shallow water habitat in specific locations in the Delta will increase food production and provide temperature benefits to longfin smelt. This newly-created habitat will be carefully monitored to determine the extent to which it has been successful. It will be implemented in phases and can be modified if the parties to the ITP agree that changes to the habitat restoration element would help provide the anticipated benefits. As a result, DFG concludes that the habitat restoration measures are capable of successful implementation.

Based on the foregoing and the other information contained in DFG's record in support of this ITP, DFG finds that the measures required by the ITP are capable of successful implementation.

3. The permit is consistent with any regulations adopted pursuant to Sections 2112 and 2114. (Section 2081(b)(3))

No regulations regarding longfin smelt have been adopted pursuant to sections 2112 or 2114. Therefore, DFG finds that the ITP satisfies this requirement.

4. The applicant shall ensure adequate funding to implement the measures required by paragraph (2), and for monitoring compliance with, and effectiveness of, those measures. (Section 2081(b)(4))

Section 7.1 of the ITP requires that the "Permittee shall fund the acquisition, initial enhancement, restoration, long-term monitoring of 800 acres of inter-tidal and associated sub-tidal wetland habitat." This funding shall be ensured by an endowment or other funding mechanism approved by DFG.

The other Conditions of Approval do not require funding.

ITP sections 6.1, 6.2, 6.4 and 8 all require monitoring for compliance and effectiveness. In addition, the ITP includes a Mitigation Monitoring and Reporting Plan to ensure compliance with the Conditions of Approval.

Based on the foregoing and other information contained in DFG's record in support of this ITP, DFG finds that the applicant has ensured adequate funding to implement the

measures required to minimize and fully mitigate the impacts of the authorized taking and for monitoring compliance with, and effectiveness of, those measures.

5. No permit may be issued pursuant to subdivision (b) if issuance of the permit would jeopardize the continued existence of the species. The department shall make this determination based on the best scientific and other information that is reasonably available, and shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities. (Section 2081(c))

Jeopardy is not defined in the Fish and Game Code. Federal regulations provide:

To “jeopardize the continued existence of” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.”¹⁷

DFG has not adopted this federal definition for the purposes of state law, but does consider the factors enumerated in Section 2081(c) when determining whether permitting a project would jeopardize the continued existence of the species. In this case, DFG determined that issuance of the ITP would not impact the species’ ability to survive and reproduce. That conclusion was reached after analyzing the species number entrained and loss by the SWP pumps, the range of the species, the species population trend (to the extent known), threats to the species in addition to the SWP and foreseeable impacts from other related projects, most notably CVP operations.

DFG concluded that a moderate part of the species range was affected, and a small percentage of the species’ population. Although species loss is expected from SWP operations, DFG expects that the impacts of the loss will be minimized and fully mitigated by the terms of the ITP. It was further concluded that there are other known threats to the species, but definite information on how the other threats impact longfin smelt populations is scarce. Therefore, DFG considered these threats to the extent it was able using the best scientific information. Finally, DFG recognized that loss estimates are conservative because the SWP and CVP together draw water, and the impact on the population is higher than what is attributed to the SWP alone. However, with the Conditions of Approval in the ITP, and based on the relative conditions of Delta smelt and longfin smelt, DFG believes that the issuance of this ITP will not jeopardize the continued existence of the species.

¹⁷ 50 CFR § 402.02.

CEQA Findings

DFG's issuance of the ITP is subject to the California Environmental Quality Act, Public Resources Code, section 21000 et seq. (CEQA). DFG is a responsible agency under CEQA with respect to the ITP because of prior environmental review of the Project by the DWR as the lead agency. (See generally Pub. Resources Code, §§ 21067, 21069.) DWR prepared an initial study and on February 18, 2009, adopted the On-going California State Water Project Operations in the Sacramento-San Joaquin Delta for the Protection of Longfin Smelt Negative Declaration (SCH No. 2009012022).

In fulfilling its obligations as a responsible agency, DFG's obligations under CEQA are more limited than the lead agency. (CEQA Guidelines, § 15096, subds. (a), (f))¹⁸ DFG, in particular, is responsible for considering only the effects of those activities involved in the Project which it is required by law to carry out or approve and mitigating or avoiding only the direct or indirect environmental effects of those parts of the Project which it decides to carry out, finance, or approve. (Pub. Resources Code § 21002.1, subd. (d); CEQA Guidelines, §§ 15041, subd. (b), 15096, subds. (f), (g).) Accordingly, because DFG's exercise of discretion is limited to issuance of the ITP, DFG is responsible for considering only the environmental effects that fall within its permitting authority under CESA.

In conjunction with the issuance of the ITP, DFG is adopting an Addendum to the ND pursuant to CEQA. (CEQA Guidelines § 15164.) The Addendum describes the changes to the Project required by the ITP, including a description of other elements in the BO or other mitigation measures not specified in DWR's Project Description, such as measures related to the North Bay Aqueduct, Suisun Marsh, Morrow Island Distribution System, fish screens, and habitat restoration.

DFG finds that substantial evidence in the record shows that the changes described in the Addendum are not substantial changes that would require major revisions of the ND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. Moreover, since the adoption of the ND, there have been no significant changes in the circumstances under which the Project will be undertaken, nor has any new information of substantial importance become available. Therefore, pursuant to CEQA Guidelines sections 15164(b) and 15162, an Addendum is the appropriate environmental document for these changes.

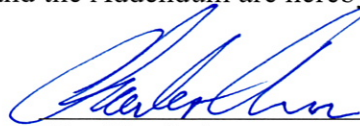
DFG has considered the adopted ND and the environmental effects described therein, in conjunction with the Addendum, prior to making a decision on the issuance of the ITP. DFG finds that the ND and the Addendum are adequate under CEQA to support approval of this ITP.

¹⁸ The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

**IV.
CONCLUSION**

DFG has carefully considered all of the required statutory and regulatory elements to approve this ITP. The record contains substantial evidence to support the conclusions reached herein. As a result, these findings and the Addendum are hereby adopted, and the ITP is approved.

23 Feb 09
Date



By: Chuck Armor
Regional Manager, Bay-Delta Region