California Department of Fish and Wildlife
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534

California Endangered Species Act
Incidental Take Permit No. 2081-2023-036-03

PHASE 2 LOS VAQUEROS RESERVOIR EXPANSION PROJECT – WATER OPERATIONS

I. Authority:

This California Endangered Species Act (CESA) incidental take permit (ITP) is issued by the California Department of Fish and Wildlife (CDFW) pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and California Code of Regulations, Title 14, section 783.0 et seq. CESA prohibits the take[1] of any species of wildlife designated by the California Fish and Game Commission as an endangered, threatened, or candidate species.[2] However, CDFW may authorize the take of any such species by permit pursuant to the conditions set forth in Fish and Game Code section 2081, subdivisions (b) and (c). (See Cal. Code Regs., tit. 14, § 783.4.)

Permittee:	**Contra Costa Water District**
Principal Officer:	**Rachel Murphy, General Manager**
Contact Person:	**Maureen Martin, (925) 688-8323**
Mailing Address:	**Post Office Box H2O, Concord, CA 94524** **Email: rmurphy@ccwater.com**

II. Effective Date and Expiration Date of this ITP:

This ITP is effective as of the date signed by CDFW below. This ITP provides take authorization as described in Section VII, below, and supersedes all provisions of ITP No. 2081-2009-013-03 as of this ITP's effective date. Unless renewed by CDFW, this ITP and its authorization to take the Covered Species shall expire on **December 31, 2038**.

Notwithstanding the expiration date on the take authorization provided by this ITP, Permittee's obligations pursuant to this ITP do not end until CDFW accepts as complete the Permittee's Final Mitigation Report required by Condition of Approval 8.8 of this ITP.

[1] Pursuant to Fish and Game Code section 86, "'take' means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (See also *Environmental Protection Information Center v. California Department of Forestry and Fire Protection* (2008) 44 Cal.4th 459, 507 [for purposes of incidental take permitting under Fish and Game Code section 2081, subdivision (b), "'take' … means to catch, capture or kill".)

[2] The definition of an endangered, threatened, and candidate species for purposes of CESA are found in Fish and Game Code sections 2062, 2067, and 2068, respectively.

III. Project Location:

The Phase 2 Los Vaqueros Reservoir Expansion Project – Water Operations (Project) consists of the operations and maintenance of Los Vaqueros Reservoir and four existing water diversion intakes and pumping stations, together with associated conveyance facilities, in the Sacramento-San Joaquin Delta Estuary (Delta), located in Contra Costa County, Alameda County and San Joaquin County (See Figure 1):

- Los Vaqueros Reservoir is located about 4 miles northwest of the intersection of Vasco Road and State Route 205 near the Byron Airport in eastern Contra Costa County, latitude and longitude: 37.837293, -121.728968.

- The Mallard Slough intake and pump station is located just south of Chipps Island in the western Delta, near the City of Pittsburg, Contra Costa County, latitude and longitude: 38.035525, -121.927986, County Assessor's Parcel Number (APN): 096-100-018-9 and 096-100-017-1.

- The Old River intake and pump station is located on Old River near State Route 4 in Discovery Bay, Contra Costa County, latitude and longitude: 37.887360 -121.576866, APN: 008-340-036-6.

- The Middle River intake and pump station is located on Victoria Canal, in San Joaquin County, latitude and longitude 37.866634 -121.543930, APN: 129-190-350-000.

- The Rock Slough intake consists of a series of four pumping plants located along the Contra Costa Canal near the City of Oakley, Contra Costa County, latitude and longitude: 37.976173, -121.641050, APN: 020-140-049-6 and 020-140-051-2.

Project operations will occur in all fish-bearing waterways within the Project Area that include Mallard Slough, Old River, Middle River (Victoria Canal) and Rock Slough (Figure 1).

IV. Project Description:

COVERED ACTIVITIES

Project related activities covered (Covered Activities) under this ITP include: (1) diversion of water from Permittee's four points of diversion (Mallard Slough, Old River, Middle River (Victoria Canal) and Rock Slough) up to a combined total of 439 TAF annually; and (2) Maintenance activities associated with Permittee's water diversion intakes.

HISTORICAL AUTHORIZATIONS FOR THE LOS VAQUEROS PROJECT

Memorandum of Understanding/Management Authorization No. 9339

Pursuant to former Fish and Game Code section 2081, CDFW issued Memorandum of Understanding and Management Authorization (MOU/MA) No. 9339 to Contra Costa Water

District (CCWD) on February 16, 1994, for construction and development of the Los Vaqueros Reservoir. ITP 2081-2009-013-03 superseded all provisions of MOU/MA No. 9339 to avoid, minimize and fully mitigate the incidental take and all impacts of the taking on winter-run Chinook salmon and Delta smelt expected to occur as a result of the Los Vaqueros Project as described therein.

CDFW Consistency Determination No. 2080-2007-019-03

CDFW Consistency Determination (CD) No. 2080-2007-019-03 addressed incidental take of Chinook salmon and Delta smelt during the construction of the Alternative Intake Project which consisted of construction of a new intake at Victoria Canal (the Middle River point of diversion).

Incidental Take Permit No. 2081-2009-013-03

CDFW CD No. 2080-2007-019-03 did not address impacts to longfin smelt; therefore, on November 5, 2009, CDFW issued ITP No. 2081-2009-013-03 to authorize incidental take and impacts to longfin smelt due to construction of the Alternative Intake Project as described therein, and authorized take of winter-run Chinook salmon (*Oncorhynchus tshawytsca*), spring-run Chinook salmon (*Oncorhynchus tshawytsca*) of the Sacramento drainage, Delta smelt (*Hypomesus transpacificus*), and longfin smelt (*Spirinchus thaleichthys*) expected to occur during operation and maintenance of CCWD's points of diversion to divert water either to storage in the Los Vaqueros Reservoir or the Contra Costa Canal for direct use in the Contra Costa Water District service area. ITP No. 2081-2009-013-03 superseded all provisions of MOU/MA No. 9339 pertaining to these species.

Incidental Take Permit No. 2081-2011-002-03

On March 1, 2011, CDFW issued ITP No. 2081-2011-002-03 which superseded provisions of MOU/MA No. 9339 to avoid, minimize, and fully mitigate the incidental take and impact to San Joaquin kit fox (*Vulpes macrotis mutica*), California tiger salamander (*Ambystoma californiense*), and Alameda whipsnake (*Masticophis lateralis euryxanthus*) resulting from expansion of Los Vaqueros Reservoir to 160 TAF and operation and maintenance of the Los Vaqueros Reservoir within the administrative boundary of the Los Vaqueros Watershed and enhancement and management of the habitat management lands.

Incidental Take Permit No. 2081-2021-036-03

CDFW is currently processing a request from Permittee to issue ITP No. 2081-2021-036-03 to authorize incidental take of San Joaquin kit fox, California tiger salamander and Alameda whipsnake associated with construction, operation, and maintenance of the Phase 2 Los Vaqueros Reservoir Expansion Project.

PROJECT BACKGROUND AND SUMMARY

Permittee operates untreated water distribution facilities, and water treatment and treated water distribution facilities. Permittee uses the Los Vaqueros Reservoir, together with other current facilities, to serve approximately 550,000 people and industries in central and eastern Contra Costa County.

In 1998, Permittee completed construction of a dam and 100 thousand-acre-foot (TAF) impoundment (Los Vaqueros Reservoir) located in the Kellogg Creek watershed in eastern Contra Costa County. The reservoir was built to provide water storage and to ensure availability of high-quality water to customers. In 2012, Permittee completed the expansion of Los Vaqueros Reservoir (Phase 1 Los Vaqueros Reservoir Expansion Project) to increase reservoir storage capacity from 100 TAF to 160 TAF. The Permittee has not fully used this additional 60 TAF capacity to date.

Water stored in the Los Vaqueros Reservoir is diverted from the Delta through the Central Valley Project (CVP) pursuant to a contract with the U.S. Bureau of Reclamation (Reclamation), through the State Water Project (SWP), upon completion of Phase 2 Expansion construction, and pursuant to a contract with the California Department of Water Resources (DWR), under Project partners' water right permits, and under Permittee's water rights permit number 20749 and license number 20750. Currently, the Permittee has the maximum capacity to divert up to 222 TAF annually for either direct diversion to use or diversion to storage at the reservoir.

Permittee now seeks to further expand the Los Vaqueros Reservoir storage capacity from 160 TAF to 275 TAF and add Delta interconnection facilities that tie into the California Aqueduct (Figure 2 – Existing, Modified and Possible New Facilities for the Phase 2 Expansion). The California Aqueduct via the transfer Bethany will intertie with multiple other water purveyors whose diversion facilities and water transfers or Delta exports and related activities are explicitly outside the scope of authorization of this ITP (Phase 2 Expansion).

The Los Vaqueros Reservoir Joint Powers Authority (JPA) partners of the Phase 2 Expansion consist of the following local water agencies: Alameda County Water District, East Bay Municipal Utility District, Grassland Water District, Santa Clara Valley Water District, San Francisco Public Utilities Commission, San Luis & Delta-Mendota Water Authority, and Alameda County Flood Control and Conservation District, Zone 7. These JPA partners have established long-term governance and financing for the Phase 2 Expansion. The San Luis & Delta-Mendota Water Authority is comprised of the following entities: Banta-Carbona Irrigation District; Broadview Water District; Byron Bethany Irrigation District (CVPSA); Central California Irrigation District; City of Tracy; Columbia Canal Company (a Friend); Del Puerto Water District; Eagle Field Water District; Firebaugh Canal Water District; Fresno Slough Water District; Grassland Water District; Henry Miller Reclamation District No. 2131; James Irrigation District; Laguna Water District; Mercy Springs Water District; Oro Loma Water District; Pacheco Water District; Panoche Water District; Patterson Irrigation District; Pleasant Valley Water District; Reclamation District

1606; San Benito County Water District; San Luis Water District; Santa Clara Valley Water District; Tranquillity Irrigation District; Turner Island Water District; West Side Irrigation District; West Stanislaus Irrigation District; and Westlands Water District. Not all members of the San Luis Delta Mendota Water Authority are currently participating in the Phase 2 Expansion.

In summary, the Phase 2 Expansion includes enlarging the existing water storage capacity of Los Vaqueros Reservoir from 160 TAF to 275 TAF, upgrading of existing and construction of new conveyance facilities, and operation of Permittee's water diversions to divert a total of up to 439 TAF annually under long-term operations once the new conveyance facilities are constructed. Currently Permittee is limited to 222 TAF annually and will continue to be limited to 222 TAF annually during near-term operations. The Phase 2 Expansion received a conditional award of $477 million from the California Water Commission to provide environmental, emergency response, and recreational state benefits. At the time of the writing of this ITP, the federal benefits of the Phase 2 Expansion are proposed to be increased water supply for the fourteen south-of-Delta wildlife refuges in the San Joaquin Valley identified in the Central Valley Project Improvement Act (CVPIA) and Central Valley Project (CVP) operational flexibility; the local benefits of the Phase 2 Expansion are proposed to be access to new water supplies and improved water supply reliability.

EXISTING FACILITIES

Permittee diverts water from four Delta intakes located at Mallard Slough, Rock Slough, Old River, and Middle River. The current facilities include the following:

- Middle River Intake and Pump Station—250-cubic feet per second (cfs) intake and pump station on Victoria Canal, equipped with a positive barrier fish screen. Water from the Middle River Intake is conveyed by pipeline to the Old River Pipeline at the Old River Pump Station.

- Middle River Pipeline—72-inch-diameter, 250-cfs pipeline that is 30,000 feet long and conveys water from the Middle River Pump Station to the Old River Pipeline.

- Old River Intake and Pump Station—250-cfs intake and pump station on Old River near State Route 4, equipped with a positive barrier fish screen.

- Old River Pipeline—78-inch-diameter, 320-cfs pipeline that is 34,700 feet long and conveys water from the Old River Pump Station to the Transfer Facility.

- Transfer Facility—Los Vaqueros Reservoir system hub that regulates water into and out of the Los Vaqueros Reservoir via the Transfer Pipeline and to the Contra Costa Canal via the Los Vaqueros Pipeline; key facilities include a 4-million-gallon steel tank, a 200-cfs pump station to lift water to the reservoir, and two flow control stations.

- Transfer Pipeline—72-inch-diameter pipeline that is 19,600 feet long and conveys up to 200 cfs from the Transfer Facility to the Los Vaqueros Reservoir, and 400 cfs from the Los Vaqueros Reservoir to the Transfer Facility.

- Los Vaqueros Dam and Reservoir—160-TAF off-stream storage reservoir for water that is diverted by Permittee from the Delta when source water quality meets and impounded behind a 230-foot-high earthen fill embankment dam.

- Los Vaqueros Pipeline—Comprised of two in-line segments: a 96-inch-diameter pipeline that is approximately 18,000 feet long and a 90-inch-diameter pipeline that is approximately 29,000 feet long with a 400-cfs capacity. Conveys water, via gravity, from the Transfer Facility to the Contra Costa Canal at the Neroly Blending Facility in Oakley.

- EBMUD-CCWD Intertie[3]—Connects the Los Vaqueros Pipeline with Mokelumne Aqueduct No. 2 where the two facilities intersect in Brentwood. The Intertie can be used to deliver water, up to 155 cfs from Mokelumne Aqueduct #2 into the Los Vaqueros Pipeline either uphill to the Transfer Facility for storage in Los Vaqueros Reservoir or downhill to the Contra Costa Canal for delivery to CCWD's service area, or both directions simultaneously. Water conveyed through Mokelumne Aqueduct #2 may come from two sources: diversions at EBMUD and Sacramento County's Freeport Regional Water Project (FRWP) Intake on the Sacramento River or releases from EBMUD's Pardee Reservoir on the Mokelumne River. Water can also be moved from the Transfer Facility through the Los Vaqueros Pipeline to be pumped into Mokelumne Aqueduct #2 to deliver to EBMUD's service area.

- Contra Costa Canal—Permittee's primary conveyance facility carries Delta water from Rock Slough, Old River, and Middle River Intakes for delivery to treatment plants, large industries, and irrigation customers throughout CCWD's service area. The Contra Costa Canal is 48 miles long with capacity ranging from 350 cfs at the Rock Slough Intake to 22 cfs at its western terminus at the Martinez Reservoir.

- Rock Slough Intake—Capacity of 350 cfs and diverts water by using a series of four pumping plants along the Contra Costa Canal for delivery to the CCWD service area. The Rock Slough intake is equipped with a positive barrier fish screen.

- Mallard Slough Intake—39.3-cfs intake and pump station on Mallard Slough, south of Chipps Island in the western Delta. Mallard Slough Intake is equipped with a positive barrier fish screen. Diversions at Mallard Slough Intake occur when salinity is less than 100 milligrams per liter (mg/L) chloride, generally limited to winter and spring of wetter years. Operations at Mallard Slough Intake will not change with the implementation of the Phase 2 Expansion.

[3] The Freeport Intake is operated by the Freeport Water Authority, a Joint Powers of Authority consisting of EBMUD and Sacramento County Water Agency. Operations of water diversions associated with it are governed under a separate ITP, (ITP No. 2081-2010-031-03).

The Permittee's service area and existing water system facilities are shown in Figure 3 – Permittee Service Area and Major Facilities. Table 1 through Table 4, provided below, are summaries of the design and cleaning specifications and the fish screen design specifications of the Permittee's four diversion facilities.

Table 1. Old River, Middle River, Rock Slough and Mallard Slough Facility Design Criteria for Intake and Pumping Plant[4]

Water Levels	**Old River Intake**	**Middle River Intake**	**Rock Slough Intake**	**Mallard Slough Intake**
Maximum water surface	Elevation +8 ft (100-year flood)	Elevation +8 ft (100-year flood)	Elevation +8 ft (100-year flood)	Elevation +7 ft (100-year flood)
Minimum water surface	Elevation -2 ft (extreme low water)	Elevation -2 ft (extreme low water)	Elevation -1.93 ft (tidal range, 1984 to 1996)	Elevation -2.25 ft (extreme low water)
Design low water	Elevation -0.5 ft (MLLW)	Elevation -0.5 ft (MLLW)	Elevation -1.6 ft	Elevation -2.25 ft
Normal high water	Elevation +2.5 ft (MHHW)	Elevation +2.5 ft (MHHW)	Elevation +4.5 ft	Elevation +2.6 ft

[4] Table 1 defines the parameters within which each of the four (4) intakes can operate. Extreme low water is defined as the lowest low tide of the year. Normal high water is defined as the mean higher-high water (MHHW) or the average height of the highest tide recorded at a tide station each day during the recording period. Mean lower-low water (MLLW) is defined as the mean lower low water or the average height of the lowest tide recorded at a tide station each day during the recording period. The terms identified in this table are based on the 19-year National Tidal Datum Epoch from the National Oceanic and Atmospheric Administration.

Table 2. Old River, Middle River, Rock Slough and Mallard Slough Facility Screen Intake Dimensions[5]

General Intake Criteria	Old River Intake	Middle River Intake	Rock Slough Intake	Mallard Slough Intake
Number of intake bays	5	9	8	8
Width of bays	15 ft	15.7 ft	40 ft	4.75 ft
Top of intake structure deck	Elevation +11 ft	Elevation +12 ft	Elevation +10.5 ft	Not applicable
Top of screen opening	Elevation -0.6 ft	Elevation -0.0 ft	Elevation +6.4 ft	Elevation -3.5 ft
Intake sill elevation	Elevation -12.5 ft	Elevation -10 ft	Elevation -7.55 ft	Elevation -10 ft
Intake side water depth	20 ft, maximum 10 ft, minimum 11.5 to 14.5 ft, normally	18 ft, maximum 8 ft, minimum 9.5 to 12.5 ft, normally	15.6 ft, maximum 6 ft, minimum 6 to 12 ft, normally	17 ft, maximum 7.8 ft, minimum 7.8 to 12.6 ft, normally

[5] Table 2 provides the intake dimensions, specifications, and design criteria of the intake bays at all four (4) Project intakes.

Table 3. Old River, Middle River, Rock Slough and Mallard Slough Facility Fish Screen Design Specifications[6]

Fish Screens	Old River Intake	Middle River Intake	Rock Slough Intake	Mallard Slough Intake
Screen material	Type 304 stainless steel	Type 304 stainless steel	Type 304 stainless steel	70% copper – 30% nickel alloy
Maximum screen approach velocity	0.33 fps	0.2 fps	0.2 fps	0.2 fps
Maximum gross wetted screen area	750 square ft	1,340 square ft	4,480 square ft	285 square feet
Maximum screen open area	50% of gross wetted screen area	50% of gross wetted screen area	At least 40%	Information not available
Screen height	11.5 ft, vertical	10 ft, vertical	14 ft, vertical	7.5 ft
Screen inclination	1ft (horizontal) to 6ft(vertical)	vertical	5 degrees from vertical	About 11.5 degrees from horizontal
Maximum screen opening	3/32 inch, oriented vertically	1. 75 mm, oriented vertically	1.75 mm	3/32 inch
Panel size	5 ft by 12 ft deep, not including transition plate	5.2 ft by 10 ft deep, not including transition plate	9.5 ft by 14 ft, not including transition plate	4.75 ft by 7.5 ft
Number of panels	3 per bay: 15 total	3 per bay: 27 total	4 per bay: 32 total	8 total
Panel support system	Steel tube and plate sections acting as guide rails	Steel tube and plate sections acting as guide rails	Stainless steel fish screen guides and seats	Stainless steel retainers and catches

Table 4. Old River, Middle River, Rock Slough and Mallard Slough Facility Screen Cleaning Operations[7]

Screen Cleaning and Debris Removal System	**Old River Intake**	**Middle River Intake**	**Rock Slough Intake**	**Mallard Slough Intake**
Screen Cleaning System	Two units of rake on a single rail system	One unit of rake	Four units of brush-only system	Air and water scouring system
Screen cleaning system operation	Single stroke vertical scraping cycle at each position along screen face	Single stroke upward vertical scraping cycle at each position along screen face.	Four brushes move slowly down the face of the screen, then are lifted out of the water to move to the next screen surface.	High-pressure air to dislodge and remove debris on the screen surface, followed by artificial cross current to carry debris away from screens
Debris removal operation	Single continuous operation along the intake face to the end of the structure into a debris box	Single continuous operation along the intake face to the end of the structure into a debris box	Not applicable; the brush only system does not pick up debris	Not applicable; the air and water scouring system does not pick up debris
Debris box area	16 ft by 10 ft, based on a 20 cubic yard dumpster	16 ft by 10 ft, based on a 20 cubic yard dumpster	Not applicable, the brush only system does not pick up debris	Not applicable; the air and water scouring system does not pick up debris

PROJECT OPERATIONS: NEAR-TERM

Operations of the facilities during the permit term are separated into two periods: (1) Near-term and (2) Long-term. The Near-term period begins at the issuance of this ITP and ends upon completion of construction of the majority of the facilities needed to proceed to long-

[6] Table 3. Fish Screen design specifications and description of the materials utilized at the four Project intakes. Fps stands for feet per second.
[7] Table 4. Screen cleaning operations, actions, and devices at the four (4) Project intakes.

term operations, which is anticipated by Permittee to be in 2035. During the Near-term period, Permittee will operate its facilities similar to current operations with a maximum annual diversion limit of 222 TAF/year. The Long-term period begins after the planned construction of the Transfer Bethany Pipeline is completed and runs through the end of this ITP. During the Long-term period, Permittee may operate to increase its annual diversion limits up to 439 TAF/year. Table 5 summarizes the facilities and operations for Near-term and Long-term periods.

Permittee will continue to fill the Los Vaqueros Reservoir when there is fresh water in the Delta and release water from the reservoir when Delta water supply or water quality is limited. The maximum fill rate will continue to be 200 cfs as the Permittee does not intend to increase its capacity rates to divert water to storage. The greatest diversions from the Delta will occur when the Delta is fresh and there is water in excess of the water needed to meet CVP and SWP Delta regulatory obligations. Permittee's intake capacity will remain unchanged during the term of this ITP and instantaneous maximum diversion rates will remain unchanged from those authorized under its previous ITP (2081-2009-013-03). Permittee will restore the capacity to divert up to 350 cfs at the Rock Slough Intake. Diversions during the driest times, such as drought, will be limited by water supply availability and much of the water delivered to Permittee and JPA partners will be from reservoir releases. Permittee chooses which intakes to use and which operations to perform based on demands, regulations, hydrology, water quality, and maintenance activities.

Table 5. Old River, Middle River, Rock Slough and Mallard Slough Facility Screen Cleaning Operations Summary of the Project Facilities and Operations Diversion Capacity[8]

Facility	**Capacity**	**Near-term Operations**	**Long-term Operations**
Mallard Slough	39.3 cfs	Direct delivery to Permittee	No change
Rock Slough/PP1	350 cfs	Direct delivery to Permittee	Fill reservoir, direct delivery to Permittee, Los Vaqueros Reservoir Joint Powers Authority (JPA) and CVPIA Refuge Water Supply Program
Old River	250 cfs	Direct delivery to Permittee or fill reservoir	Fill reservoir, direct delivery to Permittee, JPA and CVPIA Refuge Water Supply Program
Middle River	250 cfs	Direct delivery to Permittee or fill reservoir	Fill reservoir, direct delivery to Permittee, JPA and CVPIA Refuge Water Supply Program

[8] Table 5. Overview of the near-term and proposed long-term operations at the four Project intakes. Cfs means cubic feet per second.

Los Vaqueros Reservoir	160/275 TAF	160 TAF for water quality and emergency supply for Permittee	275 TAF for water quality and emergency supply for Permittee, JPA and CVPIA Refuge Water Supply Program
Max Fill Rate	200 cfs	Max rate to fill Los Vaqueros Reservoir	No change.
Transfer-Bethany Pipeline	NA/300 cfs	Not Applicable	Deliver water to JPA and CVPIA Refuge Water Supply Program directly from any intake or from storage
Neroly Highlift Pump Station	NA/350 cfs	Not Applicable	Fill reservoir, direct delivery to JPA and CVPIA Refuge Water Supply Program from Rock Slough/PP1
Maximum Annual Diversions		222 TAF/year	439 TAF/year

Factors that affect Permittee operations include Permittee's service area demand, Delta water quality, power costs, maintenance needs, and coordination with CVP and SWP operations as governed by the 2019 U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) Re-initiation of Consultation on Long-Term Operations (ROC on LTO) Biological Opinions (BOs) and 2020 CDFW Long-Term Operations (LTO) ITP. This section will describe how Permittee considers these factors in determining its operations.

Project Diversions

Permittee's diversions occur primarily at the Rock Slough, Old River, and Middle River intakes. These three intakes divert water from the Delta, with Old River as the water source for the Rock Slough and Old River Intakes and Middle River as the predominant water source for the Middle River Intake on Victoria Canal. Diversions from these three intakes are mainly under Permittee's CVP contract (Contract Number: I75r- 3401A-LTR1-P), which allows diversion of up to 195 TAF/year. Permittee also has a long-term agreement with East Contra Costa Irrigation District (ECCID) that allows Permittee to divert water under ECCID's water right, from the Rock Slough and Old River Intakes, in an amount of up to 8.2 TAF/year in all years plus an additional 4 TAF/year when Permittee's CVP allocation is below 100 percent. In addition, the City of Brentwood has a long-term agreement with ECCID for up to 14.8 TAF/year of water diverted under ECCID's water right, which Permittee diverts from the Rock Slough and Old River Intakes and delivers to the City of Brentwood. However, neither the City of Brentwood nor the ECCID are considered JPA partners for the Los Vaqueros Reservoir JPA. From November to June, Permittee can divert up to 95,850 acre-feet (AF)/year to store in Los Vaqueros Reservoir under Permittee's Los Vaqueros Water Right (Permit No. 20749) from the Old River and Middle

River Intakes. In addition, Permittee can divert up to 26,780 AF/year from Mallard Slough under Permittee's Water Right License No. 10514 and Permit No. 19856.

Coordination with CVP and SWP Operations

Permittee has regular check-in meetings with Reclamation and DWR to coordinate operations with CVP and SWP. Typical coordination topics include: Delta conditions and regulations, CVP and SWP operations, CVP contract water scheduling, potential filling windows for Los Vaqueros Reservoir, and potential impacts of operations on listed species. The coordinated operations have been developed to avoid conflicts between Permittee diversions and CVP/SWP exports under different Delta operations scenarios created by authorizations under the State Water Resources Control Board's Water Right Decision 1641 (Decision 1641), the 2019 USFWS and NMFS ROC on LTO BOs, and the CDFW 2020 LTO ITP. These Delta authorizations do not apply to or directly govern Permittee operations. Real-time coordination with Reclamation and DWR is a means by which the Permittee ensures its operations do not interfere with Reclamation and DWR's ability to comply with their regulatory authorizations for the protection of listed species.

PROJECT OPERATIONS: LONG-TERM

Long-term operations will begin once construction of the majority of the facilities needed to proceed to long-term operations have been completed. Long-term operations will include similar considerations as the Near-term operations. With the implementation of the new facilities, Permittee will deliver water to JPA members and Refuge Water Supply Program. Long-term operations provide additional benefits to JPA partners and the CVPIA Refuge Water Supply Program through utilization of the available capacities of Rock Slough, Old River, and Middle River intakes after Permittee's needs are met. The Long-term operations are designed to increase diversions up to a total of 439 TAF/year. Considerations that affect the Long-term operations include: (1) system capacity, (2) Permittee's water supply and water quality needs, (3) Delta regulations, (4) available water supply, (5) CVPIA Refuge Water Supply Program and local agency water demands, and (6) maintenance needs of the system.

Many JPA partners are CVP and/or SWP contractors, and a portion of a contractor's CVP or SWP allocation could be diverted through the Project and pumped-in to the California Aqueduct or stored in Los Vaqueros Reservoir pending amendments to CVP and/or SWP water rights with the State Water Resources Control Board. Permittee will coordinate such diversions during regular CVP and/or SWP scheduling processes, which require CVP or SWP approval of the delivery schedule submitted by the associated contractor. In addition to providing water to JPA partners who are CVP and SWP contractors, the Phase 2 Expansion also will provide water to the CVPIA Water Refuge Supply Program. Permittee will continue to coordinate with the CVP and SWP to ensure that the Near-term and Long-term operations of the Project will not interfere with Reclamation and DWR's ability to comply with their permit conditions for export operations at Jones Pumping Plant and Banks Pumping Plant, respectively.

DIVERSION INTAKE MAINTENANCE ACTIVITIES

Mechanical Removal of Aquatic Weeds

Permittee will mechanically remove invasive aquatic weeds from the area in front of the fish screens at the Rock Slough, Old River, and Middle River intakes. For the Rock Slough intake, the area subject to weed removal is approximately six acres, extending from the Rock Slough Extension to 100-200 feet beyond the log boom, and from the area downstream of the fish screen and upstream of the Rock Slough Headworks Structure. The area subject to removal at Old River Intake is approximately 5.6 acres, and approximately 2.5 acres at Middle River Intake. Mechanical removal will be done once per year per location, between July 1 and October 1, and will take approximately two weeks at each location.

The harvester will cut the weeds at a depth of approximately five feet below the water surface. In shallower areas (six feet deep or less), the harvester will cut the weeds as close to the bottom as practicable. No disturbance to the bottom of waterways will occur. Cut aquatic weeds will be pulled up into the harvester via conveyor belt until the harvester is full. Once full, the aquatic weeds will be pulled off the harvester by a crane at the intake facilities. An excavator will be employed, as needed to scoop out the weeds. Cut weeds are transported to a drying area on-site and once the weeds have been dried, they will either be removed or composted on-site. The aquatic weeds will then be loaded onto trucks or other equipment and transported to the drying areas that are available on-site. The harvesting areas cover the width of the main rivers, extending 100-200 feet upstream and downstream of the log booms.

Hand Removal of Vegetation, Trash, or Debris

Hand removal will be utilized to remove small amounts of nuisance or weedy vegetation, trash, or debris where mechanical removal is not feasible. Hand removal will be done with aid of weed cutters, spades, hoes, shovels, adzes, saws, or other hand implements. Trash, debris, and waste will be removed from all of the intake areas, including debris pits, laydown areas, and drainage channels, on an ongoing basis and lawfully disposed of. Large debris and trash (including trees, vehicles, refrigerators, and other large appliances) in front of the fish screens will be removed with the aid of hoists, excavators, work boats, and similar large equipment.

Flow, Water Level, and Water Quality Sensors Cleaning, Repair, and Replacement

Each intake has a level sensor on the front of the fish screen. Some locations also have water quality sensors. Sensors are continuously monitored, and cleaning, repair, and replacement of the sensors will be performed on as as-needed basis.

Ladders/Safety/Float/Log Boom Repair and Replacement

Ladders, nets, floats, and log booms are inspected at least annually and repaired or replaced when damaged. Log booms are located several feet in front of the screens to prevent large debris from damaging the screens. The log booms are inspected once a week and are repaired or replaced from July to October, or as-needed if in-water work is not necessary.

Washing of Land-based Facilities

Intake structures are pressure washed with water or cleaned with a wire brush and painted with rollers or brushes using epoxy paint. Permittee will paint certain structures (e.g., the headworks structure and the underside of Rock Slough Fish Screen) with a nesting birds deterrent coating to prevent birds from nesting on structures. Structures will be pressure washed annually and painted either annually or as needed.

Wet Well Cleaning

Wet wells are concrete, or metal pipes placed vertically in the intakes behind the fish screens. Debris and silt that collects in the well are backflushed with a pump to clear the system of debris. Suction cleaning and desilting will occur along the concrete apron in front of and behind the screens at the Rock Slough, Old River, and Middle River Intakes. Turbidity controls will be implemented to reduce turbidity of the return flow to the river. Wet well cleaning and desilting will occur as needed, as frequently as once a year.

Fish Screen Cleaning and Maintenance

Mechanical rakes and brushes at the fish screens will be maintained regularly, including maintenance of rake head, wire ropes, and hydraulic and debris handling systems. The fish screen systems have automated cleaning systems, and the pressure differential across both sides of the screens will be continuously monitored to ensure the fish screens are performing properly. After cleaning, they will be reinstalled with the assistance of an in-water diver.

For specific details regarding the screen cleaning and debris removal systems at each intake refer to Table 4 above. Mechanical rakes and brushes that are used at the intake screens will be maintained regularly, including maintenance of rake head, wire ropes, and hydraulic and debris handling systems. The individual panels of each fish screen are removed, washed and repaired once every two years at a minimum. For reinstallation of the screen panels, an in-water diver is used to ensure the screens are properly fit during the process.

Facilities Inspection and Repair

Mechanical and electrical equipment will be visually examined and operated to ensure functionality. Cables and pulleys will be checked for wear, pulleys will be lubricated, and baskets will be painted with brushes. All facilities will be inspected at least once a year.

Graffiti Removal

Graffiti will be painted over by hand either with a brush or roller. Graffiti may also be removed by sandblasting. Waste materials from sandblasting will be collected and disposed of at an appropriate waste disposal site.

Sign Repair/Replacement/Installation

New signs may be installed, and damaged sign faces or supports will be repaired. Faces of signs will be repainted or replaced. Signs and navigational lights are located on posts in the water to ensure anglers do not get too close to the intakes. Signs will be inspected monthly. Repairs or replacement of signs will occur on an as-needed basis. Replacement or repair of posts or piles are not covered under this ITP.

Additional Rock Slough Maintenance Activity (Rock Slough intake only)

To manage invasive aquatic weeds, herbicide application will occur at Rock Slough Intake between July 1 and October 1. Herbicide application will be done concurrently with mechanical harvesting. Herbicides will be delivered from pressurized tanks and sprayed from vehicle and/or boat mounted booms, via backpack sprayers, or other application rig, or by manually wicking herbicides directly onto vegetation. Aerial spraying using aircraft will not be conducted.

NEW FACILITIES ASSOCIATED WITH THE PROJECT

Although construction of new facilities or modifications to existing ones are not covered under this ITP[9], completion of their construction will determine when the Project moves from conducting operations under existing or Near-term operational conditions to Long-term operational conditions (see Figure 2, Existing, Modified and Possible New Facilities for the Phase 2 Expansion). All four existing intakes (Rock Slough, Old River, Middle River and Mallard Slough) and related pipelines will be used by the Project at their permitted capacities, and the current maximum diversion rate of each intake will remain unchanged. However, the volumes and times when Permittee's diversions are actively operating and/or operating at rates higher than the historical operations will increase when the Project enters the long-term operations period. Previously, the Permittee elected to not divert greater volumes of water because the water available was in excess of Permittee's needs at the time. Construction of

[9] CDFW is currently processing a request from Permittee to issue ITP No. 2081-2021-036-03 to authorize incidental take of San Joaquin kit fox, California tiger salamander and Alameda whipsnake associated with construction of the Phase 2 Los Vaqueros Reservoir Expansion Project. ITP No. 2081-2021-036-03 will address impacts of newly described and/or previously uncontemplated activities not currently covered under ITP No. 2081-2011-002-03.

the new and/or modified Phase 2 Expansion may provide a larger customer base to capitalize on the excess yield potential above what the Permittee requires for its needs. Permittee expects to commence construction in 2025 and anticipates it will take up to nine years to complete. The new and modified facilities the Permittee anticipates utilizing during Long-term operations consist of the following elements:

- Los Vaqueros Reservoir Expansion/Dam Modification – The height of the existing earthen dam will be raised by 55 feet to expand the reservoir storage capacity from 160 TAF to 275 TAF.

- Transfer Facility Expansion and Upgrade –The existing pumps, which regulate flows in and out of Los Vaqueros Reservoir and into the Contra Costa Canal via the Los Vaqueros Pipeline, will be changed and modified to electric pump motors to lift water at the current permitted capacity of 200 cfs. Expansion of the Transfer Facility will involve construction of a new 300 cfs capacity pump station, consisting of six new 50 cfs pumps and an additional 5-million-gallon (MG) steel storage tank, to provide a total of 9 MG of storage immediately adjacent to the existing Transfer Pump Station.

- Transfer-Bethany Pipeline — A new, 300 cfs capacity pipeline that starts at the Transfer Facility and connects to the California Aqueduct north of Bethany Reservoir. The Transfer Bethany Pipeline would serve as the regional connection between the Permittee facilities and the majority of the JPA partners and CVPIA Refuge Water Supply Program. Through the Transfer-Bethany Pipeline, water can be pumped from the Transfer Facility to south-of-Delta partners via direct connection to the California Aqueduct.

- Neroly High-Lift Pump Station – A new high-lift pump station will be constructed on the Contra Costa Canal near Permittee's Neroly Blending Facility. The Neroly High-Lift Pump Station will pump water from the existing Contra Costa Canal to the existing Transfer Facility, which will enable filling of Los Vaqueros Reservoir and deliveries to the Transfer-Bethany Pipeline from the existing Rock Slough Intake. The proposed capacity of the Neroly High-Lift Pump Station is 350 cfs.

- Pumping Plant #1 Replacement – The Rock Slough Intake diversion capacity will be restored to the designed and permitted 350 cfs. The Contra Costa Canal Replacement Project, which has replaced four miles of unlined open channel portion of the Contra Costa Canal between the Rock Slough fish screen and Pumping Plant #1 with a buried pipe, has resulted in lower operating water surface levels at Pumping Plant #1. After the completion of the fifth segment, pumping capacity at Pumping Plant # 1 will be limited to approximately 200 cfs or less using existing Pumping Plant #1 pumps. Larger horsepower pumps set at a lower elevation than the existing pumps at Pumping Plant #1 are needed to restore the full permitted pumping capacity of 350 cfs.

V. Covered Species Subject to Take Authorization Provided by this ITP:

This ITP covers the following species:

Name	CESA Status[10]
1. Longfin Smelt (*Spirinchus thaleichthys*)	Threatened[11]
2. Delta Smelt (*Hypomesus transpacificus*)	Endangered[12]
3. Spring- run Chinook Salmon *(Oncorhynchus tshawytscha)* of the Sacramento River drainage	Threatened[13]
4. Winter-run Chinook Salmon (*Oncorhynchus tshawytscha)*	Endangered[14]

These species and only these species are the "Covered Species" for the purposes of this ITP.

VI. Impacts of the Taking on Covered Species:

Project activities and their resulting impacts are expected to result in the incidental take of individuals of the Covered Species. The activities described above expected to result in incidental take of individuals of the Covered Species include monitoring, ongoing water diversion operations, and maintenance of diversion-related infrastructure at the Mallard Slough Intake and Pump Station, Old River Intake and Pump Station, Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough Intake (Covered Activities). Impacts from Covered Activities on the Covered Species may be direct, in the form of capture, stranding, or mortality, or indirect, in the form of increased competition, increased predation, reduction of available habitat, increased habitat fragmentation, and other behavioral disruption resulting from ongoing Project water diversion activities.

Impacts of the taking on the Covered Species also include: 1) During Near-term operations of the ITP term), a reduction in quantity of available aquatic habitat, up to 222 TAF annually as water is diverted; 2) during Long-term operations, increased reduction in quantity of available aquatic habitat up to 439 TAF annually as water is diverted out of the system; 3) Disruption to movement and/or migration of the Covered Species caused by water diversions; 4) Disruption to ecosystems processes and loss of food web resources; and 5) Ongoing effects of the loss of areal extent or volume of aquatic habitat for the Covered Species as a result of the Covered Activities during Near-term operations and Long-Term Operations. Modifications of flow patterns within the vicinity of the CCWD intakes due to filling operations

[10] Under CESA, a species may be on the list of endangered species, the list of threatened species, or the list of candidate species.
[11] See Cal. Code Regs. tit. 14 § 670.5, subd. (b)(2)(E).
[12] See Cal. Code Regs. tit. 14 § 670.5, subd. (a)(2)(O).
[13] See Cal. Code Regs. tit. 14 § 670.5, subd. (b)(2)(C).
[14] See Cal. Code Regs. tit. 14 § 670.5, subd. (a)(2)(M).

of the Project likely will result in a small increase in take of longfin smelt and Delta smelt as a result of displacement to habitat less suitable for spawning and rearing. Covered Activities will also likely increase adverse conditions for juvenile winter-run and spring-run Chinook salmon migration through the Delta.

Incidental take of individuals of the Covered Species in the form of mortality ("kill") may occur in the form of entrainment and impingement as a result of Covered Activities such as operation of the intake and pump station facilities. Incidental take of individuals of the Covered Species may also occur from the Covered Activities in the form of mortality ("kill") from Covered Activities such as facility maintenance, maintenance activities, application of aquatic herbicides, mechanical vegetation control, contaminant releases or spills, and as a result of Covered Activities described in detail below for the Covered Species. Incidental take of individuals of the Covered Species may also occur from the Covered Activities in the form of pursue, catch, capture, or attempt to do so of the Covered Species from take evaluation monitoring. The areas where authorized take of the Covered Species is expected to occur include the vicinity of: Mallard Slough Intake and Pump Station, Old River Intake and Pump Station, Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough Intake (collectively, the Project Area (Figure 1)).

Impacts of the authorized taking also include adverse impacts to Covered Species related to physiological, behavioral and habitat-level effects, reduction in habitat extent and quality, degradation to water quality, and the Project's incremental contribution to cumulative impacts (indirect effects). These impacts include, but are not limited to: water quality effects, increased turbidity and sediment release, long-term effects due to increased pollution and release of contaminants, displacement from preferred habitat, and increased vulnerability to predation.

Delta Smelt (*Hypomesus transpacificus*) and Longfin Smelt (*Spirinchus thaleichthys*)

Project activities and their resulting impacts are expected to result in the incidental take of Delta Smelt (DS) and Longfin Smelt (LFS). The activities described above in the Project Description as Covered Activities and the direct and indirect impacts described in detail below are expected to result in incidental take of individuals of the Covered Species.

DIRECT EFFECTS

Incidental take of DS and LFS in the form of mortality ("kill") may occur as a result of operations and maintenance activities for the Mallard Slough Intake and Pump Station, Old River Intake and Pump Station, Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough Intake. The areas where authorized take of DS and LFS is expected to occur are Mallard Slough, Old River, Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough.

Entrainment and Impingement:

Incidental take of DS and LFS individuals may occur due to entrainment and impingement of individuals at the Project fish screens at all pump and intake facilities covered in this ITP as identified above. Entrainment occurs when a fish is drawn to or transported with the flow of water towards the intake and through a fish screen. Impingement occurs when a fish is pushed against the fish screen of an intake due to approach velocities that are higher than the swimming capability of the fish and prevent the fish from swimming away from the screen. Incidental take of individuals of the Covered Species are expected to occur from both entrainment and impingement at the Project locations and facilities identified above.

Maintenance Activities - Generally:

Incidental take of DS and LFS individuals may occur due to maintenance activities at the Project locations and facilities identified above. Maintenance activities that may result in incidental take include mechanical, manual and chemical removal of aquatic weeds; manual removal of vegetation, trash and/or debris; repair and replacement of ladders, safety nets, float and log booms; washing of land-based facilities; wet well cleaning; fish screen cleaning and maintenance; facilities inspection; and utility and facilities repair.

Maintenance Activities - Aquatic Weed Control:

Incidental take of DS and LFS individuals may occur due to Permittee's aquatic weed control activities. The application of herbicides by Permittee at the Rock Slough intake may result in incidental take. Direct or acute exposure to herbicides may cause immediate mortality and reduce medium-term survival through impacts to growth and development of the Covered Species. Long-term exposure to herbicides may cause mortality as a result of long-term health impacts to the Covered Species. The mechanical removal of weeds at Rock Slough, Old River and Middle River (located on Victoria Canal) intakes by the Permittee may result in incidental take. Mechanical weed removal may directly injure or kill DS and LFS individuals from harvester strikes and entanglement in weeds lifted from the water.

Maintenance Activities - Contaminant Spills:

Maintenance activities may result in accidental spills of contaminants, including cement, oil, fuel, hydraulic fluids, paint, and other construction-related materials, resulting in localized water quality degradation at the Project locations and facilities identified above. These spills may result in incidental take of DS and LFS individuals by direct injury and mortality (e.g., damage to gill tissue that causes asphyxiation) or delayed effects on growth and survival (e.g., increased stress or reduced ability to feed), depending on the nature and extent of the spill and the contaminants involved. Additional maintenance activities that may result in contaminant spills include: fish screen cleaning and maintenance; facilities inspection and utility and facilities repair; flow, water level, and water quality sensors cleaning; repair and replacement of water quality sensors; and graffiti removal from concrete structures. These spills may also result in incidental take of DS and LFS individuals by direct injury and

mortality (e.g., damage to gill tissue that causes asphyxiation) or delayed effects on growth and survival (e.g., increased stress or reduced feeding), depending on the nature and extent of the spill and the contaminants involved.

Monitoring:

Incidental take of DS and LFS individuals may occur due to the Permittee's fish monitoring program described in Condition of Approval 8.10 of this ITP. To implement the fish monitoring program, the Permittee will operate nets and other capture methods in the vicinity of the Project fish screens. Fish captured in the nets will be retained for identification and will not be returned to the water, resulting in direct mortality to the DS and LFS individuals.

INDIRECT EFFECTS

Impacts of the authorized taking also include adverse impacts to DS and LFS individuals related to the Project's incremental contribution to cumulative impacts (indirect impacts). The areas where authorized take of DS and LFS is expected to occur are in Mallard Slough, Old River, the Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough.

Entrainment and Impingement:

Operation of the Project intakes may result in non-lethal impingement at Project fish screens and facilities identified at the locations above to DS and LFS individuals. Non-lethal impingement may increase stress conditions or injury and lead to eventual mortality. Entrainment and impingement may also occur to prey species of DS and LFS that may result in a reduction of available aquatic prey species (i.e., entrainment of zooplankton in Project Intakes). Reductions in the amount of prey available could reduce growth rates of juvenile DS and LFS.

Maintenance Activities – Generally:

Project maintenance activities may also result in indirect impacts to DS and LFS. Mechanical harvesting of aquatic weeds will result in temporary disturbance that may cause DS and LFS to avoid disturbed habitat and move to areas where they are more susceptible to predation; it may also remove prey species from the water and reduce available food sources. Contaminant spills and sediment disturbance may kill and reduce the quantity of species that are food for DS and LFS. At Rock Slough, application of herbicides on aquatic weeds may create large volumes of dead aquatic matter, which when decomposing lowers dissolved oxygen in the water column. Herbicide usage at Rock Slough may also kill and reduce the quantity of aquatic prey species.

Maintenance Activities – Sediment Disturbance:

Sediment disturbance from maintenance activities may cause erosion and the disturbance of land-based sediment and soil to mobilize and transport sediment into waterways. Suspended

sediment increases turbidity and may alter fish physiology, behavior, and habitat conditions in waterways. Short-term increases in turbidity and suspended sediment may disrupt normal behavior patterns of DS and LFS, affecting foraging, rearing, and migration. The level of disturbance may also cause juvenile fish to abandon protective habitat or reduce their ability to detect predators, potentially increasing their vulnerability to predators. Eroded soils and suspended sediments may also transport harmful pollutants such as nutrients; metals; oils, fuels, and grease; and herbicides, and other agricultural chemicals into the water column. Chronic exposure to high turbidity and suspended sediment may inhibit growth and survival by impairing respiratory function, reducing tolerance to disease and contaminants, and by causing physiological stress. Covered Activities that have the potential to result in sediment transport and delivery to waterways include: mechanical removal of aquatic weeds; hand removal of vegetation, trash and debris; ladders, safety nets, floats, and log boom repair and replacement; log boom maintenance; washing land-based facilities; wet well cleaning; fish screen cleaning and maintenance; facilities inspection as well as utility and facilities repair.

Winter-run Chinook salmon and spring-run Chinook salmon (*Oncorhynchus tshawytscha*)

Project activities and their resulting impacts are expected to result in the incidental take of Chinook Salmon Winter-Run (CHNWR) and Chinook Salmon Spring-Run (CHNSR). The activities described above in the Project Description as Covered Activities and the direct and indirect impacts described in detail below are expected to result in incidental take of individuals of the Covered Species. The areas where authorized take of the Covered Species (CHNWR and CHNSR) will occur include operations and maintenance of the: Mallard Slough Intake and Pump Station, Old River Intake and Pump Station, Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough Intake.

DIRECT EFFECTS

Incidental take of CHNWR and CHNSR in the form of mortality (“kill”) may occur as a result of operations and maintenance activities for the Mallard Slough Intake and Pump Station, Old River Intake and Pump Station, Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough Intake. The area where authorized take of CHNWR and CHNSR is expected to occur is Mallard Slough Intake and Pump Station, Old River Intake and Pump Station, Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough Intake.

Impingement:

Incidental take of CHNWR and CHNSR individuals may occur due to impingement of individuals at the Project fish screens. Impingement occurs when a fish is pushed against the fish screen due to approach velocities that prevent the fish from swimming away from the fish screen. Incidental take of individuals of the Covered Species are expected to occur from impingement at the Project locations identified above.

Maintenance Activities – Generally:

Incidental take of CHNWR and CHNSR individuals may occur due to maintenance activities at the Project locations and facilities identified above. Maintenance activities that may result in incidental take include mechanical, manual and chemical removal of aquatic weeds; manual removal of vegetation, trash and/or debris; repair and replacement of ladders, safety nets, floats, and log booms; washing of land-based facilities; wet well cleaning; fish screen cleaning and maintenance; facilities inspection; utility and facilities repair.

Maintenance Activities - Aquatic Weed Control:

Incidental take of CHNWR and CHNSR individuals may occur due to the Permittee's aquatic weed control activities. The Permittee shall apply herbicides in Rock Slough, direct or acute exposure to herbicides may cause immediate mortality and reduce medium-term survival through impacts to growth, development, and olfactory-mediated behaviors such as migration and reproduction of the Covered Species. Long-term exposure to herbicides may cause mortality through long-term health impacts to the Covered Species. The Permittee shall mechanically remove weeds at Rock Slough, Old River and Middle River intakes. Mechanical weed removal may injure or kill CHNWR and CHNSR individuals from harvester strikes and entanglement in weeds removed from the water.

Maintenance Activities - Contaminant Spills:

Maintenance activities may result in accidental spills of contaminants, including cement, oil, fuel, hydraulic fluids, paint, and other construction-related materials, resulting in localized water quality degradation. These spills may result in incidental take of CHNWR and CHNSR individuals by direct injury and mortality (e.g., damage to gill tissue that causes asphyxiation) or delayed effects on growth and survival (e.g., increased stress or reduced feeding), depending on the nature and extent of the spill and the contaminants involved. Additional maintenance activities that may result in contaminant spills include fish screen cleaning and maintenance; facilities inspection and utility and facilities repair; flow, water level, and water quality sensors cleaning, repair, and replacement; and graffiti removal from concrete structures. These spills may also result in incidental take of CHNWR and CHNSR individuals by direct injury and mortality (e.g., damage to gill tissue that causes asphyxiation) or delayed effects on growth and survival (e.g., increased stress or reduced feeding), depending on the nature and extent of the spill and the contaminants involved.

Monitoring:

Incidental take of CHNWR and CHNSR individuals may occur due to the Permittee's fish monitoring program as described in Condition of Approval 8.10 of this ITP. To implement the fish monitoring program, the Permittee will use nets and other capture methods in the vicinity of the Project fish screens. Fish captured will be retained for identification and will not be returned to the water, resulting in direct mortality of CHNWR and CHNSR individuals.

INDIRECT EFFECTS

Impacts of the authorized taking also include adverse impacts to CHNWR and CHNSR individuals related to the Project's incremental contribution to cumulative impacts (indirect impacts). The area where authorized take of CHNWR and CHNSR is expected to occur is in the Mallard Slough Intake and Pump Station, Old River Intake and Pump Station, Middle River Intake and Pump Station (located on Victoria Canal), and Rock Slough Intake.

Impingement:

Operation of the Project Intakes may result in non-lethal impingement at Project fish screens at the facilities and location identified above. Non-lethal impingement may increase stress conditions or injury and lead to eventual mortality. Entrainment and impingement may also occur to prey species of CHNWR and CHNSR individuals that may result in a reduction of available aquatic prey species (i.e., entrainment of zooplankton in Project Intakes). Reductions in the amount of prey available could reduce growth rates of juvenile CHNWR and CHNSR and reduction of aquatic prey species (i.e., entrainment of zooplankton in Project Intakes).

Maintenance Activities:

Project maintenance activities may also create indirect impacts to CHNWR and CHNSR. Mechanical harvesting of aquatic weeds will result in temporary disturbance that may cause fish to avoid disturbed habitat and move to areas where they are more susceptible to predation; it may also remove prey species from the water and reduce available food sources. Contaminant spills and sediment disturbance may kill and reduce the quantity of species that are food for CHNWR and CHNSR. At Rock Slough, application of herbicides on aquatic weeds may create large volumes of dead aquatic matter, which may lower dissolved oxygen in the water column. Herbicide usage at Rock Slough may also kill and reduce the quantity of aquatic prey species.

Sediment Disturbance:

Sediment disturbance from maintenance activities may cause erosion and the disturbance of land-based sediment and soil to mobilize and transport sediment into waterways. Suspended sediment increases turbidity and may alter fish physiology, behavior, and habitat conditions in waterways. Short-term increases in turbidity and suspended sediment may disrupt normal behavior patterns of CHNWR and CHNSR, affecting foraging, rearing, and migration. The level of disturbance may also cause juvenile fish to abandon protective habitat or reduce their ability to detect predators, potentially increasing their vulnerability to predators. Eroded soils and suspended sediments may also transport harmful pollutants such as nutrients; metals; oils, fuels, and grease; herbicides, and other agricultural chemicals into the water column. Chronic exposure to high turbidity and suspended sediment may inhibit growth and survival by impairing respiratory function, reducing tolerance to disease and contaminants, and by causing physiological stress. Sediment disturbance may kill and reduce the quantity of

species that are food for CHNWR and CHNSR. Covered Activities that have the potential to result in sediment transport and delivery to waterways include mechanical and manual removal of aquatic weeds; manual removal of vegetation, trash and/or debris; repair and replacement of ladders, safety nets, float, log booms; log boom maintenance; washing land-based facilities; wet well cleaning; fish screen cleaning and maintenance; facilities inspection; utility and facilities repair.

VII. Incidental Take Authorization of Covered Species:

This ITP authorizes incidental take of the Covered Species and only the Covered Species. With respect to incidental take of the Covered Species, CDFW authorizes the Permittee, its employees, contractors, and agents to take Covered Species incidentally in carrying out the Covered Activities, subject to the limitations described in this section and the Conditions of Approval identified below. This ITP does not authorize take of Covered Species from activities outside the scope of the Covered Activities, take of Covered Species outside of the Project Area, take of Covered Species resulting from violation of this ITP, or intentional take of Covered Species.

VIII. Conditions of Approval:

Unless specified otherwise, the following measures apply to all Covered Activities within the Project Area, including: waterways and channels within the Project Area; operation of pumps, barriers and gates; operations at Mallard Slough Intake and Pump Station, Old River Intake and Pump Station, Middle River Intake and Pump Station, and Rock Slough Intake facilities; herbicide application; aquatic weed removal; sediment removal; predator removal; and Covered Species relocation. CDFW's issuance of this ITP and Permittee's authorization to take the Covered Species are subject to Permittee's compliance with and implementation of the following Conditions of Approval:

1. **Legal Compliance:** Permittee shall comply with all applicable federal, state, and local laws in existence on the effective date of this ITP or adopted thereafter.

2. **CEQA Compliance:** Permittee shall implement and adhere to the mitigation measures related to the Covered Species in the Biological Resources section of the Los Vaqueros Reservoir Expansion Project Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (SCH No.: 2006012037) certified on March 31, 2010, the Final Supplement to the Final EIS/EIR (Addendum # 1) certified on May 31, 2020, and the Los Vaqueros Reservoir Expansion Project EIR Addendum (Addendum # 2) certified on July 5, 2023 by the Contra Costa Water District as lead agency for the Project pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.).

3. **LSA Agreement Compliance:** Permittee shall implement and adhere to the mitigation measures and conditions related to the Covered Species in the Lake and Streambed Alteration Agreements (Notification No. 1600-2019-0321-R3 and EPIMS-CCA-15218-R3) for the Project executed by CDFW pursuant to Fish and Game Code section 1600, et seq.

4. **ESA Compliance:** Permittee shall implement and adhere to the terms and conditions related to the Covered Species in the March 18, 1993 NMFS Biological Opinion (BO) (5004) and the September 9, 1993 USFWS BO (1-1-93-F-35) issued for the take of the Covered Species for the ongoing operations of the Los Vaqueros Reservoir and Delta intakes (Old River Intake, as well as the already-existing Rock Slough and Mallard Slough Intakes) for the Project pursuant to the Federal Endangered Species Act and held by Reclamation. Permittee shall also implement and adhere to the terms and conditions related to the Covered Species in the April 27, 2007 USFWS BO (1-1-07-F-0044) and the July 13, 2007 NMFS BO (2005/00122) for the Alternative Intake Project constructed on Middle River in Victoria Canal held by Reclamation. In addition, Permittee shall implement and adhere to the terms and conditions related to the Covered Species in the NMFS 2017 BO for the Rock Slough Fish Screen Facilities Improvement Project (BO No. WCR-2017-6161, dated June 29, 2017 and amended on November 2, 2017 as 08FBDT00-2017-F-0072) and held by Reclamation. Further, Permittee shall continue to coordinate with Reclamation and DWR on CVP and SWP operations pursuant to the NMFS 2019 BO on Long-term Operation of CVP and SWP (BO. No. WCRO-2016-00069) and USFWS 2019 BO for Reinitiation of Consultation on the coordinated operations for the CVP and SWP (Service file No. 08FBTD00-2019-F-0164), (collectively, 2019 BOs). For purposes of this ITP, where the terms and conditions for the Covered Species in the federal authorizations are less protective of the Covered Species or otherwise conflict with this ITP, the conditions of approval set forth in this ITP shall control.

5. **ITP Time Frame Compliance:** Permittee shall fully implement and adhere to the conditions of this ITP within the time frames set forth below and as set forth in the Mitigation Monitoring and Reporting Program (MMRP), which is included as Attachment 1 to this ITP.

6. **Consultation Regarding Amendment:** The ITP may require an amendment if any one of the following conditions occur:

   6.1. Modification to the Project Description, monitoring, studies, or Project operational requirements identified in this ITP.

   6.2. Modification to the anticipated transition from near-term operations to long-term operations in 2035.

   6.3. Modification, re-initiation or replacement of the March 18, 1993 NMFS Biological Opinion (BO) (5004) or the September 9, 1993 USFWS BO (1-1-93-F-35) issued for the take of the Covered Species for the ongoing operations of the Los Vaqueros Reservoir and Delta intakes, the USFWS 2019 BO (Service file No. 08FBTD00-2019-F-0164) for DS and LFS or the NMFS 2017 BO for the Rock Slough Fish Screen (WCR-2017-6161) and NMFS 2019 BO on Long-term Operation of CVP and SWP (BO No. WCRO-2016-00069) for CHNWR and CHNSR or any subsequent BO addressing the coordinated operations of the Project.

6.4. Modification or replacement of the 2020 CDFW LTO ITP (ITP No. 2081-2019-066-00) for DS, LFS, CHNWR and CHNSR or any subsequent ITP addressing the long-term operations of the State Water Project.

6.5. Modification, execution, or initiation of any operations identified in the Settlement Agreement between Contra Costa Water District and the Department of Water Resources, dated July 26, 2023 in regards to the Delta Conveyance Project. The Settlement Agreement represents a binding agreement for DWR and its successors to provide conveyance capacity from the Delta Conveyance Project conveyance facilities and provide water conveyance to the Permittee (CCWD) as part of the proposed Delta Conveyance Project.

6.6. Modification to the Bay-Delta Plan or water rights decisions by the SWRCB affecting operations of the Project, or execution of binding Voluntary Agreements adopted by the SWRCB as a means of implementing the Bay-Delta Plan that modify the context in which the Covered Activities are undertaken.

6.7. Modification to existing monitoring programs referenced in this ITP, which include: Smelt Larval Survey, 20mm Survey, Summer Townet Survey, and the Fall Midwater Trawl Survey. Modifications that will trigger an amendment include but is not limited to 1) the removal of a station from the monitoring program or 2) the reduction in the frequency or duration of surveys at the stations identified in this ITP.

6.8. Any other change or modification to the project description, project scope or project impacts, such as dewatering, pursuant to California Code of Regulations, Title 14, Section 783.6 or Fish and Game Code Section 2081(b) and (c).

Permittee shall notify CDFW if any of the conditions listed above occurs. Permittee shall consult with CDFW if any of the conditions listed above occur to determine whether an amendment is necessary for reasons including, but not limited to, an increase or decrease in the anticipated extent of the taking of Covered Species or the impacts on the Covered Species that result from the Covered Activities, or modifications to the necessary and appropriate measures to minimize and fully mitigate the impacts of the taking. If Permittee desires to amend this ITP, Permittee shall comply with Section IX (Amendment), below. CDFW will adhere to the amendment process prescribed by the California Code of Regulations, Title 14, section 783.6(c) to determine whether any proposed amendment is major or minor and whether additional or modified measures are necessary. This condition does not modify CDFW's authorities or obligations pursuant to CESA, including the obligation to amend this ITP as required by law.

7. General Provisions:

7.1. Designated Representative. Before initiation of Covered Activities, Permittee shall designate a representative (Designated Representative) responsible for communications with CDFW and overseeing compliance with this ITP. Permittee shall

notify CDFW in writing before starting Covered Activities 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.

7.2. Designated Fisheries Biologists. Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information of the Designated Fisheries Biologist(s) using the Biologist Resume Form (ATTACHMENT 2) or another format containing the same information, at least 30 days before initiating Covered Activities. The Designated Fisheries Biologist(s) shall be responsible for monitoring Covered Activities to help minimize and fully mitigate or avoid the incidental take of individual Covered Species and to minimize impacts to Covered Species' habitat as specified in Condition of Approval 7.4 - Designated Fisheries Biologist On-site Monitoring Requirements. Permittee shall obtain CDFW approval of the Designated Fisheries Biologist(s) in writing prior to initiating Covered Activities and shall also obtain approval in advance in writing if a Designated Fisheries Biologist's role or responsibilities with the Project must be modified.

7.2.1. A Designated Fisheries Biologist is an individual who shall meet, at minimum, the following requirements: 1) have a degree in biology; 2) have a minimum of five years of academic training and professional experience in aquatic ecology, ichthyology, marine biology or closely related field; 3) have at least two years of direct experience handling at least one of the special status fish species that may occur within the Project work area; and 4) is in possession of appropriate State and Federal permits to handle special status species of fish that may occur within the Project work area.

7.3. Designated Fisheries Biologist Authority. To ensure compliance with the Conditions of Approval of this ITP, the Designated Fisheries 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 unimpeded access to the Project Site and otherwise facilitate the Designated Fisheries Biologist in the performance of their duties. If the Designated Fisheries Biologist is unable to comply with the ITP, then the Designated Fisheries 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 Fisheries 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.

7.4. Designated Fisheries Biologist On-site Monitoring Requirements. A Designated Fisheries Biologist shall be present at any time the following Covered Activities are being conducted at any Project Area:

7.4.1. Deployment of exclusion measures;

7.4.2. Aquatic vegetation mechanical or hand removal (See Condition of Approval 9.2 - Work Window for Mechanical Aquatic Weed Removal);

7.4.3. Any application of herbicides (See Condition of Approval 9.3 - Herbicide Use);

7.4.4. Work involving cementitious products of any kind; and

7.4.5. Installation and removal of fish screens.

7.5. Education Program. Permittee shall conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the Designated Fisheries Biologist that includes:

- Important timing windows for Covered Species, including information about the distribution and habitat needs of the Covered Species
- Take avoidance and minimization measures that will be implemented during Covered Activities
- Protocols for identifying relevant take avoidance and minimization measures based on the nature, timing, and location of Covered Activities
- Species of Special Concern and Federally listed species that may be present in the Project Area but are not Covered Species
- Covered Species habitat avoidance requirements
- Roles and responsibilities of workers, managers, Designated Representative, and Designated Fisheries Biologist(s)
- 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
- Covered Species status pursuant to CESA including legal protection, recovery efforts, penalties for violations

- 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.

7.6. Trash Abatement. Permittee shall initiate a trash abatement program before starting Covered Activities and shall continue the program for the duration of the Project. 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 pets.

7.7. 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 exclude the storage and handling of hazardous materials from the Project Area and shall properly contain and dispose of any unused or leftover hazardous products off-site.

7.8. CDFW Access. Permittee shall provide CDFW staff with reasonable access to the Project facilities and mitigation lands under Permittee control, and shall otherwise fully cooperate with CDFW efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.

7.9. Refuse Removal. During the conductance of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all trash including any construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.

8. Monitoring, Notification and Reporting Provisions:

8.1. Notification Before Commencement. The Designated Representative shall notify CDFW within fourteen (14) calendar days of starting Covered Activities of this ITP and shall document compliance with all pre-Project Conditions of Approval within 14 days of initiating Covered Activities.

8.2. Notification Before Commencement of Long-term Covered Activities. The Designated Representative shall provide written notice to CDFW thirty (30) calendar days prior to initiating any Long-term Covered Activities.

8.3. 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 proposed measures to remedy the situation.

8.4. Compliance Monitoring. The Designated Fisheries Biologist shall be on-site daily and shall remain on the site wherever and whenever the following Covered Activities occur: mechanical removal of aquatic weeds; hand removal of aquatic weeds; painting of intake structures and land based facilities; wet well cleaning; fish screen panel removal and installation; graffiti removal via sandblasting; herbicide application; and mechanical harvesting of aquatic plants. In addition, the Designated Fisheries Biologist shall conduct compliance inspections at quarterly intervals. The Designated Fisheries Biologist shall conduct compliance inspections to:

(1) minimize incidental take of the Covered Species;

(2) prevent unlawful take of species;

(3) check for compliance with all measures of this ITP; and

(4) ensure that the Covered Activities are occurring as specified in the Project Description of this ITP.

The Designated Representative or Designated Fisheries Biologist shall prepare daily written observation and inspection records summarizing oversight activities and compliance inspections, observations of Covered Species, survey results, and monitoring activities required by this ITP.

8.5. Monthly Compliance Report. The Designated Representative or Designated Fisheries Biologist shall compile the observation and inspection records identified in Condition of Approval 8.4 into a Monthly Compliance Report and submit it to CDFW along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Monthly Compliance Reports shall be submitted to the CDFW offices listed in the Notices section of this ITP and via e-mail to CDFW's Regional Representative and Headquarters CESA Program. At the time of this ITP's approval, the CDFW Regional Representative is Sanjay Das (Sanjay.Das@wildlife.ca.gov) and Headquarters CESA Program email is CESA@wildlife.ca.gov. CDFW may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If CDFW determines the reporting schedule must be changed, CDFW will notify Permittee in writing of the new reporting schedule.

8.6. Annual Status Report. Permittee shall provide CDFW with an Annual Status Report (ASR) no later than January 1 of every year beginning with issuance of this ITP and continuing until CDFW accepts the Final Mitigation Report identified below. The ASR shall summarize information from the prior water year October 1 through September 30. Each ASR shall include, at a minimum: (1) a summary of all Monthly Compliance Reports for that year identified in Condition of Approval 8.4; (2) a general description of the status of the Project Area and Covered Activities, including actual or projected completion dates, if known; (3) a copy of the table in the MMRP with notes showing the current implementation status of each mitigation measure; (4) an assessment of the effectiveness of each completed or partially completed mitigation measure 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.

8.7. CNDDB Observations. The Designated Fisheries Biologist shall submit all observations of Covered Species to CDFW's California Natural Diversity Database (CNDDB) within 60 calendar days of the observation and the Designated Fisheries Biologist shall include copies of the submitted forms with the next Monthly Compliance Report or ASR, whichever is submitted first relative to the observation.

8.8. 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 Fisheries Biologist shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Monthly Compliance Reports and 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.

8.9. Notification of Take or Injury. Permittee shall immediately notify the Designated Fisheries Biologist if a Covered Species is taken or injured by a Project-related activity, or if a Covered Species is otherwise found dead or injured within the vicinity of the Project. The Designated Fisheries Biologist or Designated Representative shall provide initial notification to CDFW by calling the Regional Office at (707) 428-2002 and the CDFW Representative at (707) 815-5059 by the end of the business day. The initial notification to CDFW shall include information regarding the location, species, and number of animals taken or injured and the ITP Number. 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 animal

or carcass, and if possible, provide a photograph, explanation as to cause of take or injury, and any other pertinent information.

8.10. Larval Fish Monitoring Program. Permittee shall develop a Larval Fish Monitoring Program (LFMP) to monitor the effectiveness of the avoidance and minimization conditions to protect larval Delta Smelt (DS) and larval Longfin Smelt (LFS) from entrainment and impingement at Rock Slough under a range of different water year types, environmental conditions, and operational conditions. Prior monitoring has demonstrated that Permittee's fish screens at the Rock Slough Intake prevent entrainment of screenable-sized fish. However, larval DS and larval LFS are not screenable by the fish screens due to their size. Thus, monitoring is needed to better understand the risk of entrainment and impingement of larval DS and LFS at the Rock Slough Intake due to diversions. The LFMP shall be developed in coordination with CDFW and submitted for CDFW's written approval within one year of the finalization of this ITP. Permittee shall initiate the LFMP within six months of approval of the LFMP by CDFW. Every five years after the initial approval of the LFMP, the Permittee may evaluate the effectiveness of the LFMP and the availability of new monitoring technology and submit modifications, if any, to the LFMP for CDFW's approval before implementation. Results of the LFMP may also inform potential changes to Condition of Approval 9.9 - Reduction of Diversion Rates at Rock Slough and Middle River Intakes to Minimize Take of larval DS and larval LFS, if approved by CDFW through an amendment to this ITP. At minimum, the LFMP shall incorporate all of the following:

8.10.1. Monitoring Methodology for the Larval Fish Monitoring Program. Permittee shall perform ichthyoplankton net sampling in front of the Rock Slough fish screen during all diversions occurring when larval DS and larval LFS are likely present as described below. Three samples shall be collected each day, four times per week for all diversions occurring when larval DS and larval LFS are likely present as described below. Any modifications to the sampling protocol made subsequent to initiation of the LFMP shall be submitted to and approved by CDFW prior to implementation. Protocol shall include the following specifications:

a) All sampling shall occur as close to the screen as feasible, at a location within Rock Slough approved in writing by CDFW.

b) Permittee shall use a 505 µm mesh ichthyoplankton net (mouth of 29 in. x 20 in.; length of 11 ft, or other CDFW approved net).

c) The net shall be equipped with a routinely calibrated low-flow mechanical flowmeter.

d) Start and end flow meter readings shall be recorded for each sample tow or event.

e) The sampling interval shall be 30 minutes of continuous sampling per tow or event.

f) The sample date and sample start and end times shall be recorded.

g) Start and end flow meter readings, tow distance, and tow interval shall be recorded for each tow or event. The number of tows (or events) and total sample volume shall be recorded for each 30-minute sampling interval.

h) Water temperature and turbidity shall be recorded for each day sampling occurs.

i) Each sample shall be transferred to a labeled jar containing 10% buffered formalin (or other CDFW approved fixative). Rose Bengal stain may be added to the samples. A serial number shall be given to each sample based on the location, date, and time of collection. The sample's serial number shall be used to track it through laboratory processing, data analyses, and reporting. (For Example, Intake-Date-(Year/Month/Day) Time Sample Collection Started-Location: RS-230927-1300-InFront).

j) Species, length and catch of each individual fish and fish egg in the sample shall be recorded.

k) Diversion rate at the intake where sampling occurs shall be recorded for each 30-minute sampling interval. Mean daily diversion rate at that intake shall also be recorded.

l) Catch and sample volume shall be used to calculate catch-per-unit-effort (CPUE) for each 30-minute sampling interval and CPUE recorded.

m) All recorded data shall be entered into a Microsoft Excel spreadsheet and submitted in the monthly reports as specified below under Larval Fish Monitoring Plan Reporting.

Permittee shall perform ichthyoplankton net sampling in front of the Rock Slough fish screen for all diversions occurring when larval DS and larval LFS are likely present. Larval DS and larval LFS presence shall be determined when any of the following occur:

(1) Detections of DS larvae by Smelt Larva Survey (SLS) or 20mm Survey in the previous 30 days in the lower San Joaquin River (stations 809, 812, 815) or in the central or south Delta (stations 901, 902, 906, 910, 912, 914, 915, 918, 919) (see Figure 4 – Smelt Larval survey Sampling Locations Station Map and Figure 5 – 20mm Survey Sampling Locations Map), or in salvage at the fish collection facilities at the CVP/SWP export facilities;

(2) March through June if 14-day average Old and Middle River Index (OMRI) is negative (as reported at SacPAS Delta Smelt Website (https://www.cbr.washington.edu/sacramento/workgroups/delta_smelt.html), calculation for OMRI as described in Hutton et al. 2008[15]) and turbidity at Old River at Bacon Island (California Data Exchange Center (CDEC) station OBI) or Holland Cut near Bethel Island (CDEC station HOL) has exceeded a daily average of 12 Formazin Nephelometric Units (FNU) in the previous 30 days.

(3) Detections LFS larvae by SLS or 20mm Survey in the previous 30 days in the lower San Joaquin River (stations 809, 812, 815) or in the central or south Delta (stations 901, 902, 906, 910, 912, 914, 915, 918, 919) or in salvage at the fish collection facilities at the CVP/SWP export facilities.

Permittee may cease the monitoring protocol identified in this Condition of Approval for the remainder of the year once CVP/SWP OMR Management Season for smelt has ended. CDFW staff shall notify the Permittee, in writing, when CVP/SWP OMR Management Season for smelt has initiated and ended within 72 hours of the event change.

8.10.2. Larval Fish Monitoring Plan Reporting. Permittee shall submit monthly larval DS and larval LFS monitoring reports to CDFW that include the information previously described in Condition of Approval 8.10.1 and the following:

a) Sampling time;

b) The sampling interval;

c) Net meter counts for the ichthyoplankton net;

d) The sample volume and fish counts and lengths by species;

e) Both the diversion rate for the 30-minute sampling interval and the mean; daily diversion rate for the day on which the sampling occurred, and;

f) Daily water temperature and turbidity for days when sampling occurred.

Permittee shall submit the reports to CDFW by the end of the second business week of the month following sampling. Permittee shall include data for every day sampled, including days on which no DS and/or LFS were caught in a spreadsheet that includes all sampling for the water year. The monthly reports shall also be included in Condition

[15] Hutton, P. 2008. A Model to Estimate Combined Old & Middle River Flows. Metropolitan Water District of Southern California. Final Version April 2008. A Model to Estimate Combined Old & Middle River Flows - DocsLib

of Approval 8.6 for Annual Status Report and Condition of Approval 8.8 for the Final Mitigation Report.

8.11. Data Accessibility. Permittee shall provide CDFW with access to all raw data and associated analyses, including in digital tabular format, and reports for all monitoring required in Condition of Approval 8 of this ITP and described in the Project Description within 60 days of collection of data or completion of analyses and reports, and otherwise upon request.

9. Take Minimization Measures: The following requirements are intended to ensure the minimization of incidental take of Covered Species in the Project Area during Covered Activities. Permittee shall implement and adhere to the following conditions to minimize take of Covered Species:

9.1. Disinfect Equipment Prior to Entry into Watercourses. To prevent spread of invasive aquatic species and diseases, gear and equipment to be used in watercourses including, but not limited to, boots, waders, hand tools and nets must be decontaminated pursuant to the CDFW Aquatic Species Decontamination Protocol (available online at Aquatic Invasive Species (ca.gov)) prior to entry into a watercourse.

9.2. Work Window for Mechanical Aquatic Weed Removal. Covered Activities for mechanical or manual removal of aquatic weeds from the Project Area shall be restricted to the period July 1 through October 1 when water temperatures are greater than 25°C and aquatic weed production is highest.

9.2.1. Mechanical Removal Work Window Exceptions. Mechanical removal may be required to address floating aquatic vegetation, i.e., water hyacinth, from April 1 through June 30 if vegetation becomes entrained and accumulates in front of fish screens. If mechanical removal of aquatic weeds is necessary outside of the July 1 through October 1 work window, or if the water temperature in the area proposed for removal activities is less than 25° C, a CDFW-approved Designated Fisheries Biologist (see Conditions of Approval 7.2 and 7.3) shall be present during mechanical removal activities.

9.3. Herbicide Use. Herbicide treatments shall occur 1) a minimum of a 200-foot radius from the mouth of Mallard Slough, Rock Slough, and the Old River and Middle River intakes, 2) from July 1 through November 30, when Covered Species are not likely to be present, and 3) when the surface water temperature is below 25° C. Permittee shall notify and confer with CDFW to determine whether CESA-listed fish species are present and at risk from the proposed treatments. Pursuant to Conditions of Approval 7.2 and 7.3, a CDFW-approved Designated Fisheries Biologist shall be present on-site whenever aquatic herbicides are utilized.

9.3.1. Permittee shall notify CDFW fourteen (14) calendar days in advance of the intent to apply an aquatic herbicide under this ITP.

9.3.2. Herbicide application shall be conducted in observance of the application guidelines and restrictions as stated in FIGURE 6 of this ITP.

9.3.3. Herbicide application shall be conducted in coordination with the California Department of Boating and Waterways (DBW) in accordance with the existing Memorandum of Understanding (MOU) between DBW and Permittee.

9.3.4. Use of surfactants prior to July 1 of any year is not authorized under this ITP.

9.4. In-Water Work Window. Permittee shall only perform in-channel maintenance between September 1 and November 15 of each year.

9.5. Maximum Total Annual Diversions. Permittee's maximum total annual diversions from the four intakes (Rock Slough, Old River, Middle River, and Mallard Slough) shall not exceed 439 TAF per year.

9.6. No Diversion Without Fish Screens. Permittee shall not divert water from a particular point of diversion at any time unless the protective fish screens are installed and fully operational. If fish screens are not operational at a particular point of diversion due to maintenance or repair requirements, water shall not be diverted from that location until the screens have been re-installed and are fully operational. Other points of diversion with the fish screens installed and operational may continue to divert water.

9.7. Fish Screens. Permittee shall operate and maintain the Project Intake Fish Screens to minimize entrainment of screenable-sized fish for all Covered Species. The Permittee shall operate all Project intake fish screens as specified in Condition of Approval 9.7.1 (Velocity Requirements at Project Intake Fish Screens) to minimize impingement of fish for all Covered Species.

9.7.1. Velocity Requirement at Project Intake Fish Screens. To minimize impingement of Covered Species, the Permittee shall operate all Project Intake Fish Screens according to the CDFW Fish Screening Criteria (CDFW 2000[16]). Permittee shall adhere to the requirements of 0.2 feet per second (fps) for DS and LFS and the requirement of 0.33 fps for CHNWR and CHNSR. Permittee shall calculate spatially averaged approach velocity by averaging all of the measurements taken across different parts of the screen. Permittee may operate the fish screen such that approach velocities measured at a single point on the screen may be no higher than 20% above the spatially averaged velocity.

9.7.1.1. Salmon Approach Velocity. Permittee shall operate Rock Slough, Old River, and Middle River Project Intake Fish Screens to spatially averaged

[16] California Department of Fish and Wildlife (CDFW). 2000. Fish Screening Criteria. 07354626804.pdf (noaa.gov)

velocities equal to or less than 0.33 fps at all times for the minimization of impingement of CHNWR and CHNSR. Permittee shall calculate spatially averaged approach velocity by averaging all of the measurements taken across different parts of the fish screen. Permittee may operate the fish screen such that approach velocities measured at a single point on the screen may be no higher than 0.40 fps; this allows for individual points on the screen to fluctuate 20% above the spatially averaged velocity. This approach velocity requirement shall apply when smelt are determined to not be in the vicinity of the Rock Slough, Old River, and Middle River intakes as described below (Condition of Approval 9.7.1.2.1 – Smelt Absence for Approach Velocity Requirements).

9.7.1.2. Smelt Approach Velocity. Permittee shall operate Rock Slough, Old River, and Middle River Project Intake Fish Screens to spatially averaged velocities equal to or less than 0.2 fps for the minimization of entrainment and impingement of DS and LFS when they are determined to be present in the Delta. This approach velocity requirement shall not apply when smelt are determined to not be in the vicinity of the Rock Slough, Old River, and Middle River intakes as described below (Condition of Approval 9.7.1.2.1 – Smelt Absence for Approach Velocity Requirements). The smelt velocity requirements shall be in place at all times at Mallard Slough fish screen, where DS are expected to be present year-round. Permittee may operate the Project fish screen such that approach velocities measured at a single point on the fish screen may be no higher than 0.24 fps; this allows for individual points on the fish screen to fluctuate 20% above the spatially averaged velocity.

When smelt are determined to not be in the vicinity of the Project Intakes as specified below in Condition of Approval 9.7.1.2.1, Permittee may operate Rock Slough, Old River, and Middle River intakes such that velocities do not exceed the salmon approach velocity of 0.33 fps.

9.7.1.2.1. Smelt Absence for Approach Velocity Requirements. DS and LFS shall be considered to not be in the vicinity of the Rock Slough, Old River, and Middle River intakes for the purposes of requiring the Smelt Approach Velocity when the CVP/SWP OMR Management Season for Smelt is not in place. When the CVP/SWP OMR Management Season for Smelt is in place, DS and LFS shall be considered to not be in the vicinity of the Project Intakes for the purposes of requiring the Smelt Approach Velocity when no DS or LFS detections of any life stage have occurred in the previous 30 days in:

a) Monitoring surveys: Fall Midwater Trawl (at stations 809, 810, 811, 812, 813, 814, 815, 902, 904, 905, 908, 909,

910, 911, 912, 913, 914, or 915 (Figure 7 – Fall Midwater Trawl Station Map)), Enhanced Delta Smelt Monitoring (EDSM) (Subregions 17 and 18 in the San Joaquin River and 19 through 26 in the Central and South Delta, see Figure 8 - Map of EDSM sampling regions), SLS and 20mm (stations 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, and 918), and Summer Townet (stations 809, 812, 815, 902, 906, 910, 912, 914, 915, 918) surveys (Figure 9 – Summer Townet Station Map).

b) Salvage at the fish collection facilities at the CVP/SWP export facilities (https://wildlife.ca.gov/Conservation/Delta/Salvage-Monitoring).

When the CVP/SWP OMR Management Season for Smelt is in place and DS have not been detected as stated above, DS shall be considered to not be in the vicinity of the Rock Slough, Old River, and Middle River intakes for the purposes of requiring the Smelt Approach Velocity if the following abiotic conditions are present March 1 through June 30:

a) 14-day average Old and Middle River Index is positive (as reported at SacPAS Delta Smelt Website).

b) Turbidity Old River at Bacon Island (California Data Exchange Center (CDEC) station OBI) has not exceeded a daily average of 12 FNU in the previous 30 days.

c) Turbidity at Holland Cut near Bethel Island (CDEC station HOL) has not exceeded a daily average of 12 FNU in the previous 30 days.

9.7.2. Velocity Monitoring and Management Plan. Permittee shall submit a fish screen approach velocity monitoring and management plan (VMMP) within 180 days from the issuance of this ITP for approval in writing from CDFW. CDFW shall provide comments within 30 days of receipt of the VMMP, as applicable. The Permittee shall revise the VMMP in response to CDFW's comments and resubmit the VMMP for approval. The VMMP shall describe actions the Permittee shall take to ensure that approach velocities at the Project fish screens comply with Condition of Approval 9.7.1 – Velocity Requirements at Project Intake Fish Screens. The VMMP shall include actions to 1) assess approach velocities (via grid velocity testing and continuous monitoring of approach velocities) and 2) utilize this information to manage approach velocities to minimize impacts to Covered Species.

The VMMP shall address, at minimum, the following requirements:

9.7.2.1. Grid Velocity Testing. Permittee shall perform grid velocity testing of screen approach velocities at all Project Intake Fish Screens to ensure the intakes are operating within the CDFW Fish Screening Criteria (Condition of Approval 9.7.1 – Velocity Requirements at Project Intake Fish Screens) and to calibrate the Continuous Velocity Monitoring Program (Condition 9.7.2.2 – Continuous Velocity Monitoring Program) for the purposes of managing velocity as specified in Condition 9.7.2.3 – Velocity Management.

Permittee shall perform baseline grid velocity testing and submit results within the timeframe identified in the VMMP. Follow-up grid velocity testing at each Project Intake Fish Screen shall occur a minimum of once every five years to perform a recalibration of the Continuous Velocity Monitoring Program (Condition of Approval 9.7.2.2 – Continuous Velocity Monitoring Program). If any changes occur that would increase approach velocity above the CDFW Fish Screening Criteria requirements (Condition of Approval 9.7.1 – Velocity Requirements at Project Intake Fish Screens), the Permittee shall perform new grid velocity testing at that fish screen within 90 days of the changed conditions. Permittee shall submit information regarding grid velocity testing in an annual report as described in Condition 9.7.3 – Approach Velocity Reporting.

Grid Velocity Testing Methods

Permittee shall perform grid velocity testing using methods that follow guidance from the U.S. Bureau of Reclamation (USBR 2009[17]; USBR 2017[18]). The following criteria shall be adhered to for grid velocity testing, unless an alternate method is approved by CDFW:

a) Use of an acoustic Doppler velocimeter, or device with specifications similar to the instrument used in the USBR 2009 evaluation.

b) The number and spatial arrangement of sampling points shall be adequate to evaluate approach velocity across the entire fish screen face. Velocity measurements shall be divided into a grid, with each grid section representing no more than 15 square feet

[17] US Department of the Interior, Bureau of Reclamation (USBR). Microsoft Word - Guidelines for Fish Screening Evaluations-NEW.doc (usbr.gov)
[18] US Department of the Interior, Bureau of Reclamation (USBR). 2017. Improving Data Collection Methods for Hydraulic Evaluations of Fish Screens. Denver, Colorado. Accessed September 2023. https://www.usbr.gov/tsc/techreferences/hydraulics_lab/pubs/HL/HL-2017-03.pdf

of wetted fish screen area (excluding structural areas such as posts in between panels).

c) The approach velocity shall be measured at the center point of each grid section. The approach velocity shall be measured as close as possible to the fish screen face without entering the boundary layer turbulence at the fish screen face (generally within 3 inches).

Permittee shall perform grid velocity testing at Project intake fish screens under a diverse range of conditions (listed below) to ensure that testing adequately represents real-world velocity and operations of the facilities and assesses conditions with the greatest possibility for high approach velocities. These conditions include but are not limited to:

a) Adverse fish screen cleanliness conditions.

I. Routine levels of aquatic weeds and debris have built up on fish screens.

II. Prior to fish screen cleaning events (i.e., prior to power washing of screens). Testing shall occur after the longest cleaning interval.

b) Adverse tidal conditions.

I. High amplitude, high tide events (mean higher-high water) associated with incoming tides that may increase approach velocities.

II. During high amplitude low tide events (mean lower-low water) when there is greatest possibility for diversions to be concentrated across a small screen area, which can increase approach velocities.

9.7.2.2. Continuous Velocity Monitoring Program. Permittee shall develop a Continuous Velocity Monitoring Program (CVMP) to monitor the risk of high screen approach velocities in real time as a sub-section of the VMMP. The CVMP is subject to the submission and approval process specified in Condition of Approval 9.7.2 – Velocity Monitoring and Management Plan. The CVMP shall be utilized to manage velocity as specified in Condition of Approval 9.7.2.3 – Velocity Management. The CVMP shall adhere to the following criteria:

a) The CVMP shall collect real-time data at a time interval no larger than every 15 minutes to evaluate screen approach velocity at Project Intake Fish Screens, or at an interval determined in consultation with CDFW to accommodate the development of a rating height curve in lieu of installing additional velocity monitoring equipment.

b) Monitoring data from the CVMP shall be calibrated based upon the results of the grid velocity testing (collected pursuant to Condition of Approval 9.7.2.1 – Grid Velocity Testing). The sampling methods and sample size of the continuous velocity monitoring must be adequate to accurately approximate the results of the grid velocity testing and identify conditions that could lead to high screen approach velocities.

Permittee shall submit information regarding continuous velocity monitoring in a monthly log and an annual report as described in Condition of Approval 9.7.3 – Approach Velocity Reporting.

9.7.2.3. Velocity Management. Permittee shall operate Project Intake Fish Screens to meet the velocity requirements (in Condition of Approval 9.7.1 – Velocity Requirements at Project Intake Fish Screens) for both spatially averaged velocity and point velocity. The VMMP shall describe how the Permittee will utilize the data collected from the Continuous Velocity Monitoring Program (Condition of Approval 9.7.2.2 – Continuous Velocity Monitoring Program) to inform this velocity management. If velocities exceed velocity requirements (Condition of Approval 9.7.1 – Velocity Requirements at Project Intake Fish Screens), Permittee shall take actions to reduce approach velocities to the required velocity (Condition of Approval 9.7.1 – Velocity Requirements at Project Intake Screens). Minimizations that the Permittee shall implement to improve fish screen performance and reduce approach velocity include but are not limited to:

a) Operating routine, automated fish screen cleaning equipment at increased intervals.

b) Implementing manual fish screen cleaning, such as power washing at increased intervals.

c) Addressing high velocity hotspots with louvers and baffles.

d) Reducing diversion rates.

Permittee shall submit information regarding velocity management in a monthly log and an annual report as described in Condition of Approval 9.7.3 – Approach Velocity Reporting.

9.7.3. Approach Velocity Reporting.

9.7.3.1. Monthly Log. Permittee shall submit a monthly reporting log to CDFW for each month by the end of the second business week of the month following reporting. The monthly log shall list any deviations from the velocity requirements (Condition of Approval 9.7.1 – Velocity Requirements at Project Intake Fish Screens). The list shall include the date, time, intake, duration of the deviation, expected cause of the deviation, actions taken to manage velocity (Condition of Approval 9.7.2.3 – Velocity Management), and result of the actions. The monthly reports shall also be included in Condition of Approval 8.6 for Annual Status Report and Condition of Approval 8.8 for the Final Mitigation Report.

9.7.3.2. Annual Report. Permittee shall submit an annual report to CDFW each year by January 1 for the previous water year (October 1 - September 30) as part of the report identified in Condition of Approval 8.6 – Annual Status Report. The annual report shall contain the following information:

a) Methods, results, and discussion regarding any grid velocity testing (Condition of Approval 9.7.2.1. - Grid Velocity Testing) that occurred within the reporting window. The report shall describe actions to calibrate the continuous velocity monitoring program (Condition of Approval - 9.7.2.2. Continuous Velocity Monitoring Program) based upon the results of the grid velocity testing.

b) Methods, results, and discussion regarding the Continuous Velocity Monitoring Program.

c) Analysis of velocity management efforts. Including analysis of causes and conditions resulting in any deviations from the velocity requirements (listed in Condition 9.7.1 – Velocity Requirements at Project Intake Fish Screens). Analysis of actions taken to manage velocity and any additional actions needed to manage velocity in the future and any planned modifications to facilities or changes to operations.

9.8. Maximum Instantaneous Diversion Rate at Rock Slough. Following completion of the upgrades to Pumping Plant #1 (Rock Slough), the Permittee shall operate the Rock Slough Intake up to 350 cfs during a 90-day period (hereafter: testing window) to continuously monitor velocity and assess compliance with the velocity requirements

(Condition of Approval 9.7.1 – Velocity Requirements at Project Intake Fish Screens) during variable operations that includes a 350 cfs diversion rate. Prior to the beginning of the testing window, the Permittee shall perform grid velocity testing (Condition of Approval 9.7.2.1 – Grid Velocity Testing) to recalibrate the Continuous Velocity Monitoring Program (Condition of Approval 9.7.2.2 – Continuous Velocity Monitoring Program) and shall perform a minimum of 90 days of continuous velocity monitoring. The testing window shall be developed in consultation with CDFW and occur when the risk of entrainment to DS and LFS is low, within one year of the upgrades to Pumping Plant #1. Outside of the 90-day testing window, the Permittee shall meet the approach velocity requirements specified in Condition of Approval 9.7.1 - Velocity Requirement at Project Intake Fish Screens using the results from the grid velocity test described above.

Within 30 days of completion of the 90 days of continuous velocity monitoring, Permittee shall submit a report to CDFW containing the same information that is required in the approach velocity annual report (Condition of Approval 9.7.3.2 Annual Report). The report shall also include an analysis of how the diversion rate affects compliance with the requirements of Condition of Approval 9.7.1 - Velocity Requirements at Project Intake Fish Screens. If the required approach velocity is exceeded during the testing window, the report shall contain a discussion of how diversion rates will be managed to meet the requirements of Condition of Approval 9.7.1 - Velocity Requirements at Project Intake Fish Screens.

For Covered Species – Delta Smelt and Longfin Smelt

9.9. Diversion Rates Limitations at Rock Slough and Middle River to Minimize Take of Larval Delta Smelt and Larval Longfin Smelt. During CVP/SWP OMR Management Season for smelt, the Permittee's operation of Middle River and Rock Slough intakes shall be subject to real-time operational criteria to minimize take of larval DS and larval LFS via entrainment and impingement at fish screens. Larval is defined as fish less than 20mm. During the CVP/SWP OMR Management Season, minimization measures for protection of larval DS and larval LFS shall be initiated when the daily average Old and Middle River Index (OMRI) (as reported at SacPAS Delta Smelt Website) is less than or equal to zero (0) cubic feet per second (cfs), but shall not be initiated when daily average OMRI is greater than zero (0) cfs.

9.9.1. Rock Slough Minimization Condition for Larval Longfin Smelt. Covered Activities at the Rock Slough Intake shall minimize impacts to larval LFS. This minimization condition for protection of larval LFS at Permittee's Rock Slough Intake shall be initiated by detection of one or more larval LFS at Station 902 by the Smelt Larva Survey (SLS) or 20 mm Survey, or detection of one or more larval LFS by Permittee's larval fish monitoring program (LFMP) at Rock Slough. When initiated, this minimization condition shall remain in effect until: 1) the next SLS or 20 mm Survey does not detect larval LFS at Station 902 or

fourteen (14) days, whichever is sooner, and 2) Permittee's LFMP at Rock Slough has not detected larval LFS for at least seven days.

Diversion rates: Maximum diversion rate upon initiation of a minimization condition varies with the mean daily OMRI. When initiated, the minimization conditions at the Rock Slough intake shall be as follows:

1. If OMRI is between 0 and -1,000 cfs, Permittee shall not exceed a diversion rate of 150 cfs.

2. If OMRI is -1,000 to -4,000 cfs, Permittee shall not exceed a diversion rate of 200 cfs.

9.9.2. Middle River Minimization Condition for Larval Longfin Smelt. Covered Activities at the Middle River intake shall minimize impacts to larval LFS. The minimization condition for protection of larval LFS at Permittee's Middle River intake shall be initiated by detection of one or more larval LFS at Station 914 by the SLS or 20 mm Survey. When initiated, this condition shall remain in effect until the next SLS or 20 mm Survey that does not detect larval LFS at Station 914 or 14 days, whichever is sooner.

Diversion rates: Maximum diversion rate allowable upon initiation of a minimization condition varies with the mean daily OMRI. When initiated, the minimization conditions at the Middle River intake shall be as follows:

1. If OMRI is between 0 and -1,000 cfs, Permittee shall not exceed a diversion rate of 150 cfs.

2. If OMRI is -1,000 and to -2,500 cfs, Permittee shall not exceed a diversion rate of 200 cfs.

9.9.3. Rock Slough Minimization Condition for Larval Delta Smelt. Covered Activities at the Rock Slough intake shall minimize impacts to larval DS. Minimization conditions shall be initiated by detection of larval DS in the SLS or 20 mm Survey at station 902 or detection of one or more larval DS by Permittee's LFMP at Rock Slough and/or by abiotic conditions used to indicate larval DS presence (defined in the following paragraph, titled "*Abiotic threshold*").

Abiotic threshold: The use of Secchi depth to indicate larval DS presence becomes active when the daily mean surface water temperature at Jersey Point (California Data Exchange Center (CDEC) station SJJ) is 12° C (53.6° F) or higher for three consecutive days. Minimization conditions shall be initiated at the Rock Slough intake when the Secchi depth (depth at which Secchi disk is no longer visible to sampler) measured at station 902 in an SLS or 20 mm Survey is one meter or less. In the event of a missed Secchi depth reading at station 902, this condition shall not be initiated. When initiated by Secchi depth,

the minimization condition shall remain in effect until the Secchi depth at station 902 is greater than 1 meter in a subsequent SLS or 20 mm Survey or daily average turbidity at Old River at Bacon Island (CDEC Station OBI) is less than 12 FNU for three (3) consecutive days. If the subsequent survey is missed, the minimization condition shall be lifted 14 days after initiation.

Detection threshold: Detection of one or more larval DS at Station 902 by the SLS or 20mm Survey or by detection of one or more larval DS by Permittee's LFMP at Rock Slough shall initiate the minimization condition at the Rock Slough intake. When initiated by detection of one or more larval DS at Station 902 or by the LFMP, minimization conditions shall remain in effect until larval DS are not detected at Station 902 in a subsequent SLS or 20 mm Survey or 14 days, whichever is sooner, and Permittee's LFMP at Rock Slough has not detected larval DS for at least seven days.

Diversion rates: Maximum diversion rate upon initiation of a minimization condition varies with the mean daily OMRI. When initiated, the minimization conditions at the Rock Slough intake shall be as follows:

1. If OMRI is between 0 and -1,000 cfs, Permittee shall not exceed a diversion rate of 150 cfs.

2. If OMRI is -1,000 to -4,000 cfs, Permittee shall not exceed a diversion rate of 200 cfs.

9.9.4. Middle River Minimization Condition for Larval Delta Smelt. Covered Activities at the Middle River intake shall minimize impacts to larval DS. Minimization conditions shall be initiated by detection of larval DS in the SLS or 20 mm Survey at station 914 and/or by abiotic conditions used to indicate larval DS presence (defined in the following paragraph, titled "*Abiotic threshold*").

Abiotic threshold: The use of Secchi depth to indicate larval DS presence becomes active when the daily mean surface water temperature at Jersey Point (CDEC station SJJ) is 12°C (53.6° F) or higher for three consecutive days. Minimization conditions shall be initiated at the Middle River intake when the Secchi depth measured at station 914 in an SLS or 20 mm Survey is one meter or less. In the event of a missed Secchi depth reading at station 914, this measure shall not be initiated. When initiated by Secchi depth, the minimization condition shall remain in effect until the Secchi depth at station 914 is greater than 1 meter in a subsequent SLS or 20 mm Survey or daily average turbidity at Victoria Canal near Byron (CDEC Station VCU) is less than 12 FNU for three consecutive days. If the subsequent survey is missed, the condition shall be lifted 14 days after initiation.

Detection threshold: Detection of one or more larval DS at Station 914 by the SLS or 20mm Survey shall initiate the minimization condition at the Middle River intake. When initiated by detection of one or more larval DS at Station 914, minimization conditions shall remain in effect until larval DS are not detected at Station 914 in a subsequent SLS or 20 mm Survey or 14 days, whichever is sooner.

Diversion rates: Maximum diversion rate upon initiation of a minimization condition varies with the mean daily OMRI. When initiated, the minimization conditions at the Middle River intake shall be as follows:

1. If OMRI is between 0 and -1,000 cfs, Permittee shall not exceed a diversion rate of 150 cfs.

2. If OMRI is -1,000 to -2,500 cfs, Permittee shall not exceed a diversion rate of 200 cfs.

9.10. Consideration of Monitoring and Potential Modifications to Diversion Rates Limitations at Rock Slough to Minimize Take of Larval Delta Smelt and Larval Longfin Smelt. Commencing one year before Permittee anticipates initiating long-term operations, Permittee shall confer with CDFW to evaluate monitoring data collected under Condition of Approval 8.10 – Larval Fish Monitoring Program. To facilitate this evaluation, Permittee shall conduct an analysis using best available science and which incorporates analytical parameters requested by CDFW to assess the risk of entrainment and impingement of larval DS and larval LFS at Rock Slough under different levels of diversions and OMRI. Based on the analysis, if Permittee identifies proposed changes to Condition of Approval 9.9 - Diversion Rates Limitations at Rock Slough and Middle River to Minimize Take of Larval Delta Smelt and Larval Longfin Smelt, that provide equivalent minimization of impacts to larval DS and larval LFS as Condition of Approval 9.9, Permittee may submit a permit amendment request pursuant to CESA's implementing regulations. This condition does not modify CDFW's authorities or obligations regarding permit amendment.

10. Habitat Management Land Acquisition and Restoration: CDFW has determined that permanent protection and perpetual management of compensatory habitat is 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. 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, and CDFW's estimate of the protected acreage required to provide for adequate compensation.

To meet this requirement, the Permittee shall:

(1) Before the start of Covered Activities for Near-term Operations: either purchase 14.08 acres of Covered Species credits from a CDFW-approved mitigation or conservation bank pursuant to Condition of Approval 10.2 below OR shall provide for both the permanent protection and management of 14.08 acres of Habitat Management (HM) lands pursuant to Condition of Approval 10.3 below and the calculation and deposit of the management funds pursuant to Condition of Approval 10.4 below. Purchase of Covered Species credits OR permanent protection and funding for perpetual management of 14.08 acres of HM lands must be complete before initiating Covered Activities, or within 18 months of the effective date of this ITP if Security is provided pursuant to Condition of Approval 11 below for all uncompleted obligations.

AND:

(2) Before the start of Covered Activities for Long-term Operations: either purchase 10.28 acres of Covered Species credits from a CDFW-approved mitigation or conservation bank pursuant to Condition of Approval 10.2 below OR shall provide for both the permanent protection and management of 10.28 acres of Habitat Management (HM) lands pursuant to Condition of Approval 10.3 below and the calculation and deposit of the management funds pursuant to Condition of Approval 10.4 below. Purchase of Covered Species credits OR permanent protection and funding for perpetual management of 10.28 acres of HM lands must be complete before initiating Covered Activities for Long-term Operations, or within 18 months of the effective date of this ITP if Security is provided pursuant to Condition of Approval 11 below for all uncompleted obligations. The Permittee shall also restore, enhance and maintain 2.08 acres of spawning habitat for Delta smelt and longfin smelt pursuant to Condition of Approval 10.6 below.

10.1. Cost Estimates. For the purposes of determining the Security amount, CDFW has estimated the cost sufficient for CDFW or its contractors to complete acquisition, protection, and perpetual management of the HM lands and restoration of smelt spawning habitats as follows:

10.1.1. Land acquisition costs for HM lands identified in Condition of Approval 10.3 below, estimated at $45,200/acre for 24.36 acres: **$ 1,101,072** ($636,416 for Near-term Operations; $464,656 for Long-term Operations). Land acquisition costs are estimated using local fair market current value per acre for lands with habitat values meeting mitigation requirements;

10.1.2. All other costs necessary to review and acquire the land in fee title and record a conservation easement as described in Condition of Approval 10.3.1 and 10.3.2 below: **$220,878** ($110,439 for Near-term Operations; $110,439 for Long-term Operations);

10.1.3. Start-up costs for HM lands, including initial site protection and enhancement costs as described in Condition of Approval 10.3.6 below, estimated at **$**

$2,036,734; ($1,174,974 for Near-term Operations; $861,760 for Long-term Operations);

10.1.4. Interim management period funding as described in Condition of Approval 10.3.7 below, estimated at **$ 158,160**; ($90,480 for Near-term Operations; $67,680 for Long-term Operations);

10.1.5. Long-term management funding as described in Condition of Approval 10.4 below, estimated at $34,675/acre for 24.36 acres **$844,683**, ($488,224 for Near-term Operations; $356,459 for Long-term Operations). Long-term management funding is estimated initially for the purpose of providing Security to ensure implementation of HM lands management.

10.1.6. Related transaction fees including but not limited to account set-up fees, administrative fees, title and documentation review and related title transactions, expenses incurred from other state agency reviews, and overhead related to transfer of HM lands to CDFW as described in Condition of Approval 10.4, estimated at **$6,000** ($3,000 for Near-term Operations; $3,000 for Long-term Operations).

10.1.7. Restoration of spawning habitat for Covered Species as described in Condition of Approval 10.5 for Long-term Operations, estimated at $956,938/acre for 2.08 acres: **$1,990,431**.

10.1.8. All costs associated with CDFW engaging an outside contractor to complete the mitigation tasks, including but not limited to acquisition, protection, and perpetual funding and management of the HM lands and restoration of temporarily disturbed habitat. These costs include but are not limited to the cost of issuing a request for proposals, transaction costs, contract administration costs, and costs associated with monitoring the contractor's work: **$110,000** ($55,000 for Near-term Operations and $55,000 for Long-term Operations).

10.2. Covered Species Credits. If the Permittee elects to purchase Covered Species credits to complete compensatory mitigation obligations, then Permittee shall purchase 24.36 (14.08 acres for Near-term operations; 10.28 acres for Long-term operations) acres of Covered Species credits from a CDFW-approved mitigation or conservation bank prior to initiating Covered Activities, or no later than 18 months from the issuance of this ITP if Security is provided pursuant to Condition of Approval 11 below. Prior to purchase of Covered Species credits, Permittee shall obtain CDFW approval to ensure the mitigation or conservation bank is appropriate to compensate for the impacts of the Project. Permittee shall submit to CDFW a copy of the Bill of Sale(s) and Payment Receipt prior to initiating Covered Activities or within 18 months from issuance of this ITP if Security is provided, per each Phase of the Project as specified above.

10.3. Habitat Management Lands Acquisition and Protection. If the Permittee elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the Permittee shall:

10.3.1. Fee Title. Transfer fee title of the HM lands to CDFW pursuant to terms approved in writing by CDFW. Alternatively, CDFW, in its sole discretion, may authorize a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Government Code sections 65965-65968, as amended.

10.3.2. Conservation Easement. If CDFW does not hold fee title to the HM lands, CDFW shall act as grantee for a conservation easement over the HM lands or shall, in its sole discretion, approve a non-profit entity, public agency, or Native American tribe to act as grantee for a conservation easement over the HM lands provided that the entity, agency, or tribe meets the requirements of Civil Code section 815.3. If CDFW elects not to be named as the grantee for the conservation easement, CDFW shall be expressly named in the conservation easement as a third-party beneficiary. The Permittee shall obtain CDFW written approval of any conservation easement before its execution or recordation. No conservation easement shall be approved by CDFW unless it complies with Civil Code sections 815-816, as amended, and Government Code sections 65965-65968, as amended, and includes provisions expressly addressing Government Code sections 65966(j) and 65967(e). Because the "doctrine of merger" could invalidate the conservation interest, under no circumstances can the fee title owner of the HM lands serve as grantee for the conservation easement.

10.3.3. HM Lands Approval. Obtain CDFW written approval of the HM lands before acquisition and/or transfer of the land by submitting, at least three months before acquisition and/or transfer of the HM lands, documentation identifying the land to be purchased or property interest conveyed to an approved entity as mitigation for the Project's impacts on Covered Species;

10.3.4. HM Lands Documentation. Provide a recent preliminary title report, Phase I Environmental Site Assessment, and other necessary documents (please contact CDFW for document list). All documents conveying the HM lands and all conditions of title are subject to the approval of CDFW, and if applicable, the Wildlife Conservation Board and the Department of General Services;

10.3.5. Land Manager. Designate both an interim and long-term land manager approved by CDFW. The interim and long-term land managers may, but need not, be the same. The interim and/or long-term land managers may be the landowner or another party. Documents related to land management shall identify both the interim and long-term land managers. Permittee shall notify

CDFW of any subsequent changes in the land manager within 30 days of the change. If CDFW will hold fee title to the mitigation land, CDFW will also act as both the interim and long-term land manager unless otherwise specified. The grantee for the conservation easement cannot serve as the interim or long-term manager without the express written authorization of CDFW in its sole discretion.

10.3.6. Start-up Activities. Provide for the implementation of start-up activities, including the initial site protection and enhancement of HM lands, once the HM lands have been approved by CDFW. Start-up activities include, at a minimum: (1) preparing a final management plan for CDFW approval (see https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=137386&inline); (2) conducting a baseline biological assessment and land survey report within four months of recording or transfer; (3) developing and transferring Geographic Information Systems (GIS) data if applicable; (4) establishing initial fencing; (5) conducting litter removal; (6) conducting initial habitat restoration or enhancement, if applicable; and (7) installing signage;

10.3.7. Interim Management (Initial and Capital). Provide for the interim management of the HM lands. The Permittee shall ensure that the interim land manager implements the interim management of the HM lands as described in the final management plan and conservation easement approved by CDFW. The interim management period shall be a minimum of three years from the date of HM land acquisition and protection and full funding of the Endowment and includes expected management following start-up activities. Interim management period activities described in the final management plan shall include, but are not limited to, fence repair, continuing trash removal, site monitoring, removal of illegal encampments, repair of vandalism, and vegetation and invasive species management.

Permittee shall either (1) provide Security to CDFW for the minimum of three years of interim management that the land owner, Permittee, or land manager agrees to manage and pay for at their own expense, (2) establish an escrow account with written instructions approved in advance in writing by CDFW to pay the land manager annually in advance, or (3) establish a short-term enhancement account with CDFW or a CDFW-approved entity for payment to the land manager.

10.4. Endowment Funds. If the Permittee elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the Permittee shall ensure that the HM lands are perpetually managed, maintained, and monitored by the long-term land manager as described in this ITP, the conservation easement, and the final management plan approved by CDFW. After obtaining CDFW approval of the HM lands, Permittee shall provide long-term management and stewardship funding for the perpetual management of the HM lands by establishing two long-term management funds

(Endowments). The Endowments are sums of money, held in a CDFW-approved fund, that are permanently restricted to paying the costs of long-term management and stewardship of the mitigation property for which the funds were set aside, which costs include the perpetual management, maintenance, monitoring, and other activities on the HM lands consistent with this ITP, the conservation easement, and the management plan required by Condition of Approval 10.3.5. "Endowment" as used in this ITP shall refer to the endowment deposits and all interest, dividends, other earnings, additions and appreciation thereon. The Endowments shall be governed by this ITP, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

After the interim management period, Permittee shall ensure that the designated long-term land manager implements the management and monitoring of the HM lands according to the final management plan. The long-term land manager shall be obligated to manage and monitor the HM lands in perpetuity to preserve their conservation values in accordance with this ITP, the conservation easement, and the final management plan. Such activities shall be funded through the Endowment.

10.4.1. Identify an Endowment Manager. The Endowments shall be held by the Endowment Manager(s), which shall be either CDFW or another entity qualified pursuant to Government Code sections 65965-65968, as amended.

Permittee shall submit to CDFW a written proposal that includes: (i) the name of the proposed Endowment Manager(s); (ii) whether the proposed Endowment Manager(s) are a governmental entity, special district, nonprofit organization, community foundation, or congressionally chartered foundation; (iii) whether the proposed Endowment Manager(s) hold the property or an interest in the property for conservation purposes as required by Government Code section 65968(b)(1) or, in the alternative, the basis for finding that the Project qualifies for an exception pursuant to Government Code section 65968(b)(2); and (iv) a copy of the proposed Endowment Managers' certification pursuant to Government Code section 65968(e).

Within thirty days of CDFW's receipt of Permittee's written proposal, CDFW shall inform Permittee in writing if it determines the proposal does not satisfy the requirements of Fish and Game Code section 2081(b)(3) and, if so, shall provide Permittee with a written explanation of the reasons for its determination. If CDFW does not provide Permittee with a written determination within the thirty-day period, the proposal shall be deemed consistent with Section 2081(b)(3).

10.4.2. Calculate the Endowment Funds Deposits. After obtaining CDFW written approval of the HM lands, long-term management plan, and Endowment Manager(s), Permittee shall prepare an endowment assessment (equivalent to a Property Analysis Record (PAR)) to calculate the amount of funding

necessary to ensure the long-term management of the HM lands (Endowment Deposit Amount). Note that the endowment for the easement holder should not be included in this calculation. The Permittee shall submit to CDFW for review and approval the results of the endowment assessment before transferring funds to the Endowment Manager(s).

10.4.2.1. Capitalization Rate and Fees. Permittee shall obtain the capitalization rate from the selected Endowment Manager(s) for use in calculating the endowment assessment and adjust for any additional administrative, periodic, or annual fees.

10.4.2.2. Endowment Buffers/Assumptions. Permittee shall include in the endowment assessment assumptions the following buffers for endowment establishment and use that will substantially ensure long-term viability and security of the Endowment:

10.4.2.2.1. 10 Percent Contingency. A 10 percent contingency shall be added to each endowment calculation to hedge against underestimation of the fund, unanticipated expenditures, inflation, or catastrophic events.

10.4.2.2.2. Three Years Delayed Spending. The endowment shall be established assuming spending will not occur for the first three years after full funding.

10.4.2.2.3. Non-annualized Expenses. For all large capital expenses to occur periodically but not annually, such as fence replacement or well replacement, payments shall be withheld from the annual disbursement until the year of anticipated need or upon request to the Endowment Manager and CDFW.

10.4.3. Transfer Long-term Endowment Funds. Permittee shall transfer the long-term endowment funds to the Endowment Manager(s) upon CDFW approval of the Endowment Deposit Amount identified above.

10.4.4. Management of the Endowment. The approved Endowment Manager(s) may pool the Endowment with other endowments for the operation, management, and protection of HM lands for local populations of the Covered Species but shall maintain separate accountings for each Endowment. The Endowment Manager(s) shall, at all times, hold and manage the Endowments in compliance with this ITP, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

Notwithstanding Probate Code sections 18501-18510, the Endowment Manager(s) shall not make any disbursement from the Endowments that will result in expenditure of any portion of the principal of the endowment without

the prior written approval of CDFW in its sole discretion. Permittee shall ensure that this requirement is included in any agreement of any kind governing the holding, investment, management, and/or disbursement of the Endowment funds.

Notwithstanding Probate Code sections 18501-18510, if CDFW determines in its sole discretion that an expenditure needs to be made from the Endowment to preserve the conservation values of the HM lands, the Endowment Manager shall process that expenditure in accordance with directions from CDFW. The Endowment Manager shall not be liable for any shortfall in the Endowment resulting from CDFW's decision to make such an expenditure.

10.5. Reimburse CDFW. Permittee shall reimburse CDFW for all reasonable costs incurred by CDFW related to issuance and monitoring of this ITP, including, but not limited to transaction fees, account set-up fees, administrative fees, title and documentation review and related title transactions, costs incurred from other state agency reviews, and overhead related to transfer of HM lands to CDFW.

10.6. Habitat Restoration. As partial mitigation for the entrainment and/or impingement of the larval life stage of Delta smelt and longfin smelt, Permittee shall also identify an additional 2.08 acres of habitat for enhancement and restoration of spawning habitats for Delta smelt and longfin smelt. The proposed restoration area(s) shall ideally be contiguous, shall be located from the Lindsey/Cache Slough Complex south to the confluence of the Sacramento and San Joaquin Rivers and/or within experimental release locations for the Delta Smelt Experimental Release Program, and shall be accessible to Delta smelt and longfin smelt for use as spawning habitat. Once the proposed restoration area(s) are identified and have received written approval from CDFW, Permittee shall conduct initial invasive non-native plant removal and restoration activities on the identified land by November 1, 2034, shall complete invasive plant removal and restoration activities by November 1, 2035, and shall monitor and maintain restored or enhanced conditions for the life of the Project.

Permittee shall prepare and submit a Habitat Restoration and Monitoring Plan (HRMP) to CDFW for written approval. The HRMP shall describe, at minimum: 1) actions that will be undertaken to remove and control Arundo spp. in the restoration area(s) and 2) effectiveness monitoring that will be conducted at the sites to ensure that the restored habitat remains free of Arundo spp., maintains conditions suitable for spawning by Delta and longfin smelt, and is accessible to Delta smelt and longfin smelt, for the life of the Project. The HRMP shall describe in detail proposed activities for the control and eradication of Arundo spp. Activities identified shall specifically target areas both above and below Mean Higher High Water (MHHW) for Arundo spp. control, with a minimum of 50% of the activities being focused on areas below MHHW. The HRMP shall include success criteria including but not limited to, 1) maximum percent cover of Arundo spp. on an annual basis, 2) specific protocol(s) for long-term monitoring and

ongoing control of Arundo spp., and 3) any other activities necessary to create and maintain suitable spawning habitat for Delta smelt and longfin smelt.

11. Security: The Permittee may proceed with Covered Activities only after the Permittee has ensured funding (Security) to complete any activity required by Condition of Approval 10 that has not been completed before Covered Activities begin. Permittee shall provide Security as follows:

11.1. Security Amount. The total Security shall be in the amount of **$6,812,456[20]**, (Near-term Operations Security is $2,558,533 and $4,253,923[20], for Long-term Operations) or in the amount identified in Condition of Approval 10.1[20] specific to the obligation that has not been completed. This amount is determined by CDFW based on the cost estimates identified in Condition of Approval 10.1[20] above, sufficient for CDFW or its contractors to complete land acquisition, property enhancement, startup costs, initial management, long-term management, monitoring, and restoration.

11.2. Security Form. Security shall be in the form of an irrevocable letter of credit (see Attachment 3), or another form of Security approved in advance in writing by CDFW's Office of the General Counsel.

11.3. Security Timeline. The Security for Near-term Operations shall be provided to CDFW within 60 days after the effective date of this ITP. The Security for Long-term Operations shall be provided to CDFW for review and approval either at least 90 days before Covered Activities for Long-term Operations begin or by January 1, 2035, whichever comes first. Security for Long-term Operations shall be provided to CDFW within 90 days of CDFW approval of the Security amount and either at least 30 days before Covered Activities for Long-term Operations begin or by March 30, 2035, whichever comes first.

11.4. Security Holder. The Security shall be held by CDFW or in a manner approved in advance in writing by CDFW.

11.5. Security Transmittal. Permittee shall transmit it to CDFW with a completed Mitigation Payment Transmittal Form (see ATTACHMENT 4) or by way of an approved instrument such as an escrow agreement, irrevocable letter of credit, or other.

11.6. Security Drawing. The Security shall allow CDFW to draw on the principal sum if CDFW, in its sole discretion, determines that the Permittee has failed to comply with the Conditions of Approval of this ITP.

11.7. Security Release. The Security (or any portion of the Security then remaining) shall be released to the Permittee after CDFW has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied, as evidenced by:

- Written documentation of the acquisition of the HM lands;

- Copies of all executed and recorded conservation easements;
- Written confirmation from the approved Endowment Manager(s) of its receipt of the full Endowments;
- Timely completion of habitat restoration requirements; and
- Timely submission of all required reports.

Even if Security is provided, the Permittee must complete the required acquisition, protection and transfer of all HM lands and record any required conservation easements for Near-term Operations no later than 18 months from the effective date of this ITP; Permittee must also complete the required restoration, acquisition, protection, and transfer of all HM lands and record any required conservation easements for Long-term Operations no later than June 30th, 2036. CDFW may require the Permittee to provide additional HM lands and/or additional funding to ensure the impacts of the taking are minimized and fully mitigated, as required by law, if the Permittee does not complete these requirements within the specified timeframe.

IX. Amendment:

This ITP may be amended as provided by California Code of Regulations, Title 14, section 783.6, subdivision (c), and other applicable law. This ITP may be amended without the concurrence of the Permittee as required by law, including if CDFW determines that continued implementation of the Project as authorized under this ITP would jeopardize the continued existence of the Covered Species or where Project changes or changed biological conditions necessitate an ITP amendment to ensure that all Project-related impacts of the taking to the Covered Species are minimized and fully mitigated. Circumstances which may require an amendment include, but are not limited to, the situations outlined in Section VIII, Condition of Approval 6 of this ITP.

X. Stop-Work Order:

If CDFW determines the Permittee has violated any term or condition of this ITP or has engaged in unlawful take, CDFW may issue Permittee a written stop-work order instructing the Permittee to suspend any Covered Activity for an initial period of up to 30 days or risk suspension or revocation of this ITP. CDFW can issue a stop-work order to prevent or remedy a violation of this ITP, including but not limited to the failure to comply with reporting or monitoring obligations, or to prevent the unauthorized take of any CESA endangered, threatened, or candidate species, regardless of whether that species is a Covered Species under this ITP. Permittee shall stop work immediately as directed by CDFW upon receipt of any such stop-work order. Upon written notice to Permittee, CDFW may extend any stop-work order issued to Permittee for a period not to exceed 30 additional days.

If Permittee fails to remedy the violation or to comply with a stop-work order, CDFW may proceed with suspension and revocation of this ITP. Suspension and revocation of this ITP shall be governed by California Code of Regulations, Title 14, section 783.7, and any other applicable law. Neither the Designated Fisheries Biologist nor CDFW shall be liable for any costs incurred in complying with stop-work orders.

XI. Liability

Permittee shall be solely liable for any violations of this ITP, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

XII. Compliance with Other Laws:

This ITP sets forth CDFW's requirements for the Permittee to implement the Project pursuant to CESA. This ITP does not necessarily create an entitlement to proceed with the Project, nor does this ITP constitute CDFW's endorsement of the Project, or require Permittee to proceed with the Project. Permittee is responsible for complying with all other applicable federal, state, and local law. The decision to proceed with the Project is Permittee's alone.

XIII. Notices:

Written notices, reports and other communications relating to this ITP shall be delivered to CDFW by email or registered first class mail at the following address, or at addresses CDFW may subsequently provide the Permittee. Notices, reports, and other communications shall reference the Project name, Permittee, and ITP Number (2081-2023-036-03) in a cover letter and on any other associated documents.

Original cover with attachment(s) to:

Erin Chappell, Regional Manager
California Department of Fish and Wildlife – Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
Telephone (707) 428-2002
Erin.Chappell@wildlife.ca.gov and R3CESA@wildlife.ca.gov

and a copy to:

Habitat Conservation Planning Branch
California Department of Fish and Wildlife
Attention: CESA Permitting Program
Post Office Box 944209
Sacramento, CA 94244-2090
CESA@wildlife.ca.gov

Unless Permittee is notified otherwise, CDFW's Regional Representative for purposes of addressing issues that arise during implementation of this ITP is:

Sanjay Das
California Department of Fish and Wildlife – Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
Telephone (707) 815-5059
Sanjay.Das@wildlife.ca.gov

XIV. Compliance with the California Environmental Quality Act:

CDFW's issuance of this ITP is subject to CEQA. CDFW is a responsible agency pursuant to CEQA with respect to this ITP because of prior environmental review of the Project by the lead agency, Contra Costa Water District. (See generally Pub. Resources Code, §§ 21067, 21069.) The lead agency's prior environmental review of the Project is set forth in the Los Vaqueros Reservoir Expansion Project Final EIS/EIR, (SCH No.: 2006012037, dated March 2010) that the Contra Costa Water District certified for the Los Vaqueros Reservoir Expansion Project on March 31, 2010. The lead agency further approved a Final Supplement to the Final EIS/EIR (Addendum # 1, certified on May 13, 2020) and the Los Vaqueros Reservoir Expansion Project EIR Addendum (Addendum # 2, certified on July 5, 2023). At the time the lead agency certified the EIS/EIR and approved the Project, it also adopted various mitigation measures for the Covered Species as conditions of Project approval.

This ITP, along with CDFW's related CEQA findings, provide evidence of CDFW's consideration of the lead agency's EIS/EIR for the Project, the Final Supplement to the Final EIS/EIR, the Los Vaqueros Reservoir Expansion Project EIR Addendum and the environmental effects related to issuance of this ITP (CEQA Guidelines, § 15096, subd. (f)). CDFW finds that issuance of this ITP will not result in any previously undisclosed potentially significant effects on the environment or a substantial increase in the severity of any potentially significant environmental effects previously disclosed by the lead agency. Furthermore, to the extent the potential for such effects exists, CDFW finds adherence to and implementation of the Conditions of Project Approval adopted by the lead agency, and that adherence to and implementation of the Conditions of Approval imposed by CDFW through the issuance of this ITP, will avoid or reduce to below a level of significance any such potential effects. CDFW consequently finds that issuance of this ITP will not result in any significant, adverse impacts on the environment.

XV. Findings Pursuant to CESA:

These findings are intended to document CDFW's compliance with the specific findings requirements set forth in CESA and related regulations (Fish & G. Code § 2081, subs. (b)-(c); Cal. Code Regs., tit. 14, §§ 783.4, subds, (a)-(b), 783.5, subd. (c)(2)).

CDFW finds based on substantial evidence in the ITP application, Los Vaqueros Reservoir

Expansion Project Final EIS/EIR, (SCH No.: 2006012037 dated March, 2010), Final Supplement to the Final EIS/EIR (Addendum # 1, certified on May 13, 2020), Los Vaqueros Reservoir Expansion Project EIR Addendum (Addendum # 2, certified on July 5, 2023), the results of site visits and consultations, and the administrative record of proceedings, that issuance of this ITP complies and is consistent with the criteria governing the issuance of ITPs pursuant to CESA:

(1) Take of Covered Species as defined in this ITP will be incidental to the otherwise lawful activities covered under this ITP;

(2) Impacts of the taking on Covered Species will be minimized and fully mitigated through the implementation of measures required by this ITP and as described in the MMRP. Measures include: (1) permanent habitat protection; (2) restoration and enhancement of additional Covered Species habitat; (3) establishment of avoidance zones; (4) worker education; and (5) Monthly and Annual Compliance Reports. CDFW evaluated 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, and CDFW's estimate of the acreage required to provide for adequate compensation. Based on this evaluation, CDFW determined that the protection and management in perpetuity of 24.36 acres of compensatory habitat that is contiguous with other protected Covered Species habitat and/or is of higher quality than the Project related impacts of the Authorized taking to the Covered Species and the restoration, enhancement and ongoing maintenance of 2.08 acres of smelt spawning habitat, along with the minimization, monitoring, reporting, and funding requirements of this ITP minimizes and fully mitigates the impacts of the taking caused by the Project;

(3) The take avoidance and mitigation measures required pursuant to the conditions of this ITP and its attachments are roughly proportional in extent to the impacts of the taking authorized by this ITP;

(4) The measures required by this ITP maintain Permittee's objectives to the greatest extent possible;

(5) All required measures are capable of successful implementation;

(6) This ITP is consistent with any regulations adopted pursuant to Fish and Game Code sections 2112 and 2114;

(7) Permittee has ensured adequate funding to implement the measures required by this ITP as well as for monitoring compliance with, and the effectiveness of, those measures for the Project; and

(8) Issuance of this ITP will not jeopardize the continued existence of the Covered Species based on the best scientific and other information reasonably available, and this finding includes 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. Moreover, CDFW's finding is based, in part, on CDFW's express authority to amend the terms and conditions of this ITP without concurrence of the Permittee as necessary to avoid jeopardy and as required by law.

XVI. Attachments:

FIGURE 1	Permittee Project Intake Location(s) Map
FIGURE 2	Project Location Map and Diagram of the Permittee Facilities and Beneficiaries
FIGURE 3	Permittee Service Area and Major Facilities
FIGURE 4	Smelt Larva Survey Sampling Locations Station Map
FIGURE 5	20mm Survey Sampling Locations Station Map
FIGURE 6	Herbicide Use Parameters and Restrictions
FIGURE 7	Fall Mid-Water Trawl Stations Map
FIGURE 8	Map of Enhanced Delta Smelt Monitoring Program Sampling Regions
FIGURE 9	Summer Townet Survey Station Map
ATTACHMENT 1	Mitigation Monitoring and Reporting Program
ATTACHMENT 2	Biologist Resume Form
ATTACHMENT 3	Letter of Credit Form
ATTACHMENT 4	Mitigation Payment Transmittal Form

ISSUED BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

ON 3/1/2024**.**

DocuSigned by:
Erin Chappell
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Erin Chappell, Regional Manager
Bay Delta Region

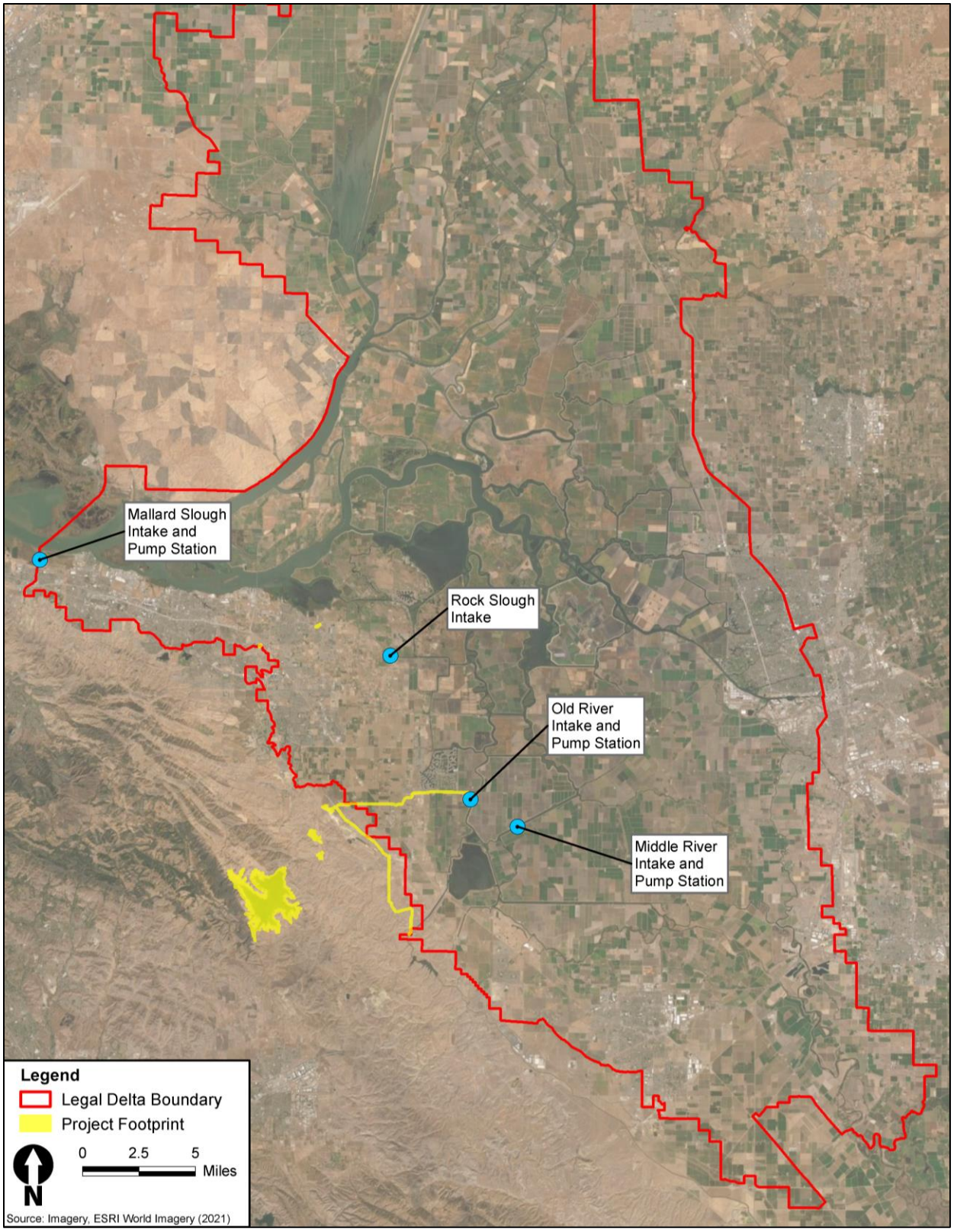

Figure 1. Permittee Project Intake Location(s) Map

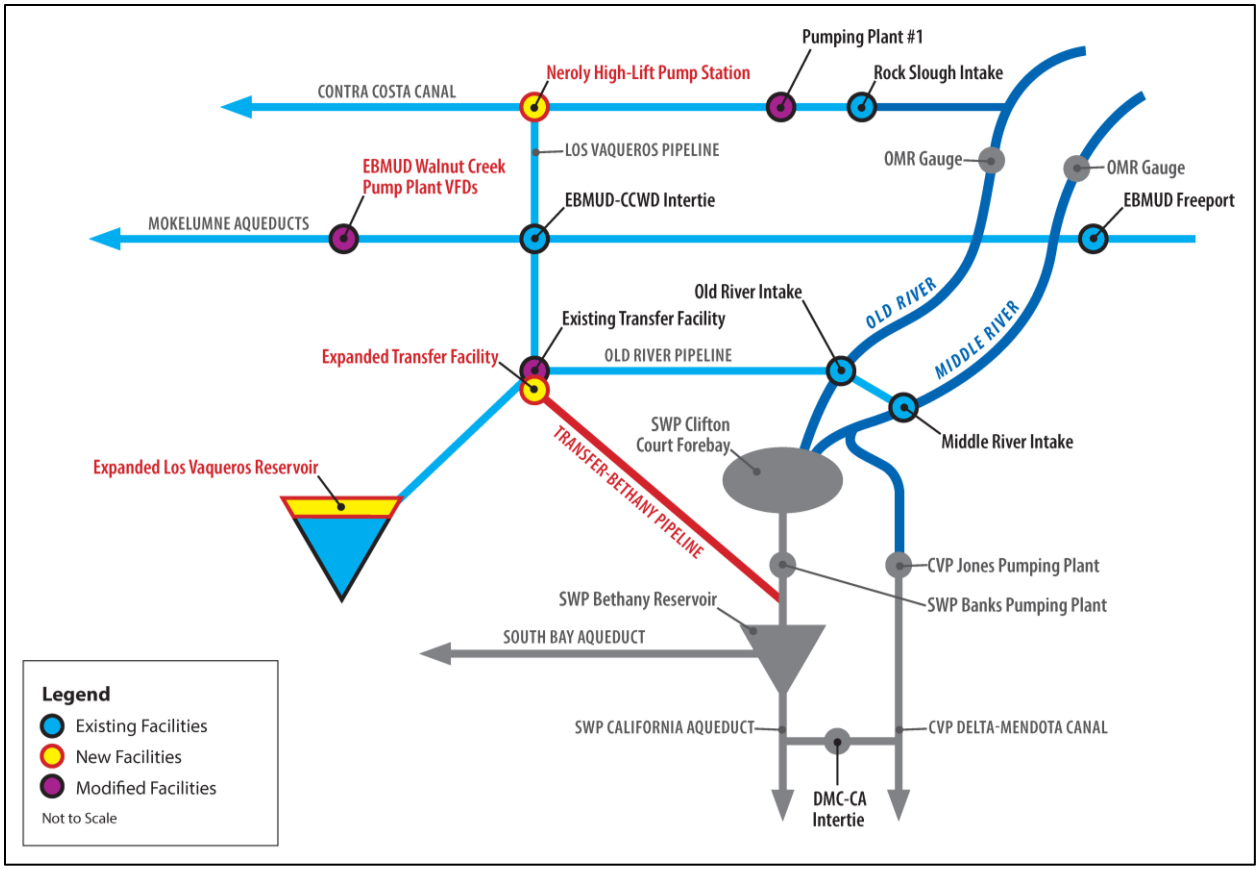

Figure 2. Existing, Modified and Possible New Facilities for the Phase 2 Expansion (note that because operation of the Mallard Slough Intake would not change under the Phase 2 Expansion, it is not included in the figure).

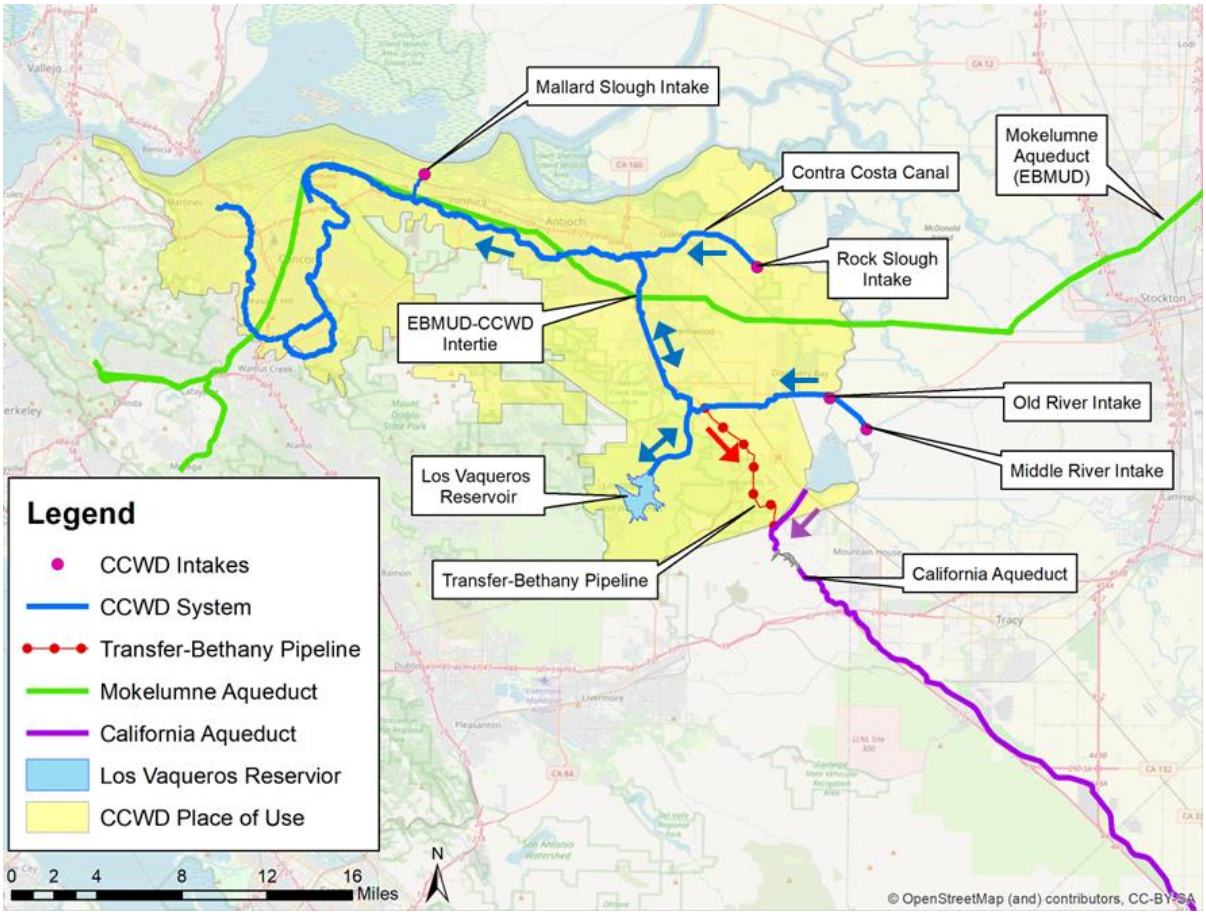

Figure 3. Permittee Service Area and Major Facilities.

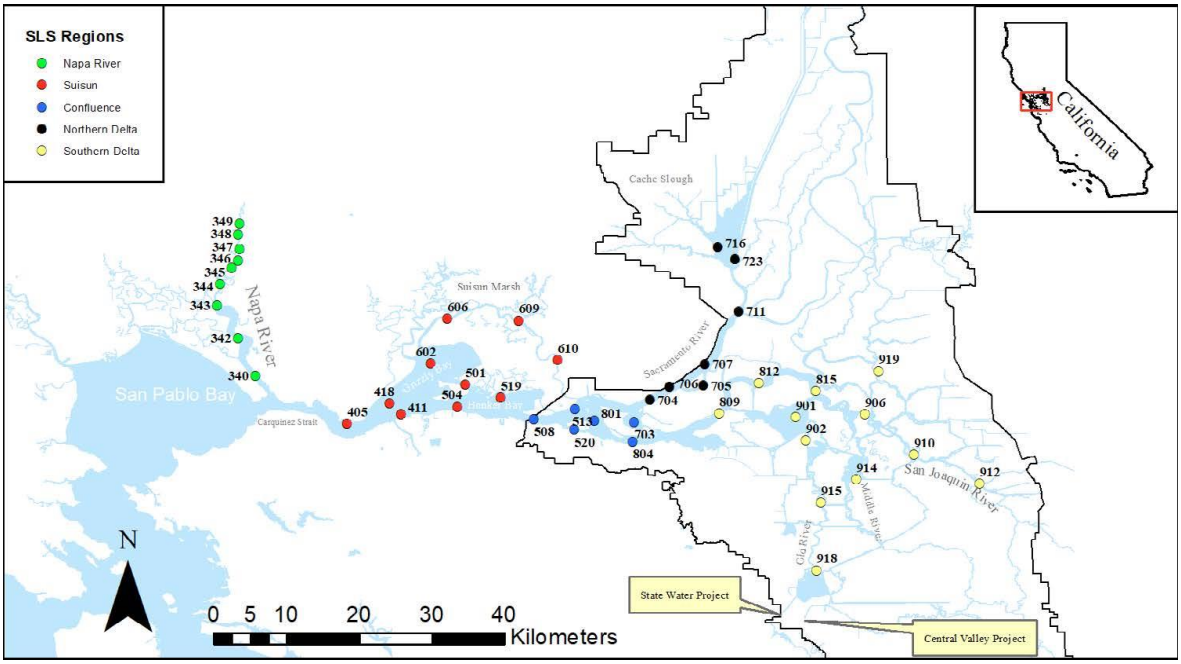

Figure 4. Smelt Larva Sampling Location Map

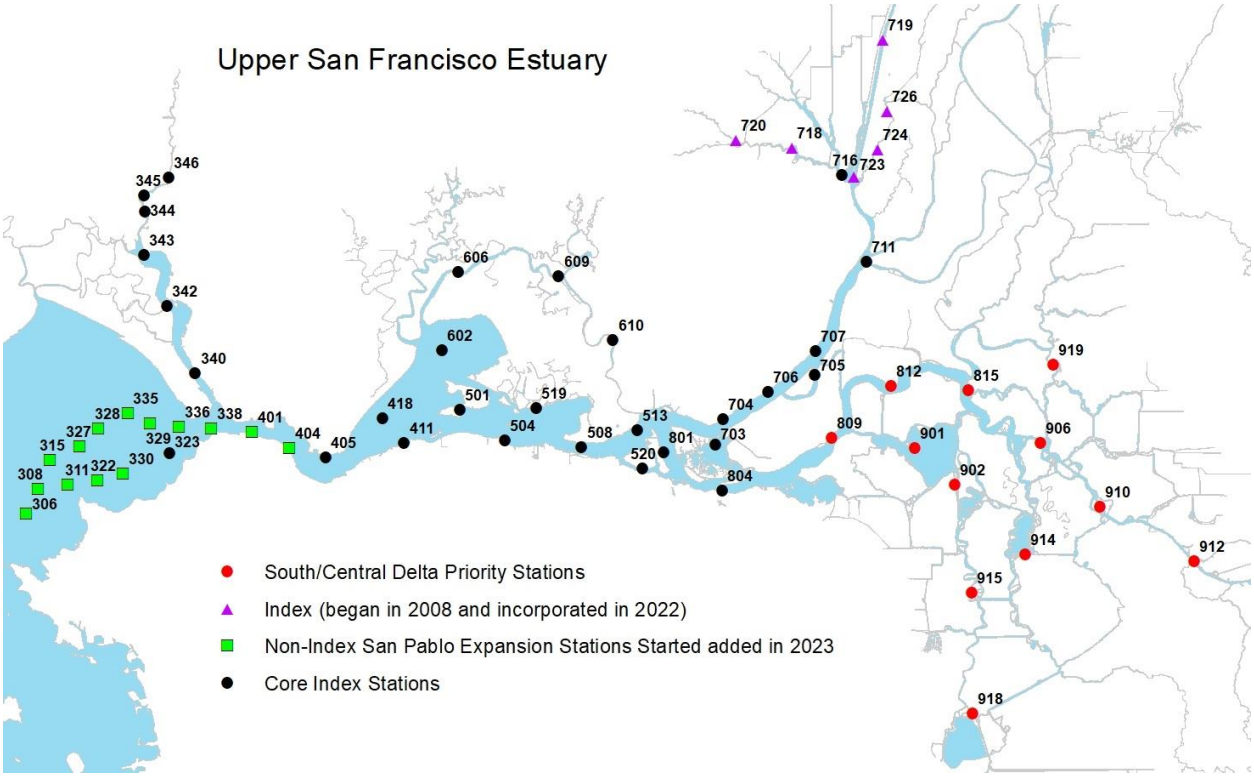

Figure 5. 20mm Survey Sampling Locations Station Map

Brand Name	Active Ingredient	Target Species	Application	Restrictions
Clearcast®	Ammonium salt of imazamox (12.1%)	Water hyacinth • Water primrose • Coontail • Brazilian elodea	Broadcast or spot spray • Water hyacinth: 16-32 fl oz*/acre; 50-200 ppb∞ • Water primrose: 32-64 fl oz/acre; 50-200 ppb • Coontail: 200-500 ppb • Brazilian elodea: 200-500 ppb	Treated water not potable 6 days after application
GreenClean® Liquid 2.0	Hydrogen dioxide (27.1%) and peroxyacetic acid (2%)	Filamentous algae	Water application either by spot treatment (applied directly over infested area), liquid (solution sprayed from shore or boat), or injection (solution injected into water via a piping system) • For filamentous algae, 2.4-24.0 gal/AF or 0.5-5 ppm∞ depending on algal growth/density	• Apply early in day under calm, sunny conditions when water temperatures are warm • Control most easily achieved when algae are not yet well established • Treat in early spring or summer when growth first begins to appear
Phycomycin® SCP	Sodium carbonate peroxyhydrate (85%)	Filamentous algae	• Broadcast or mechanical spreader, 3-100 lb/AF◊ • 0.3-10.2 ppm	• Control more easily achieved if treated soon after growth starts • Apply with 8-10 hours of daylight remaining, as decaying algae can deplete oxygen levels
Roundup Custom™	Glyphosate (53.8%)	Water hyacinth • Water primrose	• Ground broadcast: 3-7.5 pints/acre (upper end for high density) • Handheld: 1.5% solution by volume for spray-to-wet, 4-8% for low-volume directed spray • Apply after reproductive stage of growth	Potable water intake must be turned off for a minimum of 48 hours if application is within 0.5 miles of intake, unless glyphosate level <0.7 ppm

*fl oz = fluid ounce

∞ ppb = part per billion, part per million

◊ lb/AF = pounds per acre feet

Figure 6. Herbicide Use Parameters and Restrictions

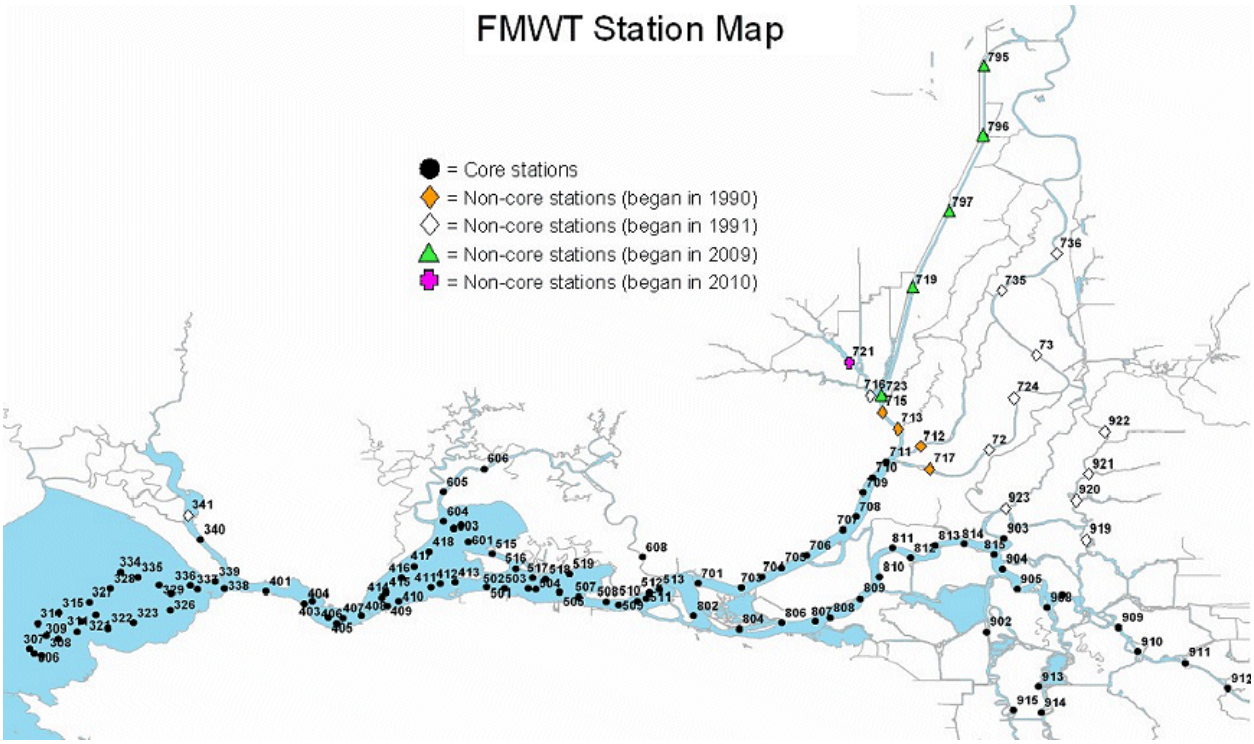

Figure 7. Fall Mid-Water Trawl Stations Map

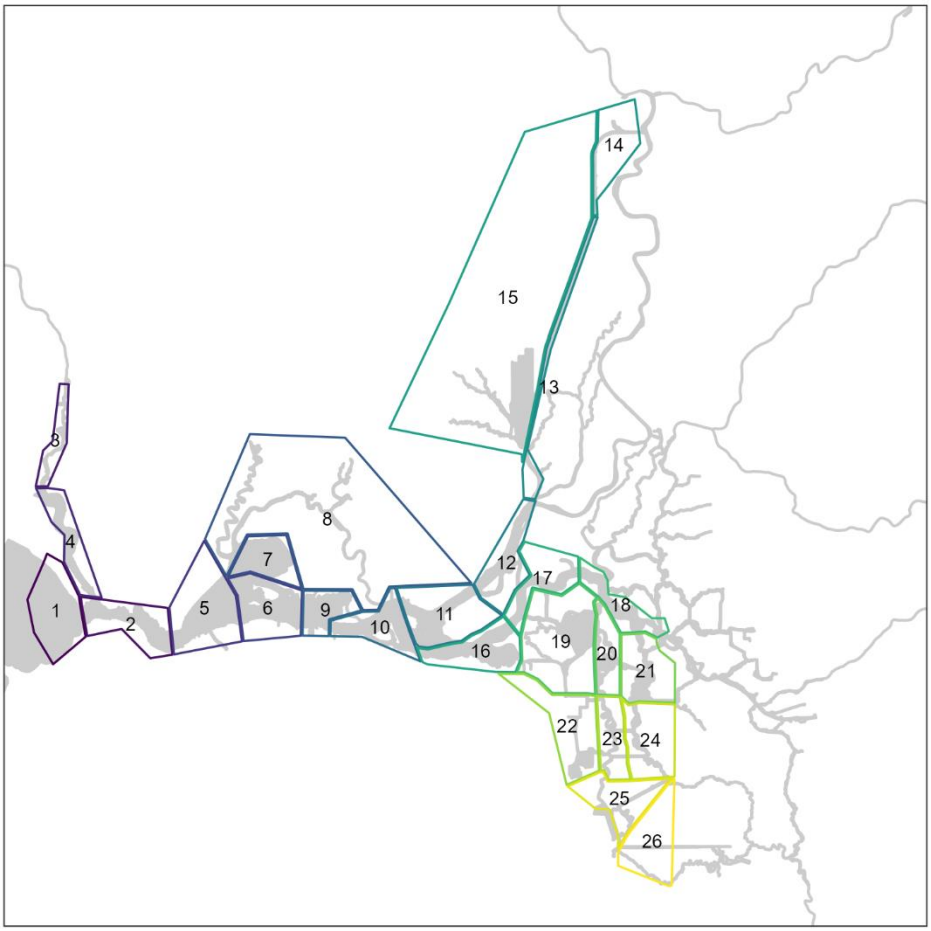

Figure 8. Map of Enhanced Delta Smelt Monitoring Program Sampling Regions

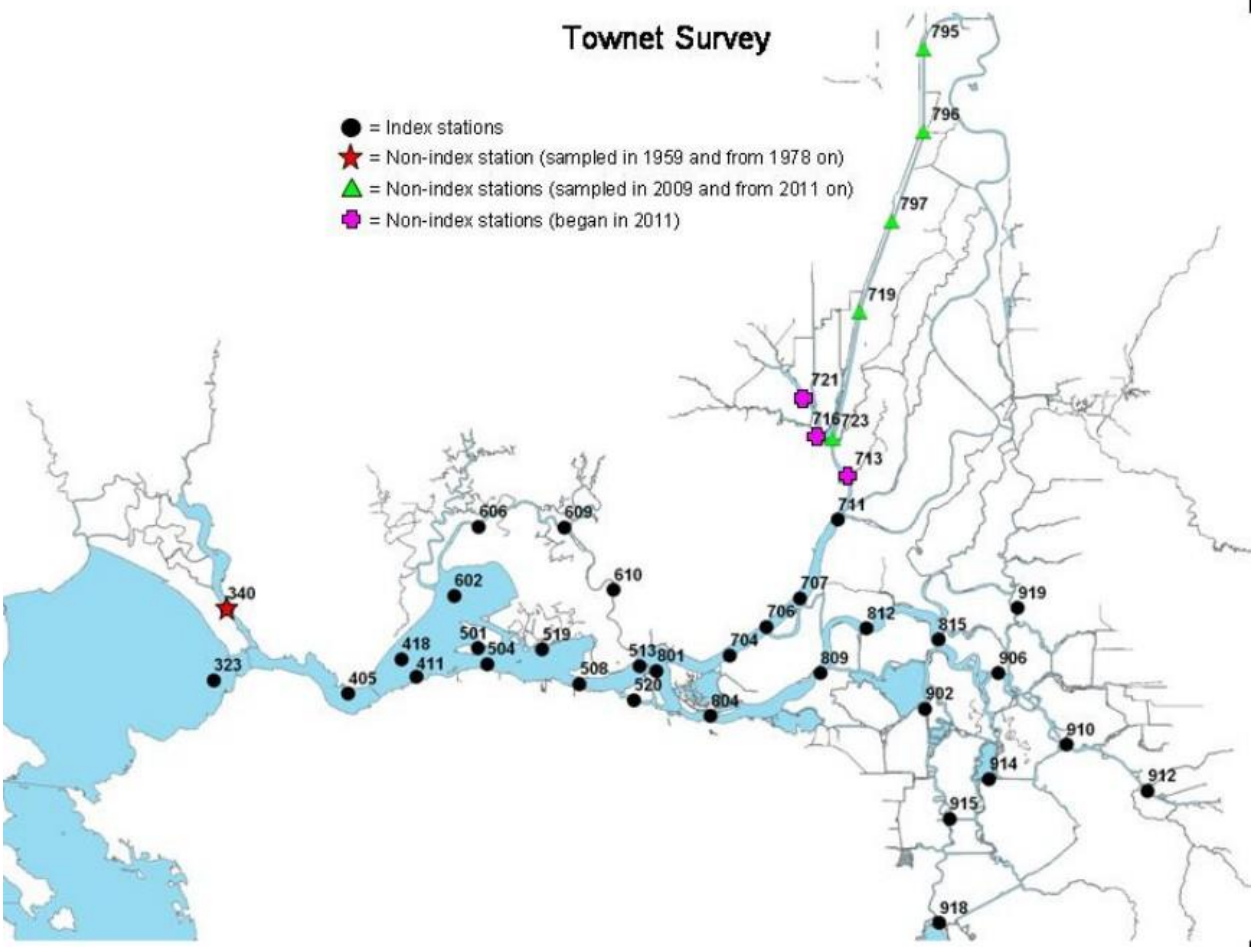

Figure 9. Summer Townet Survey Station Map