California Department of Fish and Wildlife
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558

California Endangered Species Act
Incidental Take Permit No. 2081-2014-012-03

SUISUN MARSH PLAN

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] CDFW may authorize the take of any such species by permit if the conditions set forth in Fish and Game Code section 2081, subdivisions (b) and (c) are met. (See Cal. Code Regs., tit. 14, § 783.4).

Permittee:	**Suisun Resource Conservation District**
Principal Officer:	**Steven Chappell, Executive Director**
Contact Person:	**Steven Chappell, (707) 425-9302**
Mailing Address:	**2544 Grizzly Island Road** **Suisun City, CA 94585**

Effective Date and Expiration Date of this ITP:

This ITP shall be executed in duplicate original form and shall become effective once a duplicate original is acknowledged by signature of the Permittee on the last page of this ITP and returned to CDFW's Habitat Conservation Planning Branch at the address listed in the Notices section of this ITP. Unless renewed by CDFW, this ITP's authorization to take the Covered Species shall expire on **December 31, 2040.**

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 7.3 of this ITP.

Project Location:

The activities covered in the Suisun Marsh Habitat Management, Preservation, and Restoration Plan (Project) are located within the legal boundaries of the Suisun Marsh in Solano County (See Figure 1).

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[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.

Project Description:

This Project is the ongoing operation and maintenance of publicly and privately owned Suisun Marsh diked managed wetlands, levees, water control infrastructure and water conveyance facilities for the next 30 years. The suite of actions required to conduct the ongoing operation and maintenance of these managed wetlands were addressed and analyzed as project specific elements of the Suisun Marsh Habitat Management, Preservation, and Restoration Plan (SMP). Most of these actions require and are permitted under the U.S. Army Corps of Engineers (USACE) Regional General Permit 3 (RGP) and Letter of Permission.

The fourteen specific elements of the Project covered by this ITP are listed below.

Covered Activities:

1) Managed wetland unscreened diversions and water operations
2) Coring of existing exterior levees
3) Replacing riprap on exterior levees
4) Repair exterior water control structures (gates, couplers, and risers)
5) Installing or replacing pipe for existing exterior flood, drain, or dual-purpose gate
6) Installing, repairing, or re-installing water control bulkheads
7) Removal of floating debris from pipes, trash racks, and other structures
8) Installing alternative bank protection such as brush boxes, biotechnical wave dissipaters, and vegetation on exterior levees
9) Installing new fish screen facilities
10) Salinity monitoring station maintenance, repair, and replacement
11) Salinity station relocation, installation, and removal
12) Repairing existing exterior levees
13) Dredging from tidal sloughs as source material for exterior levee maintenance and to remove sediment around fish screens, monitoring stations, Suisun Marsh Salinity Control Gate and other areas
14) Placing riprap in new areas not previously riprapped on exterior levees.

1. Managed Wetland Unscreened Diversions and Water Operations

Wetland management involves diversion and subsequent draining of tidal waters into and out of managed wetlands. Exterior levees separate managed wetlands from bays and tidal sloughs, and internal levees separate adjacent managed wetlands. Public and private landowners use various structures such as levees, ditches, water control facilities, pumps, and fish screens to manipulate the timing, duration, and depth of flooding to meet wetland management objectives.

The operations schedule for managed wetlands in Suisun Marsh is driven by a number of factors, including water year type, location within the marsh, weather conditions, diversion restrictions on unscreened diversions, and water control facilities. Most wetland managers in Suisun Marsh begin flooding their wetlands in late September and early October in preparation for the fall waterfowl migration. Because most all of the managed wetlands are at or below mean tide elevation, gravity flow can be used to fill and drain the wetlands. The wetlands are filled during flood tides when the water can flow through the water control structures into the managed wetlands, and the wetlands are drained during ebb tides when water can flow out by gravity. To allow the managed wetlands to fill to an average depth of 8 to 12 inches, the inlet gates are opened and the drain gates are closed during

initial flooding. Water diversions may operate for less than 12 hours a day (during the two high tide cycles). The volume and velocity of water diversions in the wetlands vary greatly based on the location and diameter of the intake, and the head pressure created by the ever changing tidal stage.

In mid-October to late January, following initial flooding, water is circulated through wetlands. Compared to the initial flooding period, relatively small amounts of water are exchanged between the sloughs and the wetlands during circulation. Water is moved through the managed wetlands to maintain water quality and appropriate depths. Increased circulation or complete drainage can be required in October if conditions that contribute to poor water quality or if high mosquito production occurs. These conditions depend on the weather during the fall season and requirements of the Solano County Mosquito Abatement District to protect public health and safety. Following waterfowl season, spring leach cycles are performed in the managed wetlands (February thru June) to irrigate wetlands vegetation and reduce soil salinities within the managed wetlands soils. Delta outflow, spring weather, unscreened diversion restrictions, and drainage capabilities influence when most wetland units can drain and be re-flooded. Managed wetlands undergo one to two leach cycles, which consist of rapid draining and re-flooding to half the fall water level, to remove surface salts from the wetland soils. A management objective from the Suisun Marsh Preservation Act is for all Suisun Marsh managed wetlands to obtain a 30-day flood and drain cycle. Many properties cannot obtain this objective as called for in their certified management plans. Once these leach cycles are complete, water is diverted only to maintain water level and to maintain water quality in the wetlands. Water remains in the wetlands into June or July and is then drained to allow vegetative growth and routine maintenance activities during the summer work season.

Of the 38,849 acres of managed wetlands flooded, 20,593 acres are flooded using fish screen diversions while 18,256 acres are flooded without the use of fish screens. It is estimated that the average depth of flooding is about 1 foot and total unscreened annual diversion is approximately 18,256 acre-feet (af). After initial flooding, water is circulated throughout the managed wetlands to maintain desirable water levels and water quality and then drained back into the tidal slough channels. Additionally, three properties in the Marsh (totaling over 600 acres) receive treated sewer effluent water as a primary source of water for their flooding and habitat management activities.

In the spring, water is used for spring leaching cycles for soil salt control and wetland plant irrigations. Spring flooding begins in late February and run through April or May of each year. Spring management requires post-season drainage of the managed wetlands and re-flooding to half of the fall management level. Most all properties in the marsh are capable of completing one leach cycle per year. The Suisun Resource Conservation District (SRCD) estimates about 50% of properties are capable of completing a second leach cycle in a year, depending on weather and tidal conditions and the salinity of the available water for habitat management. Evapotranspiration of the wetlands/vegetation in the spring and early summer is hard to estimate, but is considered as part of the water use during the spring leach cycles. In the spring, when possible landowners optimize the use of rain fall (fresh water) to supplement managed wetlands water supply and reduce diversions from the brackish tidal sloughs. Estimated amount of unscreened water diverted into 18,256 acres of managed wetlands in the spring (x) 0.5 feet of water= 9,128 af for the first leach cycle and 4,564 af for 50% of the properties completing a second leach cycle. The total spring water use is 13,692 af of water. Based upon these estimates the total use water use for seasonal wetland habitat management from unscreened diversions are likely to be 31,948 af.

Table 1. Diversion Volumes for Managed Wetlands

	Acres	Fall Flooding (acre-feet)	First Spring Leach (acre-feet)	Second Spring Leach (acre-feet)	Total Annual Diversion
Managed Wetlands	38,849	38,849	19,425	9,712	67,986
Screened	20,593	20,593	10,297	5,148	36,038
Unscreened	18,256	18,256	9,128	4,564	31,948

The California Department of Water Resources (DWR) facility diversions (Suisun Marsh Salinity Control Gates, Roaring River Distribution System, Morrow Island Distribution System, Goodyear Slough Outfall) are not included in this ITP. These diversions are covered under previous authorization for State Water Project operations (Delta Smelt consistency determination 2080-2011-022-00, Chinook Salmon Consistency Determination 2080-2012-005-00, and Longfin Smelt ITP 2081-2009-001-03).

2. Replacing Riprap on Exterior Levees

Riprap is replaced on the tidal side of exterior levees in the minimum amount necessary for bank stabilization. Currently, riprap is placed on exterior levee banks only in those areas with existing riprap. Those areas that receive direct wave impacts historically have been fortified with riprap and require periodic maintenance. These are areas that experience erosion and the replacement of riprap prevents the continued deterioration of the areas. On average, approximately five sites a year received exterior levee riprap replacement over the last four years (average of 2,435 cubic yards with a low of 292 cubic yards and high of 7,406 cubic yards). Riprap is placed on the tidal side of exterior levees using a long-reach excavator that is located on the levee crown, or by barge with a drag line or clamshell dredge. The barge method is used less frequently as it requires greater channel widths and is more expensive. Replacement of exterior levee riprap generally is done during July through September during dry periods; however, sometimes it has to occur during large tidal changes or during unforeseen events. In the past four years, nine events occurred in spring to summer (April thru July); 11 events occurred in late summer to autumn (August thru October); and, two events occurred in winter (as urgent and unforeseen events).

3. Coring of Existing Exterior Levees

The coring of levees is intended to stop the flow of water through rodent holes in levees. To core a levee, typically a two-foot-wide trench (depending on the width of the excavator bucket) is excavated in the levee crown using a long-reach excavator or backhoe, and the material is placed on the crown of the levee adjacent to the excavation site. The trench then is backfilled immediately using the same material that was excavated. The material is compacted during the backfilling process to seal the levee. If a rodent hole is identified, its entire length may need to be excavated to stop the flow of water and prevent future burrowing by small mammals. Coring of levees generally is performed between July and September, and approximately 700 feet can be completed in one day.

4. Repairing Exterior Water Control Structures (Gates, Couplers, and Risers)

Repairing exterior water control structures involves the replacement of components of water control structures through exterior levees (gates, stubs, or couplers) but does not involve the replacement of the pipe itself. All work is completed at low tide to allow access to the pipe and typically does not involve any excavation of sediments from the exterior slough. The repairs are generally done during July through September. In-water work is done by hand (uncoupling the old structure and re-coupling the new structure), and generally a ground crew lifts the damaged structure out of the water and

lowers the new structure into place. On average, approximately 17 structures are repaired each year (low of 8 and high of 28).

5. Installing or Replacing Pipe for Existing Exterior Flood, Drain or Dual-Purpose Gates

This activity is the replacement of an entire exterior water control structures (pipe, gates, stubs, and couplers) that are used to either flood or drain managed wetlands. There are no restrictions on the size of a drain gate. For floodgates and dual-purpose gates (flood and drain) that divert water from tidal sloughs; however, the overall capacity of the diversion may not be enlarged. In the past, water control structures typically were constructed of corrugated metal pipe. Because of the corrosive environment of the Marsh, these pipes often fail within 8 to 15 years. If an exterior pipe leaks, habitat management and maintenance activities would be compromised and can ultimately result in the uncontrolled flooding of the managed wetland. Therefore, metal pipes are typically replaced with high-density polyethylene (HDPE) pipes. When a pipe is replaced, a new pipe and appurtenant structures are assembled on the crown of the levee with the appropriate control structure components attached to each end of the pipe. A trench is excavated in the exterior levee over the existing pipe, and the old pipe is removed. Replacement pipes are typically placed in the same location as the existing structure, the trench is backfilled, and the backfilled material is compacted, in one low tide cycle. An excavator is typically used to excavate the trench, and generally, an excavator is used to install the replacement pipe. The backfill material is compacted with a dozer and/or excavator. Pipe replacement takes approximately four days and is generally completed from March through September, when adequate day time low tides occur. The first day is mobilization of equipment and materials, the second day is assembly and preparation for installation, the third day is installation, and the fourth day is bulkhead repair, demobilization and site clean-up.

If a new drainpipe is required, it would be installed at a location where discharge channels already exist or exterior levees have minimal vegetation. The new structure is assembled on the crown of the levee, usually with a flap gate or screw flap on the outside and flashboard riser or screw gate on the inside. Installing a new drainpipe requires the same types of equipment and takes the same amount of time as replacing an old drainpipe. On average, approximately 11 pipes (low of 1 and high of 23) are replaced each year with an RGP permit limit of 50 annually.

6. Installing, Repairing, or Re-installing Water Control Bulkheads

Bulkheads are built to stabilize and strengthen levees exposed to highly energetic water flows or wave energy. These structures are typically installed near water control structures and prevent the erosion of soils at the toe of the levee and ditch banks. Exterior work is done at low tide and does not involve any excavation of sediments from the exterior slough. In-water work is done by hand (unbolting the old boards and/or bolting a new structure together), and generally a ground crew lifts the old boards out of the water and lowers the new boards which are pushed into place with the bucket of an excavator. A new bulkhead may be constructed to strengthen newly excavated sections of levee, and to help avoid additional turbidity after installation of exterior water control structures by containing loose soils that otherwise may fall into the exterior slough. Bulkheads can be constructed from wood or vinyl or metal sheet pile. This activity generally would be implemented in the summer months. On average approximately 11 bulkheads are worked on each year (low of 3 and high of 21).

7. Removal of Floating Debris from Pipes, Trash Racks, and Other Structures

Floating vegetative debris and other debris, such as wood and trash, often accumulates in front of pipes, trash racks, and other structures. This debris typically is removed using a long-reach excavator. Work is done annually or on an as needed basis based upon volume of material floating in the water generally during the summer months. On average approximately 20 cubic yards are removed annually (with a low of 10 cubic yards and high of 50 cubic yards).

8. Installing Alternative Bank Protection such as Brush Boxes, Biotechnical Wave Dissipaters, and Vegetation on Exterior Levees

Pursuant to previous Biological Opinions (BO) from National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), SRCD and CDFW were required to develop levee maintenance methods as an alternative to the use of riprap. Brush boxes use natural materials and native plants for capturing sediment and dissipating wave energy to stabilize and protect the toe of the exterior levees while also providing fish habitat. The installations are generally done during July through September at low tide.

Brush boxes, brush bundles, and ballast buckets are placed below the mean high water mark and anchored with stakes. Brush boxes and brush bundles are generally dead branches that are staked into the ground or wrapped in coconut fiber. Ballast buckets are organic, biodegradable buckets planted with native wetland species such as tule, three-corner bulrush, and Baltic rush. As the technology is developed further, alternative materials or installation methods may be used. The installation of brush boxes and ballast buckets does not involve any in-water work because all work is done at low tide. This work is done entirely by hand, reducing the sedimentation that can occur with mechanical work. After the build-up of sediment and the growth of native plants over time, the exterior levee would be stabilized and protected from further erosion, and habitat would be established for fish and the macro invertebrates on which they feed.

Integrated vegetation solutions are desirable to provide low maintenance "living" bank protection and wave-energy dissipation. Applications of these solutions are limited by the local channel velocities and depth, wind fetch, and exposure to wake. If the tidal hydraulic regime is suitable for the establishment of vegetation capable of resisting high channel velocities and wave energy, vegetation will be incorporated into the erosion protection design. This would reduce the future maintenance costs of erosion protection. Historically, this activity required special permitting and was completed on an individual basis. It is anticipated that a low of 300 feet and high of 600 feet maybe completed annually in the marsh.

9. Installing New Fish Screen Facilities

Fish screens are installed at managed wetland water intakes (flood pipes) to prevent fish from swimming or being drawn into managed wetlands. The installation of fish screens was permitted beginning with the 1995 RGP.

Wetland impacts from screening diversions to protect fish would not exceed 1,000 ft^2 per year, a total of 5,000 ft^2 over the first 5-year RGP permit period, and 30,000 ft^2 over the 30 year plan period. All Suisun Marsh screens would be designed to comply with CDFW Fish Screen Criteria and USFWS Delta Smelt approach velocities of 0.2 ft. per second (fps), which are well below required approach velocities for salmon.

There are many different designs for fish screens in the Delta and Suisun Marsh. Site-specific considerations, such as acreage served, diversion volume, and channel and diversion point configuration, will dictate screen design. The stainless steel conical 8 ft., 10 ft., and 12 ft. fish screens have proven to be the most efficient design for small diversions screened in Suisun Marsh. These screens were designed to be removable from the crown of the exterior levee with a standard boom truck or excavator. This aspect of the design allows normal maintenance to be conducted in the dry months, and the screens can be removed from the tidal slough and placed on a storage platform for inspection and maintenance. Normal maintenance includes power washing the screens, replacing cathodic protection (zinc or magnesium anodes), replacing cleaning brushes, and general inspection.

Typically, fish screens are installed at an existing diversion structure; therefore, there is an existing channel or basin in the tidal area and a supply ditch in the managed wetland. However, consolidation of unscreened diversions may require a new diversion location to serve multiple wetland units at one location. The fish screen platform is supported by four pilings that are pushed into the bay mud at the toe of the exterior levee. The conical fish screen support platform and diversion pipe are placed on top of these support pilings and installed through the exterior levee. These construction methods are similar to exterior pipe replacement and bulkhead repair or installation. All other work activities for screen installation are completed at the toe of the exterior levee on the land side of the levee. These activities include water control installation, storage platform construction, and control center platform installation. This activity would be generally implemented in the summer months.

10. Salinity Monitoring Station Maintenance, Repair, and Replacement

This includes repairs to walkways, equipment housing, or other wood, plastic, or metal structures. This also includes installation, removal, replacement, repair, or modification of monitoring instrumentation within the equipment housing. These activities are done twice per year.

Weekly maintenance activities include collecting data from the electronic equipment at the site and the calibration and cleaning of the probes. With the exception of lowering probes into the water, these activities are done above the water or adjacent to the water on the levee bank.

Activities to be conducted periodically in the water by hand include cleaning or replacing the probe mounting equipment, resetting the water stage gage, cleaning probe pipes, clearing accumulated sediment from stilling wells, and replacing the dimple collar to suppress wave action. On the remaining stations with stilling wells, clearing accumulated sediment from the stilling well is done by flushing it with water pumped from the adjacent area.

Stilling well replacement and walkway/platform piling replacement involves removal by tractors and trucks operated from the existing roadway/levee and excavators or cranes operated from the roadway/levee or barge. Work generally is scheduled during the dry months of summer and fall. This activity is performed about once every 5 to 10 years at a site. Infrequent major maintenance activities do not include work done in the water.

The Permittee is gradually moving away from the use of stilling wells and moving toward using pressure transducers to measure water surface elevation. Pressure transducers (as well as the other transducers in the bundle) are suspended in the water above the bottom.

11. Salinity Station Relocation, Installation, and Removal

Salinity monitoring stations may need to be relocated, or removed due to regulatory requirements, physical constraints, the need to obtain more reliable data, the data no longer being required, or other reasons. Removal equipment may include trucks, bucket excavators, small cranes, boats, barges, and other equipment as required. Work is generally scheduled during the dry months, June through September.

Salinity monitoring stations may need to be installed to meet regulatory requirements, the need to obtain more reliable data, or other reasons. Installation equipment may include trucks, bucket excavators, small cranes, boats, barges, and other equipment as required. Work generally is scheduled during the dry months, June through September.

New monitoring stations are installed on a levee when possible or in water when location on a levee is not feasible. A new station may include installation of salinity measurement equipment with equipment housing. Stations that cannot be located on the levee also will require a platform to support the equipment housing, a walkway to access the platform, and pilings to support the platform and walkway. Stilling wells may be installed. Alternatively, pressure transducer equipment will be attached to structures in the water, such as pilings, to enable measurements to be taken in the water column without requiring disturbance of the substrate during installation or maintenance. The footprint for the walkway (actual fill) is less than 2 cubic feet. Installation of a monitoring station usually takes approximately 4 days, involves the use of a truck to haul equipment, and may require an excavator and small boat to install the stilling basin. The total ground disturbance for terrestrial and aquatic habitats would not exceed 50 ft^2.

A salinity monitoring station will be removed by hand when feasible. Otherwise, tractors and trucks operate from the existing roadway/levee and excavators or cranes operate from the roadway/levee or from barges. All components of the station will be removed, including the stilling well culvert. Pilings supporting the walkway will be removed from the levee slope/river bottom. Materials from the removed station are disposed of at an approved off-site location. The total disturbance would not exceed 400 ft^2. The removal of a monitoring station usually takes about 8 hours over the course of approximately 3 days.

12. Repairing Existing Exterior Levees

The most common practices for repairing exterior existing levees in Suisun Marsh involve the removal of accumulated silt and vegetation from water circulation ditches and grading of pond bottoms in managed wetlands and placement of spoil material on the crown of adjacent levees to raise the crown to its original or design height, and/or improvement of interior side slopes. Materials may also be imported from an upland source within or outside the Marsh. Material may also be obtained from beneficial uses of dredged materials or from implementation of the Long-Term Management Strategy (LTMS).

It is unlikely that a significant amount of levee repair material would be lost to the outboard side of an exterior levee below the mean high water line. Any material that might trickle down the outside slope of the levee from the crown probably would not affect vegetated areas and may cause only slight and very temporary turbidity.

Repair of existing levees typically occurs from June through September. Approximately 800 linear feet can be completed in one day. The current RGP authorizes placement of 1.5 cubic yards of levee material per linear foot. This activities currently permitted annual limit by the RGP is 443,000 cubic yards. However, the existing average cubic yards for levee repair is 43,902 cubic yards (low of 28,622 cubic yards and high of 87,232 cubic yards).

This activity is limited based on actual lineal footage of exterior levee of each property ownership at 1.5 cubic yards per lineal foot of levee. This administrative change from past permits allows landowners a more appropriate limit for maintenance of exterior levees. Placement of up to 1.5 cubic yards of levee material per linear foot on average for annual work activities to occur. One levee segment may require no work in a given year, and a different levee segment may require 3.0 cubic yards per linear foot because of flood damage. This would average out over the individual property's total levee system. This slight change in how permitted volumes are calculated is not expected to change the overall patterns of activities conducted in the Marsh. However, the frequency of work is expected to increase to meet the managed wetland enhancement objectives.

13. Dredging from Tidal Sloughs as Source Material for Exterior Levee Maintenance and to Remove Sediment around Fish Screens, Monitoring Stations, Suisun Marsh Salinity Control Gate, and Other Areas

Excavated materials from the adjacent tidal sloughs comprise primarily silts and clays, significantly better material for levee integrity and long-term durability than the peaty soils from managed wetlands. Dredging is proposed in major sloughs (Suisun and Montezuma Sloughs), minor sloughs, bays, and historical dredger cuts, which are areas separated from the main channels by remnant berms resulting from previous dredging to construct the original levees. Dredging from the dredger cuts provides a secondary benefit of removing silt accumulation that impairs managed wetland drainage and tidal operations of water control structures. In many locations in the Marsh, silt accumulation has physically restricted flap gates from opening, and drainage channels have become isolated from adjacent slough channels at low tide.

A dredging program, using a mechanical dredger or excavator that will provide materials for deferred and anticipated exterior levee maintenance needs. A total of 3 million cubic yards of materials would be dredged from major and minor tidal sloughs, dredger cuts, and bays over the 30-year Project implementation period, and up to approximately 100,000 cubic yards of material could be dredged annually. However, over time, as tidal restoration occurs, the number of exterior levees in the Marsh may decrease, thus reducing the amount of dredging required to maintain Marsh levees. Based on the tidal restoration proposed, it is expected that dredging could be reduced by 15% (to a total of 85,000 cubic yards annually). This reduction would occur over time and would be concurrent with the implementation of the restoration. This activity would be performed during the dredging windows of August through November.

The annual allotment would be divided between State and private property, depending on need, and limited to 2.1 cubic yards per linear foot of channel, based on the linear extent of exterior levees on each property and the regional annual limitations by habitat types. This limitation would be provided as a general guideline; however, flexibility would be necessary in case of special conditions, such as catastrophic levee failure. The proposed volume may be reduced, in any given year, if supplemental material is available through beneficial reuse of suitable dredged materials. The approximate cubic

yards and acreage of other habitat types per region proposed for dredging per year is shown in Tables 2 and 3.

Table 2. Proposed Dredging Volume of 100,000 Cubic Yards Distributed per Habitat Classification and Plan Region

Feature	Region 1	Region 2	Region 3	Region 4	Montezuma Slough	Total
	Volume (yd^3)	Volume (yd^3)	Volume (yd^3)	Volume (yd^3)	Volume (yd^3)	Volume (yd^3)
Bays	0	0	100	4,000	0	4,100
Major Sloughs	2,100	10,700	0	0	16,000	28,800
Minor Sloughs	21,600	8,900	3,000	2,400	0	35,900
Dredger Cuts	6,300	2,700	4,500	10,500	7,200	31,200
Total	30,000	22,300	7,600	16,900	23,200	100,000

yd^3 = cubic yards

Dredging would be tracked by SRCD using GIS to ensure that it does not occur more than once every three years in any location, and permit condition preclude excavation of material deeper than four feet per dredging cycle. The actual dredging locations will be changing yearly, but will be based on needed levee improvements but would be limited by region, annual permit limits, habitat types, and frequency in any one location as described above.

Table 3. Annual Acreage of Dredging per Habitat (acres)

Feature	Region 1	Region 2	Region 3	Region 4	Montezuma Slough	Total Acres
Bays	0	0	0.02	0.79	0	0.81
Major Sloughs	0.42	2.12	0	0	3.16	5.7
Minor Sloughs	4.28	1.76	0.61	0.48	0	7.13
Dredger Cuts	1.25	0.54	0.89	2.08	1.43	6.19
Total	**5.95**	**4.42**	**1.52**	**3.35**	**4.59**	**19.83**

Dredging Methods

Mechanical dredging could occur in the center of slough channels, adjacent to water control structures or culverts, in salinity monitoring station locations, in the location of the Suisun Marsh Salinity Control Gates, adjacent to fish screen structures, and historical dredger cuts. A clamshell dredge or long-reach excavator would be used to dredge in the Marsh. The long-reach excavator would dredge from the levee crown or from a barge. Clamshell dredging would take place either from a barge within the slough channel or from the top of a levee, depending on restrictions caused by vegetation on channel banks or the width of a channel. Barge clamshell dredges are not self-propelling and therefore would need a small tugboat to maneuver within the channel. From a barge, the operation would begin when the bucket assembly, attached by a boom (up to 100 feet), is lowered into the channel to collect sediments. It would scoop up to 5 cubic yards of consolidated bay mud and deposit it on the land side of the levee or crown adjacent to the channel. In limited instances, materials may be used for exterior levee maintenance in areas not adjacent to the dredged material source. The clamshell dredge or long-reach excavator may sit atop the levee and scoop up to 5 cubic yards of consolidated bay mud from the

channel bottom, using the same method as from a barge, and deposit the dredged material on the landside back slope, crown, or the levee slope on the bay/slough side if it is devoid of vegetation.

The excavated material is then stacked on the crown and back slope of the levee and smoothed with the excavator bucket, creating a uniform layer of mud that may range from 1 foot to 2 feet deep, but averaging 1.5 feet deep. After 2-3 months of drying time, the material would be disked and graded to integrate the new materials with the existing levee. Minimal materials enter the interior managed wetland or bay/slough because the materials are deliberately placed and kept on the crown and slopes of the levee.

Fish Screen Dredging
Some of the 16 fish screen structures and the Roaring River Distribution System fish screen experience significant siltation problems. Silt is deposited around these screens, which impedes the operation of the screen and screen-cleaning brushes. Every few years a relatively small amount of material would be removed from the fish screen basins (about 20 to 100 cubic yards each) by dredging. (This amount is included in the total 3 million cubic yards proposed for dredging in the Marsh). Alternative measures (trying to move silt by hand) have been ineffective. Dredging around fish screens would be done during low tide to minimize in-water work and turbidity. As the tide returns, the fish screen would be opened to allow turbid water to be drawn into the managed wetland. Dredge spoils would be placed on the crown or landside slope of the exterior levee adjacent to the fish screen. In instances where material cannot be used adjacent to the dredging site, the material may be used on other levees in Suisun Marsh, following the same environmental commitments as identified in the Suisun Marsh Habitat Management, Preservation, and Restoration Plan.

Exterior Levees Requiring Major or Minor Maintenance
Based upon GIS mapping, Suisun Marsh has approximately 199.82 miles of exterior levees that require annual maintenance and storm damage repairs. Approximately 66.35 miles of these exterior levees have vegetated berms greater than 50 feet wide so dredging is not possible. For these areas, the primary source of material for maintenance will continue to be from the adjacent managed wetlands or from importation from outside of the Marsh. This leaves approximately 133.47 miles of exterior levees that can be maintained by dredging.

14. Placing Riprap in New Areas Not Previously Riprapped on Exterior Levees

The levee system in Suisun Marsh is continually under the pressure of tidal stage, wind fetch, eroding currents, and boat-wake damage. With sea level rise and climate change, these pressures are expected to increase. Over time, protective vegetated berms and levee toes erode and expose the levee foundation to the erosive forces of wind, water, and logs. Many of the areas that require riprap have been treated, and their continued maintenance is described previously in Section 2. This activity addresses those areas that currently do not have riprap but that may be determined in the future to require such treatment.

The new RGP permits 334 linear feet of new riprap on exterior levees over the 5–year permit period (approximately 66 lineal feet a year) and the placement of new riprap on interior levees shall not exceed 200 lineal feet per year. Riprap placement would not affect emergent vegetation. Riprap would be placed on the levee using a long-reach excavator or a clamshell or drag line dredge. Placement of riprap would be done from June through September. Riprap materials would be transported to the site with a 10- wheel dump truck with a capacity of 16 cubic yards or by barge with a 400 cubic yards capacity.

New exterior levee riprap would be placed on the side slopes of exterior levees only when it has been determined that the specific conditions of each site would not support other types of erosion control. Riprap would be applied only under the following circumstances:

1) Levees exposed to channel velocities that are too high to support vegetation. Depending on soil type, it may be possible for levee material to withstand short durations that exceed 6 feet per second.

2) Channel depth on the face of the levee slope is deeper than 3 feet below mean tide level and the levee slope is steeper than 3:1 (Height:Vertical); riprap would be applied to reduce erosion potential without consideration for incorporation of vegetation.

3) Levee face typically is exposed to vessel wakes year-round and not located in a 5-mph zone; riprap would be applied in area where erosion persists.

4) Fetch length exceeds 1,000 feet in the direction of the predominant southwest to southeast winds during high water conditions (e.g., winter storms, spring tides) or prevailing winds during all other times (typically from the west); riprap would be applied to the upper slope of the levee to dissipate wind-driven waves and reduce erosion potential.

Where new riprap is placed, integrated vegetation would also be applied where it is biologically appropriate.

Covered Species Subject to Take Authorization Provided by this ITP:

This ITP covers the following species:

Name	CESA Status
1. Longfin Smelt (*Spirinchus thaleichthys*)	Threatened[3]
2. Delta Smelt (*Hypomesus transpacificus*)	Endangered[4]
3. Spring-run Chinook Salmon (*Oncorhynchus tshawytscha*)	Threatened[5]
4. Winter-run Chinook Salmon (*Oncorhynchus tshawytscha*)	Endangered[6]

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

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 that are expected to result in incidental take of individuals of the Covered Species include dredging from tidal sloughs, exterior levee maintenance and repair, managed wetland water diversion activities, replacing riprap on exterior levees, removal of floating debris from pipes, trash racks, and other structures, installing new fish screens, salinity station

[3]See Cal. Code Regs. tit. 14 § 670.5, subd. (b)(2)(E).
[4]See Cal. Code Regs. tit. 14 § 670.5, subd. (a)(2)(O).
[5]See Cal. Code Regs. tit. 14 § 670.5, subd. (b)(2)(C).
[6]See Cal. Code Regs. tit. 14 § 670.5, subd. (a)(2)(M).

relocation, installation and removal, and placing riprap in new areas not previously riprapped on exterior levees (Covered Activities).

Incidental take of individuals of the Covered Species in the form of mortality ("kill") may occur as a result of Covered Activities such as channel dredging and entrainment into managed wetlands. The areas where authorized take of the Covered Species is expected to occur is the Suisun Marsh (Project Area).

The Project is expected to cause the temporary loss of up to 20 acres of tidal marsh habitat for the Covered Species from the dredging within tidal sloughs. Impacts of the authorized taking also include adverse impacts to the Covered Species related to temporal losses, increased habitat fragmentation and edge effects, and the Project's incremental contribution to cumulative impacts (indirect impacts). These impacts include: stress resulting from noise, vibrations, decreased water quality, and localized temporary change to food web from dredging activities; low water quality discharge from managed wetlands; displacement from preferred habitat; loss of earthen shoreline habitats, and increased competition for food and space.

The Project is expected to impact Covered Species through the annual unscreened diversion of 31,948 af of water. The formula used for calculating the acreage of impact to Covered Species from diverting water is based on the calculation used in the Operations Criteria and Plan (OCAP) BO and the CDFW Consistency Determination for the exports of the State Water Project (SWP). The calculation was developed for the aquatic effect to Delta smelt and uses a ratio of water volume diverted (SWP assumes 3.0 million af) and the corresponding habitat obligation of 8,000 acres (0.00267 acres of habitat per af of water diverted). Based on 31,948 af of water diverted, the unscreened diversion of water will result in 85 acres of temporary impact to Covered Species aquatic habitat.

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.

Conditions of Approval:
Unless specified otherwise, the following measures apply to all Covered Activities within the Project Area, including areas used for vehicular, barge, boat ingress and egress, staging and parking and noise and vibration generating activities that may cause take. 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 Environmental Impact Report (SCH No.: 2003112039) certified by CDFW on December 23, 2011 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 will be required to obtain a Lake and Streambed Alteration Agreement, pursuant to Section 1600 et seq. of the Fish and Game Code, for any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed within the Suisun Marsh Secondary Management Area.

4. **ESA Compliance:** Permittee shall implement and adhere to the terms and conditions in the RGP 3 and Letter of Permission related to the Covered Species in the BOs from the National Marine Fisheries Service (2012-2390) and the USFWS (08ESMF00-2012-F-0602-2) on the Proposed Suisun Marsh Habitat Management, Preservation, and Restoration Plan and the Project-Level Actions in Solano County, California for the Project pursuant to the Federal Endangered Species Act (ESA). For purposes of this ITP, where the terms and conditions for the Covered Species in the federal authorization 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 ITP Mitigation Monitoring and Reporting Program (MMRP), which is included as Attachment 1 to this ITP.

6. **General Provisions:**

6.1. Designated Representative. Before starting 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.

6.2. Permittee Representative. Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information of a biological monitor (Permittee Representative) at least 30 days before starting Covered Activities. Permittee shall ensure that the Permittee Representative is knowledgeable of the surrounding environment and possess knowledge of the Covered Species. The Permittee Representative shall be responsible for monitoring Covered Activities to help minimize and avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. The Permittee Representative shall be an employee of the Suisun Resource Conservation District and the Permittee shall submit, to CDFW, a list of all employees who may fulfill the role of the Permittee Representative in writing before starting Covered Activities.

6.3. Permittee Representative Authority. To ensure compliance with the Conditions of Approval of this ITP, the Permittee Representative shall have authority to immediately stop any activity that does not comply with this ITP.

6.4. Education Program. Permittee shall conduct an education program during the Permittee's annual workshop. The program shall consist of a presentation from the Permittee Representative that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in this ITP.

6.5. Trash Abatement. The worksite foreman 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 at least once a week to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs. Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all temporary fill, construction refuse and debris.

6.6. Erosion Control Materials. Permittee shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as monofilament netting (erosion control matting) or similar material, in potential Covered Species' habitat.

6.7. Project Access. Project-related personnel shall access the Project Area using existing routes and shall not cross Covered Species' habitat outside or en route to the Project Area. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. If Permittee determines construction of routes for travel are necessary outside of the Project Area, the Designated Representative shall contact CDFW for written approval before carrying out such an activity. CDFW may require an amendment to this ITP, among other reasons, if additional take of Covered Species will occur as a result of the Project modification.

6.8. Staging Areas. Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the Project Area using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked Project Area unless provided for as described in Condition of Approval 6.7 of this ITP.

6.9. 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.

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

The Permittee shall provide the necessary safety gear, if required, for CDFW staff to access the work site.

7. Monitoring, Notification and Reporting Provisions:

7.1. Notification of Non-compliance. The Permittee shall immediately notify CDFW in writing if it determines that the Permittee is not in compliance with any Condition of Approval of this ITP, including but not limited to any actual or anticipated failure to implement measures within the time periods indicated in this ITP and/or the MMRP. The Designated Representative shall report any non-compliance with this ITP to CDFW within 24 hours.

7.2. Annual Status Report. Permittee shall provide CDFW with an Annual Status Report no later than January 31 of every year beginning with issuance of this ITP and continuing until CDFW accepts the Final Mitigation Report identified below. Each Annual Status Report shall include, at a minimum: (1) a general description of the status of the Project Area and Covered Activities, including actual or projected completion dates, if known; (2) a log indicating all Covered Activities conducted during the year and the associated club names; (3) a copy of the table in the ITP 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; (6) an accounting of the number of cubic yards of material dredged by region; and (7) an accounting of the number of acres of tidal wetlands created, by project, in Suisun Marsh for the prior calendar year as well as a running total since ITP issuance.

7.3. Final Mitigation Report. No later than 45 days after completion of all ITP mitigation measures, Permittee shall provide CDFW with a Final Mitigation Report. The Permittee Representative shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Annual Status Reports; (2) a copy of the table in the ITP 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.

7.4. Notification of Take or Injury. Permittee shall immediately notify the Permittee Representative 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 Permittee Representative or Designated Representative shall provide initial notification to CDFW by calling the Regional Office at (707) 944-5500. The initial notification to CDFW shall include information regarding the location, species, 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. 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:

8.1. Emergent Vegetation Protection. Permittee shall not disturb or uproot waterside emergent aquatic vegetation during covered activities except as described in condition 8.8.4.

8.2. Managed Wetland Water Diversion Activities. Permittee shall administer and monitor all managed wetland water diversion activities of private landowners in Suisun Marsh that occur in areas that divert water from Delta Smelt, Longfin Smelt, and Chinook Salmon critical habitat as designated by the USFWS and NMFS.

8.2.1. Permittee shall inform landowners in January of each year of any water diversion restrictions that will be in place from February through March. The diversion restrictions can be found in the USACE RGP [2012-00258N] and in the following Conditions 8.2.1.1 and 8.2.1.2. These diversion restrictions may be modified at any time, as conditions warrant, by the USFWS and NMFS. Permittee shall monitor all affected water intakes that are not screened to CDFW standards to ensure landowner compliance with current diversion restrictions. Permittee shall immediately notify non-compliant landowners of the actions necessary to become compliant with current diversion restrictions. Permittee shall also notify USFWS, NMFS, USACE, and CDFW of any non-compliant water diversions.

8.2.1.1. Permittee shall notify CDFW, NMFS, and USACE of the starting and closing dates of duck hunting season annually at least 30 days prior to the start of the season. Landowners diverting water from sloughs designated by NMFS [i.e., Montezuma Slough and its tributaries lower Nurse Slough (from the confluence with Denverton Slough to Montezuma), Denverton Slough; Cuttoff Slough (including Spring Branch Slough, first and second Mallard Branch Slough); Suisun Slough, (from downstream of the confluence with Boynton Slough to Grizzly Bay; and Chipps Island)] shall use no more than 25% of the water control structure's diversion capacity from November 1 to the last day of duck hunting season. These landowners are prohibited from diverting water from designated sloughs from February 21 to March 31. The purpose of these diversion restrictions is to protect migrating salmonids.

8.2.1.2. Landowners diverting water from sloughs designated by USFWS [i.e., Montezuma Slough; Bay and Goodyear Slough; Cuttoff Slough (including Spring Branch Slough, first and second Mallard Branch Slough); Suisun Slough, (from downstream of the confluence with Boynton Slough to Grizzly Bay; and Chipps Island)] shall use only 35% of the water control structure's intake capacity between April 1 and May 31. If, during this time, two out of the three CDFW 20-millimeter trawl surveys sites (sites 606, 609, and 610) estimate Delta Smelt densities greater than 20 Delta Smelt individuals per 10,000 cubic meters over a 2-week sampling period, all diversions from these sloughs shall use only 20% of

the water control structure's intake capacity. Survey trawls shall take place at least once every 14 days between April 1 and May 31.

8.3. Coring and Repairs of Exterior Levees. Material shall remain on the crown or interior side of the levee during repairs.

8.3.1. All work activities below the mean high water mark shall be restricted to periods of low tide (within a 6-hour period, from 3 hours prior to low tide to 3 hours following low tide).

8.3.2. Permittee shall restrict levee repairs to periods of dry weather.

8.3.3. Permittee shall use all excavated material to backfill the trench.

8.3.4. Permittee shall complete repairs of levee breaches within 7 days of the breach.

8.4. Riprap Placement. Permittee shall only place riprap in previously armored areas and in unarmored levee areas that are exposed to erosive forces. Permittee's placement of new riprap on unarmored levees shall not exceed 67 linear feet annually.

8.4.1. Permittee shall limit all work activities below the mean high water mark shall be restricted to periods of low tide (within a 6-hour period, from 3 hours prior to low tide to 3 hours following low tide).

8.4.2. Permittee shall use riprap that is free of erodible soils, litter, and materials that are deleterious to aquatic life.

8.4.3. Permittee shall not place riprap directly on emergent vegetation.

8.5. Alternative Levee Erosion Protective Techniques. Permittee shall use alternative levee erosion protective techniques whenever feasible, including but not limited to brush boxes, native vegetation planting, setback levees, and other biotechnical material and geotechnical levee design techniques.

8.5.1. Permittee shall limit all work activities below the mean high water mark and shall be restricted to periods of low tide (within a 6-hour period, from 3 hours prior to low tide to 3 hours following low tide).

8.5.2. Permittee shall perform work by hand when installing alternative levee erosion protective techniques.

8.5.3. Permittee shall only use native material free of non-native, invasive plants.

8.6. Repairing, Installing, or Replacing Exterior Water Control Structures, Bulkheads, and Pipe for Existing Exterior Flood, Drain, or Dual Purpose. Permittee shall not change the existing use or diversion capacity when repairing or replacing exterior water control structures or pipes of exterior water control structures for flood purposes.

8.6.1. Permittee shall limit all work activities below the mean high water mark to periods of low tide (within a 6-hour period, from 3 hours prior to low tide to 3 hours following low tide).

8.6.2. Permittee shall locate all new and/or replacement drain pipes in the largest possible sloughs, or sloughs with the highest levels of tidal circulation possible, to minimize the possibility of degraded water quality conditions.

8.6.3. Permittee shall install new exterior drain structures where the discharge channel already exists.

8.6.4. Permittee shall use HDPE pipes and stainless steel and vinyl water control structure components when appropriate to extend the useful life of the structures and reduce maintenance.

8.6.5. Permittee shall pre-assemble all pipes before installation to minimize work time.

8.7. Installing New Fish Screens. Permittee shall reduce fish entrainment loss throughout the Marsh by consolidating and/or equipping water control structures with state-of-the-art fish screens when practicable and funding allows. Permittee shall screen any new or enlarged exterior water control structures in accordance with CDFW's criteria.

8.8. Dredging Activities from Tidal Sloughs. Permittee shall restrict all in-water dredging activities to August 1–November 30, unless otherwise extended by CDFW in writing.

8.8.1. Permittee shall review each landowner's annual dredging proposal and allocate regional dredging volumes by habitat types not to exceed 100,000 cubic yards per year in Suisun Marsh. Permittee shall not dredge more than 1,000,000 cubic yards of material in a 10-year period.

8.8.2. Permittee shall use a clamshell dredge or long-reach excavator stationed on the levee crown or from a barge. No suction dredging is permitted.

8.8.3. Permittee shall not dredge within 200 feet of any storm drain outfall or urban discharge locations, unless preconstruction contaminate testing is conducted and test results are negative for substances deleterious to fish and wildlife.

8.8.4. Permittee shall avoid dredging in areas with emergent vegetation to the extent possible. Permittee shall not dredge in tidal wetland areas with emergent vegetation, adjacent to the levee, that are greater than 50 feet wide at mean sea level. Permittee shall not dredge in areas that have been tidally restored.

8.8.5. Permittee shall not dredge in an area more frequently than once every three years, i.e. the dredge cycle shall be once every three years or longer.

8.8.6. Permittee shall not dredge deeper than 4 feet deep from the top of the channel bed, per dredge cycle.

8.8.7. Permittee shall not allow any substance deemed deleterious to fish and wildlife to enter the waterway or be placed where it could be washed into the waterway. Any contaminated water/material from project activities shall be pumped or placed into a holding facility and removed for proper disposal. In the event of a spill in to the waters of the State, the Permittee shall immediately notify the California Emergency Management Agency at 1-800-852-7550 and immediately initiate the clean-up activities. CDFW shall be notified by the Permittee at the contact information below and consulted regarding clean-up procedures.

8.9. Covered Species Mortality. Permittee shall preserve by freezing or placing in a container with 10 percent formalin solution any Covered Species that is killed during Project activities. Permittee shall record the time and exact locations of any incidental take, method of take, length of time from death to preservation, water temperature, and other relevant information shall be recorded in writing. Permittee shall deliver preserved individuals to a CDFW or USFWS laboratory that CDFW identifies at the time the Permittee contacts CDFW as required by Condition 7.4 of this ITP.

9. Habitat Restoration:

CDFW has determined that this project is self-mitigating for the temporary loss of 20 acres of tidal marsh habitat from dredging within tidal sloughs and 85 acres of aquatic habitat from unscreened diversion of water for the Covered Species because the Permittee will participate in the restoration of 5,000 to 7,000 acres of habitat over a 30-year period, with 1,600 to 2,300 acres created within the first 10 years. Permittee will create and preserve more than 2,500 acres of tidal and managed wetlands as a requirement of the Revised Suisun Marsh Mitigation Agreement among U.S. Bureau of Reclamation (BOR), DWR, CDFW, and SRCD, dated June 20, 2005, and the participation in the authorization, creation and management of at least 200 acres of tidal wetland habitat, which is an inherent part of the Project. The implementation of creating 1,600 to 2,300 acres of tidal wetlands provides additional aquatic habitat for Covered Species that fully mitigates the impacts of the taking of Covered Species caused by Project activities, including the temporary impacts to Covered Species habitat.

10. Performance Security

The Permittee will not be providing an endowment account or letter of credit for the Suisun Marsh Plan because it can provide adequate funding assurances based on Permittee's financial position to make any ongoing payments for mitigation purposes and its partnership with State agencies that fund the long-term maintenance and operation of the Suisun Marsh Plan.

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.

Stop-Work Order:

CDFW may issue Permittee a written stop-work order requiring Permittee to suspend any Covered Activity for an initial period of up to 25 days 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. 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 25 additional days. 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 Permittee Representative nor CDFW shall be liable for any costs incurred in complying with stop-work orders.

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. Permittee is responsible for complying with all other applicable federal, state, and local law.

Notices:

The Permittee shall deliver a fully executed duplicate original ITP by registered first class mail or overnight delivery to the following address:

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

Written notices, reports and other communications relating to this ITP shall be delivered to CDFW by 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 (2081-2014-012-03) in a cover letter and on any other associated documents.

Original cover with attachment(s) to:

Gregg Erickson, Regional Manager
California Department of Fish and Wildlife
7329 Silverado Trail
Napa, CA 94558
Telephone (707) 944-5500
Fax (707) 944-5563

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

James Starr, Environmental Program Manager
California Department of Fish and Wildlife
7329 Silverado Trail
Napa, CA 94558
Telephone (209) 234-3440
Fax (707) 944-5563

Compliance with CEQA:

CDFW's issuance of this ITP is subject to CEQA. CDFW is the lead agency pursuant to CEQA with respect to this ITP (See generally Pub. Resources Code, §§ 21067, 21069). The environmental review of the Project is set forth in the Suisun Marsh Habitat Management, Preservation, and Restoration Plan Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) (State Clearinghouse # 2003112039) dated November 2011 that CDFW certified for the Suisun Marsh Habitat Management, Preservation, and Restoration Plan on December 23, 2011. At the time, CDFW, as the lead agency, certified the 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, which are available as a separate document, provide evidence of CDFW's consideration of the EIR for the Project 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.

In November 2011, BOR, USFWS, and CDFW, with the SRCD, and DWR completed the Final EIR/EIS. The EIR/EIS contains a detailed project description, describes potential environmental impacts, conservation measures, and other best management practices.

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 and Game 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, Suisun Marsh Habitat Management, Preservation, and Restoration Plan Final EIR/EIS, U.S. Army Corps of Engineers Regional General Permit 3 (2012-00258N), USFWS Biological Opinion (08ESMF00-2012-F-0602-2), NMFS Biological Opinion (2012-2390), Revised Suisun Marsh Mitigation Agreement, the results of site visits, 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) tidal marsh restoration; (2) establishment of avoidance measures; (3) worker education; (4) work windows and (5) Annual Status 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 at least 200 acres of compensatory habitat that is contiguous with other protected Covered Species habitat and/or is of higher quality than the habitat being destroyed by the Project, 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.

Attachments:

FIGURE 1	Project Location
FIGURE 2	Suisun Marsh Dredging Volumes by Region
ATTACHMENT 1	Mitigation Monitoring and Reporting Program

ISSUED BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDIFE

on 4-12-18.

Gregg Erickson, Regional Manager
Bay Delta Region

ACKNOWLEDGMENT

The undersigned: (1) warrants that he or she is acting as a duly authorized representative of the Permittee, (2) acknowledges receipt of this ITP, and (3) agrees on behalf of the Permittee to comply with all terms and conditions

By: Steven Chappell Date: 5/12/18

Printed Name: Steven Chappell Title: Executive Director, SRCD

Figure 1. Project location.

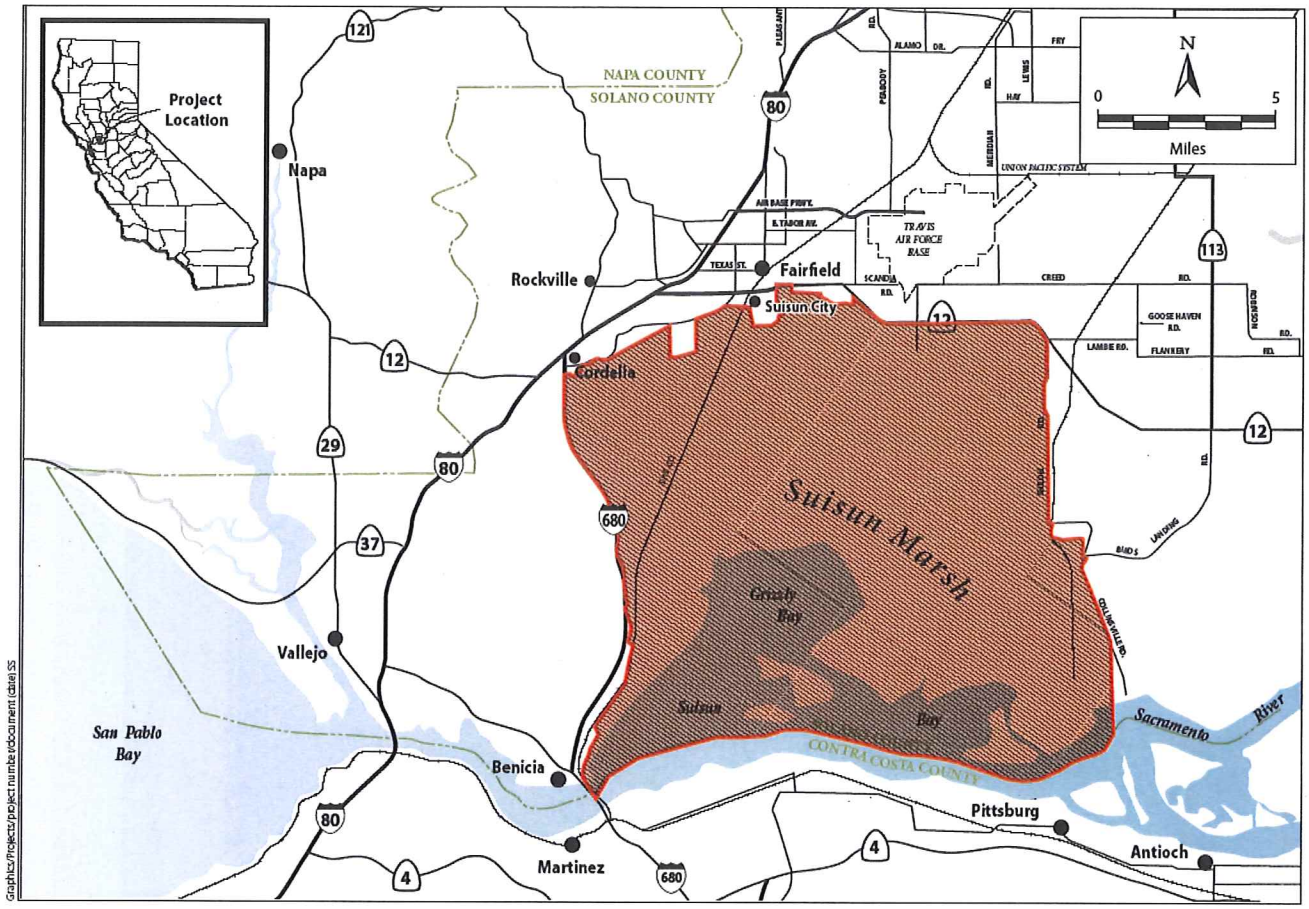
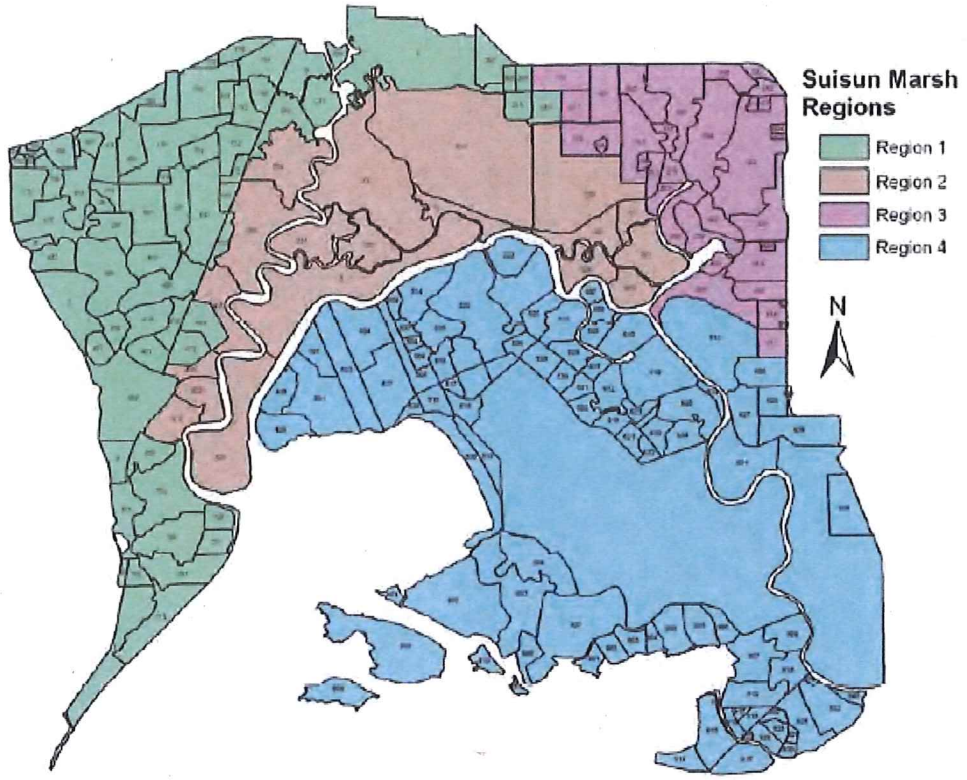


Figure 2. The proposed dredging volumes in Suisun Marsh (cubic yards) by region based upon the extent of exterior levees in each region.



	Region 1	Region 2	Region 3	Region 4	Montezuma Slough	Total
% of Levees by Region	30.0%	22.3%	7.6%	16.9%	23.2%	100%
Cubic Yards	30,000	22,300	7,600	16,900	23,200	100,000

Attachment 1

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

INCIDENTAL TAKE PERMIT NO. 2081-2014-012-03

PERMITTEE: **Suisun Resource Conservation District**

PROJECT: **Suisun Marsh Plan**

PURPOSE OF THE MMRP

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

OBLIGATIONS OF PERMITTEE

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

VERIFICATION OF COMPLIANCE, EFFECTIVENESS

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

TABLE OF MITIGATION MEASURES

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

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
PRE-CONSTRUCTION					
1	Designated Representative. Before starting Covered Activities, Permittee shall designate a representative (Designated Representative) responsible for communications with CDFW and overseeing compliance with the 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 the ITP.	ITP Condition # 6.1	Entire Project	Permittee	
2	Permittee Representative. Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information of a biological monitor (Permittee Representative) at least 30 days before starting Covered Activities. Permittee shall ensure that the Permittee Representative is knowledgeable of the surrounding environment and possess knowledge of the Covered Species. The Permittee Representative shall be responsible for monitoring Covered Activities to help minimize and avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. The Permittee Representative shall be an employee of the Suisun Resource Conservation District and the Permittee shall submit, to CDFW, a list of all employees who may fulfill the role of the Permittee Representative in writing before starting Covered Activities.	ITP Condition # 6.2	Entire Project	Permittee	
3	Permittee Representative Authority. To ensure compliance with the Conditions of Approval of the ITP, the Permittee Representative shall have authority to immediately stop any activity that does not comply with the ITP.	ITP Condition # 6.3	Entire Project	Permittee	
4	Education Program. Permittee shall conduct an education program during the Permittee's annual workshop. The program shall consist of a presentation from the Permittee Representative that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in the ITP.	ITP Condition # 6.4	Entire Project	Permittee	
5	Trash Abatement. The worksite foreman 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 at least once a week to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs. Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all temporary fill, construction refuse and debris.	ITP Condition # 6.5	Entire Project	Permittee	
DURING CONSTRUCTION					
6	Erosion Control Materials. Permittee shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as monofilament netting (erosion control matting) or similar material, in potential Covered Species' habitat.	ITP Condition # 6.6	Entire Project	Permittee	
7	Project Access. Project-related personnel shall access the Project Area using existing routes and shall not cross Covered Species' habitat outside or en route to the Project Area. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. If Permittee determines construction of routes for travel are necessary outside of the Project Area, the Designated Representative shall contact CDFW for written approval before carrying out such an activity. CDFW may require an amendment to the ITP, among other reasons, if additional take of Covered Species will occur as a result of the Project modification.	ITP Condition # 6.7	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
8	Staging Areas. Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the Project Area using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked Project Area unless provided for as described in Condition of Approval 6.7 of the ITP.	ITP Condition # 6.8	Entire Project	Permittee	
9	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.	ITP Condition # 6.9	Entire Project	Permittee	
10	CDFW Access. Permittee shall provide CDFW staff with reasonable access to the Project and mitigation lands under Permittee control, and shall otherwise fully cooperate with CDFW efforts to verify compliance with or effectiveness of mitigation measures set forth in the ITP. The Permittee shall provide the necessary safety gear, if required, for CDFW staff to access the work site.	ITP Condition # 6.10	Entire Project	Permittee	
11	Notification of Non-compliance. The Permittee shall immediately notify CDFW in writing if it determines that the Permittee is not in compliance with any Condition of Approval of the ITP, including but not limited to any actual or anticipated failure to implement measures within the time periods indicated in the ITP and/or this MMRP. The Designated Representative shall report any non-compliance with the ITP to CDFW within 24 hours.	ITP Condition # 7.1	Entire Project	Permittee	
12	Annual Status Report. Permittee shall provide CDFW with an Annual Status Report no later than January 31 of every year beginning with issuance of the ITP and continuing until CDFW accepts the Final Mitigation Report identified below. Each Annual Status Report shall include, at a minimum: (1) a general description of the status of the Project Area and Covered Activities, including actual or projected completion dates, if known; (2) a log indicating all Covered Activities conducted during the year and the associated club names; (3) a copy of the table in the ITP 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; (6) an accounting of the number of cubic yards of material dredged by region; and (7) an accounting of the number of acres of tidal wetlands created, by project, in Suisun Marsh for the prior calendar year as well as a running total since ITP issuance.	ITP Condition # 7.2	Entire Project	Permittee	
13	Notification of Take or Injury. Permittee shall immediately notify the Permittee Representative 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 Permittee Representative or Designated Representative shall provide initial notification to CDFW by calling the Regional Office at (707) 944-5500. The initial notification to CDFW shall include information regarding the location, species, 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.	ITP Condition # 7.4	Entire Project	Permittee	
14	Emergent Vegetation Protection. Permittee shall not disturb or uproot emergent vegetation during covered activities except as described in condition 8.8.4.	ITP Condition # 8.1	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
15	Managed Wetland Water Diversion Activities. Permittee shall administer and monitor all managed wetland water diversion activities of private landowners in Suisun Marsh that occur in areas that divert water from Delta Smelt, Longfin Smelt, and Chinook Salmon critical habitat as designated by the USFWS and NMFS. • Permittee shall inform landowners in January of each year of any water diversion restrictions that will be in place from February through March. The diversion restrictions can be found in the ACOE Regional General Permit [2012-00258N] and in the following Conditions 8.2.1.1 and 8.2.1.2. These diversion restrictions may be modified at any time, as conditions warrant, by the USFWS and NMFS. Permittee shall monitor all affected water intakes that are not screened to CDFW standards to ensure landowner compliance with current diversion restrictions. Permittee shall immediately notify noncompliant landowners of the actions necessary to become compliant with current diversion restrictions. Permittee shall also notify USFWS, NMFS, ACOE, and CDFW of any noncompliant water diversions. • Permittee shall notify CDFW, NMFS, and ACOE of the starting and closing dates of duck hunting season annually at least 30 days prior to the start of the season. Landowners diverting water from sloughs designated by NMFS (i.e., Montezuma Slough and its tributaries lower Nurse Slough [from the confluence with Denverton Slough to Montezuma], Denverton Slough; Cuttoff Slough [including Spring Branch Slough, first and second Mallard Branch Slough]; Suisun Slough, [from downstream of the confluence with Boynton Slough to Grizzly Bay; and Chipps Island]) shall use no more than 25% of the water control structure's diversion capacity from November 1 to the last day of duck hunting season. These landowners are prohibited from diverting water from designated sloughs from February 21 to March 31. The purpose of these diversion restrictions is to protect migrating salmonids. • Landowners diverting water from sloughs designated by USFWS (i.e., Montezuma Slough; Bay and Goodyear Slough; Cuttoff Slough [including Spring Branch Slough, first and second Mallard Branch Slough]; Suisun Slough, [from downstream of the confluence with Boynton Slough to Grizzly Bay; and Chipps Island]) shall use only 35% of the water control structure's intake capacity between April 1 and May 31. If, during this time, two out of the three CDFW 20-millimeter trawl surveys sites (sites 606, 609, and 610) estimate Delta Smelt densities greater than 20 Delta Smelt individuals per 10,000 cubic meters over a 2-week sampling period, all diversions from these sloughs shall use only 20% of the water control structure's intake capacity. Survey trawls shall take place at least once every 14 days between April 1 and May 31.	ITP Conditions # 8.2, 8.2.1, 8.2.1.1, 8.2.1.2	Entire Project	Permittee	
16	Coring and Repairs of Exterior Levees. Material shall remain on the crown or interior side of the levee during repairs. • All work activities below the mean high water mark shall be restricted to periods of low tide (within a 6-hour period, from 3 hours prior to low tide to 3 hours following low tide). • Permittee shall restrict levee repairs to periods of dry weather. • Permittee shall use all excavated material to backfill the trench. • Permittee shall complete repairs of levee breaches within 7 days of the breach.	ITP Conditions # 8.3, 8.3.1, 8.3.2, 8.3.3, 8.3.4	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
17	Riprap Placement. Permittee shall only place riprap in previously armored areas and in unarmored levee areas that are exposed to erosive forces. Permittee's placement of new riprap on unarmored levees shall not exceed 67 linear feet annually. • Permittee shall limit all work activities below the mean high water mark shall be restricted to periods of low tide (within a 6-hour period, from 3 hours prior to low tide to 3 hours following low tide). • Permittee shall use riprap that is free of erodible soils, litter, and materials that are deleterious to aquatic life. • Permittee shall not place riprap directly on emergent vegetation.	ITP Conditions # 8.4, 8.4.1, 8.4.2, 8.4.3	Entire Project	Permittee	
18	Alternative Levee Erosion Protective Techniques. Permittee shall use alternative levee erosion protective techniques whenever feasible, including but not limited to brush boxes, native vegetation planting, setback levees, and other biotechnical material and geotechnical levee design techniques. • Permittee shall limit all work activities below the mean high water mark shall be restricted to periods of low tide (within a 6-hour period, from 3 hours prior to low tide to 3 hours following low tide). • Permittee shall perform work by hand when installing alternative levee erosion protective techniques. • Permittee shall only use native material free of non-native, invasive plants.	ITP Conditions # 8.5, 8.5.1, 8.5.2, 8.5.3	Entire Project	Permittee	
19	Repairing, Installing, or Replacing Exterior Water Control Structures, Bulkheads, and Pipe for Existing Exterior Flood, Drain, or Dual Purpose. Permittee shall not change the existing use or diversion capacity when repairing or replacing exterior water control structures or pipes of exterior water control structures for flood purposes. • Permittee shall limit all work activities below the mean high water mark to periods of low tide (within a 6-hour period, from 3 hours prior to low tide to 3 hours following low tide). • Permittee shall locate all new and/or replacement drain pipes in the largest possible sloughs, or sloughs with the highest levels of tidal circulation possible, to minimize the possibility of degraded water quality conditions. • Permittee shall install new exterior drain structures where the discharge channel already exists. • Permittee shall use HDPE pipes and stainless steel and vinyl water control structure components when appropriate to extend the useful life of the structures and reduce maintenance. • Permittee shall pre-assemble all pipes before installation to minimize work time.	ITP Conditions # 8.6, 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5	Entire Project	Permittee	
20	Installing New Fish Screens. Permittee shall reduce fish entrainment loss throughout the Marsh by consolidating and/or equipping water control structures with state-of-the-art fish screens when practicable and funding allows. Permittee shall screen any new or enlarged exterior water control structures in accordance with CDFW's criteria.	ITP Condition # 8.7	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
21	Dredging Activities from Tidal Sloughs. Permittee shall restrict all in-water dredging activities to August 1–November 30, unless otherwise extended by CDFW in writing. • Permittee shall review each landowner's annual dredging proposal and allocate regional dredging volumes by habitat types not to exceed 100,000 cubic yards per year in Suisun Marsh. Permittee shall not dredge more than 1,000,000 cubic yards of material in a 10-year period. • Permittee shall use a clamshell dredge or long-reach excavator stationed on the levee crown or from a barge. No suction dredging is permitted. • Permittee shall not dredge within 200 feet of any storm drain outfall or urban discharge locations, unless preconstruction contaminate testing is conducted and test results are negative for substances deleterious to fish and wildlife. • Permittee shall avoid dredging in areas with emergent vegetation to the extent possible. Permittee shall not dredge in tidal wetland areas with emergent vegetation, adjacent to the levee, that are greater than 50 feet wide at mean sea level. Permittee shall not dredge in areas that have been tidally restored. • Permittee shall not dredge in an area more frequently than once every three years, i.e. the dredge cycle shall be once every three years or longer. • Permittee shall not dredge deeper than 4 feet deep from the top of the channel bed, per dredge cycle. • Permittee shall not allow any dredge material or any other substance deemed deleterious to fish and wildlife to enter the waterway or be placed where it could be washed into the waterway. Any contaminated water/material from project activities shall be pumped or placed into a holding facility and removed for proper disposal. In the event of a spill in to the waters of the State, The Permittee shall immediately notify the California Emergency Management Agency at 1-800-852-7550 and immediately initiate the clean-up activities. CDFW shall be notified by the Permittee at the contact information below and consulted regarding clean-up procedures.	ITP Conditions # 8.8, 8.8.1, 8.8.2, 8.8.3, 8.8.4, 8.8.5, 8.8.6, 8.8.7	Entire Project	Permittee	
22	Covered Species Mortality. Permittee shall preserve by freezing or placing in a container with 10 percent formalin solution any Covered Species that is killed during Project activities. Permittee shall record the time and exact locations of any incidental take, method of take, length of time from death to preservation, water temperature, and other relevant information shall be recorded in writing. Permittee shall deliver preserved individuals to a CDFW or USFWS laboratory that CDFW identifies at the time the Permittee contacts CDFW as required by Condition 7.4 of the ITP.	ITP Condition # 8.9	Entire Project	Permittee	
POST-CONSTRUCTION					
23	Final Mitigation Report. No later than 45 days after completion of all ITP mitigation measures, Permittee shall provide CDFW with a Final Mitigation Report. The Permittee Representative shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Annual Status Reports; (2) a copy of the table in the ITP 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 the 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.	ITP Condition # 7.3	Post-construction	Permittee	