Regulatory Division
450 Golden Gate Ave., 4th Floor
San Francisco, CA 94102-3406

US Army Corps of Engineers ®
San Francisco District

SAN FRANCISCO DISTRICT

PUBLIC NOTICE

PROJECT: Reissuance of Regional General Permit 3 for Suisun Marsh Managed Wetlands Operations and Maintenance

PUBLIC NOTICE NUMBER: SPN-2012-00258N
PUBLIC NOTICE DATE: June 30, 2022
COMMENTS DUE DATE: July 30, 2022

PERMIT MANAGER: Jayme Ohlhaver TELEPHONE: 415-503-6834 E-MAIL: jayme.a.ohlhaver@usace.army.mil

1. **INTRODUCTION**: Suisun Resource Conservation District (SRCD) (POC: Steve Chappell, 707-425-9302), 2544 Grizzly Island Road, Suisun, CA 94585; California Department of Fish and Wildlife (DFW) (POC: Greg Martinelli, 2825 Cordelia Road, Suite 100, Fairfield, CA 94534); California Department of Water Resources (DWR) (POC: Hoan Tang 3500 Industrial Boulevard, West Sacramento, CA 95691); U.S. Bureau of Reclamation (USBR) (POC: Armin Halston, 801 I Street, Suite 140, Sacramento, CA 95814) have applied to the U.S. Army Corps of Engineers (the Corps), San Francisco District, for a Department of the Army Reissuance of Regional General Permit 3 (RGP3) – Suisun Marsh Managed Wetlands Operations and Maintenance Projects. RGP3 is currently set to expire on March 1, 2023. RGP3 currently authorizes the permittees to conduct annual maintenance activities with minor environmental impacts within the managed wetlands of Suisun Marsh. The RGP3 reissuance would authorize the aforementioned currently implemented activities for another five years. This Department of the Army permit application is being processed pursuant to the provisions of Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 et seq.), and Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 et seq.).

2. **PROPOSED PROJECT**:

Project Site Location: The management area covered by RGP3 is located in the Suisun Marsh, which is bounded to the west by Interstate 680, Highway 12 to the north, Shiloh Road and Collinsville Road to the east, and Suisun Bay to the south, in southern Solano County west of the Sacramento river Delta, as shown on the attached vicinity map (Figure 1).

Project Site Description: The Suisun Marsh (the Marsh) is one of the largest contiguous estuarine marshes in the United States and is comprised of several islands. Most of these islands are subdivided into distinct land ownerships. Landowners in the Marsh include the State of California, non-profit organizations, private hunting clubs comprised of multiple owners, and private individuals. There are over 130 privately-owned managed wetlands and state-owned DFW properties in the Suisun Marsh.

A majority of the islands in the Suisun Marsh are ringed with large exterior levees and are typically 12 feet wide at the crown with 2:1 side slopes (Figure 2a). Levee construction began in the 1850s to convert tidal marsh to farmland. As agricultural and cattle grazing activities became unprofitable, portions of the land were subsequently converted to permanently and seasonally flooded wetlands.

Managed wetlands are contained within the exterior levees and emergent wetlands are often found between the exterior levees and the slough. The managed wetlands of the Marsh are managed specifically for nesting and wintering waterfowl and provide important habitat for a variety of resident and migratory waterfowl and shorebirds and other native and special-status species.

In the managed wetlands, landward of the exterior levees, are usually a series of interior levees, 2 to 4 feet in height (Figure 2b), often topped with an unpaved gravel or dirt road.

The interior of most of the islands also contains a series of primary and secondary ditches which are connected to the tidal sloughs by exterior water control structures. As

shown in Figure 2c, these ditches are trapezoidal, earthen channels. The primary ditches are typically 3 to 3.5 feet deep and 12 to 20 feet wide with a 2:1 side slope. Secondary ditches are typically 2 to 2.5 feet deep, 6 to 10 feet wide, also with a side slope of 2:1. Often there are smaller spreader ditches. These ditches are triangular 'V' shaped ditches (Figure 2d). These spreader ditches are up to 18 inches deep.

Water is diverted from sloughs or bays through exterior water control structures into the ditches and is used to seasonally flood the managed wetlands of the islands. At other times, water is passively drained by gravity through water control structures or actively pumped off the island into the adjacent sloughs or bays. As shown in Figure 2e, water control structures consist of a culvert which runs through levee and a mechanism (such as a screw or flap gate) to control the direction and amount of flow through the pipe. The water control structures and channels allow the landowners to control the amount and duration of water on their property.

Interior water control structures allow water to pass through interior levees. These structures connect secondary and primary ditches to each other. Interior water control structures consist of 18 to 48 inch diameter culverts, flap gates, screw gates, weir boxes, and flashboard risers. Historically metal water control structures have been used in the Marsh, but due to the corrosive environment of the brackish waters, the useful life of these structures was short. High-density polyethylene (HDPE) pipes are now being used in most of the water control structure replacements and installations to extend the life of the structures and reduce future maintenance needs. These interior water control structures also enable landowners to vary water levels on adjacent areas of the managed wetland independently.

Exterior water control structures are similar to interior water control structures except they are typically larger (24 inches to 48 inches in diameter pipes) and allow water to pass through exterior levees. Exterior water control structures connect sloughs or bays to primary ditches.

Project Description: Activities conducted under the requested reissuance of RGP3 would permit both private (as represented by SRCD) and public (DFG and DWR) landowners to maintain and upgrade existing infrastructure and facilities, install new infrastructure, and improve management capabilities of existing wetland units. The proposed activities would include only currently implemented activities. No modifications to currently implemented activities or new activities not previously been covered by RGP3 are proposed. The activities proposed for authorization under RGP3 are one component of the Suisun Marsh Habitat Management, Preservation, and Restoration Plan (SMP), a comprehensive 30-year plan designed to address the management of the varied resources within the Suisun Marsh.

The proposed RGP3 renewal would be valid from January 1, 2023 until December 31, 2027. Specifically the permit would authorize the activities described below.

Repairing Existing Interior and Exterior Levees: This action involves the improvement or repair of levees by using spoils from other permitted activities such as clearing interior ditches, constructing new interior ditches, or grading pond bottoms. Vegetation growth on levees can require mowing to maintain condition and to assess repair needs. The spoils would be placed on the crown and interior backslope of the levee with an excavator, dozer, or box scraper. On rare occasions, exterior levee integrity is compromised, (from rodent holes, storm damage, or unanticipated overtopping of the levee crown), allowing uncontrolled tidal flows to enter the managed wetland which can cause levee breaches. If the exterior levee breach can be repaired utilizing on site material consistent with existing permit terms and conditions, the levee integrity is restored on the next appropriate low tide cycle. If necessary, materials may be imported from an upland source within or outside the Marsh. Aggregate base rock may be placed on the crown of levees to prevent road surface degradation. Work generally would occur in late summer, and approximately 500 linear feet of levee can be repaired per day.

Repairing Existing Exterior Levees: The most common practices for repairing exiting exterior levees in Suisun Marsh involves obtaining suitable material from five primary sources: 1) the removal of accumulated silt and vegetation from water circulation ditches in managed wetlands, 2) construction of new interior ditches or swales, 3) the grading of pond bottoms and upland areas in the managed wetland, 4) importation of material from a source outside of the Marsh (must be tested prior to placement) and 5) dredging from the tidal sloughs and dredger cuts under the Corps Letter of Permission (LOP) (Permit # 2012-00259N). The placement of these materials are used to

raise the levee crown to its original or design height, and improvement of interior side slopes.

Repair of existing levees typically takes place from June through September. Approximately 500 linear feet can be completed in 1 day.

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.

This activity currently is limited based on the actual lineal footage of exterior levee for each ownership. This administrative approach allows landowners the placement of up to 1.5 cubic yards (cy) of levee material per linear foot on average annually. One levee segment may require no work in a given year, and a different levee segment may require 3.0 cy per linear foot because of flood damage. This volume limitation would average out over the individual property's total levee system.

Repairing Existing Interior Levees: Construction methods for interior levee repair is the same as those described above for exterior levees, but the volume of required material is typically smaller per lineal foot and dredging under the LOP is not an authorized source of material for interior levee maintenance.

Coring Existing Interior Levees: The coring of levees is intended to stop the flow of water through rodent holes and cracks in levees. To core a levee, typically a 2-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 1 day.

Grading Pond Bottoms for Water Circulation: To improve water circulation by re-contouring low areas and raising pond bottoms and provide material for levee maintenance, material is graded from high-ground areas or pond bottoms. The raising of low pond bottom areas improves circulation and drainage in the managed wetlands. Grading also can include the creation or maintenance of swales, typically 2 feet deep with gradual slopes. This work is completed with a box scraper pulled by a low-ground pressure dozer or tractor. Work generally is done June through August. Approximately 700 cy can be graded per day.

Clearing Existing Interior Ditches: This action is the removal of accumulated silt, emergent vegetation, and aquatic vegetation from primary and secondary interior ditches with an excavator to eliminate water-flow restrictions. Clearing of material from interior ditches would also include the Roaring River Distribution System (RRDS), Morrow Island Distribution System (MIDS), and Goodyear Slough Outfall (GYSO) areas, which are managed by DWR. Primary interior ditches are typically 4-to 4.5-foot-deep trapezoids which are 12 to 20 feet wide at the surface and have a 2:1 side slope. Secondary ditches are typically also trapezoidal, 3 to 3.5 feet deep, and 6 to 10 feet wide with 2:1 side slopes. Although the DWR facilities are unique in size, they are cleared the same way as typical ditches.

Ditch clearing would generally be done during the months of June through September using a long-reach excavator, harvester, or other drag method to remove sediments. Approximately 900 linear feet and 1,500 cy of material can be cleared from a typical ditch in 1 day. Excavation within typical interior ditches and DWR interior ditches would be administered by SRCD to ensure that the overall quantity of material removed from interior ditches does not exceed the maximum allotment of 443,000 cy per year currently allowed under the RGP. DFW and landowners would follow the allotment schedule as provided in the existing RGP that bases the amount of material that can be removed on the size of the parcel that encompasses the ditch. The material excavated from these ditches could be spread evenly on adjacent land or used for levee repairs. Sidecast materials may be left in place to dry for up to 1 year to ensure that all materials are dried before being used for an authorized activity (levee maintenance, raising pond bottom sinks, or grading) or removed to an area outside Corps jurisdiction (crown of a levee or hauled offsite to another upland area). If deposited on the levee, spoils could be moved using a dozer or box scraper. If deposited elsewhere, the material could be placed in trucks and hauled to the upland discharge location.

The applicants propose that excavation within the DWR facilities be limited to an average of 1.5 cy per linear foot of DWR levee, which would amount to 3 cy per linear foot of ditch for RRDS, GYSO, and MIDS, which have levees on both sides. The material excavated from the DWR facilities would be placed on the crown and slopes of the levees confining the facility or hauled offsite to an upland disposal location as described above to be stockpiled and used for other authorized activities within or outside the marsh.

Constructing New Interior Ditches: This action is the removal of pond bottom material with an excavator to create a new interior ditch for improved water circulation. Approximately 600 linear feet of ditch can be constructed in 1 day, and work generally would be conducted during the months of June through August. A long-reach excavator may be used to remove the silt and spread materials evenly on adjacent land. However, spoils may be sidecast and left adjacent to the ditch for up to 1 year; then they must be used for an authorized activity (levee maintenance, raising of pond bottom sinks, or grading) or removed to an area outside Corps jurisdiction (crown of a levee). Spoils are moved using a dozer or box scraper.

Creating Pond Bottom Spreader V-Ditches: V-ditches are 18-by-18-inch or 24-by-24-inch ditches created by pulling a V-ditch plow behind a tractor. These V-ditches facilitate circulation and drainage of low areas and sinks. Occasionally, a ditch may be constructed in high areas to improve drainage by connecting an isolated wet area to other draining wet areas. Typically, these ditches silt in quickly and last only 1 to 2 years after creation. These ditches normally are created after the ponds have drained for the season, generally June through August, and 2,000 feet can be constructed per day. Spoil materials typically remain on the sides of the V-ditches, although they may be spread back into the pond bottom to further improve the low areas, or they can be flattened adjacent to the V-ditch.

Repairing Existing Interior Water Control Structures: This repair involves the replacement of component parts of pipes through interior levees (gates, stubs, or couplers) but not replacement of the pipe itself. Work is done by hand (uncoupling the old structure and re-coupling the new structure), and generally a ground crew removes the damaged structure and installs the new structure on the end on the existing pipe and walkways. This work typically is completed in the summer, when the managed wetlands are dry.

Replacing Pipe for Existing Interior Water Control Structures or Installing New Interior Water Control Structures: This activity includes the replacement of a pipe for an existing interior water control structure or the installation of a pipe for a new interior water control structure. If a new structure is being installed, the new structure is assembled on the crown of the levee, a trench is excavated laterally through the levee, the new pipe is placed in the trench, the trench is backfilled, and the fill is compacted. If a pipe is being replaced, the trench is excavated at the site of the old pipe and that pipe is removed. Similar to installing new pipe, the replacement pipe is placed in the trench and backfilled. However, when feasible, new drainage pipes would be placed where they can be consolidated or drain into an existing ditch. Occasionally, an interior ditch cannot be drained sufficiently for pipe replacement. In these instances a coffer dam or sheetpiles may be used to retain the water temporarily until the pipe is replaced.

Many water control structures have walkways that run from the levee to the end of the pipe. These walkways include pilings, walkway boards, and handrails. These structures strengthen the gate by providing a grounded structure for frame attachment, and they provide a means by which wetland managers can access the gate for operation. Any necessary repair to these structures typically is done during pipe replacement. However, some repairs may need to be done more frequently, especially replacement of walkway boards or handrails.

This work typically is completed in the summer when the managed wetlands are dry.

Installing New, Relocating, or Replacing Existing Blinds: Duck blinds are plastic, fiberglass, or metal structures (3 feet x 4 feet x 8 feet) placed in the ground to conceal the hunter. When an in-ground blind is replaced, the old blind is excavated from the ground, and a new blind is placed in the void, which can be as deep as 4 feet. This work is completed with a dozer and/or excavator. The blind is placed and secured with vertical timbers that are pushed into the ground adjacent to the blind and horizontal cross timbers. Then material from the pond bottom is graded to form an island to conceal the sides of the blind.

Discing Managed Wetlands: Discing is done in managed wetlands in the spring or late summer to clear problematic vegetation, reduce the production of vector mosquitoes, break up the soil for seedbed preparation, smooth excavated material, fill cracks in soil, or create fire breaks. A disc is pulled behind a tractor or dozer. Depending upon the wetland management and vegetation objectives, discing can occur annually in upland areas to promote annual grasses and cereal grain production and once every two to five years in wetland areas to set back plant succession. Discing is voluntarily limited to twenty percent of the total acreage of a property per year.

Installing Drain Pumps and Platforms: Drain pumps are installed on wooden platforms built to support them. The pump and platform are installed on the inland side of the exterior levee. Occasionally, the pump discharge pipe will be set high in the profile of the exterior levee so that the pipe does not limit levee access and allows discharge at high tide.

Replacing Riprap on Interior Levees: Riprap is replaced on interior levees, including existing riprap on the RRDS, GYSO, and MIDS, in the minimum amount necessary for bank stabilization and in areas around water control structures where water flow and eddies erode the ditch bank and interior levee toe. Riprap will be replaced on interior levee banks only in those areas with existing riprap. Riprap is placed on the interior levees using a long-reach excavator that is located on the levee crown. Approximately 300 feet of riprap can be placed per day. Riprap generally is replaced during July through September.

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 replaced 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. Replacement of exterior levee riprap generally is done during July through September during dry periods; however, sometimes urgent repairs are required in the winter and spring during storm and flood events or as a result of unforeseen levee damages. 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 dragline or clamshell dredge. The barge method is used less frequently as it requires greater channel widths and is more expensive. The amount of exterior levee riprap placed depends on site specific conditions; however typically the minimum amount of riprap is used.

Placing New Riprap in Areas That Were Not Previously Riprapped Interior and 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. This activity addresses those areas that currently do not have riprap but that may be determined in the future to require such treatment.

This activity allows the placement of up to 334 lineal feet of new riprap on exterior levees over the 5-year permit (approximately 66 lineal feet per year). Placement of new riprap on the side slopes of interior ditches is limited to 200 linear feet per year on average for the RGP 3. New riprap placement will not affect emergent vegetation. Riprap could be placed on the levee using a long- reach excavator or a clamshell or dragline dredge. Placement of riprap would typically 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 cy or by barge with a 400 cy capacity. For interior levees, this activity is needed occasionally where the velocity of water flowing through an exterior water control structure causes scouring eddies and bank erosion of inter-levee toes or wind wave fetch erodes interior levee toe.

New 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:

- 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.

- Channel depth on the face of the levee slope is deeper than 3 feet below Mean Tide Level (MTL) and the levee slope is steeper than 3:1 (H:V); riprap would be applied to reduce erosion potential without consideration for incorporation of vegetation.

- 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.

- 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 also would be applied where it is biologically appropriate.

If new riprap is placed on either interior or exterior levees, BMPs would be implemented to reduce the environmental effect.

Coring of Existing Exterior Levees: This activity is the same as described for interior levees (above).

Repairing Exterior Water Control Structures (Gates, Couplers, and Risers): Repairing exterior water control structures involves the replacement of components of pipes 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.

Installing or Replacing Pipe for Existing Exterior Flood, Drain, or Dual-Purpose Gates: This activity is the replacement of an exterior water control structure (pipe, gates, stubs, and couplers) that is 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 for that parcel 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 begin leaking and fail within 8 to 15 years. If an exterior pipe leaks, habitat management and maintenance activities would be compromised as a result of uncontrolled flooding of the managed wetland. Therefore, metal pipes typically are replaced with high-density polyethylene (HDPE) pipes, which can potentially last indefinitely.

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 old pipe, and the pipe is removed. Replacement pipes typically are placed in the same location as the existing structure, the trench is backfilled, and the backfilled material is compacted. Either a dozer or an excavator is 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 4 days and generally would be done March through September. 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 demobilization and site clean-up.

If a new drain pipe 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, with a flap gate 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 drain pipe.

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 typically are installed near water control structures or location of high wind and wave fetch 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 into place. 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, vinyl or metal sheetpile. This activity generally would be implemented in the summer months.

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 spring, summer, and fall months.

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 Regional General Permit (RGP). Wetland impacts from screening diversions to protect fish would not exceed 1,000 square feet per year or a total of 5,000 square feet over the 5-year permit period. All Suisun Marsh screens would be designed to comply with U.S. Fish and Wildlife Service (USFWS) delta smelt approach velocities of 1.2 feet 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-foot, 10-foot, and 12-foot 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, when installing a new diversion for an individual ownership or the 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 landside of the levee. These activities include water control installation, storage platform construction, and control center platform installation.

This activity generally would be implemented in the summer months.

Installing Alternative Bank Protection such as Brush Boxes, Biotechnical Wave Dissipaters, and Vegetation on Exterior and Interior Levees: Pursuant to previous Biological Opinions (BO) from the National Marine Fisheries Service (NMFS) and the USFWS, SRCD was 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 exterior levees while also providing fish habitat. The installations generally are 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 tree stakes. Brush boxes and brush bundles are generally dead branches that are staked into the ground. 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 macroinvertebrates 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. The following criteria would be considered in determining the appropriateness of vegetation, either by itself or in combination with riprap, at each site:

- When channel velocities are low enough to prevent loss, vegetation solutions can be installed to halt erosion processes along levee slopes and natural channel bank sections.

- If channel depth on the face of the levee slope is less than 3 feet below mean tide level (MTL), i.e., mid tide level, and the levee slope is less than 3:1 (H:V), vegetation solutions can be installed to halt erosion processes along levee slopes and natural channel bank sections.

- If levee slopes provide suitable foundations, brush boxes can be installed at various elevations to create a "benched" sequence up the slope and reduce or stop erosion in areas where scallop failures have occurred.

- If shallow water, shallow slopes, benches, or shoal exists, vegetation can be installed to greatly reduce wake energy and provide a low-maintenance erosion-reduction measure.

- If fetch length is less than 1,000 feet in the direction of the predominant southeast to southwest winds during high-water conditions (e.g., winter storms, spring tides) or prevailing winds during all other times (typically from the west), vegetation solutions should be applied to the upper slope of the levee to dissipate wind-driven waves and reduce erosion potential.

Constructing Cofferdams in Managed Wetlands: Cofferdams are temporary earthen structures used to cross interior ditches or prevent interior water from flowing into construction sites, in support of other permitted construction activities (e.g., exterior pipe replacement) and required BMPs. Cofferdams are temporary and are constructed from material from the levee toe, pond-bottom grading, or other excavated areas in the managed wetlands. The volume of material used to transverse the ditch is limited to that required to stop the flow of water and provide adequate width to support equipment access to both sides of the ditch. During installation, a long-reach excavator or dozer places or pushes material from the adjacent levee crown or field area into the ditch. Upon completion of the associated work activities, the cofferdam or crossing is excavated and removed from the ditch and the ditch is restored to its original width and depth. Upon removal of the cofferdam, all material is placed on the crown and backslope of the exterior levee or is spread out over the adjacent interior ditch bank or levee. An alternative to cofferdams is a sheetpile that can be pushed across the ditch profile into the levee toe with a long-reach excavator and removed upon completion of construction. Sheetpiles could be used instead of or in conjunction with cofferdams. This activity generally would be implemented in the summer months.

Suisun Marsh Salinity Control Gate Repair and Maintenance: While operation of the Suisun Marsh Salinity Control Gates (SMSCG) is covered under the Long Term Operation of the Central Valley Project and State Water Project (Long Term Ops), maintenance and repair of the facility would need to be covered by the RGP. Flashboards are installed and removed on an annual basis by means of either a land-based crane on the banks of Montezuma Slough or a barge crane. Repairs and maintenance would restore normal capacity to the facility and include servicing, replacing, and installing sections and pieces of the radial gates, boat locks, and appurtenant structures that are connected to or associated with the entire facility. Most work is done above water from a boat or the superstructure while sections are hoisted out of the water. This activity is conducted by DWR.

Roaring River Distribution System Fish Screen Cleaning, Repair and Maintenance: Similar to the SMSCG, the RRDS operation is covered under Long Term Ops, but maintenance and repair of the facility would need to be covered by the RGP. The fish screens are cleaned by successively lifting each of the stationary vertical screen panels out of the water and pressure washing the silt and vegetation accumulation off of the screens. During the flood-up season (generally August through October), this activity can be conducted up to once a day. During the rest of the year, this activity is conducted less frequently on an as-needed basis. This activity would restore normal capacity to the facility, and is conducted by DWR.

Salinity Monitoring Station Maintenance, Repair, and Replacement: Infrequent major maintenance activities do not include work done in the water. 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, and clearing accumulated sediment from stilling wells. 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 an excavator or boomtruck 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 by DWR about once every 5 to 10 years at a site.

DWR 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. This activity is conducted by DWR.

Salinity Monitoring Station Relocation, Installation, and Removal: Salinity monitoring stations may need to be relocated, installed, or removed because of regulatory requirements, physical constraints, the need to obtain more reliable data, the data no longer being required, or other reasons. Maintenance 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.

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 square feet. The removal of a monitoring station usually takes about 8 hours over the course of approximately 3 days.

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, 1 day to 2 weeks depending on location, involves the use of a truck to haul equipment, and may require an excavator, barge, crane, and small boat to install the stilling basin. The total disturbance would not exceed 50 square feet. This activity is conducted by DWR or a contractor.

Basic Project Purpose: The basic project purpose comprises the fundamental, essential, or irreducible purpose of the project, and is used by the Corps to determine whether the project is water dependent. The basic project purpose is maintenance and water management.

Overall Project Purpose: The overall project purpose serves as the basis for the Section 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals for the project while allowing a reasonable range of alternatives to be analyzed. The overall project purpose is to maintain existing infrastructure

and facilities, and improve management capabilities of existing wetland units within the Suisun Marsh.

Project Impacts: The total amount of annual excavation and temporary fill for the project would vary from year to year, but would be limited to a maximum of 459,000 cubic yards of earthen material. This is the same cap currently allowed under the existing RGP3. Interior ditch cleaning by property owners of managed wetlands typically ranges from between 27,000 and 60,000 cubic yards of excavation. However, in years when maintenance of the RRDS, MIDS, and GYS facilities is required, the amount of material excavated could approach the 459,000 cubic yard maximum. Pond bottom grading would also vary from year to year and is limited to 1,836,000 cy of earth material. Grading and contouring the managed wetlands typically ranges between 44,000-140,000 cy of excavation. Riprap would be limited to the replacement of existing riprap, and placement in exposed areas that were not previously riprapped. Placement of new riprap in areas not previously riprapped on the exterior side of levees would be limited to 66 linear feet per year on average for the RGP. Placement of riprap on the side slopes of interior ditches would not exceed 200 linear feet per year on average for the RGP.

Proposed Mitigation: Authorizations under the reissued RGP3 would need to have no more than minimal, individual and cumulative, impacts on the aquatic environment. Continuation of existing best management practices (BMPs) would help to avoid and minimize adverse effects. These BMPs include standard design features and construction practices, riprap placement BMPs, biological resources BMPs, and water diversion restrictions. Impacts related to the ongoing operation and maintenance of public and private managed wetlands in the proposed project area, including DWR facilities, were offset previously by the Suisun Marsh Mitigation Agreement in 2005. Under this agreement, the applicants continue to preserve, manage, and maintain 2,500 acres of managed and tidal wetlands as conservation areas. The Suisun Marsh Mitigation Agreement was implemented to cover the additional permanent impacts to waters of the United States resulting from the activities proposed under this RGP3 reissuance

3. **STATE AND LOCAL APPROVALS**:

Water Quality Certification: State water quality certification or a waiver thereof is a prerequisite for the issuance of a Department of the Army Permit to conduct any activity which may result in a fill or pollutant discharge into waters of the United States, pursuant to Section 401 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1341 *et seq*.). The applicant is hereby notified that, unless USACE is provided documentation indicating a complete application for water quality certification has been submitted to the RWQCB within 30 days of this Public Notice date, the District Engineer may consider the Department of the Army permit application to be withdrawn. No Department of the Army Permit will be issued until the applicant obtains the required certification or a waiver of certification. A waiver can be explicit, or it may be presumed if the RWQCB fails or refuses to act on a complete application for water quality certification within 60 days of receipt, unless the District Engineer determines a shorter or longer period is a reasonable time for the RWQCB to act.

Water quality issues should be directed to the Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, California 94612, by the close of the comment period.

Coastal Zone Management: Section 307(c) of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. § 1456(c) *et seq*.), requires a non-Federal applicant seeking a federal license or permit to conduct any activity occurring in or affecting the coastal zone to obtain a Consistency Certification that indicates the activity conforms with the state's coastal zone management program. Generally, no federal license or permit will be granted until the appropriate state agency has issued a Consistency Certification or has waived its right to do so. Since the project occurs in the coastal zone or may affect coastal zone resources, the applicant has obtained Consistency Determination from the San Francisco Bay Conservation and Development Commission to comply with this requirement.

Coastal zone management issues should be directed to the Executive Director, San Francisco Bay Conservation and Development Commission, 375 Beale St., Suite 510, San Francisco, CA 94105 by the close of the comment period.

4. **COMPLIANCE WITH VARIOUS FEDERAL LAWS**:

National Environmental Policy Act (NEPA): Upon review of the Department of the Army permit application and other supporting documentation, USACE has made a *preliminary* determination that the project neither qualifies for a Categorical Exclusion nor requires the preparation of an Environmental Impact Statement for the purposes of NEPA. At the conclusion of the public comment period, USACE will assess the environmental impacts of the project in accordance with the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347), the Council on Environmental Quality's regulations at 40 C.F.R. § 1500-1508, and USACE regulations at 33 C.F.R. § 325. The final NEPA analysis will normally address the direct, indirect, and cumulative impacts that result from regulated activities within the jurisdiction of USACE and other non-regulated activities USACE determines to be within its purview of Federal control and responsibility to justify an expanded scope of analysis for NEPA purposes. The final NEPA analysis will be incorporated in the decision documentation that provides the rationale for issuing or denying a Department of the Army Permit for the project. The final NEPA analysis and supporting documentation will be on file with the San Francisco District, Regulatory Division.

Endangered Species Act (ESA): Section 7(a)(2) of the ESA of 1973, as amended (16 U.S.C. § 1531 *et seq*.), requires Federal agencies to consult with either the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) to ensure actions authorized, funded, or undertaken by the agency are not likely to jeopardize the continued existence of any Federally-listed species or result in the adverse modification of designated critical habitat. As the Federal lead agency for the SMP, the USBR will be responsible for determining the presence or absence of Federally-listed species and designated critical habitat, and the need to conduct consultation. To complete the administrative record and the decision on whether to issue a Department of the Army Permit for the project, the Corps will obtain all necessary supporting documentation from the USBR concerning the consultation process. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit.

The USBR initiated formal Section 7 consultation with NMFS on June 7, 2012, for the project's effects on the following federally listed fish species: North American green sturgeon (*Acipenser medirostris*), Central California Coast threatened steelhead (*Oncorhynchus mykiss*), Central Valley threatened steelhead (*O. mykiss*), Central Valley spring-Run threatened Chinook salmon (*O. tshawytscha*), and Sacramento River winter-run endangered Chinook (*O. tshawytscha*); and designated critical habitat for North American green sturgeon.

The USBR initiated formal Section 7 consultation with the USFWS on June 6, 2012 for the project's effects on the following endangered birds, mammals, and plants: salt marsh harvest mouse (*Reithrodontomys raviventris halicoetes*), California clapper rail (*Rallus longirostris obsoletus*), Soft bird's beak (*Chloropyron molle ssp. molle*), delta smelt (*Hypomesus transpacificus*), California least tern (*Sternula antillarum browni*), and Suisun thistle (*Cirsium hydrophilum var. hydrophilum*); and designated critical habitat for delta smelt. The work authorized under this permit could adversely and/or beneficially impact endangered species.

Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA): Section 305(b)(2) of the MSFCMA of 1966, as amended (16 U.S.C. § 1801 *et seq*.), requires Federal agencies to consult with the NMFS on all proposed actions authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH). EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. EFH is designated only for those species managed under a Federal Fisheries Management Plan (FMP), such as the *Pacific Groundfish FMP*, the *Coastal Pelagics FMP,* or the *Pacific Coast Salmon FMP*. As the Federal lead agency for this project, the U.S. Bureau of Reclamation made an initial determination that the project may result in adverse impacts to EFH for Chinook salmon, and consequently initiated consultation with NMFS for these potential impacts on June 7, 2012. To complete the administrative record and the decision on whether to issue a Department of the Army Permit for the project, the Corps will obtain all necessary supporting documentation from the U.S. Bureau of Reclamation concerning the consultation process. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit for the project.

Marine Protection, Research, and Sanctuaries Act (MPRSA): Section 302 of the MPRSA of 1972, as amended (16 U.S.C. § 1432 *et seq*.), authorizes the Secretary of Commerce, in part, to designate areas of ocean waters, such as the Cordell Bank, Gulf of the Farallones, and Monterey Bay, as National Marine Sanctuaries for the purpose of preserving or restoring such areas for their conservation, recreational, ecological, or aesthetic values. After such designation, activities in sanctuary waters authorized under other authorities are valid only if the

Secretary of Commerce certifies that the activities are consistent with Title III of the Act. No Department of the Army Permit will be issued until the applicant obtains any required certification or permit. The project does not occur in sanctuary waters, and a *preliminary* review by USACE indicates the project is not likely to affect sanctuary resources. This presumption of effect, however, remains subject to a final determination by the Secretary of Commerce or his designee.

National Historic Preservation Act (NHPA): Section 106 of the NHPA of 1966, as amended (16 U.S.C. § 470 *et seq*.), requires Federal agencies to consult with the appropriate State Historic Preservation Officer to take into account the effects of their undertakings on historic properties listed in or eligible for listing in the *National Register of Historic Places.* Section 106 of the Act further requires Federal agencies to consult with the appropriate Tribal Historic Preservation Officer or any Indian tribe to take into account the effects of their undertakings on historic properties, including traditional cultural properties, trust resources, and sacred sites, to which Indian tribes attach historic, religious, and cultural significance. As the Federal lead agency for this project, the U.S. Bureau of Reclamation will be responsible for determining the presence or absence of historic properties or archaeological resources, and the need to conduct consultation. To complete the administrative record and the decision on whether to issue a Department of the Army Permit for the project, the Corps will obtain all necessary supporting documentation from the applicant concerning the consultation process. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit for the project. The U.S. Bureau of Reclamation has initiated a programmatic consultation with the State Historic Preservation Officer (SHPO), but the project is not anticipated to have any potential to affect cultural resources. If unrecorded archaeological resources are discovered during project implementation, those operations affecting such resources will be temporarily suspended until the Corps concludes Section 106 consultation with the State Historic Preservation Officer or the Tribal Historic Preservation Officer to take into account any project related impacts to those resources.

5. **COMPLIANCE WITH THE SECTION 404(b)(1) GUIDELINES**: Projects resulting in discharges of dredged or fill material into waters of the United States must comply with the Guidelines promulgated by the Administrator of the Environmental Protection Agency under Section 404(b) of the Clean Water Act (33 U.S.C. § 1344(b)). An evaluation pursuant to the Guidelines indicates the project is dependent on location in or proximity to waters of the United States to achieve the basic project purpose. This conclusion raises the (rebuttable) presumption of the availability of a practicable alternative to the project that would result in less adverse impacts to the aquatic ecosystem while not causing other major adverse environmental consequences. The applicant has been informed to submit an analysis of project alternatives to be reviewed for compliance with the Guidelines.

6. **PUBLIC INTEREST EVALUTION**: The decision on whether to issue a Department of the Army Permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the project and its intended use on the public interest. Evaluation of the probable impacts requires a careful weighing of the public interest factors relevant in each particular case. The benefits that may accrue from the project must be balanced against any reasonably foreseeable detriments of project implementation. The decision on permit issuance will, therefore, reflect the national concern for both protection and utilization of important resources. Public interest factors which may be relevant to the decision process include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

7. **CONSIDERATION OF COMMENTS**: USACE is soliciting comments from the public; Federal, State, and local agencies and officials; Native American Nations or other tribal governments; and other interested parties in order to consider and evaluate the impacts of the project. All comments received by USACE will be considered in the decision on whether to issue, modify, condition, or deny a Department of the Army Permit for the project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, and other environmental or public interest factors addressed in a final environmental assessment or environmental impact statement. Comments are also used to determine the need for a public hearing and to determine the overall public interest in the project.

8. **SUBMITTING COMMENTS**: During the specified comment period, interested parties may submit written comments to Jayme Ohlhaver, San Francisco District, Regulatory Division, 450 Golden Gate Avenue, 4th Floor, San Francisco, California 94102-3404; comment letters should cite the project name, applicant name, and public notice number to facilitate review by the Regulatory Permit Manager. Comments may include a request for a public hearing on the project prior to a determination on the Department of the Army permit application; such requests shall state, with particularity, the reasons for holding a public hearing. All substantive comments will be forwarded to the applicant for resolution or rebuttal. Additional project information or details on any subsequent project modifications of a minor nature may be obtained from the applicant and/or agent or by contacting the Regulatory Permit Manager by telephone or e-mail (cited in the public notice letterhead). An electronic version of this public notice may be viewed under the *Public Notices* tab on the USACE website: https://www.spn.usace.army.mil/Missions/Regulatory.