CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

ORDER NO. R2-2025-0025

REISSUED WASTE DISCHARGE REQUIREMENTS and WATER QUALITY CERTIFICATION for:

U.S. ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT SAN FRANCISCO BAY FEDERAL CHANNEL MAINTENANCE DREDGING PROGRAM, 2026 THROUGH 2029

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

A. Purpose of Order

This Order constitutes Waste Discharge Requirements (WDRs) and provides the Clean Water Act (CWA) section 401 water quality certification (Certification) for the U.S. Army Corps of Engineers, San Francisco District (USACE) for the San Francisco Bay Federal Channel Maintenance Dredging Program, 2026 through 2029 Project (Project). USACE previously implemented San Francisco Bay Area navigation maintenance dredging under WDRs and Water Quality Certification Order No. R2-2020-0011 issued for a five-year period starting in 2020, and a one-year water quality certification issued March 21, 2025, to cover dredging year[1] 2025. USACE submitted a Pre-Filing Meeting Request to the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), on May 15, 2025. A Pre-Filing Meeting was held on May 23, 2025. On July 2, 2025, USACE submitted a complete and valid request for certification verifying that the Project described below will not violate state water quality standards. The Water Board provided public notice of the request for certification of the Project and for public comments from August 29, 2025 through September 29, 2025 pursuant to CWA section 401(a)(1) and Cal. Code Regs. (CCR), tit. 23, section 3858. Per Code of Federal Regulations (CFR), title 40, section 121.6, the federal agency and state certifying authority may jointly agree in writing to the reasonable period of time for the state certifying authority to act on a request for certification, provided the reasonable period of time does not exceed one year from the date that the request for certification was received. On July 18, 2025, USACE and the Water Board agreed in writing to a reasonable period of time of 180 days (i.e., until December 29, 2025).

[1] Dredging year refers to the calendar year in which dredging is planned to begin.

USACE authorizes its own discharges pursuant to CWA section 404 (33 U.S. Code (USC) 1344, 40 CFR section 336.1(a)) and section 10 of the Rivers and Harbors Act of 1899 (33 USC 403).

For the Certification, the Water Board is required to evaluate whether the Project, including its operation activities, will comply with applicable water quality requirements per 40 CFR section 121.3(a). The Water Board must include conditions, i.e., requirements, in a certification to assure that the activity will comply with applicable water quality requirements per 40 CFR section 121.3(b). For the WDR, the Water Board must implement the San Francisco Bay Water Quality Control Plan (Basin Plan) and protect beneficial uses, among other requirements, per Water Code section 13263.

B. Project Scope

The Water Board and USACE jointly prepared the Environmental Assessment/Environmental Impact Report for San Francisco Bay Federal Channels Operation and Maintenance Dredging and Sediment Placement Activities, Dredging Years 2025-2034 (EA/EIR). The EA/EIR along with the application for this Order described above in Finding A Purpose of Order describe the Project. The Project and its history are summarized below in Finding 1 through 17.

1. Project Overview

USACE maintains the navigability of federally-authorized channels at the entrance to and within San Francisco Bay. USACE removes accumulated sediment (primarily silt and clay) by hydraulic (e.g., self-propelled hopper, hydraulic cutter head) or mechanical (e.g., clamshell) dredges and typically disposes of the dredged sediment by either self-propelled hopper, dump scow, or by use of a pipeline to transport sediment to beneficial reuse sites. Dredging will occur consistent with the standard practices described in the EA/EIR Section 2.3.1.5.

Dredging within San Francisco Bay is managed cooperatively through the Long-Term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region. The Water Board and USACE both participate in the LTMS with the U.S. Environmental Protection Agency (U.S EPA), the San Francisco Bay Conservation and Development Commission (BCDC), and the California State Lands Commission (CSLC). These LTMS agencies evaluated alternative management options for disposal and reuse of dredged sediment over a 50-year planning horizon in a Policy Environmental Impact Statement/Programmatic Environmental Impact Report (EIS/EIR) completed in October 1998. The EIS/EIR indicated that dredged sediment disposal may have adverse impacts on the beneficial uses of the waters of San Francisco Bay and that in-Bay disposal should be reduced from historical levels. As a result, LTMS agencies decreased disposal of sediment within San Francisco Bay. The LTMS also created the Dredged Material Management Office (DMMO), a working group with representatives of the state and federal agencies with regulatory authority over Bay Area dredging projects.

This WDR and Certification applies only to maintenance dredging, which is performed on a periodic basis to previously authorized and historical depths and removes recently deposited

sediment. This Certification does not apply to “new work” dredging, which removes sediment to new authorized depths and may involve dredging consolidated sediment or historically-contaminated sediment.

2. Dredging Project Summary

USACE proposes to perform maintenance dredging at several locations in the Bay Area (Figure 1). USACE’s maintenance dredging program provides for maintenance of federal navigation channels inside San Francisco Bay. USACE plans to dredge channels critical to the region’s maritime trade and the economy of the region and nation. The Richmond Outer Harbor, Richmond Inner Harbor, Oakland Inner and Outer Harbor, Pinole Shoal (San Pablo Bay), Suisun Bay Channel and New York Slough, and Redwood City Harbor (not including the San Bruno Channel) navigation channels are expected to be dredged annually or biennially. The San Rafael Creek, Napa River and Petaluma River (upper portion and across the flats) navigation channels are expected to be dredged once during this Order. San Bruno Channel is infrequently dredged and may or may not be dredged once during this Order.

USACE also annually dredges the Main Ship Channel (MSC), which is outside of the San Francisco Bay. The eastern portion of this channel is within the seaward limit of state submerged lands (three nautical miles from the coastline) and is therefore within Water Board jurisdiction. Dredging, however, has not taken place in this portion of the channel over the past 20 years and USACE does not expect to dredge this portion of the channel during this Order. Nevertheless, the Main Ship Channel is included for coverage in this Order to allow USACE to dredge any portion of the channel where shoaling occurs, and to provide coverage for placement or disposal at sites within Water Board jurisdiction (i.e. SF-17 or a beach nourishment project at Ocean Beach, San Francisco).

3. Phased Implementation of Dredging

USACE is implementing a phased approach to maintenance dredging during this four-year Order. In dredging year 2026, USACE will likely conduct dredging and placement following the Phase 1 description in Table 1. For this Phase, the government hopper dredge Essayons, or similarly-sized hopper dredge, would be used to dredge the MSC and Richmond Outer Harbor. At Pinole Shoal, dredging would be deferred until 2027. All other channels would be dredged mechanically or with cutterhead. Phase 1 represents the current, ongoing dredging operation as implemented over the last 9 years. In 2026, it is possible USACE will implement Phase 2 as described in Table 1. In Phase 2, the government hopper dredge Essayons, or similarly-sized hopper dredge, would be used to dredge the MSC and the Richmond Outer Harbor and the Pinole Shoal Channels. A channel slated for ocean disposal at SF-DODS, either Richmond Inner Harbor or Oakland Harbor, will be split between placement in-Bay and at a non-aquatic beneficial reuse site to achieve additional beneficial reuse of dredged sediment while maintaining the same cost as ocean disposal. The decision on whether Phase 1 or Phase 2 will be implemented by USACE will depend on whether Phase 2 is feasible after considering logistics and cost. Logistical and cost considerations that will affect whether Phase 2 is feasible include, but are not limited to, equipment availability, contracting requirements, and implementation schedule.

For dredging years 2027, 2028, and 2029, USACE will either implement Phase 2 as described above, or might be ready to implement Phase 3. In this phase, the government hopper dredge Essayons, or similarly-sized hopper dredge, would be used to dredge as described in Phase 2, and add additional hopper dredging in Richmond Inner Harbor and/or part of Oakland Harbor. USACE would utilize cost savings from additional hopper dredging at those channels to place additional sediment from other channels at an approved non-aquatic beneficial reuse site, while maintaining the same overall cost for the annual dredging program. Phase 3 is described in detail in Table 1. The decision on whether Phase 2 or Phase 3 will be implemented by USACE will depend on whether Phase 3 is feasible after considering logistics and cost. Logistical and cost considerations that will affect whether Phase 3 is feasible include, but are not limited to, equipment availability, contracting requirements, and implementation schedule.

When implementing Phase 2 or 3, USACE will minimize in-Bay hopper dredging entrainment impacts by placing dredged sediment at a non-aquatic tidal wetland restoration site to benefit longfin smelt and other Bay species.

The volume of beneficial reuse to minimize/offset impacts will be calculated by first using the following equation and the actual volume of water and sediment pumped by the hopper dredge to calculate acres of restoration:

$$Acres\ of\ restoration = \frac{800\ acres\ \times Volume_{water/sediment\ pumped\ by\ hopper\ dredge}}{3.0\ million\ acre-feet}$$

Then, the acres of restoration will be converted to a volume of dredged sediment for beneficial reuse using the following equation:

$$Volume\ of\ Beneficial\ Reuse = \frac{acres\ of\ restoration \times \$1{,}325{,}000\ per\ acre}{Cost_{Increment}\ per\ cubic\ yard} \times 2$$

In the rare event that logistical or cost considerations make it infeasible to implement Phase 3, USACE may shift back to implementing Phase 1 or 2 at any point during the period of this Order. The lack of available equipment would be the most likely consideration that would make Phase 3 infeasible.

USACE is using a phased implementation because all three phases are eligible as the Federal Standard Base Plan[2]. For dredged sediment placement, USACE fully considers all three phases in Table 1 practicable and reasonable alternatives on an equal basis, including the use of dredged sediment beneficially, to identify the Federal Standard (33 CFR Parts 335-338). “Base Plan” is an operational manifestation of the Federal Standard because it defines the disposal or

[2] The Federal Standard Base Plan means the dredged material disposal alternative or alternatives identified by the Corps which represent the least costly alternatives consistent with sound engineering practices and meeting the environmental standards established by the 404(b)(1) evaluation process or ocean dumping criteria (33 CFR § 335.7).

placement costs that are assigned to the “navigational purpose” of the project (USACE Engineer Regulation 1105-2-103).

Lastly, in any given year, USACE may partner with a local sponsor to cost share the incremental cost of beneficial reuse or may fund the incremental cost if suitable funds were provided to USACE through federal appropriations. This would increase beneficial reuse beyond what is planned in Phase 1, 2, or 3. In this situation, the exact channel or channels from which sediment would be taken to beneficial reuse might be dictated by the funding source or be determined by USACE. Further, the impacts from the Project in this situation would be less than planned in Phases 1, 2, or 3 because temporary disturbance from sediment disposal in the Bay, which affects turbidity, would be less as a result of less sediment being disposed in the Bay. Likewise, if more sediment was beneficially reused during Phase 3, entrainment impacts from hopper dredging would be less because it is only logistically feasible for USACE to beneficially reuse sediment that is generated through mechanical or cutterhead dredging.

4. Dredging Volumes and Timing

Tables 1 and 2 summarize USACE’s dredging activities, including average and maximum estimated dredging volumes per episode, and the Federal Standard placement sites for the Project. The volume estimates are based on historical dredging from 2000 to 2022.

Based on the range of volumes that USACE has proposed (Table 1 and 2) and previously conditioned dredging volume limits, the maximum total dredging volume within San Francisco Bay is 10.32 million cubic yards (mcy) and the maximum total dredging volume in the San Francisco Main Ship Channel (MSC) west of the Golden Gate, outside San Francisco Bay, is 1.8 mcy for four years (2026 through 2029). USACE expects to begin dredging in May each year and to complete dredging by the spring of the following calendar year. Exact timing of work will be determined on a year-by-year basis by USACE based on accretion rates, channel depths, funding availability, and equipment availability. This Order authorizes and certifies maintenance dredging activities through dredging year 2029, which includes dredging that may extend into May 2030.

Table 1. 2025 San Francisco Bay Dredging Project Summary

Project	Maintenance Depth (feet below MLLW)[1]	Likely Dredge Type	Alternate Dredge Method	Dredging Recurrence (Years)	Average Volume Per Episode (cy)[2]	Maximum Volume Per Episode (cy)[2]	Phase 1[3]	Phase 2[3]	Phase 3[3]
Richmond Outer Harbor	45	Hopper	Clamshell-Bucket or Cutterhead	1-2	210,000[4]	730,000	SF-10[5, 6]	SF-11[5, 6]	SF-10[5, 6]
Richmond Inner Harbor	38	Clamshell-Bucket or Hopper	Cutterhead	1	300,000	630,000	SF-DODS	SF-11[5] and Non-Aquatic Beneficial Reuse	SF-11[5, 6]
Oakland Inner and Outer Harbor	50	Clamshell-Bucket or Hopper	Cutterhead	1	750,000	1,225,000	SF-DODS	SF-DODS	SF-11[5, 6] and Non-Aquatic Beneficial Reuse
Pinole Shoal	35	Hopper	Clamshell-Bucket	1-2	150,000[4]	560,000	SF-10[5, 6]	SF-10[5, 6]	SF-9[5, 6]
Suisun Bay Channel and New York Slough[7, 8]	35	Clamshell-Bucket	N/A	1	165,000	425,000	SF-16[5]	SF-16[5] and Non-Aquatic Beneficial Reuse	SF-16[5] and Non-Aquatic Beneficial Reuse
Redwood City Harbor (Harbor Channel)	30	Clamshell-Bucket	Cutterhead	1	180,000	650,000	SF-11[5]	SF-11[5]	SF-11[5]
Redwood City Harbor (San Bruno Channel)	30	Hopper	Clamshell-Bucket	Infrequent	30,000	30,000	SF-11[5]	SF-11[5]	SF-11[5]

Project	Maintenance Depth (feet below MLLW)[1]	Likely Dredge Type	Alternate Dredge Method	Dredging Recurrence (Years)	Average Volume Per Episode (cy)[2]	Maximum Volume Per Episode (cy)[2]	Phase 1[3]	Phase 2[3]	Phase 3[3]
San Rafael Creek	6-8	Clamshell-Bucket	Cutterhead	4-6	110,000	280,000	SF-11[5]	SF-11[5]	SF-9[5]
Napa River	9	Cutterhead	Clamshell-Bucket	6-11	110,000	165,000	Local Sponsor Provided Upland	Local Sponsor Provided Upland and Non-Aquatic Beneficial Reuse	Local Sponsor Provided Upland and Non-Aquatic Beneficial Reuse
Petaluma River Channel	8	Cutterhead	Clamshell-Bucket	4-7	150,000	210,000	Local Sponsor Provided Upland	Local Sponsor Provided Upland and Non-Aquatic Beneficial Reuse	Local Sponsor Provided Upland and Non-Aquatic Beneficial Reuse
Petaluma River (Across the Flats)	8	Clamshell-Bucket	Cutterhead	3	70,000	330,000[9]	SF-10[5]	SF-10[5]	SF-10[5]
Sea Trials for Hopper Maintenance	N/A	Hopper	N/A	N/A[10]	12,000	12,000	SF-11[5] or SF-8	SF-11[5] or SF-8	SF-11[5] or SF-8

Notes:

[1] A 2-foot overdredge allowance beyond these depths is authorized, but not shown.

[2] Average and maximum volumes are based on dredging volumes from 2000 through 2022 (EA/EIR).

[3] USACE may divert any suitable sediment, as determined by the DMMO, from the Federal Standard placement site to beneficial reuse for any of the phases when funding outside the Operation and Maintenance Program is available.

[4] Represents the average volume per episode when the channel is dredged annually.

[5] Also includes other in-Bay disposal sites.

[6] USACE may place the last hopper dredged load at SF-8, the San Francisco bar Channel Disposal Site.

[7] Aside from regularly scheduled maintenance of this navigation project, USACE would take urgent action outside the work window, as needed, to remove the hazardous shoaling at Bulls Head Reach.

[8] Due to rapid shoaling at Bulls Head Reach, this portion of the Suisun Bay Channel may be advance maintenance dredged by up to 4 feet, plus an additional 2 feet of allowable overdepth.

[9] Petaluma River (Across the Flats) is dredged infrequently, this maximum volume is from 1994 dredging.

[10] Sea trials for hopper dredge maintenance will happen as needed, up to twice, when the USACE owned ships enter dry dock in the San Francisco Bay.

cy = cubic yards

mcy = million cubic yards

SF-9 = Carquinez Strait Disposal Site

SF-10 = San Pablo Bay Disposal Site

SF-11 = Alcatraz Island Disposal Site

SF-16 = Suisun Bay Disposal Site

SF-DODS = San Francisco Deep Ocean Disposal Site (55 miles west of Golden Gate)

Table 2. Main Ship Channel Dredging Summary

Project	Maintenance Depth (feet below MLLW)[1]	Likely Dredge Type	Alternate Dredge Method	Dredging Recurrence (Years)	Average Volume Per Episode (cy)[2]	Maximum Volume Per Episode (cy)[2]	Phase 1[3]	Phase 2[3]	Phase 3[3]
San Francisco Harbor – Main Ship Channel	55	Hopper	N/A	1	345,000	615,000	SF-8 and SF-17	SF-8 and SF-17	SF-8 and SF-17

Notes:

[1] Typical 2-foot overdredge allowances beyond these depths are not shown.

[2] Average and maximum volumes are based on dredging volumes from 2000 through 2022 (EA/EIR).

[3] USACE may divert any suitable sediment, as determined by the DMMO, from the Federal Standard placement site to beneficial reuse for any of the phases when funding outside the Operation and Maintenance Program is available.

SF-8 = San Francisco Bar Channel Disposal Site

SF-17 = Ocean Beach placement site (near shore site, includes the Ocean Beach nearshore demonstration site

5. Dredging Locations

The general locations of the channels are depicted collectively in Figure 1. The channel boundaries are more precisely shown on the Project maps provided in Figures 2 through 10. The actual shoaling locations within each channel will be determined on a quarterly basis by USACE. Dredging will be confined within the channel boundaries shown in Figures 1 through 10 and shall not exceed the project depth, as shown in Tables 1 and 2, plus an overdredge depth of 2 feet. Placement of dredge sediment will be confined to the boundaries of the placement sites depicted in Figures 1 through 10.

6. Contaminant Resuspension

Dredging can cause resuspension of contaminants bound to the sediment. Therefore, USACE is required to characterize sediment quality and place that sediment in appropriate locations. When contaminants, such as dichlorodiphenyltrichloroethane, polychlorinated biphenyls, and mercury, are detected in the Project area at elevated concentrations that may pose a threat to aquatic life, mechanical dredging will be undertaken with a closed environmental clamshell bucket to minimize potential adverse effects from the release of sediment with elevated contamination levels. USACE shall coordinate with the Water Board, in conjunction with the DMMO, to determine the extent of elevated concentrations and appropriate measures during the sediment characterization and episode approval process pursuant to Provision 2 of this Order.

7. Disposal and Placement Sites

The dredged sediment will be disposed at a combination of aquatic disposal sites or placed at tidal wetland beneficial reuse sites over the term of this Order. The location in which dredged sediment will be disposed or reused will be based on the physical, chemical, and biological suitability of the sediment for the dredge footprint and other technical, logistical, and cost practicability considerations. Disposal sites may include USACE-designated unconfined aquatic disposal locations within San Francisco Bay (henceforth referred to as in-Bay disposal), which include the following sites: Carquinez Strait Disposal Site (SF-9), San Pablo Bay Disposal Site (SF-10), Alcatraz Island Disposal Site (SF-11), and Suisun Bay Disposal Site (SF-16). Disposal may also take place in the Pacific Ocean at San Francisco Deep Ocean Disposal Site (SF-DODS). SF-DODS is beyond the 3-mile offshore limit of Water Board jurisdiction and is regulated by the U.S. EPA, under the federal Marine Protection, Research and Sanctuary Act.

Sand dredged from the San Francisco MSC may be placed for beneficial reuse, such as for nourishment of the San Francisco littoral cell to help combat erosion at Ocean Beach. USACE is currently conducting a beach nourishment beneficial reuse pilot demonstration study at the Ocean Beach Near Shore Demonstration Site, which is encompassed by the future Ocean Beach placement site (SF-17), in waters of the Pacific Ocean adjacent to the south-of-Sloat-Boulevard stretch of Ocean Beach (Figure 8). SF-17 is located where waves can potentially feed sediment toward the southern reach of Ocean Beach, which may ultimately help mitigate ongoing shoreline erosion in the area that threatens significant municipal infrastructure,

including segments of the Great Highway and major sewer lines running underneath and alongside it.

Additionally, sand has historically been disposed at the San Francisco Bar Channel Disposal Site (SF-8). Pre-site designation studies concluded that the area would be dispersive, meaning that waves would spread the sand shoreward to the surf zone and beach at such a rate that accumulation would be minimal. However, surveys indicate that spreading occurs at a much slower rate than expected and that underwater shoals impair safe operation of hopper dredges during rough seas. USACE therefore limits use of SF-8 to the extent feasible. Sand from in-Bay channels and non-USACE projects may be considered beneficial reuse when placed in the eastern portion of SF-8 that is within the three nautical mile limit of Water Board jurisdiction because it is adding new sand to the San Francisco Bar and littoral transport system. Sand placed at SF-8 from the San Francisco MSC is not considered beneficial reuse because the dredged sediment is already within the San Francisco Bar and littoral transport system.

USACE may also place dredged sediment at a tidal wetland beneficial reuse site such as Cullinan Ranch Restoration Project (Cullinan) or Montezuma Wetlands Restoration Project (Montezuma), which are the only currently approved tidal wetland beneficial reuse sites.

Should USACE place some or all of the dredged sediment at Cullinan, the dredged sediment will be transported to Cullinan in the San Pablo Bay National Wildlife Refuge by barge, where it will be beneficially reused to restore tidal wetlands for the endangered salt marsh harvest mouse and other species. Dredged sediment placement and management at Cullinan is regulated under Waste Discharge Requirements Order No. R2-2010-0108. All dredged sediment and any water entrained during dredging will be completely contained within the placement cell. Cullinan is near to meeting its dredged sediment needs and is expected to reach capacity within the term of this Order.

Should USACE place some or all of the dredged sediment at Montezuma, the dredged sediment will be transported to Montezuma in the Suisun Marsh by barge, where it will be beneficially reused to restore tidal marsh habitat for the endangered salt marsh harvest mouse and other species. Dredged sediment placement and management at Montezuma is regulated under Waste Discharge Requirements Order No. R2-2012-0087. Montezuma still needs approximately 13 million cy and is not expected to reach capacity during the term of this Order.

Over the term of this Order a new beneficial reuse placement site is expected to be permitted at Bel Marin Keys Unit V (Bel Marin Keys). Bel Marin Keys is the second phase of the Hamilton Wetlands Restoration project and adds 1,600 acres of wetlands including 900 acres of tidal wetlands and 680 acres of non-tidal and freshwater wetlands, as well as upland, subtidal, and non-wetland tidal habitats, for a total acreage of approximately 2,600 acres for the expanded site. This Order includes coverage for the placement of dredged sediment at any fully evaluated and permitted beneficial reuse placement site.

The EA/EIR explored potential near-shore strategic placement sites to beneficially reuse dredged sediment through shallow water placement methods in San Francisco Bay, but given

the lack of site-specific details, any strategic placement site will require site-specific environmental impact evaluation under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and separate permitting under the Porter-Cologne Water Quality Control Act (Porter-Cologne) and Clean Water Act section 401 prior to use. This includes implementation of Alternative 4 in the EA/EIR, described below in Finding 18; therefore, implementation of this alternative is not authorized by this Order.

8. Advance Maintenance

Advance maintenance dredging is utilized in areas where typical shoaling patterns create navigational restrictions on an ongoing basis. Advance maintenance is restricted to Suisun Bay Channel and Bulls Head Reach, which exhibit rapid shoaling.

9. Knock-Down Dredging

USACE may need to occasionally perform knock-down dredging or grading of underwater shoals, to supplement routine maintenance dredging episodes. Regular maintenance dredging completely removes the shoaled sediments from a Project area, but knock-down dredging is the redistribution of shoaled sediments within a Project area. Knock-down dredging is most useful in supplementing routine maintenance dredging when time constraints may not allow for normal dredging or when shoals threaten safe navigation only in a small portion of a Project area that is otherwise at or below its permitted depth. Conducting separate knock-down operations is often more efficient than mobilizing dredging equipment and transporting the sediment to a disposal site. Knock-down dredging is typically performed by dragging an I-beam towed by a boat across a shoal to redistribute the shoaled sediment within the maintenance Project area. The temporarily redistributed sediment is subsequently removed during a regular dredging event. Knock-down events occurring separately from full dredging episodes, or in combination with a dredging episode occurring in a different location within the same channel, will be subject to the same coordination with the DMMO as full dredging episodes. USACE anticipates knocking down no more than 15,000 cy in each deep draft channel (which includes Richmond Inner Harbor, Oakland Inner and Outer Harbor, Pinole Shoal, and Suisun Bay, and Redwood City channels). Depending on the volume of sediment, contaminant concentrations, and other project-specific details, water quality monitoring may be required and will be coordinated during the episode approval process described in Provision 7 of this Order.

10. Emergency Dredging

USACE is authorized by Congress to ensure that all navigation channels are dredged to a safe depth. If an area is found to be an unacceptable hazard to life or navigation or threatens to cause an immediate and unforeseen significant economic hardship if corrective action is not taken quickly, USACE may carry out dredging on a limited basis even though that project is not scheduled for dredging. In such cases, an expedited testing and approval process is often necessary. USACE does not anticipate performing more than one emergency dredging episode per year consisting of less than 40,000 cy. The Water Board recognizes the need for expedited review of emergency dredging episodes and expects that USACE will still follow the procedures outlined in Provision 7 of this Order for written approval of emergency dredging episodes.

In atypical conditions, such as after an extraordinary storm event, a shoaling situation may be such an immediate hazard that even an expedited review process is not feasible. The Water Board recognizes that USACE has the authority to remove the immediate hazard without the Executive Officer's approval pursuant to this Order.

11. Disposal and Reuse of Dredged Sediment History

The LTMS agencies endorsed the following long-term goals in the LTMS Management Plan (Management Plan) approved by the LTMS Executive Committee in July 2001:

1. Maintain in an economically and environmentally sound manner those channels necessary for navigation in San Francisco Bay and Estuary and eliminate unnecessary dredging activities in the Bay and Estuary.
2. Conduct dredged material disposal in the most environmentally sound manner.
3. Maximize the use of dredged material as a resource.
4. Maintain the cooperative permitting framework for dredging and disposal applications.

The LTMS agencies determined that these goals can be accomplished in part by maximizing beneficial reuse of dredged sediment suitable for habitat restoration along the Bay margins and disposing suitable dredged sediment outside the Bay only when beneficial reuse is not practicable. As climate change science evolved and models predict even greater sea level rise, it is now recognized that the low-lying areas of the Bay, which were historically marshes, are in jeopardy of being inundated both by rising sea level and storm surges that are occurring more frequently and at greater intensity than previously experienced. In addition, in the mid-2000s, scientists from the U.S. Geological Survey identified a significant reduction in suspended sediment loading from the Sacramento/San Joaquin River system. Less sediment in suspension and circulation within the Bay impairs the ability of shorelines, mudflats, and tidal wetlands to withstand erosion and inundation, especially as sea level rises. In 2021, San Francisco Estuary Institute released the Sediment for Survival report, which estimates that approximately 477 mcy of sediment are needed by 2100 to maintain current mudflats, wetlands, and areas slated for restoration in the San Francisco Bay Area. The report describes that all current major sources of sediment, including dredging, can only meet a fraction of this total need. Accordingly, management practices need to change quickly to access additional sources of sediment, such as dredged sediment that is currently being disposed at SF-DODS. To accomplish this, regulatory, policy, and economic efforts need to be undertaken to maximize the reuse of known sediment sources, such as dredging, while also looking for new sediment sources. The Water Board therefore encourages beneficial reuse of suitable dredged sediment as one component of regional adaptation to climate change.

The Management Plan included an in-Bay disposal target of 1.25 mcy annually. To determine whether this target is being achieved, the volume of sediment disposed in-Bay is averaged over a blocked three-year period and compared to the 1.25 mcy threshold. To allow time for planning, budgeting, and creating alternatives to in-Bay disposal, the Management Plan established a 12-year transition period for achieving the in-Bay disposal target since in-Bay

disposal volumes were in the 2 to 8 mcy range per year in the 80s and 90s. The transition period's disposal volume limits were voluntary as long as the long-term target was met overall. Public assurance that in-Bay disposal would in fact decrease was provided by language identifying when strict volume allocations to individual dredgers would be considered by the Water Board (i.e., a disposal allocation trigger). The transition period successfully concluded in 2012 with in-Bay disposal targets met every three years as described in the Management Plan. Since 2013, if the total average annual in-Bay disposal volume from the blocked three-year averaging period exceeds 1.25 mcy, the Management Plan indicates that the Water Board will consider imposition of mandatory in-Bay disposal allocations for all dredgers. In considering whether to impose allocations, the Water Board and other LTMS agencies are not to rely solely on a comparison of in-Bay disposal volumes to the 1.25 mcy target volume, but instead to consider trends and projections into the future, demonstrated efforts to support beneficial reuse, and any other relevant factors, among other criteria (LTMS Management Plan, section 6.5.2). In addition, in accordance with the Basin Plan, the Water Board will consider imposing allocations if in-Bay volume triggers are exceeded. As such, even if the 3-year average in-Bay disposal volume exceeds 1.25 mcy, imposing allocations will be considered, but is not specifically required by the Management Plan or Basin Plan.

USACE is the largest dredger in the Bay Area. Therefore, efforts by USACE to reduce in-Bay disposal and maximize beneficial reuse are critical to successful implementation of the LTMS long-term goals. From 2012 to 2019, USACE's dredging accounted for approximately 70 percent of the total volume of sediment dredged in San Francisco Bay by all dredgers. USACE's combined average annual in-Bay disposal volume over the first two post-2012 LTMS averaging periods (2013 through 2015 and 2016 through 2018) was 0.816 mcy per year. The 1.25 mcy average in-Bay disposal target was not exceeded during these averaging periods. For 2019 through 2023, USACE maintained a much lower average annual in-Bay disposal volume of 0.600 mcy due to the State Coastal Conservancy sharing the cost of beneficial reuse for Redwood City Harbor starting in 2019[3], and Section 1122 of the Water Resource Development Act (Section 1122) funds. USACE's disposal in combination with other dredgers did not exceed the 1.25 mcy in-Bay disposal target average since 2010.

Beneficial reuse is increasingly important to LTMS in light of the sediment needs of the region and has increased substantially due to a mix of approaches in the past few years. In 2022, USACE conducted the Oakland Harbor 50/50 Pilot Project, that placed approximately 432,000 cy of sediment at Cullinan Ranch for beneficial reuse and disposed 244,000 cy of sediment in-Bay at SF-11, for the same cost as 100 percent disposal at SF-DODS. This pilot project was successful in conducting beneficial reuse within the Federal Standard through cost savings from changing the disposal site location and is the approach used in Phase 2 of the Project. For 2023 and 2024, USACE received $19 million in Section 1122 funding to conduct beneficial reuse

[3] The State Coastal Conservancy provided $5,700,000 to USACE to share the incremental cost between the Federal Standard placement site and beneficial reuse sites for Redwood City Harbor.

outside of the Federal Standard Base Plan. In 2023, this resulted in approximately 1.8 mcy of sediment beneficially reused at Montezuma and approximately 90,000 cy of sediment from Redwood City Harbor being placed at Eden Landing as a near-shore strategic placement pilot project. Additional funding for beneficial reuse is not guaranteed, but may be available over the term of this Order.

12. Integrated Alternatives Analysis

This Order requires USACE to submit an annual Integrated Alternatives Analysis (IAA) of disposal options for dredged sediments from the Project under Provision 6 of this Order. The IAA is required to implement CWA section 404(b)(1) and the State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Dredge and Fill Procedures) (CWA section 404(b)(1), 40 CFR section 230.10(a and d), and Dredge and Fill Procedures sections IV.A.1.h. and IV.B.1.a.).

13. Regional Monitoring Program

This Order requires USACE to provide a technical report that documents monitoring efforts designed to evaluate the water quality impacts of the dredged material discharge on waters of the State, pursuant to California Water Code (Water Code) section 13383. The Water Board requires dischargers of waste to the Bay, including those who dispose of dredged sediment, to monitor the impacts of their discharges. This monitoring provides necessary information about ambient Bay water quality and potential long-term impacts of dredged sediment disposal. USACE has and will continue to elect to participate in the San Francisco Estuary Regional Monitoring Program for Trace Substances (RMP) to fulfill this requirement. The RMP is a coordinated and comprehensive long-term monitoring program with the goal of monitoring water and sediment quality to provide the scientific foundation for managing and improving the health of the San Francisco Bay aquatic ecosystem.

The Water Board has implemented the RMP since 1992. The RMP is a coordinated and comprehensive long-term monitoring program with the goal of monitoring water and sediment quality to provide the scientific foundation for managing and improving the health of the San Francisco Bay aquatic ecosystem. Additionally, the RMP includes special and pilot studies to answer management questions linked to actions that will improve the health of the San Francisco Bay aquatic ecosystem. USACE is a participant in the RMP and will contribute $508,000 annually, following the dredging season, to the program by funding the United States Geological Survey (USGS) to monitor suspended sediments at an array of locations in the Bay under Provision 9 of this Order. This monitoring has and will continue to improve understanding of sediment transport processes and create a comprehensive database for various numerical modeling efforts.

14. Sediment Characterization

The Water Board participates in the DMMO, a working group with representatives of the state and federal agencies with regulatory authority over Bay Area dredging projects. Staff representatives of the Water Board, USACE, U.S. EPA, BCDC, and SLC meet regularly to

jointly review dredging projects and make consensus-based recommendations to their respective agencies about the suitability of sediments for proposed placement sites based on sediment testing conducted according to DMMO testing requirements. Material proposed to be dredged and placed at ocean, inland aquatic, or beneficial reuse sites requires sediment characterization to predict the environmental impacts associated with dredging and dredged material placement activities. The objective of the sediment testing requirements is to ensure that dredging does not resuspend contaminated sediment, and placement and disposal of dredged material at designated sites occurs without causing degradation to the surrounding environment. Representatives from the California Department of Fish and Wildlife (CDFW), the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) also participate in the DMMO in an advisory capacity. Each DMMO agency retains its independent decision-making authority, but the group has significantly reduced project review time by concurrent consideration of projects. USACE handles the logistics for the operation of the DMMO.

Sediment is characterized according to the tiered testing protocols described in the Ocean Testing Manual, Inland Testing Manual, and Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region. Tier I testing exemptions rely on existing data, with no additional testing or minimal physical and chemical analyses to verify that site conditions have not changed. Tier I reports include previous testing results, spill data, and information regarding any changes to the channel that could affect sediment quality. Tier III testing is a full suite of routine physical characteristics, chemistry, bioassays, and bioaccumulation analyses. Physical characteristics include grain size and total organic carbon; chemistry includes metals, butyltins, polycyclic aromatic hydrocarbons, pesticides, polychlorinated biphenyls, and sometimes dioxins and furans.

To characterize dredged sediment for disposal or placement, USACE will conduct full Tier III sediment sampling and characterization and submit completed reports to the DMMO for approval every three to five years for annually dredged channels, or as determined by the DMMO for all other channels. USACE will submit to the DMMO requests for Tier I testing exemptions for dredging episodes in channels that have Tier III results from the last three to five years, or as determined by the DMMO.

This Order requires that dredging episodes carried out will be reviewed by the DMMO for a recommendation on the suitability for disposal or beneficial reuse of the dredged sediment. Each dredging episode must be approved in writing by the Executive Officer pursuant to Provision 7 of this Order.

15. Eelgrass

Eelgrass (*Zostera marina*) is a foundational species for SF Bay, supporting much of the biodiversity in the bay ecosystem. Eelgrass beds serve as nurseries for young fish and foraging areas for many species of fish, invertebrates, and birds. Eelgrass habitat is a high priority area for conservation and management. Eelgrass is protected under the CWA Section 404(b) (1) "Guidelines for Specification of Disposal Sites for Dredged or Fill Material," Subpart E, "Potential Impacts on Special Aquatic Sites." It has also been identified as Essential Fish Habitat for various life stages of fish species managed by fishery management plans under the Magnuson-Stevens Act, as established by NMFS. The California Eelgrass Mitigation Policy and Implementing Guidelines of October 2014, states a goal of no net loss of eelgrass habitat function in California and provides guidance for conducting surveys, impact assessment, and compensatory mitigation (NOAA Fisheries 2014).

Eelgrass in areas next to or downstream from dredging operations may be indirectly impacted by turbidity and increased sedimentation. Dredging-related turbidity plumes may temporarily impede light transmission into the water column. Since light penetration in the water column is essential to eelgrass growth and survival, variations in water quality and turbidity can readily impact them. The viability of eelgrass in beds next to dredging activities may also be impacted by sediment that settles on eelgrass blades.

The San Francisco Bay Conservation and Development Commission's website has a web-based tool, San Francisco Bay Eelgrass Impact Assessment Tool (Tool), for assessing the potential impacts of dredging projects on eelgrass. The Tool, which is located at San Francisco Bay Eelgrass Impact Assessment Tool | BCDC Open Data Portal (arcgis.com), shows 1) the maximum extent of eelgrass beds that have been surveyed in San Francisco Bay as of 2021; 2) a 45-meter growth buffer for potential bed expansion (direct impact buffer zone); and 3) a 250-meter turbidity buffer around eelgrass for determining indirect impacts (indirect impact buffer zone). The Water Board used the Tool to map the location of the Project, relative to the location of eelgrass beds and adjacent buffer zones. The Tool showed that some areas of the Project are within the 45-meter direct impact buffer zone or the 250 meter indirect impact buffer zone.

The majority of USACE channels included in this Project are frequently dredged, deep draft shipping lanes that are not conducive for eelgrass growth. Eelgrass is not present within the channel boundaries, but, as alluded to above, is present near the Richmond Inner Harbor and Oakland Inner Harbor. However, eelgrass surveys before and after dredging episodes conclude that USACE dredging does not have any impact on eelgrass. USACE will conduct eelgrass surveys and light monitoring in accordance with Provision 4 of this Order, consistent with the June 9, 2011, Programmatic Essential Fish Habitat Consultation Agreement between the U.S. EPA, USACE, and NMFS. Surveys and monitoring are necessary to verify that the Project is not having a greater than predicted impact on eelgrass and remains less than significant.

16. Entrainment Impacts

All forms of dredging have the potential to impact the following beneficial uses of waters: habitat necessary for the preservation of rare and endangered species, fish spawning, fish migration, and estuarine habitat. Dredging incidentally removes fish and other aquatic life from the environment along with the dredged sediment, a process referred to as entrainment. Animals and plants on top of or embedded in the sediment as well as those in the water column near the dredging apparatus may be entrained. In general, smaller organisms with limited or no swimming capabilities are more susceptible to entrainment. Mechanical dredging is generally accepted to entrain fewer fish than hydraulic dredging, because less water is removed along with the sediment. However, it still may remove demersal fish and crustaceans that live in or on the sediment. Entrained fish are likely to suffer mechanical injury or suffocation during dredging, resulting in mortality. Longfin smelt and delta smelt are not strong swimmers and are presumed susceptible to entrainment in the flow fields created around the intakes of hydraulic suction dredges. Longfin smelt have the potential to occur in any of the Project areas in any season. Delta smelt have potential to occur in the portions of the San Francisco Estuary that include the Pinole Shoal (San Pablo Bay) and Suisun Bay Channel dredge areas during certain seasons. Delta smelt occur in San Pablo Bay in lower numbers than in the Suisun Bay; however, they may be present in San Pablo Bay in increased numbers during high water outflow years.

Entrainment monitoring aboard the hopper dredge Essayons took place under the previous Water Board orders in June, September, and October 2016; June and November 2017; June and October 2018; July and August 2019; July 2023; and in June and July 2024. The monitoring documented entrainment of longfin smelt in ~~some years but not others~~ all years between 2016 and 2024. However, the quantity of longfin smelt entrained was unclear. No delta smelt were observed in the monitoring apparatus during these monitoring events, most likely because the Essayons dredged in areas where the salinity exceeded the tolerance limit of delta smelt. Based on entrainment data, longfin smelt are the most at-risk state and/or federally listed threatened or endangered species of being entrained during dredging activities. The majority of species observed in monitoring are not state or federally listed as threatened or endangered. For these species, the number of individuals entrained is not expected to have an impact on their population because their population sizes are not impaired like the listed species. Implementation of the standard practices in the EA/EIR section 2.3.1.5, and measures that protect special-status fish species would also protect the non-listed species. Demersal fish and invertebrate species which are found on or near the bottom are not listed species, nor are they likely population limited. Entrainment is not expected to have a significant effect on their population or species survival.

This Order requires USACE to continue monitoring under Provision 11 to evaluate potential fish entrainment during hopper dredging by the USACE-owned ship, the Essayons, in the San Francisco Bay Area. USACE describes its monitoring in the 2020-24 Monitoring Plan for Potential Fish Entrainment During Dredging by The USACE Hopper Dredge Essayons in The San Francisco Bay Area (updated 2023). Changes to this monitoring plan must be approved in writing by the Executive Officer pursuant to Provision 11. Biological monitors (a lead delta smelt expert and three fisheries technician assistants) will conduct entrainment monitoring on a

minimum of 80 percent of the dredging passes from onboard the Essayons while the vessel dredges in the San Francisco Bay. An entrainment sampling apparatus will sample dredged sediment that enters through both drag arms by passing the dredged sediment slurry through a rectangular shaped sieve. The biological monitors will sort, examine, and document the accumulated material. Other opportunistic monitoring methods (e.g., observing water surface in the hopper, sampling during water calibration and hopper flushing events) will also be conducted when relevant opportunities arise.

17. Avoidance, Minimization, and Compensatory Mitigation Measures for Entrainment Impacts

To avoid, minimize, and compensate for the entrainment impacts described above, USACE will implement measures included in the Project as described in EA/EIR Section 2.3.1.5 and the application for this Order, as well as the mitigation required in Provision 10 of this Order. These measures include operational best practices to first avoid, then minimize, and lastly compensate for adverse impacts that cannot be avoided and minimized, all in accordance with 40 CFR section 230 and the Dredge and Fill Procedures sections IV.A.1.h and IV.B, as well as conservation measures in the biological opinions issued by NMFS and USFWS for maintenance dredging and disposal projects. 40 CFR section 230 and the Dredge and Fill Procedures sections IV.A.1.h and IV.B both require a sequence of actions to first avoid, then to minimize, and lastly compensate for adverse impacts to aquatic resources that cannot be practicably avoided or minimized.

During the preparation of the 1998 LTMS EIS/EIR, the LTMS agencies initiated state and federal endangered species act (ESA) consultations with NMFS, USFWS, and the CDFW for maintenance dredging and disposal projects, covering threatened and endangered species and species of special concern, such as the Pacific herring. These programmatic consultations reduce the need for consultation on each individual dredging project by establishing programmatic work windows to avoid and minimize impacts to protected species. These programmatic work windows are based on presence/absence information for various sensitive species and establish times and locations where dredging and disposal activities may take place without further consultation.

In 2015, the LTMS programmatic consultation from NMFS was amended to (1) add measures to protect the green sturgeon from dredging activities and (2) allow work outside of the window established to protect salmonids if sediment dredged outside the work windows is beneficially reused to restore tidal wetlands. NMFS also allowed work outside windows established to protect green sturgeon if the sediment was beneficially reused. NMFS allows this because tidal wetlands provide habitat for salmonids and green sturgeon.

In 2023, the Oakland Harbor individual consultation from USFWS was initiated to add measures to protect the California least tern from potential impacts associated with USACE maintenance dredging activities in Oakland Harbor.

On February 7, 2025, the LTMS programmatic consultation from USFWS was amended to add measures to protect the longfin smelt from dredging activities, including compensatory mitigation for in-Bay hopper dredging entrainment impacts. The compensatory mitigation for longfin smelt consists of beneficial reuse of dredged sediment to restore tidal wetlands. The volume of beneficial reuse required is derived by first calculating the acres of mitigation using an equation used by CDFW to determine mitigation requirements for entrainment impacts from water extraction in the delta for the Central Valley and State Water Projects and then converting the acres of mitigation to a volume of beneficial reuse using the average cubic yards of sediment required for one acre of restoration at three restoration projects. The volume of beneficial reuse is then multiplied by a factor of two to account for the uncertainty in the timing of the restoration, likely distance of the impact sites from the beneficial reuse site(s), temporal losses in aquatic resource functions, and the likelihood of success of the restoration activities at the beneficial reuse site(s). Like NMFS, USFWS accepts beneficial reuse as mitigation for entrainment impacts to longfin smelt because tidal wetlands provide valuable habitat for longfin smelt in a similar manner to the benefits provided to salmonids and sturgeon.

When conducting Phase 1, this Order requires USACE to compensate for unavoidable in-Bay hopper dredging entrainment impacts by either purchasing longfin smelt mitigation credits at a resource agency-approved habitat conservation bank or placing a specified volume of dredged sediment at a non-aquatic beneficial reuse site for tidal wetland restoration as required in Provision 10, in a similar manner to USFWS longfin smelt mitigation described above. USACE and the Water Board developed a formula to convert the acres of mitigation owed for entrainment impacts to an equivalent volume of sediment to be placed at a site for beneficial reuse in a tidal wetland restoration project, as described in detail in Mitigation Measure BI-1: Compensatory Mitigation for Longfin Smelt of the EA/EIR. Like USFWS, the volume of beneficial reuse required is derived by first calculating the acres of mitigation using the same equation from CDFW.

$$Acres\ of\ mitigation\ required = \frac{800\ acres\ \times Volume_{water/sediment\ pumped\ by\ hopper\ dredge}}{3.0\ million\ acre-feet}$$

The formula then differs from USFWS and converts the acres of mitigation credits into a dollar value based on the cost of credits from three representative mitigation banks. Next, the formula converts the dollar amount into a volume of sediment using the incremental cost between the current federal standard placement site and a beneficial reuse site. Finally, the volume of sediment is multiplied by a factor of two as in the USFWS formula described above.

$$Volume\ of\ Beneficial\ Reuse = \frac{acres\ of\ mitigation\ required\ \times \$1{,}325{,}000\ per\ acre}{Cost_{Increment}\ per\ cubic\ yard} \times 2$$

Unlike Phase 2 and 3, Phase 1 does not include any beneficial reuse for wetland restoration, all sediment is disposed of at SF-DODS, SF-17, or in-Bay. Therefore, USACE is required to compensate for significant impacts, reducing them to less than significant in combination with the standard practices described in the EA/EIR Section 2.3.1.5 and the hopper dredging specific practices described below.

When conducting Phase 2 or 3, USACE will, as part of the Project, minimize hopper dredging entrainment impacts by placing dredged sediment at a non-aquatic beneficial reuse site for tidal wetland restoration from mechanically dredged channels, see Finding 3. Under Phases 2 and 3, USACE can conduct beneficial reuse at no additional cost, i.e. within the Federal Standard Base Plan, allowing for entrainment impacts to be minimized within the Project to the point that compensatory mitigation is not required with the standard practices described in the EA/EIR Section 2.3.1.5 and the hydraulic dredging specific practices described below. The formula to calculate the volume of dredged sediment required to minimize impacts to less than significant is the same as the formula described above for compensatory mitigation, and in Finding 3.

Under all phases of the Project, hopper dredging will be conducted in accordance with the following hydraulic dredging standard practices included in the EA/EIR section 2.3.1.5 to avoid and minimize entrainment impacts to less than significant, including:

a. No dredging shall occur in water ranging from 0 to 5 parts per thousand salinity between December 1 and June 30.

b. USACE shall implement a worker education program for listed fish species that could be adversely impacted by dredging. The program shall include a presentation to all workers on biology, general behavior, distribution and habitat needs, sensitivity to human activities, legal protection status, and project-specific protective measures.

c. Pump priming, drag head clearing, and suction of water at the beginning and end of each hopper load shall be conducted within three feet of the seafloor.

d. Hopper drag head suction pumps shall be turned off when raising and lowering the drag arms from the seafloor.

e. The drag head, cutterheads, and pipeline intakes shall remain in contact with the seafloor during suction dredging.

f. The drag head water intake doors shall be kept closed to the maximum extent practicable in locations most vulnerable to entraining smelt. In circumstances when the doors need to be opened to alleviate clogging, the doors shall be opened incrementally (i.e., the doors shall be opened in small increments and tested to see if the clog is removed) to ensure that doors are not fully opened unnecessarily.

For the delta smelt, USFWS has required USACE to consult on impacts since 2011 because monitoring at that time documented entrainment of this species by USACE dredging of Suisun Bay Channel and New York Slough. Beginning in 2015, biological opinions issued by USFWS have required USACE to dredge the Suisun Bay Channel and New York Slough using mechanical clamshell dredging, thereby avoiding impacts to delta smelt. Current entrainment monitoring does not observe delta smelt, indicating that the switch to mechanical dredging in Suisun Bay Channel and New York Slough has successfully reduced entrainment of the species during hopper dredging.

In 1998, CDFW recommended restricting dredging of all methods in the Central San Francisco Bay and Richardson Bay when Pacific herring is present for spawning and hatching, through a

programmatic work window, which is currently March 16 to November 30. In 2024, CDFW agreed the LTMS biological opinion for green sturgeon is adequate to protect white sturgeon for this Project.

18. California Environmental Quality Act

Together, the Water Board, as lead agency under CEQA, and USACE, as lead agency under the NEPA, jointly prepared the EA/EIR. The EA/EIR analyzed maintenance dredging activities and disposal through dredging year 2034. Dredging year refers to the calendar year in which dredging is planned to begin.

On October 31, 2024, the Water Board issued a draft EA/EIR for public review and filed a Notice of Completion with the State Clearinghouse. (Ca. Code of Regs., tit. 14, §§ 15085-15087.) The public comment period for the draft EA/EIR (State Clearinghouse No. 2024020498) was from October 31, 2024, through December 30, 2024. The Water Board received and evaluated comments on the draft EA/EIR. The comments received and responses to comments are in Appendix H of the final EA/EIR.

The EA/EIR evaluated the continuation of maintenance dredging operation as occurred in the last 10 years as the No Project Alternative under CEQA, consistent with the CEQA Guidelines (Cal. Code Regs., tit. 14, section 15126.6(e)(3)(A)). The EA/EIR also evaluated four project alternatives with various options to divert sediment from unconfined aquatic disposal in-Bay or from the ocean disposal site towards tidal wetland beneficial reuse sites.

- No Project Alternative - The government hopper dredge Essayons, or similarly-sized hopper dredge, would be used to dredge the MSC and a maximum of one in-Bay federal channel, either the Richmond Outer Harbor or the Pinole Shoal Channel, annually. The channel not selected as the additional hopper dredge channel (i.e., either Pinole Shoal or Richmond Outer Harbor) would be deferred. All other channels would be dredged mechanically or with cutterhead. The No Project Alternative represents the current, ongoing dredging operation as implemented over the last permit period.

- Alternative 1, Beneficial Use: Diversion from Deep Ocean Disposal - The government hopper dredge Essayons, or similarly-sized hopper dredge, would be used to dredge the MSC and the Richmond Outer Harbor and the Pinole Shoal Channel, annually. A channel slated for ocean disposal at SF-DODS (e.g. Richmond Inner Harbor or Oakland Harbor) will be split between placement in-Bay and at a non-aquatic beneficial reuse site to achieve additional beneficial reuse of dredged sediment while maintaining the same cost as ocean disposal.

- Alternative 2, Beneficial Use: Regional Optimization, Leverage Hopper Dredging - The government hopper dredge Essayons, or similarly-sized hopper dredge, would be used to dredge as in Alternative 1, and add additional hopper dredging in Richmond Inner Harbor and/or part of Oakland Harbor. USACE would utilize cost savings from additional hopper dredging at some channels to place sediment from other channels mechanically

or cutterhead dredged channels at an approved non-aquatic beneficial reuse site, while maintaining the same overall cost for the annual dredging program.

- Alternative 3, Beneficial Use: Cost Share Opportunity – USACE would partner with a local sponsor to cost share the incremental cost of beneficial reuse or USACE could fund the incremental cost if suitable funds were provided to USACE (e.g., Water Resources Development Act section 1122 funds).

- Alternative 4, Beneficial Use: Maximized – All in-Bay channels would be mechanically dredged except for small river channels that would be cutterhead dredged. All suitable sediment would be beneficially reused.

The Project consists of implementing a phased approach beginning with the No Project Alternative (Phase 1), then Alternative 1 (Phase 2), and lastly Alternative 2 (Phase 3), as well as additional beneficial reuse in the event non-federal funding or federal appropriations opportunities present themselves. The EA/EIR analyzed the environmental impacts of the Project and the alternatives described above. The EA/EIR identified that the Project would have significant entrainment impacts on longfin smelt under the No Project Alternative (i.e., Phase 1 of Project), but that the impact would be reduced to less than significant with mitigation measure BI-1. This Order imposes mitigation measure BI-1 when implementing Phase 1 to reduce impacts to longfin smelt to less than significant (see Finding 17 and Provision 10, which imposes mitigation measure BI-1). Thus, the mitigation measure to reduce significant environmental impacts to the longfin smelt to less than significant levels, as identified in the EA/EIR, has been required. This Order includes reporting and monitoring provisions that comprise a mitigation monitoring and reporting program for mitigation measures to reduce potential significant impacts (Pub. Resources Code, section 21081.6, subd. (a)(1); Cal. Code of Regs., tit. 14, section 15097).

The EA/EIR concluded that Alternative 1 and Alternative 2 would be less than significant with beneficial reuse, the standard practices that avoid and minimize entrainment impacts (see Finding 17), and incorporation of the cultural resource and archaeological protocols as part of the Project.

The Water Board has reviewed and considered the final EA/EIR prior to approving the Project and certifies that the final EA/EIR has been completed in compliance with CEQA and reflects the independent judgment and analysis of the Water Board. The Water Board will file a Notice of Determination with the State Clearinghouse within 5 business days from the issuance of this Order. (Cal. Code of Regs., tit. 14, section 15075, subd. (a).)

19. San Francisco Bay Basin Water Quality Control Plan (Basin Plan)

California Water Code section 13240 authorizes the Water Board to develop a Water Quality Control Plan for the San Francisco Bay Basin, which is the Water Board's master water quality control planning document (the Basin Plan). The Basin Plan designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes implementation programs and policies to achieve those objectives for all waters

addressed through the plan. The Basin Plan was duly adopted by the Water Board and approved by the State Water Board, U.S. EPA, and the Office of Administrative Law where required. The latest version can be found on the Water Board's website at http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml. Requirements in this Order implement the Basin Plan.

The existing beneficial uses of San Francisco Bay in the vicinity of the dredging and disposal areas are:

- Industrial service supply
- Industrial process supply
- Commercial and sport fishing
- Shellfish harvesting (Central Bay only)
- Marine Habitat (Pacific Ocean only)
- Estuarine Habitat
- Fish migration
- Preservation of rare and endangered species
- Fish Spawning
- Wildlife habitat
- Water contact recreation
- Noncontact water recreation
- Navigation

20. *Water Code Section 13263*

Water Code section 13263 requires WDRs to implement the Basin Plan and take into consideration beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241. This Order implements the Basin Plan and takes into consideration the above factors. For example, this Order continues to include receiving water limitations to prevent violations of water quality objectives and prohibits the creation of any nuisance from dredging and disposal activities, among other requirements. For Water Code section 13241 factors, the Water Board finds:

a. **Past, present, and probable future beneficial uses of water**. Basin Plan Chapter 2 identifies designated beneficial uses for water bodies in the San Francisco Bay Region. Beneficial uses of water relevant to this Order are also identified above in Finding 19. The Water Board has taken beneficial uses into account in establishing the requirements of this Order. The prohibitions, receiving water limitation, and provisions in this Order ensure that present and future beneficial uses of water will not be adversely affected.
b. **Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto**. The environmental characteristics of the San Francisco Bay watershed are described in Chapter 1 of the Basin Plan and in the application for this Order. The prohibitions, receiving water limitation, and provisions

in this Order ensure that the environmental characteristics of the hydrographic unit will not be adversely affected.

c. **Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.** By complying with the requirements established in this Order, USACE will ensure control over factors that could affect water quality. The prohibitions, receiving water limitation, and provisions in this Order will ensure that dredging and sediment disposal and placement are properly implemented, and water quality is protected.
d. **Economic considerations.** USACE has reliably conducted its operations and maintenance dredging program as required by the Water Board and consistent with the Federal Standard Base Plan, which takes costs into consideration. Therefore, the prohibitions, receiving water limitation, and provisions are unlikely to impose additional economic burden on USACE. In the unlikely event that USACE incurs additional costs to remain in compliance with this Order, those costs would be justified and necessary to properly conduct the Project and protect public health and the environment. If USACE were not in compliance with this Order, it could have a negative economic impact on commercial fishing, aquatic navigation, and recreation. Because USACE maintains navigational channels into and through the San Francisco Bay to the region's ports and refineries, if USACE did not conduct the Project it would have severe negative impacts on the local economy and residents of the region.
e. **The need for developing housing within the region.** This Order will have no impact on the development of housing within the region.
f. **The need to develop and use recycled water.** This Order will have no impact on the development and use of recycled water.

21. Dredge and Fill Procedures

The Dredge and Fill Procedures include a wetland definition and procedures for submitting, reviewing, and approving applications for water quality certifications and waste discharge requirements for dredge or fill activities. The Dredge and Fill Procedures only allow authorization of dredge or fill activities after it has been demonstrated that a sequence of actions has been taken to first avoid, then to minimize, and lastly compensate for adverse impacts that cannot be practicably avoided or minimized to waters of the state. The avoidance, minimization, and compensatory mitigation measures included in the Project and required by this Order comply with the Dredge and Fill Procedures.

22. Anti-Degradation Policy

Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Resources Control Board established California's antidegradation policy through Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). It incorporates the federal antidegradation policy where the federal policy applies under federal law and requires that whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality must be maintained. Resolution 68-16 only allows change in the existing high quality if it has

been demonstrated to the Water Board that the change is consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial uses of such water, and will not result in water quality less than that prescribed in the policies. Resolution 68-16 further requires that discharges meet WDRs that will result in the best practicable treatment or control of the discharge necessary to assure that (a) pollution or nuisance will not occur and (b) the highest water quality consistent with the maximum benefit to the people of the State will be maintained. Permitted discharges must comply with both the federal and state antidegradation policies.

This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. It does not authorize disposal or placement of sediment with concentrations of pollutants that would degrade water quality. Dredged sediment is characterized, and results are reviewed by the DMMO to provide sediment disposal and placement suitability, see Finding 14. Should sediment characterization indicate elevated contaminants, USACE is required in Provision 2 of this Order to implement additional z-layer[4] characterization and/or practices to prevent resuspended sediment from spreading contaminants, see Finding 6.

The Project will increase turbidity during the dredging, disposal and placement of sediment thereby temporarily degrading water quality. The increased turbidity, however, will be short-lived and spatially localized to the dredging, disposal and placement sites and areas in the immediate vicinity of the dredging, disposal and placement sites. Accordingly, the reduction in water quality will be minor, short-term, localized, and will not cause long-term effects. Mechanical dredging causes the highest turbidity by incidental fallback but is the most stationary method of dredging which spatially limits turbidity increases. Leaking or overflow of scows are not permitted during transport, preventing turbidity from increasing in route to sediment disposal or placement. Dredging is temporary, and turbidity quickly dissipates once dredging is complete. Hydraulic dredging causes significantly less disturbance and resuspension of sediment. Aquatic disposal of sediment causes a turbidity plume that dissipates in about 15 to 20 minutes (Reilly et al. 1992, LTMS EIS/EIR 1998), also being spatially localized.

The permitted discharge will also not result in water quality less than that prescribed in policies and this Order requires the best practicable control to assure no pollution or nuisance and the highest water quality consistent with the maximum benefit of the people.

[4] Z-layer is defined as sediment sampled six inches below the project's over-depth allowance to determine whether newly exposed sediment after dredging would have an effect on essential fish habitat.

23. Notification

USACE and interested persons have been notified of the Water Board's consideration of WDRs and a certification for the Project and have been provided with the opportunity to submit their written comments from August 29 through September 29, 2025.

The Water Board, in a properly noticed public hearing, heard and considered all comments pertaining to the Project and the EA/EIR.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder and other State regulations, as applicable, and to the provisions of the federal Clean Water Act, as amended, and regulations and guidelines adopted thereunder, that USACE shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. The discharge of water, material, or wastes that is not otherwise authorized by the Order is prohibited.
2. Dredging and disposal activities that create a condition of pollution or nuisance as defined in section 13050(l) and (m) of the California Water Code are prohibited.
3. Overflow, leakage, or spilling of dredged sediment from barges, bins or dump scows during transportation from the dredging site to the placement site is prohibited.

B. RECEIVING WATER LIMITATION

1. The discharge shall not cause a violation of any applicable water quality objectives for receiving waters adopted by the Water Board and the State Water Board.

C. PROVISIONS

General

1. Maintenance dredging shall be implemented in conformance with the Project as described in Finding 1 through 17 above, and all documents submitted with the application for this Order.
2. Chemical and biological testing of sediment from the Project has historically shown elevated levels of contaminants in some channels that may pose a threat to aquatic life.
    a. Should testing and analysis of the overlying sediment from the Project show elevated levels of contaminants that may pose a threat to aquatic life, then USACE shall include, in its episode approval request package, the best management practices (BMPs) that will be used to prevent resuspended sediment from leaving the Project area. Appropriate BMPs include a closed environmental clamshell bucket to prevent spillage and/or enclosing the working dredge with a silt curtain.

b. Should testing and analysis of the z-layer from the Project show elevated levels of contaminants that may pose a threat to aquatic life, USACE shall coordinate with the DMMO on a suitable plan, with a timeline, on actions and/or measures it will implement to prevent exposure of the contaminated z-layer to aquatic life post dredging. This plan shall be coordinated before the episode approval request package is submitted to the Water Board. USACE shall review the *Programmatic EFH Conservation Measures for the LTMS Program Agreed-upon by USACE, EPA, and NMFS* dated June 9, 2011 for possible measures to implement.

3. All post-dredge and monitoring reports required by this Order shall be submitted to the Water Board no later than June 30 each year through 2030, unless specified elsewhere in this Order.

Reporting and Monitoring

4. **Eelgrass:** Some areas of the Project are within the 45-meter direct impact buffer zone or the 250 meter indirect impact buffer zone identified by the San Francisco Bay Eelgrass Impact Assessment Tool. As such, USACE is required to implement the following provisions as it applies to the different areas of Project:

    a. Consistent with the Programmatic Essential Fish Habitat Consultation Agreement (Agreement), USACE shall conduct pre-dredge surveys of eelgrass areal coverage and density within the dredge footprint where it overlaps the 250-meter indirect impact buffer zone, conduct post-dredge surveys of eelgrass areal coverage and density if eelgrass is present in the pre-dredge survey, and shall send copies of these surveys to the Water Board; and

    b. Consistent with the Agreement, USACE shall implement light monitoring to protect eelgrass beds within 250 meters of dredging activity from adverse impacts due to excess turbidity in the water column and shall send the Water Board the results of light monitoring studies.

5. For each dredging episode, USACE shall coordinate the dredged sediment suitability determinations through the DMMO, following applicable federal and state guidance on a testing framework and on the preparation of reports.

6. **Integrated Alternatives Analysis:** USACE shall, as part of the episode approval process, submit to the Water Board an evaluation of alternative disposal sites pursuant to section 404(b)(1) of the Clean Water Act and the Dredge and Fill Procedures. This type of evaluation, also known as an “Integrated Alternatives Analysis,” or IAA, shall incorporate all USACE dredging projects (annual and non-annual) over as many years/dredging cycles as possible, up to a maximum of five years, and shall evaluate the practicability of the following beneficial reuse and disposal options:

    a. Habitat Restoration Beneficial Reuse: USACE shall evaluate the practicability of placing dredged sediment from the federal navigation channels at tidal marsh and other appropriate types of habitat restoration sites within the San

Francisco Bay Region and USACE shall take dredged sediment to those sites where it is practicable. USACE shall make good faith efforts to coordinate with habitat restoration projects that are seeking dredged sediment.

b. Levee Restoration Beneficial Reuse: USACE shall evaluate the practicability of placing dredged sediment from the federal navigation channels at levee restoration sites within the San Francisco Bay Region and USACE shall take dredged sediment to those sites where it is practicable. USACE shall make good faith efforts to coordinate with levee restoration projects that are seeking dredged sediment.

c. Other Beneficial Reuse Sites and Rehandling Sites: USACE shall evaluate the practicability of placing dredged sediment from the federal navigation channels at other types of beneficial reuse sites and dredged sediment rehandling sites within the San Francisco Bay Region and USACE shall take dredged sediment to those sites where it is practicable.

d. Coordination with other USACE Projects: USACE shall evaluate the practicability of combining placement of dredged sediment from the federal navigation channels with sediment from other USACE projects implementing beneficial reuse when both projects will occur at similar times or locations or will be performed by the same contractor.

USACE shall submit the IAA by March 31, annually during years 2026 through 2029.

7. **Episode Approvals**: Dredging episodes, including knockdown events, shall not commence until authorized in writing by the Water Board Executive Officer. At least 45 days prior to a dredging episode, USACE shall provide an episode approval request package to the Water Board, with at least 30 days for the Water Board to review the request. The package shall include the following information specific to the episode:

   a. Estimated volume of sediment (i) overlying the permitted depth, (ii) overdepth, and (iii) total volume to be dredged;

   b. Areas to be dredged (include a map and acreage);

   c. Most recent bathymetric survey;

   d. Proposed and alternate disposal and/or beneficial reuse placement sites;

   e. Discussion on the sediment quality, explaining why the sediment is suitable for the proposed disposal and/or beneficial reuse placement sites;

   f. If testing and analysis of the overlying sediment in the Project show elevated levels of contaminants that may pose a threat to aquatic life, include the BMPs that will be used to prevent resuspended sediment from leaving the Project area (include map of where BMPs will be implemented); and

   g. If testing and analysis of the z-layer in the Project show elevated levels of contaminants that may pose a threat to aquatic life, include a final plan, with

timeline, on actions and/or measures USACE will implement to prevent exposure of the contaminated z-layer to aquatic life post-dredging.

The episode approval is dependent on the information provided in the request being consistent with the certified and authorized Project in this Order, USACE's most recent IAA, and sediment suitability.

8. **Annual Post-Dredge Reporting:** For each year covered by this Order, USACE shall provide an electronic copy of a post-dredge report to the Water Board within 45 days after all dredge projects funded in the same fiscal year have been completed, or by the following June 30, whichever comes first. The post-dredge report for each channel shall be submitted via email to RB2-Dredgereports@waterboards.ca.gov. The report shall contain the following information:

    a. Dredging dates;

    b. Post-dredge survey maps of the dredge footprint;

    c. Calculated final dredge volume;

    d. Placement location(s) of dredged sediment; and

    e. Volume of dredged sediment placed at each placement location;

    f. As appropriate, a discussion on the actions and/or measures USACE implemented to prevent exposure of the contaminated z-layer to aquatic life post-dredging; and

    g. When USACE implements Phase 1, documentation of the calculation to determine the amount of mitigation needed to compensate for entrainment impacts from hopper dredging, and the method of fulfilling this mitigation through mitigation credits purchased or volume of sediment beneficial reused as required in Provision 10.

    If USACE does not dredge a channel for which an episode approval was issued, it shall provide a letter to the Water Board by February 14 the following year, specifying which channel it did not dredge.

9. **Monitoring Program:** USACE shall provide a monitoring report that evaluates the water quality impacts of the dredged sediment discharge on waters of the state. This provision is required, consistent with the Water Board's requirement of other dischargers to the Bay including those who dispose of dredged sediment, to monitor the impacts of their discharges to ensure compliance with water quality standards. This monitoring provides necessary information about ambient Bay water quality and potential long-term impacts of dredged sediment disposal. In lieu of submitting channel-specific reports, USACE may elect to participate in the San Francisco Estuary Regional Monitoring Program for Trace Substances (RMP) to fulfill this requirement by contributing $508,000 annually, following the dredging season, to USGS. The RMP is a coordinated and comprehensive long-term monitoring program with the goal of monitoring water and sediment quality to provide the scientific foundation for managing and improving the health of the San Francisco Bay aquatic ecosystem. Additionally, the RMP provides for special and pilot studies of

interest to program participants. As such, the Water Board recognizes payments to USGS for monitoring that contributes to the RMP as fulfilling the requirement to provide information on water quality impacts.

Hopper Dredging

10. When implementing Phase 1, USACE shall compensate for unavoidable in-Bay hopper dredging entrainment impacts by either: 1) purchasing longfin smelt mitigation credits at a resource agency-approved habitat conservation bank, or 2) placing a volume of dredged sediment at a non-aquatic beneficial reuse site for tidal wetland restoration, per the equations below.

    If USACE complies by purchasing mitigation credits, the acres of mitigation required shall be calculated using the following equation and the actual volume of water and sediment pumped by the hopper dredge:

    $$Acres\ of\ mitigation\ required = \frac{800\ acres\ \times Volume_{water/sediment\ pumped\ by\ hopper\ dredge}}{3.0\ million\ acre-feet}$$

    If USACE complies by by placing a volume of dredged sediment at a non-aquatic beneficial reuse site for tidal wetland restoration, the volume of dredged sediment shall be determined using the following equation and the acres of mitigation calculated with the previous equation:

    $$Volume\ of\ Beneficial\ Reuse = \frac{acres\ of\ mitigation\ required\ \times \$1{,}325{,}000\ per\ acre}{Cost_{Increment}\ per\ cubic\ yard} \times 2$$

11. **Entrainment Monitoring:** USACE shall continue monitoring to evaluate potential fish entrainment during hopper dredging by the USACE-owned ship, the Essayons, in the San Francisco Bay as described in 2020-24 Monitoring Plan for Potential Fish Entrainment During Dredging by The USACE Hopper Dredge Essayons in The San Francisco Bay Area (updated 2023). Changes to this monitoring plan must be approved in writing by the Executive Officer. At a minimum USACE shall implement the following monitoring techniques:

    a. An entrainment sampling apparatus shall sample dredged sediment that enters through both drag arms by passing the dredged sediment slurry through a rectangular shaped sieve.

    b. Biological Monitors (a lead delta smelt expert and three fisheries technician assistants) shall conduct entrainment monitoring on a minimum of 80 percent of the dredging passes from onboard the Essayons while the vessel dredges in the San Francisco Bay. The biological monitors shall sort, examine, and document the accumulated material in the sampling apparatus.

    c. Other opportunistic monitoring methods (e.g., observing water surface in the hopper, sampling during water calibration and hopper flushing events) shall be conducted when relevant opportunities arise.

The annual entrainment monitoring report is due by June 30 of years 2026 through 2029.

Administrative and General Compliance

12. USACE shall notify the Water Board immediately by telephone and e-mail whenever an adverse condition occurs due to the Project's activities. An adverse condition includes, but is not limited to, a violation or threatened violation of prohibitions or provisions of this Order, or a release of petroleum products or hazardous substances to waters of the state. A written notification of an adverse condition shall be submitted to the Water Board within 30 days of occurrence, except that for petroleum products and hazardous substances discharges, notification shall be to the California Office of Emergency Services as soon as there is knowledge of the discharge and notification is possible without impeding cleanup or emergency measures consistent with Water Code sections 13271 and 13272. The written notification shall identify the adverse condition, describe the action necessary to remedy the condition, and specify a timetable, subject to the modifications of the Water Board, for remedial actions.
13. In response to a suspected violation of any provision of this Order, the Water Board may require USACE to furnish, under penalty of perjury, any technical or monitoring reports the Water Board deems appropriate, under Water Code section 13383.

Standard Provisions

14. The discharge of dredged sediments to the waters of the State shall cease immediately whenever violations of this Order are detected by USACE or by Water Board, and the discharge shall not resume until compliance can be assured to the Executive Officer's satisfaction.
15. USACE shall provide the Water Board or its authorized representative, in accordance with Water Code section 13267(c), with the following:
    a. Entry upon premises in which any required records are kept.
    b. Access to copy any records required to be kept under terms and conditions of this Order.
    c. Access to inspect monitoring equipment required by this Order.
    d. Access to sample any discharge.
    e. Small craft transport to offshore locations or vessels for the purpose of inspection, provided that it is within normal business hours.

D. CERTIFICATION

1. The Water Board independently reviewed the Project to analyze impacts to water quality and beneficial uses within the Project's area. CWA section 401 authorizes the agency responsible for certification to prescribe provisions, effluent and other limitations, and monitoring requirements necessary to ensure compliance with applicable water quality

requirements and with any other appropriate requirement of state law. Section 401 further provides that state certification provisions shall become provisions of any federal license or permit for the Project. The requirements of this Order must be met to ensure that the Project will comply with water quality standards, any applicable effluent limitations, standard of performance, prohibition, effluent standard, or pretreatment standard requirement pursuant to the CWA above and to ensure that the Project will comply with any other appropriate requirements of state law

2. The Water Board hereby certifies that any discharge from the Project will comply with the applicable provisions of Clean Water Act sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards), and with other applicable requirements of state law.
3. This Order applies to the Project as proposed in the application materials and conditioned and approved in this Order. Failure to implement the Project as proposed, conditioned, and approved is a violation of this Order. Violation or threatened violation of the conditions of this Order is subject to remedies, including, but not limited to, penalties or injunctive relief as provided under applicable state or federal law.
4. This Order action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to CWC section 13330 and 23 CCR section 3867. The Water Board may add to or modify the conditions of this Order, as appropriate, to implement any new or revised water quality standards and implementation plans adopted and approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act or in response to new information concerning the conditions of the Project.
5. This Order is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
6. Order is conditioned upon total payment of the full fee required in state regulations (23 CCR section 3833). The application fee for the Project is $0 and additional annual fees are not required because the permittee is a federal agency.
7. Water Board Order No. R2-2020-0011 is hereby rescinded.
8. Dredging under this Order must be completed no later than May 15, 2030. This Order expires on June 30, 2030.

I, Eileen M. White, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 11, 2025.

Eileen M. White
Digitally signed by Eileen M. White
Date: 2025.12.12 19:22:13 -08'00'
Water Boards

Eileen M. White
Executive Officer

ATTACHMENTS:

Figure 1. Location Map
Figure 2. Dredge Locations and Sediment Placement Areas for Richmond Harbor
Figure 3. Dredge Locations and Sediment Placement Areas for Oakland Harbor
Figure 4. Dredge Locations and Sediment Placement Areas for San Pablo Bay and Mare Island Strait
Figure 5. Dredge Locations and Sediment Placement Areas for Suisun Bay Channel
Figure 6. Dredge Locations and Sediment Placement Areas for Redwood City Harbor
Figure 7. Dredge Locations and Sediment Placement Areas for San Rafael Creek Channel
Figure 8. Dredge Locations and Sediment Placement Areas for Napa River Channel
Figure 9. Dredge Locations and Sediment Placement Areas for Petaluma River Channel
Figure 10. Dredge Locations and Sediment Placement Areas for San Francisco Harbor

Figure 1. Location Map

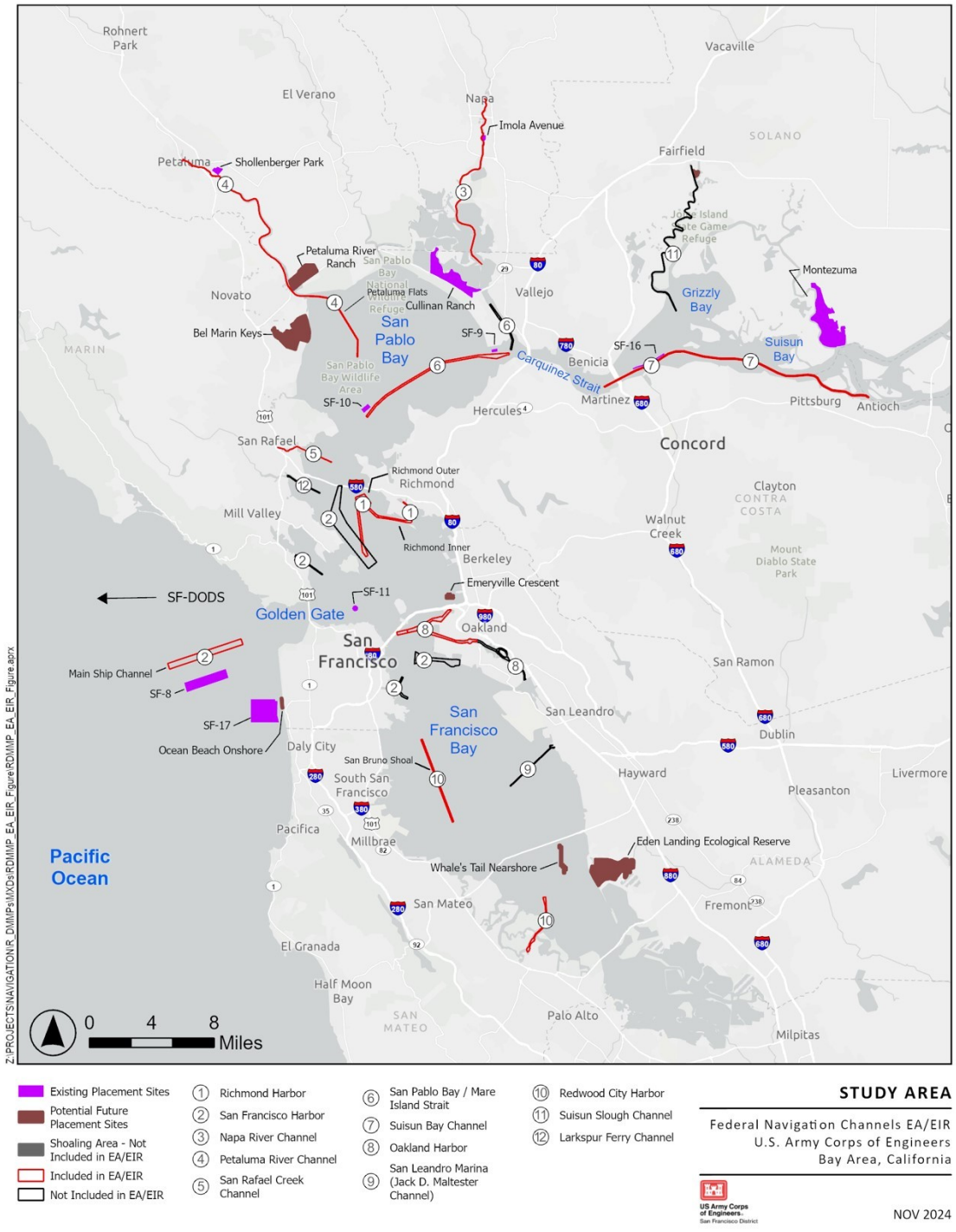

Figure 2. Dredge Locations and Sediment Placement Areas for Richmond Harbor

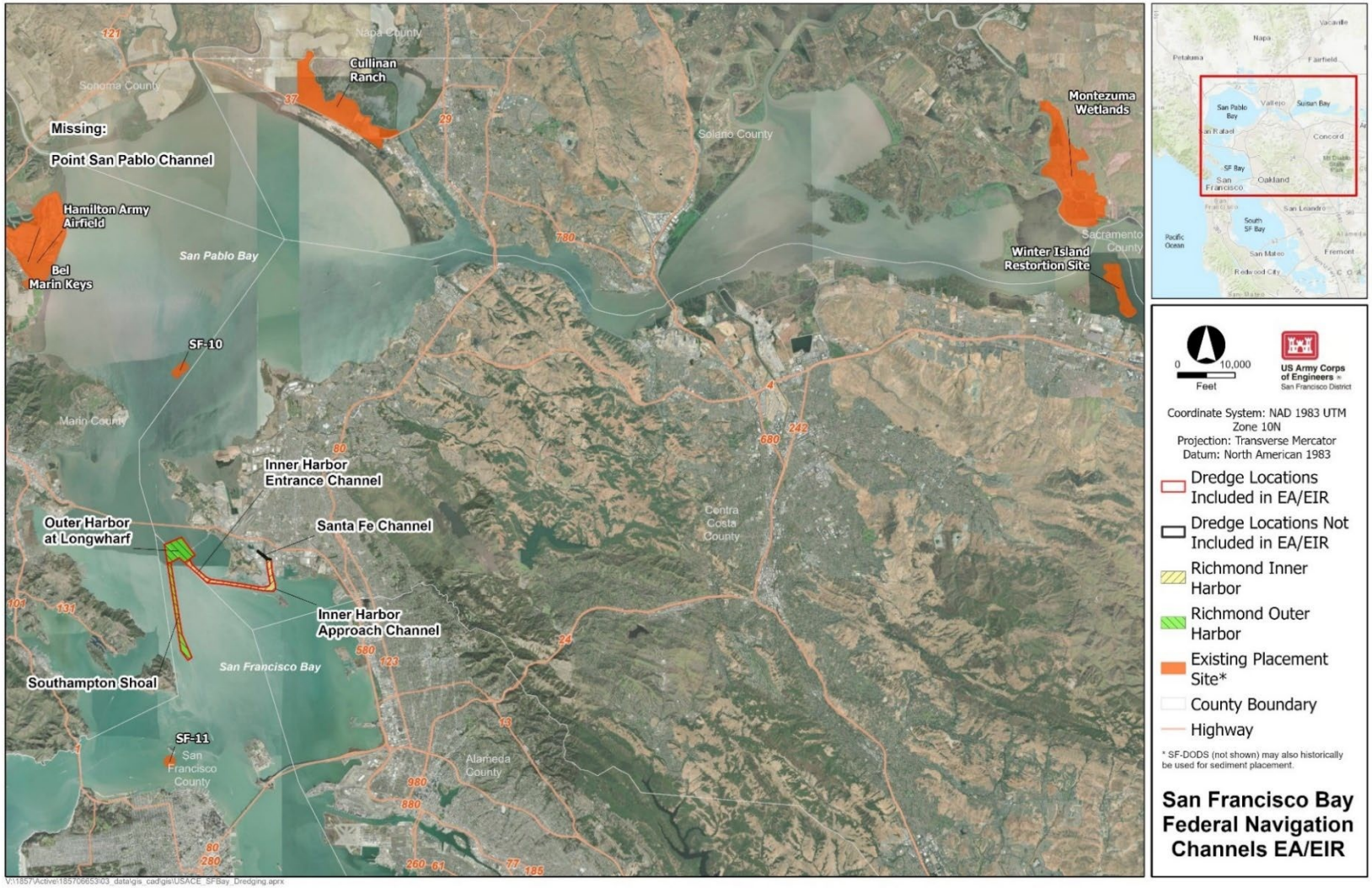

Figure 3. Dredge Locations and Sediment Placement Areas for Oakland Harbor

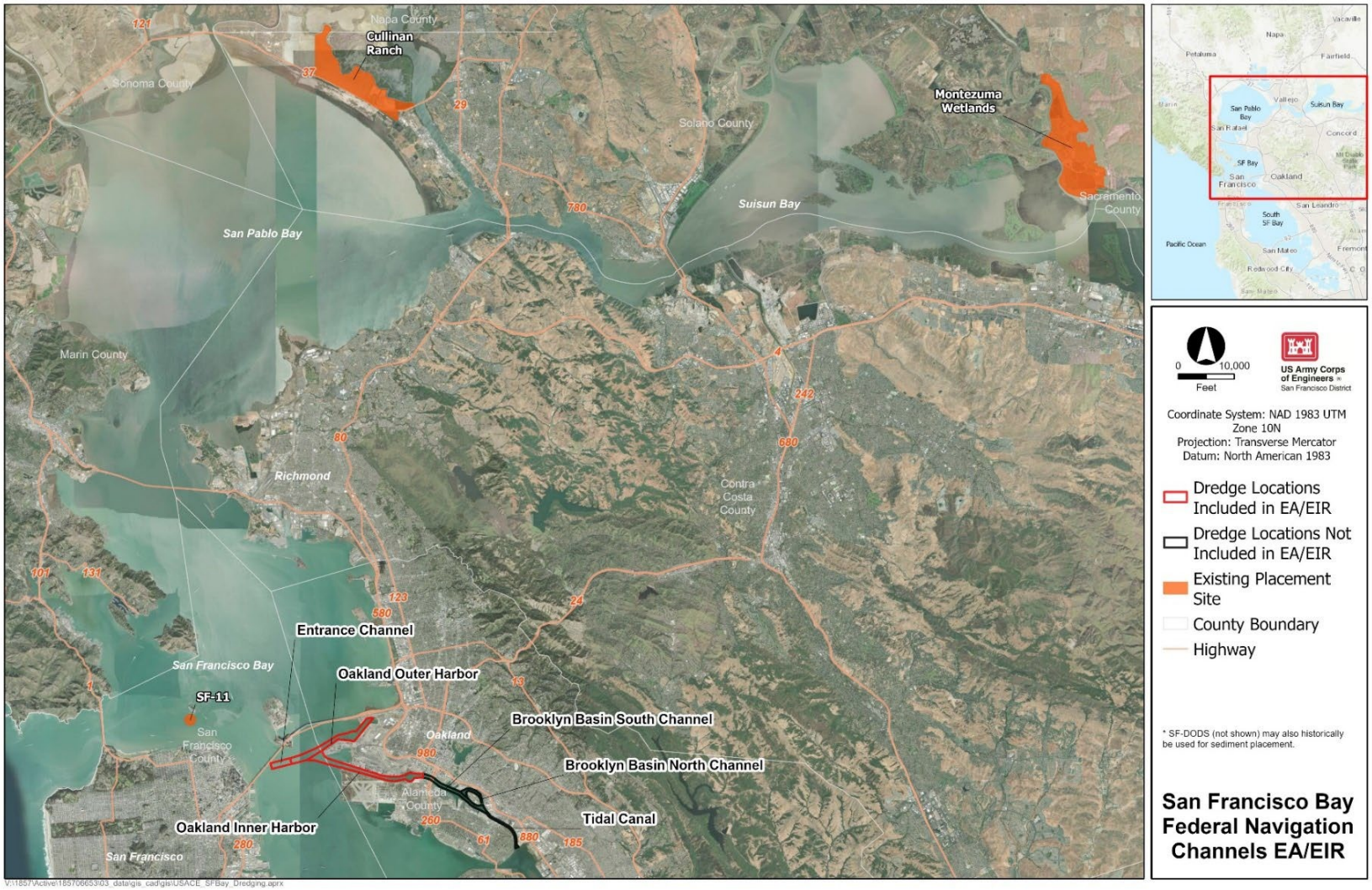

Figure 4. Dredge Locations and Sediment Placement Areas for San Pablo Bay and Mare Island Strait

Figure 5. Dredge Locations and Sediment Placement Areas for Suisun Bay Channel

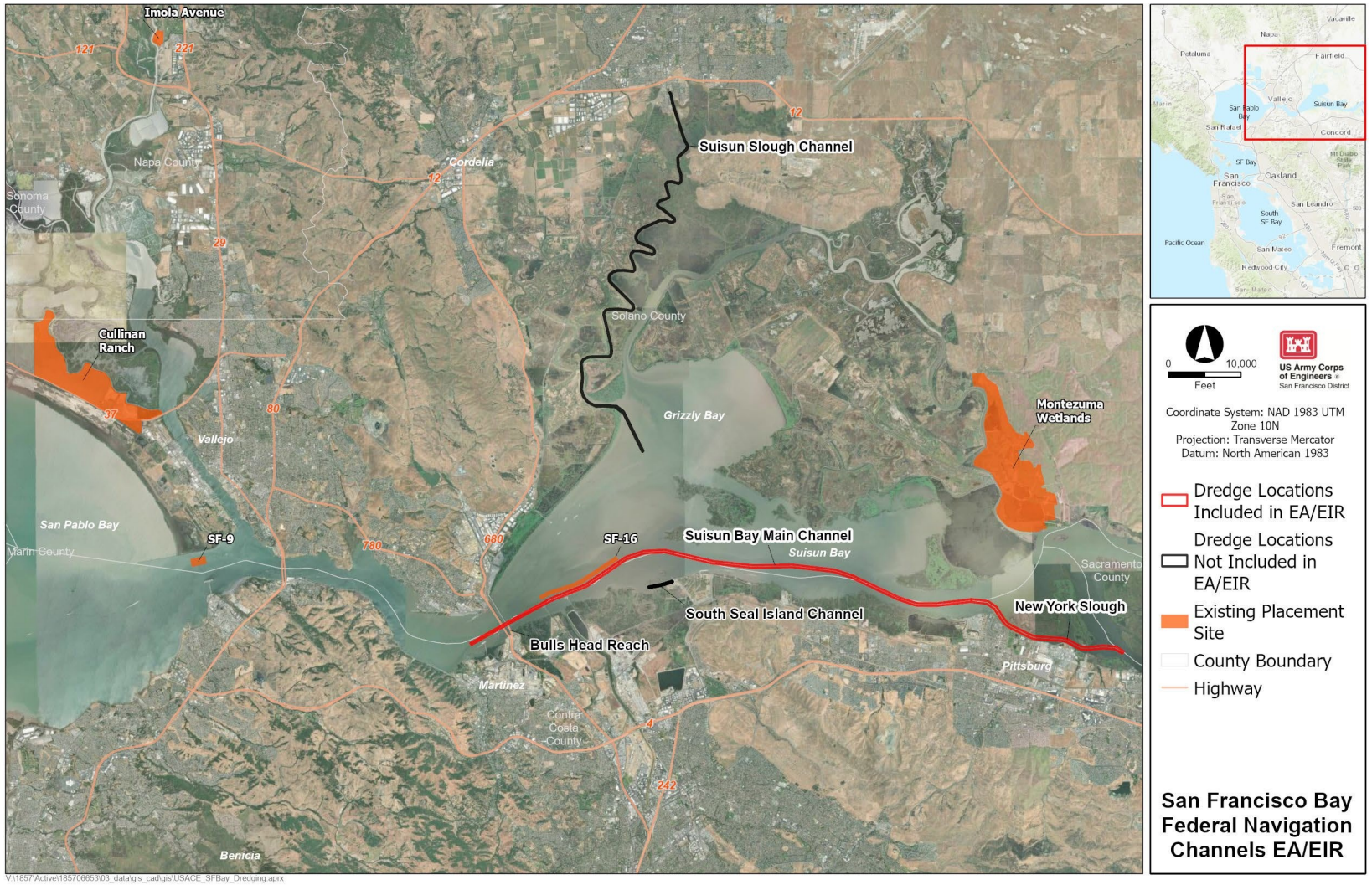

Figure 6. Dredge Locations and Sediment Placement Areas for Redwood City Harbor

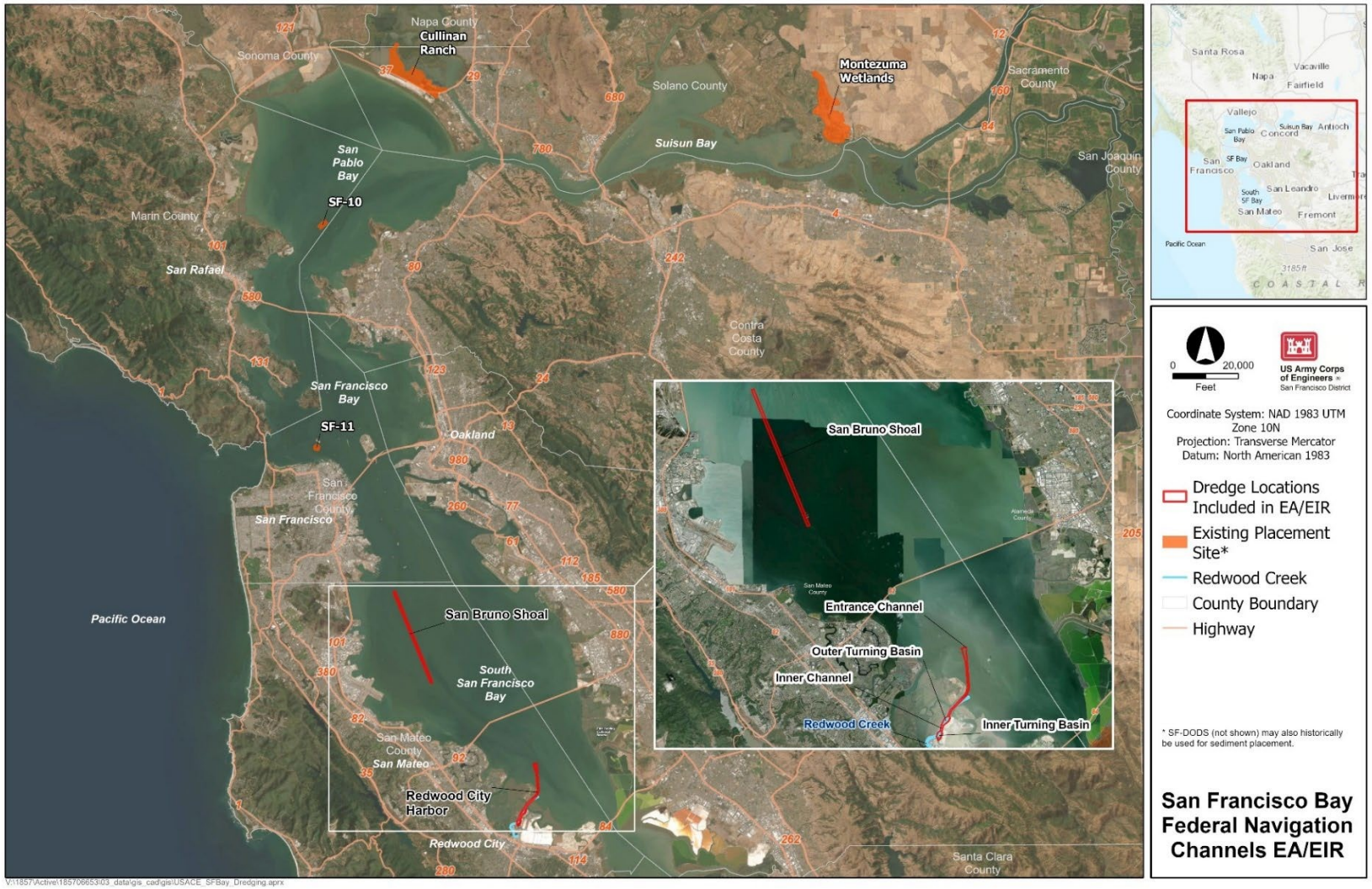

Figure 7. Dredge Locations and Sediment Placement Areas for San Rafael Creek Channel

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Figure 9. Dredge Locations and Sediment Placement Areas for Petaluma River Channel

Figure 10. Dredge Locations and Sediment Placement Areas for San Francisco Harbor