APPENDIX C
Response to Comments

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We received three comment letters during the public comment period, which closed on November 4, 2019, and we have reviewed and considered the comments contained in those letters. The comments[1] and our responses are presented here. Staff initiated changes are presented at the end of our responses.

Comment letters received:

[1] The comments in Appendix C have been paraphrased. Readers should refer to the comments in Appendix B to see the comments in full.

Comment Letter No. 1: U.S. Army Corps (USACE)

Comment 1.1

"As a federal agency, conducting congressionally authorized operation and maintenance dredging, USACE is only subject to federal law, specifically here the federal requirements under the Clean Water Act. Therefore, USACE requests a Water Quality Certification (WQC) pursuant to Section 401 of the Clean Water Act. Without a clear and explicit waiver of sovereignty, USACE is unable recognize the Water Board's purely state Waste Discharge Requirement (WDR) authorities. However, USACE acknowledges that the Water Board may have its own administrative reasons for issuing a joint WDR/WQC rather than a standalone WQC."

Response to Comment 1.1

Pursuant to Water Code section 13263(d), the Board may prescribe waste discharge requirements (WDRs) although no discharge report has been filed. Furthermore, from 1990 to the present, the Board has regulated USACE's maintenance dredging activities under WDRs. Initially, the Board issued WDRs every 2-3 years for USACE maintenance dredging. After adoption of the Long-Term Management Strategy (LTMS) Management Plan in 2001, WDRs were issued for 3-year periods corresponding with the LTMS in-Bay disposal reduction step-down periods. USACE provides no reference to any new provision of law or change in circumstance that would restrict the Board's ability to continue to regulate USACE's maintenance dredging activities under WDRs. WDRs are appropriate where, as in this activity, there are ongoing discharges. Moreover, the Board may modify WDRs more easily than a stand-alone section 401 Water Quality Certification (WQC) to react to changed circumstances and/or new information during the term of the permit.

Under the Supremacy Clause (U.S. Const., art. VI, cl. 2.), and the doctrine of sovereign immunity, federal agencies and facilities are subject to State law only to the extent authorized by Congress. (*Hancock v. Train* (1976) 426 U.S. 167.) Any such authorization must be "clear and unambiguous" and any waiver must be narrowly construed. (*Goodyear Atomic Corp. v. Miller* (1986) 486 U.S. 174, 180.) Because only Congress may waive sovereign immunity, any such waiver will be found within a federal statute.

In this case, there are two waivers of sovereign immunity within the federal Clean Water Act (CWA) (33 U.S.C. § 1251 *et seq*.): CWA § 313 and CWA § 404(t). Both sections contain similar language; however, the former is a more general sovereign immunity waiver applicable to "the discharge or runoff of pollutants," while the latter is more specific and applies to the "discharge of dredge or fill material in any portion of the navigable waters." For example, CWA § 404(t) provides:

"Nothing in this section shall preclude or deny the right of any State or interstate agency to control the discharge of dredged or fill material in any portion of the navigable waters within the jurisdiction of such State, including any activity of any Federal agency, and each such agency shall comply with such State or interstate requirements both substantive and procedural to control the discharge of dredged or fill material to the same extent that any person is subject to such requirements. This section shall not be construed as affecting or impairing the authority of the Secretary to maintain navigation."

The Ninth Circuit Court of Appeals has held that the Clean Water Act's waiver of sovereign immunity requires a federal entity to obtain a state permit that regulates and controls dredging and water quality. (*Friends of the Earth v. U.S. Navy* (9th Cir., 1988) 841 F.2d 927.) The WDRs

regulate USACE's ongoing discharge of dredged or fill material and are consistent with the waivers of sovereign immunity in the Clean Water Act.

Comment 1.2

"USACE similarly objects to Water Board's application of California Environmental Quality Act and California Endangered Species Act to our federal project. USACE continues to hold the same position outlined in our agencies' joint Finding of No Significant Impact (FONSI) and Environmental Assessment/Environmental Impact Report (EA/EIR) for Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay Fiscal Years (FY) 2015-2024, signed May 29, 2015 that reduction of hopper dredging is unnecessary and inappropriate. However, USACE will reduce the scope of our federal project and alternate annual dredging of Richmond Outer Channel and Pinole Shoals Channel to remain in compliance with the WDR/WQC. The reduction of dredging will produce even less impacts to the State's listed species than were USACE to switch to clamshell dredging one of these two channels annually."

Response

Although USACE is not required to comply with the California Endangered Species Act (CESA), the Water Board must comply with CESA when issuing WDRs and a WQC. Under CESA, "all State agencies '*shall* seek to conserve endangered species and threatened species and *shall* utilize their authority in furtherance of the purposes of' CESA." (*Kern County Water Agency v. Watershed Enforcers* (2010) 185 Cal.App.4th 969, 980 [citing Fish & G. Code § 2055] [emphases added].) The requirement to reduce hopper dredging in the Richmond Outer Harbor and Pinole Shoal channels complies with CESA because it substantially lessens significant effects of maintenance dredging on two State-listed species, delta smelt and longfin smelt.

We acknowledge that the California Environmental Quality Act (CEQA) does not apply to USACE independent of the 401 context. The Water Board, however, must comply with CEQA in connection with the 401 WQC. Where, as here, a project will have significant effects on the environment, the Water Board cannot approve the project unless it eliminates or substantially lessens those impacts where feasible and determines that any remaining impacts are acceptable due to overriding concerns. (Cal. Code Regs., tit. 14, § 15092, subd. (b).) Reduced hopper dredging is feasible and therefore required.

In addition, the Water Board may impose conditions under CWA § 401 that require a federal activity to comply with State water quality standards and appropriate requirements of State law. (*PUD No. 1 of Jefferson County v. Washington Dept. of Ecology* (1994) 511 U.S. 700, 712-713.) Requiring reduced hopper dredging is necessary to ensure that USACE's activities are undertaken consistently with water quality standards. The Basin Plan designates Preservation of Rare and Endangered Species (RARE), Estuarine Habitat (EST), Fish Spawning (SPWN), and Fish Migration (MIGR) as beneficial uses, which are part of water quality standards under the federal Clean Water Act. (CWA § 303(c)(2)(A).) Reduced hopper dredging will, for example, ensure that habitats necessary for threatened and endangered species are protected consistent with the RARE beneficial use designation for San Francisco Bay.

Comment 1.3

"In the TO, the Water Board states that 'the potential for entrainment would be reduced with the use of a mechanical dredge' (p.24) compared to a hopper dredge. This is an assumption. The studies that have been completed have limited ability to produce useful statistical data

on entrainment of special-status species due to equipment limitations on government dredges (see comment 9). USACE requests that the Water Board acknowledge that this is an assumption rather than a scientifically validated fact."

Response

This contradicts USACE's draft Environmental Impact Statement analyzing deepening of the Pinole Shoal Channel (Stockton DEIS)[2], which makes a statement very similar to the one that USACE objects to in the Tentative Order. Specifically, on page 4-48 of the Stockton DEIS states., [m]echanical dredging … is generally accepted to entrain far fewer fish than hydraulic dredging because little water is removed along with the sediment and it does not involve any suction…"

The California Department of Fish and Wildlife (CDFW) is the primary State agency responsible for protecting State threatened and endangered species in California. In its March 14, 2014, memorandum to the Water Board (CDFW Memo) providing guidance on issues related to entrainment of State-listed fish species (attached to the Tentative Order), recommended reducing the use of hopper dredging equipment inside San Francisco Bay. CDFW's recommendation is based on the fact that mechanical dredging has less potential for entrainment of longfin and delta smelt compared to hopper dredging. While this has not been proven statistically, it is based on scientific data including patterns of fish life history and behavior, swimming ability, and flow field forces around the drag head. No studies have been performed in the last five years to show that the basis for CDFW's recommendation is invalid and the USACE monitoring demonstrates continued entrainment is occurring with the hopper dredge method. More information about scientific underpinnings of the EIR are found in the paragraphs below.

Per 2015 Federal Navigation Channels EA/EIR[3], Impact 3.6-4: Potential Adverse Effects from Entrainment on Special-Status or Commercially and Recreationally Important Marine Species, Not Including Delta Smelt and Longfin Smelt, page 3.6-33: "All forms of dredging have the potential to incidentally remove organisms from the environment with the dredged material, a process referred to as entrainment. Organisms on the dredged material may be entrained, in addition to organisms in the water column near the dredging apparatus. In general, smaller organisms with limited or no swimming capabilities are more susceptible to dredge entrainment. Mechanical dredging is generally accepted to entrain far fewer fish than hydraulic dredging, because little water is removed along with the sediment; but it still may remove demersal fish and crustaceans that live in or on the sediment."

Per 2015 Federal Navigation Channels EA/EIR, Impact 3.6-6: Potential Substantial Adverse Effects and Cumulative Impacts to Longfin Smelt from Entrainment, page 3.6-43: "Smelt are not strong swimmers and longfin smelt in particular are known to occur near the bottom of the water

[2] Draft Integrated Reevaluation Report and Environmental Impact Statement for the San Francisco to Stockton Navigation Improvement Project, available at https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/11171

[3] United States Army Corps of Engineers, San Francisco District and Regional Water Quality Control Board, San Francisco Bay Region. April 2015. Final Environmental Assessment/Environmental Impact Report. Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay, Fiscal Years 2015-2024.

column (CDFG, 2009a[4]). As a result, they are presumed susceptible to entrainment in the flow fields created around drag heads of trailing suction dredges."

Comment 1.4

"After five years of studies in cooperation with the Water Board, USACE appreciates the Water Board's agreement that monitoring requirements associated with overflow/decanting during dredging testing is no longer required."

Response

Comment noted.

Comment 1.5

"As acknowledged in the WQC (p.2), as early as the mid-2000s, the U.S. Geological Survey identified a significant reduction in suspended sediment loading from the Sacramento-San Joaquin river system into the Bay, and less sediment in suspension and circulation within the Bay impairs its ability to withstand erosion and inundation, especially as sea level rises. This shift in sediment dynamics coupled with sea level rise, brings into question the foundational assumption in the LTMS that in-Bay disposal is not beneficial and that ocean disposal is preferred to it. The Water Board should bear in mind this reality when considering compliance with the LTMS 20/40/40 goals. The Water Board must appreciate that the percentage goal that the dredging community is failing to meet is not the beneficial reuse 40% but the ocean 40%. For instance, USACE's 2019 percentages are likely to be approximately 64% beneficial reuse, 30% in- Bay, and 6% ocean. The Dredged Material Management Office (DMMO) overall numbers have all dredgers at 43.3% beneficial reuse, 38.8% in-Bay, and 20.9% ocean since the year 2000. In other words, there does not seem to be an actual desire for dredgers to shift in-Bay disposal to ocean disposal as recommended in the LTMS 20/40/40 goal."

Response

This comment appears to question the goals of the LTMS Program. The Tentative Order is not the appropriate vehicle for revising these goals. If this is USACE's intention, we recommend it work with the LTMS federal and State agency partners collectively through the LTMS Management Committee to refine and update the LTMS goals. However, the Water Board believes the LTMS goals are still appropriate in light of climate change driven sea-level rise. Further, the Water Board's perspective is that if any changes are made to LTMS goals, these modifications should require both project and dredger specific in-Bay limits associated with beneficial reuse minimums that will be directly written into dredging permits requiring more than 50 percent beneficial reuse of all dredged material.

We disagree with the assertion that in-Bay "disposal" could be considered "beneficial" in terms of adapting to sea level rise.

USACE implies that unconfined or non-engineered in-Bay disposal could be considered beneficial reuse, especially considering the decrease in suspended sediment supply. Currently, no sea level

[4] CDFG (California Department of Fish and Game), 2009a. Longfin Smelt Fact Sheet.

rise adaptation benefits are associated with dredged sediment placement at existing in-Bay dispersive aquatic disposal sites. These sites were intentionally located in areas of strong currents (i.e., high energy) to maximize dispersal of dredged sediment placed there. In 2012, as part of the USACE's ongoing Regional Dredged Material Management Planning process, a three-dimensional hydrodynamic, wave, and sediment transport model was applied to examine sediment dispersal throughout the Bay. One focus of the sediment transport modeling effort was to examine the sediment dispersal following dredged material placements. The model was applied to evaluate sediment dispersal away from two currently designated in-Bay sediment placement sites, Carquinez Strait (SF-9) and San Pablo Bay (SF-10) and two nearby sites adjacent to marsh areas. Model results indicated that placements at these sites, which are in a highly dispersive region, were not effective at supplying sediment to the nearby mudflats and marshes. There is even less likelihood that sediment placed at the Alcatraz Island site (SF-11) in central San Francisco Bay would deposit on mudflats or marshes along the Bay margin.

The LTMS12-Year Review completed in 2013 concluded that, while implementation challenges remain, the LTMS goals, and the LTMS Management Plan (based on the 1998 LTMS programmatic FEIS/EIR Alternative 3) remain valid and do not need to be changed. However, the Review did also talk about beginning a process to evaluate whether, where, and how unconfined in-Bay placement might qualify as beneficial reuse. If future studies show that in-Bay beneficial reuse may be feasible and environmentally acceptable in some locations, the volume so managed would not be accounted for as in-Bay "disposal."

We also disagree with USACE's assertion that ocean disposal is "preferred" over in-Bay disposal. There is no preference under the LTMS Management Plan to achieve an ocean disposal "goal." Ocean disposal was meant to serve as a "safety valve" for when beneficial reuse is unavailable or otherwise not practicable. The only other reason it may be desirable to shift in-Bay disposal to ocean disposal would be to avoid exceeding the cumulative annual in-Bay disposal target or the three-year average annual in-Bay disposal allocation trigger.

While we are pleased to see USACE beneficially reusing dredged sediment at higher than normal rate in 2019, we must also acknowledge that over half of this volume is a backlog owed to beneficial reuse per the LTMS Programmatic ESA consultation with NMFS (sediment dredged outside listed salmonid work window in previous years but taken to the SF-DODS ocean disposal site rather than to aquatic habitat restoration beneficial reuse).

Comment 1.6

"USACE appreciates the Water Board's certification of 4.08 million cubic yards of in-Bay disposal over five years."

Response

Comment noted.

Comment 1.7

"USACE greatly appreciates the Water Board providing the opportunity for USACE to streamline the episode approval process. By doing so, both USACE and the Water Board can conserve tax payer resources, while appropriately accounting for compliance with the Clean Water Act. Moreover, USACE appreciates the inclusion of language that increases the flexibility of the Order by authorizing the Executive Officer to consider allowing USACE to

exceed the 4.08 mcy in-Bay limit provided it does not result in exceedance of the allocation trigger and that 50% of the excess volume is beneficially reused."

Response

Comment noted.

Comment 1.8

"Notwithstanding comment 2, USACE would like the Water Board to include this revision to Provision 12: 'By March 31 of years 2021 through 2024, USACE shall submit an annual update to the plan (or an acceptable rationale justifying that no update is necessary or proposed). USACE may propose alternative evaluation methods that it believes will result in a better understanding of hopper dredge entrainment of special status species.' This flexibility appears to be consistent with the intent of the CDFW recommended monitoring, which suggested monitoring be conducted for two years then evaluated to determine if additional minimization measures or monitoring is indeed necessary."

Response

We have not added the additional sentence to Provision 12 that USACE requests in its comment. The language currently in the Tentative Order allows the flexibility to modify monitoring methods that still meet the minimum elements described in the CDFW Memo. In addition, we have confirmed via personal communication with Arn Aarreberg that CDFW still considers Provision 12 a. through e. to be minimum essential components of an acceptable entrainment monitoring plan. The Water Board is open to more broad changes in the monitoring program should a proposal be consistent with the CDFW Memo. We note that CDFW is willing to work with Water Board staff to provide recommendations on USACE-proposed modifications to Provision 12 monitoring requirements during review of the annual monitoring plan updates.

Comment 1.9

"USACE also requests the Water Board leave open the opportunity to consider alternatives to the existing entrainment monitoring requirement in the WDR/WQC. USACE understands the Water Board's concern regarding entrainment of special status species during our dredging operations and believes we may be able to ameliorate those concerns in a more effective manner than the current entrainment monitoring envisioned by the WDR/WQC. The USACE expended a considerable amount on entrainment monitoring under the former WDR/WQC and these efforts have had limited ability to produce useful statistical data on the effects of entrainment on special-status species. The continuation of this program is unlikely to provide further improved data without modifications to the entrainment devices, which would be prohibitively costly. USACE hopes that the Water Board will be amenable to potential alternatives to the entrainment monitoring requirement in Provision 12, should USACE find a substitute acceptable to the Water Board. We request the Water Board include the following statement in the TO:

The Executive Officer may consider and approve a USACE proposal that provides better benefits to special-status fish species than the entrainment monitoring required by Provision 12. This proposal, if agreed to by the Water Board, would be implemented and would replace the requirements in Provision 12.

Response

We did not make the change requested by USACE to add the statement in Comment 1.9 to the Tentative Order, but we are amenable to amending the WDRs/WQC order in the future should USACE develop a substitute for monitoring acceptable to the Water Board.

Allowing future replacement of entrainment monitoring with an unspecified alternative action that does not involve monitoring would be a significant revision to a Board-adopted WDR/WQC order. The Executive Officer does not have the authority to issue or revise WDR orders under California Water Code section 13223. The adopted order would have to go before the Water Board to amend Provision 12 to revise the entrainment monitoring requirement should USACE propose an acceptable substitute.

The current monitoring data shows continued entrainment. We are willing to work with USACE during the 2020-2024 permit term, in coordination with CDFW and the federal resource agencies, to devise an alternative to monitoring that could be shown to provide measurable benefits to special-status fish species that have been entrained by USACE hopper dredging in San Francisco Bay.

Comment Letter No. 2: San Francisco Baykeeper (Baykeeper)

Comment 2.1

"Revise the Final Order to prohibit hydraulic dredging and require mechanical clamshell dredging in in-Bay channels to protect imperiled native fish species."

Response

The Water Board does not agree that a prohibition of hydraulic dredging and requirement to implement mechanical clamshell dredging of in-Bay channels is required to protect imperiled native fish species, such as the longfin smelt and delta smelt. The current Provision in the Tentative Order, which allows hydraulic dredging every other year in the Richmond Outer Harbor Channel and the Pinole Shoal Channel, adequately protects special status fish species as demonstrated in the Board-adopted Federal Navigation Channels EA/EIR (EA/EIR)[5] and summarized below.

In developing the EA/EIR, the Water Board consulted with CDFW because it is the primary resource agency charged with responsibility for protecting endangered species in California. CDFW was consulted at length during the process of drafting the EA/EIR, and in response to a request for guidance from the Water Board, provided a memorandum dated March 14, 2014 (CDFW Memo), that outlines conditions and measures CDFW believed would reduce significant

[5] United States Army Corps of Engineers, San Francisco District and Regional Water Quality Control Board, San Francisco Bay Region. April 2015. Final Environmental Assessment/Environmental Impact Report. Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay, Fiscal Years 2015-2024.

impacts to delta smelt and longfin smelt to less than significant. One of the conditions that CDFW recommended was to reduce hopper dredging (a form of hydraulic dredging) in SF Bay to a minimum, and it referenced Alternative 1 of the Draft EA/EIR (reduce hopper dredging to one channel inside the Bay per year) as an example. The CDFW Memo also recommended a corresponding amount of compensatory mitigation in the form of mitigation bank credit purchase using the formula that CDFW developed for the State Water Project. The CDFW Memo did not recommend prohibiting hopper dredging or other forms of hydraulic dredging (e.g., cutterhead, plain suction) altogether within San Francisco Bay. As with the previous 2015-2019 Order, the current Tentative Order incorporates all impact minimization and mitigation measures recommended by the CDFW Memo so that impacts to protected species are considered less than significant.

The Water Board consulted CDFW about the Tentative Order, including the entrainment monitoring results for 2016 to 2019 on several occasions between August 2019 and November 2019 (personal communication with Arn Aarreberg). During such consultation, CDFW did not recommend any changes to the Tentative Order regarding hopper dredging due to concerns over threatened species. Therefore, we did not revise the Tentative Order.

Comment 2.2

"Revise the Final Order to require the Corps to dispose of a minimum of 40% of dredged sediment at beneficial reuse sites, or, at a minimum, retain Provision B.2 in the Final Order."

Response

The Water Board regulates dredged material in the most environmentally protective manner possible within the limits of its regulatory authority and consistent with the LTMS program goals. The Tentative Order accomplishes this objective, so we did not make the revision that Baykeeper requests. We also note that Provision B.2 was retained in the Tentative Order.

Consistent with the LTMS goal of "maximizing the use of dredged sediment as a resource," the LTMS Management Plan cites the 1998 LTMS programmatic FEIS/EIR 40-40-20 alternative (40 percent or more beneficial reuse, a maximum of 40 percent ocean disposal, and a maximum of 20 percent in-Bay disposal) as doing the best job of meeting those narrative goals. The 40-40-20 alternative is not specific to any one dredger but is to be achieved cumulatively by the entire dredging community, which it currently is. According to dredged material disposal reporting compiled by the DMMO in its annual reports, the fraction of beneficial reuse achieved for all dredgers combined between 2000 and 2018 is 40.8 percent demonstrating that the overall goal of 40 percent or more beneficial reuse is being achieved.

The mechanism for maximizing beneficial reuse and meeting the 40-40-20 alternative is to evaluate disposal alternatives for dredging projects in accordance with *Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredge or Fill Material* (40 CFR 230). Compliance with these Guidelines is required under both the USACE's Federal Standard (33 CFR 335.7) and Section 4.23 of the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Section 404(b)(1) Guidelines prohibit all discharges of dredged or fill material into waters of the U.S., unless there are no practicable alternatives to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. *An alternative is practicable if it is available and capable of being done taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by*

the applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered (40 CFR 230.10(a)(2)).

Requiring USACE to beneficially reuse a minimum of 40 percent of dredged sediment generated by its maintenance program over the five-year term of the Tentative Order is not practicable at this time. It is not logistically feasible, for instance, because the amount of sediment that can be beneficially reused is limited by the dredging work window mandated by NMFS and/or FWS to protect special status species (i.e., avoidance of other significant adverse environmental consequences) and the number of sites available to beneficially reuse dredged sediment. Currently, only two large-scale beneficial reuse sites (Montezuma Wetlands Restoration Project and Cullinan Ranch Restoration) can accept dredged sediment and the number of barges that can be sent to these sites is limited by the rates of the offloading facilities. In addition, at Cullinan Ranch, the water depth at the current offloading location limits the size of barges that can access the site, which requires the sediment to be transported in smaller barges that increases the number of trips to the site, takes additional time, and further reduces the amount of dredged material that can be sent to this site. In addition, the occasional equipment breakdowns and power outages at these sites can further limit the amount of dredged sediment that can be beneficially reused in any given year. Lastly, not all sediment is suitable for beneficial reuse at restoration sites because it contains contaminant levels above screening thresholds.

Although it is not practicable to require a minimum of 40 percent beneficial reuse of dredged sediment for USACE's maintenance program over the entire permit term, the Water Board intends to work with USACE and our LTMS partner agencies during this permit term to maximize the amount of USACE dredged material that is taken to beneficial reuse sites. We continue to support efforts to provide additional funding to increase the number of beneficial reuse sites, such as the WRDA WIIN project (Section 1122 of the Water Resources Development Act/Water Infrastructure Improvements for the Nation Act of 2016 Pub. Law 114-322), SB 840 (Budget Act of 2018)[6], or possible funding from San Francisco Bay Restoration Authority (http://sfbayrestore.org/). Additional funding may also increase capacity to beneficially reuse dredged sediment by purchasing an additional offloading facility and/or piloting strategic placement sites. We also are working to increase the number of beneficial reuse sites by supporting efforts to implement additional wetland restoration sites, such as Bel Marin Keys V and Eden Landing. Our hope is that by facilitating projects that increase beneficial reuse placement sites, the logistical constraints to beneficial reuse will be lessened; thereby, allowing more dredged sediment to be beneficially reused to protect the Bay from sea level rise resulting from climate change.

Comment 2.3

"Revise Certification C.3 of the Tentative Order to authorize the Regional Board to modify the Final Order in accordance with the pending federal court decision regarding the Previous Order."

Response

We believe the requested revision is no longer necessary. The federal judge presiding over the dredging-related litigation that Baykeeper references issued a decision shortly after Baykeeper submitted its comments (Order Denying Plaintiff's Motion for Summary Judgment and Granting

[6] https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB840

Defendant's Motion for Summary Judgment, *San Francisco Bay Conservation and Development Commission v. United States Army Corps of Engineers, et al.,* U.S. District Court Northern District of California (Case No. 16-cv-05420-RS). The Water Board is not a party to that litigation and the court's decision does not affect the Tentative Order. No changes have been made to Certification C.3.

Comment 2.4

"Add to the Final Order the Receiving Water Limitations from the Previous Order that were omitted from the Tentative Order"

Response

We did not retain the receiving water limitations based on narrative water quality objectives for nuisance conditions and toxic pollutants and numeric objectives for conventional pollutants (dissolved oxygen, pH, un-ionized ammonia, and salinity), because they are unnecessary. Inclusion of these receiving water limitations was not necessary in the Previous Order either. The San Francisco Estuary Institute (SFEI) completed a literature review in 2008[7] to better understand the short-term effects of dredging on water quality in San Francisco Bay. Based on key findings of SFEI's literature review, we have determined that water quality impacts related to the prior receiving water limitations due to dredging and aquatic disposal activities conducted under the LTMS Program, which applies to all USACE navigation dredging, are unlikely. This is due to: 1) the small area affected by the discharge plumes in relation to the substantially larger area of the Bay, 2) water volume and tidal circulation at the dispersive aquatic disposal sites, and 3) sediment testing and evaluation which ensures no in-Bay disposal of sediments that either exhibit toxicity or fail the bioaccumulation test.

Comment 2.5

"Add to the Final Order the language from Provision B.6 of the Previous Order regarding overflow and decanting during mechanical dredging activities."

Response

We removed the requirement to monitor water quality during decanting operations[8] in the Tentative Order because the decant monitoring data that USACE collected from 2015 to 2019 in Oakland Harbor, Richmond Inner Harbor, and Redwood City Harbor under the Previous Order demonstrates that decanting during dredging of fine-grain sediment does not generate large plumes of suspended sediment that will adversely impact fish and other aquatic life. Turbidity during decanting operations in Oakland and Richmond Harbors never exceeded the 50 NTU (or 10 percent greater than concurrent background turbidity when background was greater than 50 NTU) compliance limit 500 feet down current from the dredge scow. Although there were a few excursions of turbidity above 50 NTU in Redwood City Harbor in 2015 and 2016, the frequency,

[7] Jabusch, T., A. Melwani, K. Ridolfi and M. Connor. 2008. Effects of short-term water quality impacts due to dredging and disposal on sensitive fish species in San Francisco Bay. Prepared by San Francisco Estuary Institute for US Army Corps of Engineers, San Francisco District.

[8] Decanting refers to the release of water entrained with dredged sediment from a barge when the water reaches the top of a stand pipe that typically represents about 80% of barge capacity. The stand pipe acts as a weir, allowing the discharge of supernatant water to increase the barge's effective load.

magnitude, and duration did not reach a level that would likely harm aquatic life. No turbidity exceedances were observed in Redwood City Harbor during the 2017 and 2019 decant monitoring events (no dredging was conducted in 2018).

Comment 2.6

"Retain in the Final Order increased funding provided in Provision B.20."

Response

Comment noted. We did not adjust this requirement to monitor, evaluate, and report the water quality impacts of dredged sediment discharge to waters of the State, which USACE may elect to fulfill by contributing a minimum amount of funding to the RMP, as described in Provision B.20.

The following three comments were the focus of Baykeeper's August 6, 2019, letter commenting on USACE's application for a Clean Water Act 401 certification for the 2020-2024 Maintenance Dredging Program. This letter was attached to Baykeeper's letter commenting on the Tentative Order.

Comment 2.7 (Comment I in August 6, 2019 Baykeeper letter)

"The Regional Board Has a Duty under Clean Water Act Section 401 to Impose Conditions to Ensure that the Entire O&M Dredging Activity Protects Water Quality Standards."

Response

We agree that the Water Board has a duty under the Clean Water Act to protect water quality standards and the Tentative Order fulfills this duty regarding USACE's dredging program. USACE has successfully followed all the fish entrainment-related mitigation and monitoring requirements of the Previous Order by dredging Richmond Outer Harbor Channel and the Pinole Shoal Channel every other year to maintain the navigability of those federal navigation channels in San Francisco Bay. The Water Board does not consider the action by USACE to reduce hopper dredging to every other year to be an act of "unlawful deferred dredging" but views this action as complying with the CDFW Memo and Provision 10 of the Previous Order. The Water Board continues to impose conditions on USACE that require reduced hopper dredging for those two channels to protect threatened and endangered species and habitat. Therefore, the conditions in this Tentative Order ensures that maintenance dredging performed by USACE will be done in a manner that will not result in significant adverse impacts to threatened and endangered species or violate State water quality standards.

Baykeeper correctly states that when the Water Board issued its prior maintenance dredging order to the Corps in 2015, the Corps asserted that its regulations at 33 C.F.R. Part 335-338 (referred to as the federal standard) prohibit the Corps from implementing the Water Board's requirements if they increase costs. Nonetheless, the Corps subsequently decided to dredge in accordance with the Water Board's previous order. And it has expressed willingness to continue complying in accordance with the Tentative Order. We appreciate Baykeeper's support that the federal standard does not exempt the Corps from complying the Clean Water Act. The Tentative Order includes requirements necessary to meet applicable provisions of the Clean Water Act and appropriate requirements of state law.

Comment 2.8 (Comment II in August 6, 2019 Baykeeper letter)

"The Regional Board Must Require the Corps to Use Clamshell Dredges in All In-Bay Channels."

Response

See response to Comment 2.1 above.

Comment 2.9 (Comment III in August 6, 2019 Baykeeper letter)

"The Regional Board Must Require that the Corps Beneficially Reuse at Least 40% of Dredged Sediment in Order to Protect Beneficial Uses."

Response

See response to Comment 2.2 above.

Furthermore, in this comment, Baykeeper drew the conclusion that "dredging operations threaten the viability of wetlands" and directly impact the amount of sediment available to replenish existing wetlands, citing a number of scientific papers and presentations. We disagree that this literature supports such a conclusion. A majority of the papers, i.e., those authored by USGS and appearing in a 2013 issue of Marine Geology, are irrelevant to the issue as explained in the Water Board's opposition brief (California Regional Water Quality Control Board, San Francisco Bay Region's Opposition to Baykeeper's Petition for Writ of Mandate, *San Francisco Baykeeper, Inc., v. California Regional Water Quality Control Board, San Francisco Bay Region, and DOES 1-25*, Superior Court of the State of California, County of Alameda (Case No. RG15776089)) and summarized below.

1. The studies Baykeeper provided chiefly evaluated the loss of fine-to-coarse grained sand, ebb-tidal erosion, and open coast beach erosion rather than the clay and silt found in the Bay Mud that USACE typically dredges from most of the navigation channels.
2. The dredged material placement sites most likely to be used for the channels where sand is present are all located within the San Francisco Bay and outer coast sediment transport system, so sand placed at those sites will remain available to replenish coastal areas south of the Golden Gate, such as Ocean Beach, which Baykeeper claimed was at risk from erosion.
3. Water Board staff's analysis of Bay Mud removal via USACE dredging concluded that for the period covered by the EA/EIR (through the term of the Tentative Order), accretion of sediment to wetlands and marshes in San Francisco Bay would exceed any sea level rise. Consequently, USACE's dredging of Bay Mud will not negatively impact accretion to wetlands, tidal marshes and other low-lying ecosystems along the Bay shoreline.

The remaining papers that mention dredging do not support Baykeeper's assertion that dredging impacts tidal wetlands. In fact, no studies to our knowledge have been published to date that demonstrate a scientific link between removal of sediment via dredging and impacts to wetlands by preventing accretion or causing erosion. The sediment dynamics in the Bay are an incredibly important physical process and the RMP sediment working group

(https://www.sfei.org/programs/sf-bay-regional-monitoring-program) has initiated a number of studies to answer critical questions. For example, a study is underway to update understanding of erosion and accretion in the Bay over the past 25 to 35 years by combining 2014-15 Ocean Protection Council bathymetric survey data with recent NOAA, USGS, and California State University Monterey Bay surveys to create a bathymetric Digital Elevation Model of the whole of San Francisco Bay. In addition, another study of sediment flux at the Golden Gate is critical for understanding the overall sediment mass balance in San Francisco Bay. Provision 20 of this Tentative Order requires USACE to pay for funding USGS sediment monitoring to provide a backbone of scientific understanding of sediment transport dynamics.

Comment Letter No. 3: California Marine Affairs and Navigation Conference (CMANC)

Comment 3.1

"We heartily agree with the statement 'The Water Board therefore finds that it is in the public interest to encourage beneficial reuse of suitable dredged material as one component of regional adaptation to climate change and reduced suspended sediment loading to the Bay.' The question is what is beneficial?"

Response

Use of the term "beneficial reuse" in the Tentative Order is consistent with the 1998 LTMS EIS/EIR[9] and the 2001 Management Plan[10], which discussed the beneficial reuse of dredged material in broad terms. The intent of these LTMS documents was to avoid unnecessarily restricting known or new potential beneficial reuse opportunities, while providing the public with the assurance that LTMS agencies would only approve projects that clearly offered net environmental benefits. Relevant excerpts from the LTMS EIS/EIR include:

- Section 2.4.2.4 (p. 2 – 18): "'Beneficial reuse' refers to managing dredged material as a valuable resource that can be used to create other benefits, rather than just as a waste product to be disposed of as efficiently as possible."
- Section 2.6.1 (p. 2 – 20): "Proposed habitat restoration projects using dredged material should be evaluated in the context of regional habitat goals developed independently [...] Only habitat restoration/creation projects having positive overall net benefits will be supported as LTMS projects."

The following is a relevant excerpt from the LTMS Management Plan:

- Section ES-7 (p. ES – 17): "For restoration projects using dredged material in areas not covered by regional habitat goals […] the LTMS agencies will also encourage and authorize as legally appropriate, such projects which would clearly result in an overall net gain in habitat quality and would minimize loss of existing habitat functions. Whenever feasible, such projects will provide, as part of the project design, for a no net loss in the habitat

[9] https://www.spn.usace.army.mil/Missions/Dredging-Work-Permits/LTMS/Volume-1/
[10] https://www.spn.usace.army.mil/Portals/68/docs/Dredging/LMTS/entire%20LMTF.pdf

functions existing on the project site or, where necessary, provide compensatory mitigation for lost habitat functions in accordance with state and federal mitigation requirements."

Comment 3.2

"Further, the Tentative Order refers to "habitat restoration." What is meant by this term and does it preclude USACE or other party from applying to place dredged material over mud flats or other shallow water habitat where there is potential for legacy contaminants to be exposed?"

Response

The Water Board broadly defines "habitat restoration" projects as those projects undertaken to establish, re-establish, or enhance aquatic ecosystems and their beneficial uses. This definition of habitat restoration does not prohibit placement of dredged material over mud flats or other shallow water habitat provided that the project proponent can demonstrate that placement of dredged material in these environments provides a net environmental benefit by following the definitions in the response to Comment 3.1

Comment 3.3

"In 2015, we requested the Water Board positively affirm that additional sediment does not need to go into the water column as the Tentative Order in 2015 stated '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.' As we see the question, under current Sea Level Rise predictions from the State of California is it better to put dredged material back into the Bay where it will increase sediment in suspension and possibly feed both mudflats and wetlands or place the sediment directly into wetlands that may or may not be able to function under Sea Level Rise and possibly not provide other benefits, such as limiting the loss of mudflats?"

Response

We cannot make the affirmation requested. There may be specific circumstances under which placement of sediment "into the water column" can be demonstrated to provide a net environmental benefit. For example, a thin lift placement project may involve adding a few inches of sediment to shallow water habitats like mud flats and tidal wetlands to help them accrete in preparation for sea level rise. A project proponent would first have to meet the criteria listed in the response to Comment 3.1 and demonstrate that sediment placed in the Bay would measurably increase the elevation of specific mudflat or wetland habitat before we would consider in-Bay placement to be of equal or greater benefit than direct placement into wetlands. Where sediment is placed in the Bay is a critical factor influencing whether the sediment flows out the Golden Gate and leaves the system or whether the sediment is transported by currents, waves, and wind to the shoreline areas to feed mud flats and tidal wetlands. Sediment transport modeling can help answer these important questions. However, we point out that placement of dredged material at the existing in-Bay disposal sites approved in this permit does not constitute beneficial reuse because modeling indicates that material is exported out of the Bay (See response to Comment 1.5)

Comment 3.4

"We continue to ask the Water Board to affirm that additional sediment does not need to go into the water column to meet its obligations under the Basin Plan and Porter-Cologne Act."

Response

See response to Comment 3.3.

Comment 3.5

"The Tentative Order requires USACE to prepare and submit an Integrated Alternatives Analysis. We request that you include language that shows there is nothing to preclude other parties to provide additional funds to USACE to achieve the forms of 'beneficial reuse' that you ask of USACE."

Response

We acknowledge that funding for beneficial reuse may be provided by sources outside USACE and have correspondingly revised Finding 9 in response to the comment. We have added the following text:

> Because placement of dredged sediment at beneficial reuse sites is generally more expensive than in-Bay or deep ocean disposal, the Water Board recognizes that additional funding for beneficial reuse may need to be provided by sources outside USACE, such as local project sponsors, State appropriations, or granting agencies like the San Francisco Bay Restoration Authority.

The Water Board supports efforts to identify non-USACE funding sources for beneficial reuse of federal channel dredged sediment. We have demonstrated this through our letters of support for the San Francisco Bay Beneficial Reuse Pilot Program funded pursuant to Section 1122 of the Water Resources Development Act of 2016 and the Redwood City Harbor Beneficial Use Project funded by appropriation of State of California general funds through the State Coastal Conservancy.

Comment 3.6

"Further, as we asked in 2015, please state that the Water Board has reviewed the socio-economic, life safety and environmental impacts to other Corps' projects within the San Francisco District and South Pacific Division due to the additional costs of dredging navigation channels in San Francisco Bay as a result of this Tentative Order. Specifically, dredging of small coastal communities, such as: Moss Landing; Noyo and Morro Bay."

Response

The Water Board has crafted the Tentative Order considering USACE's budget process. The Water Board, however, does not have any control over USACE's internal budgetary process. Accordingly, the Water Board has no control over the extent to which USACE (1) asks for an increase in funding, (2) receives additional funding, or (3) reallocates existing funds from other projects external to this Tentative Order.

Comment 3.7

"On page 3, there is a discussion about increasing USACE's beneficial reuse as their 'disproportional' use of in-bay disposal reduces the availability of in-bay disposal for other dredgers. We would like to see any analysis that the Board has on this impact including any analysis of requiring each individual medium-dredging sponsor to have to individually meet the 40-40-20 'goals' of LTMS."

Response

If the Corps exceeds the 4.08 million cubic yard (mcy) five-year threshold for in-bay disposal in the Tentative Order, it would be a "disproportional" use of the in-Bay disposal capacity shared by all dredgers. As explained in Finding 7, this threshold is based on the relative contribution of USACE's total dredging volume to the total volume of all dredging over the past two LTMS averaging periods (2013-2015 and 2016-2018). On average, USACE's dredging comprised approximately 71 percent of all dredging performed from 2013 through 2018. After applying a safety factor, we set the threshold in the Tentative Order as 65 percent of the LTMS goal for in-Bay disposal over a five-year period.

Should USACE exceed this threshold, the potential impact to medium-sized dredgers is that they would have to divert dredged sediment planned for in-Bay disposal to ocean or beneficial reuse sites, which would increase disposal costs by approximately two to five times the cost of in-Bay disposal. Determining how USACE and other dredgers help meet the overall LTMS goals is part of the integrated alternatives analyses process established by the LTMS as described in Comment 2.2.

Comment 3.8

"Please provide information as to how the USGS monitoring of suspended sediments 'has' improved the Board's understanding of sediment transport processes and, what changes the Board has made to its policies as a result of this monitoring."

Response

USGS suspended sediment monitoring has been critical to the Water Board's understanding of sediment supply and demand in San Francisco Bay. For example, it was through this monitoring that Water Board staff first learned of the sudden step decrease in 1999 in suspended sediment concentrations in the Bay, thought to be due to depletion of the pool of sediment washed into the Bay from hydraulic mining in the 1800s. An adequate suspended sediment supply is necessary for development of diverse, resilient baylands. The supply of inorganic (mineral) sediment available to deposit on tidal wetlands helps govern their ability to keep pace (maintain elevations) with rising sea levels.

The Water Board has not yet made any changes to its policies resulting from information gained through USGS monitoring of suspended sediments. However, the Water Board is currently working on an update to its Basin Plan wetland policy that addresses climate change and decreased sediment supply[11]. One goal of this policy update is to encourage strategic placement of clean sediment from navigational dredging projects to help existing tidal marshes maintain elevation capital, improve topographic diversity, and increase high tide refugia within marsh interiors.

[11] California Regional Water Quality Control Board, San Francisco Bay Region. 2019. *Wetland Policy Climate Change Update Project, Wetland Fill Policy Challenges and Future Regulatory Options: Findings and Recommendations*. https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/climate_change/R2%20Climate%20Change-Wetlands%20Policy_2019-1016.pdf

Comment 3.9

"Under the existing beneficial uses of San Francisco Bay, we would like to know why items such as "life safety" and "flood damage reduction" are not included."

Response

Although the terms "life safety" and "flood damage reduction" are not uniquely named beneficial uses in the Basin Plan, these components are in fact included in existing beneficial uses of San Francisco Bay. The Water Board's wetland policy/climate change update report (see footnote 11) recognizes that natural features, such as coarse-grain beaches and mature tidal wetlands provide life safety and flood damage reduction for at-risk communities and critical infrastructure. At present, beaches and wetlands are protected with several existing beneficial uses listed in the Basin Plan including Estuarine Habitat, Fish Migration, Preservation of Rare and Endangered Species, Water Contact Recreation, Noncontact Water Recreation, Shellfish Harvesting, Fish Spawning, and Wildlife Habitat. Further, life safety is incorporated into many of the Basin Plan beneficial uses, such as Commercial and Sportfishing or Water Contact Recreation, because the water quality objectives associated with those uses protect human health.

Comment 3.10

"Has there been any updated correspondence between the Board and California Department of Fish and Wildlife concerning take of state-listed species under the USACE navigation maintenance program?"

Response

Water Board staff contacted CDFW staff via phone and email numerous times since the previous order was adopted in 2015 to solicit their advice on the effectiveness of hopper dredge entrainment monitoring and mitigation measures designed to protect both state and federally-listed species. CDFW did not ask for any significant changes to Provisions related to entrainment and thus did not update the 2014 memorandum to the Water Board providing guidance on issues related to take of State-listed fish species.

Staff-Initiated Changes

We corrected typographical errors and made other minor editorial and formatting changes to the Tentative Order. We also made two minor changes worth noting.

First, to maintain consistent use of terminology related to review of alternative disposal site analysis pursuant to Clean Water Act section 404(b)(1), we changed the words "feasible" and "feasibility" to "practicable" and "practicability" in Provision 8 parts c and d.

Second, Arn Aarreberg of CDFW suggested during a November 8, 2019, phone call with staff that the March 31 due date for the five-year entrainment monitoring plan and annual updates may not provide adequate time for detailed review of modifications to the monitoring plan relative to USACE's contracting process. We, therefore, revised Provision 12 to require the entrainment monitoring annual updates by January 31.