PORT OF OAKLAND

August 22, 2019

Sent via email: Edwin.s.townsley@usace.army.mil and CESPN-RDMMP@usace.army.mil

Edwin S. Townsley
Deputy District Engineer for Project Management
San Francisco District
U. S. Army Corps of Engineers
450 Golden Gate Ave, #4530
San Francisco, CA 94102

Subject: General Comments on Draft Project Management Plan for San Francisco Bay Regional Dredged Material Management Plan

Dear Mr. Townsley:

Thank you for the opportunity to speak on behalf of the Port of Oakland on the draft Project Management Plan ("PMP") that will guide the development of a Regional Dredged Material Management Plan ("RDMMP") for the San Francisco Bay. We are eager to participate throughout the RDMMP project life-cycle and to work alongside our federal partners to confront the uncertainty and opportunities facing the future of dredged material placement.

At this early stage, we have two comments related to the PMP and development of the RDMMP in general for your consideration:

1. The PMP states the "scope, schedule, and budget for this RDMMP are based on" the assumption that "the O&M navigation program will be run parallel with the RDMMP studies and be independent of them, and therefore unaffected by the studies" (p .12).

   Our support for the development of the RDMMP is contingent on this assumption and that this endeavor will not utilize resources (funding or personnel) that would otherwise go towards the delivery of the Corps' on-going O&M projects. These projects are vital to maintaining the Bay's shipping channels that are a necessary component of trans-Pacific commerce and any reduction in O&M resources threatens the vitality of both the Bay Area's shipping industry and the beneficial re-use goals of the region.

2. The PMP states, "... the results of these studies may affect future management practices within the LTMS (Long Term Management Strategy)" (p. 27).

   The need for sediment to improve shoreline resiliency in the face of sea-level rise and the new findings related to the Bay's increasing sediment deficit have turned dredged sediment into an important resource and warrant a reassessment of the current limitations on in-bay placement. At the same time, there has been a sharp increase in the cost of dredging over the past decade and there is uncertainty regarding future beneficial re-use site capacities. That makes this the ideal time for an in-depth re-evaluation of the LTMS placement goals, with an emphasis on increasing sediment utilization in a cost-effective manner. The development of this RDMMP is an opportunity for dredgers and regulatory agency stakeholders to come together and make science-based decisions to address these new challenges that have surfaced since the adoption of the LTMS Management Plan in 2001.

   We would like to stress the importance of early engagement with the other LTMS agencies to ensure that the studies undertaken for this RDMMP are formulated in a way that they can also be of value to inform future programmatic reviews of the LTMS and, as a result, make an impact to all dredgers of the San Francisco Bay.

Thank you again for your leadership and for this opportunity to share our perspective. Please feel free to contact me at (510) 627-1273 if you have any questions.

Sincerely,

Robert Andrews
Interim Director of Engineering

cc:

Matt Davis, Port of Oakland
Richard Sinkoff, Port of Oakland

Private Citizen written/emailed comments

"Thank you for holding the Regional DMMP Public Meeting on July 19, 2019.

Thanks to Mr. Stu Townsley for listening to our concerns.

It seems an interesting correlation that the 2004-2010 DMMP wasn't completed in 2010 and now there is a new DMMP proposed that would coincide with refineries planning to bring oil tar sands to the Bay Area.

The dredging project alone could release up to 7.2M additional tons of CO2 equivalent into the atmosphere, along with significant increase in local air pollution.

As Mr. Townsley admitted the process wasn't handled well. The public barely found out about the DEGRR & EIS in time to submit a comment by the June 24, 2019 deadline, although the proposal came out in April, 2019.

Likewise, the "public" meeting on July 19, 2019 was difficult for the public to hear about. As I look at the SF RDMMP timeline the July 19 meeting is the only public meeting scheduled.

As stated in the April 2019 DEGRR & EIS "the channels in the study area primarily serve crude oil imports and refined product exports to and from several oil refineries and 2 non-petroleum industries".

We support wetlands restoration, but not as a cover for creating access for more crude to be refined and exported.

If you want to dredge San Rafael to allow small businesses in Marin and elsewhere to prosper, great. Put the dredged materials in places to provide wetlands restoration. We don't want or need dredging of toxic chemicals in the Carquinez Strait and Suisun Bay to allow further deaths and harm to existing communities along those waterfronts.

SF Bay has a unique ecosystem and people travel from around the world to visit this area. Wildlife and plant life depend on us to take care of their ecosystem and we are all interconnected for survival.

There are NO mitigation plans in place to treat tar sand spills in SF Bay. It was acknowledged at the meeting that more than half of the tonnage in SF Bay is crude oil. Dredging will allow even more crude oil, which is imported, impacts the local community, and much of which is then exported.

We are in a climate emergency and we hope you will acknowledge that as well. While we appreciate the way Mr. Townsley handled the July 19 meeting, it would be preferable to bring in someone more familiar with the SF Bay and the impacts this dredging project will have on the clean water and air and health of the residents."

"A hydrodynamic model of the bay that includes sediment transport, organic carbon production, contaminant fate and transport, and bioaccumulation is fundamental to understanding the environmental impacts of this dredging project. The model must identify and account for all external sources of contamination. These sources must include known sources of contamination such as sewage treatment plants and permitted industrial discharges as well as non-point sources of contamination such as Superfund and RCRA sites, urban runoff, and landfill leachate. The contaminant classes considered must include PCBs, dioxin/furans with 2,3,7,8 substitutions, organochlorine pesticides related to DDT and chlordane, PAHs, and the metals cadmium, mercury, and methyl mercury.

A fate and transport model of the bay is only as good as the data provided. An extensive sampling program is required and way overdue! It's irresponsible to continue without this information."

"Would like increased studies on sea level rise and toxins in dredged materials."

"There is no "waste" dredged materials need to be reused to the best of our abilities to protect from climate change."

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December 2, 2019

Lieutenant Colonel John Cunningham
District Commander
US Army Corps of Engineers, San Francisco District
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102

Subject: Comments on the Project Management Plan for the San Francisco Bay Regional Dredge Material Management Plan

Dear Lieutenant Colonel Cunningham,

Thank you for the opportunity to comment on the Project Management Plan (PMP) for the San Francisco Bay Regional Dredge Material Management Plan (RDMMP). Ducks Unlimited requests that the PMP and the resulting RDMMP include placing dredged sediment for the beneficial use at the multiple existing and planned sites in the San Francisco Bay Area.

Ducks Unlimited is the world's leader in wetland conservation. We are a 501(c)3 organization that specializes in the planning and implementation of wetland conservation projects throughout North America. We work closely with federal, state, local, and private entities to protect, restore, and enhance wetlands that benefit waterfowl, other wildlife, and people. The San Francisco Bay is one of our top 5 continental priority landscapes. As such, our team of conservationists stationed in our Vallejo field office provide valuable financing, planning, and implementation services to Bay Area wetland conservation partners. We are actively engaged in the current and planned restoration of sites requiring beneficial use of dredged material for success.

Ducks Unlimited strongly encourages the Army Corp of Engineers' (ACOE) to maximize the beneficial use of dredged material to support wetland restoration and address sea level rise adaptation in the San Francisco Bay area. Ducks Unlimited is well aware of the science supporting a sediment deficiency in the Bay, and that beneficial use of dredged sediment is critical to achieve the well-established wetland restoration objectives for San Francisco Bay. These acres objectives are identified in multiple regional conservation plans that the ACOE both financially supported and had hands-on contributions towards their development. It is now time for the ACOE to actively participate in their implementation via beneficially using dredged sediments.

Restored wetlands provide tremendous societal benefits through the ecosystem services they provide such as flood protection, wave attenuation, water filtration, groundwater recharge, nursery grounds for fish, and habitat for endangered species to name a just few. Historically, more than 200,000 acres of tidal wetlands fringed San Francisco Bay. In 1999, the Baylands

Ecosystem Habitat Goals project, a multiagency effort to identify what kinds and amounts of wetland habitats around the Bay are necessary to sustain its health, set a goal of restoring 100,000 acres. Yet since then, only 15,000 acres are now restored. The recent climate change update (2016) found that restoring at least 50,000 is critical to protect the health of the Bay as it faces sea level rise by 2030. Bold action and policies promoting wetland restoration are needed to achieve this minimum acreage goal in the time remaining.

The existing (e.g. Cullinan Ranch) and planned (e.g. Eden Landing) placement sites hold a capacity of over 25 million cubic yards beneficial use sediment placement, or well over a decade of capacity for USACE's operations and maintenance dredging in San Francisco Bay. Beneficial use of dredged material at these sites would result in over 7,000 acres of tidal marsh restoration, significantly contributing to the regional effort to restore wetlands and increase shoreline resilience. This next decade is of critical importance to the health of San Francisco Bay. Now is the time to act. We respectively request that the PMP and the RDMMP both incorporate and prioritize beneficial use of dredged sediments for existing and planned placement sites.

Thanks again for this opportunity to comment. We encourage USACE to ensure the RDMMP to increase the beneficial use of dredged sediment in San Francisco Bay. Please contact Renee Spenst, Ph.D. at rspenst@ducks.org or 916-851-5310 if there are any questions.

Sincerely,

Mark E. Biddlecomb
Director of Operations

SAN FRANCISCO
BAYKEEPER®

Transmitted via email

August 19, 2019

Stu Townsley
Deputy for Project Management
U.S. Army Corps of Engineers
San Francisco District
Email: CESPN-RDMMP@usace.army.mil

Re: Comments on the Proposed Regional Dredged Material Management Plan

Dear Mr. Townsley:

On behalf of San Francisco Baykeeper ("Baykeeper") and our more than 5,000 members and supporters, I submit the following comments on proposed Regional Dredged Material Management Plan ("RDMMP") for dredging activities in San Francisco Bay. Baykeeper's mission is to protect San Francisco Bay from its biggest threats and to hold polluters accountable. During the past several years, Baykeeper has worked to ensure that that the Corps beneficially reuses dredged sediment instead of treating it as a waste product and that dredging operations in the Bay do not unnecessarily harm imperiled native fish species. The preparation of the RDMMP provides the Corps with an opportunity to ensure that dredging is truly environmentally acceptable, by committing to beneficially reuse dredged sediment and to switching to mechanical dredges in all in-Bay channels. For the reasons stated below, Baykeeper urges the Corps to take a leadership role in adopting these practices.

I. The RDMMP Should Commit the Corps to Beneficially Reusing at Least 40% of Dredged Sediment.

While the Corps has recognized the importance of beneficially reusing dredged sediment, the Corps has thus far resisted requirements and has not fully committed to beneficially reusing sediment from its dredging operations. Beneficial reuse is not simply valuable; it is necessary if Bay Area wetlands are to remain viable with predicated sea level rise and if wetland restoration projects are to succeed. Moreover, failing to beneficially reuse sediment, and instead removing the sediment from the Bay ecosystem, significantly contributes to the sediment deficit in the Bay. Finally, current legal authorities currently require the Corps to beneficial reuse sediment, despite the Corps' resistance.

A. The Corps' Commitment to Beneficially Reusing Sediment Is Essential to Protect Ecosystems and Communities from Sea Level Rise.

Wetlands are critical to protecting the water quality, ecosystems, fish and wildlife, and human communities of the Bay. With expected sea level rise in the Bay Area, wetlands are becoming more threatened, at the same time that they become even more critical for flood control to protect shoreline communities and as natural ecosystems to support beneficial uses. By 2100, the Bay is expected to rise by three feet, and the "the U.S. Geological Survey says the predicted damage

from sea level rise in California *triples* once tides, storms and erosion are taken into account."[1] This amounts to an estimated 70 billion dollars of structural damage from flood loss, and 42,000 homes and business and 1100 contaminated sites will be impacted.[2]

Moreover, the Bay has seen a significant reduction in suspended sediment inputs.[3] "Over the last half-century, sediment loss trends have been documented in San Pablo Bay, Suisun Bay, and Central Bay."[4] At the same time, sea level rise means more sediment is needed to maintain the Bay's existing wetlands and other shoreline ecosystems. The scientific consensus is that we have until 2030 to ready the region's existing wetlands for climate change.[5]

To add to this need for sediment, the Bay Area needs to restore wetlands on a grand scale in order to protect our communities from sea level rise and storm surges.[6] Bay Area voters overwhelmingly passed Measure AA in 2016 to provide a parcel tax to restore wetlands.[7] But one of

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[1] San Francisco Baykeeper, *Sea Level Rise Along California: Questions & Answers*, https://baykeeper.org/shoreview/california-slr.html, attached as Exhibit A; Raquel Maria Dillon, *Sea Level Rise in Bay Area is Going to Be Much More Destructive than We think, Says USGS Study,* KQED, March 13, 2019, available at https://www.kqed.org/science/1939059/the-ocean-is-not-a-bathtub-so-sea-level-rise-will-be-more-damaging, attached as Exhibit B.

[2] San Francisco Baykeeper, *How Will Sea Level Rise Impact the Shoreline of San Francisco Bay?*, available at https://baykeeper.org/shoreview/index.html.

[3] Barnard, P. L. *et al*., "Sand transport in the San Francisco Bay Coastal System: An overview," 345 Marine Geology, 3-17 (2013); Ariel Rubissow Okamoto, *Making the Most of Mud*, Bay Nature, February 1, 2013, available at https://baynature.org/article/making-the-most-of-mud/, attached as Exhibit C; Moftakhari, H.R., D.A. Jay, S.A. Talke, and D.H. Schoellhamer. "Estimation of historic flows and sediment loads to San Francisco Bay, 1849–2011." Journal of Hydrology 529 (2015): 1247-1261, attached as Exhibit D; DredgeFest California: Key Findings and Recommendations, December 2016, available at http://dredgeresearchcollaborative.org/works/dredgefest-california-white-paper/, attached as Exhibit E.

[4] Final Environmental Assessment/Environmental Impact Report for Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay ("O&M EA/EIR"), Fiscal Years 2015-2024, April 2015, at 3.4-8, available at https://www.waterboards.ca.gov/rwqcb2/water_issues/programs/dredging/Fed%20Nav%20Channels_FEAEIR_April%202015.pdf.

[5] Laura Tam and Julie Beagle, *Eleven Years to Save San Francisco Bay*, San Francisco Chronicle, June 21, 2019, *available at* https://www.sfchronicle.com/opinion/openforum/article/Eleven-years-to-save-San-Francisco-Bay-14026824.php, attached as Exhibit F; *see also* San Francisco Baykeeper, Sea Level Rise and Wetlands Along San Francisco Bay, available at https://baykeeper.org/shoreview/wetlands.html, attached as Exhibit G; *see also* San Francisco Bay Regional Water Quality Control Board, Order No. R2-2015-0023, 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, 2015 through 2010 ("2015 WQC") at 2, attached as Exhibit H.

[6] *See* Robin Meadows, *San Francisco Bay Area Makes History with Wetland Restoration Measure,* Water Deeply, October 14, 2016, available at https://www.newsdeeply.com/water/articles/2016/10/14/san-francisco-bay-area-makes-history-with-wetland-restoration-measure, attached as Exhibit I; *see also* Erica Gies, *Fortresses of mud: how to protect the San Francisco Bay Area from rising seas,* Nature, October 9, 2019, available at https://www.nature.com/articles/d41586-018-06955-4, attached as Exhibit J.

[7] *See* Meadows, *supra* note 6; *see also* San Francisco Bay Restoration Authority, Parcel Tax, http://sfbayrestore.org/parcel-tax.

the biggest challenges wetland restoration projects face is finding a sufficient amount of soil and sediment.[8] Back in 2013, Amy Hutzel, the Bay Area program manager at the State Coastal Conservancy, stated "We can't let any more mud go to waste. As we're out there dredging our ports, marinas, and flood control channels, as we're digging up dirt around the Bay to do construction, we need to make the best use of every bit of dirt we can to help sustain our habitats and wildlife."[9]

The Corps is responsible for approximately 70% of dredging that occurs in San Francisco Bay.[10] Therefore, beneficially reusing dredged sediment from Corps' projects is essential to the success of wetland restoration and sea level rise adaptation in the Bay.

At the July 19, 2019 workshop on the RDMMP, Baykeeper was pleased to hear Corps' staff articulate these same points and acknowledge the need to beneficially reuse dredged material in the face of sea level rise. Moreover, the Corps' recent draft environmental impact statement for a deepening project in the Pinole Shoal and Suisun Bay Channels recognized that "[p]lacement of material at SF-DODS is not ideal since it takes material out of the natural system, while both Cullinan Ranch and Montezuma Wetlands both can beneficially use the material and are cost effective."[11] In fact, for the deepening project the Corps determined that the federal standard required that the dredged sediment be beneficially reused.

Despite this acknowledgement of the importance of beneficially reusing sediment, the Corps does not propose to beneficially reuse any sediment from in-Bay channels during its operations and maintenance dredging for the next five years.[12] Instead, the Corps plans to either dump the dredged sediment in in-Bay disposal sites or at SF-DODS, which is 50-miles off the coast in the Pacific Ocean.[13] The Corps argues that this is environmentally acceptable for operations and maintenance dredging.

The Corps' position on maintenance dredging that beneficial reuse is not the federal standard contradicts its determination on the deepening project for the Pinole Shoal Channel and Suisun Bay,

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[8] *See* Gies, *supra* note 6; *see also* Isaac Pearlman, *Bay Area's Massive Marsh Restoration Project Takes Root*, Sierra, April 22, 2019, available at https://www.sierraclub.org/sierra/bay-areas-massive-marsh-restoration-project-takes-root, attached as Exhibit K.
[9] Okamoto, *supra* note 3, Exhibit C.
[10] *See* Dredged Material Management Office's (DMMO), "Dredging and Placement of Dredged Material in San Francisco Bay January-December 2013 Report." Baykeeper's independent calculations indicate that DMMO miscalculated the reported total for this data, and that, when all dredging volumes are properly added, the percentage of the Corps' dredging increases to over 80%. "Dredging and Placement of Dredged Material in San Francisco Bay January-December 2013 Report," Dredged Material Management Office, Appendix I (July 2014), *available at* http://www.spn.usace.army.mil/Portals/68/docs/Dredging/Annual%20Reports/DMMO%202013%20Annual%20Report_Final%207-22-14.pdf.
[11] Draft Integrated Reevaluation Report and Environmental Impact Statement for the San Francisco to Stockton Navigation Improvement Project ("Stockton DEIS"), available at https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/11171, at ES-5 – ES-6.
[12] U.S. Army Corps of Engineers, San Francisco Federal Maintenance Dredge Consistency Determination, Dredging Seasons 2020-2024, June 2019, at Table 1, attached as Exhibit L.
[13] *Id*.

where the Corps found that the federal standard alternative included beneficial reuse. It is illogical that dredging projects in the same channels result in such different results.

Moreover, the Corps has already committed to beneficially reusing at least 40% of dredged sediment through the Long-Term Management Strategy.[14] By participating in creating and implementing the LTMS, the Corps has shown considerable leadership in reducing the harmful impacts from in-Bay unconfined disposal and to promote beneficial reuse. We urge the Corps to ensure that the RDMMP includes, at a minimum, the goals of the LTMS.

B. Failing to Beneficially Reuse Sediment Will Exacerbate the Impacts of Sea Level Rise.

Dredging in San Francisco Bay not only provides an opportunity to beneficially reuse sediment in wetland restoration project, but failing to beneficially reuse sediment negatively impacts the amount of sediment available to replenish existing wetlands and to restore wetlands. Several scientific studies have looked at sediment transport in San Francisco Bay and found that removing sediment from the Bay ecosystem will negatively impact shoreline wetlands and coastal beaches.[15, 16, 17, 18, 19, 20, 21, 22, 23, 24] Baykeeper would like to draw the Corps' attention to the following excerpts

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[14] Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region, Final Policy Environmental Impact Statement/Programmatic Environmental Impact Report, August 1998, at 1-15 – 1-16, Executive Summary attached as Exhibit M.

[15] Dallas, K. L. & Barnard, P. L., "Linking human impacts within the estuary to ebb-tidal delta evolution," 56 Journal of Coastal Research, 713-716 (2009), attached as Exhibit N.

[16] Dallas, K. L. & Barnard, P. L., "Anthropogenic influences on shoreline and nearshore evolution in the San Francisco Bay coastal system," 92 Estuarine, Coastal and Shelf Science, 195-204 (2011), attached as Exhibit O.

[17] Barnard, P. L. *et al*., "Integration of bed characteristics, geochemical tracers, current measurement, and numerical modeling for assessing the provenance of beach sand in the San Francisco Bay Coastal System," 345 Marine Geology, 181-206 (2013), attached as Exhibit P.

[18] Barnard, P. L. *et al*., "Sand transport in the San Francisco Bay Coastal System: An overview," 345 Marine Geology, 3-17 (2013), attached as Exhibit Q.

[19] San Francisco Estuary Institute, Pulse of the Estuary 2009, Bay Sediments: Past a Tipping Point, 3 (2009), *available at* www.sfei.org/rmp/pulse.

[20] Erikson, L.H., Wright, S.A., Elias, E., Hanes, D.H., Schoellhamer, D.H., Largier, J., "The use of modeling and suspended sediment concentration measurements for quantifying net suspended sediment transport through a large tidally dominated inlet," 345 Marine Geology, 98–114 (2013), attached as Exhibit R.

[21] McGann, M., Erikson, L., Wan, E., Powell II, C., Maddocks, R.F., "Distribution of biologic, anthropogenic, and volcanic constituents as a proxy for sediment transport in the San Francisco Bay Coastal System," 345 Marine Geology, 115–144 (2013), attached as Exhibit S.

[22] Rosenbauer, R.J., Foxgrover, A.C., Hein, J.R., Swarzenski, P.W., "A Sr–Nd isotopic study of sand-sized sediment provenance and transport for the San Francisco Bay Coastal System," 345 Marine Geology, 145–153 (2013), attached as Exhibit T.

[23] Wong, F.L., Woodrow, D.L., McGann, M., "Heavy mineral analysis for assessing the provenance of sandy sediment in the San Francisco Bay Coastal System," 345 Marine Geology, 172–182 (2013), attached as Exhibit U.

[24] Hein, J., Mizella, K., Barnard, P., "Sand sources and transport pathways for the San Francisco Bay coastal system based on X-ray diffraction mineralogy," 345 Marine Geology, 154-169 (2013), attached as Exhibit V.

from the cited scientific studies, which pertain directly to the impacts of dredging on sediment transport in San Francisco Bay.

(1) Dallas, K. L. & Barnard, P. L., "Linking human impacts within the estuary to ebb-tidal delta evolution," 56 Journal of Coastal Research, 713-716 (2009):

- San Francisco Bay is one [of] the largest estuaries in the United States and has been continuously altered by a range of activities, including influx by hydraulic mining debris, mining of fill for bay development, *dredging of harbors and waterways*, and mining of sand and gravel for use as construction aggregate. (*Id*. at 713 [emphasis added].)
- Since 1900 a minimum of 130 million m^3 (Mcm) of sediment has been permanently removed from the San Francisco Bay and adjacent coastal ocean through borrow pit mining (27 Mcm), aggregate mining (26 Mcm), *and dredging (77 Mcm)*. (*Id*. at 714 [emphasis added].)
- With new management plans calling for an increase in *out of bay dredge disposal*, and aggregate companies lobbying to extract greater volumes, it is likely these activities will further limit the available sediment supplied to the bar. (*Id*. at 716 [emphasis added].)

(2) Dallas, K. L. & Barnard, P. L., "Anthropogenic influences on shoreline and nearshore evolution in the San Francisco Bay coastal system," 92 Estuarine, Coastal and Shelf Science, 195-204 (2011):

- A minimum of 200 million m^3 of sediment has been permanently removed from the [San Francisco Bay] system *by dredging*, aggregate mining, and borrow pit mining. (*Id*. at 203 [emphasis added].)

(3) Barnard, P. L. *et al*., "Integration of bed characteristics, geochemical tracers, current measurement, and numerical modeling for assessing the provenance of beach sand in the San Francisco Bay Coastal System," 345 Marine Geology, 181-206 (2013):

- At present . . . *dredging* removes about 3 million m^3/yr of sediment, with the majority of this material permanently removed from the San Francisco Bay Coastal System. (*Id*. at 202 [emphasis added].)
- [T]his work also highlights the need to more efficiently manage existing in-Bay sediment resources, as active aggregate mining and *dredging* occurs along well-defined sand transport pathways that carry sediment toward outer coast beaches, at removal rates that exceed the present-day sediment supply rates from all San Francisco Bay watersheds. (*Id*. at 203 [emphasis added].)

(4) Barnard, P. L. *et al*., "Sand transport in the San Francisco Bay Coastal System: An overview," 345 Marine Geology, 3-17 (2013):

- Over the last century, a minimum of 200 million m^3 of sediment has been permanently removed from the San Francisco Bay Coastal System through *dredging*, aggregate mining, and borrow pit mining. (*Id.* at section 2.2.4 [emphasis added].)
- *Dredging* removes about 3 million m^3/year of sediment out of navigation channels and from other channel and berth maintenance projects, with the majority of this material permanently removed from the San Francisco Bay Coastal System via deep-water disposal in the Pacific Ocean, [. . .] roughly equivalent to the annual sediment supply from the Central Valley. (*Id.* at section 2.2.4 [emphasis added].)

(5) Erikson, L.H., Wright, S.A., Elias, E., Hanes, D.H., Schoellhamer, D.H., Largier, J., "The use of modeling and suspended sediment concentration measurements for quantifying net suspended sediment transport through a large tidally dominated inlet," 345 Marine Geology, 98–114 (2013):

- A quantitative understanding of sediment delivered to, stored within, and exported from an estuary is important for a number of issues including *maintenance dredging of navigation channels*, sand mining, light availability for primary productivity, creation and sustainability of tidal wetlands, and the transport of particle-bound nutrients and contaminants. (*Id.* at 96 [emphasis added].)

(6) McGann, M., Erikson, L., Wan, E., Powell II, C., Maddocks, R.F., "Distribution of biologic, anthropogenic, and volcanic constituents as a proxy for sediment transport in the San Francisco Bay Coastal System," 345 Marine Geology, 115–144 (2013):

- Aggregate mining, *dredging*, and borrow pit mining has also been responsible for the removal of large quantities of sediment from the Bay. (*Id.* at 119 [emphasis added].)

These studies make clear that disposing of dredged material at SF-DODS is not environmentally acceptable, as required by the Federal Standard. *See* 33 C.F.R. §§ 336.1(c)(1), 335.4. The Bay is already in a sediment deficit that threatens coastal beaches and shoreline wetlands, and failing to beneficially reuse dredged sediment contributes to that deficit. Moreover, sea level rise will only cause these impacts to be more significant as time passes.

C. Existing Legal Authorities Require the Corps to Beneficially Reuse Sediment.

Not only does the LTMS set goals for dredgers to beneficially reuse 40% of all dredged sediment, but the San Francisco Bay Conservation and Development Commission (BCDC) and San Francisco Bay Regional Water Quality Control Board ("Regional Board") have adopted requirements in the Bay Plan and Basin Plan, respectively, to require beneficial reuse and/or to protect wetlands.

The Bay Plan is "a comprehensive and enforceable plan for the conservation of the water[s] of the bay and the development of its shoreline." Cal. Gov't Code § 66603; *see also id.* § 66651. On February 16, 1977, Office of Coastal Management approved the entirety of the Bay Plan as part of California's CZMP, and has approved several amendments to the Bay Plan since that time. The federally-approved San Francisco Bay segment of California's CZMP also includes, *inter alia*, the

McAteer-Petris Act, Cal. Gov't Code §§ 66600 *et seq*., and BCDC's regulations, 14 Cal. Code. Regs., Divn. 5, ch. 1-24, §§ 10110 *et seq*. The Bay Plan and McAteer-Petris Act contain numerous enforceable policies regarding the importance of and public interest in encouraging maximum beneficial reuse of dredged sediment and limiting unconfined in-Bay disposal of such sediment and protecting the Bay and its land and water uses and natural resources, including wildlife, wetlands, and water quality through, *inter alia*, wetland restoration and avoidance, minimization, and mitigation of harm to native species and habitats.

In 2015, when authorizing the Corps' maintenance dredging in the Bay, BCDC imposed a requirement for the Corps to beneficially reuse 40% of its dredged sediment.[25] BCDC imposed this requirement under its authority granted by the Coastal Zone Management Act and to enforce Bay Plan Dredging Policies 1 and 5. BCDC's conditional concurrence specifically required:

> Beginning in 2017, the Corps must comply with, *inter alia*, Bay Plan Dredging Policies 1 and 5 to maximize the beneficial reuse of dredged sediment as a resource by meeting the LTMS goals that a minimum of 40% of the dredged material be beneficially reused and that a maximum of 20% of dredged material be disposed of in the Bay.[26]

Unfortunately, the Corps has unlawfully refused to implement this requirement, and the State has been forced to legally challenge the Corps' authority to refuse the Beneficial Reuse Condition. However, Baykeeper urges the Corps not to wait for a judgment to implement this condition. Under the CZMA, the Corps has a duty to ensure that its dredging operations are consistent with the Bay Plan. The Bay Plan requires that the dredged material be beneficially reused to maximum extent feasible, and the Corps has previously determined that beneficially reusing dredged sediment from in-bay channels is feasible. Baykeeper urges the Corps to reconsider its position under the CZMA.

Further, the Basin Plan, which includes the federally-enforceable water quality standard for San Francisco Bay, identifies wetlands as critical to San Francisco Bay.

> Wetlands and related habitats comprise some of the Region's most valuable natural resources. Wetlands provide critical habitats for hundreds of species of fish, birds, and other wildlife; offer open space; and provide many recreational opportunities. Wetlands also serve to enhance water quality, through such natural functions as flood control and erosion control, stream bank stabilization, and filtration and purification of surface water.

(Basin Plan, § 4.23.) Specifically, wetlands are necessary to support several beneficial uses:

> Many individual wetlands provide multiple benefits depending on the wetland type and location. There are many potential beneficial uses of wetlands, including Wildlife Habitat (WILD); Preservation of Rare and Endangered Species (RARE); Shellfish Harvesting (SHELL); Water Contact Recreation (REC1); Noncontact Water Recreation (REC2); Commercial, and Sport Fishing (COMM); Marine

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[25] Letter from Lawrence J. Goldzband, BCDC, to Lt. Colonel John C. Morrow, Corps San Francisco District, Re: Consistency Determination No. C2015.002.00, June 15, 2105 ("Letter of Agreement"), attached as Exhibit W.
[26] *Id*., Special Condition II.B ("Beneficial Reuse Condition").

Habitat (MAR); Fish Migration (MIGR); Fish Spawning (SPAWN); and Estuarine Habitat (EST).

(Basin Plan, § 2.2.3.)

Beneficial uses are water quality standards and under the CWA section 404 guidelines, the Corps must ensure its dredging operations do not cause or contribute to violations of water quality standards. *See* 40 C.F.R. § 230.10(b)(1). In order to do that, the Corps should commit to beneficially reusing a significant portion of the dredged sediment instead of wasting the material at SF-DODS.

II. The Corps Should Use the RDMMP Process to Study Ways to Make Beneficial Reuse More Cost-Effective.

As mentioned above, the Corps recently has refused to beneficially reuse dredged sediment because it generally costs more to do so than disposing in unconfined in-bay sites or at SF-DODS. Baykeeper urges the Corps to use the RDMMP process to study methods to reduce the costs associated with beneficial reuse. For instance, in different forums, it has been suggested that beneficial reuse would be more cost effective if the Bay Area had access to one or two off-loaders to facilitate the disposal of dredged sediment into wetland restoration sites. The Corps should evaluate what means are available to acquire off-loaders for the Bay Area.

Moreover, Baykeeper urges the Corps to further study whether there are in-bay disposal locations where sediment would naturally transport to existing wetlands. Disposing in unconfined areas in the Bay can cause impacts to fish and other wildlife, which the Corps should consider, but sediment managers and scientists have discussed this as a potential cost-effective way of disposing of sediment that would also help maintain wetlands. More analysis of that possibility should be done, and the RDMMP process provides such an opportunity.

In sum, Baykeeper urges the Corps to transfer the energy and resources it is currently spending to fight requirements to beneficially reuse sediment and instead use the RDMMP process to take a leadership role in developing methods and means to ensure that beneficial reuse is as efficient as it can be.

III. The RDMMP Process Should Also Commit the Corps to Using Clamshell Dredges in All In-Bay Channels.

Baykeeper also asks that the RDMMP consider the type of equipment used to dredge the navigations channels within San Francisco Bay. The Corps has preferred to use hydraulic hopper dredges in all channels where it is technically feasible. However, hydraulic hopper dredges cause significant impacts on imperiled fish species, in particular Delta smelt and longfin smelt, which are found in in-Bay channels. The Corps should commit to using mechanical dredges in all in-Bay channels to ensure that its dredging operations do not negatively impact the existence of these fish species.

The O&M EA/EIR evaluated the impact of O&M dredging on imperiled fish species, in particular, Delta smelt and longfin smelt.[27] As recognized by the Corps and federal resource agencies, dredging with hydraulic dredges has significant adverse impacts on these species because the fish get sucked into the dredge (*i.e.,* entrained) and are killed.[28] In 2013, the Corps studied the impacts of hydraulic dredges on Delta and longfin smelt.[29] The study found that up to 29% of the population of Delta smelt and up to 8% of the population of longfin smelt would be killed annually by using hydraulic dredges in the in-Bay channels.[30] In contrast, using a mechanical dredge in the in-Bay channels essentially eliminates the entrainment of fish because the fish do not get trapped in the mechanical dredge bucket.[31] While the Corps has subsequently challenged the extent of take that occurs from the use of hydraulic dredges found by its own study, it is clear that using a hydraulic dredge causes much greater impacts on imperiled fish species than a mechanical dredge.

After reviewing the Corps' entrainment study, the California Department of Fish and Wildlife (CDFW) found that the Corps' dredging as proposed (*i.e.*, primarily using hydraulic dredges in the in-Bay channels) "would substantially reduce the number of" these listed fish species and cause significant cumulative impacts to those species.[32] CDFW thus recommended to "reduce hopper dredging to a minimum in [the] Bay."[33] The Regional Board then concluded that hydraulic dredges would significantly impact Delta and longfin smelt by substantially reducing their populations.[34]

Because of the impact on Delta and longfin smelt, the O&M EA/EIR included two Reduced Hopper Dredge Alternatives, which would require the Corps to use mechanical dredges rather than hydraulic dredges in certain in-Bay channels, while still annually dredging these channels.[35] Under Reduced Hopper Dredge Alternative 1, starting in fiscal year 2017, the Corps could use a hydraulic dredge only in the MSC and one in-Bay channel; the Corps would purchase mitigation credits for the take of imperiled fish in the hydraulically dredged channel and would use a mechanical dredge in the other channel.[36] Under Reduced Hopper Dredge Alternative 2, starting in fiscal year 2017, the Corps could use a hydraulic dredge only in the MSC.[37] The Regional Board found that the Corps could feasibly implement either alternative, as each alternative provided a two-year phase-in period to allow the Corps to budget for the change in equipment use.[38] When the Regional Board approved the Water Quality Certification for O&M dredging for 2015-2019, the Regional Board required that

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[27] O&M EA/EIR, *supra* note 4, at ES-2, ES-19.
[28] *Id*. at 3.6-35, 3.6-43.
[29] *Id*. at 3.6-36.
[30] *Id*. at 3.6-41, 3.6-46.
[31] *Id*. at ES-12, 3.6-43, 3.6-49 – 3.6-50.
[32] 2015 WQC, *supra* note 5, at 12, 30.
[33] *Id*. at 12-15, 30.
[34] O&M EA/EIR at 3.6-39 - 3.6-40, 3.6-46 - 3.6-47.
[35] *Id*. at ES-9 – ES-12, 3.6-41 – 3.6-43, 3.6-48 – 3.6-50.
[36] *Id*. at ES-10 – ES-11.
[37] *Id*. at ES-11; 2015 WQC, *supra* note 5, at 15.
[38] O&M EA/EIR at 2-24; San Francisco Bay Regional Water Quality Control Board, Response to Comments on Tentative Order for U.S. Army Corps of Engineers, San Francisco District Maintenance Program, 2015-2019 ("Response to Comments"), at 8-9, attached as Exhibit X; 2015 WQC, *supra* note 5 at 15.

the Corps to implement either Reduced Hopper Dredge Alternative 1 or 2, as described in the O&M EA/EIR.[39]

The status of the Delta smelt and longfin smelt in San Francisco Bay has not improved since the O&M EA/EIR, and in fact, recent data indicates that the species have become further imperiled. Delta smelt is a native fish that is only found in the San Francisco Bay-Delta Estuary and were once abundant but now are "at imminent danger of extinction."[40] Delta smelt is listed as threatened under the federal Endangered Species Act (ESA) and endangered under the California ESA.[41] Recent abundance numbers for the Delta smelt have been at historic lows.[42]

Similarly, longfin smelt were once one of the most abundant open-water fishes in the Estuary and were commercially important fish.[43] Today the species' numbers have plummeted to record lows in the Bay-Delta.[44] Longfin smelt is listed as threatened under the California ESA and the U.S. Fish and Wildlife Service (FWS) has determined that listing of the Bay-Delta population is warranted under the federal ESA.[45] Longfin smelt abundance in 2018 (the most recent year of sampling) were less than 1% of the levels detected when sampling began in 1967. Since the species was listed by the State in 2009, longfin smelt numbers have plummeted further. The 10-year average abundance from 2000-2009, has decreased by 88%, compared to the 10-year average abundance from 2009-2018.[46]

Hopper dredges cause a much more significant impact on smelt than mechanical dredges. The Corps cannot dispute this. In fact, the Corps recently published a draft Environmental Impact Statement analyzing deepening of the Pinole Shoal Channel and determined that use of a mechanical dredge was the lowest-cost, environmentally-acceptable way of dredging in that channel.[47] Yet for O&M dredging, the Corps illogically continues to argue that using hopper dredges in in-Bay channels, particularly the Pinole Shoal Channel and the Richmond Outer Harbor, constitutes the federal standard alternative. Using a hopper dredge in those channels is not environmentally

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[39] 2015 WQC, *supra* note 5, at 1, 22-23, 27; *see also* Response to Comments, *supra* note 38, at 9.
[40] California Dept. of Fish & Wildlife, Delta Smelt, available at https://www.wildlife.ca.gov/Conservation/Fishes/Delta-Smelt, attached as Exhibit Z; O&M EA/EIR at 3.6-19 – 3.6-20, 3.6-39.
[41] O&M EA/EIR at 3.6-19.
[42] *See* "News worsens for rare Delta fish; Smelt's decline reflects health of estuary as a whole," Stockton Record (Apr. 18, 2015), available at http://www.recordnet.com/article/20150418/NEWS/150419726/101095/A_NEWS, attached as Exhibit AA; *see also* Sahagun, Louis, "As California's delta smelt spirals toward extinction, a future in captivity awaits," Los Angeles Times, April 22, 2019, available at: https://www.latimes.com/local/california/la-me-threatened-delta-smelt-aquarium-exhibit-20190422-story.html, attached as Exhibit BB.
[43] The Bay Institute *et al*., Petition to List the San Francisco Bay-Delta Population of Longfin Smelt (*Spirinchus thaleichthys*) as Endangered Under the Endangered Species Act, August 8, 2007, at p. ii-iii, attached hereto as Exhibit CC.
[44] *Id*.
[45] O&M EA/EIR at 3.6-19.
[46] *See* California Dept. of Fish & Wildlife, Monthly Abundance Indices, available at http://www.dfg.ca.gov/delta/data/fmwt/indices.asp.
[47] The Stockton DEIS, *supra* note 11, correctly states that "[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." Stockton DEIS at 4-48; *see also id*. at 4-6, 4-50.

acceptable, as the best available evidence and the Corps' own recent determination for the deepening project, indicates that it would significantly harm two imperiled fish species.

Not only has the State required the Corps to switch to using mechanical dredges in in-Bay channels, but FWS also requires the Corps to dredge with a mechanical dredge in Suisun Bay to avoid significant impacts on Delta smelt. FWS estimates that "about 10 percent of the current population" of Delta smelt is killed by the Corps' hydraulic dredges in Suisun Channel alone.[48] Thus, to minimize take of Delta smelt, FWS now requires the Corps to conduct maintenance dredging activities in Suisun Channel using only a mechanical dredge between August 1 and November 30 of each year. The Corps is complying with these FWS limitations on its dredging operations.

Unfortunately, the Corps unlawfully refused to make any changes to its equipment use in any in-Bay channel as a result of the Regional Board's conditions imposed under Clean Water Act section 401. The RDMMP process presents the Corps with an opportunity to change its harmful practice of using hydraulic dredges in in-Bay channels and to switch to the less harmful mechanical dredges. Past practice shows that is feasible for the Corps to change its equipment to avoid impacts to fish, and the Corps should take a pro-active, responsible position and do so in all-Bay channels.

IV. The Corps Is Not Prohibited by the Federal Standard to Beneficially Reuse Sediment or from Using Mechanical Dredges in All In-Bay Channels.

In response to the conditions the Regional Board included in the last Water Quality Certification issued for the O&M dredging from 2015-2019 and conditions imposed by BCDC in its conditional concurrences under the CZMA, the Corps has asserted that the Corps' regulations, referred to as the "Federal Standard," prohibits the Corps from implementing state conditions imposed under these federal statutes if they increase costs. The Corps' interpretation of the Federal Standard is wrong for two reasons.

First, Congress has expressly required the Corps to comply with State requirements to meet WQS and to implement State conditions imposed under the CZMA to the maximum extent practicable. 33 U.S.C. §§ 1344(t), 1323; 16 U.S.C. § 1456(c)(1)(A); 15 C.F.R. §§ 930.30, 930.32(a)(3), 930.39(c). In fact, Congress amended the CWA "to indicate unequivocally that all Federal facilities and activities are subject to all of the provisions of State and local pollution laws." S. Rep. No. 95-370, at 67 (1977); *see also In re Operation of the Mo. River Sys. Litig.,* 418 F.3d 915, 918 n.4 (8th Cir. 2005) ("Congress' intent in enacting the l977 amendments was to subject the Corps' *channel-dredging* activities to state [WQS] promulgated pursuant to the CWA, while preserving its authority to maintain navigation") (emphasis in original); *Ohio v. U.S. Army Corps of Engr's.*, 259 F.Supp.3d 732, 749-50 (N.D. Ohio 2017) ("Congress verified its intent to make" the State "the ultimate authority" on water quality standards and "did not intend for federal agency decisions to pre-empt state law in this area") (citation omitted).

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[48] Letter from Jessica Burton Evans to Kim Turner, re: Request to Revise the Project Description for a previously submitted (dated February 2, 2016) Biological Assessment Fiscal Year 2016 and 2017 Maintenance Dredging of Suisun Bay Channel to Reflect that Clamshell Dredging is Proposed Only for 2016, dated July 7, 2016, attached as Exhibit DD.

Second, the Corps ignores and misinterprets the plain language of its own regulations, which expressly require it to comply with environmental standards, including the Clean Water Act and CZMA. The Federal Standard does not simply require the Corps to dredge in the least-costly manner, but also expressly requires dredging to be "environmentally acceptable" and in compliance with environmental requirements. *See* 33 C.F.R. §§ 335.2, 335.4, 335.5, 336.1(a)(1), (b)(8), (c)(1)-(2), (10); *Ohio*, 259 F.Supp.3d at 752-54, 760-61. Moreover, the Corps has a separate duty to ensure its dredging operations are environmentally acceptable. The evidence clearly indicates that beneficially reusing dredged sediment is necessary to protect and restore wetlands in the face of sea level rise in San Francisco Bay. Further, the evidence is also clear that hydraulic dredges negatively impact smelt species that are on the brink of extinction. It is unreasonable for the Corps to conclude that dredging without these conditions is environmentally acceptable. Thus, the Corps should reconsider its unlawful interpretation of its own regulations, follow Congressional intent by implementing State requirements imposed under the Clean Water Act and CZMA, and enact procedures and policies that are truly environmentally acceptable, instead of simply cheaper.

V. Conclusion

Thank you for the opportunity comment on the proposed RDMMP In sum, Baykeeper urges the RDMMP to commit the Corps to the following two practices:

1) At a minimum, beneficially reuse 40% of all sediment dredged during O&M dredging of in-Bay navigation channels.
2) Use only mechanical dredges in all in-Bay navigation channels.

If you have any questions or would like to discuss these comments further, please contact me at erica@baykeeper.org or 510-735-9700.

Sincerely,

Erica A. Maharg
Managing Attorney

San Francisco Bay Conservation and Development Commission

375 Beale Street, Suite 510, San Francisco, California 94105 tel 415 352 3600 fax 888 348 5190

State of California | Gavin Newsom – Governor | info@bcdc.ca.gov | www.bcdc.ca.gov

September 17, 2019

US Army Corps of Engineers, San Francisco District
450 Golden Gate Avenue, 4th Floor
San Francisco, CA 94102

ATTENTION: Ms. Thanh Tran

SUBJECT: US Army Corps of Engineers Draft Project Management Plan for the San Francisco Bay Regional Dredged Material Management Plan

Dear Ms. Tran:

Thank you for the opportunity to comment on the US Army Corps of Engineers' (USACE) Draft Project Management Plan (PMP) for the San Francisco Bay Regional Dredged Material Management Plan (RDMMP) and the discussion we had at the September 5, 2019 Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (LTMS) Program Managers meeting. We appreciate this early opportunity to provide input to help scope the PMP and the RDMMP. While we understand that the PMP is a USACE required document that provides structure for the RDMMP work plan and program, we are concerned that even at this early stage, the USACE appears to be ignoring the long established LTMS Program, to which the USACE is a signatory and partner agency. We believe that the RDMMP should build off of this successful program should save time, energy, and funds through direct coordination and linkage with the LTMS Management Plan.

As you are aware, the LTMS Management Program establishes programmatic goals for the placement of dredged sediment in the San Francisco Bay (Bay) region. These goals include maximizing beneficial reuse of dredged sediment, minimizing in-Bay disposal, and using the San Francisco Deep Ocean Disposal Site (SFDODS) as a "stop gap measure" when beneficial reuse is not feasible. This successful program was established through significant environmental review, including evaluation of alternatives through development of an Environmental Impact Statement and Environmental Impact Report (EIS/EIR), which identified the preferred alternative as one that included a minimum of forty percent beneficial reuse in the region, as averaged on a three year basis. The USACE and the US Environmental Protection Agency (EPA) signed a Record of Decision, adopting the program. Since that action, the Program has completed its transition period, and now is in its eighteenth year of implementation of its fifty-year program, successfully beneficially reusing over 25 million cubic yards of sediment from navigation dredging projects. The development of the LTMS Program was based on multiple studies and evaluations and should be considered the baseline from which the RDMMP is built.

The PMP should reflect this existing program and the efforts that have been undertaken to develop and support it rather than discounting it and starting anew.

As you are also likely aware, time is short for the Bay Region to take action to respond to climate change and rising seas. There is a regional consensus of managers, scientists, environmental groups, and industry that we have approximately ten years to implement significant restoration activities such that tidal marshes can reach marsh plain elevation and vegetation, creating the best opportunity for adaption to sea level rise before climate change ramps quickly up. There is also a consensus that dredged sediment use is key to creating that resilience in subsided baylands. Tidal marshes provide wave attenuation and flood benefits that local communities need to reduce the impacts of coastal flooding and increase storm surge. The LTMS Program twelve year review found this to be an urgent need and that an increase in beneficial reuse beyond that originally identified was needed. The PMP and RMMP as proposed is scheduled to take five years to complete, losing the opportunity to place dredged sediment while planning is underway. This reality highlights the need for the USACE to use the available information and program to increase placement of dredged sediment in an expedited fashion and reduce the planning timeframe.

Regarding the Draft PMP, there are specific issues beyond the overarching concern described above. The following items describe these issues in brief. We are happy to discuss any of these items in more detail.

1. Please discuss the relationship of this program to the Coastal Zone Management Act.
2. It would be useful to have a summary of the preliminary assessments of the channels summarized or available as an appendix
3. The PMP is heavily focused on in-Bay disposal and does not include active and planned beneficial reuse sites that should be considered at this early stage.
4. The Stockton Deepening Project and its potential future maintenance dredging needs should be discussed and included.
5. The Jack D. Maltester Channel is no longer necessary as the marina has been abandoned, therefore should either remove or provide an updated discussion.
6. The Larkspur Ferry Channel information is out of date and should include information regarding the more recent dredge episodes.
7. Pinole Shoal Channel – you may want to include a discussion about advanced maintenance dredging that occurs occasionally.
8. San Rafael Canal section should include a discussion of the contaminant issues at that site.
9. San Francisco Bar Channel – you may want to clarify that sand placed there is. Intended to feed the littoral cell, and potentially provide sand to the beach. I don't believe there are any studies that show that this action actually provides a beach nourishment benefit.
10. The in-bay placement discussion should include a discussion of the cumulative volume limit of 1.25 million cubic yards annually based on a three-year average.

11. The available placement sites should include at a minimum Montezuma and Cullinan Ranch Restoration Sites. The near-term sites of Bel Marin Keys and Eden Landing should also be discussed.
12. Regarding the calculation of cost and benefits, please include the habitat, coastal flooding, wave attenuation, and endangered species benefits in this evaluation.
13. A more thorough explanation of the need for regulatory and resource agency participation in the process, described in the project constraint section would be useful in understanding the effort needed and whether the agencies have the staff resources to provide the proposed level of support defined as a constraint. It is important to develop timelines that take into consideration the limited staff resources in the region.
14. BCDC has identified literature and other resources that may be helpful in the gap analysis.
15. Please provide a copy of the cited memorandum, 15 September 2015 CEWC-CO memorandum.
16. Please provide a more fleshed out Work Breakdown Structure with associated timeframes for items shown on page 16.
17. Please consider the LTMS Agencies key partners in the Communication Plan
18. Please provide the appendices for review and comment.

Lastly, we echo our partner agency, the EPA's concerns summarized here regarding the significant in-Bay disposal bias, and that it would like this document to result in changes to the LTMS program (rather than writing the DMMP to implement LTMS as much as possible). It is very important that the RDMMP process address the LTMS Management Plan, and the RDMMP's relation to it, early and directly and that "Gaps Analysis" discussion plans to include related studies and literature going back only to 1999, when dozens of focused studies that were conducted prior to that date, as well as the LTMS Management Plan and LTMS EIS/EIR which should be considered key references.

Thank you again for the opportunity to comment on the draft PMP. We look forward to the next iteration with the inclusion of the LTMS Program, and the important work the region has undertaken to beneficially reuse dredged sediment. If you have questions, or would like to further discuss these comments, please feel free to contact me at 415.352.3623 or via email at brenda.goeden@bcdc.ca.gov. We would also be happy to reserve time at an LTMS Management Committee or Program Managers meeting to further discuss.

Sincerely,

BRENDA GOEDEN
Sediment Management Program

Coastal Conservancy

November 1, 2019

Lieutenant Colonel John Cunningham
District Commander
US Army Corps of Engineers, San Francisco District
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102

Subject: Comments on the Project Management Plan for the San Francisco Bay Regional Dredge Material Management Plan

Dear Lieutenant Colonel Cunningham,

Thank you for the opportunity to comment on the Project Management Plan (PMP) for the San Francisco Bay Regional Dredge Material Management Plan (RDMMP). The California State Coastal Conservancy requests that the PMP and the resulting RDMMP include several existing and planned beneficial use sites among the San Francisco Bay Area Placement Sites, namely Montezuma Wetlands, Cullinan Ranch, Bel Marin Keys Unit V, and Eden Landing.

San Francisco Bay has lost over eight-five percent of its tidal marsh since the mid-1800s. A large partnership of Federal, State, and local agencies and organizations is currently on a path to restore 60,000 acres of tidal wetlands to add to the existing 40,000 acres and achieve a net total of 100,000 acres of lost natural infrastructure that helped protect the region from tidal flooding and storm damage. This Bay partnership has acquired lands, developed regional plans, and is implementing multiple projects to restore these critical tidal wetlands for both ecosystem benefits and shoreline protection. Sediment is key to addressing the historical subsidence that has occurred and sediment from dredging navigation channels is acknowledged as a resource that cannot be wasted. In a show of strong public support for these activities, the Bay Area voted in 2016 to tax themselves to fund $500 million over the next 20 years in efforts to accelerate wetlands restoration in light of rising seas and potential tidal flooding.

Much of the sediment dredged from the federal navigation projects in San Francisco Bay is currently disposed of at the Deep Ocean Disposal site, 50 miles outside of the Bay in the

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Pacific Ocean, or at dispersive in-Bay disposal sites, missing an opportunity to protect, restore and create aquatic ecosystem habitats, stabilize Bay shorelines, protect communities and infrastructure, restore estuarine ecosystems, support endangered species recovery, reducing USACE's costs in the aggregate by providing construction materials otherwise wasted, and provide adaptive capacity to the region.

Cullinan Ranch, Montezuma, Bel Marin Keys Unit V, and Eden Landing Wetland Restoration Projects together represent a commitment of over $153 million of non-federal expenditures to date for land acquisition, planning, design, and site preparation. Each project is described in greater detail below.

Cullinan Ranch Wetland Restoration Project. The 1,575-acre Cullinan Ranch is owned by the US Fish and Wildlife Service (USFWS) as part of the San Pablo Bay National Wildlife Refuge, in Solano County in northern San Francisco Bay. The USFWS is restoring this site to historic tidal marsh conditions, increasing tidal marsh habitat for threatened and endangered species, as well as stabilizing the subsided shoreline behind a weak levee system. Approximately 300 acres of the site is specifically targeted for salt marsh harvest mouse (federally and state listed as endangered) and requires the placement of dredged sediment to reach appropriate elevations for pickleweed establishment. Once sediment has been received, salt marsh harvest mouse habitat is anticipated to develop on this site within 2-5 years. This site is currently designed and permitted to import approximately 2.8 million cubic yards (mcy) of dredged sediment

Montezuma Wetlands Restoration Project. Montezuma is privately owned and operated by Montezuma LLC. This subsided wetland restoration site is located at the eastern edge of Nationally-recognized Suisun Marsh. It is adjacent to Montezuma Slough near the town of Collinsville in Solano County. This site represents 12.6% of the Suisun Marsh and the entire region is low in the tidal frame with non-engineered levees providing limited protection from inundation and salt-water intrusion into the Western Delta, threatening much of the State's fresh-water infrastructure. In addition to restoring tidal wetlands for endangered species habitat, including least tern, salt marsh harvest mouse, Ridgway's Rail, Delta smelt, and salmon, as well as productive vegetation that will build organic sediment, this site is bordered on one side by upland habitat, which will allow for marsh transgression over time. The site's location in the "null" zone, where fresh and salt water meet, led to the Corp's identification of this site in 2011 as the region's top ecological prospect for restoration using dredged sediment.

Montezuma's design includes construction of an internal levee system with specific deep cells that can accept sediment with slightly elevated levels of contamination, making it unique among Bay Area restoration projects. It increases the region's capacity to maintain navigation channels and berthing areas that have elevated levels of contaminants, reducing costs for upland disposal at landfills. As permitted, this site can

accept both "cover" and "foundation" quality sediment, "cover" sediment can be in direct contact with water and organisms, while "foundation" is buried deeper in the site in deep cells.

At Montezuma, 20 mcy of dredged sediment are necessary to restore approximately 1,880 acres of tidal and seasonal wetlands. Approximately 7.5 mcy of dredged sediment has been placed to date as part of Phase 1 of the project. Phase 2 of the project has 10 mcy capacity. Additional phases could accept up to 4 mcy more sediment. This project is fully permitted and operational on a 365 24/7 basis.

Bel Marin Keys Unit V Expansion of Hamilton Wetland Restoration Project. The roughly 960-acre Hamilton site owned by the Conservancy, is located in the City of Novato, Marin County, on the western shore of San Pablo Bay. Restoration of the former airfield, using sediment primarily from the Port of Oakland 50-foot Deepening Project, was completed by USACE in 2014 when the site was breached to the Bay. The adjacent Bel Marin Keys project (also owned by the Conservancy), authorized by the Water Resources Development Act of 2007, as an aquatic ecosystem restoration project, would expand Hamilton by 1,576 acres, creating nearly 2,600 acres of contiguous restored wetlands. Bel Marin Keys was converted from salt marsh habitat to agricultural use over the past 150 years, and thus is heavily subsided. Restoration of Bel Marin Keys would develop habitat for federal endangered species, including the Ridgway's Rail and the salt marsh harvest mouse. Recently snowy plovers and least terns have made limited use of Hamilton, an added benefit that may also be realized at Bel Marin Keys.

The site is subsided, with an insufficient, rip-rapped shoreline berm requiring constant maintenance to prevent flooding of the adjacent properties and community. As part of the restoration project, a flood risk management levee is now being constructed by the Conservancy between the tidal area and a residential community, increasing flood and storm protection. Restoring this site would improve and stabilize the shoreline, reducing the need to maintain its current hardened edge, and increasing this region's ability to manage risk through adaptation and tidal sediment trapping as the site develops. Under the current design, this site would accept 9.5 mcy of dredged sediment to construct tidal wetlands. This site is currently in the permitting phase. Construction of the levee is planned for 2019 and 2020, and the site could be ready to start receiving dredged sediment as soon as 2021.

Eden Landing Ecological Reserve Wetland Restoration Project. Phase II of the Eden Landing project would restore and enhance approximately 2,300-acres of former salt ponds to a mix of wetland habitats while simultaneously providing coastal flood risk management and wildlife oriented public access and recreation in the southern portion of San Francisco Bay. Located adjacent to Hayward and Union City, the site is owned and

operated by the California Department of Fish and Wildlife (CDFW). This project is a significant portion of the multi-agency South Bay Salt Pond Restoration Project, a Federal, State, and local effort to restore 15,000 acres of former industrial salt production ponds to a mix of wetland habitat.

The proposed project would raise and improve existing levees or berms and make other improvements to improve coastal flood risk management for the neighboring Union City and Hayward Communities, including residential and commercial properties, as well as the Union Sanitary District's wastewater facility. The use of dredged sediment in this site would reduce wave fetch in storms, providing additional protection to development landward of the site, as well as provide early development of tidal vegetation on the site. This site has the capacity for 7.2 mcy of dredged sediment. This site is estimated to be permitted and operational in 2022.

Together, these four restoration projects represent over 25 million cubic yards of capacity for dredged sediment placement, or well over a decade of capacity for USACE's operations and maintenance dredging in San Francisco Bay. Beneficial use of dredged material at these sites would result in over 7,000 acres of tidal marsh restoration, significantly contributing to the regional effort to restore wetlands and increase shoreline resilience. This next decade is of critical importance to the health of San Francisco Bay. In order for tidal wetlands to keep pace with some level of sea level race, they need to be restored and established by 2030. Sites that are deeply subsided need sources of sediment to raise their elevation prior to restoration, or they may never become vegetated tidal marsh. Due to the existing low site elevations, dredged sediment is a neccesary piece of the restoration effort in San Francisco Bay. Beneficial use addresses USACE's mission to support commercial navigation, provide flood risk management, and restore aquatic ecosystems, and consideration of those very real benefits helps support the economic drivers for the Corps navigation program.

Thanks again for this opportunity to comment. We encourage USACE to ensure the RDMMP to increase the beneficial use of dredged sediment in San Francisco Bay. Please contact Amy Hutzel at amy.hutzel@scc.ca.gov or 510-286-4180 if there are any questions.

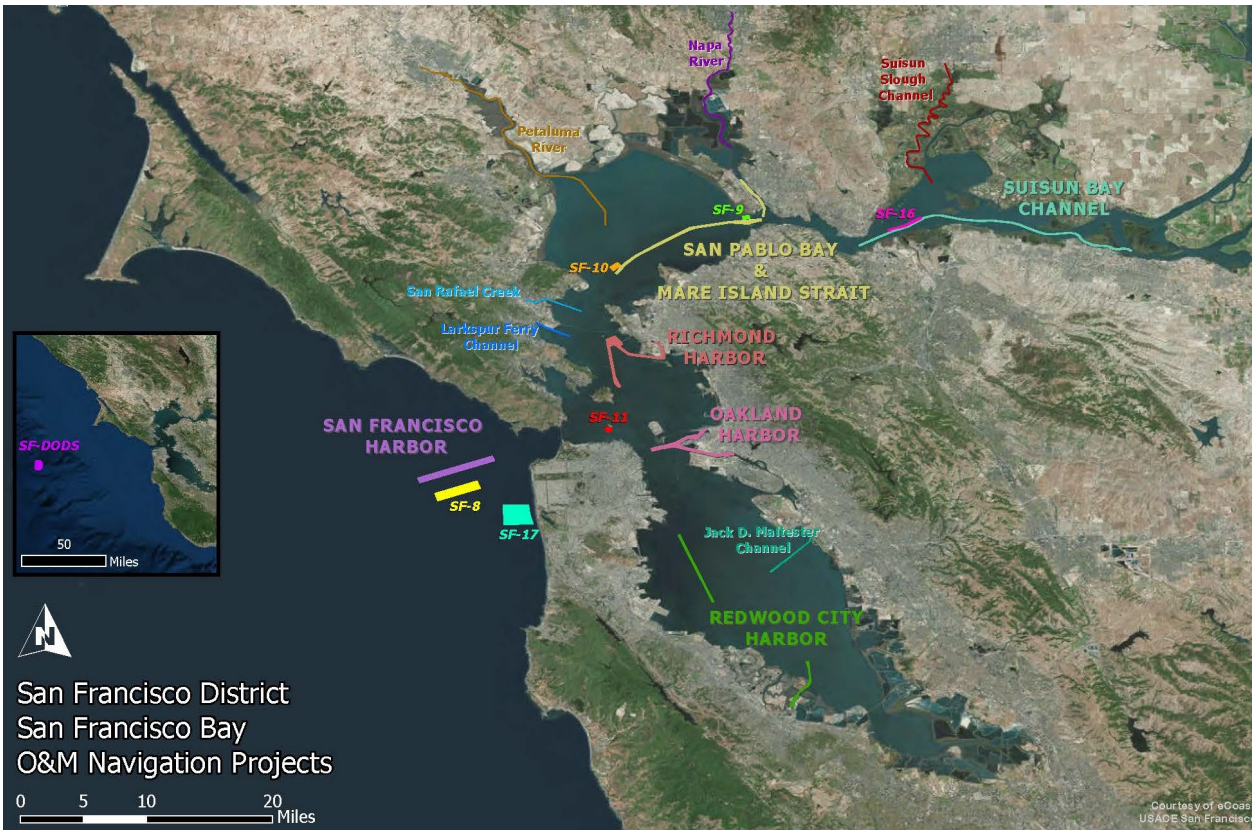
Sincerely,

Sam Schuchat
Executive Officer

US Army Corps
of Engineers®
San Francisco District
O&M Navigation Program

PROJECT MANAGEMENT PLAN

Project Name: San Francisco Bay Regional Dredged Material Management Plan
Project County, State: The Nine Counties of San Francisco Bay, CA



10 June 2019

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PROJECT MANAGEMENT PLAN ACCEPTANCE

I have reviewed this Project Management Plan dated 10 June 2019 and certify that it contains accurate content and is sufficient to guide the execution of the San Francisco Bay Regional Dredged Material Management Plan

Project Delivery Team Member	Signature	Date

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ERRATA

This project management plan is a living document, as it evolves, changes will be documented below.

Revision Number	Revision Date	Section	Description of Revision

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Acronym/Abbreviation	Meaning

1.0 INTRODUCTION

Per the guidance given in the Planning Guidance Notebook (Engineer Regulation (ER) 1105-2-100), Appendix E, Section E-15:

- All Federally maintained navigation projects must demonstrate that there is sufficient dredged material placement capacity for a minimum of twenty years;

- Dredged Material Management Plans (Management Plans) shall be prepared, on a priority basis, for all Federal navigation projects, or groups of inter-related harbor projects, or systems of inland waterway projects (or segments);

- Management Plans shall identify specific measures necessary to manage the volume of material likely to be dredged over a twenty year period, from both construction and maintenance dredging of Federal channel and harbor projects. Non-Federal, permitted dredging within the related geographic area shall be considered in formulating Management Plans to the extent that disposal of material from these sources affects the size and capacity of disposal areas required for the Federal project(s). In those cases where two or more Federal projects are physically inter-related (e.g., harbors which share a common disposal area or a common channel) or are economically complementary, one Management Plan may encompass that group of projects; and,

- Base Plan (Federal Standard). It is the Corps of Engineers policy to accomplish the disposal of dredged material associated with the construction or maintenance dredging of navigation projects in the least costly manner. Disposal is to be consistent with sound engineering practice and meet all Federal environmental standards including the environmental standards established by Section 404 of the Clean Water Act of 1972 or Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. This constitutes the base disposal plan for the navigation purpose. Each management plan study must establish this "Base Plan", applying the principles given in ER 1105-2-100.

Management Plan development shall proceed in two phases: preliminary assessments, and if needed, Management Plan studies. A preliminary assessment is required for all Federal navigation projects to document the continued viability of the project and the availability of dredged material placement capacity sufficient to accommodate twenty years of dredging. If the continued viability of the project is uncertain, then Management Plan studies are required. Management Plan studies are then further divided and conducted in two phases: an initial phase and a final phase. The initial phase concentrates on developing a detailed Scope of Work, and the final phase executes that Scope of Work. The initial phase shall be completed within twelve months of receipt of funds by the San Francisco District (SPN), and shall produce a Scope of Work for the final phase of the study. The Scope of Work shall be the basis for estimating the total study cost and local share, if any, and shall allow not longer than thirty-six months to complete the final phase.

The six deep-draft Operations and Maintenance (O&M) navigation projects (Oakland, Redwood City, Richmond, San Francisco Main Ship Channel, San Pablo Bay, and Suisun Bay) in the San

Francisco Bay (Bay) area have recently completed preliminary assessments that recommend the development of Management Plans, due to the large uncertainties in future placement sites availability, environmental conditions, and beneficial use opportunities. The recommendations recognized the inter-dependence of these projects, and recommended a single Regional Dredged Material Management Plan (RDMMP) for the Bay be implemented. In addition, there are also six shallow-draft navigation projects in the Bay and they shall also be included in the RDMMP, as they also share the same regional economy, in-bay placement sites, and ecological and physical conditions.

The planning effort described in this PMP will addresses all federally authorized and maintained navigation channels in the San Francisco Bay System. The main impediments to continued dredging are the criteria associated with limited placement capacity. Efficient execution of the Federal O&M dredging program in San Francisco Bay requires a strategic and regional approach that addresses these challenges. Once the San Francisco Bay RDMMP is complete, a 20-year vision for the Federal O&M dredging program will be established. If site conditions change within a particular Federal project, or at a placement site, warranting additional in-depth study studies, USACE can initiate a site specific Dredge Material Management Plan (DMMP) to address the changing conditions. USACE typically reviews project specific DMMPs every 5 years making necessary adjustments as needed. A 5-year review of the RDMMP will also be implemented.

1.1 Purpose and Scope

The purpose of this Project Management Plan (PMP) is to manage the execution of a RDMMP for the Bay. This PMP serves as a guide and reference on how to manage the project delivery team, project acquisitions, changes to the project, quality of work products, risks to project execution, internal and external communications, and most importantly the overall scope, schedule, and budget for the RDMMP.

This PMP is not intended to anticipate or include all possible changes to the project during execution. It is a dynamic "living" document that requires periodic update. Revisions to the PMP will reflect significant changes to the costs, schedule, and/or scope of the RDMMP. The Project Manager (PM) will facilitate discussions related to changes to this PMP, and coordinate the schedule and budgets with the various Chiefs prior to finalizing and issuing a revised or updated PMP.

The RDMMP is in its initial phase of the Management Plan studies and this PMP focuses on the development of the Scope of Work for the final phase of the Management Plan studies. The PMP will be updated again after the Scope of Work has been developed and approved.

1.2 Project Descriptions

San Francisco Bay Regional Dredged Material Management Plan Study Area

The RDMMP study area extends from approximately 50 nautical miles offshore at the San Francisco Deep Ocean Disposal Site (SF-DODS), through the Golden Gate Bridge, covering the

entire Bay, to the border of the Sacramento-San Joaquin Delta (Delta); the Delta border being defined herein as the upstream limit of the Suisun Bay Channel (Figure 1).

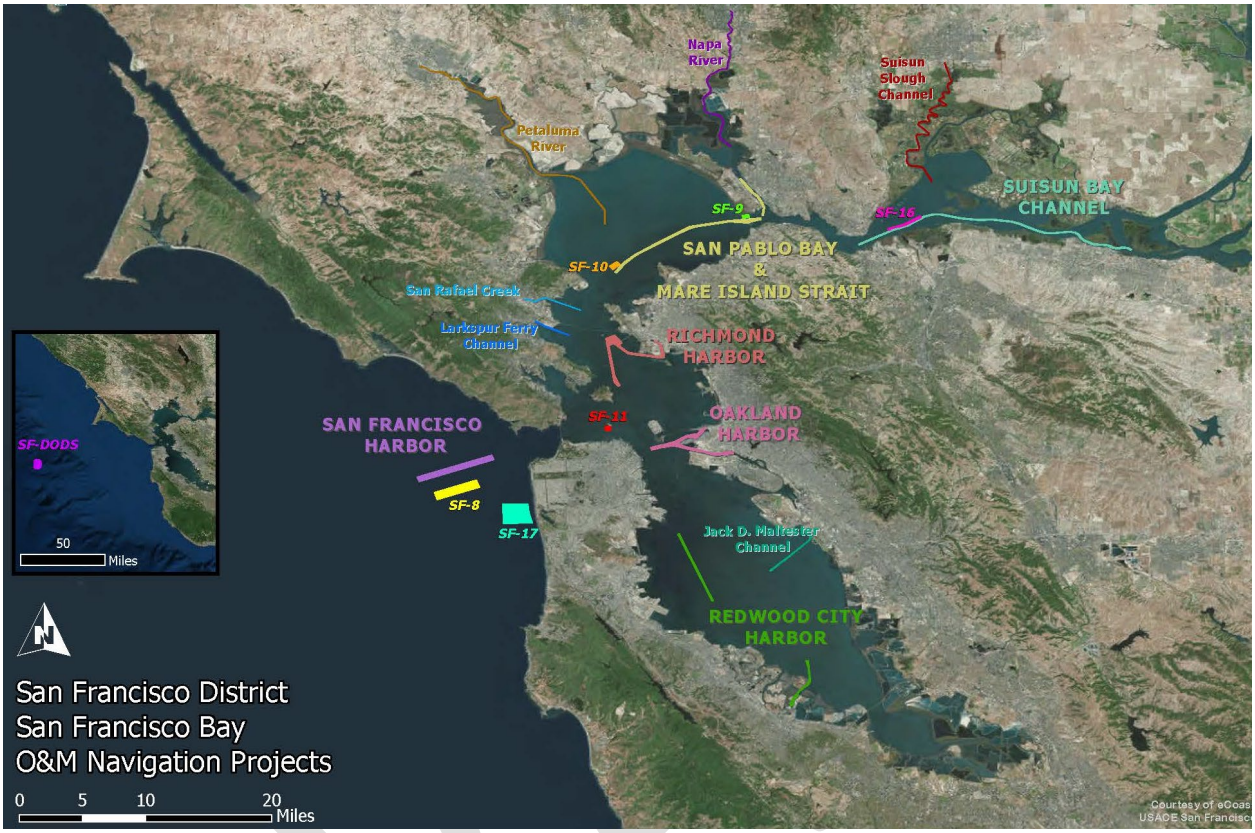

Figure 1. The Study Area for the RDMMP showing the 12 Projects and 7 Placement Sites

Deep-Draft Federal Navigation Projects

Descriptions of the six deep-draft Federal navigation projects are given herein:

Oakland Harbor: Oakland Harbor is on the eastern shore of San Francisco Bay immediately south of the San Francisco-Oakland Bay Bridge. The authorized project includes the Entrance Channel, Outer Harbor Channel, Inner Harbor Channel, Brooklyn Basin South Channel, Brooklyn Basin North Channel, and Tidal Canal. Oakland Harbor is in the City of Oakland, on the eastern shore of central San Francisco Bay immediately south of the San Francisco-Oakland Bay Bridge. Deepening of the Entrance Channel, Outer Harbor Channel, and Inner Harbor Channel to 50 feet MLLW was completed early in 2010. The Entrance Channel, Outer Harbor Channel, and Inner Harbor Channel are typically dredged annually. Dredged material from Oakland Harbor has typically been less than 80 percent sand. Prior to 1999, all dredged material from Oakland Harbor was placed at SF-11. Since 1999, the material has been placed at SF-DODS, Montezuma Wetlands Restoration Project, Hamilton Wetlands Restoration Project and SF-11.

Redwood City Harbor: The Port of Redwood City is approximately 18 miles south of San Francisco on the western side of South San Francisco Bay. It provides deep-draft access to the mid-Peninsula and San Jose metropolitan areas. The authorized project consists of San Bruno Channel, an Entrance Channel, an Outer Turning Basin, a Connecting Channel, an Inner Turning Basin, and Inner Channel. The Inner Channel mainly supports recreational craft, and is currently not maintained by the federal government. Redwood City Harbor was last deepened in 1962. Project maintenance provides for dredging of the channels and turning basins, which range in width from 300 feet to 900 feet, to 30 feet MLLW. The Entrance Channel, Outer Turning Basin, Connecting Channel, and Inner Turning Basin are typically dredged every 1 to 2 years. San Bruno Channel is 510 feet wide by 1,800 feet long and is dredged on a 10-year interval or greater, and was last dredged in 2005. Dredged material from Redwood City Harbor has typically been less than 80 percent sand, and placed at SF-11, or at Bair Island for beneficial use

Richmond Harbor: The Richmond Harbor authorized project is located between San Francisco Bay and San Pablo Bay in Contra Costa and San Francisco Counties. The project consists of the Santa Fe Channel, Inner Harbor Approach Channel, Inner Harbor Entrance Channel, Outer Harbor at the Long Wharf, and the Southampton Shoal. Dredged material from the Outer Harbor has typically been less than 80 percent sand, and placed at the Alcatraz Island placement site (SF-11), while dredged material from the Inner Harbor is also less than 80 percent sand, and placed at SF-DODS and SF-11. The project was last deepened in August 1998.

San Francisco Harbor (Main Ship Channel): San Francisco Harbor consists of a deep-draft navigation channel ("Main Ship Channel"; MSC) immediately offshore of the Bay and its in-bay components. The MSC was last deepened in 1974. Current project depth is 55 feet MLLW. The channel is located approximately 5 miles west of the Golden Gate Bridge and extends across the arc-shaped, submerged San Francisco Bar in the Gulf of the Farallones. It is approximately 16,000 feet long and 2,000 feet wide. The channel is the only deep-draft ocean entrance to San Francisco Bay and is used by all ocean-going shippers to San Francisco Bay and inland ports. It is typically dredged annually. Dredged material from the MSC is greater than 80 percent sand, and has been placed at SF-8 and the nearshore Ocean Beach placement site (SF-17).

San Pablo Bay and Mare Island Strait: The San Pablo Bay and Mare Island Strait authorized project includes these general navigation features: (1) The Pinole Shoal Channel, a 600-foot-wide channel to a depth of 35 feet MLLW, which is approximately 11 miles long; (2) A 600-foot-wide channel to 30 feet MLLW through Mare Island Strait; (3) A channel to 30 feet MLLW up the Napa River, except (4) at the northerly end, at the City of Vallejo Marina, where the project depth is 26 feet MLLW.

The Pinole Shoal Channel provides deep-draft navigation in and through San Pablo Bay, and is an integral part of the San Francisco Bay to Stockton project. The sediment composition of dredged material from Pinole Shoal Channel varies along the channel, with the eastern and western ends of the channel typically being sandy. Dredged material from Pinole Shoal Channel is typically placed at the San Pablo Bay placement site (SF-10). The channel is authorized for a depth of 45 feet MLLW, but is only maintained to a depth of 35 feet MLLW plus 2 feet of allowable overdepth (i.e., total maintained depth of 37 feet MLLW) based on current economic needs. The project was last deepened in 1982. Beginning in 2011, the western section of Pinole

Shoal Channel was slightly realigned to the north. The realigned channel experiences substantially less shoaling than the old alignment, and thus requires less dredging.

The Mare Island Strait portion of this authorized project has not been dredged since the closure of the Navy base in April 1996. It is currently being re-evaluated for dredging, as there are now commercial interests in allowing deeper draft vessels to use commercial port facilities.

Suisun Bay Channel: Suisun Bay Channel consists of Bulls Head Reach, Suisun Bay Main Channel, New York Slough, and the South Seal Island Channel. The Suisun Bay Channel is located 30 miles northeast of San Francisco in the counties of Contra Costa and Solano. Suisun Bay Channel was deepened to 35 feet MLLW in 1960. Bulls Head Reach and New York Slough were deepened to 35 feet MLLW in 1968. The channel is an integral part of the San Francisco Bay to Stockton project, providing deep-draft access from the Pacific Ocean to the inland ports of Stockton and Sacramento. The Main Channel and New York Slough are typically dredged annually Dredged material from Suisun Bay Channel is typically greater than 80 percent sand, and placed at the Suisun Bay placement site (SF-16) and occasionally the Carquinez Strait placement site (SF-9). At Bulls Head Reach, past maintenance has included dredging up to 4 feet of advance maintenance material to accommodate rapid shoaling. Because of the variable shoaling rate at this location, this practice is reviewed annually to determine if it remains effective. In the case of Bulls Head Reach Shoal, USACE typically elects to perform advance maintenance every year because that area shoals faster than the annual dredging cycle.

Shallow Draft Federal Navigation Projects

Jack D. Maltester Channel (San Leandro Marina): The Jack D. Maltester project is located in the San Leandro Marina, on the eastern shore of the Bay in Alameda County. The project includes the Main Access Channel and the Interior Access Channel. The channels were last deepened in 1965. Project maintenance provides for dredging of the 200-foot-wide Main Access Channel to 6 and 7 feet MLLW, and the 140-foot-wide Interior Access Channel to 7 feet MLLW. The project was last dredged in 2009. Dredged material has typically been less than 80 percent sand, and placed at a sponsor-provided upland site. The channels provide access for recreational boating, access to the East Bay Authority sanitary outfall, and access to Oakland International Airport for waterborne search and rescue operations.

Larkspur Ferry Channel: The project is approximately 12 miles north of San Francisco in Marin County, and primarily provides for public ferryboat transit service between Marin County and San Francisco. The project consists of a main navigation channel and a turning basin. The main channel has a project depth of 13 feet at MLLW, with channel dimensions of 232 feet wide by 13,560 feet long; from the head-of-navigation at the Ferry Terminal. The turning basin has a project depth of 15 feet MLLW, with variable dimensions. The ferry service, terminal facilities, and berthing improvements are directly dependent upon the channel being dredged. The project was last dredged in fiscal year 2003 by the USACE and fiscal year 2006 at the local sponsor's expense. The project reverted back to federal maintenance of the channel in 2007 (per Sec. 3012 of WRDA 2007), but has not yet received funds for dredging. In-bay aquatic placement at SF-11 is utilized for qualified suitable material. Characteristically, shoaling deposition is uniform and material type is predominantly mud and silt

Napa River: The Napa River navigation project consists of a downstream reach from Mare Island Strait Causeway to Asylum Slough, and an upstream reach from Asylum Slough to Third Street. This project is a shallow-draft, predominately light commercial and recreational channel. Project maintenance provides for dredging of the Napa River Channel to a depth of 15 feet MLLW from Mare Island Strait Causeway to Asylum Slough, and to a depth of 10 feet MLLW to the head of navigation at the Third Street Bridge in the City of Napa; the channels were deepened to these depths in 1952. The project is approximately 100 feet wide and 16 miles long. Dredged material from the Napa River has typically been less than 80 percent sand, and placed at the sponsor-provided upland sites. Napa River is on a 6-year dredging cycle, and was last dredged in 2016.

Petaluma River: The Petaluma River navigation project is located in Sonoma and Marin counties, and consists of two segments: (1) the Petaluma "Across the Flats" segment, which starts in San Pablo Bay and extends up to the mouth of the river; and (2) the "River Channel" segment that extends up the river channel itself. Project maintenance provides for dredging the channel 200 feet wide to a depth of 8 feet MLLW for the Petaluma Across the Flats segment, and 100 feet wide to 8 feet MLLW thereafter (River Channel), including a turning basin 300 to 400 feet wide to 8 feet MLLW. Both segments were initially dredged to a depth of 8 feet MLLW in 1933. Dredged material from the Petaluma Across the Flats has typically been less than 80 percent sand, and placed at the San Pablo Bay placement site (SF-10). Dredged material from the River Channel has typically been less than 80 percent sand, and placed at sponsor-provided upland sites. The Petaluma Across the Flats Channel is on a 3-year dredging cycle, and the River Channel is on a 4-year dredging cycle. The River Channel has not been dredged since 2003 and the Petaluma Across the Flats has not been dredged since 1998, due to insufficient funds.

San Rafael Creek: San Rafael Creek consists of the San Rafael Across the Flats Channel, Inner Canal Channel, and a 200-foot-wide turning basin near the western terminus of the Inner Canal Channel. San Rafael Creek is in the north Bay in Marin County. This project is a shallow-draft, predominately light commercial and recreational channel. Project maintenance provides for dredging the San Rafael Across the Flats Channel in San Francisco Bay to the mouth of San Rafael Creek to a depth of 8 feet MLLW (plus 2 feet of allowable overdepth); and 6 feet MLLW (plus 2 feet of allowable overdepth) for the Inner Canal Channel to the head of navigation at the Grand Street Bridge in the City of San Rafael. On average, the San Rafael Across the Flats is dredged every 7 years, and the Inner Canal Channel and turning basin are dredged every 4 years. The San Rafael Across the Flats was last dredged in 2012 to a depth of 5 feet MLLW. The Inner Canal Channel was last dredged in 2011; the turning basin was last dredged in 2003. Dredged material has typically been less than 80 percent sand, and placed at the Alcatraz Island Placement Site (SF-11).

Suisun Slough Channel: Suisun Slough Channel connects the City of Suisun (near Fairfield) to Grizzly Bay, and then to Suisun Bay 30 miles northeast of San Francisco. The authorized project includes: (1) an entrance channel in Grizzly Bay that is 13 miles long and 200 feet wide with a depth of 8 feet Mean Lower Low Water (MLLW); (2) a channel to the head of navigation at Suisun City that is 100 to 125 feet wide with a depth of 8 feet MLLW; and (3) a turning basin. The project is scheduled for an eight-year dredging cycle, but it was last dredged in FY 1991.

San Francisco Bay Area Placement Sites

SF-8 (San Francisco Bar Channel): The SF-8 placement site is a 15,000-foot by 3,000-foot-wide rectangle 7,500 feet south of the MSC in the Pacific Ocean. Depths at SF-8 range from approximately 30 to 45 feet MLLW. Disposal is limited to sandy material dredged by USACE from the MSC. However, the easternmost portion of SF-8 is within the Clean Water Act (CWA) 3-mile limit, and sand from other San Francisco Bay Area dredging projects can be permitted there as beneficial reuse for beach nourishment. There is no set limit on placement of dredged material at SF-8. The site was thought to be dispersive, but operation reports from the captain of the USACE hopper dredge, Essayons, state that vessel maneuverability is impaired during times of rough seas because sand is being placed faster than it disperses.

SF-9 (Carquinez Strait Placement Site): The SF-9 placement site is a 1,000-foot by 2,000-foot rectangle, approximately 10 to 55 feet deep, 0.9 mile west of the entrance to Mare Island Strait in eastern San Pablo Bay in Solano County. Disposal is limited to 1.0 million cubic yards of dredged material per month and a maximum of 3.0 million cubic yards per year during wet or above-normal water flow years; and 2.0 million cubic yards per year during all other years.

SF-10 (San Pablo Bay Placement Site): The SF-10 placement site is a 1,500-foot by 3,000-foot rectangle, approximately 30 to 45 feet deep, 3.0 miles northeast of Point San Pedro in southern San Pablo Bay in Marin County. Disposal is limited to 500,000 cubic yards of dredged material per year.

SF-11 (Alcatraz Placement Site): The SF-11 placement site is a 1,000-foot-radius circular area, approximately 40 to 70 feet deep, approximately 0.3 mile south of Alcatraz Island in the Central Bay. Since at least 1972, SF-11 has been the most heavily used disposal site in San Francisco Bay. Placement is currently regulated at a maximum of 400,000 cubic yards per month from October to April; and 300,000 cubic yards per month from May to September. Disposal is limited to 4.0 million cubic yards of dredged material per year.

SF-16 (Suisun Bay Placement Site): The SF-16 placement site is a single-user in-bay unconfined disposal site reserved for sand dredged from the Suisun Channel and New York Slough only. SF-16 is a 500-foot by 11,200-foot rectangle adjacent to the northern side of Suisun Bay Channel, approximately 1 mile upstream of the Interstate-680 Bridge. The depth at this site is approximately 30 feet MLLW. Currently, the site is authorized to receive 200,000 cubic yards of dredged sand per year.

SF-17 (Ocean Beach Nearshore Placement Site and Ocean Beach Demonstration Site): The SF-17 placement site is in waters of the Pacific Ocean adjacent to the south-of-Sloat-Boulevard stretch of Ocean Beach, and outside of the southern section of SF-8 (San Francisco Bar Channel). SF-17's eastern boundary is approximately 0.35 mile offshore from the back-beach bluff, its center is 4 miles southwest of SF-8, and the site's area is 3.3 square miles. Water depths along the shoreward boundary range from approximately 25 to 35 feet MLLW, and depths along the seaward boundary ranges from approximately 37 to greater than 50 feet MLLW. SF-17 is also known as the Ocean Beach demonstration site.

SF-DODS (San Francisco Deep Ocean Disposal Site): Approximately 50 nautical miles west of the Golden Gate Bridge, SF-DODS is the farthest offshore and deepest (8,000 to 10,000 feet MLLW) dredged material placement site in the United States. SF-DODS is authorized to receive up to 4.8 million cubic yards of dredged material per year. However, annual placement at SF-DODS since 2000 for all dredging projects in San Francisco Bay, not just the federal navigation channels, has averaged less than 1 million cubic yards.

1.3 Project Authority

There is no one single authority for the twelve active navigation projects in the Bay. Tables of authorities for the individual projects are given in their respective Preliminary Assessments for each project.

1.4 Project History

Brief descriptions of the individual project histories are given in their respective Preliminary Assessments for each project.

1.5 Applicable Regulations

Applicable Engineer Regulations (ERs) for this PMP for the San Francisco Bay RDMMP include ER 5-1-11, ER 5-1-14, and ER 1105-2-100. Additional guidance is also provided in Policy Guidance Letter Number 40. The studies produced from this PMP will also follow all applicable environmental, planning, and engineering regulations in their executions.

1.6 Scope Management Plan

The RDMMP is at low risk of negatively impacting the O&M navigation program, as the program will continue in parallel using currently approved methods for dredging and placement and be independent of any tasks associated with the studies. Therefore scope creep or scope changes represents a very low risk to the overall O&M navigation program. Further details on scope change management are given in Section 6.

2.0 TEAM ROLES

The development of the Scope of Work for the Management Plan studies requires seven disciplines: project management, plan formulation, physical processes (water resources engineering), environmental planning, economics, cost engineering, and dredging and placement logistics (navigation engineering). The Project Delivery Team (PDT) members are listed in Table 1 below.

Table 1. Project Delivery Team Members

PDT Member Name	Role	Phone	Email
Tawny Tran	Project Manager	415-503-6741	Thanh.T.Tran@usace.army.mil
TBD	Lead Planner	TBD	TBD
TBD	Coastal Engineer	TBD	TBD
TBD	Environmental Planner	TBD	TBD
TBD	Economist	TBD	TBD
TBD	Cost Engineer	TBD	TBD
TBD	Navigation Engineer	TBD	TBD
TBD	Public Involvement Specialist	TBD	TBD

The roles and responsibilities for the PDT members are given in bulleted form below:

- **Project Manager** manages the overall project execution and performance according to the PMP, communicates management strategy for the PDT, monitors project schedule, costs, and quality of the project tasks and work products, provides updates to the Project Review Board (PRB) - with corrective action plans for potential schedule slippage, cost over-runs, or quality-scope creep, responsible and accountable for the RDMMP work product for the duration of the project, and documents all approved changes in the PMP, P6, or CEFMS as necessary.

- **Lead Planner** manages the overall development of Base Plan alternatives, produces the RDMMP using input from the other PDT members, manages the review of the Scope of Work for DQC and QA, organizes and/or attends PDT and other (resource agencies, stakeholder, etc.) meetings, and other miscellaneous duties as assigned by the project manager.

- **Coastal Engineer** develops, or oversees the development of, the technical analyses needed to estimate the future placement capacity for the twelve Bay navigation projects for a minimum of twenty years, interfaces with other PDT members as necessary to develop the coastal engineering scope, produces the coastal engineering scope of work for the RDMMP, and attends PDT and other (resource agencies, stakeholder, etc.) meetings as required.

- **Environmental Planner** evaluates the impacts associated with any proposed Base Plan alternatives and develops, or oversees the development of, the technical analyses needed to estimate these impacts for the twelve Bay navigation projects for a minimum of twenty years, produces the environmental scope of work for the RDMMP, attends PDT and other (resource

agencies, stakeholder, etc.) meetings, and ensures compliance with environmental laws and regulations, as required.

- **Economist** develops benefits for the twelve navigation projects for any proposed Base Plan alternatives and calculates benefit to cost ratios for the projects to determine if some or all of the navigation projects are still economically viable, produces the economics scope of work for the RDMMP, and attends PDT and other (resource agencies, stakeholder, etc.) meetings as required.

- **Cost Engineer** develops cost estimates for any proposed Base Plan alternatives and develops, produces the cost engineering scope of work for the RDMMP, and attends PDT and other (resource agencies, stakeholder, etc.) meetings as required.

- **Navigation Engineer** determines if conventional dredging equipment and West Coast availability is sufficient for any proposed Base Plan alternatives, or if additional equipment or innovative techniques will be needed, produces the navigation engineering scope of work for the RDMMP, and attends PDT and other (resource agencies, stakeholder, etc.) meetings as required.

- **Public Involvement Specialist** assists in planning and development of stakeholder engagement related aspects of the project. This could include developing a project communication plan and/or an engagement plan, designing meeting formats, meeting facilitation, coordination, developing outreach materials, developing and updating stakeholder outreach lists, and processing and analyzing stakeholder inputs.

The work product for the first year of this PMP is a Scope of Work for the Management Plan studies that will be executed in the following three years. As such, and in agreement with policy guidance given in EC 1165-2-217 (Section 8), review of the Scope of Work is limited to District Quality Control (DQC). In addition, the Major Subordinate Command (MSC), the South Pacific Division (SPD), will provide Quality Assurance (QA) of the Scope of Work. Both the DQC and QA review team members are listed in Table 2 below. The Scope of work will be delivered to SPD through the SPN designated District Support Team (DST) lead. In addition, all DQC and QA comments will be entered in the USACE approved review software 'ProjNet / DrChecks'. 'Over the shoulder' DQC is encouraged, but at least one comment must be entered in DrChecks for each role listed in Table 2.

Table 2. Review Team Members

Review Team Member Name	Role	Phone	Email
TBD	Plan Formulation / DQC Review Lead	TBD	TBD
TBD	Coastal Engineering	TBD	TBD
TBD	Ecology/Environmental	TBD	TBD
TBD	Economics	TBD	TBD
TBD	Cost Engineering	TBD	TBD
TBD	Navigation Engineering	TBD	TBD

Review Team Member Name	Role	Phone	Email
TBD	SPN - QA DrChecks Manager	TBD	TBD
TBD	SPD – QA Planning	TBD	TBD
TBD	SPD – QA Engineering	TBD	TBD
TBD	SPD – QA Navigation	TBD	TBD

3.0 ASSUMPTIONS AND CONSTRAINTS

3.1 Assumptions

The scope, schedule, and budget for this RDMMP are based on the following assumptions:

- The O&M navigation program will be run in parallel with the RDMMP studies and be independent of them, and therefore unaffected by the studies.
- The environmental resource agencies will actively participate in the development of the studies and have sufficient dedicated resources to respond in a timely manner to study requests.
- Per policy guidance, more detailed scopes for the study will be developed during the first year of funding, and be included in a revised PMP.
- There will be sufficient and continuous funding for the duration of the RDMMP.

3.2 Constraints

The RDMMP studies will follow all applicable Federal laws. The studies will attempt to avoid inconsistencies with existing State or local laws, regulations, and policies. However, where there are conflicts between Federal law or policy and State or local law or policy, the Federal law or policy will be followed.

3.3 Non-Federal Partners Requirements

This RDMMP is 100% internally funded by the USACE and therefore there are no paying Non-Federal Partners. However, all but one of the navigation projects have identified Non-Federal Partners, whose operations may be effected by the results of the studies and are listed in Table 3 below.

Table 3. Non-Federal Partners for the San Francisco Bay O&M Navigation Projects

SPN O&M Navigation Project	Non-Federal Partner
Oakland	Port of Oakland
Redwood City	Port of Redwood City
Richmond	Port of Richmond
San Francisco Harbor – Main Ship Channel	none
San Pablo Bay & Mare Island Strait	Contra Costa County & Stockton Port District
Suisun Bay Channel	Contra Costa County & Stockton Port District
Jack D. Maltester Channel (San Leandro Marina)	City of San Leandro
Larkspur Ferry Channel	Golden Gate Bridge Highway & Transportation District
Napa River	Napa County Flood Control & Water Conservation District
Petaluma River	City of Petaluma
San Rafael Creek	City of San Rafael
Suisun Slough Channel	Contra Costa County & Stockton Port District

4.0 PROJECT TASKS

This version of the PMP will only list tasks for Phase 1 (Scope of Work Development for the Management Plan Studies), as the tasks for the later phases will be developed in the Scope of Work to be produced by the end of Phase 1.

4.1 Phase 1 Tasks

Gaps Analysis – Annotated Bibliography

While implementation guidance has not yet been promulgated, Section 1116 of WRDA 2018 requires DMMPs to make maximum use of existing information. Sorting existing information could be a daunting task for the Bay, as there are hundreds of relevant reports produced on the Bay, which would require reading multiple thousands of pages to glean pertinent information for the RDMMP. Instead a focused approach to use existing information should be adopted; starting with the more recent studies and working backwards to 1999 – that start of the new sediment regime in the Bay. This search of post-1999 information will be supplemented by seminal publications identified by Bay regional experts in the fields of sediment transport, dredging technology, Bay environment, and possibly others. The results of this gaps analysis will be documented in an annotated bibliography, so that future updates to the San Francisco Bay RDMMP will be more efficient and only have to look at new information since the bibliography.

The Gap Analysis will review relevant policy and environmental resources, in addition to scientific or academic information. Specific to documenting the current status of potential placement sites, the Gap Analysis should consider and build off of outputs from the past San Francisco Bay RDMMP effort (2010-2012).

Internal (Initial) Development of Scopes for the Management Plan Studies

Based on the results of the Gaps Analysis, the PDT in conjunction with other USACE organizations (SPD, ERDC, and possibly other Districts with specialized expertise) will develop initial scopes of work for the gaps that require further study. It is noted that information will be needed for more than just volume capacity at placement sites, as the Federal Standard consists of more than just the least costly placement site, but also environmental impacts and Federal environmental compliance requirements, frequency and methods used for dredging (see 15 September 2015 CEWC-CO memorandum). Therefore multiple disciplines will be involved in the gaps analysis.

The PDT also recognizes that regional engagement with multiple agencies and stakeholders must be achieved for a successful Management Plan, and that engagement should be based on a scientifically supportable, risk- informed approach. Having an initial draft scope to engage others provides a mechanism for the outside groups to communicate their concerns and identify missing information from the gaps analysis.

Engagement of Outside Groups – Circulation of Draft Scope

The initial Scopes of Work will be circulated to the various groups affected by Federal dredging within the Bay according to the Communication Plan outlined in Section 9 and to be further refined during Phase 1. Multiple meetings and workshops will be held with various target audiences to better understand concerns and refine the science scopes needed to reduce uncertainty related to capacity and other issues with placing dredged material in the Bay.

Iterative Revisions of the Scopes of Work for the Management Plan Studies

The engagement process both internally and with outside groups will be repeated until satisfactory scopes of work are developed. It is expected to take three drafts to accomplish a satisfactory scope of work.

Routing, Approval, and Budgeting of the Scopes of Work for the Management Plan Studies

The Vertical Team will be engaged throughout the scope development process, but will also have the final Scope of Work routed through the District upper management, through SPD, and to HQUSACE to ensure consistency with national policies and viability for budgeting purposes. Once agreement with the Scopes of Work are reached with the Vertical Team, the District will submit, or update, work packages to reflect the agreed-upon Scopes of Work.

4.2 Milestones

The milestones for the project are given in Table 4 below. It should be noted that only MS1 and MS2 milestones for Phase 1 are relevant to this PMP and the other milestones are subject to change, based on the Scope of Work produced by the end of Phase 1.

Table 4. Milestones for the San Francisco Bay Regional Dredged Material Development Plan

MS #	Phase	Milestone Name
MS1	1	Annotated Bibliography Complete
MS2	1	Scope of Work Complete
MS3	2A	Volume Capacity Study Complete
MS4	2A	Economics Study Complete
MS5	2A	West Coast Dredging Equipment Industry Survey Complete
MS6	2A	Alternative Base Plans Development Complete and Ready for Evaluation
MS7	2B	NEPA – Environmental Compliance / Impact Study Complete
MS8	2B	Recommended Base Plan Selected
MS9	2B	Final Regional DMMP Approved and Complete

4.3 Work Breakdown Structure

A Work Breakdown Structure (WBS) organizes the work necessary to successfully complete the project in a logical manner and divides the work into multiple levels of activities, tasks, and subtasks to fulfill the objectives of the project. For the San Francisco Bay Regional DMMP, the project is divided into four major activities, with multiple tasks and no subtasks, as shown in Table 5 below.

Table 5. Work Breakdown Structure for the San Francisco Bay Regional DMMP

WORK BREAKDOWN STRUCTURE - SF BAY REGIONAL DMMP
SF BAY REGIONAL DMMP
PMP DEVELOPMENT
PHASE 1 (initial) SCOPE OF WORK DEVELOPMENT
Gaps Analysis - Annotated Bibliography
Initial (internal) Draft Scope Development
Circulation of Draft Scope with Targeted Audiences
Revised 2nd Draft Scope Development
Recirculation of 2nd Draft with Targeted Audiences
Refined 3rd Draft Scope Development
Recirculation of 3rd Draft with Targeted Audiences
Final Draft - Internal Routing through Vertical Team
Approved Scope of Work for Management Plan Studies
PHASE 2A (final) EXECUTION OF MANAGEMENT PLAN STUDIES
Management Plan Study on Volume Capacities / Physical Processes
Management Plan Study on Economics of Navigation Projects
Management Plan Study / Industry Survey of West Coast Dredging Equipment
Management Plan Study/NEPA Document on Environmental Impacts
PHASE 2B (final) MANAGEMENT PLAN REPORT & APPROVAL OF RDMMP
Gather Background Information & Existing Conditions
Develop Future No Change / No Action Conditions
Develop Alternative Base Plans Based on Management Plan Studies
Evaluate Base Plans against No Action Conditions
Trade-Off Analysis of Base Plans against Each Other
Selection of Recommended Base Plan
Circulation of Recommended Base Plan with Targeted Audiences
Local Consensus or Modification of Recommended Base Plan
Routing of Final Base Plan through Vertical Team
Approved Base Plan and RDMMP for SF Bay

It should be noted that the PMP at this stage only covers the PMP Development and Phase 1, and that Phases 2A and 2B are subject to change based on the scope of work developed by the end of Phase 1.

4.4 Resource Estimate and Distribution

Resource estimation and distribution for the San Francisco Bay RDMMP comes for the scope of services from the individual disciplines needed to produce the RDMMP. A summary of costs by discipline for Phase 1 is provided in appendix A.

The costs for Phases 2A and 2B will be produced as part of the scope of work developed by the end of Phase 1.

4.5 Schedule Management Plan

Schedule management will follow the guidance given in Section 6 of this PMP (Change Management Plan), and more specifically the 15% threshold set for schedule slippages given in Subsection 6.2. Day to day schedule management will be the responsibility of the PM, with assistance from the PDT. Major changes or slippages to the schedule shall follow the guidance given in Section 6.

5.0 ACQUISITION PLAN

All work related to the development of the Scope of Work will be done through in-house SPN labor, with possible help from other USACE districts or the USACE Engineering Research and Development Center (ERDC), through cross-charge labor codes.

It is envisioned that for the actual Management Plan studies will require conventional contracting processes to supplement in-house labor, other USACE district, or ERDC labor efforts. Indefinite Delivery Contract task orders may be used to obtain specific technical analyses for a particular discipline's work effort. Other methods for obtaining needed work efforts or expertise, may include Military Interdepartmental Purchase Request to the U.S. Geological Survey (USGS) or the National Oceanic and Atmospheric Administration (NOAA), or sole source contracts to obtain specific expertise on very specialized topics from academia or other research institutes.

6.0 CHANGE MANAGEMENT PLAN

The purpose of a Change Management Plan is to define and manage the project's baseline performance measurement thresholds for changes in scope, schedule, and cost to determine if actual project execution has exceeded these thresholds. The first year is devoted to developing a more detailed Scope of Work to be executed during the following three years, and large changes to scope, schedule, and budget are not expected. However, the following three years may see large changes in scope, schedule, or budget, depending on the results of the Management Plan studies. Regardless, the following change management plan is applicable to either the first year or the following three years.

This Change Management Plan was created for the San Francisco Bay RDMMP in order to set expectations on how the approach to changes will be managed, what defines a change, the purpose and role of the change control board, and the overall change management process. All stakeholders to the RDMMP will be expected to formally submit or request changes in accordance with this Change Management Plan and all requests and submissions will follow the process detailed herein.

The PM must ensure that any approved changes are communicated to the PDT and other relevant project stakeholders. Additionally, as changes are approved, the PM must ensure that the changes are captured in the PMP where necessary. These updates must then be communicated to the PDT and relevant stakeholders as well.

6.1 Definitions of Change

There are several types of changes which may be requested and considered for the San Francisco Bay RDMMP. Depending on the extent and type of proposed changes, formal documentation and the communication of these changes will be required to include any approved changes into the PMP as well as ensure all relevant stakeholders are notified. There are three types of changes:

- **Scheduling Changes**: changes which will impact the approved project schedule. These changes may require fast tracking, crashing, or re-baselining the schedule depending on the significance of the impact.

- **Budget Changes**: changes which will impact the approved project budget (i.e. authorized cost). These changes may require requesting additional funding, releasing funding which would no longer be required or adding to project or management reserves. This may require changes to the cost baseline for the project.

- **Scope Changes**: changes which are necessary and impact the project's scope which may be the result of unforeseen requirements which were not initially planned for. These changes may also impact budget and schedule. These changes may require revision to WBS, project scope statement, and other project documentation as necessary.

6.2 Decision Thresholds

Decision thresholds for the three types of changes that affect the San Francisco Bay RDMMP are given herein.

Schedule Change

Minor changes to a project's schedule occur frequently, and many of these changes can be absorbed by adjusting either the sequence or duration of tasks. A critical milestone slip of more than 15% (e.g., a 2-month slip within a FY) will be considered to be a major schedule change for this project.

Cost Change

The PM will consistently monitor schedule progress and scope changes, and assess how these changes will impact the project's cost. The PM will also attend monthly In Progress Reviews (IPRs) to alert branch and section chiefs of any resourcing issues that may affect the project's cost. If the progress or scope changes indicate that the project cost is likely to increase by more than 20% over the expected cost, the PM will consult with SPN Programs to determine the impact of these changes on the O&M Navigation Program budget. Any significant changes in costs will also be reported upward through the Vertical Team. If actual project costs exceed the expected project costs by more than 20% in a given FY, then the project is considered to have a cost change.

Scope Change

If a change to a project is determined to impact one or more of the project's technical disciplines, the PMSPN will consult PDT members from the appropriate disciplines to evaluate how the change can be best incorporated with the least impact. The threshold for determining whether a change to a project constitutes a significant change in the scope of the project depends on the cost impact of the change. Scope changes that result in a cost increase of 20% or more are considered a significant change in scope.

The plan to manage and contain scope creep includes the following check points:

- Regular assessments of completed tasks, work in progress, and study status.
- Regular team meetings to discuss and resolve unexpected issues.
- Regular updates on project expenditures.
- Regular updates on WBS revisions.

6.3 Change Control Board

The Change Control Board (CCB) is the approval authority for all proposed change requests for the San Francisco Bay RDMMP. The purpose of the CCB is to review all change requests, determine their impacts on the project risks, scope, cost, and schedule, and to approve or deny each change request. Table 7 provides the list of the SPN CCB members:

Table 6. Change Control Board Members for the San Francisco District

Name	Position	CCB Role
Stu Townsley	DPM/ Chief of PPMD	CCB Chair -- recommends
Susan Kelly	Chief of EPC	CCB Member -- recommends
Nick Malasavage	Chief of Operations	CCB Member -- recommends
LTC Travis Rayfield	District Engineers	Approves or Rejects Changes

As change requests are submitted to the PM by PDT members, the PM will log the requests in the change log and the CCB will convene at least every month, to review all change requests. For a change request to be approved, all CCB members must vote in favor of the change. In the event more information is needed for a particular change request, the request will be deferred and sent back to the PM for more information or clarification. If a change is deemed critical, an ad hoc CCB meeting can be called in order to review the change prior to the next scheduled CCB meeting

6.4 Change Control Roles and Responsibilities

Change control management is everyone's duty. The roles and responsibilities for all change management efforts related to the San Francisco Bay RDMMP are given herein:

District Engineer:
- Approve/reject all changes to budget/funding allocations within approved thresholds.
- Approve/reject all changes to schedule baseline within approved thresholds.
- Approve/reject any changes in project scope within approved thresholds.

CCB Members:
- Meet monthly or on a more frequent ad hoc basis for urgent changes to critical projects.
- Recommend approval or rejection of changes brought before the CCB.
- Hold internal CCB meeting as needed to improve change control management processes.

Project Manager:
- Receive and log all change requests from project stakeholders.
- Conduct preliminary risk, cost, schedule, scope analysis of change prior to CCB.
- Seek clarification from change requestors on any open issues or concerns.
- Make documentation revisions/edits as necessary for all approved changes.
- Participate on the CCB.

Project Delivery Team:
- Submit all change requests on standard organizational change request forms.
- Provide all applicable information and detail on change request forms.
- Be prepared to address questions regarding any submitted change requests.
- Provide feedback as necessary on impact of proposed changes.

7.0 QUALITY MANAGEMENT PLAN

It is the policy of SPD and SPN to develop quality systems and implement quality management practices, including Quality Assurance (QA) and Quality Control (QC), that ensure that projects and technical products meet the agreed upon requirements of the customer and appropriate laws, policies and technical criteria, on schedule and within budget. Neither SPN, nor SPD has an updated Quality Management Plan (QMP) that reflects the latest USACE policy guidance. The SPN QMP is dated December 2003, and the SPD QMP is dated December 2002. The old process required the MSC to develop a QMP that covers all of its program and its districts, then the districts develop a QMP that covers all of its programs and projects, then individual projects at the districts develop individual Quality Control Plans (QCP). In recent years this approach has been replaced by a national standard for review of civil works projects that has been promulgated in various Engineer Circulars (EC). QC and QA of all work products now follows the guidance given in EC 1165-2-217 (Review Policy for Civil Works), dated February 2018. The QMP for the San Francisco Bay RDMMP is to follow the QA and QC practices given in EC 1165-2-217.

8.0 RISK MANAGEMENT PLAN

This section follows the guidance given in REF8007G (Risk Management Plan). Risk Management is a systematic process of identifying, analyzing, and responding to risk for the entire project life-cycle. In order to successfully address risk, an initial risk assessment must be performed at the start of the project, including mandatory risk elements and demonstrating active management of the risk throughout the project life, and updated periodically as necessary. At a minimum, the following risk elements must be assessed: (1) scope, (2) quality, (3) schedule, (4) safety and health, (5) cost, (6) security, (7) technical obsolescence, and (8) asset protection. The level of risk (low, medium, or high) is determined from the level of risk from the risk elements. When a project is determined to be other than low-risk, the risk must be identified, and actions to lower the risk and associated control procedures defined in the PMP. Only the District Engineer (DE) may provide final PMP approval in the event of an overall project risk rating of high, or extremely high, respectively.

The risk management plan will be developed by the PM and PDT members during the first year of the RDMMP, in parallel with the Management Plan studies Scope of Work development. The following sub-sections describe the content and process for developing a risk management plan.

8.1 Risk Management Plan Contents

- Identify what the risk management activity is in the WBS and describe how often risk management will be performed throughout the project life-cycle.
- Describe the budget for risk management plan development and monitoring.
- Risk Thresholds - Describe the amount of risk that is acceptable.
- Identify Risks and Characteristics – List of Risks and Triggers
- Evaluation and Analysis of Risks – Determine Probability and Severity Ratings.
- Complete Overall Risk Table.
- Describe Highest-Level Risk.
- Calculate Costs associated with Risk Elements.
- Describe Risk Response Control Procedures.
- Document identified risks, descriptions, causes, what is affected in the WBS, and impact on project objectives, risk owner and responsibility, agreed response to risk, and expected result of response.
- Risk Monitoring –Describe how the PDT will keep track of identified risks (risk register), identify new risks, determine if agreed responses to risks have been executed, and evaluate the effectiveness of risk responses to reduce identified risks.

8.2 Risk Management Roles and Responsibilities

- The PM is responsible for initiating the development of the Risk Management Plan.
- The PDT is responsible for participating in the development of the Risk Management Plan by identifying and defining potential risks and appropriate responses to risks for the project; and also responsible for implementing the plan once it is developed and approved.

8.3 Risk Assessment

- Establish Risk Management Team. Initiate risk management assessment meeting.
- Identify Risk. Identify risks (1-12 minimum), provide a short description, triggers and potential impact per example below.
- Determine Probability. Evaluate and analyze each risk identified. Determine the appropriate probability rating and severity rating (should the risk event occur) for each risk from Table 8 and Table 9 below.

Table 7. Risk Probability Descriptions

Probability	Description
Frequent	Occurs often, continuously experienced.
Occasional	Occurs several times
Likely	Occurs sporadically.
Seldom	Unlikely, but could occur at some time.
Unlikely	Can assume it will not occur.

Table 8. Severity Categories Descriptions

#	Category	Description
I.	Catastrophic	Death or permanent total disability, system destruction, major property damage. Lost the ability to accomplish mission.
II.	Critical	Permanent partial disability, temporary total disability, major system damage, or significant property damage. Cannot accomplish mission to standards or cannot execute portions of mission.
III.	Marginal	Temporary disabling injury, lost workday case, minor system damage, minor property damage. Degrades ability to accomplish mission capabilities to standards.
IV.	Negligible	First aid or minor supportive medical treatment, minor system impairment. Little or no impact on mission.

- Enter probability and severity ratings from above into Table 10 (Risk Table) below to characterize overall project risk as E (extremely high), H (high), M moderate), or L (low) for each of the four risk categories given in Table 10.
- Evaluate the above results along with the results of the safety and health risk (refer to Safety and determine the highest-level risk of all five categories.
- Overall project risk level is determined by the highest risk rating. Decisions to accept risks must be made at a level equal to the degree of risk. Project and Program Managers and Commanders must weigh the risks against the benefits of performing an activity.

- Decision responsibility is given in Table 10, the Severity Rating Table, where DE is the District Engineer, DPM is the Deputy District Engineer, PgM is the Navigation Program manager, and PM is the Project Manager.

Table 9. Risk Table

SEVERITY	Probablity of Occurrence					
	////////////////	Frequent	Occasional	Likely	Seldom	Unlikely
	Catastrophic	DE		DPM		PgM
	Critical	DE	DPM		PgM	PM
	Marginal	DPM	PgM		PM	
	Negligible	PgM	PM			

9.0 COMMUNICATION PLAN

Management Plan studies must ensure that appropriate involvement is solicited from all resources and non-Federal interests affected by Federal dredging in the Bay (per Section E-15 e. [3] of ER 1105-2-100); thereby requiring good external communications outside of USACE for success. Additionally, good internal communications are required within USACE to produce Management Plan studies that are efficient in terms of time and costs. A good communication plan should have the following qualities:

- Identifies and defines issues that may impact the Management Plan study.
- Identifies the target audiences, key stakeholders, and their interests in the RDMMP.
- Develops key messages with partners.
- Identifies information strategy and budget.
- Identifies the media strategy.
- Plans the communication levels and types of stakeholder involvement.

9.1 Internal Communications

PDT Communications

Communication is the hallmark of a successful team. Timely, clear, and concise communication, both written and verbal, among all of the team members will be critical in successfully completing the Management Plan studies. In order for the PDT to collaboratively work toward a goal of mutual respect, each team member must build a climate of trust through communication. Team members should consider the following guidelines during team interaction:

- Communicate openly and honestly with each other.
- Listen actively in order to understand.
- Communicate with awareness of the impact on others.
- Provide feedback with a focus on behavior, not the person.
- Keep each other informed.
- Proactively address rumors and harmful statements.
- Disagree respectively and elevate as appropriate for resolution.

PDT communication will occur informally between the PM and PDT members, and the lead planner and PDT members, and more formally through regularly scheduled meetings. Informal communication will consist of verbal conversations and email, while formal communication will include the former methods and specific work products to be delivered to the lead planner and PDT. All team members are responsible for staying current with policies and processes affecting their work and checking for new communications.

Vertical Team Communications

The Vertical Team is defined herein as the Corps San Francisco District (SPN) upper management, the South Pacific Division District Support Team (SPD-DST), which includes the

SPD Navigation Business Line Manager (BLM) and SPD Chief of Operations & Regulatory; and Corps Headquarters (HQUSACE) Navigation BLM and staff. All PDT communication with the Vertical Team shall be coordinated through the PM, or whoever the PM designates to communicate with the Vertical Team. The PM will communicate Management Plan study execution status and any issues to the Vertical Team at regularly scheduled meetings (once every two months), or on an ad-hoc basis as execution and strategy issues arise.

9.2 External communications

Project Management, Public Affairs, and Public Involvement

All external communication shall be coordinated through the Project Manager, while ensuring the Public Affairs Office has been consulted and kept informed about the external communications. The District's Public Involvement Specialist, or lead planner, is responsible for executing the communication plan, the planning and scheduling of meetings specific to external groups, and the day to day communications with external groups.

Resource Agencies

It will be critical to engage the National Marine Fisheries Service (NMFS), and the US Fish and Wildlife (USFWS) during the development, execution, and post-results discussion of the Management Plan studies. Any changes from current dredging practices that result from the Management Plan studies most likely will require consultation with NMFS and/or USFWS. Also, the State agency, the California Department of Fish and Wildlife (CDFW) should be engaged to ensure the Management Plan studies meet both Federal and State needs to the greatest extent practicable. These resource agencies need to be brought in at the beginning of the studies to ensure that we have scientific consensus

Long Term Management Strategy Agencies

Our partner agencies in the Long Term Management Strategy (LTMS) for the placement of dredged material in the San Francisco Bay agencies (U.S. Environmental Protection Agency, Bay Conservation and Development Commission, and San Francisco Bay Regional Water Quality Control Board) will have a keen interest in the Management Plan studies, as the results from these studies may affect future management practices within LTMS.

Non-Federal Partners

Our Non-Federal partners listed in Table 3 will be very interested in the Management Plan studies, as the results produced by these studies may impact positively or negatively on the amount and frequency of dredging of their particular project.

Other Federal and State Agencies

Changes from current dredging practices based on the Management Plan studies results may also affect other Federal and State agencies such as the Federal Emergency Management Agency, the

California Department of Water Resources, and the State Lands Commission. Additionally, Federal agencies such as the U.S. Geological Survey and the National Oceanic and Atmospheric Administration may be conducting complementary studies and/or have scientific expertise of value to the Management Plan studies, and therefore should be kept informed.

Stakeholders

There are numerous groups representing a wide variety of interests related to dredging in in the Bay that will expect to be kept informed and have input into the Management Plan studies. Groups interested in the Bay's environment, commercial dredgers, ports and marinas, the maritime industry, oil refineries, business development and economic councils, academia, water borne transportation, and possibly others should be engaged early in the process to ensure the results from the Management Plan studies will be accepted as technically sound no matter whether the results support or refute their own groups' view.

Public

The Bay area communities have been active participants on numerous studies at the District and a similar level of interest is expected for the Management Plan studies. Technical jargon should be eliminated when discussing technical results from the Management Plan studies with the public.

The Press

All requests from the press in any media format (newspaper, television, social media, etc.) shall be coordinated through the Public Affairs Office (PAO). PDT members should not engage the press without first checking with the PAO.

Elected Officials

Due to the importance of Federal dredging to the Bay regional economy and how results from the Management Plan studies may impact Federal dredging practices, the PAO will periodically inform the staff for Senators Feinstein and Harris, staff for Bay area Congressional Representatives, staff for State official, and local officials. All communications with elected officials shall be coordinated through the PAO and Project Manager, and SPN upper management.

9.3 Communication Matrix and Communication Plan Checklist

A detailed communication plan will be developed as part of the scoping effort for the Management Plan studies. A communication matrix, similar to Table 11 below, will be developed and implemented as part of the detailed communication plan.

Table 10. Communication Risk Matrix

Target Audience	Messenger	When (Frequency)	How	Level of Communication
Resource Agencies				
LTMS				
Partners				
Other Federal & State				
Stakeholders				
Public				
The Press				
Elected Officials				

In Addition, Attachment O from ES-02001.2, from the Quality Management System (QMS) guidance, provides a useful checklist for development of the detailed communication plan and is repeated herein.

☑	☑	Description	Who is responsible	Communication Milestones	When (date)	Implementation
	Define Issues and Target Audiences					
		-- What are the issues that are important to the public?				
		-- What issues also affect the public?				
		-- What are there negative issues?				
		-- Who does this project affect?				
		-- Who are you trying to communicate with?				
		-- Who are the customers & stakeholders?				
		-- What are their information needs?				
	Establish Communication Goals & Objectives					
		-- What are the communication goals?				
		-- How do these goals support overall project goals?				
		-- How do the goals address established issues?				
		-- How the goals address target audiences?				
		-- How are the goals: realistic, clear, measurable & actionable?				
		-- How are the objectives intermediate steps to reaching a goal?				
		-- How are the objectives measurable by behavioral change?				
		-- How are the objectives easily turned into specific tasks?				
	Select Communications Channels					
		-- Which is the best media to communicate the issue?				
		-- Which is the best media to communicate to the target audience?				
		-- Which is the best media: broadcast, print, electronic or a mix?				
		-- How is the selection based on objectives and target audiences?				
		-- How is the selection based on ease of use with key messages?				
		-- How much the time it will take to implement this media being considered?				
	Identify Coalition Partners					
		-- Who are others that share same issues and target audiences?				
		-- What role or roles can each coalition partner fulfill?				

☑	☑	Description	Who is responsible	Communication Milestones	When (date)	Implementation
		-- What key messages are being developed for use by Corps and partners?				
		Strategy for Implementation – Identify Key Messages				
		-- What are key messages developed to communicate with each target audience?				
		-- What are key messages developed for each communication objective?				
		-- How do key messages articulate command and leadership positions?				
		-- How do key messages affect the necessary behavioral or attitude change?				
		-- How are the key messages refined and tailored to the communication channel?				
	Strategy for Implementation – Identify Communication Materials					
		-- What material will be developed to communicate key messages?				
		-- What type of materials will be developed?				
		-- News Releases				
		-- Media Kits				
		-- Brochure or program				
		-- Speeches				
		-- Scripts				
		-- Videos				
		-- Articles				
		-- Photos				
		-- Briefings				
	Strategy for Implementation – Communication Activities					
		-- What types of activities will be used to communicate messages?				
		-- Speaking opportunities in the community				
		-- Public Meetings				
		-- Media interviews				
		-- Media opportunities at project site				
		-- Appearances on broadcast shows (radio or TV)				
		-- Meetings with Sponsor and stakeholders				
		-- Groundbreakings, PCA signings, Dedications, etc.				
		-- Open Houses				
		-- Meetings with Congressmen and their staffs				
	Determine an Evaluation and Measurement Plan					

☑	☑	Description	Who is responsible	Communication Milestones	When (date)	Implementation
		-- How is evaluation measuring changes in knowledge, behavior, and attitudes?				
		-- Pre & Post Surveys				
		-- Focus Groups				
		-- One-on-One interviews				
		-- How did Communication Plan meet its goals?				
		-- How did objectives measure behavioral changes?				
		-- What were the measurable tasks/action items tied to objectives successful?				
	Ensured Feedback					
		-- What mechanisms developed to ensure feedback from target audiences?				
		-- What mechanisms developed to ensure feedback from coalition partners?				
	Create a Timeline with Milestones					
		-- How were Communication Milestones identified in PMP and imputed electronically?				
		-- How are milestones integrating and reinforcing objectives, messages and strategies?				
		-- How is the timeline being agreed upon by those executing it?				
	Determine Communication Staff and Management					
		-- Is an internal organization chart for communications management being created?				
		-- How are roles and responsibilities designated specifically?				
		-- How are responsible team member identified for each objective?				
		-- How are coalition partner roles and responsibilities outlined?				
		-- Will internal communications staff need augmentation by contractor?				
	Create a Communications Budget					
		-- List all anticipated expenses:				
		-- Labor				
		-- Materials				
		-- Service costs				
		-- Budget categories for Communications:				
		-- Research				
		-- Materials				
		-- Internal Communications				

☑	☑	Description	Who is responsible	Communication Milestones	When (date)	Implementation
		-- Direct Marketing				
		-- Communication Staff labor				
		-- Contractor Costs				
		-- Meetings and Conferences				
		-- Groundbreakings, PCA signings, Dedications, etc.				
		-- Travel				
		-- Collateral materials				

APPENDIX A – COST ESTIMATE

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APPENDIX B – GANTT CHART SCHEDULE

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PROJECT MANAGEMENT PLAN (PMP)

FOR THE SAN FRANCISCO BAY REGIONAL DREDGED MATERIAL MANAGEMENT PLAN (RDMMP)

August 18, 2019

Stu Townsley
Deputy District Engineer
United States Army Corps of Engineers – San Francisco District
450 Golden Gate Avenue
San Francisco, CA 94102

Submitted electronically

Re: San Francisco Bay Regional Dredged Material Management Plan

Dear Mr. Townsley:

I write on behalf of the East Bay Leadership Council in support of the development of a San Francisco Bay Regional Dredged Material Management Plan (RDMMP). The East Bay Leadership Council is an employer-led public policy advocacy organization focused on increasing economic vitality and quality of life in the East Bay. Our members are dedicated to supporting projects and initiatives that will keep our economy thriving.

The East Bay Leadership Council understands the importance of maintaining the federal channels to their currently authorized project depth as this facilitates goods movement in the Bay Area and beyond. As such, our membership supports the development of a sound strategy for ensuring the dredging of these channels will be conducted in an economically and environmentally sound manner. We also support the exploration of potential beneficial reuse sites for dredge material disposal.

Our organization supports the U.S. Army Corps of Engineers goal of identifying opportunities, limitations and potential efficiencies through the development of an RDMMP. The East Bay Leadership Council also recognizes that performing the annual federal channel operation and maintenance dredging requires adequate federal funding and the East Bay Leadership Council wishes to express its support for continued funding of this effort in light of the vital importance of these channels to our economy.

Thank you for your consideration on this important issue. We look forward to continuing to work you on the RDMMP.

Sincerely,

Kristin Connelly

Kristin Connelly
President & CEO

4200 Park Blvd. #143
Oakland, CA 94602
415-699-3586 phone

January 27, 2020

Lieutenant Colonel John Cunningham
District Commander
U.S. Army Corps of Engineers, San Francisco District
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102

Re: Comments on the Project Management Plan for the San Francisco Bay Regional Dredge Material Management Plan

Dear Lieutenant Colonel Cunningham,

Thank you for the opportunity to comment on the Project Management Plan (PMP) for the San Francisco Bay Regional Dredge Material Management Plan (RDMMP). I am writing on behalf of the San Francisco Bay Joint Venture (SFBJV) to encourage the U.S. Army Corps of Engineers (USACE) to revise the PMP and the resulting RDMMP to facilitate more beneficial use of dredge material at wetland restoration sites throughout the bay. We recommend that the plans include several existing and planned beneficial use sites among the San Francisco Bay Area Placement Sites, namely Montezuma Wetlands, Cullinan Ranch, Bel Marin Keys Unit V, and Eden Landing.

The SFBJV is a partnership of non-governmental organizations, utilities, landowners, and non-voting agencies with a goal to acquire, restore and enhance wetlands and riparian habitats, associated uplands, and sub-tidal habitats to benefit birds, fish, and other wildlife in the San Francisco Bay Area. The SFBJV is one of the eighteen federally-sponsored habitat Joint Ventures to implement the North American Wetlands Conservation Act and federal bird conservation plans. The SFBJV Management Board consists of 25 agencies and private organizations whose members agree to support and promote the goals and objectives of the Joint Venture and who represent the diversity of wetlands interests found in the San Francisco Bay Region.

The SFBJV Implementation Plan, *Restoring the Estuary*, is based on the goals established in the Baylands Habitat Goals and targets nearly 200,000 acres of wetlands and riparian habitats for protection, restoration, or enhancement through our partners' funding and expertise. The 2015 update to the Baylands Goals, developed by more than 100 scientists, identifies the need to restore complete ecosystems and to accelerate restoration to complete as many projects as possible over the next 15 years for marshes to keep pace with sea level rise. This document also highlights the need for sediment placement to raise subsided baylands to elevations sufficient to support wetland vegetation in order to provide resilience to rising seas. As the USACE amends its PMP for the San Francisco Bay RDMMP, we encourage consistency with these adopted regional plans in recognition of the positive nature and multiple benefits provided by habitat restoration projects.

While the SFBJV comments within this letter are broad in nature, we strongly encourage close consideration of comments from SFBJV implementing partners like the San Francisco Bay Conservation and Development Commission, Ducks Unlimited, and the State Coastal

Conservancy. These experts have outlined in detail how the USACE can best help the conservation community increase the pace and scale of bay habitat conservation implementation.

Ensuring adequate sediment for restoration is a top SFBJV priority. Historic tidal wetlands were diked and drained for commercial use such as farming over the past 150 years, causing them to subside. Many of these lands are being restored back to tidal action, returning them to wetland habitats. Natural sedimentation is possible in some regions of the Estuary. However, other portions of the Estuary suffer from a sediment deficit, thus it will take many years of natural sedimentation to bring the elevation up to marsh plain. Therefore, the SFBJV is a major advocate for the beneficial use of dredged material to raise the elevation of subsided sites and to restore wetlands quicker, enabling them to keep pace with sea level rise.

The SFBJV is actively engaged in the USACE DMMO process and participates in the Long-Term Management Strategy for placement of dredge materials (LTMS). Our efforts in trying to secure more beneficial use of sediment for wetlands restoration led us to create *SediMatch*, a program to match dredgers and other suppliers with restoration projects that need dredge material. *SediMatch* has been embraced by the LTMS and many dredging partners, such as the Bay Planning Coalition. While the focus of *SediMatch* is on private dredging, which can supply only about 25% of the material that is dredged each year, the USACE is the largest dredger in the Estuary. The SFBJV is concerned that the valuable sediment produced during USACE dredging is lost when disposed at the Deep Ocean Disposal site or in-Bay in non-restoration sites.

Multiple Estuary wetland conservation plans stress the need to increase the pace of wetland restoration this decade. For tidal wetlands to keep pace with some level of sea level rise, they need to be restored and established by 2030. Sites that are deeply subsided need sources of sediment to raise their elevation prior to restoration, or they may never become vegetated tidal marsh. Dredged sediment is an important piece of the restoration effort in San Francisco Bay. However, the current draft of the PMP focuses mainly on in-Bay disposal and does not include active and planned beneficial use sites.

The available placement sites should include Montezuma Wetlands, Cullinan Ranch, Bel Marin Keys, and Eden Landing. These four projects together represent a commitment of over $153 million of non-federal expenditures to date for land acquisition, planning, design, and site preparation.

The SFBJV recommends that the USACE alter the PMP and the resulting RDMMP to encourage as much beneficial use of dredged material within the Estuary as possible. If you have any questions, please contact our Coordinator, Sandra Scoggin.

Sincerely,

Jeff McCreary
Vice Chair

Cc: SFBJV Management Board

Bay Planning Coalition

August 19, 2019

United States Army Corps of Engineers – San Francisco District
450 Golden Gate Avenue
San Francisco, CA 94102

RE: San Francisco Bay Regional Dredged Material Management Plan

Dear USACE:

The Bay Planning Coalition (BPC) is a non-profit, policy advocacy organization with over 150 members across a range of industries who collectively advocate for strong economic growth while protecting the environmental sustainability of the region. Our members recognize the vital importance of the U.S. Army Corps of Engineers (USACE) in maintaining the federal navigation channels to their currently authorized project depth to ensure safe and efficient commercial navigation not only for the Bay Area but for the entire Western United States. Likewise, BPC supports the goals of the San Francisco Bay Long Term Management Strategy (LTMS) for dredged material; which are to maintain navigation channels in San Francisco Bay and conduct dredged material disposal economically and in the most environmentally sound manner, maximize the use of dredged material as a resource, and maintain a cooperative permitting framework for dredged material management.

BPC recognizes that dredging is expensive (especially within the LTMS framework), and we support the USACE in developing a San Francisco Bay Regional Dredged Material Management Plan (RDMMP) in order to understand the drivers, limitations, opportunities, and potential efficiency improvements that should be considered in order to perform the annual federal channel operation and maintenance (O&M) dredging as efficiently as possible over the next 20 years.

Understanding the sediment transport flows and mechanisms in San Francisco Bay is a key component in evaluating the carrying capacity of the system as well as evaluating the potential future dredging needs for USACE. To that end, BPC recommends that USACE update the bay wide sediment transport model including assessing the significance of the reduction in the suspended sediment load emanating from the Delta as reported by USGS in order to understand whether the LTMS 20% in-bay placement limitation and 40% ocean disposal allowance remains the most environmentally sound approach to dredged material management in the San Francisco Bay. There is a growing body of research on projected sea-level rise and the importance of planning for flood protection and shoreline resiliency that can be considered as part of this assessment.

Bay Planning Coalition

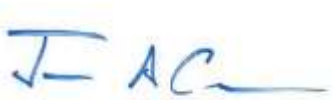
The RDMMP process can address another major future dredging challenge by evaluating whether there is sufficient capacity to facilitate the volume of dredged material potentially available for beneficial reuse over the next 20 years, and identifying if there is potential need or benefit for developing additional near shore and beneficial reuse dredge material placement locations. The process for developing new options is complicated and time-consuming. BPC would like to see USACE take on a leadership role in this evaluation of potential additional beneficial reuse locations.

BPC is aware that a significant but unfinished effort was previously undertaken by the USACE to develop a San Francisco Bay RDMMP only a few years ago. We strongly encourage the USACE to initiate the new RDMMP effort by building from what was produced prior to the suspension of funding for the former effort. We also recommend adoption of the robust stakeholder engagement approach utilized during the previous undertaking in order to ensure consensus among all interested parties for the findings and future strategies that will stem from the new RDMMP.

These evaluations may help inform the optimization of dredged material placement both environmentally to facilitate environmental restoration and sea level rise resiliency, and economically, to help drive down costs which would allow USACE to increase O&M dredge volume from the available federal funding.

BPC recognizes that developing the scope for the RDMMP and conducting the Management Studies will take some time and our members are eager to be a supportive partner to help USACE throughout the process. We look forward to working with you.

Sincerely,



John A. Coleman
Chief Executive Officer

San Francisco Bay Regional Water Quality Control Board

Sent via electronic mail: No hard copy to follow

September 19, 2019
CIWQS Place ID 815608

U.S Army Corps of Engineers
San Francisco District
450 Golden Gate Ave, 4th floor, Suite 6761
San Francisco, CA 94103
Attn.: Ms. Tawny Tran, PMP Program Manager
E-mail: Thanh.T.Tran@usace.army.mil

Subject: Comments on the U.S. Army Corps of Engineers Draft Project Management Plan for Preparation of a Regional Dredged Material Management Plan

Dear Ms. Tran:

Thank you for the opportunity to comment on the US Army Corps of Engineers' (USACE) Draft Project Management Plan (PMP) for the San Francisco Bay Regional Dredged Material Management Plan (RDMMP). We understand that the PMP is a USACE-required document that provides structure for the RDMMP work plan and we appreciate this early opportunity to provide input to help scope the PMP and the RDMMP.

Our overarching concern with the draft PMP is that it fails to properly acknowledge the long established LTMS Program, to which the USACE is a signatory and partner agency. For example, Section 1.1 ("Purpose and Scope") does not mention the LTMS or any LTMS-related context for the RDMMP. In fact, the LTMS Program is only mentioned once, very briefly, on page 27 under Section 9.2 ("External communications"), and even then only to imply that the RDMMP may result in changes to the LTMS Program rather than saying that the RDMMP will implement the LTMS Management Plan as much as possible. We concur with the comment made by our LTMS partner agencies, BCDC and EPA, that the PMP and the RDMMP should directly commit to complying with the existing LTMS Program and Management Plan, rather than ignoring them and starting anew. The LTMS Program was established through multiple studies and significant environmental review and should be the baseline from which the RDMMP is built.

We are also concerned that the draft PMP appears to be biased toward in-Bay dredged material disposal, even at this early stage in the planning process. For example, Section 1.2 ("Project Description – San Francisco Bay Placement Sites") on pages 7 and 8, lists all the unconfined aquatic in-Bay disposal sites but none of the active and planned wetland beneficial reuse sites in the Bay margin (e.g., Montezuma Wetlands Restoration, Cullinan Ranch Restoration, Eden Landing Phase II, Bel Marin Keys Unit V, etc.). We urge USACE to evaluate as many active and planned beneficial reuse sites as it can identify in the RDMMP process, given the scientific consensus that dredged sediment placement is an effective way to create resilience to sea level rise in subsided baylands. In addition, we suggest that USACE evaluate the efficacy and suitability of strategic placement of dredged sediment to enhance mudflats and tidal marshes.

We look forward to working with USACE to develop an RDMMP that reflects the LTMS Program, and larger regional needs such as habitat restoration, infrastructure protection, and sea level rise adaptation, to the maximum extent practicable within the legal and policy constraints governing USACE's management of its dredged material in the Bay Area.

If you have any questions, please contact Elizabeth Christian at (510) 622-2335, or by email, to elizabeth.christian@waterboards.ca.gov.

Sincerely,

For Michael Montgomery
Executive Officer