



**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



9 July 2019

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Project Management Plan
San Francisco Bay Regional Dredge Material Management Plan (RDMMP)

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Acronym/Abbreviation	Meaning

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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

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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 address 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

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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.

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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

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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.

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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.

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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

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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

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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

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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.

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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

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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.

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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.

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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:

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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.

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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.

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- 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

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

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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 respectfully 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

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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

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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 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.

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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.

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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	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?				

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	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				

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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	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				

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	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				

Project Management Plan
Project Name

Date (if desired)

APPENDIX A – COST ESTIMATE

Project Management Plan
Project Name

Date (if desired)

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APPENDIX B – GANTT CHART SCHEDULE

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Project Management Plan
Project Name

Date (if desired)

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