SAN FRANCISCO BAY FEDERAL CHANNELS OPERATION AND MAINTENANCE DREDGING AND SEDIMENT PLACEMENT ACTIVITIES

Draft Environmental Assessment (EA) /
Environmental Impact Report (EIR)
SCH # 2024020498
Public Meeting
Tuesday, November 19, 2024
4:00 – 6:00 p.m.

U.S. ARMY

US Army Corps of Engineers®

CALIFORNIA WATER BOARDS
San Francisco Bay · R2

REMINDER FOR ALL VIRTUAL MEETING PARTICIPANTS

- Remote attendees, please ensure you have your microphone muted when not in a speaking role to avoid unnecessary distractions.
- Please be aware that **today's meeting is being recorded**.
- Please hold questions until the end of the presentation.

Mute/un-mute microphone and turn on/off camera

Send a message to the chat

Raise hand

Exit meeting

AGENDA

Welcome and Introductions

Meeting Purpose

Project Overview

Environmental Impact Analysis

Clarifying Questions

CEQA Public Comment Period (to begin no later than 5:40 p.m.)

WELCOME AND INTRODUCTIONS

Welcome

Joint presentation by:

- San Francisco Bay Regional Water Quality Control Board (Water Board) &
- U.S. Army Corps of Engineers (USACE) San Francisco District

Project Team Introductions

- **Water Board:** Jazzy Graham-Davis, Kevin Lunde, Xavier Fernandez
- **USACE:** Arye Janoff, Ellie Covington, Chris Eng, Justin Yee
- **Consultant Team (Scout-Stantec JV)**: Becky Diaz, Bridget Lowry, Cynthia Jones, Jamil Ibrahim, and Barry Snyder

PURPOSE OF MEETING

This meeting is to provide information on the project, the scope of analysis, and a summary of potential impacts.

At this meeting we WILL

- Provide instructions to submit written comments
- Answer clarifying questions

At this meeting we WILL NOT

- Accept verbal comments on the Environmental Assessment (NEPA)
- Respond to comments during comment period

HOW TO SUBMIT COMMENTS

Comments due by 5:00 PM Monday, December 16, 2024

Email joint comments to:

SF-Bay-Dredging@usace.army.mil for NEPA and
Jazzy.Graham-Davis@waterboards.ca.gov for CEQA

Comments on the NEPA Environmental Assessment MUST be submitted via email. The Water Board encourages all CEQA Environmental Impact Report commenters to submit written comments via email.

Comment letters for CEQA may also be mailed to:

SF Bay Water Board, Attn: Jazzy Graham-Davis
1515 Clay Street, Suite 1400
Oakland, CA 94612

BACKGROUND

USACE and Water Board released a Draft Environmental Assessment and Environmental Impact Report (EA/EIR) for public review and comment

- USACE lead agency for National Environmental Policy Act (NEPA)
- Water Board lead agency for California Environmental Quality Act (CEQA)

USACE conducts maintenance dredging every year in multiple navigational channels as authorized by congress

Water Board permits maintenance dredging through federal and state authority

- Clean Water Act Section 401 Water Quality Certification
- Porter Cologne Water Quality Control Act Waste Discharge Requirements

CEQA REQUIREMENTS

NEPA and CEQA are generally similar. CEQA requires analysis of a broader range of impacts.

Required Under CEQA:

- Comparison to a baseline of the existing conditions- No Project Alternative
- Consideration of impacts to federal and state listed species, and species of special concern
- Scoping period and comments – Completed March 2024
- Adoption hearing – Summer/Fall 2025

NEPA REQUIREMENTS

National Environmental Policy Act (NEPA)

- Draft Environmental Assessment (EA) fulfills NEPA compliance requirements for continuation of maintenance dredging in SF Bay over ten-year period beginning in dredging year 2025 through 2034.

- EA focus on the context and intensity of effects that may “significantly” affect the quality of the human environment (CEQ NEPA Regulations 40 CFR § 1508.27).

- Environmental agencies, applicants, and the public are involved in preparing the EA, to the extent practicable (CEQ NEPA Regulations, 40 CFR § 1501.4(e)(2)).

- Draft EA and Draft Finding of No Significant Impact (FONSI) circulated for public review (40 CFR § 1501.4(e)(2)).

QR Code for web site to access documents

PROJECT BACKGROUND

- The USACE, in coordination with the Water Board and other stakeholders, has been performing dredging and placement activities in San Francisco Bay for decades.

- The dredging process involves the excavation of accumulated sediment from the channel bed, and the subsequent transportation and placement of the sediment at a permitted facility.

Clamshell dredge in San Francisco Bay

- Accumulation of sediment that settles in these channels can impede navigability. Maintenance dredging removes this sediment and returns the channels to authorized depths to provide safe, reliable, and efficient waterborne transportation systems (channels, harbors, and waterways) for the movement of commerce, national security needs, and recreation.

PROJECT PURPOSE

- **Project Purpose:** Provide safe, reliable, and efficient waterborne transportation systems (channels, harbors, and waterways) for the movement of commerce, national security needs, and recreation, which is achieved through continuing to dredge federal navigation channels in the SF Bay Area.

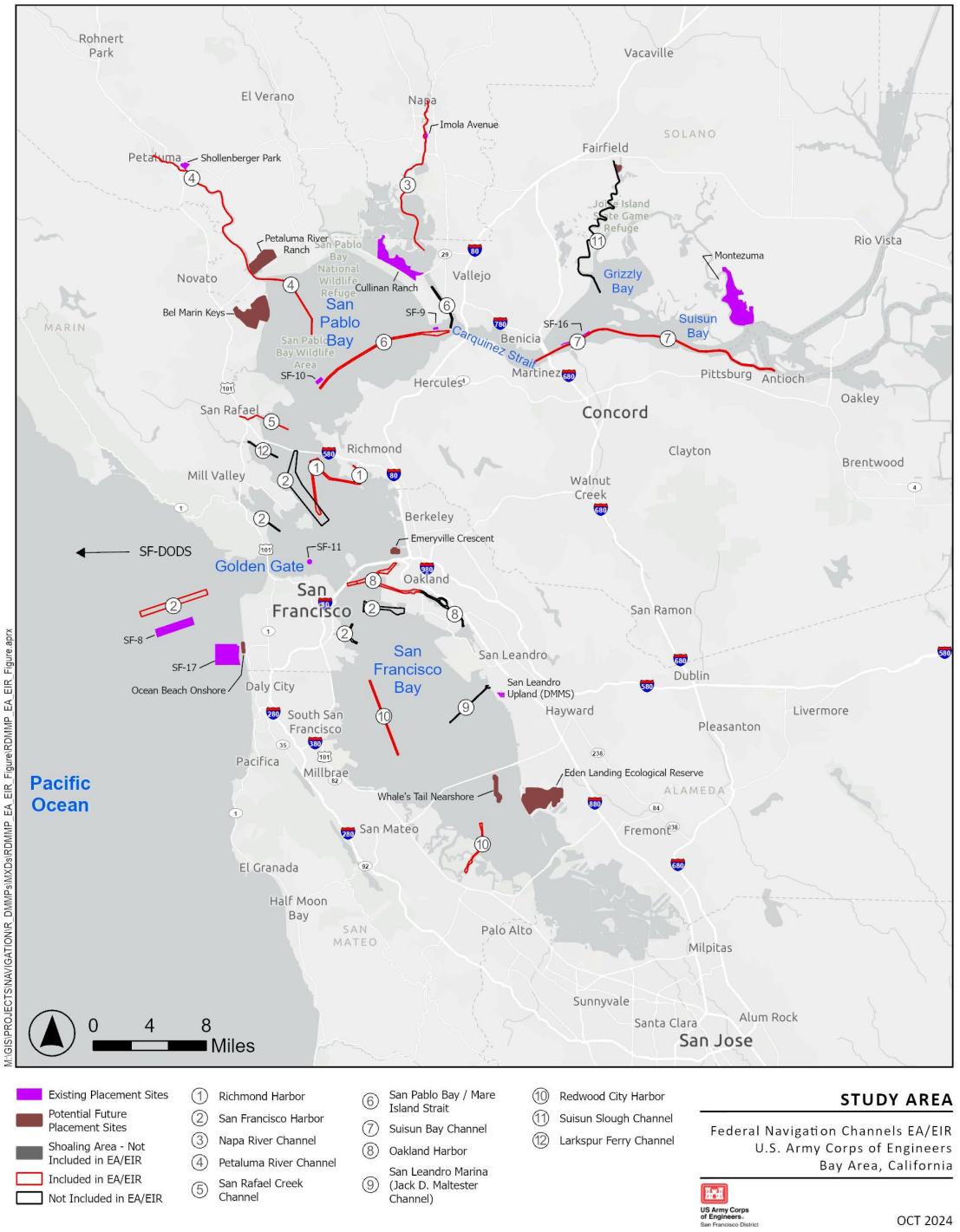
- Increase the minimum amount of dredged material beneficially used by USACE within the constraints of the Federal Standard Base Plan.

- Dredging will be
  - Consistent with navigation project authorizations
  - Consistent with the 20-Year Regional Dredged Material Management Plan (RDMMP), to the maximum extent possible
  - Conducted in a manner that adequately protects the environment, including protection of listed species, essential fish habitat (EFH), and beneficial use of waters.

Container ship at Port of Oakland

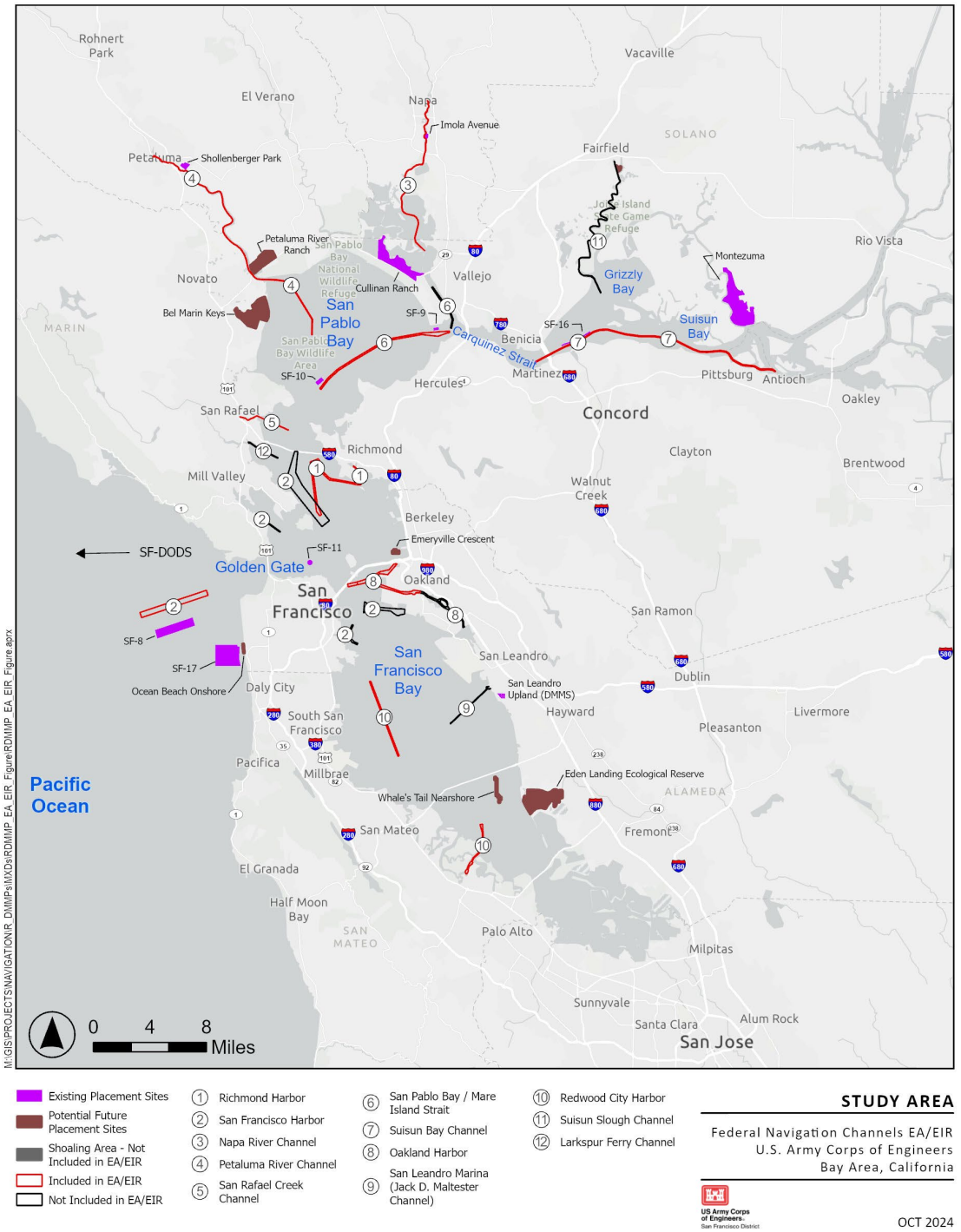
PROJECT OVERVIEW

- Continued operations and maintenance dredging of federal navigation channels in SF Bay.
- Transportation and placement of the sediment at a permitted locations, consistent with permit conditions established by applicable regulatory agencies.
- Aim to increase beneficial use in consideration of USACE's 70% beneficial use nationwide by 2030 Command Philosophy.



NAVIGATION CHANNELS

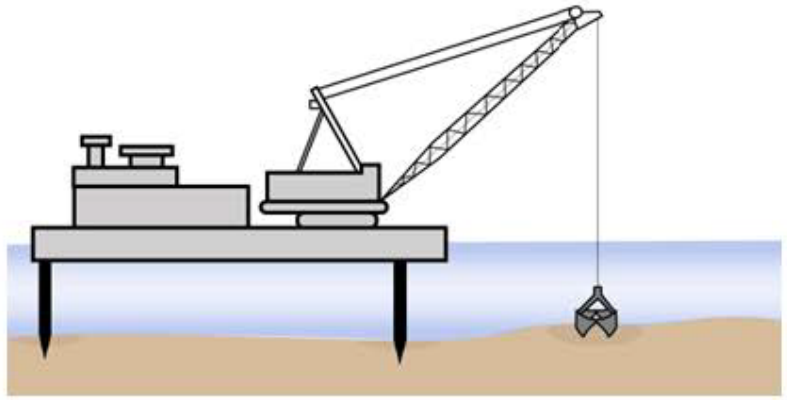
- Oakland Harbor (Inner and Outer)
- Redwood City Harbor (Channels and San Bruno Shoal)
- Richmond Harbor (Inner and Outer)
- San Francisco Harbor – Main Ship Channel
- San Pablo Bay (Pinole Shoal)
- Suisun Bay Channel
- Napa River Channel
- Petaluma River Channel (River Channel and Across the Flats)
- San Rafael Creek



DREDGING EQUIPMENT AND METHODS

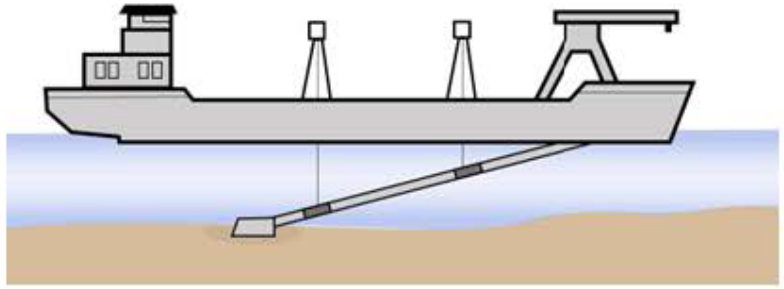
DREDGING METHODS

MECHANICAL | **HYDRAULIC**



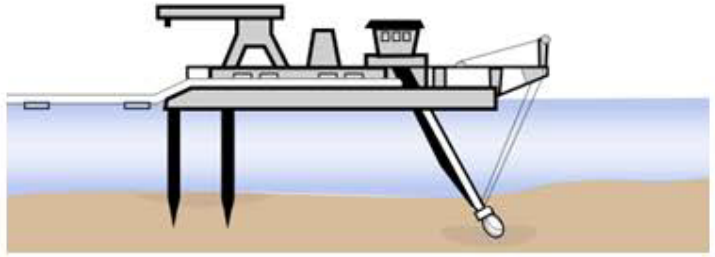
Clamshell or Bucket Dredge

- Material is scooped from bottom
- Barges used to transport material for placement



Hopper Dredge

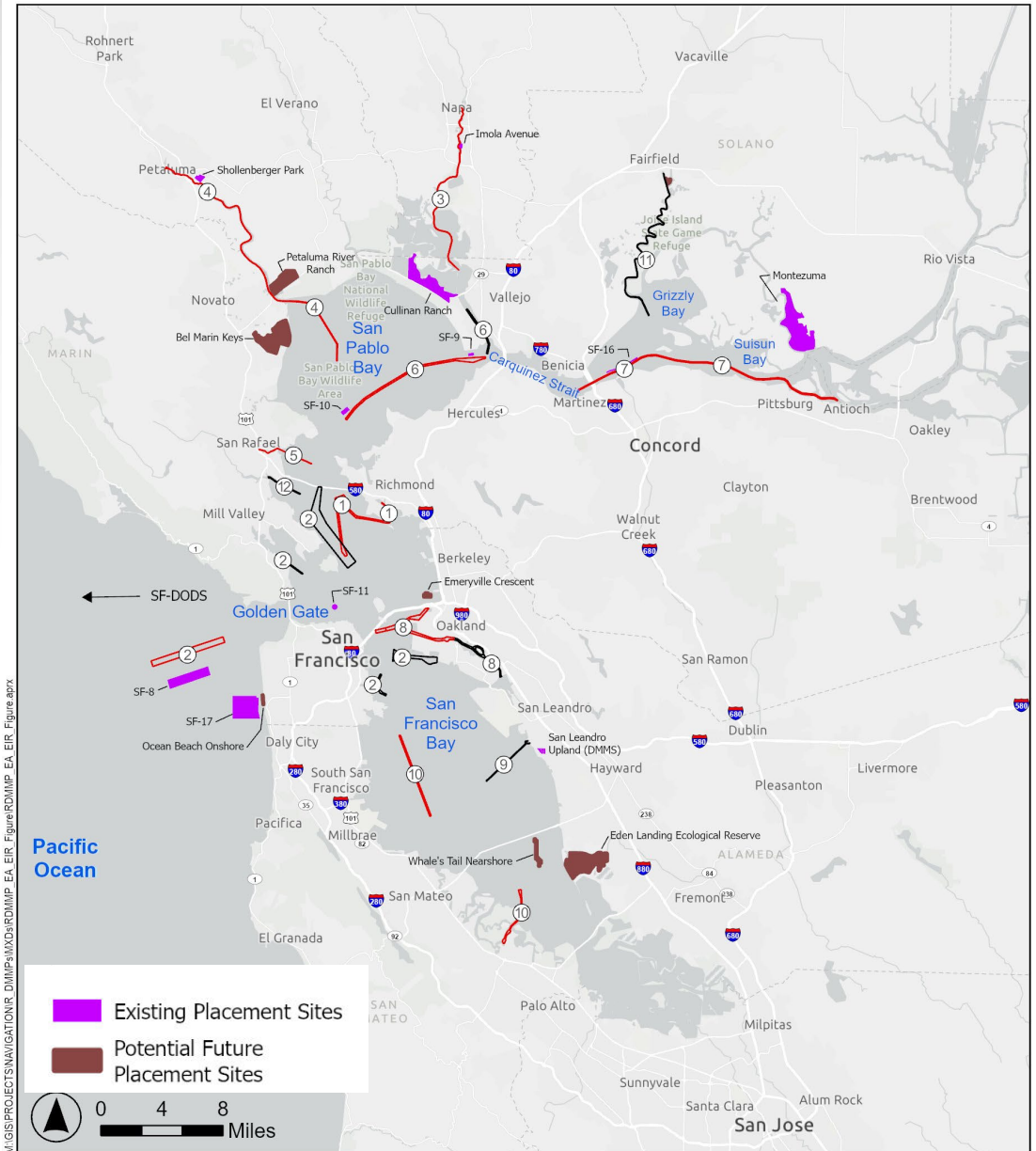
- Intake pipes (drag arms) drag along bottom sucking up material into the hopper
- Ship travels to a placement site and discharges from the hopper



Cutterhead Dredge

- Pumps suck material through an intake pipe
- Sediment is discharged through a pipeline

PLACEMENT TYPE CATEGORIES



Existing Beneficial Use Sites

Placement Type Category	Example Placement Location
Existing Beneficial Use Sites	
Upland Direct Placement	Cullinan Ranch Restoration Project, Montezuma Wetlands Restoration Project
Nearshore Strategic Placement	SF-17 (Ocean Beach Nearshore Placement Site)
Transitional Placement Sites	
Bar Channel Placement Site	SF-8 (San Francisco Bar Channel Placement Site)
In-Bay Placement Sites	SF-9 (Carqinuez Strait Placement Site), SF-10 (San Pablo Bay Placement Site), SF-11 (Alcatraz Placement Site), SF-16 (Suisun Bay Placement Site)
Upland (Sponsor-Provided) Site	Shollenberger Park, Imola Avenue
Disposal Site	
Deep Ocean Disposal	SF-DODS

Possible Future Beneficial Use Sites*

- Upland Direct Placement Sites
- Nearshore Strategic Placement Sites
- Elevation Augmentation/Marsh Spraying Sites
- Water Column Seeding Sites

**Use of these sites by USACE would be conditioned upon the completion of supplemental environmental review under NEPA and/or CEQA, and upon acquisition of required environmental approvals from resource and regulatory agencies.*

FEATURES AND MEASURES COMMON TO ALL ALTERNATIVES

USACE hopper dredge, *Essayons*

- Meet all federal environmental compliance requirements
- Work window requirements established by NMFS and USFWS in LTMS BiOps
- Employ avoidance and minimization measures identified in current and future LTMS BiOps
- Other measures described in Draft EA/EIR

- Specific measures for hydraulic dredging to protect longfin smelt and delta smelt:
  - No dredging in water ranging from 0 to 5 parts per thousand salinity between December 1 and June 30.
  - Implement a worker education program for listed fish species that could be adversely impacted by dredging.
  - Set up a fish deterrent system pilot study to assess the potential for directing fish away from the hopper dredge during operations to reduce entrainment.
  - Apply environmental DNA (eDNA) sampling and use of an echosounder in conjunction with hopper dredging activities to assess the fish community in potential dredging locations.

ALTERNATIVES EVALUATED IN DRAFT EA/EIR

Alternatives
No Action Alternative (NEPA)
No Project Alternative (CEQA)
Alternative 1 – Beneficial Use: Diversion from Deep Ocean Disposal
Alternative 2 – Beneficial Use: Regional Optimization, Leverage Hopper Dredging
Alternative 3 – Beneficial Use: Cost Share Opportunity
Alternative 4 – Beneficial Use: Maximized

ALTERNATIVES EVALUATED IN DRAFT EA/EIR

Alternatives	
No Action Alternative (NEPA)	
No Project Alternative (CEQA)	**Proposed Project**
Alternative 1 – Beneficial Use: Diversion from Deep Ocean Disposal	
Alternative 2 – Beneficial Use: Regional Optimization, Leverage Hopper Dredging	
Alternative 3 – Beneficial Use: Cost Share Opportunity	
Alternative 4 – Beneficial Use: Maximized	

Proposed Action/Proposed Project is anticipated to be the No Project Alternative in the first year or two of implementation. This is expected to transition to Alternative 1 and Alternative 2 in later years

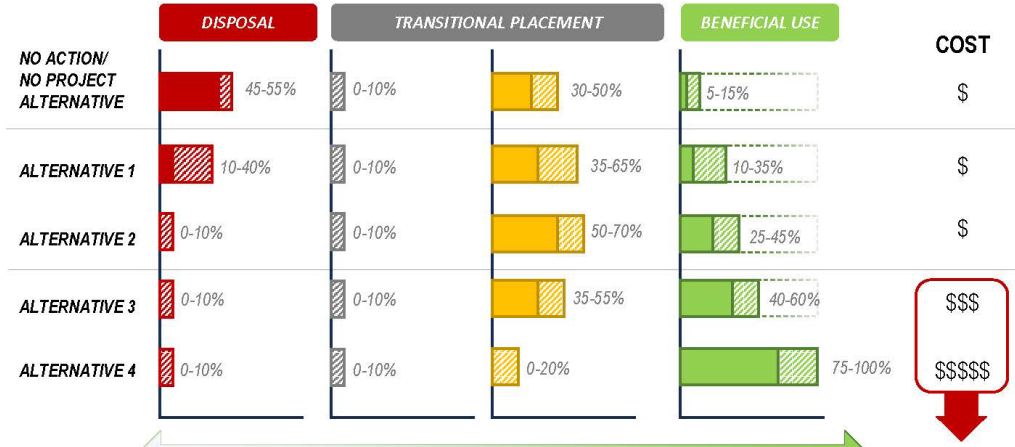
NO ACTION/ NO PROJECT ALTERNATIVE
Continue to execute the navigation dredging program in the same way as it has been done in the past, as authorized.

ALTERNATIVE 1
Material slated for SF-DODS disposal may be diverted and split between placement in-Bay and at an upland beneficial use site to achieve additional beneficial use while maintaining the same cost.

ALTERNATIVE 2
Increase hopper dredging in the Bay to offset the increased cost of beneficial use to achieve more beneficial use than Alternative 1.

ALTERNATIVE 3
Builds off Alternative 2 (above) and takes more sediment to upland beneficial use sites .

ALTERNATIVE 4
Place all suitable material at upland beneficial use sites, including a portion of sediment placed at nearshore strategic placement beneficial use sites.



DEEP OCEAN DISPOSAL
- *SF-DODS*

UPLAND SITES (Sponsor-provided)
- *Shollenberger Park (Petaluma River)*
- *Imola Avenue (Napa River)*

OCEAN (>3 miles offshore)
- *SF-8*

IN-BAY
- *SF-9, 10, 11, 16*

NEARSHORE STRATEGIC PLACEMENT (<3 miles offshore)
- *SF-17 (Ocean Beach Demonstration Site)*

UPLAND DIRECT PLACEMENT SITES
- *Montezuma Wetlands*
- *Cullinan Ranch*

POSSIBLE FUTURE BENEFICIAL USE PLACEMENT SITES
- *Eden Landing (Whale's Tale)*
- *Emeryville Crescent*

Alternatives 3 and 4 are not candidates to be the Federal Standard Base Plan given neither are the least cost alternative and would require non-federal funding for the incremental cost above the Base Plan.

Comparing Across Alternatives

ALTERNATIVES

Oakland Inner and Outer Harbor

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-DODS[2]	Clamshell	N/A	1	10	750,000	1,225,000	750,000
No Project	SF-DODS[2]	Clamshell	N/A	1	10	750,000	1,225,000	750,000
1	SF-DODS[2]	Clamshell	N/A	1	10	750,000	1,225,000	750,000
2	Upland BU site SF-11[2]	Clamshell Hopper	Cutterhead Clamshell	1	10	540,000 210,000	880,00 345,000	540,000 210,000
3	Upland BU Site	Clamshell	Cutterhead	1	10	750,000	1,225,000	750,000
4	Upland BU site Strategic Placement Site	Clamshell Clamshell	Cutterhead Cutterhead	1	10	650,000 100,000	1,060,000 165,000	650,000 100,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.

ALTERNATIVES

Redwood City Harbor – Channels

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-11[2]	Clamshell	N/A	1	10	180,000	650,000	180,000
No Project	SF-11[2]	Clamshell	N/A	1	10	180,000	650,000	180,000
1	SF-11[2]	Clamshell	N/A	1	10	180,000	650,000	180,000
2	SF-11[2]	Clamshell	N/A	1	10	180,000	650,000	180,000
3	SF-11[2] Upland BU Site	Clamshell Clamshell	N/A Cutterhead	1	10	100,000 80,000	360,000 290,000	100,000 80,000
4	Upland BU Site Strategic Placement Site	Clamshell Clamshell	Cutterhead Cutterhead	1	10	80,000 100,000	290,000 360,000	80,000 100,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.

ALTERNATIVES

Redwood City Harbor – San Bruno Shoal

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-DODS[2]	Hopper	Clamshell	Infrequent	1	30,000	30,000	5,000
No Project	SF-DODS[2]	Hopper	Clamshell	Infrequent	1	30,000	30,000	5,000
1	SF-DODS[2]	Hopper	Clamshell	Infrequent	1	30,000	30,000	5,000
2	SF-11[2]	Hopper	Clamshell	Infrequent	1	30,000	30,000	5,000
3	SF-11[2]	Hopper	Clamshell	Infrequent	1	30,000	30,000	5,000
4	Upland BU Site	Clamshell*	Hopper*	Infrequent	1	30,000	30,000	5,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.
* Note: For Alternative 4, likely and alternative dredge methods updated from methods shown in the Draft EA/EIR.

ALTERNATIVES

Richmond Inner Harbor

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-DODS[2]	Clamshell	N/A	1	10	300,000	630,000	300,000
No Project[3]	SF-DODS[2]	Clamshell	N/A	1	10	300,000	630,000	300,000
1	SF-11[2] Upland BU Site	Clamshell Clamshell	Hopper Cutterhead	1	10	160,000 140,000	335,000 295,000	160,000 140,000
2	SF-11[2]	Hopper	Clamshell	1	10	300,000	630,000	300,000
3	SF-11[2] Upland BU Site	Hopper Clamshell	Clamshell Cutterhead	1	10	265,000 35,000	555,000 75,000	265,000 35,000
4	Upland BU site	Clamshell	Cutterhead	1	10	300,000	630,000	300,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.
[3] For the No Project Alternative, Richmond Inner Harbor would continue to be dredged to depth of -38 feet MLLW. Richmond Inner Harbor is authorized to be dredged to -41 feet MLLW (No Action assumption); however, due to lack of federal interest, USACE consistently maintains the depth of the channel at -38 feet MLLW.

ALTERNATIVES

Richmond Outer Harbor

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-10 (SF-11 alternate)	Hopper	Clamshell	1	10	210,000	730,000	210,000
No Project	SF-10 (SF-11 alternate)	Hopper	Clamshell	2	5	250,000	730,000	125,000
1	SF-11[2]	Hopper	Clamshell	1	10	210,000	730,000	210,000
2	SF-10[2]	Hopper	Clamshell	1	10	210,000	730,000	210,000
3	SF-10[2] Upland BU Site	Hopper Clamshell	Clamshell Cutterhead	1	10	195,000 15,000	680,000 50,000	195,000 15,000
4	Upland BU site	Clamshell	Cutterhead	1	10	210,000	730,000	210,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.

ALTERNATIVES

San Francisco Main Ship Channel

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-17 SF-8	Hopper	N/A	1	10	255,000 90,000	455,000 160,000	255,000 90,000
No Project	SF-17 SF-8	Hopper	N/A	1	10	255,000 90,000	455,000 160,000	255,000 90,000
1	SF-17 SF-8	Hopper	N/A	1	10	255,000 90,000	455,000 160,000	255,000 90,000
2	SF-17 SF-8	Hopper	N/A	1	10	255,000 90,000	455,000 160,000	255,000 90,000
3	SF-17 SF-8	Hopper	N/A	1	10	255,000 90,000	455,000 160,000	255,000 90,000
4	SF-17 Onshore BU Site	Hopper	N/A	1	10	260,000 85,000	465,000 150,000	260,000 85,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.

ALTERNATIVES

San Pablo Bay (Pinole Shoal)

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-10[2]	Hopper	Clamshell	1	10	150,000	560,000	150,000
No Project	SF-10[2]	Hopper	Clamshell	2	5	190,000	560,000	95,000
1	SF-10[2]	Hopper	Clamshell	1[5]	10	150,000	560,000	150,000
2	SF-9[2]	Hopper	Clamshell	1[5]	10	150,000	560,000	150,000
3	SF-9[2] Upland BU Site	Hopper Clamshell	Clamshell N/A	1[5]	10	140,000 10,000	520,000 40,000	140,000 10,000
4	Upland BU Site	Clamshell	N/A	1[5]	10	150,000	560,000	150,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.
[5] Includes as-needed advance maintenance dredging.

ALTERNATIVES

Suisun Bay Channel and New York Slough

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-16[2]	Clamshell	N/A	1[6]	10	165,000	425,000	165,000
No Project	SF-16[2]	Clamshell	N/A	1[6]	10	165,000	425,000	165,000
1	SF-16[2]	Clamshell	N/A	1[6]	10	165,000	425,000	165,000
2	SF-16[2] Upland BU site	Clamshell	N/A	1[6]	10	130,000 35,000	335,000 90,000	130,000 35,000
3	SF-16[2] Upland BU site	Clamshell	N/A	1[6]	10	130,000 35,000	335,000 90,000	130,000 35,000
4	SF-16[2] Upland BU site	Clamshell	N/A	1[6]	10	130,000 35,000	335,000 90,000	130,000 35,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.
[6] Includes as-needed emergency dredging episodes of no more than three emergency dredging episodes consisting of less than 30,000 CY each per year.

ALTERNATIVES

Napa River

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action[4]	Upland (sponsor-provided) Site	Cutterhead	Clamshell	6–11	2	110,000	165,000	20,000
No Project[4]	Upland (sponsor-provided) Site	Cutterhead	Clamshell	6–11	2	110,000	165,000	20,000
1	Upland (sponsor-provided) Site, Upland BU Site	Cutterhead	Clamshell	6–11	2	110,000	165,000	20,000
2	Upland (sponsor-provided) Site, Upland BU Site	Cutterhead	Clamshell	6–11	2	110,000	165,000	20,000
3	Upland (sponsor-provided) Site, Upland BU Site	Cutterhead	Clamshell	6–11	2	110,000	165,000	20,000
4	Upland (sponsor-provided) Site, Upland BU Site	Cutterhead	Clamshell	6–11	2	110,000	165,000	20,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.
[4] Under the No Project Alternative, Lower Napa River Channel and Upper Napa River Channel would be dredged to -9 feet MLLW, rather than the authorized depths of -15 feet and -10 feet, respectively (No Action assumptions).

ALTERNATIVES

Petaluma River – Across the Flats

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-10[2]	Clamshell	N/A	3	3	70,000	70,000	20,000
No Project	SF-10[2]	Clamshell	N/A	3	3	70,000	70,000	20,000
1	SF-10[2]	Clamshell	Cutterhead	3	3	70,000	70,000	20,000
2	SF-10[2]	Clamshell	Cutterhead	3	3	70,000	70,000	20,000
3	SF-10[2]	Clamshell	Cutterhead	3	3	70,000	70,000	20,000
4	SF-10[2], Upland BU Site	Clamshell	Cutterhead	3	3	70,000	70,000	20,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.

ALTERNATIVES

Petaluma River – River Channel

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	Upland (sponsor-provided) Site	Cutterhead	Clamshell	4–7	2	150,000	210,000	30,000
No Project	Upland (sponsor-provided) Site	Cutterhead	Clamshell	4–7	2	150,000	210,000	30,000
1	Upland (sponsor-provided) Site, Upland BU Site	Cutterhead	Clamshell	4–7	2	150,000	210,000	30,000
2	Upland (sponsor-provided) Site, Upland BU Site	Cutterhead	Clamshell	4–7	2	150,000	210,000	30,000
3	Upland (sponsor-provided) Site, Upland BU Site	Cutterhead	Clamshell	4–7	2	150,000	210,000	30,000
4	Upland (sponsor-provided) Site, Upland BU Site	Cutterhead	Clamshell	4–7	2	150,000	210,000	30,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.

ALTERNATIVES

San Rafael Creek

Dredging Channel	Placement Site[1]	Likely Dredge Method	Alternate Dredge Method	Dredging Recurrence (years)	Dredging Episodes over 10-Year Cycle	Average Volume per Episode (CY)	Maximum Volume per Episode (CY)	Average Annual volume over 10-year Cycle (CY)
No Action	SF-11[2]	Clamshell	N/A	4–6	3	110,000	280,000	35,000
No Project	SF-11[2]	Clamshell	N/A	4–6	3	110,000	280,000	35,000
1	SF-11[2]	Clamshell	N/A	4–6	3	110,000	280,000	35,000
2	SF-9[2]	Clamshell	N/A	4–6	3	110,000	280,000	35,000
3	SF-9[2] Upland BU Site	Clamshell Clamshell	N/A Cutterhead	4–6	3	65,000 45,000	165,000 115,000	20,000 15,000
4	Upland BU Site	Clamshell	Cutterhead	4–6	3	110,000	280,000	35,000

[1] Placement sites can vary over the 10-year dredging cycle and are provided as one example of how this alternative can be executed.
[2] If work is performed outside the National Marine Fisheries Service work window, placement will occur at a BU site to mitigate impacts.

CEQA IMPACT ANALYSIS

Analyzed impacts under CEQA for

- No Project Alternative
- Alternatives 1 – 4
- Proposed Action/Project (combination of No Project, Alt 1, & Alt 2)

Resources not considered in detail

- Aesthetics and Visual Resources
- Agriculture
- Energy
- Forestry
- Minerals
- Noise
- Population and Housing/Public Services
- Seismicity
- Recreation
- Regional Growth
- Socioeconomics
- Utilities
- Wildfire Impacts

RESOURCES WITH NO SIGNIFICANT IMPACTS

Geology, soils, and sediment quality

- Considered erosion from channel sides, sediment quality impacts from dredging and placement, and sediment mounding at in-Bay placement sites
- Less than significant impacts under all alternatives

Hazards and hazardous materials

- Considered emergency planning and potential for hazardous materials to affect human health and the environment
- Less than significant or no impacts under all alternatives
- Benefits for emergency response operations (NEPA)

RESOURCES WITH NO SIGNIFICANT IMPACTS

Hydrology and water quality

- Considered degradation through alteration of temperature, salinity, pH, dissolved oxygen and turbidity, and mobilization of contaminated sediment
- No long-term turbidity increases
- Less than significant impacts under all alternatives

Land use and planning

- Considered if there are conflicts with policies, plans, and regulations
- No impacts under all alternatives

Transportation and traffic, including navigation

- Considered rare circumstances of land-based transportation for landfill disposal of sediment, and interference with vessel activity
- Less than significant or no impacts under all alternatives
- Benefits from improved channel navigation (NEPA)

RESOURCES WITH NO SIGNIFICANT IMPACTS

Air Quality, Climate Change, and Greenhouse Gas Emissions

AQ-1: Potential violation of any air quality standard or contribute substantially to an existing or projected air quality violation

AQ-2: Potential conflict with or Obstruction of Implementation of an Applicable Air Quality Plan

AQ-3: Potential for exposure of Sensitive Receptors to Substantial Pollutant Concentrations

AQ-4: Potential to Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

AQ-5: Result in Cumulative Impacts on Regional Air Quality

Less than significant or no impacts, and no mitigation

CULTURAL AND TRIBAL RESOURCES

Summary of Potential Impacts and Mitigation Measures

Impact	All Alternatives	Mitigation Measures
CT-1: Substantial Adverse Change to a Historical Resource or Disturb Unique Archaeological Resources	**Less than significant with mitigation**	**CT1-1: Cultural Resources Monitoring Program** **CT1-2: Inadvertent Archaeological Discovery**
CT-2: Potential to Disturb Human Remains, including those Interred Outside of Formal Cemeteries	**Less than significant with mitigation**	**CT2-1: Treatment of Human Remains**
CT-3: Potential Impacts to Native American Sacred Sites or Religious Ceremonies	Less than significant	None
CT-4: Potential for Dredging, Transport, and Placement Activities to Result in Cumulative Impacts on Historical Resources	**No cumulatively considerable impacts with mitigation**	**CT1.-1: Cultural Resources Monitoring Program** **CT1-2: Inadvertent Archaeological Discovery** **CT2-1: Treatment of Human Remains**

BIOLOGICAL RESOURCES

Summary of Potential Impacts and Mitigation Measures

Impact	No Project	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Mitigation Measures
BI-1: Potential Effects on Fish and Benthic Invertebrate Survival Caused by Entrainment	**Significant; reduced to LTS**	**Significant; reduced to LTS**	Less than significant	Less than significant	Less than significant	Less than significant	**BI1-1: Compensatory Mitigation- No Project**
BI-2: Potential Adverse Effects of Increased Turbidity Caused by Dredging and Material Placement on Special Status Species, Critical Habitat and Commercially Valuable Marine Species	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	None
BI-3: Potential Effects on Fish and Marine Mammals Caused by Noise from Dredging Activities	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	None
BI-4: Potential Effects of Maintenance Dredging and Material Placement on Benthic Habitat	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	None
BI-5: Potential Effects Caused by Upland Beneficial Use of Dredged Material Placement	Less than significant	Less than significant*	Less than significant*	Less than significant*	Less than significant*	Less than significant*	None

* Beneficial under NEPA

BIOLOGICAL RESOURCES

Summary of Potential Impacts and Mitigation Measures

Impact	No Project	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Mitigation Measures
BI-6: Potential Effects Caused by the Resuspension of Contaminated Sediments	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	None
B7: Potential Interference of Migratory Passage for fish and marine mammals	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	None
BI-8: Potential Effects of Dredging Activities on Roosting, Nesting, and Foraging Avian Species	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	None
BI-9: Potential Disturbance of EFH and “Special Aquatic Sites” Including Eelgrass Beds and Mudflats	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	None
BI-10: Potential for Dredging, Transport, and Placement Activities to Result in Cumulative Impacts on Biological Resources	No cumulatively considerable impacts	No cumulatively considerable impacts	No cumulatively considerable impacts	No cumulatively considerable impacts	No cumulatively considerable impacts	No cumulatively considerable impacts	None

BIOLOGICAL RESOURCES- LONGFIN SMELT

Entrainment of longfin smelt by hopper dredging a major focus

Longfin smelt found during entrainment monitoring

Impact analysis used independent lines of evidence:

- Area of SF Bay habitat affected 2- 8% for each channel
- In-Bay hopper dredging duration generally 20 days per year (range of 0 - 59 days)
- Examined impacts on life stage and probability of occurrence during likely dredging period
- Minimization measures to reduce entrainment

Beneficial reuse for tidal wetland restoration benefits longfin smelt

- Included as compensatory mitigation in No Project Alternative
- Incorporated into the Federal Standard Base Plan in Alternatives 1-3
- Not applicable for Alternative 4 which does not include hopper dredging

Examples of other protected species considered:

Delta smelt (ESA), green sturgeon (ESA), white sturgeon (CESA candidate), salmonids (ESA)

BIOLOGICAL RESOURCES- MINIMIZATION

Minimization measures included for hydraulic dredging in SF Bay:

- No dredging in waters 0-5 ppt salinity between December 1 and June 30
- At the beginning and end of each hopper load, pump priming, drag head clearing, and suction of water conducted within 3 feet of the seafloor
- Hopper drag head suction pumps turned off when raising and lowering the drag arms from the seafloor
- USACE implement a worker education program for listed fish species that could be adversely impacted by dredging
- Hopper drag head, cutterheads, and pipeline intakes remain in contact with the sea floor during dredging
- The hopper drag head water intake doors will be kept closed to the maximum extent practicable in locations most vulnerable to entraining smelt

Past minimization measure removed

- Dredging may proceed anywhere when water temperature exceeds 22.0ºC 

Pilot studies to test eDNA methods and fish deterrent equipment

COMPENSATORY MITIGATION CALCULATION

Formula from CDFW to calculate acres mitigation required

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

No species-specific mitigation banks currently available in SF Bay and not predicted to be available in the near term

Therefore, we converted acres of mitigation into volume of BUDM required to offset impacts to longfin smelt

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

Final BUDM volume will be determined annually using pump hours from hopper dredge

Examples listed in Table 3-16 for general information

Channel	Estimated Pump Volume (acre-feet)	Average Proposed Annual Volume	Approximate Acres of Compensatory Mitigation Required	Approximate Volume of Required Beneficial Use (CY)
Oakland Inner or Outer Harbor (portion of channel)	1,281	210,000	0.34	35,000
Richmond Inner Harbor	1,829	300,000	0.49	45,000
Richmond Outer Harbor	1,281	210,000	0.34	30,000
Pinole Shoal	915	150,000	0.24	20,000

CUMULATIVE IMPACT ANALYSIS

Considered past, present and reasonably foreseeable projects (CEQA guidelines Section 15065)

Examples include non-federal maintenance dredging, sand mining, wetland restoration projects, and Oakland Turning Basins Widening

Cumulative impacts were not significant for any resource area

- As an example, we looked at mounding and navigation hazards from In-Bay placement volumes

Photo of a hopper dredger contracted by the USACE San Francisco District to dredge various locations around the San Francisco Bay.

SCHEDULE

Feb 13, 2024: Notice of Preparation filed; agency/public scoping period, Feb 13, 2024 to Mar 14, 2024

Oct 31, 2024: Draft EA/EIR released for agency and public review; comment period starts. **Comments due 5:00 p.m. Dec 16, 2024**

Mar 5, 2024:
CEQA Scoping Meeting

WE ARE HERE
Nov 19, 2024:
CEQA Public Meeting

Summer/Fall 2025:
Adopt Final EA/EIR

MORE INFORMATION

- **Mailing List:**
  - To be added to the mailing list send an email to: Jazzy.Graham-Davis@Waterboards.ca.gov

- **US Army Corps of Engineers, San Francisco District**
  - **Point of Contact:** SF-Bay-Dredging@usace.army.mil
  - **Website:** https://www.spn.usace.army.mil/

QR Code for web site to access documents

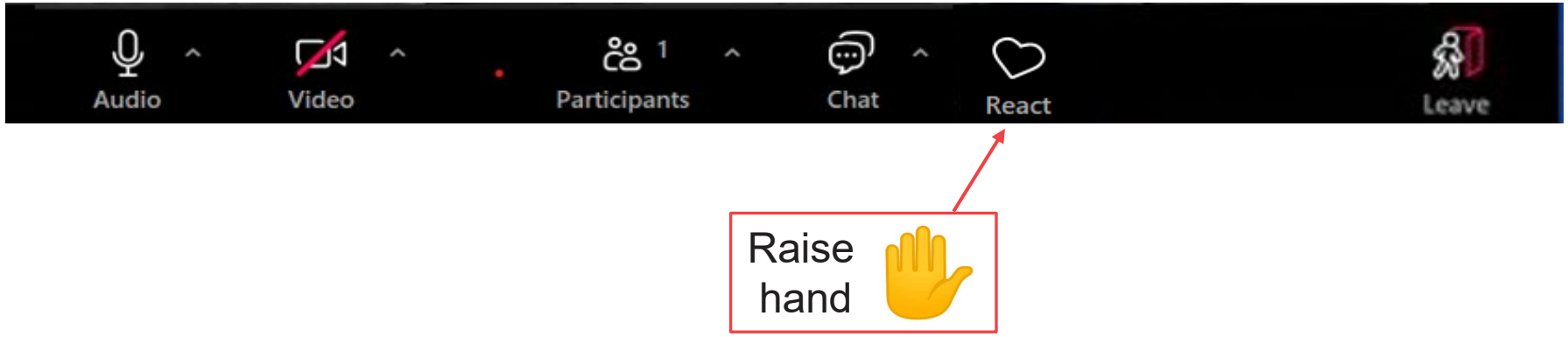
- **San Francisco Bay Regional Water Quality Control Board**
  - **Point of Contact:** Jazzy Graham-Davis, Jazzy.Graham-Davis@waterboards.ca.gov
  - **Website:** https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/dredging/

CLARIFYING QUESTIONS

Clarifying Questions and Public Comment Protocol

The USACE and Water Board

- Will answer clarifying questions about the project overview or environmental impact analysis during the clarifying questions portion of the agenda (current agenda item)
- Will not respond to public comments made during the public comment period (next agenda item)
- Will record and respond to all relevant verbal comments in the preparation of the Final EIR



HOW TO SUBMIT PUBLIC COMMENTS

Public Comments on the Draft Environmental Impact Report (EIR) may be submitted in one of the following ways.

Please note that comments must be received by 5:00 p.m., Monday, December 16, 2024

Preferred:

Email comments to

SF-Bay-Dredging@usace.army.mil for NEPA and
Jazzy.Graham-Davis@waterboards.ca.gov for CEQA

Additional Options for Submitting Comments:

- Request to provide verbal comment during this virtual meeting by raising your hand.
- *Note: Please do not submit public comments via the meeting chat.*

Raise hand

USACE and the Water Board will consider all relevant comments during preparation of the Final EA/EIR

THANK YOU FOR ATTENDING

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FEATURES AND MEASURES COMMON TO ALL ALTERNATIVES

- Meet all federal environmental compliance requirements
- Dredging at each project location would be limited to the authorized depth.
- Knockdowns (i.e., knocking down high spots or isolated shoals) may be performed in all locations except the San Francisco Harbor Main Ship Channel (MSC).
- Overflow conditions
- Work window requirements established by NMFS and USFWS in BiOps for LTMS
- Dredging stopped if any fuel/waste leaks or spills, and cleanup implemented
- Notes to mariners and navigation warning markers used to prevent navigation hazards
- Employ avoidance and minimization measures identified in current and future LTMS BiOps
- Specific measures for hydraulic dredging to protect longfin smelt and delta smelt.

ALTERNATIVES – PLACEMENT VOLUMES

Placement Locations	Average Placement Volumes (Cubic Yards per Year)[1] (Minimum to Maximum)					
	No Action Alternative (NEPA)	Proposed Project			Alternative 3	Alternative 4
		No Project Alternative (CEQA)	Alternative 1	Alternative 2		
Existing Beneficial Use Sites						
Upland Direct Placement Sites	0 *(0 to 0)*	0 *(0 to 0)*	135,420 *(112,850 to 451,400)*	609,390 *(451,400 to 677,100)*	970,510 *(789,950 to 1,015,650)*	1,602,470 *(1,467,050 to 1,692,750)*
Nearshore Strategic Placement Site: SF-17 (Ocean Beach Nearshore Placement Site)	270,840 *(112,850 to 338,550)*	254,040 *(105,850 to 317,550)*	270,840 *(112,850 to 338,550)*	270,840 *(112,850 to 338,550)*	270,840 *(112,850 to 338,550)*	270,840 *(112,850 to 338,550)*
Transitional Placement Sites						
SF-8, San Francisco Bar Channel Placement Site	90,280 *(0 to 225,700)*	84,680 (0 to 211,700)	90,280 *(0 to 225,700)*	90,280 *(0 to 225,700)*	90,280 *(0 to 225,700)*	0 *(0 to 225,700)*
In-Bay Placement Sites	789,950 *(677,100 to 902,800)*	740,950 *(635,100 to 846,800)*	947,940 *(789,950 to 1,241,350)*	1,263,920 (1,128,500 to 1,354,200)	902,800 *(789,950 to 1,015,650)*	135,420 *(0 to 225,700)*
Upland (Sponsor-Provided) Sites	22,570 *(0 to 225,700)*	21,170 *(0 to 211,700)*	22,570 *(0 to 225,700)*	22,570 *(0 to 225,700)*	22,570 *(0 to 225,700)*	22,570 *(0 to 225,700)*
Deep Ocean Disposal Site	1,083,360 *(1,015,650 to 1,241,350)*	1,016,160 *(952,650 to 1,164,350)*	789,950 *(225,700 to 902,800)*	0 *(0 to 225,700)*	0 *(0 to 225,700)*	0 *(0 to 225,700)*
Potential Future Beneficial Use Placement Sites[2]	0 *(0 to 0)*	0 *(0 to 0)*	0 *(0 to 0)*	0 *(0 to 0)*	0 *(0 to 0)*	203,130 *(112,850 to 338,550)*

[1] Maximum placement volumes would not be realized across placement locations concurrently.

[2] Potential Future BU Site Types include: Nearshore Strategic Placement Sites, Elevation Augmentation/Marsh Spraying Sites, and Water Column Seeding Sites. Environmental review processes have not been completed for these sites and there is insufficient information available to fully analyze the potential impacts of placing dredged material at these locations in this Draft EA/EIR.

PROJECT OVERVIEW CONTINUED

Current maintenance dredging typically involves four steps:

1. Testing for sediment quality and placement suitability determination
2. Removing recently shoaled sediment from the dredging site to restore authorized navigation channel dimensions
3. Transporting dredged material by barges, hopper dredges, or pipeline to the placement site
4. Placing the dredged material at the designated placement site(s).

Photo of maintenance dredging of the Napa River from the Horton barge and dredge.

PROJECT NEED

- The USACE, as mandated by Congress, has the authority to maintain navigability of federal navigation channels to authorized depth.

- Maintenance dredging removes accumulated sediment and aims to return channels to authorized depths to provide safe, reliable, and efficient waterborne transportation systems (channels, harbors, and waterways) for the movement of commerce, national security needs, and recreation.

Photo of USACE maintenance dredging in San Francisco Bay with clamshell.

PROJECT PURPOSE

- USACE's purpose of the project is to maintain safe navigation in the federal navigation channels in San Francisco Bay. USACE's primary method for maintaining navigation is through dredging, which will be:
  - Consistent with navigation project authorizations as laid out in the USACE 20-year Regional Dredged Material Management Plan (RDMMP);
  - Consider, where practicable, the goals of the Long-Term Management Strategy for Placement of Dredged Material (LTMS) in the San Francisco Bay Region;
  - Adequately protect the environment, including listed species.

Photo of a clamshell dredge coming up from the bottom of Richmond Harbor during maintenance dredging.

PROJECT GOALS

- Provide safe, reliable, and efficient navigation through federal channels in San Francisco Bay and identify the federal standard base plan (i.e., least cost, environmentally acceptable, and technically feasible dredging plan);
- Increase beneficial use in consideration of USACE's 70% beneficial use by 2030 Command Philosophy and the Long Term Management Strategy (LTMS) program's goals to the maximum extent practicable; and
- Conduct dredging in a manner that minimizes impacts to resources, including listed species.

Photo of maintenance dredging in the upper portion of the Napa River.

PROJECT ACTIVITIES

Current maintenance dredging typically includes the following methods:

Hydraulic dredging:

- Involves hopper dredges or cutterhead suction attached to hydraulic pipelines that convey dredged material to a barge or directly onto a placement site

Mechanical dredging

- Involves bucket or clamshell dredges, which scoop material into a barge for transport to a placement site.

Knockdowns

- Uses a clamshell or other equipment to smooth high spots into immediately adjacent deeper areas, without transport to an offsite placement location.

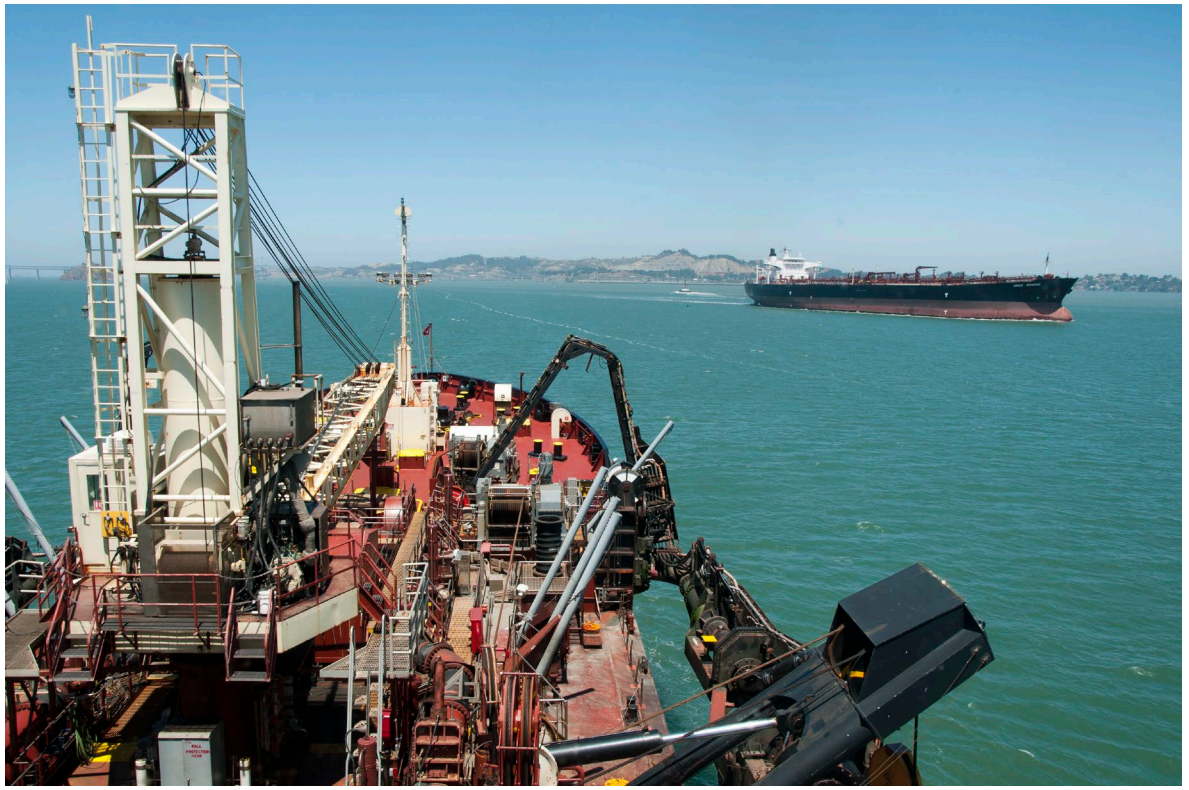

Photo of a hopper dredger contracted by the USACE San Francisco District to dredge various locations around the San Francisco Bay.

PROJECT ACTIVITIES CONTINUED

- The USACE proposes to conduct dredging activities within the environmental work windows to the maximum extent practicable and in coordination with regulatory agencies.

- Dredging and placement depends on economics (least cost), sediment quality and characteristics, and technical feasibility
  - Federally-designated aquatic in-bay placement sites, permitted and operational beneficial use sites, and deep ocean disposal as necessary.
  - Sponsor-provided upland sites for certain shallow-draft channels.

- The EA/EIR has evaluated an array of alternatives focused on beneficial use, including different dredging methods (e.g., hydraulic), reducing ocean placement, and sediment retention in the bay system.

PROJECT ACTIVITIES CONTINUED

Photo of beneficial use project at Ocean Beach under construction.

- In the future, new beneficial use sites may be available, such as the Bel Marin Keys wetland restoration site, and other nearshore strategic placement sites or other Engineering with Nature® (EWN) beneficial use methods.
- Future sites will undergo additional environmental impact review under CEQA and/or NEPA and obtain permitting approvals before use.