Welcome!

San Francisco Bay Regional Dredged Material Management Plan Charrette

9:00 – 9:10	Opening Remarks, Webinar Logistics
9:15 – 9:25	RDMMP Overview
9:30 – 9:40	RDMMP Planning Process to Date
9:40 – 10:15	Breakout Session #1 – Objectives, opportunities, constraints
10:15 – 10:25	Break
10:25 – 10:40	RDMMP Measures and alternatives
10:40 – 11:30	Breakout Session #2 – Measures, strategies
11:30 – 11:35	Break
11:35 – 12:15	Group Discussion on Alternative development and criteria for evaluation
12:15 – 12:30	Next Steps and Closing

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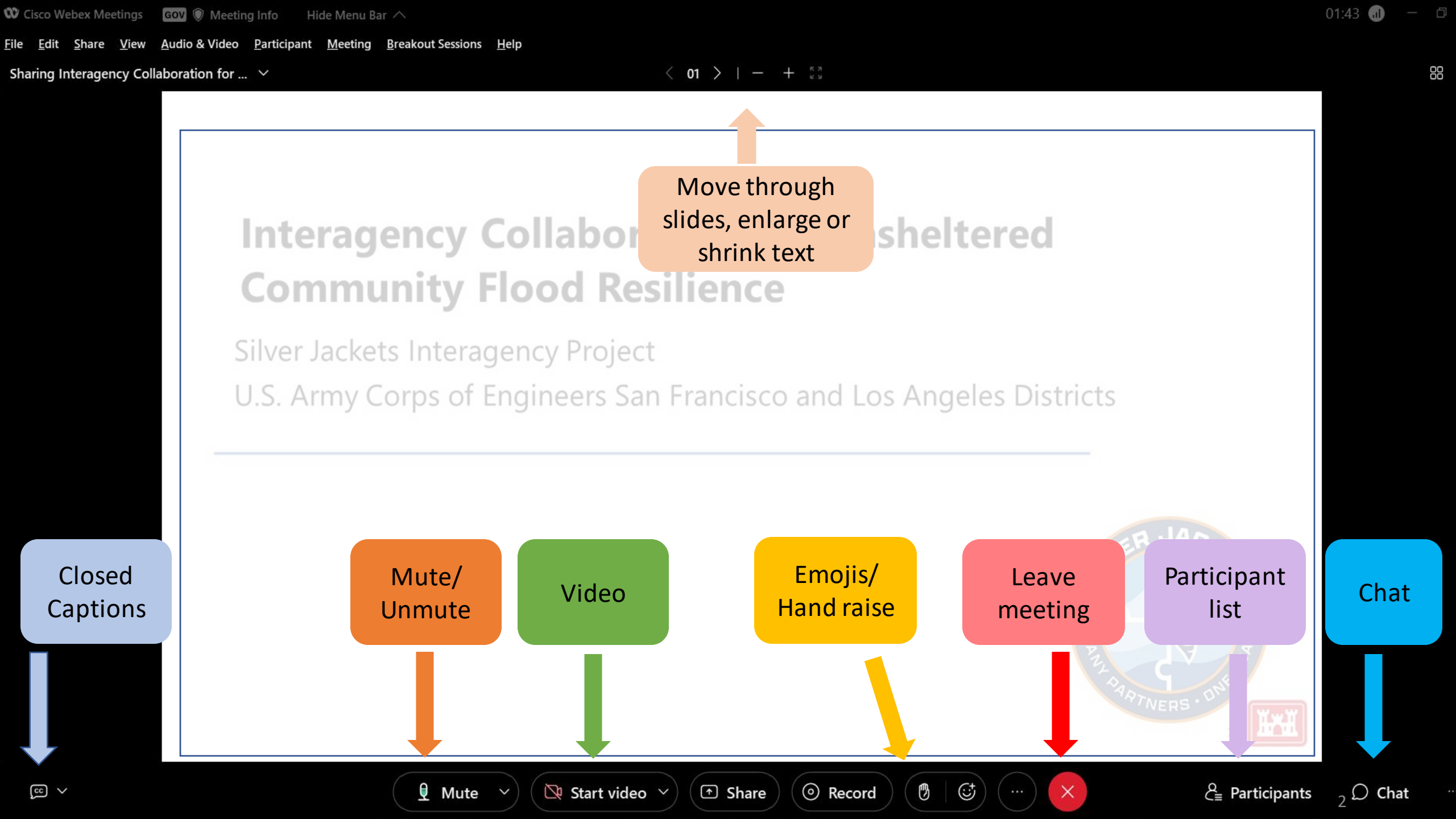
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Chat

Introduction to San Francisco District

LTC Kevin Arnett, P.E., Ph.D.
District Commander
San Francisco District

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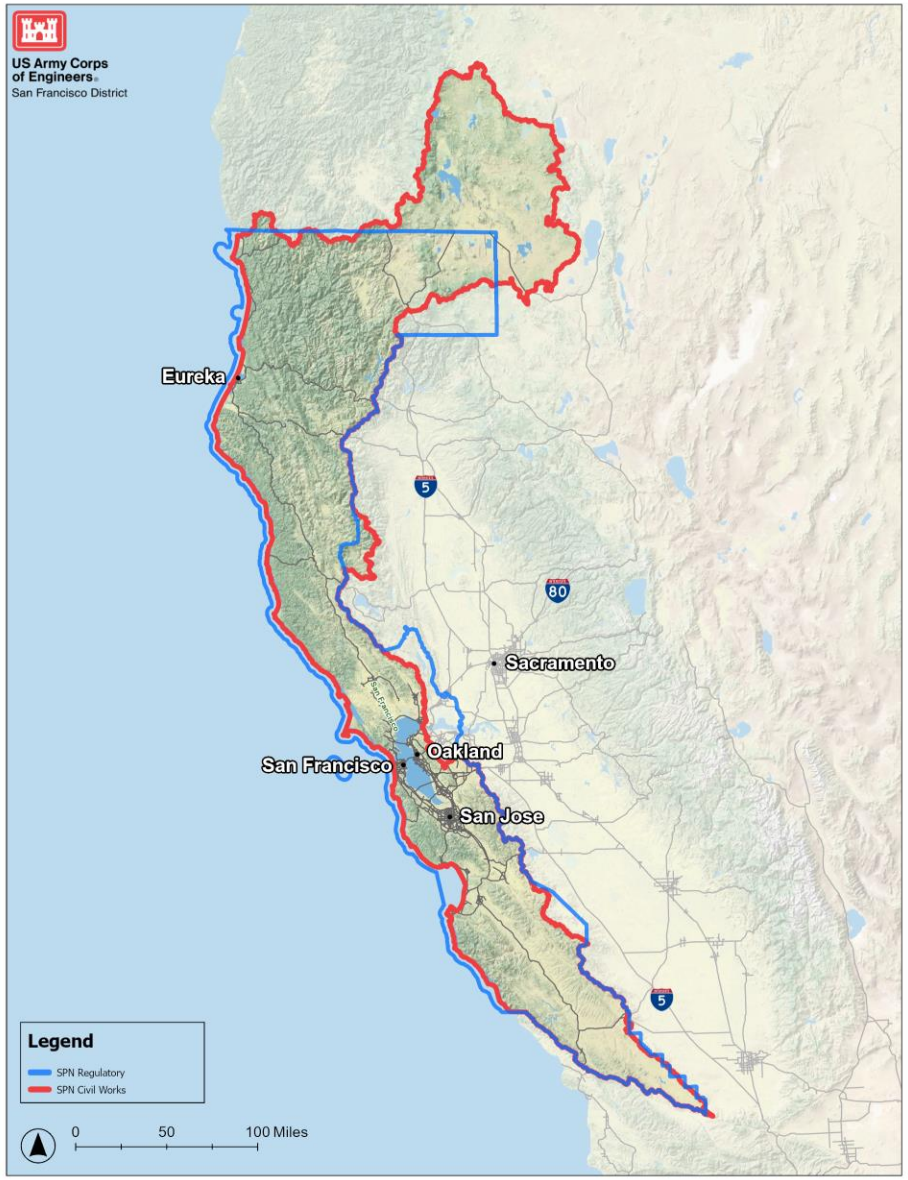
USACE San Francisco District Navigation Program

Mission:

Operate and maintain safe, reliable, efficient, and environmentally-sustainable waterborne transportation systems in the San Francisco Bay-Delta and along the outer northern California coast

- Achieve full depth within budget and environmental constraints

- Enable maximum channel access between dredging episodes



San Francisco District Strategic Plan

Goal 1

Build Trust, Talent, Capability

Goal 2

Deliver Multibenefit Navigation Program

Chief of Engineers
70%
Beneficial Use Practices
by the year
2030
Target

Goal 3

Deliver Multi-Jurisdictional Sea Level Rise Projects

Goal 4

Engineer with Nature

Goal 5

Build Resilience to Western Extremes

Goal 6

Deliver Value and Benefits Equitably

Goal 7

Support National Security

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Regional Dredge Material Management Plan Overview

Dr. Tessa Beach
Planning Chief
Environmental Services Branch Chief
San Francisco District

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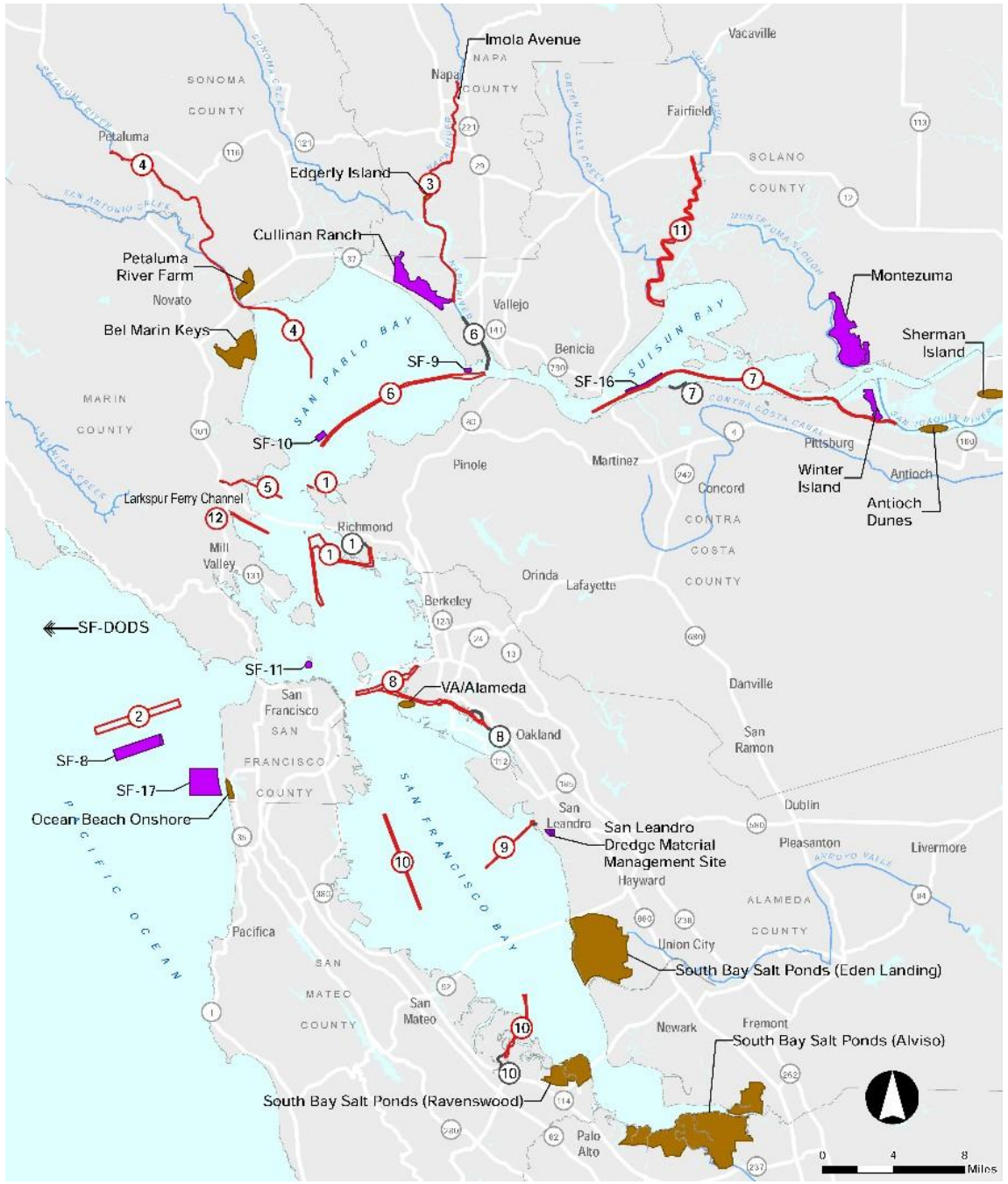
San Francisco Bay Channels & Placement Sites

San Francisco Bay Federal Maintenance Dredging Projects

Project	Volume Cubic Yards (per episode)	Dredge Type	Placement Site(s)
Main Ship Channel	450,000	Hopper	Ocean Beach Demo Site /SF-8 / Ocean Beach Onshore
Oakland Harbor	950,000	Clamshell	SF-DODS/ Beneficial Use / SF-11
Richmond Outer Harbor	350,000	Hopper	SF-11/SF-10
Richmond Inner Harbor	350,000	Clamshell	SF-DODS/ Beneficial Use
Pinole Shoal Channel	300,000	Hopper	SF-11/SF-10
Suisun Bay Channel/New York Slough	200,000	Clamshell	SF-16/SF-9
Redwood City Harbor	600,000	Clamshell	SF-11/SF-DODS/ Beneficial Use
Petaluma Channel (Across the Flats)	250,000	Clamshell	SF-10
Petaluma Channel (River)	350,000	Cutterhead	Schollenberger Park
Napa River (Upper)	55,000	Clamshell	Imola/Napa Pipe
Napa River (Lower)	13,000	Clamshell/Cutterhead	Imola/Napa Pipe
San Bruno Shoal	16,000	Hopper/Clamshell	SF-11
San Rafael Creek	87,000	Clamshell/Cutterhead	SF-10 / SF-11



Channels = red

Placement sites

- Available = purple
- Not Available =brown

* Not shown:

San Francisco Deep

Ocean Disposal Site

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Dredge Material Management Plan (DMMP) Guidance

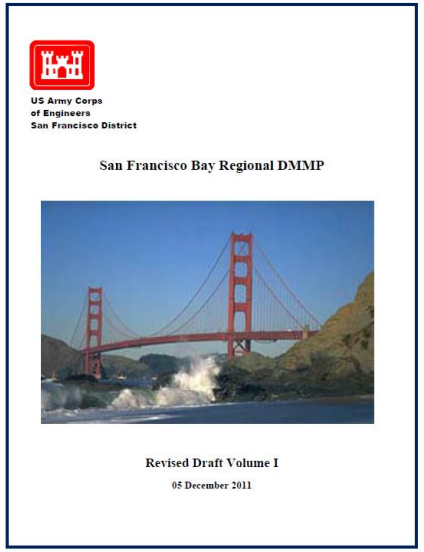
- **USACE Planning Guidance Notebook (Appendix E-15)**
  - All Federally maintained navigation projects must demonstrate sufficient dredged material placement/disposal capacity for a minimum of 20 years
  - USACE policy is to accomplish dredge material placement in the least costly manner
    - This constitutes the base disposal plan for the navigation purpose (Federal Standard)
    - Each DMMP study must establish this "Base Plan"
  - Each DMMP must include an assessment of potential beneficial uses
    - Where beneficial uses involve an incremental cost over the Base Plan, these incremental costs require a cost share partner

Incremental cost = [$ to take material to BU] – [$ for Base Plan]

Requires Cost Share Partner

Federal O&M Funding

SF Bay Regional DMMP Background



- **Prior Draft Regional DMMP (2011) – Not completed**
  - Volume I (of four) Draft completed
  - Supporting Manuscripts (30 total manuscripts)
    - Manuscript 5 = Sediment Transport Dynamics
    - Manuscript 7= Regional Sediment Management (sources and sinks)
    - Manuscript 17 = Trends in Sediment Shoaling and Projected Dredging
    - Manuscripts 24-26 = Biological resources; Invasive Species and pathways; Species of Concern
  - Informed 2015-2024 NEPA/CEQA and associated compliance for SF Bay Dredging Program

- **Individual Channel Preliminary Assessments (2019)**
  - Completed – Identified need for comprehensive RDMMP to evaluate placement capacity for 20 years

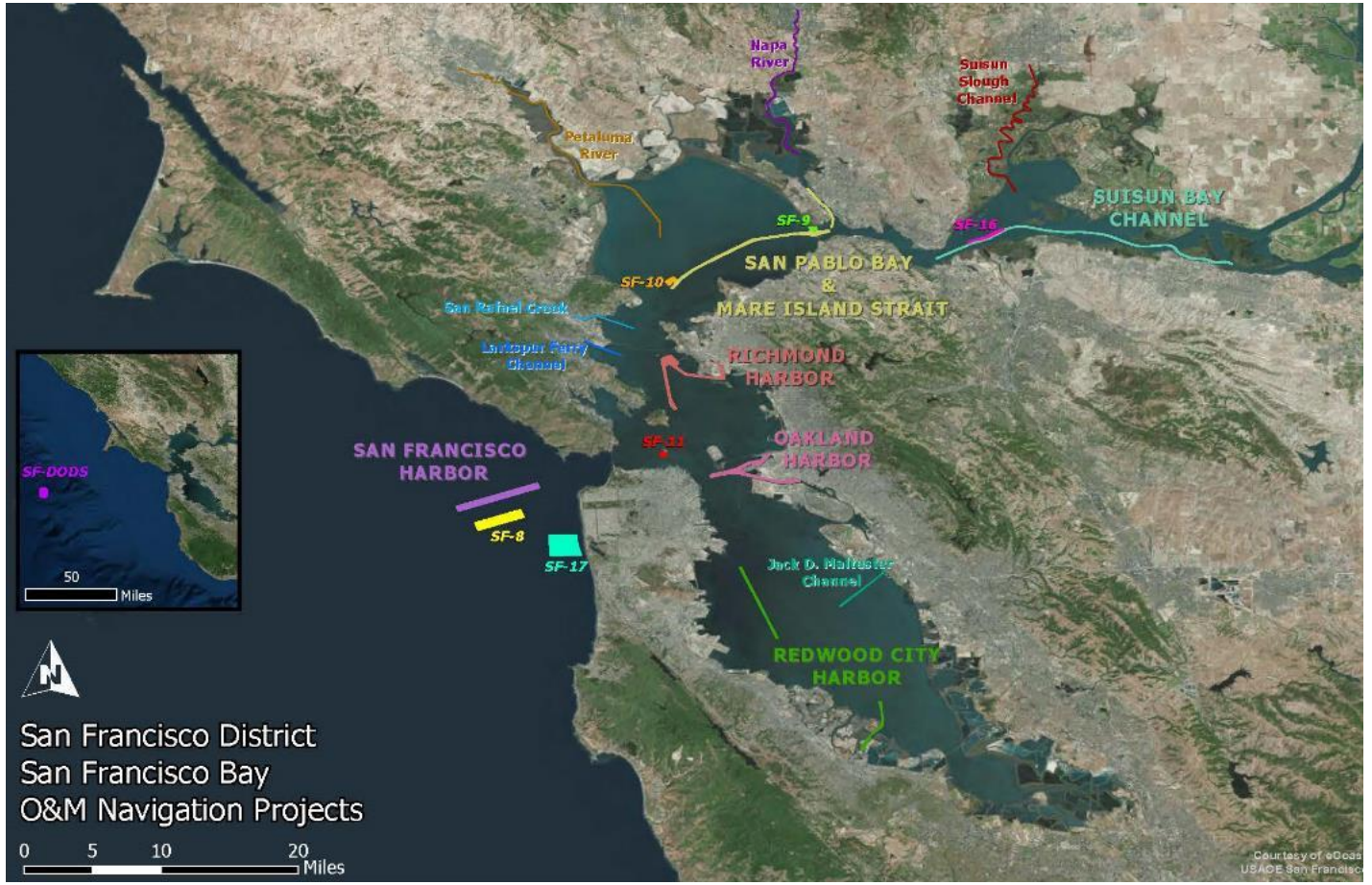
Current SF Bay Regional DMMP Objectives

Objectives

- Evaluate current placement sites & new opportunities
- Identify placement capacity for 20 years
- Establish Federal Standard Base Plan
- Identify/evaluate beneficial uses
- Input for new multi-year environmental compliance
    - based on current science to inform environmental effects & requirements

Structure

- Comprehensive approach
    - Multiple channels and shared placement sites
- Broad stakeholder engagement



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SF Bay RDMMP Phase I – Scoping (2020-2022)

- **Stakeholder Charrettes**
  - Initial public meeting
  - 5 thematic stakeholder charettes
    - Toxicology
    - Climate Change and Other Environmental Issues
    - Physical Processes
    - Economics, Social Studies and Policies
    - Summary and Next Steps

- **Knowledge Gaps Identification (SFEI)**
  - Literature review of past studies
  - 25 knowledge gaps identified
  - Condensed to 18 gaps for prioritization
  - Gaps prioritized in Inter-agency Workgroup
  - Final refinement by USACE

- **Scope of work for phase II efforts**
  - Including Gap Analyses studies

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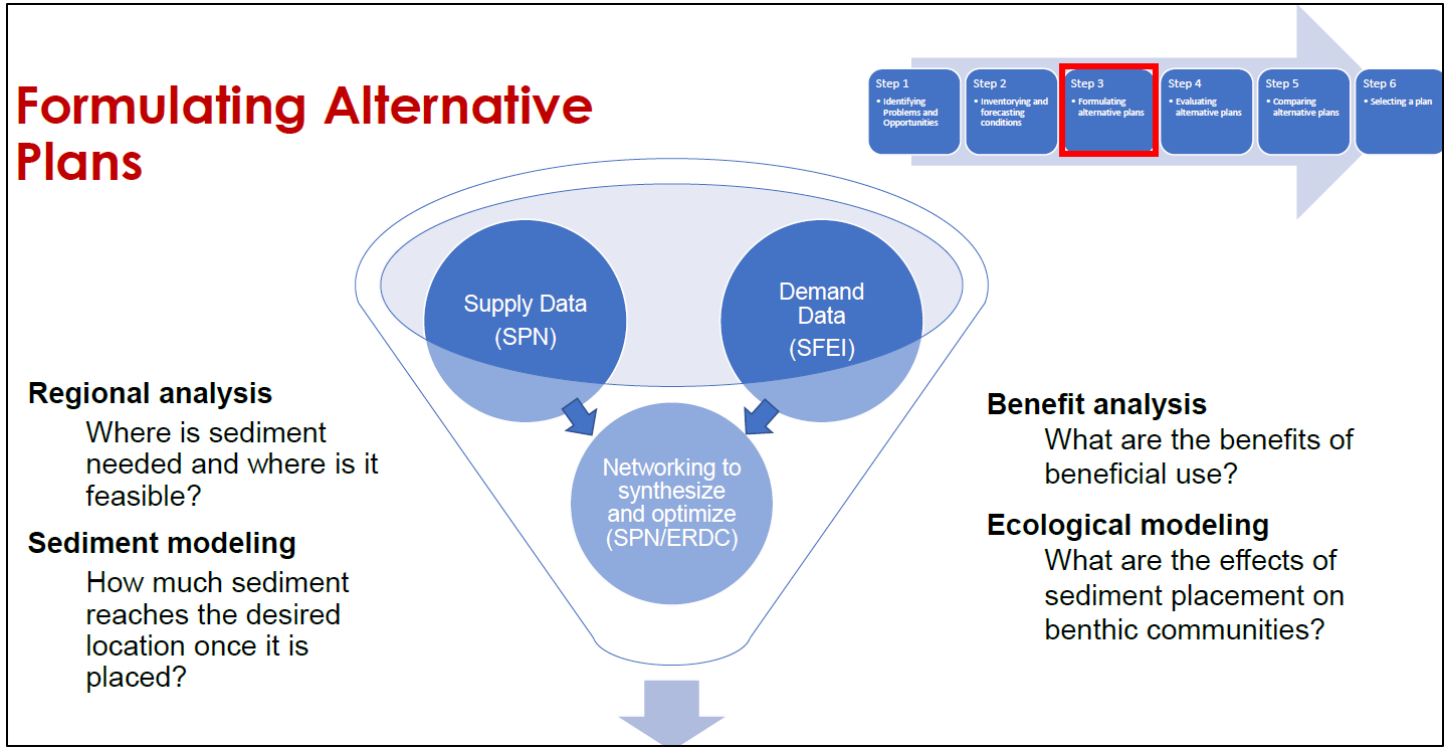
Gap Analyses Studies

- **Regional analysis of potential BU locations**
- **Hydrodynamic and sediment transport modeling for strategic shallow water placement**
- **BU Benefits analysis**
- **Ecological modeling**



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SF Bay RDMMP Phase II – Complete Study(2022-2024)

- **Gap analyses studies (SFEI, ERDC, IWR)**
- **Develop engineering, economic, environmental inputs**
- **Plan formulation and evaluation**
- **RDMMP report and environmental approvals**
  - NEPA/CEQA
  - 401 WQC
  - CZMA Consistency

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Future Annual DMMPs under Sec. 125 of WRDA 2020

- **Section 125(c)** - annually prepare dredged material management plans (DMMPs) with a 5-year outlook
  - Full Federal expense
  - Minimum 30-day public input
  - Spreadsheet format
  - BUDDI process for new sites

Regional 5 year DMMP Template and Example — **Five-Year DMMP**

Project	P2 Number	CWIS	Dredge Frequency	Average CY/Event	Public Outreach Completed	Disposal Site Name	Total Capacity available(CY)	Dredge Material Management Categories	Disposal Site Proponent	Federally Funded or Cost Shared	Environmental Compliance	Real Estate Compliance	Other USACE Business Lines	Appropriation	Cubic Yard Placed: Base Year (BY)	BY+1	BY+2	BY+3	BY+4	Base Year (BY): Funding Package Submitted (Y/N)	Cost ($1000)	Funding Source
Example:																						
Wet River			Annual	500,000 CY	Yes, Regional PN 1/15/2022-2/16/2022	ODMDS	5 M CY	Open-water - material removed from system*	USACE	Federal Standard	Sediment testing needed	COMPLETE - Exercise of Navigation Servitude (within the	None	O&M	200,000	200,000	200,000	50,000	200,000	Yes	1500	PBUD
						Nearshore site A	3 M CY	Open-water - material stays in system*, Beach Nourishment	USACE	Federal Standard	Sediment testing needed	COMPLETE - Exercise of Navigation Servitude (within the ordinary	None	O&M	300,000	300,000	300,000	300,000	300,000	Yes	2100	PBUD

- **Section 125(a)** - authorizes USACE to cost-share (65%/35%) the <u>incremental cost</u> of BU placement opportunities
  - Incremental costs must be reasonable in relation to benefits
  - Requires cost-share partner
  - Multiple placements over multiple years allowed

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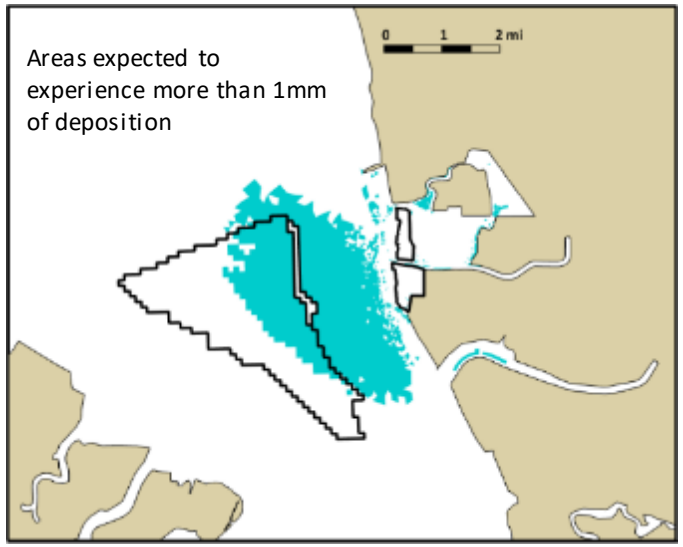
WRDA 2020 Section 125 Key Takeaways

- The Federal Standard still dictates the base plan
- Beneficial use, when it is not the base plan, requires a source to fund the incremental cost
  - Cost-sharing of the beneficial use increment (65%/35%) to encourage more funding sources
- Limited/higher-cost BUDM opportunities are a challenge in the region
  - Your input needed to help identify new beneficial uses/ locations / techniques

Tiscornia Marsh



Eden Landing

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RDMMP Planning Process

Dr. Arye Janoff
Lead Planner
Regional Dredged Material Management Plan

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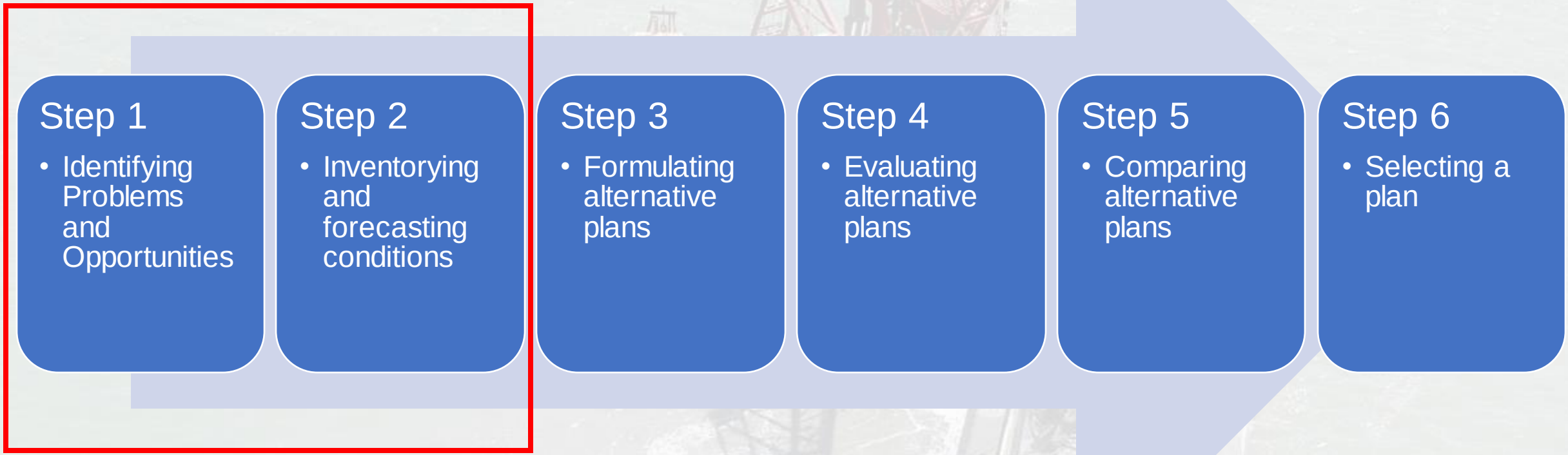
USACE Planning Process



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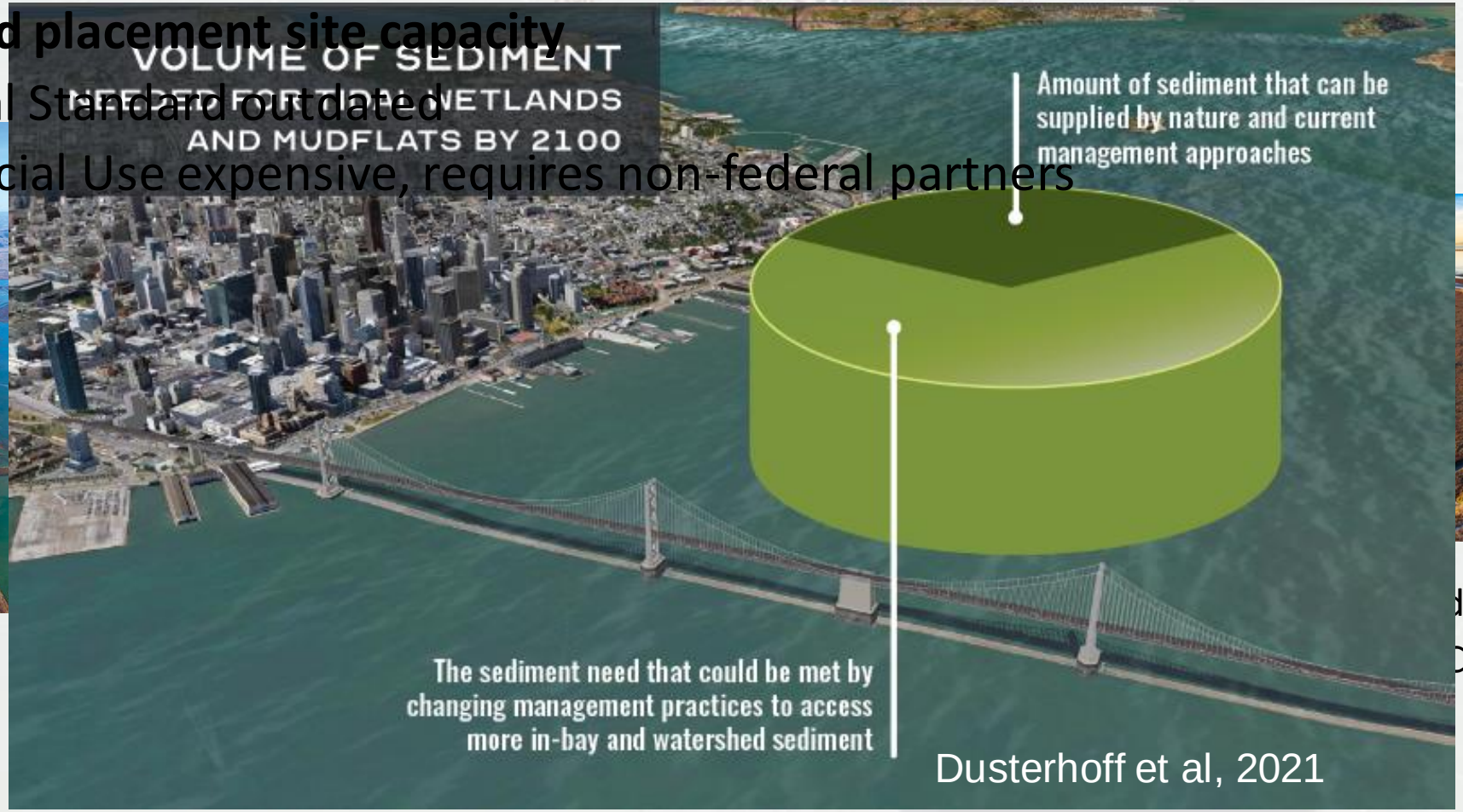
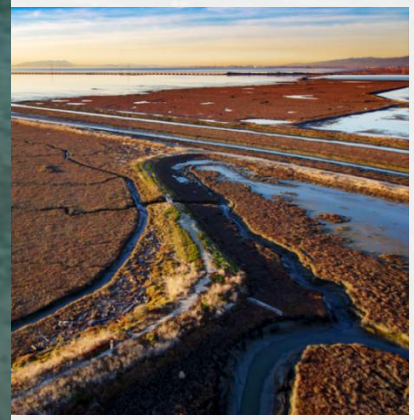
RDMMP Planning Process

- Problems
  - **SF Bay sediment starved**
  - **Limited placement site capacity**
  - Federal Standard outdated
  - Beneficial Use expensive, requires non-federal partners

Cullinan Ranch:
David Siervert



Dusterhoff et al, 2021



ding Ecological
Cris Benton

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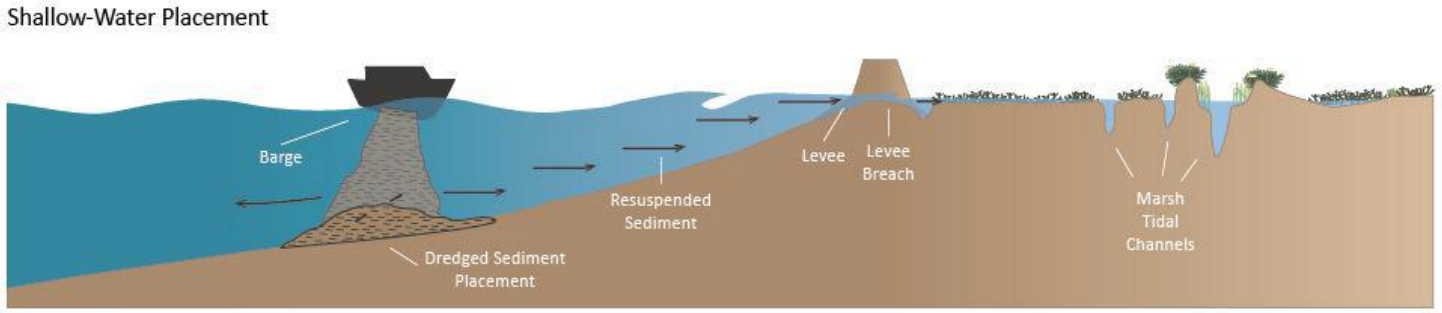
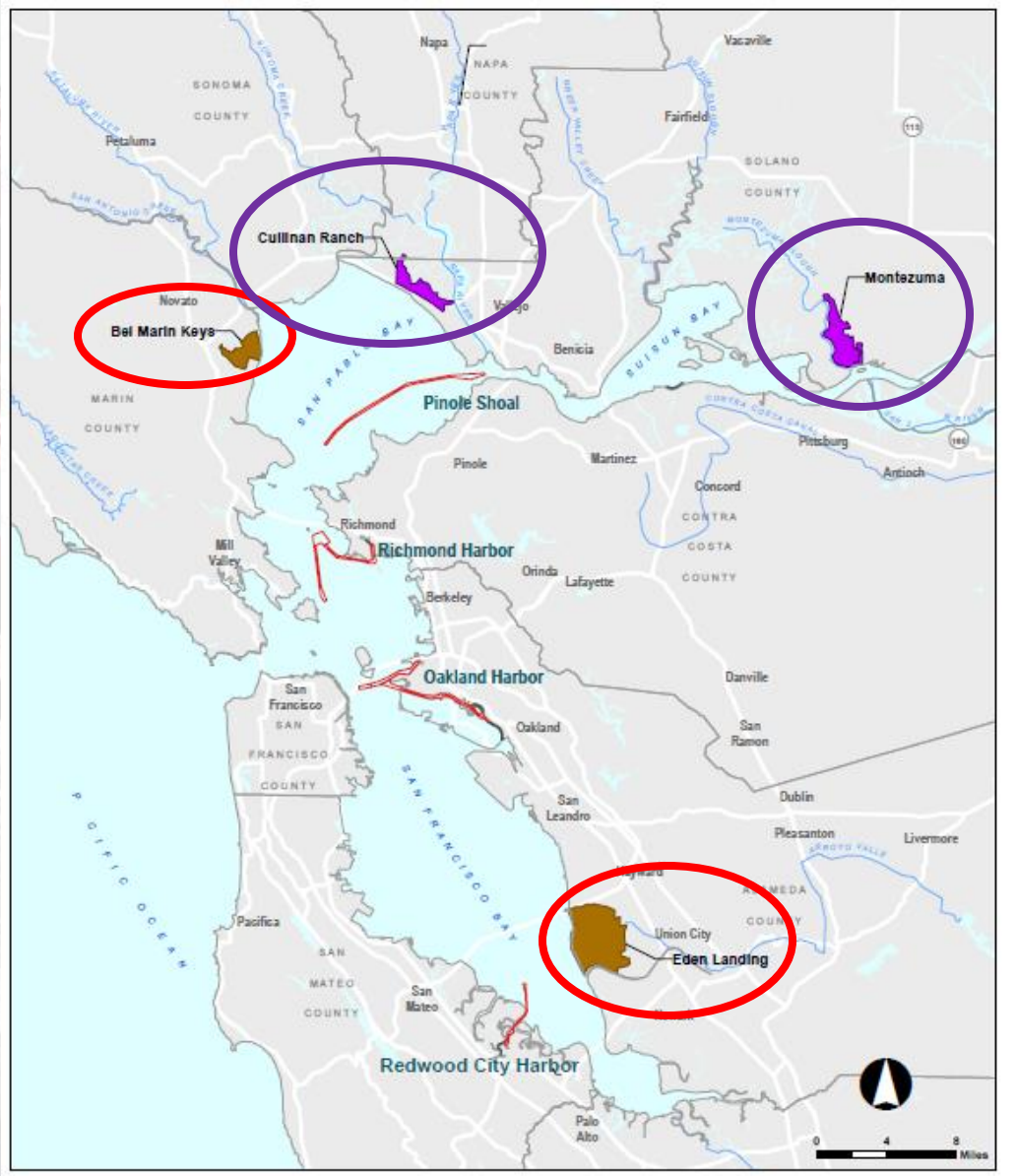
RDMMP Planning Process

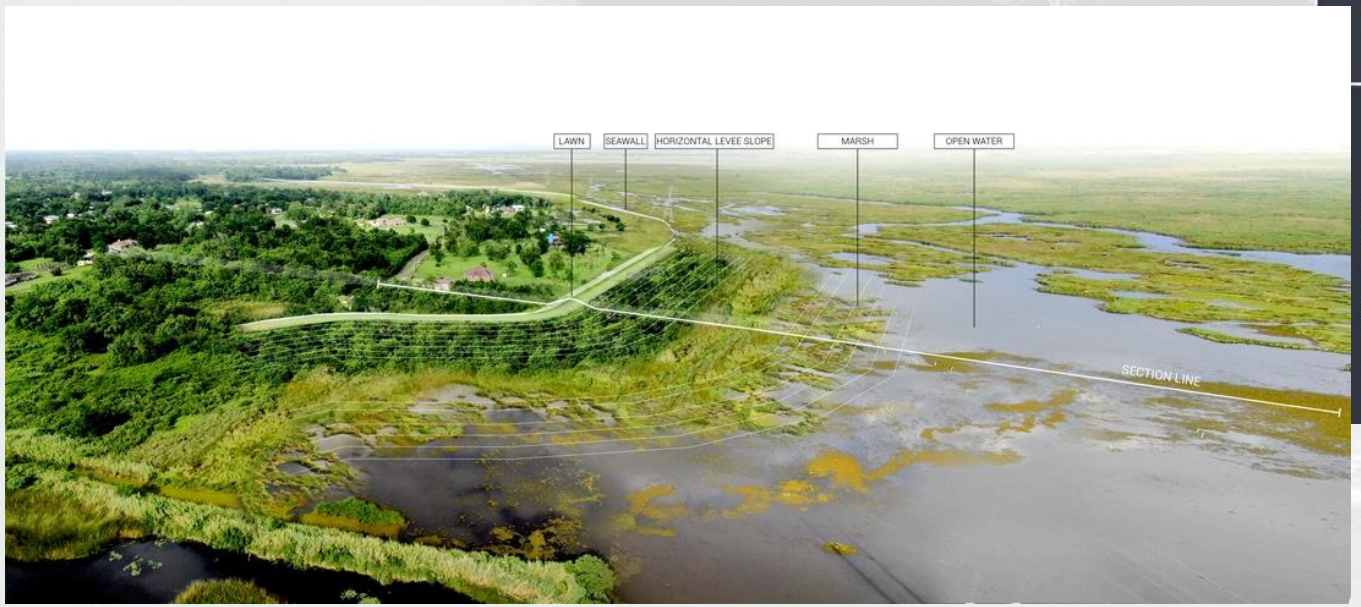
- Opportunities
  - Leverage existing BU
  - Develop new BU sites
  - New dredging methods

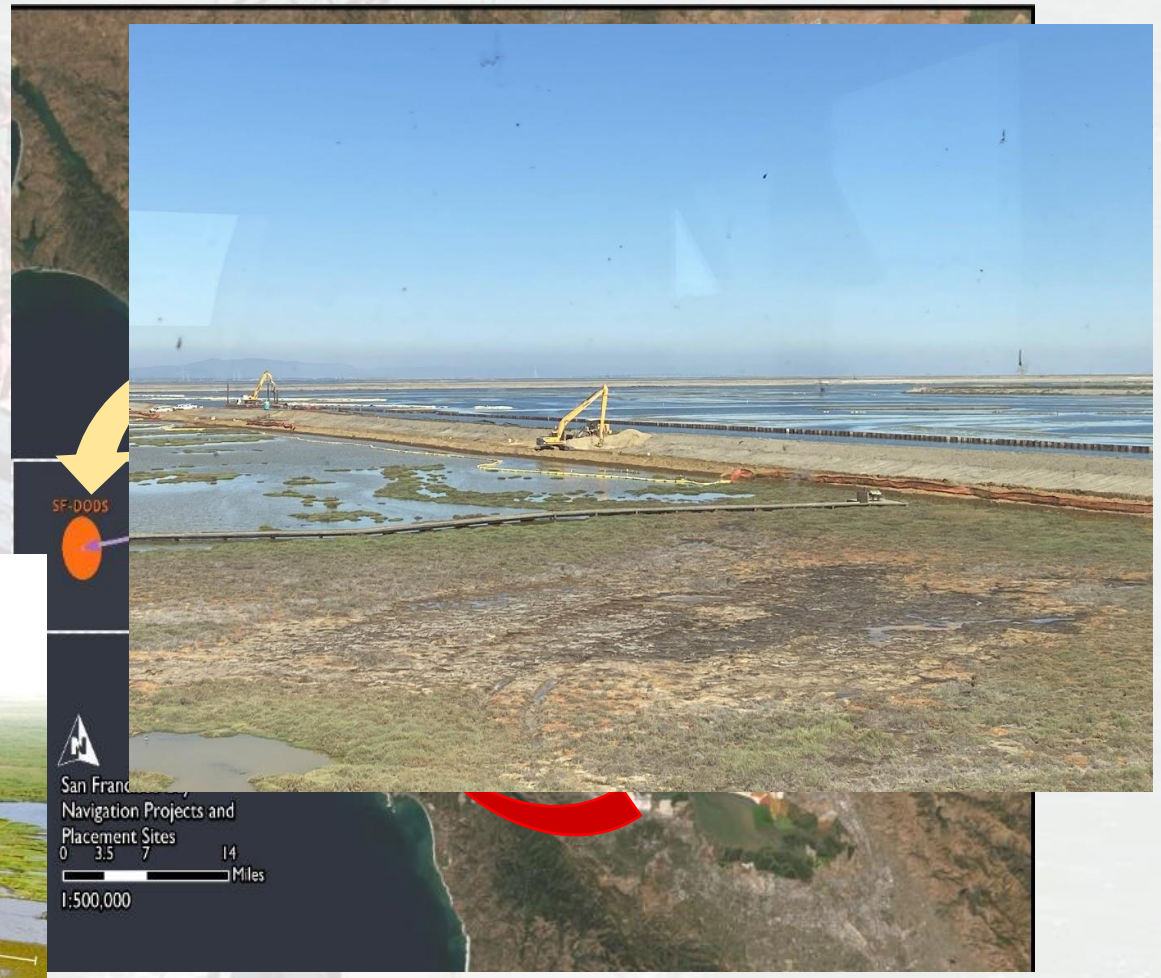




RDMMP Planning Process

- Objectives
  - Develop the Federal Standard
  - Maximize Beneficial Use
    - Leverage Engineering with Nature
  - Inter-agency, regional coordination
    - Inclusive, accessible planning process





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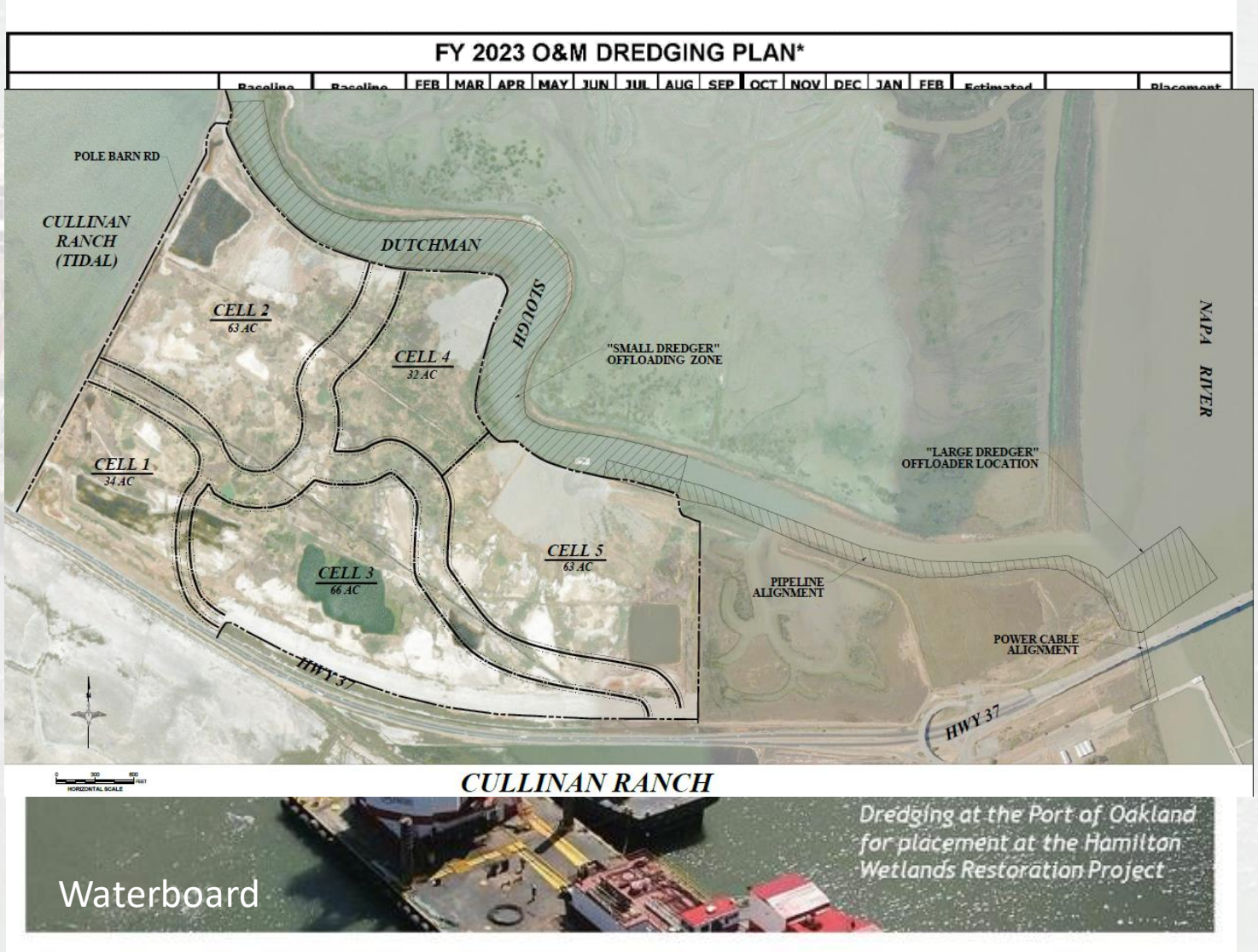
RDMMP Planning Process

- Constraints
  - Dredging and placement costs
  - Equipment availability
  - Environmental work windows
  - Placement site capacity and accessibility



Breakout Session 1:
Objectives, opportunities, constraints

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Breakout Session #1 Instructions

1. Share your name, your organization, and how you engage with dredged material management.

2. Share your perspective

   - What are your **objectives** for regional dredged material management?
   - What are the **opportunities** to improve dredged material planning at the regional scale?
   - What are **constraints** of this regional management approach?

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Rules of Engagement

- **Engage in a way that feels comfortable for you.** Share their ideas verbally, through the chat, and through the Jamboard. We strongly recommend keeping your camera on so that we can feel more connected a group but this is not a requirement.

- **Step up, step back** This means, if you are the person who feels very comfortable sharing, take note of how often you are sharing, and "step back" tor giving time for others to share. If you tend to be a quiet participant, take a chance and "*step up"* with your idea, share your concerns, your ideas, concerns, and excitement with the group. A good facilitator will make sure this is safe for you.

- **Take what you need** – Participants can step away from Webex for water, bio break, whatever you need, when you need.

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Breakout Session 1 Share Out

Objectives

- Balance BU with dredging requirements
- Pragmatic dredged material management – econ and env
- Tie DMMP to regional ecosystem restoration/management plans
- Minimize distance from channel to placement site
- Communciation/outreach across key stakeholders and engaging the restoration community and folks on their priorities more frequently
- Collaboration among stakeholders on regional scale (with goal of reducing costs)
- Shared understanding of policy, regulations
- Improve Fed Standard
- Support resilience for shoreline ecosystems to SLR
- Regional approach
- Offer alternatives placement methods in contracting process (flexibility)
- Max BU
- Identify Fed Standard
- Improve public buy-in
- Better understand benefits and impacts of placements
- Minimize costs and make BU more cost effective

Breakout Session 1 Share Out

Objectives -	
Opportunities	**Constraints**
- Identify leader on the regional scale to collate and manage information effectively	-

Break
Please come back at 10:25

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Measures, strategies, alternatives

Dr. Arye Janoff
Lead Planner
Regional Dredged Material Management Plan

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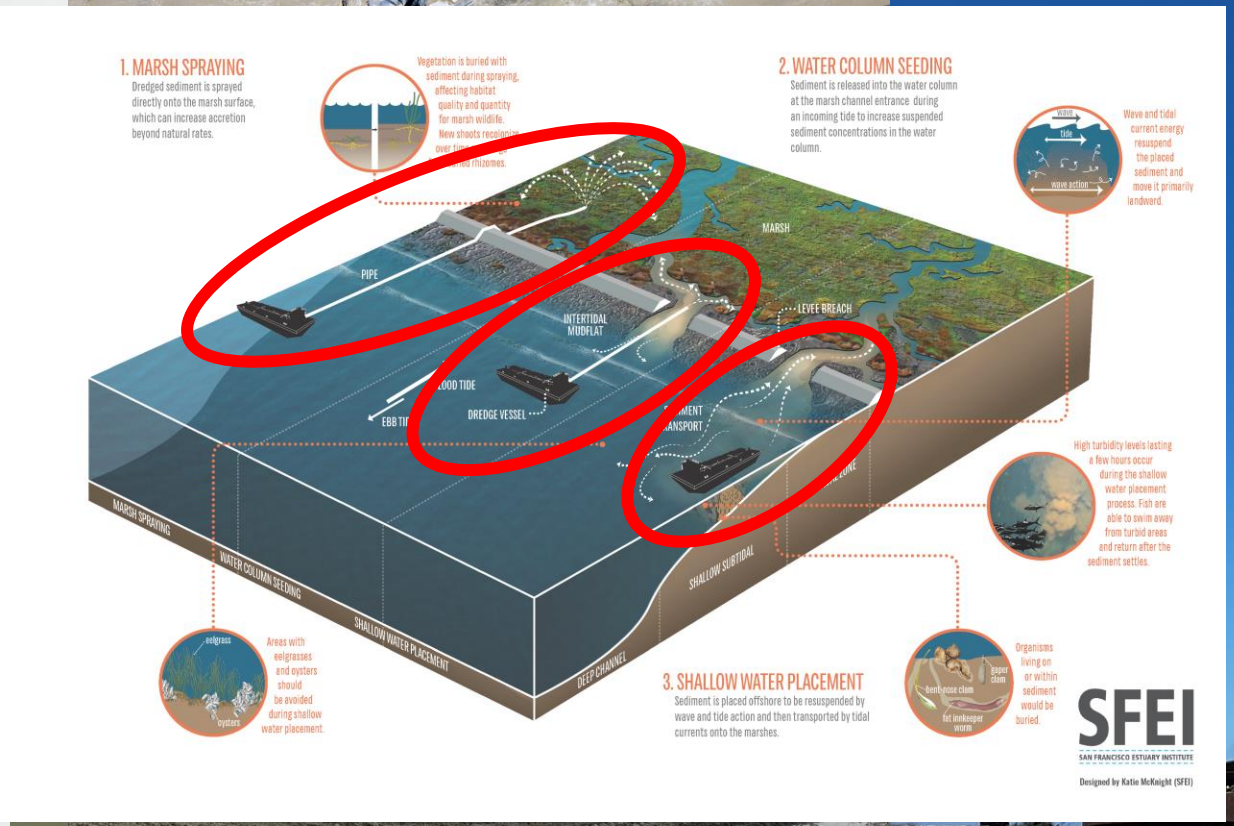
Measures, Strategies, Alternatives



Measures, Strategies, Alternatives

- Strategies
  - Meet federal standard
  - Maximize beneficial use
  - Minimize distance from dredging to placement

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USACE Planning Process

Step 1
- Identifying Problems and Opportunities

Step 2
- Inventorying and forecasting conditions

Step 3
- Formulating alternative plans

Step 4
- Evaluating alternative plans

Step 5
- Comparing alternative plans

Step 6
- Selecting a plan

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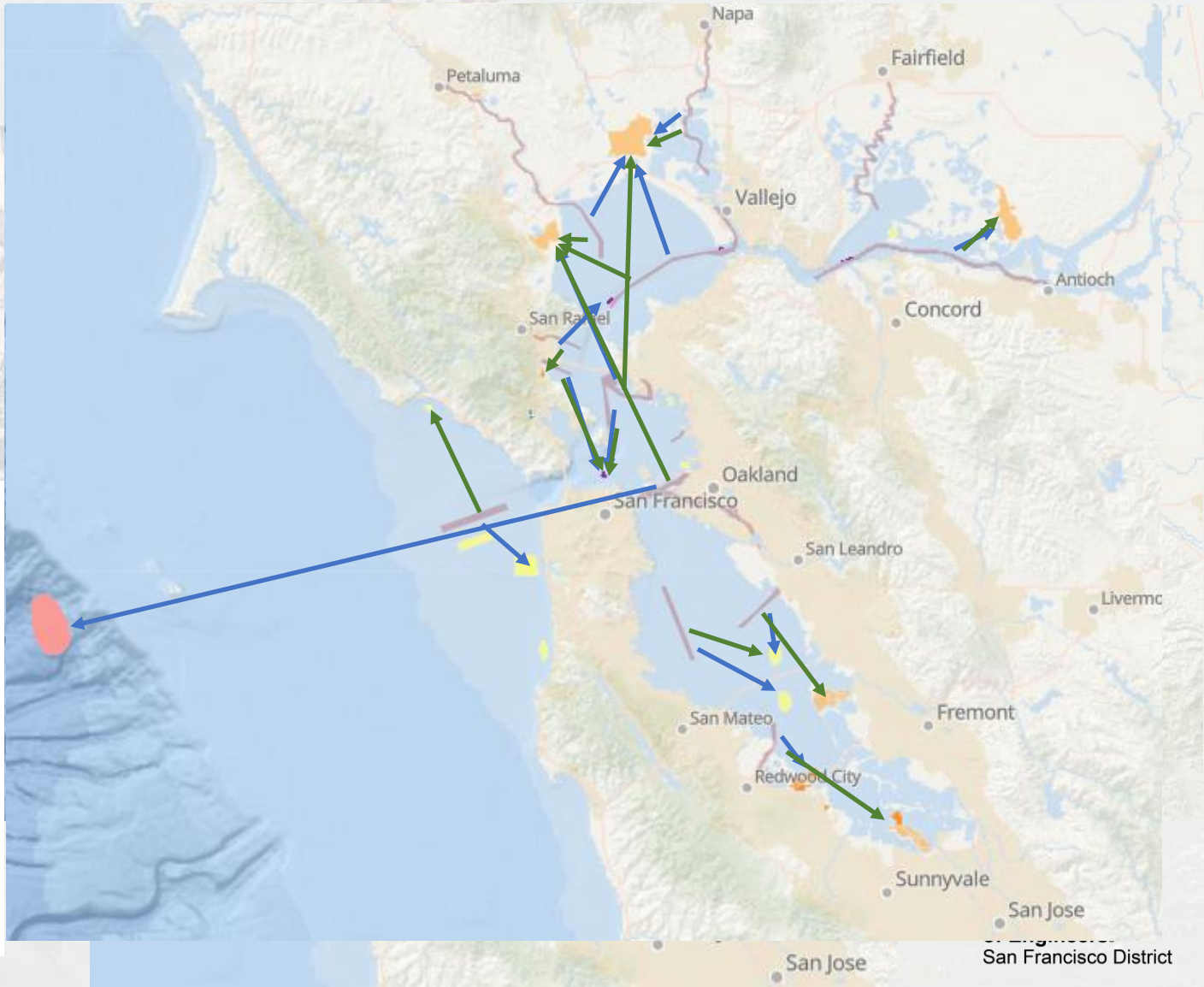
Measures, Strategies, Alternatives

- Example Alternative Themes
  - Future without project condition
  - Maximize Beneficial Use
    - All direct placement sites
    - Direct + EWN techniques
  - otimization
  - timization

	Direct	Strategic	Marsh Spray	Water Column Seeding
Ocean Beach onshore				
Ocean Beach nearshore				
Pacifica onshore				
Pacifica nearshore				
Stinson Beach onshore				
Stinson Beach nearshore				
Montezuma (Suisun Bay)				
Bel Marin Keys (San Pablo Bay)				
Eden Landing (SBSP) (South Bay)				
Skaggs Island (San Pablo Bay)				
Alviso Creek (SBSP)				
Ryer Island nearshore				
Giant Marsh nearshore				
Emeryville Crescent nearshore				
Stege Marsh nearshore				
Whale's Tail marsh nearshore				
Cogswell marsh nearshore				
Faber Tract				
Pond A6				
Ravenswood (SBSP)				
Corte Madera Marsh				
Arrowhead Marsh				



Breakout Session 2: Placement sites and methods

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Breakout Session #2 Instructions

Identify where there is need for sediment in SF Bay.

- New sites
  - Petaluma River Ranch
    - Port Sonoma Marina is user of that site
    - Potential multi-user site during 2011 DMMP effort
    - Sonoma Land Trust took it over and transitioned from farming to restoration
    - 18 million CY capacity
    - Still a desire to receive dredged material to meet restoration objectives
    - Easement currently on it
  - Joyce Island
    - Currently being permitted
  - Castro Cove (near Chevron Refinery)
    - Restoration site
  - Deer Island Basin in Novato Baylands
  - McInnis Marsh (north of Gallinas Creek)
  - Half Moon Bay on outer coast
  - Rockaway Beach in Pacifica
  - Sears Point still needs sediment (tidal connections already exist)
  - West Cullinan
  - San Rafael is one of most threatened cities by SLR
    - Shorelines there could submit requests and realize important benefites
- What are the benefits associated with new sites?
  - Larger sites provide more opportunity for dredgers and investment in the infrastructure
  - Focus BU sites on providing benefits to the species we're affecting by dredging
    - CDFW – this could get them on board with more hydraulic dredging
  - Flooding, restoration, etc.
  - Sites are at different elevations and benefits are different (/will be realized at different times)
- What are the placement methods and constraints for new sites?
  - Cutterhead vs. clamshell for offloader
  - Size of offloader?
  - How big of a site to get the benefits and investment necessary
  - Mixed in-bay and upland can be cost competitive
  - Extensive sediment transport analysis and monitoring of our placed sediment
  - Coarse sediment – can we take out of non-dispersive sites and use that in a beneficial manner to allow for more placement site capacity?
  - Leverage offloading infrastructure at BMK for other sites in north bay
  - Not enough sediment available at some of the sites to achieve shoreline resiliency and the benefits we'd like to see
  - Grant style model to get proposals in for new placement sites that are maybe not first in line but can be incorporated via the 125 process
  - Regionally
    - South Bay is more dispersive
    - North Bay requires a different approach

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Break
Please come back at 11:35

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Group Discussion: Alternative development and criteria for evaluation

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USACE Planning Process

Step 1
- Identifying Problems and Opportunities

Step 2
- Inventorying and forecasting conditions

Step 3
- Formulating alternative plans

Step 4
- Evaluating alternative plans

Step 5
- Comparing alternative plans

Step 6
- Selecting a plan

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Developing Alternatives

What are some themes of alternatives using ingredients discussed (i.e., objectives, constraints, sites, methods, benefits)

- Themes (example: take all suitable material to BU)
  - Theme 1: Dredge access or flood control channels to unlock BU (be creative and expand beyond navigation mission if possible)
  - Theme 2: Take all suitable material to BU
  - Theme 3: Reduce cost by building in efficiencies (network approach for sediment source/placement, governments, etc.)
  - Theme 4: Beach enhancement/nourishment, marsh creation for multiple benefits (i.e., ecology, SLR resilience, etc.)
  - Theme 5: Focus on BU *needs*
  - Theme 6: Provide multiple benefits for historically disadvantaged communities (e.g., **Central Bay**) – more equitable use of resources, focus wetland restoration in regions where people live
  - Theme 7: Develop appropriately scaled projects to accomplish BU goals to build in cost efficiencies and enhance demand for market response

	Alternative 1	Alternative 2	Alternative 3
Theme	Dredge access or flood control channels to unlock BU (be creative and expand beyond navigation mission if possible)	Take all suitable material to BU; Focus on BU *needs*	Reduce cost by building in efficiencies (network approach for sediment source/placement, governments, etc.)
Sites			
Methods			

	Alternative 4	Alternative 5	Alternative 6
Theme	Beach enhancement/nourishment, marsh creation for multiple benefits (i.e., ecology, SLR resilience, etc.) and protect critical infrastructure, recreation, etc. (on the multiple benefits theme)	Provide multiple benefits for historically disadvantaged communities (e.g., **Central Bay**) – more equitable use of resources, focus wetland restoration in regions where people live currently and where they **will** live based on housing development plans	Develop appropriately scaled projects to accomplish BU goals to build in cost efficiencies and enhance demand for market response
Sites	• Ocean Beach onshore/nearshore? • Pacifica (Beach Blvd., Rockaway, Esplanade?) • Surfer's Beach in HMB • Stinson/Bolinas?	• Giant Marsh • Pinole • San Pablo Creek • Chevron • Tiscornia marsh • Bothin marsh • SFEP regional grouping • Carquinez shorelines (Benicia,	

Screening Criteria

- What screening criteria/metrics to evaluate alternatives
  - How much (volume) dredged material goes to BU (restoration)
  - Has market equipment capacity increased in line with needs
    - Is existing equipment being utilized effectively
  - How is BU $$ changing over time on project- and regional-scale
  - Cost savings via SLR resiliency, community health benefits, flood/coastal storm risk reduction benefits
  - Better outreach to engage key stakeholders (quality over quantity)
    - Partner with local sponsors, workshops, public accessibility
  - Time spent dredging and placing
  - Efficiency of dredging/placement methods
  - Funding availability
  - Accomplish navigation mission
  - How many people does each alternative serve (how many communities, how many EJ communities)
  - How much flood reduction, coastal storm risk reduction
  - Is the alternative monitorable?
  - Impacts and benefits to species and habitat
  - Willing financial sponsor
  - Reduce/minimize ocean disposal
  - Is alternative providing multiple benefits

Additional Notes

- Recommendations on future engagement (sp. on equity)
  - Tap in OHTB outreach efforts in Oakland
  - BCDC EJ advisors group
  - Bring EJ groups into the planning room (rather than separate discussions)
  - Women in Environment (Ellen)

Next Steps and Closing

Dr. Arye Janoff
Lead Planner
Regional Dredged Material Management Plan

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Next Steps

- Progressing through the Planning Process – Summer 2023
  - *Formation of Alternatives*
  - *Alternatives Analysis*
  - *Recommended Plan*

- Environmental Agency Coordination – Fall 2023
  - *NEPA Documentation, Public Comment, FONSI (Fall 2023 – Winter 2024)*
  - *RWQCB, BCDC, NMFS, FWS consultations and approvals (Fall 2024 – Winter 2025)*

- Dredging Schedule
  - *Plans and Specifications (Fall 2024 – Winter 2025)*
  - *Dredging (Summer – Fall 2025)*

- Future Updates – Winter 2023 through Summer 2025
  - *Studies and technical reports will inform current and future RDMMP updates*
  - *The RDMMP can be revised if new information warrants changes to the base plan*

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Contact

Dr. Arye Janoff

Lead Planner

Regional Dredged Material Management Plan

Arye.M.Janoff@usace.army.mil

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Closing Reflections

What's something that you learned from the conversations today?

What's one way you'd like to support regional planning moving forward?

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Thank you for joining us!

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