

Sediment Workgroup 2021 Sediment Workgroup Meeting #1

March 18, 2021

1. Update your name and add your affiliation



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- 2. If you joined by computer and phone separately, please merge your connection



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- 3. Unmute yourself and say your name when you start speaking



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- 4. Turn on video when you are speaking



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5. Raise your hand if you have a comment or question



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2.0

Invite

5. Raise your hand if you have a comment or question

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Chat

Record

Share

Leave Meeting

 Use the chat function if you have a comment, question, or technical issue

Participante

Goals for Today

- Re-engage the members of the Sediment Workgroup
- Discuss priorities for 2022 Special Studies
- Decide on proposals to develop for 2022 funding



Agenda for Today

Item	Time
1. Meeting Overview & Introductions	1:00 – 1:20 pm
2. Discussion of Bathymetric Data Gaps	1:20 – 1:50 pm
3a. Discussion of Priorities for 2022 Special Studies (Breakout rooms)	1:50 – 2:40 pm
BREAK	2:40 - 2:50 pm
3b. Report Back on Breakout Room Discussions	2:50 – 3:30 pm
4. Discussion of Logistics for Special Study Proposals	3:30 – 3:50 pm
5. Wrap Up and Announcements	3:50 – 4:00 pm

(please raise your virtual hand)

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Mission

To provide technical oversight and stakeholder

guidance on RMP studies addressing questions about

sediment delivery, sediment transport, dredging,

and beneficial reuse of sediment.





Guiding Management Questions

1. What are acceptable levels of chemicals in sediment for placement in the Bay, baylands, or restoration projects?



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- 2. Are there effects on fish, benthic species, and submerged habitats from dredging or placement of sediment?



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- 3. What are the sources, sinks, pathways and loadings of sediment and sediment-bound contaminants to and within the Bay and subembayments?
- 4. How much sediment is passively reaching tidal marshes and restoration projects and how could the amounts be increased by management actions?



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- 3. What are the sources, sinks, pathways and loadings of sediment and sediment-bound contaminants to and within the Bay and subembayments?
- 4. How much sediment is passively reaching tidal marshes and restoration projects and how could the amounts be increased by management actions?
- 5. What are the concentrations of suspended sediment in the Estuary and its segments?



Workgroup Multi-Year Plan

Element	Study	Funder	Questions addressed	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Sediment Monitoring Strategy	RMP WQIF	1,3,4		50 (238)		78					15
Strategy	Strategy/Workgroup Support	RMP	1,2,3,4			10		10	Workgro	oup supp core pr	oort cove ogram	ered by
Strategy	Sediment Modeling Strategy	RMP	1,2,3,4					26				15
	Sediment Conceptual Model	SEP	1,2,3,4					(142)				
	Sediment Bioaccumulation Guidance	RMP	1			30*		23				
Screening Values	Benthic Index Development	RMP	1			21*						
	Toxicity Reference Value Refinement	RMP	1							40		
Dredging Impacts on	Benthic Invertebrate Assessment	RMP LTMS	2									
Essential Fish Habitat	Light Attenuation Near Dredging	RMP LTMS	1,2						2	0	40	
	DMMO Database and Online Tools	RMP	1			55	Data	abase maintenance	e costs cover	red by co	ore prog	ram
Data Mining	DMMO Data Synthesis	RMP SEP	1,2		12*	(45)					50	
	DMMO Database Enhancement	RMP	1,2						40			
Beneficial	Beneficial Reuse	RMP	1,2				30		34			40
Reuse	Sediment Placement Projects or Planning	RMP	2							75		

Current Workgroup Activities

2020 Special Studies

- Sed Monitoring & Modeling Strategy (SMMS)
- Golden Gate Sediment Flux Modeling Study
- Bathymetric Change Analysis Study Year 2
- Sediment Bioaccumulation Threshold Study

SEPs Funded in 2020

- Bay Sediment Conceptual Model
- Quantifying Flow and Sed Flux from Selected Tribs
- Susp Sed Settling Velocity Study, South SFB
- Suisun Bay Sed Flux and Flocc Study



Current Workgroup Activities

Funded 2021 Special Studies

- Temporal variability in sediment delivery to a South San Francisco Bay salt marsh
- DMMO San Francisco Bay Floating Percentile Method Update
- DMMO database enhancements



Bathymetric Data Gaps

Bruce Jaffe & Theresa Fregoso USGS



RMP REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY

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Priorities for 2022 Special Studies



RMP REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY

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Summer and

• Multi-Year Plan identifies 2022 High Priority general study ideas and budgets





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- We use the newly-completed SMMS to help prioritize specific study ideas





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- We will then be asked to rank the proposals before submitting to TRC (will get ~70% of requested funds)





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- We use the newly-completed SMMS to help prioritize specific study ideas
- We develop 2022 proposals for highest priority study ideas
- We will then be asked to rank the proposals before submitting to TRC (will get ~70% of requested funds)
- Proposals not funded will go on the list for potential SEP funds





MULTI-YEAR PLAN FOR SEDIMENT

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	Sediment Supply Synthesis	RMP USGS	3,4		40 (40)							
	Maintain Stream Gages and Add New Ones	RMP SEP	3,4			(115)						
	Monitor Mallard Island Suspended Load and Bedload Flux	RMP	3,4			30					50	
	Monitor Tributary Suspended Load and Bedload Flux	RMP								75		75
Loading to the Bay	Model Tributary Suspended Load and Bedload Flux	RMP									100	
	Monitor Sediment Flux at Key Locations in the Bay (e.g., major creek mouths downstream of head of tide, mudflats/shallows, major bridges, Golden Gate)	RMP SEP	3,4	33 (98)	(69)	120	(158)			100		100
	Model Current and Future Sediment Flux at Key Locations throughout the Bay	RMP	3,4					45			100	
Sinks &	Monitor Sediment Deposition at Key Locations in the Bay (e.g., creek reaches downstream of head of time, mudflats/shallows)	RMP	3,4						140	60		100
reservoirs	Model Current and Future Sediment Deposition Dynamics throughout the Bay	RMP	3,4							100	100	
	Bathymetric Change Studies	RMP USGS	3,4				77 (5)	77 (5)				



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High Priorities total = \$375k w/ \$60k already allocated

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Table 2 - Priority recommendations for additional sediment studies over the next five years.

Element	Action Category	Priority Recommendation	Relevant Studies	Funding Source	Year
Loading to the	Small tributaries	Continue loads monitoring at existing tributary sites	Alameda, San Lorenzo, and Guadalupe loads (USGS sites)	Alameda County PW / Valley Water	WY 2020 & 2021
Вау	sediment supply	Add monitoring at new tributaries for greater spatial coverage	Belmont, Arroyo Corte Madera del Presidio, Novato, and Walnut	SEP	WY 2020 & 2021
	Flux at x-sections in the Bay	Improve the information for Benicia Bridge x-section for 2002-2019	Livsey & Downing-Kunz	SEP	Expected in 2021
		Initiate shoal flux studies near reference marshes	South San Francisco Bay: Lacy & Thorne	RMP special study	Expected late 2022
	Flux on shoals and into wetlands	Model suspended sediment flux between the Bay axis and shallows			
Transport		Model changes in sediment delivery for future conditions			
Pathways		Model suspended sediment flux at the Golden Gate	McWilliams et al in preparation	RMP special study	Report expected in Q1, 2021
	Golden Gate Bridge flux	Empirical observations of flux at the Golden Gate Bridge	Winter high flow in response to a storm	RMP discretionary	Reactionary
		Develop a proxy for estimating long term SSC flux at the GG Bridge			
Wr	Whole Bay	Developing tools to track sediment sources, sinks, and pathways	On the SEP list		

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Sinks and Reservoirs	Bathymetric change	Filling bathymetry data gaps	On the SEP list		
Sediment Character	Bed character	Bed erodibility estimates in at a variety of locations around the Bay			
Bay Water Column Character	SSC in the	Data on settling velocity and flocculation of different grain sizes for a variety of shoal environments	South San Francisco Bay: Allen et al.	SEP	Report expected late 2021
	water column	Continuous SSC monitoring in the shallows and subembayments	On the SEP list		
	SSC in the water column	Use satellite imagery to analyze turbidity and SSC			
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Our job is to develop proposals for a few high priority projects that total \$315k



On to the Breakout Rooms!

Discussion Questions

- What priority studies identified in the Sediment Monitor and Modeling Strategy do you think should be ranked highest for 2022 funding?
- Are there additional studies that should be considered for 2022 funding (e.g., Strategic Placement)?



On to the Breakout Rooms!

Discussion Questions

- What priority studies identified in the Sediment Monitor and Modeling Strategy do you think should be ranked highest for 2022 funding?
- Are there additional studies that should be considered for 2022 funding (e.g., Strategic Placement)?

Aim to arrive a list of ranked studies based on everyone's "top 3"

A Workgroup member will be asked to record the discussion for the Report Back

We'll meet back in the main room at 2:50 pm. Have fun!



Breakout Rooms!



RMP REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY

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Summer will

Report Back on 2022 Special Studies Discussion



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Transa

Study Ideas Rising to the Top...

Bay axis to bay shallows modeling (Dave - ask Jessie and Karen about using their data for this effort)

- South Bay priority?
- Timing of sediment delivery in relation to restoration

Sediment delivery to the bay for future conditions

- More monitoring on particle size distribution both in headwater and downstream channel stretches
- Could speak to WRMP priorities on SSC in tidal marsh channels
- Linking to climate models
- Inform future decisions on restoration efforts

SSC modeling in shallows and subembayments

Bed erodibility estimates

Linked studies (sediment loads, wetland accretion, monitoring on mudflats)

Flux at the Golden Gate and cross sections of the Bay

Modeling current and future sediment transport and dep dynamics on marshes

Tributary-Bay sediment connection

Movement of mud and sand in the Bay

Continuous suspended sediment monitoring - would help with strategic placement study and useful as a baseline

Tracking sediment sources, sinks, and pathways (modeling and monitoring) Suspended sediment concentration using satellite imagery Remote sensing turbidity - SSC relationships Study to support strategic placement pilot Strategic Placement (physical tracer and modeling study) Proxy for flux at the Golden Gate Toxicity refinement Placement of biosolids Modeling flocculation dynamics Improved Delta flux estimates

Proposal Logistics and Timing



RMP REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY

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Summer will

Proposal Development Timeline

- Mid-March to April 14 Draft proposals developed
- April 15 to April 29 Draft proposals reviewed by Jay, Melissa, and Scott
- April 30 to May 12 Draft proposals revised
- May 13 Final proposals to all Workgroup members in advance of May 20 Workgroup meeting

Quick Wrap-up

Summer and



RMP REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY

sfei.org/rmp

May 20th Meeting Overview

Full Day Zoom Meeting (10 am – 3 pm)

MORNING

 Brief presentations of completed and in-progress studies

AFTERNOON

- Proposal presentations
- Proposal ranking



Announcements from Workgroup Members



RMP REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY

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THANK YOU!



See you on May 20th!

RMP REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY

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