

**SAN FRANCISCO BAY
NUTRIENT MANAGEMENT STRATEGY**

**FY2025 Annual Report &
Overview of FY2025-2026 Work Activities**

September 2025



SFEI Contribution # 1320

1. INTRODUCTION

This report presents an overview of the San Francisco Bay Nutrient Management Strategy (NMS) FY2026 Program and summarizes the status of NMS-funded projects during the first quarter of the year (Q1). After a brief summary of the program plan development process, *Section 2* provides an overview of FY2026 revenue, approved projects, outlines of major work activities, and project statuses. *Section 3* presents a table of NMS-related work products for FY2025 and FY2026 (thus far), along with weblinks to available products. Lastly the *Appendices* summarize additional NMS-related projects supported by other funding sources.

2. FY2026 PROGRAM PLAN

2.1 Process for Developing NMS Program Plans

The NMS annual calendar (July-June) is organized to allow multiple opportunities for discussion and review of upcoming science priorities by the NMS Steering Committee (SC). In general, priorities for the following fiscal year are introduced at the NMS SC's fall meeting and explored again in more detail at its winter meeting. The proposed Program Plan is then reviewed, discussed, and voted on during the May meeting.

The specific projects pursued in this year's annual Program Plan are based on science priorities and related work identified in the 2025-2030 Science Plan, a multi-year workplan developed through priority-setting discussions with the NMS SC during FY2025. During the planning process, the SC selected projects that target the highest priority management questions, science needs, and updated goals for the Nutrient Watershed Permit. The approved 2025-2030 Science Plan can be found here: [link](#).

2.2 FY2026 Revenue

FY2026 revenue came from several sources and totaled \$4,248,000 (Table 1). Funding from the Bay Area Clean Water Agencies (BACWA) via the Nutrient Watershed Permit was \$2,200,000 (R.1). The San Francisco Bay Regional Monitoring Program (RMP) contributed \$256,000 (R.2) in Special Study funding to support the moored sensor network, as well as \$292,000 (R.3) for ship-based monitoring efforts. Lastly, \$1,500,000 (R.4) of the multi-year EPA SFB-WQIF Grant 'Tracking Bay Health' is being used to complement Nutrient Permit funding and advance program priorities.

Table 1 NMS FY2026 REVENUE

FY2026 REVENUE		
R.1	Nutrient Permit: FY2026 Funds	2,200,000
R.2	RMP CY2026 special study funds	256,000
R.3	RMP Contribution to ship-based monitoring	292,000
R.4	EPA SFB-WQIF Grant: Tracking Bay Health	1,500,000
TOTAL		4,248,000

2.3 FY2026 Work Activities and Statuses

Summary descriptions of the NMS work activities being conducted in FY2026 and their statuses are included below. The FY2026 project budgets are summarized in Table 2a, and additional notes are included in Appendix A1. The Continuing Project budgets are summarized in Table 2b, and additional notes are included in Appendix A2. The Additional Projects, which includes work funded by grants from NOAA and the EPA, are summarized in Table 2c, and brief notes are included in Appendices A3, A4, and A5. For detailed information about the FY2026 projects, please see the descriptions in the approved FY2026 Program Plan ([link](#)).

1) **FY2026 Modeling** (CMOD.1-3, CMOD.5, CMOD.7-8, & EMOD.1&2):

Modeling work for FY2026 has been progressing as planned during Q1. Work thus far has primarily focused on advancing key biogeochemical model updates (CMOD.1). During fall 2025 and winter 2026, work will get underway on modeling the 2022 HAB event (CMOD.2), evaluating potential environmental change scenarios (CMOD.3), and developing source apportionment techniques (CMOD.5). The NMS model advisory group (MAG) will be reconvened during Q3 of FY2026 (CMOD.8, FY2024 P3) to review and advise the on-going model updates and improvements, including best strategies for pursuing the remainder of the modeling goals in the 2025-2030 Science Plan. Planning is underway for Lower South Bay (LSB) modeling (EMOD.1&2), and upcoming work during Q2 will include extending the time period over which the LSB model has been calibrated and validated, with other project components moving forward in late-Q2 through Q4.

2) **FY2026 NMS Monitoring** (CMON.1-3 & EMON.5):

FY2026 Monitoring activities have been progressing on-schedule during Q1. San Francisco Bay channel cruises (CMON.1) have been moving ahead as planned. The R/V Peterson goes into drydock for approximately one month in late September for repairs that were identified during FY2025 but postponed until a window when downtime would be least impactful. The NMS moored sensor network (CMON.2) is continuing water quality data collection at existing stations. The NMS recently expanded its network in collaboration with staff from the city of San Jose to include a new station in Coyote Creek in the Lower South Bay. Two new mooring

stations will be added within the coming months, one on the western shore of Alameda and a second in San Pablo Bay. For more information, see the Moored Sensor Program quarterly reports in Table 3. High-speed mapping survey work (CMON.3) is underway, with two South/Central Bay surveys and two North Bay surveys (Central, San Pablo, Suisun) carried out in Q1. Two more surveys (South/Central and North) are planned for mid-September 2025, along with three surveys between March and June 2026.

3) FY2026 NMS Field and Lab Studies (FLOB.1 & FLHAB.1-3):

The FY2026 Field and Lab Studies are all in the early stages. Kick-off meetings have been held for projects that are scheduled to start in Q1 or Q2, and initial plans are being developed. A major focus of work during July and August was on developing scopes and getting subcontracts in place for external contractors, including for the projects related to *Heterosigma* strain sequencing and virus quantification (FLHAB.1-2).

4) FY2026 Synthesis and Assessment Framework Projects (AFHAB.1, SYNOB.1-2, SYNHAB.1-2 & SYNLSB.1):

Like the Field and Lab Studies, the FY2026 Synthesis and Assessment Framework projects are in the early stages. Initial scoping meetings have been held for all new projects, and more intensive work is expected to start in Q2 (AFHAB.1, SYNOB.1-2, SYNHAB.1). For the projects that build directly upon individual projects from previous years, work is ongoing (SYNHAB.2, SYNLSB.1).

5) FY2026 Program Management (PM & SLNHLS.1):

FY2026 Program Management is proceeding as planned, and efforts have been focused on budget planning and management, project prioritization meetings with team members, and contract and project scoping (PM). FY2026 also includes dedicated Science Communication efforts (SYNHLS.1), and an initial science communication plan is being developed.

6) Continuing NMS Projects (Table 2b, Appendix A2):

Most of the FY2025 projects are complete (FY 2025 C1-C4, P1, P5, P7) or will be by the end of 2025 (FY2025 P2-P4). Small pools of remaining labor budgets in some of these projects will be used for finalizing deliverables or advancing related work in FY2026. One smaller project aimed to refine the deep subtidal assessment framework was paused (FY2025 P6), and funds will be used in combination with continuing funds in a separate project (FY2023 P2) to evaluate and update facets of the 2016 AF work after planning discussions in FY2026 Q2.

Many of the continuing projects from FY2022-2024 resulted in work products in late FY2025 and early FY2026 (FY2023 P7, P11; FY2022 P1B, P7, P14) that were shared with the Steering Committee in July 2025 (see Table 3 #1-11, 17, 24). Additionally, the Analysis / Synthesis of 2022 HAB Event Report (3300 031), the State of the Science Report (FY2023 P6), and a report on open-bay reaction and transformation rates (FY2024 P4) are expected in fall of 2025. Two additional projects, the LSB DO Assessment Framework (FY2024 P2) and Coastal Nutrient Fluxes (FY2022 P19), remain slowed due to work re-prioritization and capacity gaps.

7) **Additional Projects** (NOAA and EPA Grants):

Additional Projects include work conducted as part of three nutrient-related projects that are supported by federal grants (NOAA, EPA). The projects' goals and science questions are well-aligned with NMS priorities, and work will be pursued in close coordination with NMS-funded projects.

2.4 NMS Reserve

The amount of funding in the NMS Reserve is estimated at \$225,000 through June 2025. The majority of the NMS Reserve is the product of interest from the NMS LAIF.

Table 2a FY2026 NMS Core Program and Projects

	FY26 Program Plan Code	Projects/Tasks		Budget	Spent thru 8/20/2025*	Encumb.**	Balance 8/20/2025*	% Spent + Encumb.
1	CMOD.1	Biogeochemical Model Development	Total	\$299,935	\$66,168	\$90,000	\$143,767	52%
			Labor	\$189,935	\$66,168	\$0	\$123,767	
			Direct/Sub	\$110,000	\$0	\$90,000	\$20,000	
2	CMOD.2	Predicting the 2022 HAB	Total	\$199,940	\$0	\$100,000	\$99,940	50%
			Labor	\$99,940	\$0	\$0	\$99,940	
			Direct/Sub	\$100,000	\$0	\$100,000	\$0	
3	CMOD.3	Environmental Change Scenarios	Total	\$49,859	\$0	\$0	\$49,859	0%
			Labor	\$49,859	\$0	\$0	\$49,859	
			Direct/Sub	\$0	\$0	\$0	\$0	
4	CMOD.5	Source Apportionment	Total	\$30,080	\$0	\$20,000	\$10,080	66%
			Labor	\$10,080	\$0	\$0	\$10,080	
			Direct/Sub	\$20,000	\$0	\$20,000	\$0	
5	CMOD.7	Model Infrastructure	Total	\$69,816	\$402	\$20,000	\$49,414	29%
			Labor	\$24,816	\$402	\$0	\$24,414	
			Direct/Sub	\$45,000	\$0	\$20,000	\$25,000	
6	CMOD.8	Convene the NMS MAG	Total	\$35,000	\$0	\$20,000	\$15,000	57%
			Labor	\$5,000	\$0	\$0	\$5,000	
			Direct/Sub	\$30,000	\$0	\$20,000	\$10,000	
7	EMOD.1& 2	LSB Simulations: Fluxes, Transformations, System Responses	Total	\$49,938	\$0	\$30,000	\$19,938	60%
			Labor	\$19,938	\$0	\$0	\$19,938	
			Direct/Sub	\$30,000	\$0	\$30,000	\$0	
8	CMON.1	Ship-based Monitoring	Total	\$601,824	\$4,721	\$531,140	\$65,963	89%
			Labor	\$49,968	\$0	\$0	\$49,968	
			Direct/Sub	\$551,856	\$4,721	\$531,140	\$15,995	
9	CMON.2	Moored Sensors	Total	\$706,014	\$48,415	\$307,092	\$350,507	50%
			Labor	\$393,413	\$46,534	\$0	\$346,879	
			Direct/Sub	\$312,601	\$1,881	\$307,092	\$3,628	

	FY26 Program Plan Code	Projects/Tasks		Budget	Spent thru 8/20/2025*	Encumb.**	Balance 8/20/2025*	% Spent + Encumb.
10	CMON.3	Shoal Mapping	Total	\$299,978	\$13,436	\$271,997	\$14,545	95%
			Labor	\$21,825	\$7,280	\$0	\$14,545	
			Direct/Sub	\$278,153	\$6,156	\$271,997	\$0	
11	EMON.5	Data Management	Total	\$75,038	\$7,877	\$0	\$67,161	10%
			Labor	\$75,038	\$7,877	\$0	\$67,161	
			Direct/Sub	\$0	\$0	\$0	\$0	
12	FLOB.1	Monitor Changes from POTW Load Reductions	Total	\$100,043	\$280	\$0	\$99,763	0%
			Labor	\$70,043	\$280	\$0	\$69,763	
			Direct/Sub	\$30,000	\$0	\$0	\$30,000	
13	FLHAB.1	Investigate the 2022 Heterosigma Strain	Total	\$100,442	\$1,426	\$59,000	\$40,017	60%
			Labor	\$17,442	\$1,403	\$0	\$16,039	
			Direct/Sub	\$83,000	\$23	\$59,000	\$23,978	
14	FLHAB.2	Investigate the Weak Top-down Pressure, Summer 2022 (Virus)	Total	\$100,628	\$143	\$89,000	\$11,485	89%
			Labor	\$11,628	\$143	\$0	\$11,485	
			Direct/Sub	\$89,000	\$0	\$89,000	\$0	
15	FLHAB.3	Understanding HAB Biology (toxins under varied enviro. conditions)	Total	\$100,628	\$0	\$50,000	\$50,628	50%
			Labor	\$11,628	\$0	\$0	\$11,628	
			Direct/Sub	\$89,000	\$0	\$50,000	\$39,000	
16	AFHAB.1	Heterosigma Direct Lethality	Total	\$49,939	\$143	\$35,000	\$14,796	70%
			Labor	\$14,939	\$143	\$0	\$14,796	
			Direct/Sub	\$35,000	\$0	\$35,000	\$0	
17	SYNOB.1	High Priority Datasets (Turbidity & Zooplankton)	Total	\$99,966	\$0	\$10,000	\$89,966	10%
			Labor	\$59,966	\$0	\$0	\$59,966	
			Direct/Sub	\$40,000	\$0	\$10,000	\$30,000	
18	SYNOB.2	Semi-empirical Estimates of N Losses	Total	\$119,853	\$0	\$10,000	\$109,853	8%
			Labor	\$89,853	\$0	\$0	\$89,853	
			Direct/Sub	\$30,000	\$0	\$10,000	\$20,000	
19	SYNHAB.1	Analysis of Multi-year HAB and Toxin Data (HAB/phytoplankton-communit y conceptual model)	Total	\$109,334	\$2,738	\$0	\$106,596	3%
			Labor	\$70,334	\$2,640	\$0	\$67,694	
			Direct/Sub	\$39,000	\$98	\$0	\$38,902	

	FY26 Program Plan Code	Projects/Tasks		Budget	Spent thru 8/20/2025*	Encumb.**	Balance 8/20/2025*	% Spent + Encumb.
20	SYNHAB.2	Analysis of Long-term Forcings and Conditions	Total	\$50,753	\$0	\$0	\$50,753	0%
			Labor	\$50,753	\$0	\$0	\$50,753	
			Direct/Sub	\$0	\$0	\$0	\$0	
21	SYNLSB.1	LSB Synthesis (Model Application, Workplan)	Total	\$49,911	\$570	\$5,000	\$44,341	11%
			Labor	\$39,911	\$570	\$0	\$39,341	
			Direct/Sub	\$10,000	\$0	\$5,000	\$5,000	
22	SYNHLS.1	Science Communication	Total	\$99,175	\$470	\$16,000	\$82,705	17%
			Labor	\$83,175	\$470	\$0	\$82,705	
			Direct/Sub	\$16,000	\$0	\$16,000	\$0	
23	PM	Program Management	Total	\$849,903	\$97,864	\$16,000	\$736,039	13%
			Labor	\$813,903	\$96,640	\$0	\$717,263	
			Direct/Sub	\$36,000	\$1,224	\$16,000	\$18,776	
		subtotal		\$4,247,997	\$244,652	\$1,680,229	\$2,323,116	45%

*Total spending (labor, direct, subcontracts) through August 20, 2025.

**Encumbered: Funds that are included in subcontracts but not yet spent or invoiced

***Balance = Budget - (Spending through August 20, 2025 + Encumbered)

Table 2b Continuing NMS Projects

	FY	Projects/Tasks		Budget	Spent thru 8/20/2025*	Encumb.**	Balance 8/20/2025*	% Spent + Encumb.
1	FY25	P1 Shoal Mapping	Total	\$112,780	\$28,073	\$76,797	\$7,910	93%
			Labor	\$10,841	\$2,931	\$0	\$7,910	
			Direct/Sub	\$101,939	\$25,142	\$76,797	\$0	
2	FY25	P2 Synthesis: Nutrient-Phytoplankton Linkages	Total	\$119,720	\$37,786	\$9,608	\$72,326	40%
			Labor	\$109,720	\$37,394	\$0	\$72,326	
			Direct/Sub	\$10,000	\$392	\$9,608	\$0	
3	FY25	P3 Synthesis: Long-term Forcings	Total	\$119,488	\$50,438	\$10,000	\$59,050	51%
			Labor	\$109,488	\$50,438	\$0	\$59,050	
			Direct/Sub	\$10,000	\$0	\$10,000	\$0	
4	FY25	P4 Support for Environmental Analyst	Total	\$70,381	\$25,291	\$0	\$45,090	36%
			Labor	\$70,381	\$25,291	\$0	\$45,090	
			Direct/Sub	\$0	\$0	\$0	\$0	
5	FY25	P6 Assessment Framework: Deep subtidal	Total	\$10,000	\$0	\$0	\$10,000	0%
			Labor	\$10,000	\$0	\$0	\$10,000	
			Direct/Sub	\$0	\$0	\$0	\$0	
6	FY25	P7 Relaunch Mussel Sampling during Summer 2024	Total	\$14,000	\$9,300	\$4,700	\$0	100%
			Labor	\$9,300	\$9,300	\$0	\$0	
			Direct/Sub	\$4,700	\$0	\$4,700	\$0	
7	FY24	P2 LSB DO Assessment Framework	Total	\$163,187	\$75,186	\$12,340	\$75,661	54%
			Labor	\$128,187	\$58,526	\$0	\$69,661	
			Direct/Sub	\$35,000	\$16,660	\$12,340	\$6,000	
8	FY24	P3 MAG Continuation	Total	\$40,000	\$0	\$35,000	\$5,000	88%
			Labor	\$0	\$0	\$0	\$0	
			Direct/Sub	\$40,000	\$0	\$35,000	\$5,000	

	FY	Projects/Tasks		Budget	Spent thru 8/20/2025*	Encumb.**	Balance 8/20/2025*	% Spent + Encumb.
9	FY24	P4 Open-Bay Reaction/ Transformation Rates	Total	\$57,829	\$51,577	\$0	\$6,252	89%
			Labor	\$37,132	\$30,880	\$0	\$6,252	
			Direct/Sub	\$20,697	\$20,697	\$0	\$0	
10	FY23	P2 Assessment Framework Deep Subtidal	Total	\$174,123	\$110,187	\$55,130	\$8,806	95%
			Labor	\$85,553	\$81,190	\$0	\$4,363	
			Direct/Sub	\$88,570	\$28,997	\$55,130	\$4,443	
11	FY23	P6 High-level Synthesis, Multi-year Report	Total	\$115,651	\$63,934	\$1,754	\$49,963	57%
			Labor	\$76,596	\$26,633	\$0	\$49,963	
			Direct/Sub	\$39,055	\$37,301	\$1,754	\$0	
12	FY23	P11 Trend Synthesis	Total	\$106,279	\$70,341	\$10,348	\$25,590	76%
			Labor	\$84,484	\$60,546	\$0	\$23,938	
			Direct/Sub	\$21,795	\$9,795	\$10,348	\$1,652	
13	FY22	P14 HAB Synthesis	Total	\$75,000	\$61,608	\$6,819	\$6,573	91%
			Labor	\$30,766	\$24,193	\$0	\$6,573	
			Direct/Sub	\$44,234	\$37,415	\$6,819	\$0	
14	FY22	P19 Coastal Nutrient Fluxes	Total	\$325,000	\$160,611	\$154,389	\$10,000	97%
			Labor	\$10,000	\$0	\$0	\$10,000	
			Direct/Sub	\$315,000	\$160,611	\$154,389	\$0	
15	FY 23/24	3300 031 Supplemental Environmental Projects: HAB Funding	Total	\$252,300	\$232,299	\$0	\$20,001	92%
			Labor	\$229,290	\$209,289	\$0	\$20,001	
			Direct/Sub	\$23,010	\$23,010	\$0	\$0	
		subtotal		\$1,755,738	\$976,631	\$376,885	\$402,222	77%

*Total spending (labor, direct, subcontracts) through August 20, 2025.

**Encumbered: Funds that are included in subcontracts but not yet spent or invoiced

Table 2c Additional Projects

Overall Goal(s)	Tasks/Focus Areas	Project Period & Funding	Funder, Team
NOAA-MERHAB Develop and implement a robust HAB monitoring program for the San Francisco Estuary For more details, see Appendix A3.	- Develop/apply remote sensing algorithms (chl, HAB metrics) - Molecular-techniques for detecting/quantifying HAB-taxa - Augment in-situ continuous monitoring - HAB data-dashboard (informing managers, regulators, stakeholders)	Oct 2023 - Sep 2027 Total: \$2.99 mill FY26: ~\$500,000	NOAA-MERHAB <i>Team:</i> SFEI, USGS, DWR UCSC, Baykeeper, Water Board
<i>"Destination Clean Bay"</i> Create models and decision-support-tool development for nutrient management For more details, see Appendix A4.	- Develop/apply numerical modeling approaches to nutrient source apportionment and management alternative evaluation - Sediment transport modeling - Simulate future environmental scenarios and assess effective management options	Dec 2023 - Nov 2027 Total: \$1.8 mill (nutrient-related funding) FY26: ~\$460,000	EPA-WQIF <i>Team:</i> SFEI, USGS, UCSC, RMA
<i>"BayInsight"</i> Identify high-priority monitoring needs and augment or refine monitoring activities to address needs For more details, see Appendix A5.	- Stakeholder engagement, including building collaborations with programs with monitoring mandates - Data analysis/interpretation to identify high-priority/high-leverage needs (parameters/indicators, regions, techniques); - Identify 'optimal' monitoring program design and implement/augment/refine program components	Jun 2024 - May 2028 Total: \$2.99 mill FY26: ~\$675,000	EPA-WQIF <i>Team:</i> SFEI, USGS, DWR

3. WORK PRODUCTS

NMS-related work products from FY2025 and FY2026 through 9/1/2025 are compiled in Table 3, along with associated links.

Table 3 Work Products: FY2025 and FY2026 through 9/1/2025

1	<i>Reports:</i> a) NMS Moored Sensor Program, FY2025 Update #1 b) NMS Moored Sensor Program, FY2025 Update #2	Link #1 Link #2
2	<i>Report:</i> Trend Synthesis Report: chl, GPP, DO (2025)	Link
3	<i>Report:</i> LSB Factors Influencing High-Biomass/Low-DO Report (2025)	Link
4	<i>Report:</i> Expanded Dissolved Oxygen Monitoring in the Lower South Bay (2025 DO/miniDOT Evaluation)	Link
5	<i>Report:</i> Investigating chl-HAB Indicators (2025 Submitted Manuscript)	Link
6	<i>Report:</i> Tools for improved HAB Classification: (eDNA) Classification Method Improvements (2025)	Link
7	<i>Report:</i> HAB Synthesis Technical (2025)	Link
8	<i>Report:</i> Monitoring Program Integration and Optimization (2025)	Link
9	<i>Report:</i> 2022 HAB Event Interpretation Manuscript: Grazers & Community Analysis (2025)	(submitted to journal)
10	<i>Report:</i> HAB Monitoring Program Development: Progress Update (2025)	Link
11	<i>Report:</i> Turbidity/Suspended Sediment Monitoring Report (2025)	Link
12	<i>Report:</i> Production explains spatial variations of nutrient availability and pH across the South SF Bay shoals (2024)	Link
13	<i>Memo:</i> 2025 Summer Conditions for HAB-growth Tracking	Link
14	<i>Report:</i> Microbial Nitrogen Removal in South San Francisco Bay: Does It Play a Role in Eutrophication Resistance? (2025)	Link
15	<i>Report:</i> Interannual Ecosystem Metabolism of an Estuarine Delta Measured Using a High Frequency Sensor Array (Draft Oct 2024)	Link
16	<i>Webtool:</i> Water quality trends: Include longer data records (back to 1980s, when available) and dissolved inorganic nitrogen (e.g., DIN).	Link
17	<i>Webtool:</i> POTW Loads over time: data explorer	Link

18	<i>Webtool:</i> San Francisco Bay Water Quality Data Viewer: USGS cruises 1980-present; time-series and channel cross-section data	Link
19	<i>Webtool:</i> Remote sensed data webtool for San Francisco Bay. Sentinel-3 chlorophyll and turbidity : daily automated fetch/process/plot. <i>Links to the right are for Jul-Aug 2023 imagery</i>	chl link turb link
20	<i>Dataset:</i> Chl, DO, and other data from Alcatraz mooring (chl, DO start August 2023), in collaboration with USGS	Link
21	<i>Dataset:</i> DO sensors installed at near-bottom and mid-depth on the San Mateo Bridge and the Dumbarton Bridge; data available via telemetry.	DMB SMB
22	<i>Dataset:</i> Processed remote-sensed chlorophyll-a: October 2024-August 2025. Data are processed and updated daily. Data are being used for model calibration and validation as well as data analysis and synthesis. <i>Link to the right is for 2/1/2024 imagery</i>	Link
23	<i>Dataset:</i> Processed remote-sensed turbidity: October 2024-August 2025. Data are processed and updated daily. Data are being used for model calibration and validation as well as data analysis and synthesis. <i>Link to the right is for 2/1/2024 imagery</i>	Link
24	<i>Dataset:</i> Updated 18S HAB Data: HAB Re-classified Dataset & Toxins Datasets	Used in #6, 7, & 10

Appendix A1: FY 2026 NMS Core Program and Project Overviews

	FY26 Program Plan Code	Projects/Tasks	Notes
1	CMOD.1	Biogeochemical Model Development	Work is underway on testing improvements to the biogeochemical model as well as model calibration.
2	CMOD.2	Predicting the 2022 HAB	Initial work is underway with the main work planned to begin during Fall 2025. [The total project budget is \$300,000; with \$100,000 of funding coming from a separate WQIF grant]
3	CMOD.3	Environmental Change Scenarios	Main work is planned to begin during Fall 2025. [The total project budget is \$150,000; with \$100,000 of funding coming from a separate WQIF grant]
4	CMOD.5	Source Apportionment	Progress was made on initial simulations and method development during Q1. [The total project budget is \$100,000, with \$70,000 coming from a separate WQIF grant, and that labor is not reflected here]
5	CMOD.7	Model Infrastructure	Work will occur as needed throughout FY26. [The total project budget is \$100,000, with \$30,000 coming from a separate WQIF grant]
6	CMOD.8	Convene the NMS MAG	Initial planning is underway. Planning work will continue with the NMS-SC modeling subcommittee during Fall 2025 for MAG meeting planning, charge questions, etc. [The total project budget is \$75,000, with \$40,000 coming from the FY24 P3 project]
7	EMOD.1&2	LSB Simulations: Fluxes, Transformations, System Responses	Initial scoping is underway for early work. Upcoming work during Q2 will include extending the time period over which the LSB model has been calibrated/validated. Other project components will get underway in late-Q2.
8	CMON.1	Ship-based Monitoring	FY26 Peterson Cruises are proceeding as planned. The ship will be dry-docked in late September to perform necessary repairs that were identified during FY25 and postponed until a window when downtime would be least impactful.
9	CMON.2	Moored Sensors	Moored sensor maintenance is proceeding as planned. A new sensor was added in Coyote Creek and two new sensors are planned for Seaplane Lagoon and San Pablo Bay. Installation is dependent on agency permissions, but the goal is to have both installed before the end of 2025.

11	CMON.3	Shoal Mapping	Work is underway. Two South/Central Bay surveys and two North Bay surveys (Central, San Pablo, Suisun) have been carried out so far this fiscal year (July, August). Additional surveys (South and North) are planned for mid-September 2025. Three additional surveys will be carried out between March and June 2026.
12	EMON.5	Data Management	Initial data management priorities have included documenting and publishing the HAB sequencing and toxin data, along with mooring data QA/QC.
13	FLOB.1	Monitor Changes from POTW Load Reductions	Work plan development is underway, which will include early data analysis to inform the plan.
14	FLHAB.1	Investigate the 2022 Heterosigma Strain	Work on detailed scoping and contracting is underway. Initial project meetings were held, and lab work will begin in Q2.
15	FLHAB.2	Investigate the Weak Top-down Pressure, Summer 2022 (Virus)	Subcontracts are in-progress. Encumbered funds will increase accordingly. Initial project meetings have been held with the subcontractors.
16	FLHAB.3	Understanding HAB Biology (toxins under varied enviro. conditions)	The subcontract is in place with UCSC for the lab component of study. See AFHAB.1 below for the expert workshop that will also inform this work.
17	AFHAB.1	Heterosigma Direct Lethality	Initial planning process for expert workgroup will start in fall 2025. Encumbered funds to be used for workgroup honoraria.
18	SYNOB.1	High Priority Datasets (Turbidity & Zooplankton)	Project work will begin fall 2025.
19	SYNOB.2	Semi-empirical Estimates of N Losses	Project work will begin fall 2025.

20	SYNHAB.1	Analysis of Multi-year HAB and Toxin Data (HAB/phytoplankton-community conceptual model)	Subcontracts are in-progress. Encumbered funds will increase accordingly. Initial project scoping has begun, and work will get underway in Q2.
21	SYNHAB.2	Analysis of Long-term Forcings and Conditions	FY26 project work will begin after remaining FY25 project work has concluded (FY25 P3).
22	SYNLSB.1	LSB Synthesis (Model Application, Workplan)	Related work is underway under EMOD1&2 (model updates). Synthesis work and workplan development will begin in late Q2 or Q3.
23	SYNHLS.1	Science Communication	Science communication work has been moving ahead supported by FY23 P6 so far this FY. Work under this project will get underway in Q2, including executive summaries for recent technical reports and developing an overarching science communication plan.
24	PM	Program Management	Early FY26 program management included budget planning and management, project prioritization meetings with team members, and contract and project scoping.

Appendix A2: Continuing NMS Project Overviews

	FY	Projects/Tasks	Notes
1	FY25	P1 Shoal Mapping	Remaining funds at the end of FY25 (\$7910) will be used to support mapping-related work in Q1 of FY26, including planning for and joining mapping surveys, data management, and working with the modeling team to support the use of mapping data for model development.
2	FY25	P2 Synthesis: Nutrient-Phytoplankton Linkages	This project has been focusing on continued in-depth analysis of space-time variability in water quality data from mapping surveys collected during 2021-2024 (and now 2025) to investigate/quantify underlying processes shaping observed nutrient, phytoplankton biomass, and oxygen concentrations. Some of the funding was used to complete an October 2024 technical report [link] . Work on this project will be moving ahead in late Q1 and Q2-Q3.
3	FY25	P3 Synthesis: Long-term Forcings	Work has been moving forward on processing satellite turbidity estimates from 2002-2011, early comparisons between 2002-2011 and 2017-present turbidity, and convening technical advisors (NOAA, UCSCS) for four meetings between Dec 2024-May 2025. In recent months, work shifted to troubleshooting and revising 2002-2011 atmospheric corrections and compiling field data for validating turbidity estimates across the two eras. Work will also be supported with FY26 funds in SYNHAB.2.
4	FY25	P4 Support for Environmental Analyst	The NMS-SC approved reallocating \$55,000 to increase the mooring program's staff capacity and help support hiring a new staffer. Reallocation was proposed because the original project was no longer possible due to staff changes at USGS. \$15,000 in labor remains here to allow for SFEI staff to contribute to work related to the original project that will be moving forward in FY26.
5	FY25	P6 Assessment Framework: Deep subtidal	These funds were originally intended to support AF-related science planning in FY25, but other funding was used to support overall science planning, which ended up encompassing AF-related planning. The funding will now be used in FY26 for AF related planning in FY26 in combination with FY23 P2.
6	FY25	P7 Relaunch Mussel Sampling during Summer 2024	The summer/fall 2024 sampling was completed. No funding was allocated to support continued sampling in FY25 or FY26, The summer/fall 2024 samples have been archived along with mussel samples from prior years for future measurements of additional toxins when funding allows. The remaining funds will cover the cost of sample storage/archiving (freezer facility).

7	FY24	P2 LSB DO Assessment Framework	Substantial progress was made on this project in FY24. Work was paused in FY25, but it is being restarted in FY26. Remaining funds will be used to complete the originally-planned activities, including reconvening a subset of the expert group to develop an overarching LSB DO AF report (evaluating different lines of evidence, strengths/limitations) as well as wrapping some remaining data analysis and the related write-up.
8	FY24	P3 MAG Continuation	This funding will be used to support the FY26 MAG project (CMOD.8).
9	FY24	P4 Open-Bay Reaction/Transformation Rates	This project is working to develop and apply techniques for inferring reaction/transformation rates using open-Bay mooring data. Work is nearly complete on an initial technical report describing the approach(es) and interpretations.
10	FY23	P2 Assessment Framework Deep Subtidal	This project is building on and updating prior AF work from 2015-2016. The second phase of the project started in FY2023, but it was put on hold due to the August 2022 HAB event. One primary focus of this project has been in-depth analyses exploring relationships between chl and HAB relative abundance using the updated eDNA/molecular data 2015-2022 as a next step in identifying potential indicators or thresholds for assessing condition. A draft technical report was shared in late October 2024. That was recently updated and improved as part of submitting to a journal for publication, with that version shared in July 2025 The second component of the project was intended to evaluate or update other facets of the 2016 AF work. The plan is to move planning related to that work forward in FY26 Q2 discussions that will also be supported by the continuing funds in FY25 P6.
11	FY23	P6 High-level Synthesis, Multi-year Report	Work has been moving ahead on high-level synthesis products, including a 'state of the science report', a draft of which will be shared at the September 2025 SC meeting.

12	FY23	P11 Trend Synthesis	A technical report for this project was completed in July 2025 that, in addition to evaluating trends for chl, also included trends for GPP, dissolved oxygen, and dissolved inorganic nitrogen. The report also explored the influence of trend window size on magnitude or significance of trends and compared trends in high-frequency turbidity data at the Dumbarton Bridge with chl and GPP trends in the southern half of South Bay. Other recent work products associated with this project include updates to the WQ-trend webtool, which added DIN to the list of water quality parameters, extended the time period evaluated through 2024, and expanded the trend analyses to stations in San Pablo Bay and Suisun Bay. During Fall 2025 work will assess potential next steps with remaining funds, e.g., exploring underlying factors leading to water quality changes, and how to best pursue that work, including in conjunction with results from other projects (e.g., results from FY25 P3)
13	FY22	P14 HAB Synthesis	After needing to pause this project to improve the phytoplankton and HAB classifications (both sample analyses and bioinformatics), an updated draft report was shared in July 2025. Remaining work on this project includes: i) adding some additional interpretations into the discussion; ii) reconvening the expert group and incorporating any remaining feedback from that group. A goal has been to submit this work for publication in a peer-reviewed journal, but additional funding may be needed to reach that goal.
14	FY22	P19 Coastal Nutrient Fluxes	Combines FY21&FY22 funds. This project was launched as a multi-group collaboration investigating the effects of SFB nutrients along the coast. The project was paused due to postdoc turnover during and after covid. Work will resume in FY26 in collaboration with SCCWRP, UCLA, and UCSC. The project has two work products so far (Zhou et al. 2023; Cooper et al. 2024).
15	FY 23/24	3300 031 Supplemental Environmental Projects: HAB Funding	These funds were secured to support HAB monitoring, assessment, and synthesis work in the wake of the 2022 Heterosigma bloom in SF Bay. Remaining funds are being reserved for completing the technical report write-up and manuscript submission. The goal for completing the report is October 2025.

Appendix A3: Overview of NOAA-MERHAB Project

- The overarching goal of the San Francisco Estuary (SFE) MERHAB project (SFE-MERHAB) is to establish the technical foundation, program design, and strategic plan for implementing a robust Estuary-wide HAB monitoring program
- Project Objectives
 - Enhance monitoring data resources to include rapid detection of HAB events and improve the understanding of HAB drivers and ecology
 - Invest in new technologies and tools including: remote sensing, molecular tools, and expanded in-situ continuous monitoring
 - Invest in community science
 - Integrate data streams and decision support tools
 - Gather and integrate datasets from existing, new, and system-wide sources
 - Develop SF Estuary HAB Dashboard
 - Fill data and knowledge gaps about HAB toxin production and transport to inform monitoring strategies across ecological and management boundaries.
 - Develop a coordinated HAB monitoring and management strategy across the Estuary to improve HAB event response and manage HAB impacts
- For more details:
 - [Project webpage](#)

Appendix A4: Overview of EPA WQIF Project, Destination Clean Bay

- Destination Clean Bay is a joint project with the RMP that has a total budget of \$3 million, approximately \$1.5 million of which directly targets NMS science priorities. Those priorities focus on developing modeling tools and approaches and applying them to investigate management options
- The modeling work includes several nutrient-focused technical areas that are important for upcoming NMS priorities (\$600,000 budget for the following nutrient modeling tasks)
 - development of modeling approaches and/or post-processing approaches for tracking point source zones of influence and quantifying relative nutrient contributions (source apportionment);
 - identifying meaningful/useful future scenarios, and simulating those future scenarios (environmental-change scenarios) to characterize impacts, and to the extent possible investigate frequency or probability of occurrence and risk;
 - simulating and analyzing management scenarios (e.g., load reductions);
 - support for community modeling: support for model documentation, making model publicly available (versions/code, data, documentation) as a research or management tool for the science/management community.
- Early NMS modeling work identified light attenuation coefficient data ($K_d = f(SSC)$) as an important data gap. The project will include the development and calibration/validation of a sediment transport model for SSC, driven by the NMS hydrodynamic model. Sediment transport modeling work is being pursued in collaboration with the RMP's PCB modeling effort. Most of the early sediment transport work has focused on regions/approaches that are primarily relevant to PCB modeling. NMS-focused sediment transport work will ramp up during FY2026
- Supporting shoal mapping work is also included, and project funds will be support mapping surveys and related sample analysis/data QA
- Processing and analysis/calibration-validation of remote-sensed products for primarily sediment/ K_d , and potentially some work on chl-a. Sediment/ K_d RS-data products will be used for calibrating/validating sediment transport models, and will also be used for updating/improving the interim semi-empirical K_d data being used, with the RS data providing valuable insights into sediment/ K_d levels along the shoals. RS-chl-a products will be used for water quality model calibration, and may also contribute to early-warning system development. (Total funding \$200k)

Appendix A5: Overview of EPA WQIF Project, BayInsight

- BayInsight is a \$3 million dollar project with the overarching goal of enhancing water quality monitoring to inform nutrient management in San Francisco Bay. This project will integrate and optimize existing water quality monitoring programs in the Bay, build long-term monitoring capacity through the expansion of monitoring networks, and conduct targeted monitoring of specific upgrade activities.
- The primary objectives of the project are to:
 - Develop collaborations with other monitoring entities with the goal of integrating and optimizing monitoring efforts
 - Expand the NMS's long-term monitoring network to fill high priority data gaps
 - Assess water quality impacts of specific management actions
 - Model nutrient scenarios for different upgrade actions and mitigation against future blooms
- Work on the BayInsight project began in March 2024 and will continue until March 2028.
- A monitoring workgroup meeting was held at SFEI in July, with 19 attendees from agencies and organizations beyond the NMS. Participants discussed current monitoring gaps and collaborative opportunities for addressing these gaps. Various subgroups have stemmed from this initial meeting and they will target key questions such as how to collect more monitoring data near the Golden Gate.
- The SFEI field team is in the process of deploying two new moored sensor stations- one in Seaplane Lagoon near the initiation of the 2022 HAB event, and one on the shallow shoals of San Pablo Bay where there is very limited high frequency data.
- Other FY26 activities will include data analysis to inform monitoring, the continued development of a data dashboard in collaboration with the MERHAB project, interpretation of high frequency data in the LSB and Delta to quantify the effects of nutrient reduction strategies, and additional expansions to ecosystem-scale long term monitoring in the Bay.