



**Morro Bay National Estuary Program
Infrastructure Investment and Jobs Act (IIJA)
Semi-Annual Report
October 1, 2024 to September 30, 2025
(FY25 Workplan)**

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Contents

1. Introduction 4
 Morro Bay National Estuary Program (Estuary Program)..... 4

2. NEP IIJA Priorities 5

3. Project updates 7
 Capacity Building..... 7
 Capacity-1: Capacity Building..... 7
 Environmental Monitoring and Research 8
 Monitoring-1: Tracking Bay Health 8
 Monitoring-2: Tracking Creek Health..... 9
 Monitoring-3: Eelgrass Monitoring and Research 11
 Monitoring-4: Data Analysis and Management 12
 Habitat Restoration and Protection..... 13
 RESTORATION-1: Invasive Species Management 13
 RESTORATION-2: Habitat Restoration and Coastal Resilience Planning..... 14
 RESTORATION-3: Fish Habitat Monitoring and Improvement..... 15
 RESTORATION-4: Open Space Habitat and Access 16
 RESTORATION-5: Implement BMPs in Watershed..... 17
 Water Infrastructure 17
 WATER-1: Stormwater Improvement 17
 WATER-2: Groundwater Monitoring 18
 Education and Outreach 19
 E&O-1: Communications..... 19
 E&O-2: Environmental Education 20
 E&O-3: Nature Center 21
 E&O-4: Community Engagement and Stewardship 22

4. Subaward Reporting 23
 Subaward: Los Osos Community Services District Monitoring Well Installation..... 24
 Subaward: Los Osos Community Services District Monitoring Well Rehabilitation..... 25
 Subaward: Los Osos Community Services District Geophysical Survey..... 25
 Subaward: Cuesta Community College Sustainable Agriculture Support 26

Subaward: San Francisco Estuary Institute (SFEI) Historical Ecology Study 26

Subaward: USGS Salt March Monitoring and Modeling Plan 27

Subawardee: CSLRCD BMP and Stormwater Implementation 28

5. Lab Competency Documentation 29

6. Significant Achievements 30

7. Significant Lessons Learned 33

8. Budget Overview 34

1. Introduction

The Morro Bay National Estuary Program (Estuary Program) is a locally driven, non-regulatory program established under Section 320 of the Clean Water Act (CWA) and further supported by the Protect and Restore America's Estuaries Act (PRAE Act). As one of 28 National Estuary Programs (NEPs) across the country, the Estuary Program works in partnership with federal, state, and local agencies, as well as community stakeholders, to protect and restore the health of Morro Bay and its watershed. The program operates under the guidance of its Comprehensive Conservation and Management Plan (CCMP) which serves as a strategic framework for addressing key water quality, habitat, and resource management challenges in the region.

Infrastructure Investment and Jobs Act of 2021

On November 15, 2021, the Infrastructure Investment and Jobs Act of 2021 (IIJA) (P.L. 117-58) was enacted. The law includes \$50 billion to the U.S. Environmental Protection Agency (EPA) for water infrastructure, the single largest investment in water that the federal government has ever made. The IIJA provides \$132 million in funding for the 28 longstanding NEPs for fiscal years (FY) 2022 through 2026. This funding will be evenly distributed to the NEPs, annually providing each with approximately \$900,000 in IIJA funds. Funding through the IIJA provides a historic investment to the NEP, more than doubling the current base funding of \$850,000 per program annually.

A core emphasis of the NEP IIJA funding is the acceleration of environmental and community restoration goals within the CCMPs. The substantial increase in NEP funding appropriated in the IIJA is expected to significantly enhance NEP capacities to do this work, as well as enable the NEPs to develop and strengthen partnerships necessary to make the most effective use of these new funds.

Morro Bay National Estuary Program (Estuary Program)

The Estuary Program is moving forward with implementing the FY25 IIJA Workplan. Our spending under the grant (Grant Number 4T-98T47301) as of September 30, 2025, was \$2,364,417. As of September 30, we have expended 65% of the IIJA funding grant that started in FY22.

The Estuary Program requests EPA's continued participation on the Executive Committee and assistance with meeting relevant administrative and programmatic grant conditions. During this period, the Estuary Program continued to coordinate with EPA staff to get relevant IIJA administration information, particularly related to updated guidance with new administration priorities.

The following report summarizes IIJA activities and deliverables completed during FY25.

2. NEP IJA Priorities

A core emphasis of IJA funding is the acceleration of goals and actions in the Estuary Program's CCMP. The EPA has also specified goals to be addressed by IJA-funded projects, including delivering environmental benefits to all communities and building the adaptive capacity of ecosystems. The following section summarizes progress made from October 1, 2024 to September 30, 2025, in alignment with these goals. All projects and activities are included in the Estuary Program's approved IJA workplans.

Accelerate and more extensively implement the Estuary Program's CCMP

- Maintained and expanded staff capacity to implement IJA projects and support CCMP goals.
- Advanced monitoring (bay, creeks, eelgrass, groundwater), habitat restoration and planning (historical ecology study, floodplain and road-crossing design, invasive species control), stormwater planning, and education tasks.
- Continued implementation of high-priority projects such as fish passage planning, invasive species treatment, stormwater improvements, and BMP installation.
- Finalized and began implementing the Habitat Protection and Restoration Strategy to guide restoration and management activities throughout the watershed.
- Initiated baywide eelgrass mapping using sonar and drone data (spring 2025) with a draft map expected early 2026.

Ensure that benefits reach all communities

- Hosted 28 field trips reaching 771 students/participants and delivered a three-part FY25 educator workshop series with a cohort of 22 educators (traditional and informal educators across San Luis Obispo and Santa Barbara Counties).
- Partnered with local schools and environmental education organizations to expand curriculum offerings and access to science-based outdoor learning opportunities. The Estuary Program funded watershed-week curriculum at 36 schools through One Cool Earth, trained 15 educators on watershed topics, and co-developed Camp Ocean Pines touch-tank and water quality curriculum.
- Updated exhibits and public content at the Nature Center, including a new entrance design, interactive activities, and maintenance. A new eelgrass exhibit is in final design for early 2026, and total FY25 visitation to the Nature Center exceeded 18,000.
- Developed a public-facing StoryMap to explore CCMP progress, continued quarterly newsletters, expanded social media content, and continued producing blogs to translate the work of the Estuary Program.

Build the adaptive capacity of ecosystems and communities

- Supported stormwater improvement project planning at Army National Guard Base Camp San Luis Obispo (Camp SLO) and the California Conservation Corps (CCC) Center, including hydrologic studies, groundwater assessments, and a geotechnical survey in March 2025, with project prioritization underway.
- Advanced fish habitat projects, including barrier assessment, steelhead growth and movement monitoring, and bay fish assessments. Conducted pikeminnow management in October 2024, developed conceptual alternatives for the San Luisito Creek fish-passage barrier, and used antenna arrays to track juvenile steelhead movements between lower Chorro Creek and the estuary.
- Collaborated with the United States Geological Survey (USGS) to develop sediment transport models and adaptation strategies to reduce coastal flooding and support long-term estuary habitat resilience.
- Conducted riparian fencing and BMP installation on working lands and supported conservation planning to enhance open space and floodplain function. Completed over 20,000 feet of wildlife-friendly fencing with off-channel watering.
- Continued to support sensor systems to collect high-resolution water quality parameters to support the Central and Northern California Ocean Observing System (CeNCOOS) that will inform changing conditions and research/modelling in the bay. Serviced and calibrated one bay sensor and participated in observing-system workshops and data-portal trainings.
- Coordinated with California Polytechnic State University, San Luis Obispo (Cal Poly) and Cuesta College to collect and analyze water quality, phytoplankton, and indicator bacteria data across the watershed and bay. Continued monthly shoreline nutrient sampling, advanced phytoplankton monitoring with genetic analyses, and recruited/trained Cuesta students to support indicator bacteria monitoring.
- Supported expanded monitoring of groundwater in Los Osos through well installation and rehabilitation to monitor water supplies. Completed one well installation and two well rehabilitations. An electrical-resistivity survey project in Los Osos is currently under development.
- Advanced invasive-species control through multi-species surveys/mapping, treatment of 38.6 acres at Camp SLO in spring 2025, bi-monthly and baywide European sea lavender monitoring, and ongoing sandspit iceplant management.
- Expanded community stewardship by hosting five cleanups that removed 212 pounds of trash with 183 volunteers, hosted Science on Tap and Science Explorations events on local habitat and resilience, and held a July partner reception recognizing the Estuary Program's 30 years with City and State honors.

These efforts collectively reflect the Estuary Program's commitment to advancing CCMP implementation with transparency, accountability, and in alignment with EPA's IJA goals.

Detailed task-level progress and subaward status for FY25 are summarized in the sections that follow.

3. Project updates

The following section provides updates to IJA projects and activities by workplan task: capacity building, environmental monitoring and research, habitat restoration and planning, water infrastructure, and education and outreach.

Capacity Building

Capacity-1: Capacity Building

Project Status: Ongoing

Objective: Increase and maintain staff capacity to support all programmatic areas including IJA administration and implementation.

Description: The addition of IJA funding requires additional staff capacity to administer and implement projects. Staff will support the administration of IJA funding, reporting, and grant/contract management. Additionally, staff will support restoration, monitoring, and education/outreach needs. This task includes increasing associated technology needs such as equipment and software to perform programmatic tasks. General monitoring and restoration equipment and supplies that can support multiple program efforts are included in this task. This activity also includes professional development training opportunities for staff.

Progress Towards Milestones: The Estuary Program successfully recruited and hired staff to build capacity to support the implementation of IJA projects. IJA funding supported a full-time Restoration Coordinator, an Education & Outreach Specialist, and two Monitoring Technicians. Part-time positions supported by the IJA funding included one Monitoring Technician, Administrative Assistant, Planning Intern, and Planning Advisor. Additionally, several Estuary Program staff funded through the 320 base funding grant contribute time towards implementing IJA projects.

Leads, Partners, and Roles: The Estuary Program serves as the lead for this task.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: IJA-funded staff directly support IJA projects and implementation of the CCMP.

Problems Encountered: None.

Deliverables: None.

Activities Planned for the Next Six Months: The Estuary Program will continue to support staff positions.

Pending Deliverables: None.

CCMP Action Plan: All

Environmental Monitoring and Research

Monitoring-1: Tracking Bay Health

Project Status: Ongoing

Objective: Collect high quality data set to support understanding of estuary health.

Description: A primary goal of the Estuary Program is to conduct monitoring to understand changing conditions. The program will continue tracking key environmental indicators, working with partners to develop and implement monitoring efforts, and collecting data related to future environmental impacts.

Progress Towards Milestones: Staff coordinated with Cal Poly on use of data generated by the CeNCOOS sensor arrays in Morro Bay. One of the sensors was sent in for calibration and maintenance work. Staff attended an Ocean Observing Community workshop and data portal training session, hosted by CeNCOOS and the Southern California Coastal Ocean Observing System, for technology transfer on recent research and accessing data. Staff recruited, trained, and coordinated Cuesta College students to conduct monitoring in the bay for indicator bacteria. The volunteers are collecting high quality bacteria data from the bay to support safe swimming and shellfish farming efforts. The community college student volunteers are at the same time gaining real-life field and lab skills that may help open doors to future career pathways. The indicator bacteria data is being shared via the State Water Resources Control Board (SWRCB) California Environmental Data Exchange Network (CEDEN) data portal and with partners to facilitate resource management and support efforts to safeguard human health. The Estuary Program is coordinating with Cal Poly faculty and students to collect monthly nutrient samples from bay shoreline sites. A batch of samples was analyzed, and the data is under analysis by Cal Poly. To better understand bay tidal prism, the Estuary Program supported supply needs for a Cal Poly researcher who installed a tide height sensor purchased with IJA funding to provide data to further refine the existing tidal prism calculations for the bay. The research team shared results with the Estuary Program. Staff are also partnering with a Cal Poly researcher on a phytoplankton monitoring project. The work includes collecting and identifying phytoplankton samples from the front and back bay, and samples underwent genetic analysis of sediment and water to assess phytoplankton communities. The phytoplankton data are under analysis. Staff purchased supplies to support monitoring efforts throughout the estuary.

Leads, Partners, and Roles: The Estuary Program served as the lead in the bacteria indicator monitoring conducted with Cuesta College. For other monitoring efforts, lead partners include Cal Poly who serves as the technical lead in the installation and maintenance of the CeNCOOS sensors; Cuesta College is a lead partner, providing lab facilities and technical support for bacteria monitoring efforts; and Cal Poly who serves as a technical lead in sample collection and analysis for efforts related to bay nutrients and phytoplankton. Partners who utilize Estuary Program data, share technical expertise, and provide landowner access (where applicable) include California State Parks, San Luis Obispo (SLO) County Public Health Department, SLO

County Parks and Recreation, Cal Poly, Cuesta College, CeNCOOS, California Department of Public Health, Los Osos Community Services District (LOCS), Central Coast Regional Water Quality Control Board (CCRWQCB), SWRCB, and commercial oyster farmers.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities for this task involved collecting and sharing high quality data that increases understanding of the long-term trends in ambient water quality in the estuary, promotes safe swimming and aquaculture, and supports identification of projects to address bacteria and nutrient pollution.

Problems Encountered: None.

Deliverables: Example of monthly indicator bacteria memos shared with partners. Data for [front bay](#) and [back bay](#) sites available via CeNCOOS data dashboard. Activities as described in semi-annual and annual reports. Bay water quality data submitted to CEDEN for use in the State Water Resources Control Board (SWRCB) Integrated Report process to assess the status of impaired water bodies in the Morro Bay watershed. Compiled and shared [Bay Health Memo for WY24](#). Example monthly bacteria results memo.

Activities Planned for the Next Six Months: Continue data collection and coordination with partners. Continue submitting data to CEDEN. Compile Bay Health Memo for WY25.

Pending Deliverables: Data managed in an Access-based system for submittal to CEDEN. Monthly bacteria result memos. Bay Health Memo for WY25.

CCMP Action Plan: MON-2 (Monitor Environmental Indicators), MON-4 (Maintain Volunteer Monitoring Program), MON-5 (Support Partners), ECR-10 (Nutrient and Bacteria Dynamics), USE-1 (Recreational Use), USE-2 (Shellfish Farming)

Monitoring-2: Tracking Creek Health

Project Status: ongoing

Objective: Collect high quality data to support our understanding of watershed creek health.

Description: A primary goal of the Estuary Program is to conduct monitoring to understand changing conditions. The program will continue tracking key environmental indicators, working with partners to develop and implement monitoring efforts, and collecting data related to future environmental impacts.

Progress Towards Milestones: Staff conducted monitoring to track key environmental indicators in the watershed. We worked with partners to collect and analyze data from water level sensors to expand our surface flow monitoring network throughout the watershed. Staff are collecting data for the development of rating curves. A contract is underway to conduct additional analysis with the low flow data to create rating curves and develop recommendations for water conservation projects. Staff conducted water quality monitoring of agricultural impacted sites throughout the watershed, with a focus on analysis of nutrients. Staff implemented monitoring efforts, including coordination with the Central Coast Ambient

Monitoring Program (CCAMP) and the Stream Pollution Trends Monitoring Program (SPoT) for sediment and water toxicity monitoring. Staff worked with Cuesta College volunteers to collect and analyze creek samples for indicator bacteria. Staff shared the bacterial indicator results on CEDEN and via monthly bacteria memos sent to partners, agencies, land managers, and landowners. Staff conducted expanded nutrient and water quality parameter monitoring. Staff conducted spring bioassessment monitoring at ten sites and are currently analyzing the 2025 data. Although staff had planned to have a researcher conduct sediment impact monitoring as part of the bioassessment monitoring effort, the work was not able to be coordinated this year. Staff conducted dry season toxicity monitoring, which involved collecting water and sediment samples and sending them to a toxicology lab. The results are expected next year. Staff purchased supplies to support monitoring efforts throughout the watershed. Staff finalized a report describing our sediment related work in WY2024.

Leads, Partners, and Roles: The Estuary Program serves as the lead on all of these efforts, providing the funding, labor, and technical knowledge for the work. In addition, lead partners in these efforts include Cuesta College, providing lab facilities and technical support for bacteria monitoring efforts; the Central Coast Water Quality Preservation, Inc. and the CCRWQCB, providing technical input on site and analyte selection; and the CCRWQCB and Creek Lands Conservation (CLC), a local nonprofit, providing guidance on sensor selection and troubleshooting. For support by the California Conservation Corps (CCC) program in partnership with AmeriCorps, corpsmembers serving with the program provide on-the-ground support for fieldwork. Partners who utilize Estuary Program data and provide landowner access (where applicable) include California State Parks, SLO County Public Health Department, SLO County Parks and Recreation, Cal Poly, Cuesta College, California Department of Public Health, CCRWQCB, SWRCB, Camp KEEP, California Department of Fish and Wildlife (CDFW), CLC, and commercial oyster farmers.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities for this task involve working with partners to develop and implement monitoring efforts to increase understanding of the long-term trends in ambient water quality in the watershed.

Problems Encountered: None.

Deliverables: A quality data set that meets the parameters outlined in the Quality Assurance Project Plan (QAPP). Monthly indicator bacteria memo (see example). Creek water quality data submitted to CEDEN for use in the SWRCB Integrated Report process to assess the status of impaired water bodies in the Morro Bay watershed. [Bioassessment Memo for WY24](#). [Creek Health Memo for WY24](#). [Sediment Report for WY24](#).

Activities Planned for the Next Six Months: Continue data collection. Submit data to CEDEN.

Pending Deliverables: Monthly bacteria memos. Data submittal to CEDEN. Creek Health Memo and Bioassessment Memo for WY2025.

CCMP Action Plans: MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-4 (Maintain Volunteer Monitoring Program), MON-5 (Support Partners), ECR-

10 (Nutrient and Bacteria Dynamics), FWR-3 (Understand Flow for Public Trust Resources), USE-1 (Recreational Use), USE-2 (Shellfish Farming)

Monitoring-3: Eelgrass Monitoring and Research

Project Status: ongoing

Objective: Conduct eelgrass monitoring to determine distribution in the bay as well as bed health.

Description: Eelgrass is a valuable habitat type in Morro Bay, providing multiple benefits. It enhances water quality and water clarity, reduces erosion, and provides habitat for wildlife. Morro Bay's eelgrass has undergone rapid changes recently, with a steep decline in acreage from 2007 to 2017 and a rebound after that. Mapping and monitoring of eelgrass allows for tracking of bed health and indicates when there is a need for restoration efforts.

Progress Towards Milestones: The Estuary Program oversaw a contract for creation of a baywide eelgrass map using sonar and drone data collected in spring 2025. The draft map is expected in early 2026. Estuary Program staff conducted macroalgae monitoring to track its interaction with eelgrass in the bay. Coordinating and planning are underway with Cal Poly for collection of high-resolution of drone imagery in late 2025 and early 2026. The data supports efforts to track eelgrass health. Staff are partnering with Cal Poly to use this imagery with an automated model to map eelgrass. Staff continued a partnership with a Cuesta College professor to develop a project to analyze eelgrass prokaryote communities and the genetics of the slime mold that causes wasting disease to better understand how eelgrass supports the estuarine ecosystem.

Leads, Partners, and Roles: The Estuary Program is the lead on the macroalgae monitoring project and the baywide eelgrass mapping project. Cuesta College is the lead on the eelgrass wasting disease work. The partners in this effort are Cal Poly as the entity leading work related to bay water quality. Partners include those utilizing the data and those providing landowner access, including California State Parks, local oyster farmers, and the city of Morro Bay. National Oceanic and Atmospheric Administration (NOAA), CDFW, United States Fish and Wildlife Service (USFWS), EPA, and others have provided funding and technical support for the effort. Other users of the data include the State Coastal Conservancy (SCC), the Pacific Marine and Estuarine Fish Habitat Partnership, the Black Brant Group, the City of Morro Bay, and local businesses.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Eelgrass monitoring and mapping efforts as well as working with research partners all support the outcome of better understanding of eelgrass stressors and dynamics. This improved understanding directly supports the outcome of development of eelgrass monitoring and restoration.

Problems Encountered: None.

Deliverables: None.

Activities Planned for the Next Six Months: Creation of a baywide eelgrass map. Macroalgae monitoring. Eelgrass prokaryote and slime mold genetic analysis work.

Pending Deliverables: 2025 baywide map of eelgrass in Morro Bay. 2024 Eelgrass Report.

CCMP Action Plans: ECR-7 (Eelgrass Data and Research), ECR-8 (Eelgrass Restoration), ECR-9 (Regional and National Collaboration)

Monitoring-4: Data Analysis and Management

Project Status: Ongoing

Objective: Analyze and maintain data in state-compatible format.

Description: The Estuary Program compiles and analyzes program-generated data to assess long-term trends and project-specific effects on water quality and other indicators of environmental quality. These analyses are shared with program partners, local landowners, and the public to help inform decision-making. Data must be available in the correct format for analysis and must be maintained in a data management system that allows for easy sharing of results.

Progress Towards Milestones: Staff coordinated with SWRCB CEDEN and CCRWQCB staff for support on data submittal to the CEDEN system for the Integrated Report process. Staff attended SWRCB CEDEN Work Group meetings to stay apprised on upcoming changes to the system. Staff worked with an Access database contractor to implement updates to the data management system. Staff are analyzing the 2025 bioassessment data with the recently calculated California Stream Condition Index (CSCI) scores for a bioassessment memo for 2025. Monitoring data was submitted to CEDEN to support the SWRCB Integrated Report for 2028.

Leads, Partners, and Roles: The lead is the Estuary Program, with partner support from the CCRWQCB and SWRCB who as users of the data and provide input on data collection, analysis, and sharing.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities such as storing and submitting data accomplished the outcome of making available to the public and state a high-quality data set that supports Total Maximum Daily Load (TMDL) analysis, Clean Water Act section 303(d) assessment, land management, etc.

Problems Encountered: None.

Deliverables: Data submittal to CEDEN.

Activities Planned for the Next Six Months: Continue to work with SWRCB on CEDEN updates.

Pending Deliverables: Bioassessment Memo for WY25.

CCMP Action Plan: MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-5 (Support Partners)

Habitat Restoration and Protection

RESTORATION-1: Invasive Species Management

Project Status: Ongoing

Objective: Prioritize, manage, and implement invasive species management in the estuary and watershed.

Description: To protect sensitive habitats in the watershed, proactive management of invasive species is a key tool. The Estuary Program works with partners and landowners to map and treat invasives such as giant reed (*Arundo donax*), iceplant (*Carpobrotus*), European sea lavender (*Limonium duriusculum*), salt cedar (*Tamarisk ramosissima*), cobweb bush (*Plechostachys serpylliflora*), and purple pampas grass (*Cortaderia jubata*). Efforts also include support of weed management on the restored floodplain area of the Chorro Creek Ecological Reserve (CCER).

Progress Towards Milestones: A contractor surveyed and mapped *Arundo donax* and up to 19 other priority invasive species within the Chorro Creek watershed in spring 2024 and January 2025. Surveys were completed on foot and using drone surveys. Priority management areas were identified, and staff are taking steps (e.g., permitting) to treat invasives. Camp SLO continued to implement their invasive species management plan focused on cape ivy, tree of heaven, periwinkle, *Arundo*, and thistle in spring 2025 with partner funding. They treated a total of 38.6 acres of invasive species in spring 2025. Staff received a permit waiver from the California Coastal Commission to manage iceplant on the sandspit for five years starting in October 2023. Estuary Program staff received additional funds for this project through the USFWS Coastal Program. Iceplant treatment occurred in fall 2023 and January 2025. Additional hand pulling of iceplant near sensitive plant species and near the water's edge occurred in August and December 2024 with another planned for November 2025. In April 2025, the CCC corpsmembers managed weeds at CCER. Staff completed bi-monthly European sea lavender monitoring at target areas and a baywide monitoring effort in summer 2025.

Leads, Partners, and Roles: SLO County is the lead for *Arundo donax* management with support from the Estuary Program. The Estuary Program is the lead for invasive species management on the sandspit and other State Parks owned areas adjacent to the estuary in partnership with landowners, State Parks, and the City of Morro Bay. The Estuary Program serves as the lead for weed management at CCER with coordination with CDFW and the CCC.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Tasks are on schedule.

Problems Encountered: None.

Deliverables: Iceplant Monitoring Report for Coastal Commission, 2024-2025.

Activities Planned for the Next Six Months: Complete re-spray of any ice plant sprouts and new locations that weren't treated in 2023 and 2025. Complete post-project monitoring and reporting to the California Coastal Commission for Year 3 of iceplant management. Work with

the CCC to complete weeding of the CCER floodplain restoration site. Complete Arundo management with San Luis Obispo County along Chorro Creek.

Pending Deliverables: None.

CCMP Action Plan: ECR-9 (Regional and National Collaboration), ECR-16 (Invasive Species Action Plan)

RESTORATION-2: Habitat Restoration and Coastal Resilience Planning

Project Status: Ongoing

Objective: Further understanding of short- and long-term environmental impacts to estuary and watershed habitats. Implement restoration projects to improve habitat acreage or conditions.

Description: Shifts in environmental conditions pose a threat to sensitive estuary habitats. Monitoring, modeling, and planning efforts can help communities mitigate the impacts of these changes by supporting planning and designs of additional habitat restoration projects within the watershed and estuary.

Progress Towards Milestones: The Estuary Program partnered with the San Francisco Estuary Institute (SFEI) to conduct a historical ecology project. SFEI has compiled an extensive list of referenced documents and georeferenced maps in Geographic Information System (GIS) and created a draft report of findings. An advisory committee is currently reviewing the draft habitat map and a final report is expected in winter 2026. The Habitat Protection and Restoration Strategy was approved by the EPA. Match funding has also been provided to the Coastal San Luis Resource Conservation District (CSLRCD) for an SCC grant to model storm and flood vulnerability and adaptation measures along lower Chorro Creek. CSLRCD is currently permitting the highest priority projects. Staff and partners implemented a project along Walters Creek to support floodplain enhancement through placement of 40 instream structures (e.g., beaver dam analogs, head cut treatments). A contractor completed geomorphic surveys at CCER to assess change over time (accretion/erosion) and fish passage at the restoration site. Estuary Program and CDFW staff are considering what adaptation measures are needed to maintain fish passage at low flows. Staff are also working with Cal Poly to improve a road crossing that was washed out along a Walters Creek tributary. A contractor completed field surveys and will have final designs of the location completed in fall 2025.

Leads, Partners, and Roles: The Estuary Program is the lead on these efforts. The Estuary Program will continue a partnership with SFEI to complete historical mapping and understanding of watershed processes. The Estuary Program is partnering with Cal Poly and Trout Unlimited on two floodplain enhancement projects and a road crossing along Walters Creek. The program will continue to partner with CDFW to ensure floodplain benefits and access to CCER are maintained.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Tasks are on schedule.

Problems Encountered: None.

Deliverables: None.

Activities Planned for the Next Six Months: A final report of the historical ecology study will be completed in winter 2025. Final designs of the Walters Creek tributary will be completed by December 2025.

Pending Deliverables: To be determined as contracts are completed over the next six months.

CCMP Action Plan: ECR-3 (Wetlands Protection and Enhancement), ECR-4 (Wetlands Inventory), ECR-7 (Eelgrass Data and Research), ECR-8 (Eelgrass Restoration), ECR-11 (Conserve Ecosystem Functions)

RESTORATION-3: Fish Habitat Monitoring and Improvement

Project Status: Ongoing

Objective: Support research and monitoring to increase understanding of fish habitat conditions and populations. Prioritize and further implementation of fish passage barrier improvement projects.

Description: Much of the habitat restoration and protection efforts of the Estuary Program target the protection of sensitive species, including steelhead. Monitoring and management of fish populations and their habitats directly support this work.

Progress Towards Milestones: Estuary Staff received funds from the USFWS Coastal Program to conduct bay fish monitoring. Two rounds of bay fish monitoring were conducted, one in fall 2023 and spring 2024. Various methodologies were employed to collect fish for identification and counting, before fish were returned to the water. A final summary report was completed in January 2025. A juvenile steelhead growth and tracking study was initiated in fall 2023 and has continued into fall 2025. A report summarizing data from fall 2023 through spring 2025 was completed. Steelhead were tagged and antennae were installed to track fish movement in lower Chorro Creek. Data from the winter storms show steelhead moving from Chorro Creek into the estuary and back again. The contractor for the San Luisito Creek Fish Passage Barrier completed two conceptual design options and an alternatives analysis within a final summary report. Given extensive utilities within the project footprint, the project is evaluating next steps. Invasive pikeminnow were managed in Chorro Creek with the CCC in October 2024 and anticipated again in October 2025.

Leads, Partners, and Roles: The Estuary Program is the lead for these efforts. Stillwater Sciences is a primary partner for monitoring as they hold the permit for implementation (e.g., electrofishing and passive integrated transponder (PIT) tags). The CCC provide field support as needed. Additional partners include the U.S. Army Corps of Engineers (ACOE), CDFW, State Parks, and landowners throughout the watershed. The Estuary Program is the lead for fish

barrier projects, in partnership with the county of SLO, California Department of Transportation (Caltrans), and CDFW. The Estuary Program is leading stakeholder engagement on fish passage barrier projects.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Project tasks are so far on schedule.

Problems Encountered: None.

Deliverables: None.

Activities Planned for the Next Six Months: Develop contract and implement a reduced effort for pikeminnow management in fall 2025.

Pending Deliverables: None.

CCMP Action Plan: ECR-3 (Wetlands Protection and Enhancement), ECR-13 (Population Dynamics), ECR-14 (Support Recovery Plans), ECR-15 (Steelhead Barriers and Habitat), MON-5 (Support Partners)

RESTORATION-4: Open Space Habitat and Access

Project Status: Ongoing

Objective: Further plans and implementation to restore habitat and improve conditions at coastal access sites.

Description: The Estuary Program strives to protect sensitive open space habitats while supporting access to these areas. We collaborate with community stakeholders and partner organizations to further plans to restore habitat and improve conditions at coastal access sites. The program supports habitat restoration opportunities and access improvements at Sweet Springs Nature Preserve and other established and protected open spaces in the watershed. The Estuary Program and our partners are always seeking opportunities for further acquisitions or conservation easements for the protection of habitats.

Progress Towards Milestones: Estuary Program staff consulted with a landowner and the LCSLO on a possible easement along the floodplain of Chorro Creek. Estuary Program staff met with SLO County Parks and Recreation staff to discuss Pasadena Point habitat enhancement opportunities. A project to conduct cultural resource survey and remove iceplant is under development. Staff are planning to complete a contract with LCSLO to support the permitting and construction of a trail along a nature preserve along Ramona Road and adjacent to Sweet Spring property in Los Osos.

Leads, Partners, and Roles: The Estuary Program is a partner on conservation and easement efforts, working with SLO County Parks, LCSLO, and Morro Coast Audubon Society.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Staff continue to collaborate with partners to prioritize projects.

Problems Encountered: None.

Deliverables: None.

Activities Planned for the Next Six Months: Work with LCSLO to contract for permits for the nature preserve trail in Los Osos.

Pending Deliverables: None.

CCMP Action Plan: ECR-3 (Wetlands Protection and Enhancement), ECR-13 (Population Dynamics), BMP-5 (Support BMPs by private landowners and municipalities)

RESTORATION-5: Implement BMPs in Watershed

Project Status: Ongoing

Objective: Implement best management practices (BMPs) in the watershed to support improved water quality and quantity.

Description: The Estuary Program collaborates with partners and landowners to prioritize and implement BMPs, which can include improvements to gully erosion areas, roads, fencing, culverts, and others. Installing fencing along riparian corridors to limit grazing is another common tool.

Progress Towards Milestones: The CSLRCD completed 20,000 feet of wildlife-friendly riparian fencing and off-channel watering on private lands. A subaward with Cuesta College was completed to install water and fencing infrastructure to support their sustainable agriculture program.

Leads, Partners, and Roles: CSLRCD is the lead for implementing BMPs and riparian fencing on private lands. As the landowner and land manager, Cal Poly is a project partner. The Estuary Program serves a partner role, providing funding and technical input for these efforts.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: None.

Problems Encountered: None.

Deliverables: None.

Activities Planned for the Next Six Months: Work with partners to identify new projects to support this goal. Continue discussion with Cal Poly on rainwater/high flow capture tanks.

Pending Deliverables: None.

CCMP Action Plan: BMP-1 (Agricultural and Grazing BMPs), BMP-2 (Rural Roads Erosion), BMP-5 (Support BMPs by private landowners and municipalities), ECR-2 (Riparian Corridors), ECR-9 (Regional and National Collaboration), EO-4 (Formal Education Programs)

Water Infrastructure

WATER-1: Stormwater Improvement

Project Status: Ongoing

Objective: Prioritize and further implementation of stormwater improvement projects that improve the health of the bay.

Description: Stormwater management is an effective tool for protecting sensitive habitats such as our estuary and creeks. The Estuary Program engages stakeholders on planning, data collection, and prioritizing stormwater projects that could be supported with IJA funding.

Progress Towards Milestones: Estuary Program staff hired a consultant to support review of existing stormwater projects to focus on identifying those with the most benefits given costs. Staff hired a consultant to complete project planning at Camp SLO and the CCC Center, including a hydrology delineation and groundwater study. A geotechnical survey was also recently completed in March 2025.

Leads, Partners, and Roles: The Estuary Program is the lead, working with potential partners such as City of Morro Bay, County of San Luis Obispo, Camp SLO, and community stakeholders. Potential tasks include project development, applying for grants, and implementing stormwater construction projects.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Project tasks are so far on schedule.

Problems Encountered: None.

Deliverables: None.

Activities Planned for the Next Six Months: Further discussion on the results of the geotechnical study and prioritizing projects for implementation.

Pending Deliverables: None.

CCMP Action Plan: BMP-5 (Support BMPs by private landowners and municipalities), BMP-7 (Support Stormwater BMPs)

WATER-2: Groundwater Monitoring

Project Status: Ongoing

Objective: Support monitoring of groundwater for the community of Los Osos.

Description: Increasing drought and groundwater supply is a major issue, in particular for vulnerable communities. The community of Los Osos depends primarily on groundwater for its water supply. Water withdrawals are leading to saltwater intrusion into the lower aquifer. To halt this threat to the aquifer, the Estuary Program works with partners such as the Los Osos Basin Management Committee (LOS BMC) and the LOCSD.

Progress Towards Milestones: Staff worked with LOCSD staff to implement a subaward to rehabilitate two existing monitoring wells to expand the network needed to support the drinking water needs of the Los Osos community. The wells support expanded monitoring to better manage the drinking water supply. The work was completed in early 2025 and all spending has been completed. Staff are working with the LOCSD to close the subaward, which will be finalized when a financial audit report is issued early next year. Staff began working with the LOCSD to create a subaward to conduct an electrical resistivity geophysical survey to track saltwater intrusion in the aquifer. Staff worked with the LOCSD and its consultant to develop

the protocols and submit them to EPA in a QAPP. The QAPP was approved by EPA, and staff are working with the LOCSO to finalize the subaward agreement for implementation in 2026.

Leads, Partners, and Roles: The lead partner in this effort is the LOCSO, which is a special district recognized by the state to provide services to the community such as water, solid waste, stormwater management, parks, etc. They act as the fiscal sponsor and lead agency for the project. They will contract with the consultant who will oversee the survey in partnership with Cal Poly and share the data collected with the public and with all other partners. Partners include the LOBMC, S&T Mutual Water Company, and Golden State Water Company. These entities work with the LOCSO to manage groundwater monitoring and supply, and all will utilize the data collected from the survey.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The project supports the outcome of expanding monitoring of groundwater for the community of Los Osos to ensure access to clean safe drinking water.

Problems Encountered: None.

Deliverables: None.

Activities Planned for the Next Six Months: Close out subaward reporting for well rehabilitation project. Finalize subaward for FY26 utilizing hydrogeology techniques to study saltwater intrusions in the aquifer and begin project implementation.

Pending Deliverables: None.

CCMP Action Plan: FWR-1 (Manage Freshwater Resources), FWR-3 (Understand Flow for Public Trust Resources)

Education and Outreach

E&O-1: Communications

Project Status: Ongoing

Objective: Implement a communications strategy and develop multimedia content to share the story of the Estuary Program, highlight projects, and engage a variety of audiences.

Description: A primary goal of the Estuary Program is to educate residents and visitors of all ages on how to be good stewards of the bay. Communication in various forms is essential to this work, allowing us to effectively communicate the status of our work, to highlight progress on CCMP implementation, and to engage a wide variety of audiences.

Progress Towards Milestones: Staff regularly updated webpages on the Estuary Program's website. The website had over 88,400 page views and over 45,500 visits in FY25. Staff launched a new CCMP tracker StoryMap and webpage on the website to track CCMP progress over time. The seasonal *Between the Tides* newsletter continues to be published every quarter and has 262 email subscribers. The newsletter is posted on the website and sent out to subscribers via email. Communications via social media have been utilizing multi-media content including

educational Reels on Instagram. In FY25, 31 blogs were posted on our website, sent to 531 email subscribers, and posted on our social media pages.

Leads, Partners, and Roles: The Estuary Program serves as the lead for all program communication, with support from outside contractors for web development and multi-media content.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The Estuary Program met expected outcomes through regular website updates, quarterly newsletters, active social media engagement, and consistent blog publication to communicate CCMP progress and stewardship messages to diverse audience.

Problems Encountered: None.

Deliverables: Communications statistics shared in the annual report (see above).

Activities Planned for the Next Six Months: Continue to update website and improve the user-friendliness of the site. Continue the quarterly newsletter and work to expand its reach. Develop and share more stories on CCMP progress. Create and share blogs and continue to engage followers on social media platforms.

Pending Deliverables: None.

CCMP Action Plan: All, depending on activity, but particularly EO-1 (Public Education and Outreach)

E&O-2: Environmental Education

Project Status: Ongoing

Objective: Provide environmental watershed and estuary-based education opportunities for students and teachers.

Description: Partnerships are key to implementing our program’s environmental education goals. Staff work with partners to support bay field trips and develop curriculum.

Progress Towards Milestones: The Estuary Program continued education partnerships with One Cool Earth, Camp Ocean Pines, California State Parks, CLC, and Cal Poly. Staff coordinated and hosted the FY25 series of three educator workshops that focused on coastal ocean literacy, restoration, and inspiring stewardship in the Morro Bay estuary and watershed. The same cohort of 22 educators attended all three workshops of the series in FY25. These attendees included traditional schoolteachers as well as informal educators, docents, volunteers, and environmental educators. The attendees were from SLO and Santa Barbara Counties. In FY25, we hosted 28 field trips that reached 771 students and individuals. These field trips were for school groups, classrooms, and youth organizations. Topics included watershed health, local wildlife, nature journaling, tide pooling, and estuarine habitats. The Estuary Program funded the 2024 to 2025 school year garden education programming at Monarch Grove Elementary School in Los Osos in partnership with One Cool Earth. The Estuary Program also funded and provided training for the One Cool Earth watershed week activities and curriculum at the 36 SLO County schools that participate in One Cool Earth programming. Staff also trained the 15

educators at One Cool Earth on curriculum related to the Morro Bay watershed and surrounding areas. The Estuary Program worked with Camp Ocean Pines to build up their touch tank and marine lab curriculum and facilities. We worked together to develop curriculum on a watershed model demonstration, water quality labs, and touch tank educational activities, and led a staff training for their spring 2025 naturalists focused on watershed education.

Leads, Partners, and Roles: The Estuary Program serves as the lead, coordinating with partners including Camp Ocean Pines, One Cool Earth, El Chorro Camp KEEP by the Sea, Cal Poly, and local educators to expand environmental education efforts. Staff develop and implement watershed and estuary-based curriculum, support bay field trips, and lead professional development workshops for teachers. Tasks include organizing and facilitating the teacher training series, designing hands-on learning experiences, and integrating estuary science into K-12 education. The program also co-leads “Watershed Week,” ensuring students across San Luis Obispo County receive watershed and stewardship education. Staff maintain partnerships, track engagement metrics, and compile program impact reports. Partners provide locations for field learning, assist with curriculum delivery, and help connect students and teachers to estuary-focused programs, while also collaborating on program design and offering staff expertise, facilities, and access to youth audiences across the region.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Development of education partnerships increased educational opportunities for students and teachers and resulted in curriculum development.

Problems Encountered: None.

Deliverables: Environmental education statistics shared in annual report (see above).

Activities Planned for the Next Six Months: Begin work on planning the 2026 educator workshop series. Continue to offer field trips to school groups.

Pending Deliverables: None.

CCMP Action Plan: EO-1 (Public Education and Outreach), EO-4 (Formal Education Programs), USE-1 (Recreational Uses)

E&O-3: Nature Center

Project Status: Ongoing

Objective: Design and install new exhibits, upgrade and maintain exhibits, and support education and outreach programming for the Nature Center.

Description: The Estuary Program maintains a free Nature Center open to the public to share messaging about the estuarine environment and stewardship. Staff maintain, update, and promote the center.

Progress Towards Milestones: Staff created updated artwork for the Nature Center entrance, and a new logo was made. These signs were manufactured and installed in FY25. The Kid’s Corner activity sheets are regularly updated and stocked for youth to use while in the Nature Center and to take home. Staff also made some minor improvements to the Nature Center

including painting walls and installing a new brochure and flyer display. A new eelgrass exhibit is in the final stages of design and expected to be built and installed early 2026. The Nature Center had over 18,000 visitors in FY25.

Leads, Partners, and Roles: The Estuary Program serves as the lead for maintaining and enhancing the Nature Center, coordinating with partners such as Morro Bay State Parks and the Morro Bay Natural History Museum. Staff enhance the Nature Center with updated exhibits, signage, and ensure ongoing exhibit maintenance to keep educational materials relevant and engaging. Additional tasks include integrating technology and interactive displays to improve visitor engagements, developing new education and outreach programming within the Nature Center, and maintaining virtual resources on the Estuary Program website. Staff also use the Nature Center to host field trips and recurring education events while tracking engagement metrics and summarizing activities in the semi-annual and annual reports.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Nature Center updates support the task outcomes to create engaging exhibits and develop supplemental programming that will increase annual visitation.

Problems Encountered: Challenges identifying a contractor to work on multiple upgrades to the Nature Center.

Deliverables: Nature Center statistics shared in the annual report (see above).

Activities Planned for the Next Six Months: Staff plans to continue programming in the Nature Center and hosting field trip groups to the space. Staff will work on adding new interactive exhibits and continue maintenance and infrastructure updates. Staff will continue to advertise for the Nature Center to attract more visitors.

Pending Deliverables: Programming statistics and Nature Center usage statistics.

CCMP Action Plan: EO-3 (Nature Center), EO-1 (Public Education and Outreach)

E&O-4: Community Engagement and Stewardship

Status: Ongoing

Objective: Provide community engagement and stewardship opportunities by hosting events and partnering with environmental organizations.

Description: The Estuary Program engages with partners to collaborate in efforts to engage the community and promote stewardship. Volunteer efforts are particularly powerful for connecting with community members and encouraging stewardship.

Progress Towards Milestones: Staff opportunistically partnered with organizations to engage the community including CLC, Camp Ocean Pines, California State Parks, and more. Staff hosted one Science on Tap event in October, with 18 attendees learning about the habitats of Morro Bay. We also hosted a Science Explorations event in January to learn more about our marsh modeling efforts and partner projects assessing vulnerability and planning in vital habitat and

transportation corridors. This event held in Los Osos had 22 attendees. Staff hosted five cleanups in Morro Bay in FY25, picking up 212 pounds of trash with 183 volunteers. The plans for working with ECOSLO on Adopt-A-Spot cleanups in Morro Bay and Los Osos have been progressing. Staff hosted a community partner reception in July as part of the Program Evaluation, honoring the many partners and volunteers that help keep our program running. The Estuary Program was recognized by the City of Morro Bay as well as the California State Assembly for 30 years of protecting and restoring the Morro Bay watershed.

Leads, Partners, and Roles: The Estuary Program leads community engagement and stewardship efforts in collaboration with partners and community members. Staff organize and facilitate recurring clean-up events to reduce marine debris and nonpoint source pollution, coordinate habitat restoration events for community volunteers, and support opportunities for community science participation. Staff track volunteer participation, document project outcomes, and summarize engagement efforts in semi-annual reports.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities conducted support the workplan task outcomes of increasing volunteer engagement and developing the infrastructure to keep the estuary free of litter.

Problems Encountered: The Adopt-a-Spot program with ECOSLO has been put on hold due to staff changes at ECOSLO.

Deliverables: Event statistics included in the annual report (see above).

Activities Planned for the Next Six Months: Staff will continue planning efforts to launch Adopt-A-Spot in Los Osos and Morro Bay in partnership with ECOSLO. We will continue to host cleanups and table at events and markets.

Pending Deliverables: Event statistics and amount of trash picked up (see above).

CCMP Action Plan: EO-1 (Public Education and Outreach), USE-1 (Recreational Uses), ECR-12 (Upland Habitats)

4. Subaward Reporting

The Estuary Program utilizes subawards to manage IJJA funding projects. The following efforts with partners were initiated as subawards:

- Cuesta College: Sustainable Agriculture Educational Program Support
- USGS: Salt Marsh Monitoring and Modeling to Plan for Future Sea Level Rise Impacts
- Los Osos Community Services District: Groundwater Monitoring Well Installation
- Los Osos Community Services District: Groundwater Monitoring Well Rehabilitation
- Los Osos Community Services District: Groundwater Resistivity Geophysics Survey
- San Francisco Estuary Institute: Historical Ecology Study
- Coastal San Luis Resource Conservation District: BMP fencing implementation and stormwater planning support

- Coastal San Luis Resource Conservation District: Permitting and modeling for Lower Chorro Creek and San Bernardo Creek floodplain improvements

Staff conducted the following activities to manage subawards:

- Each subawardee was contacted to determine the fiscal year under which they operate and the timing of their next financial audit that will include the subaward funds.
- Estuary Program staff tracked subaward progress and updated reporting forms for use with subawardees to review the results of any financial auditing and review for their organization.
- Staff developed a new project and subaward with the LOCSD to monitor groundwater resistivity.

The status of each Estuary Program subaward under the IJJA funding is as follows.

Subaward: Los Osos Community Services District Monitoring Well Installation

Project Name: Groundwater Monitoring Well Installation

Project Status: Completed

Activities Completed to Date: Procurement, selection, and contracting with contractor and well driller. Permitting coordinated and completed. Well successfully installed. Final reporting completed. Contract closed. Subaward closed. Technical and financial reporting completed.

Future Activities: None. Subaward is now complete.

Review of Financial and Programmatic Reports: In the contract development and implementation process, the subaward recipient met all financial and programmatic requirements. A financial audit, and the results show no issues of concern.

Summary of Findings from Site Visits/Desk Reviews: In all project updates and communication with the subawardee, there were no issues of concern raised related to implementation of the subaward.

Environmental Results Achieved: The installation of this monitoring well expands the monitoring network for the Los Osos Basin Management Committee and the LOCSD. This allows for better management of the drinking water supply for the community. Data from the newly installed monitoring well from fall 2024 was provided. Future annual groundwater monitoring reports will be available on the Los Osos Basin Management Committee website:
<https://www.lososbmc.org/>

Summaries of Audit Findings and Related Subawardee Management Decisions: The Estuary Program received the results of the LOCSD's financial audit, and there were no issues identified. There were no issues related to the pass-through entity's (PTE) management decisions.

Actions the Subawardee Taken to Correct Deficiencies: Not applicable. No deficiencies have been identified to date.

Subaward: Los Osos Community Services District Monitoring Well Rehabilitation

Project Name: Groundwater Monitoring Well Rehabilitation

Project Status: Work completed. Subaward closure underway.

Activities Completed to Date: Procurement, selection, and contracting with consultant and contractor. Permitting coordination. Successful transfer of ownership of one of the wells from the County to the LOCSO. Well rehabilitation completed.

Future Activities: Closing the contract and subaward. Upon completion of financial audit, Estuary Program staff will review subaward reporting forms to ensure that all subaward management requirements have been successfully met.

Review of Financial and Programmatic Reports: In the contract development and implementation process, the subaward recipient met all financial and programmatic requirements. Upon completion of a financial audit, Estuary Program staff will review the results.

Summary of Findings from Site Visits/Desk Reviews: In all project updates and communication with the subawardee, there were no issues of concern raised related to implementation of the subaward.

Environmental Results Achieved: The rehabilitation of two monitoring wells expands the monitoring network for the Los Osos Basin Management Committee and the LOCSO. This allows for better management of the drinking water supply for the community.

Summaries of Audit Findings and Related Subawardee Management Decisions: The Estuary Program is awaiting the results of the LOCSO's upcoming financial audit. There were no issues to date related to the PTE's management decisions.

Actions the Subawardee Taken to Correct Deficiencies: Not applicable. No deficiencies have been identified to date.

Subaward: Los Osos Community Services District Geophysical Survey

Project Name: Groundwater Resistivity Geophysics Survey

Project Status: Ongoing.

Activities Completed to Date: Developed monitoring protocols. Created a QAPP to document the methods, sites, and other project details. Submitted QAPP to EPA's Office of Quality Assurance (QA) and received approval. Working with the LOCSO to finalize the subaward agreement.

Future Activities: Finalize the subaward agreement. LOCSO will work with their consultant to conduct the survey. Review the final report from the LOCSO. Close out the subaward agreement.

Subaward: Cuesta Community College Sustainable Agriculture Support

Project Name: Sustainable Agriculture Educational Program Support

Project Status: Completed

Activities Completed to Date: Completed procurement, selection, and contracting for pipe installation and fence installation. All construction work completed. Final reporting completed. Contracte closed. Subaward closed.

Future Activities: Estuary Program staff will review subaward reporting forms to ensure that all subaward management requirements have been successfully met.

Review of Financial and Programmatic Reports: In the contract development and implementation process, the subaward recipient met all financial and programmatic requirements. Upon completion of a financial audit, Estuary Program staff will review the results.

Summary of Findings from Site Visits/Desk Reviews: In all project updates and communication with the subawardee, there were no issues of concern raised related to implementation of the subaward.

Environmental Results Achieved: The installation of infrastructure to support Cuesta College's sustainable agriculture education curriculum trains the next generation of ranchers in environmentally friendly land management practices. While these environmental results cannot be directly measured, the project expands and improves Cuesta's ability to provide education in updated land management practices which benefits rangeland in the Morro Bay watershed and beyond.

Summaries of Audit Findings and Related Subawardee Management Decisions: The Estuary Program received the results of the Cuesta College's upcoming financial audit. There were no issues to date related to PTE management decisions.

Actions the Subawardee Taken to Correct Deficiencies: Not applicable. No deficiencies have been identified to date.

Subaward: San Francisco Estuary Institute (SFEI) Historical Ecology Study

Project Name: Historical Ecology Study

Status: Ongoing

Activities Completed to Date: SFEI coordinated with partners to identify available resources for study. SFEI completed visits to several archival sites and a site visit in the watershed in spring 2024. SFEI has compiled initial georeferenced maps with ArcGIS and a draft final report of finding. TAC and local partners are currently reviewing the draft report.

Future Activities: SFEI will complete the final report and a presentation of the project in winter 2025/2026.

Review of Financial and Programmatic Reports: In the contract development and implementation process, the subaward recipient met all financial and programmatic requirements. Upon completion of a financial audit, Estuary Program staff will review the results.

Summary of Findings from Site Visits/Desk Reviews: In all project updates and communication with the subawardee, there were no issues of concern raised related to implementation of the subaward.

Environmental Results Achieved: The project supports more sustainable restoration and land management to adapt to future environmental challenges. While the environmental results cannot necessarily be quantified, the results support building a more resilient landscape to protect natural resources for both humans and the environment.

Summaries of Audit Findings and Related Subawardee Management Decisions: The Estuary Program is awaiting the results of SFEI's upcoming financial audit. There have been no issues to date related to PTE management decisions.

Actions the Subawardee Taken to Correct Deficiencies: Not applicable. No deficiencies have been identified to date.

Subaward: USGS Salt Marsh Monitoring and Modeling Plan

Project Name: Salt Marsh Monitoring and Modeling to Plan for Future Sea Level Rise Impacts

Status: Ongoing

Activities Completed to Date: Estuary Program staff worked with USGS to conduct sediment monitoring in the salt marsh. This data as well as historical information was fed into USGS models to understand sediment transport and sea level rise impacts on the fragile salt marsh habitat. A draft model has been completed.

Future Activities: USGS will further refine their model of future outcomes, considering several scenarios including a range of sea levels and sediment availability. The effort will address the likely loss of key habitats and the development of adaptation strategies to reduce coastal flooding for the Morro Bay estuary. The effort will develop management scenarios for restoration, enhancement, and adaptation for sea level rise concerns.

Review of Financial and Programmatic Reports: In the contract development and implementation process, the subaward recipient met all financial and programmatic requirements. Upon completion of a financial audit, Estuary Program staff will review the results.

Summary of Findings from Site Visits/Desk Reviews: In all project updates and communication with the subawardee, there were no issues of concern raised related to implementation of the subaward.

Environmental Results Achieved: By better understanding the historical landscape, the project supports more sustainable restoration and land management to adapt to future environmental challenges. While the environmental results cannot necessarily be quantified, the projects provide guidance and framework for developing a more resilient landscape to both the fragile habitats surrounding the estuary and essential infrastructure.

Summaries of Audit Findings and Related Subawardee Management Decisions: The Estuary Program is awaiting the results of USGS's upcoming financial audit. There have been no issues to date related to PTE management decisions.

Actions the Subawardee Taken to Correct Deficiencies: Not applicable. No deficiencies have been identified to date.

Subawardee: CSLRCD BMP and Stormwater Implementation

Project Name: BMP implementation and stormwater improvement implementation

Status: Completed

Activities Completed to Date: Estuary Program staff worked with CSLRCD to complete two projects. The first project involved collaborating with landowners to develop on-farm BMPs through riparian fencing and associated stock water infrastructure on upper Los Osos and Warden Creeks. CSLRCD completed 20,000 feet of wildlife-friendly riparian fencing and off channel watering on private lands. The second project supported stormwater improvements at Camp SLO's Calaveras Avenue stormwater improvement project in September 2023.

Future Activities: None.

Review of Financial and Programmatic Reports: In the contract development and implementation process, the subaward recipient met all financial and programmatic requirements. Upon completion of a financial audit, Estuary Program staff will review the results.

Summary of Findings from Site Visits/Desk Reviews: In all project updates and communication with the subawardee, there were no issues of concern raised related to implementation of the subaward.

Environmental Results Achieved: The projects addressed stormwater and soil erosion in the watershed. Bioswales associated with the stormwater improvement project capture and infiltrate stormwater while slowing flow to reduce erosion in the current drainages. On-farm BMPs improve water quality through reduced sediment and nutrient loading.

Summaries of Audit Findings and Related Subawardee Management Decisions: The Estuary Program is awaiting the results of CSLRCD's upcoming financial audit. There have been no issues to date related to PTE management decisions.

Actions the Subawardee Taken to Correct Deficiencies: Not applicable. No deficiencies have been identified to date.

Subawardee: CSLRCD Lower Chorro Creek Floodplain Study

Project Name: Lower Chorro Creek Floodplain Study

Status: Ongoing

Activities Completed to Date: The contract was finalized in late September 2025.

Future Activities: The CSLRCD will develop permit packages for five priority projects along Lower Chorro Creek and San Bernardo Creek as well as model and design floodplain improvements.

Review of Financial and Programmatic Reports: In the contract development and implementation process, the subaward recipient met all financial and programmatic requirements. Upon completion of a financial audit, Estuary Program staff will review the results.

Summary of Findings from Site Visits/Desk Reviews: No issues of concern to date.

Environmental Results Achieved: None to date.

Summaries of Audit Findings and Related Subawardee Management Decisions: The Estuary Program is awaiting the results of CSLRCD's upcoming financial audit.

Actions the Subawardee Taken to Correct Deficiencies: Not applicable. No deficiencies have been identified to date.

5. Lab Competency Documentation

The Estuary Program utilizes laboratories that have met the certification requirements for their technical area. During FY25, the following labs were used:

For Water Quality: In this period, we primarily used two labs, Fruit Growers Laboratory (FGL) and County of SLO Public Health Laboratory. Both labs maintained Environmental Laboratory Accreditation Program (ELAP) certification during this time period. Documentation for the county lab is [available online](#). The certification for FGL is [available online](#).

For Bay Nutrient Analysis: The University of California, Santa Barbara (UCSB) Marine Sciences Laboratory conducts analysis of Morro Bay waters for nutrients. Although the laboratory is not ELAP certified, it undergoes similar steps to ensure data quality. Their detailed QA manual was provided and reviewed by Estuary Program staff, and the lab's QA activities were deemed sufficient to ensure data quality.

For Toxicity Analysis: The Marine Pollution Studies Laboratory at Granite Canyon Laboratories (GC) conducts toxicity monitoring for the Estuary Program. This laboratory is [ELAP-certified](#) under certificate number 2821.

For Genetic Analysis for Cal Poly: The [University of Connecticut \(UCONN\) Institute for Systems Genomics](#) (CGI) conducts amplicon sequencing of 18S rRNA genes, following rigorous protocols to ensure data quality. The CGI adheres to Illumina MiSeq protocols and quality assurance processes, which have been reviewed and approved by Estuary Program staff and the Pasulka Lab at Cal Poly, ensuring that their QA practices meet high standards for producing accurate and reliable sequence data.

For Genetic Analysis for Cuesta College: The [CD Genomics](#) conducts whole genome sequencing and amplicon sequencing of 16S rRNA gene, performing quality control tests at every major step in the sequencing process to ensure accuracy. Upon receiving samples, CD Genomics checks the quantity and purity of each sample using industry standard equipment and methods. Positive controls and integrated software are then used to monitor sequencing quality on all runs, with additional QA measures available upon request. These protocols have been reviewed and approved by Estuary Program staff and Dr. Silvio Favoreto of Cuesta College, ensuring that the QA practices meet high standards for producing accurate and reliable sequencing data.

6. Significant Achievements

Completion of a Successful Program Evaluation Process

This year marked a major milestone with the successful completion of the Estuary Program's PE process. The evaluation, which occurs every five years, provided a valuable opportunity to reflect on program progress, assess alignment with the CCMP, and identify areas for continued growth.

Preparation for the PE required significant coordination among staff, partners, and EPA reviewers, including development of detailed materials, site visit logistics, and presentations showcasing key accomplishments across all program areas. The Estuary Program demonstrated strong performance in program management, financial accountability, and project implementation, as well as the ability to adapt to evolving guidance and funding structures.

The evaluation team commended the program for its robust partnerships, long-term restoration success, and integration of monitoring, education, and community engagement efforts. Staff collaboration and partner involvement throughout the process reinforced the strength of local partnerships and the Estuary Program's role as a trusted partner in the watershed.

The lessons and feedback from this evaluation will inform the next update to the CCMP and guide continued program improvement. Completing the PE process successfully highlights the

Estuary Program's commitment to transparency, accountability, and continuous advancement of its mission to protect and restore the estuary and watershed.

Bay Fish Response to Eelgrass Fluctuations

Morro Bay's eelgrass beds have experienced many ups and downs in the last 20 years, with a low of 13 acres in 2017 and a high of 750 acres in 2023. The Estuary Program wanted to learn more about how Morro Bay's fish population was shifting in response to these changes in eelgrass.

In the mid-2000s, Dr. John Stephens of Occidental College conducted fish monitoring in Morro Bay at a time when about 340 acres of eelgrass were present. In 2016, when there were only about 13 acres of eelgrass in the bay, Dr. Jennifer O'Leary of Cal Poly and NOAA Sea Grant repeated Stephens' work using many of the same monitoring sites and methods. The data showed that fish communities had changed with the significant loss of eelgrass. Habitat generalist species like flatfish became more common, while eelgrass-dependent species like bay pipefish had declined.

The Estuary Program decided to conduct bay fish monitoring using similar methods to see what fish populations looked like during a time of abundant eelgrass. Fish data collection took place in the fall of 2023 and spring of 2024. Various netting and trawling methods were used to capture fish in habitats throughout the bay. The fish were identified, counted, and measured before being returned unharmed to the bay. A total of 8,317 fish from 24 different taxa were collected. Bay pipefish was the most abundant species, accounting for 40% of the total catch, followed by arrow goby at 20%, and shiner perch at 10%.

Eelgrass plays a vital role in maintaining a healthy estuary, providing food and shelter for a diverse range of species. When eelgrass thrives, so do a variety of fish species, especially those that are uniquely adapted to life in seagrass beds. The Estuary Program will continue to map and monitor eelgrass in the bay to support sensitive habitats and aquatic life in Morro Bay's diverse estuary.

The efforts supported the following CCMP Action Plans: MON-5 (Support Partners), MON-6 (Support Research Activities), ECR-7 (Eelgrass Research), ECR-11 (Conserve Ecosystem Functions), ECR-13 (Population Dynamics)

Habitat Protection & Restoration Strategy Finalized

This past winter, staff finalized the Estuary Program's Habitat Protection & Restoration Strategy ([HPRS](#)) for the Morro Bay watershed. The plan provides a comprehensive, watershed-wide management approach to the health and resilience of the habitats of our watershed. It was developed to guide protection, restoration, research, monitoring, education, and resiliency efforts. It provides measurable objectives and targets to inform future management planning and projects within the Morro Bay watershed, including the Estuary Program's next CCMP update.

The HPRS describes the health, extent, and key species within five of Morro Bay watershed's habitat areas: estuarine, freshwater, sandy shores, upland, and urban & agriculture. There are descriptions of different habitat types within each habitat area, such as coastal dunes within sandy shores, or maritime chapparal with upland. These habitat types were based on previous studies like the [Atlas of Sensitive Species of the Morro Bay Area](#) (Sims 2010). The habitat strategy includes mapping analysis based on existing vegetation data of Morro Bay watershed habitats. This will allow tracking of acreage of different habitat types over time as new habitat data becomes available.

The strategy also connects the habitats to the following: the [2022 CCMP](#) Action Plans, [2021 Vulnerability Assessment](#), anthropogenic stressors, management objectives/targets, long-term resiliency, and ongoing, past, and future projects.

The aim is to work with partners to improve the resiliency of the Morro Bay watershed habitats and interconnected coastal communities through the implementation of this strategy.

These efforts support the following CCMP Action Plans: LP-1 (Protect Special Habitats/Species), ECR-1 (Instream Habitat), ECR-3 (Wetland Protection & Enhancement), ECR-9 (Regional and National Collaboration), ECR-11 (Conserve Ecosystem Functions), ECR-12 (Upland Habitats), ECR-14 (Support Recovery Plans), ECR-16 (Invasive Species Action Plan)

Expanding Estuary Education through Community Partnerships

In FY24 and FY25, the Estuary Program deepened its investment in environmental education by working with a range of local partners to deliver hands-on programming to youth and families across SLO County. These efforts directly support Section 320 of the CWA and the PRAE Act, which emphasize public education and community engagement as key strategies for protecting estuarine ecosystems.

Staff led summer programming in partnership with Morro Bay Junior and Little Guards, Creek Lands Conservation, and the SLO County Libraries. Using a watershed model and interactive activities, youth learned about the connection between land use and water quality, with Junior Guards removing 16 pounds of litter from Morro Strand State Beach as part of their stewardship efforts. Creek Lands Conservation campers explored the estuary by kayak and joined staff on a nature journaling hike up Black Hill. At libraries across the county, Estuary Program staff led storytime events on marine life, estuaries, and science careers, followed by themed crafts that introduced young children to coastal ecology.

The Estuary Program also provided funding and support to expand the reach of two regional education programs. At Monarch Grove Elementary School in Los Osos, the Estuary Program partnered with One Cool Earth to deliver a full year of garden-based environmental lessons focused on estuary and watershed health. The Estuary Program also supported "Watershed Week" across 32 One Cool Earth partner schools, where students explored the structure of wetlands, the movement of pollutants to the coast, and the role of the Morro Bay estuary.

At Camp Ocean Pines, Estuary Program funding supported the development of a new touch tank and a portable version that brings estuarine species and tidepool ecology to schools and events throughout the county. The project also supported the creation of watershed-focused curriculum and a student water quality lab, now included in the camp's environmental science programming.

Through these collaborations, the Estuary Program reached hundreds of students and families with science-based, place-based education that fosters a deeper understanding of local natural resources. These efforts contribute to the long-term goals of the program's CCMP and reflect commitment to build environmental literacy and stewardship across the watershed.

These efforts support the following CCMP Action Plans: EO-1 (Public Education and Outreach), EO-4 (Formal Education Programs)

7. Significant Lessons Learned

Federal Funding Delays: This year presented notable challenges related to the timing and processing of federal funding agreements. Delays in finalizing awards created uncertainty for project planning, contracting, and staff workload distribution. The Estuary Program adapted by adjusting timelines, prioritizing essential activities, and maintaining close communication with EPA and the NEP network to minimize disruptions. This experience reinforced the importance of proactive communication and contingency planning.

EPA coordination remained critical, but was affected by evolving NEP guidance and uncertainty. These factors occasionally impacted reporting expectations, deadlines, and program planning. The Estuary Program addressed these challenges by maintaining consistent communication with EPA and the NEP network, closely tracking changes in national guidance, and improving internal systems for project and financial planning to remain responsive to evolving requirements.

The Estuary Program will continue refining internal systems for early planning, improving coordination with EPA and partners, and ensuring program flexibility in response to changes in federal guidance and funding timelines. These lessons have strengthened the program's adaptability and resilience, supporting continued progress towards long-term CCMP goals.

Increased Internal Communication: The uncertainty in the funding situation took a toll on program staff, increasing stress over the precariousness of the funding status. An increase in communication and updates for staff and partners was essential for navigating a difficult time. Knowing that they were receiving all available information helped staff stay on course to continue to manage what was an already heavy workload.

Diversifying Funding: The Estuary Program is also exploring opportunities to diversify funding sources. While the program has a long history of demonstrated success in winning grants to support projects, the recent IJA funding reduced the necessity for these outside funding

sources. Given the impending end of the IJA funding and the uncertainty around federal funding in general, the program has plans to seek state, local, and private funding sources to continue to support the program’s projects and operational costs.

8. Budget Overview

Tables 1 and 2 present costs associated with IJA activities since the beginning of the IJA grant agreement on December 12, 2022.

Table 1: Costs expended during this annual report period (October 1, 2024 – September 30, 2025). These costs represent cumulative costs since the initiation of IJA activities.

Category	Subcategory	IJA FY25 Funds	Total Cumulative Funds
Personnel	Salaries	\$ 256,977	\$ 632,670
	Fringe	\$ 28,323	\$ 64,791
	<i>Subtotal</i>	\$ 285,300	\$ 697,460
Supplies	Computers, software	\$ 10,962	\$ 26,193
	Monitoring supplies	\$ 29,489	\$ 97,557
	Education and Outreach supplies	\$ 5,504	\$ 29,906
	<i>Subtotal</i>	\$ 45,955	\$ 153,656
Travel	Travel (includes local mileage)	\$ 5,771	\$ 7,059
	<i>Subtotal</i>	\$ 5,771	\$ 7,059
Equipment	Monitoring equipment	\$ 0	\$ 152,746
	<i>Subtotal</i>	\$ 0	\$ 152,746
Contractual	Capacity Building	\$ 0	\$ 24,729
	Monitoring	\$ 134,457	\$ 288,423
	Restoration	\$ 226,499	\$ 440,902
	Water Infrastructure	\$ 21,047	\$ 53,910
	Education and Outreach	\$ 23,994	\$ 53,350
	<i>Subtotal</i>	\$ 405,997	\$ 861,313
Other	Training, Prof. Dev.	\$ 1,445	\$ 5,923
	Restoration Subawards	\$ 97,862	\$ 341,259
	Water Infrastructure Subawards	\$ 67,808	\$ 145,000
	<i>Subtotal</i>	\$ 167,114	\$ 492,182
TOTAL		\$ 910,138	\$ 2,364,417

Table 2: Costs by Program Area and Task for IJJA funding (FY22-25)

Program Area	Workplan Task	IJJA FY25 Funds	Total Cumulative Funds
Capacity Building	Capacity-1: Capacity Building	\$ 303,479	\$ 761,365
	<i>Subtotal</i>	\$ 303,479	\$ 761,365
Environmental Monitoring and Research	Monitoring-1: Tracking Bay Health	\$ 33,982	\$ 151,814
	Monitoring-2: Tracking Creek Health	\$ 68,179	\$ 243,183
	Monitoring-3: Eelgrass Monitoring and Research	\$ 60,515	\$ 131,608
	Monitoring-4: Data Analysis and Management	\$ 1,270	\$ 12,120
	<i>Subtotal</i>	\$ 163,946	\$ 538,726
Habitat Restoration and Protection	Restoration-1: Invasive Species Management	\$ 61,702	\$ 124,417
	Restoration-2: Habitat Restoration and Coastal Resilience Planning	\$ 157,106	\$ 344,112
	Restoration-3: Fish Habitat Monitoring and Improvement	\$ 105,553	\$ 233,141
	Restoration-4: Open Space Habitat and Access	\$ -	\$ -
	Restoration-5: Implement BMPs in Watershed	\$ -	\$ 65,525
	<i>Subtotal</i>	\$ 324,361	\$ 767,196
Water Infrastructure	Water-1: Stormwater Improvement	\$ 21,047	\$ 68,875
	Water-2: Groundwater Monitoring	\$ 67,808	\$ 145,000
	<i>Subtotal</i>	\$ 88,855	\$ 213,875
Education and Outreach	E&O-1: Communication	\$ 6,299	\$ 7,800
	E&O-2: Environmental Education	\$ 20,394	\$ 50,054
	E&O-3: Nature Center	\$ 1,408	\$ 21,008
	E&O-4: Community Engagement and Stewardship	\$ 1,397	\$ 4,393
	<i>Subtotal</i>	\$ 29,498	\$ 83,256
TOTAL		\$ 910,138	\$ 2,364,417

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