



## **Morro Bay National Estuary Program 320 Grant Semi-annual Report: April 2023 to September 2023**

---

The Morro Bay National Estuary Program (Estuary Program) is moving forward on completing new and ongoing tasks in the Fiscal Year (FY) 2023 workplan. All workplans are approved by the Environmental Protection Agency and the Estuary Program's Executive Committee. The budget report shows that our Section 320 expenses under the grant (Grant Number 98T25101) in the second half of the fiscal year were \$366,911. As of September 30, we have expended 85% of the 320 grant (started in FY22). The Estuary Program has met 273% of its match requirement for the cumulative grant with cash match and estimated current in-kind contributions (at approximately \$3,960,849).

The Estuary Program requests EPA's continued participation on the Executive Committee and assistance with meeting relevant administrative and programmatic grant conditions. During this reporting period, the Estuary Program continued to address the final Program Evaluation (PE) letter, which was completed at the end of FY20.

The following report summarizes activities and deliverables completed during the semi-annual report period. As the Estuary Program does not have any subawards under this federal grant, a reporting of subaward monitoring activities carried out under 2 CFR 200.331(d) does not apply.

The Estuary Program received a grant to implement Bipartisan Infrastructure Law (BIL) funding in January 2023. Some of the organization's work is funded by BIL but supported and implemented by staff funded through the Estuary Program's 320 grant. Thus, the status of BIL-funded efforts are included in this semi-annual report. Deliverables for efforts with project costs other than staff time directly funded by BIL will be reported in the BIL semi-annual report.

## **Habitat and Water Quality Protection and Restoration**

### **Land Conservation**

**Objective:** Conserve land to achieve Management Plan goals as opportunities arise.

**Status:** Ongoing task

**Progress Toward Milestones:**

In November 2022, The Estuary Program partnered with the Morro Bay Open Space Alliance (MBOSA) to take assignment over a conservation easement of a small open space parcel in Morro Bay. The parcel resides in a neighborhood area and is known as Cerrito Peak (Eagle Rock). The parcel, owned by the City of Morro Bay, is a natural open space hill with rock outcroppings and established trails for public use. Estuary Program staff will conduct periodic monitoring to ensure that the requirements of the easement are being met. The Estuary Program continues to work with The Land Conservancy of San Luis Obispo (LCSLO) to explore potential easement projects in the watershed. Staff time has been spent visiting

possible projects given last winter's storm events and impact to lands in the Morro Bay watershed. A conservation easement floodplain area along lower Chorro Creek is currently being explored.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: These efforts directly support the task outcome of completing land conservation projects as opportunities arise.

Problems Encountered: None.

Deliverables: None.

Activities Planned for Next Six Months: The Estuary Program plans to coordinate with the LCSLO and other partners to continue outreach to landowners and support new easements as opportunities arise.

Pending Deliverables: Updated map tracking protected lands included in next State of the Bay report. NEPORT reporting.

## Restoration Maintenance and Monitoring

Objective: Conduct maintenance and monitoring for conservation easements and restoration projects, as necessary.

Status: Ongoing task

Progress Toward Milestones: The Estuary Program conducted flow monitoring on Pennington Creek following a project to remove a fish passage barrier and improve a water diversion. Data are submitted to Trout Unlimited on a regular basis to manage the flow diversion and comply with water rights.

The California Conservation Corps monitored success rates of plants installed at the Chorro Creek Ecological Reserve (CCER) once a quarter to meet permit requirements. Following the intense storms of early 2023, many plantings in the lower floodplain were lost. Additional monitoring and clean-up efforts are underway at CCER.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The accomplished tasks directly support the outcomes of conducting easement monitoring and maintaining landowner communications. Efforts also support the outcome of meeting eelgrass restoration targets.

Problems Encountered: None.

Deliverables: Pennington Creek data submitted to the California Environmental Data Exchange Network ([CEDEN](#)) and shared with partners.

Activities Planned for Next Six Months: The Estuary Program plans to conduct planning and seek funding to address impacts to CCER from the 2023 winter storms. A pre-application to the Wildlife Conservation Board has been submitted. We will also work with partners to address any needed restoration maintenance.

Pending deliverables: None.

## Chorro Creek Ecological Reserve Restoration Monitoring and Maintenance

**Objective:** Conduct monitoring and maintenance of the Chorro Creek Ecological Reserve Restoration Project.

**Status:** Ongoing task

**Progress Toward Milestones:** In the second half of FY23, efforts included monitoring the site for plant survival. Additional time was spent on site to replace plant cages damaged during storm events or plants that had outgrown cages. The California Conservation Corps provided labor and materials for plant cages and irrigating the site.

The post-construction work included establishing the monitoring required by the project permits. This includes the following monitoring activities:

- **Frequency and extent of side channel activation:** Side channel flows were monitored with field cameras and temperature loggers on site. Video of the site during the January 2023 storms is available here on [MBNEP's recent blog post](#).
- **Success of native plantings:** Revegetation efforts are being monitored through direct counting of plantings quarterly to track success three to five years post-implementation. There has been some reduction in planting survival, but the permit-required survival targets have been met through November 2022, three years after planting.
- **Fish entrapment:** Side channels will be monitored during specific flows to assess the potential for fish stranding. No known fish strandings have occurred so far. CDFW has also been contacted for potential fish surveys since due to the winter storms, the side channels have become the main channels.

**Deliverables:** None.

**Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes:** Efforts conducted under this task directly support the outcome of supporting climate ready estuary goals including floodplain restoration.

**Problems Encountered:** None.

**Activities Planned for Next Six Months:** Plantings meet target survival requirements at three years post planting (November 2022). Plant success monitoring will continue through Estuary Program funding for another year. Post-project monitoring as required by the project permits has now been completed.

**Pending Deliverables:** None.

### Other Restoration Efforts

**Objective:** Engage in other restoration efforts that arise to help achieve Management Plan goals.

**Status:** Ongoing task

Progress Toward Milestones: The Estuary Program participated in numerous efforts to meet Management Plan goals. These included participation in the following efforts:

- San Luis Obispo (SLO) County and Caltrans effort to replace the bridge over Los Osos Creek on South Bay Boulevard.
- Collaboration and support of Coastal San Luis Resource Conservation District (CSLRCD) restoration of their Los Osos Wetland project, including installation of additional plants.
- Working with CSLRCD to install fencing and off creek water sources in the watershed.
- Caltrans and SLO County effort to address two fish passage barriers on San Luisito Creek. A consultant has been hired to complete channel surveys and an alternative analysis.
- Integrated Regional Water Management (IRWM) planning and funding activities.
- Local invasive management efforts, including managing eradication of an invasive sea lavender and ice plant in the estuary and recent collaboration with SLO County on management of Arundo and jubata.
- Contract with Cuesta College in support of their Sustainable Agriculture program through installation of fencing and off channel watering.
- Partnership with Cal Poly in scoping out future floodplain enhancement projects along Walters Creek.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The Estuary Program met the anticipated outputs and outcomes by staying involved in partner efforts related to the estuary and watershed as opportunities arise that support CCMP implementation and partner projects.

Deliverables: Activities described in Semi-annual report (see above).

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue work on the Conservation Planning Initiative and to continue to participate in the local restoration and management efforts listed above.

Pending Deliverables: Final conservation planning document.

## Conservation and Restoration Project Development

Objective: To develop projects and funding for conservation and restoration.

Status: Ongoing

Progress Toward Milestones: Staff works closely with multiple partners from the watershed and beyond to develop conservation and restoration efforts to help meet CCMP goals.

In FY19, the Estuary Program completed a grant from the Resource Legacy Fund to work with the CSLRCD to educate private landowners on conservation practices such as rotational grazing, keyline ploughing, etc. and identify potential projects. With support from the Estuary Program, CSLRCD was awarded a state grant to implement a subset of these projects. CSLRCD is also adding two stormwater/sediment reduction projects sites on Army National Guard Base Camp San Luis Obispo

(Camp SLO) property to address sediment sources to Chorro Creek. With increased coordination with Camp SLO, the Estuary Program financially supported project development and full designs for another stormwater project at the facility along Calaveras Ave. This project had to be scaled back due to underground utilities but was implemented in September 2023 with additional plantings in fall/winter 2023.

The Estuary Program partnered with the US Geological Survey (USGS) to develop a project to study vulnerability of tidal marsh habitats in the face of sea level rise and evaluate management solutions. The Estuary Program also partnered with the San Luis Obispo Council of Governments (SLOCOG) on a transportation planning grant to study sea level rise impacts on South Bay Blvd. (connecting Morro Bay and Los Osos) and adjoining roads that ring the estuary. The awarded grant would also support extending the existing bay-wide circulation/flooding model. The Estuary Program is also providing match to the CSLRCD starting in fall 2023 for a State Coastal Conservancy (SCC) grant to model lower Chorro Creek flooding due to increasing storms and sea level rise. The project will also consider potential solutions to flooding in the lower Chorro Creek area.

Permitting for the removal of invasive ice plant primarily on the City of Morro Bay's section of the sandspit and potentially other sensitive habitats is underway with anticipated treatments and pre-project monitoring in fall 2023. Funding was awarded by the USFWS Coastal Program and will treat approximately 25 acres within a 90-acre site.

Estuary Program staff also supported SLO County planning efforts to improve the coastal access point at Pasadena Point in Los Osos. This access point is popular for launching kayaks and paddleboards from the beach. Because the access is through soft sand, users have been walking over salt marsh habitat to avoid the sand. The County is looking to improve the original access area to protect the marsh habitat from trampling. An initial grant was not funded, but staff are considering tying in another adjacent property into a possible access and habitat improvement project in the future.

Estuary Program staff is working with San Francisco Estuary Institute to complete a historical ecology study of the Morro Bay watershed. The project will document landscape conditions prior to recent Euro-American modification, providing information to inform management and restoration planning that will enhance climate resilience.

Staff continues to remain informed on IRWM efforts at the county level, which covers issues related to stormwater management, water supply issues, water quality issues, and potential implementation projects.

Deliverables: Activities described in this Semi-annual report (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Working with partners such as the CSLRCD to provide resources to private landowners with the end goal of implementing projects to improve water quality.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to work with partners to further the progress of stormwater management and water conservation projects. The Estuary Program will work

with the CSLRCD to implement projects described above. The Estuary Program will also work with Camp SLO on stormwater implementation projects.

## Aquatic Invasive Species Management

**Objective:** To implement management actions for pikeminnow populations in an effort to improve habitat for native steelhead.

**Status:** Ongoing

**Progress Toward Milestones:** The first year of a three-year state grant was begun in fall 2021 and continued in fall 2022 to conduct pikeminnow management. Permit processing, project planning, implementation (management in creek and reservoir), and reporting were completed. Planning for snorkel monitoring was conducted for the fall 2023 pikeminnow management work.

**Deliverables:** Annual report for 2022 pikeminnow management efforts completed by Stillwater Sciences.

**Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes:** Anticipated output is control of the invasive pikeminnow population and a better understanding of sustainable ratios of pikeminnow to steelhead that support steelhead recovery.

**Problems Encountered:** None.

**Activities Planned for Next Six Months:** The California Conservation Corps and a contractor will be completing pikeminnow management efforts and reporting on them in fall 2023 to close out the CDFW grant for the project.

**Pending Deliverables:** Annual report for 2023 pikeminnow management efforts and summary of 2021-2023 efforts within the CDFW grant.

## Environmental Monitoring and Research

### Monitoring Program Coordination

**Objective:** Continue coordination of the Monitoring Program and collect data that meets Quality Assurance Project Plan guidelines.

**Status:** Ongoing

**Progress Toward Milestones:** Staff conducted monitoring in the watershed and estuary to track long-term ambient trends and project implementation effectiveness. During the second half of FY23, the following occurred:

- Staff continued to work with long-time volunteers and began training new volunteers to conduct monitoring to support understanding of bay and creek health. Staff and volunteers were able to conduct the following monitoring in the second half of FY23: 42 monitoring trips

for bay water quality, 115 for bacteria, 233 for creek water quality, 11 for bioassessment, 7 for stream profiling, and 3 for toxicity.

- Staff coordinated with the California Department of Public Health and local shellfish growers on monitoring related to storm flows and bacteria. This included monitoring bacteria in Chorro Creek, Upper Los Osos Creek, Warden Creek, and monitoring freshwater seeps along the bay shoreline to track improvements in bacteria and nitrates since the Los Osos Water Reclamation Facility came online.
- Staff continued long-term partnership with Cuesta College, providing lecture and class materials for an oceanography course.
- Staff continued its bacteria monitoring effort in partnership with the Cuesta College Biology Department. Cuesta students completed their spring 2023 semester of monitoring and began the fall 2023 semester work. The partnership continues the Estuary Program's long-running ambient bacteria data set while providing monitoring and research opportunities for community college students.
- Staff monitored sites watershed-wide for nutrients every other month to track long-term trends.
- Staff monitored water quality conditions monthly at three sites to assess impacts from agricultural land use.
- Staff collected water and sediment samples from three creek sites for toxicity testing to assess the impacts to creek water quality from agricultural land use.
- Staff conducted planning to develop a pesticide monitoring effort to track the impacts from wastewater, agriculture, and golf course chemical application in the watershed.
- Staff maintained a network of water depth sensors to track flows year-round. Staff completed the installation of additional sensors throughout the watershed to expand tracking of year-round flow conditions.
- Staff developed and implemented a bay macroalgae monitoring protocol to track macroalgae abundance over time and space. This is particularly of interest due to the potential of macroalgae to crowd out eelgrass.
- Staff deployed continuous monitoring sensors to measure temperature, dissolved oxygen, pH, chlorophyll-a, and conductivity at watershed sites.
- Staff selected a new analytical lab to conduct analysis of water quality samples.
- Staff conducted spring bioassessment, monitoring 11 sites from late April through June with the help of volunteers. Samples were sent to a taxonomy lab for sorting, counting, and identification.
- Staff monitored endangered salt marsh bird's beak habitat within the estuary to track changes in coverage.
- Staff contracted to conduct pikeminnow management work to be conducted in early FY24. Captured steelhead will be PIT tagged to track their movements through lower Chorro Creek.
- Staff contracted to conduct bay fish monitoring to assess fish populations following eelgrass recovery. The fall fieldwork was completed, with a round of spring monitoring planned.

Deliverables: A quality dataset that meets the parameters outlined in the Quality Assurance Project Plan (QAPP). Activities described in Semi-annual report (see above). [2022 Bioassessment Memo](#). [Creek Health Memo 2022](#). [Bay Health Memo 2022](#). [Sediment Report 2022](#).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities for this task involved collecting and sharing data, resulting in an increased understanding of the long-term trends in ambient water quality in the watershed and estuary.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to conduct the following types of monitoring: creek water quality (including bimonthly nutrient monitoring, monthly agricultural site monitoring, pesticide monitoring, and toxicity monitoring), creek and bay bacteria, bay water quality, seeps water quality, stream profiling, and streamflow monitoring.

Pending Deliverables: Creek and Bay Health memos for Water Year (WY) 2023. Bioassessment memo for 2023.

## Monitoring Program Reporting and Analysis

Objective: Analyze data and share results with grantors, partners, local landowners, and the public.

Status: Ongoing

Progress Toward Milestones: Estuary Program staff compiled data in formats appropriate for various audiences, including academic classes, researchers, regulators, landowners, and the general public. Staff responded to requests for program-generated data. Several blog posts on monitoring-related topics were created over the year, including popular monthly “Field Updates” posts that provide a rundown of what staff have been up to in the estuary and watershed. Analysis is underway on creek and bay water quality data.

Deliverables: Activities described in Semi-annual report (see above). [2022 Bioassessment Memo](#). [Creek Health Memo 2022](#). [Bay Health Memo 2022](#). [Sediment Report 2022](#). Example monthly bacteria memo.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities conducted under this task involved analyzing and sharing data and results with partners, landowners, and the general public. These activities directly support the task outcome of making analysis available for others to support their own efforts to protect and restore Morro Bay and its watershed.

Problems Encountered: None.

Upcoming Activities: The Estuary Program plans to respond to requests for data, create blog posts to share data, and compile bioassessment, bacteria, and water quality data to share monitoring results.

Pending Deliverables: Sediment Report for 2023. Creek and Bay Health memos for WY 2023. Bioassessment memo for 2023.

## Monitoring Program Data Management

Objective: Maintain data in Surface Water Ambient Monitoring Program (SWAMP)-compatible format.

Status: Ongoing

Progress Toward Milestones: Estuary Program staff have been preparing monitoring data and submitting to CEDEN. Staff participates in State Water Resources Control Board (SWRCB) meetings to discuss



updating of CEDEN. Staff worked with the SWRCB on submittal of our bioassessment and water quality data. Data through the first half of FY23 has been submitted to CEDEN.

Deliverable: Activities described in Semi-annual report (see above).

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 TMDL analysis, 303(d) assessment, land management, etc.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program will continue to manage data and work with the SWRCB to upload data to CEDEN.

Pending Deliverables: Submittal of WY 2023 data to CEDEN.

## Monitoring Program Quality Assurance

Objective: Update and submit a Quality Assurance Project Plan (QAPP), work with reviewers to approve document, and implement necessary quality assurance measures.

Status: Ongoing

Progress Toward Milestones: The Estuary Program continues to implement the quality assurance measures contained in the QAPP to ensure data quality. Staff completed three addendums to the QAPP that was approved by EPA in early 2023. The addendums addressed tide height monitoring, water and sediment toxicity analysis, and a bay fish monitoring project, and all were approved by EPA.

Deliverables: Activities as described in this Semi-annual report (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: An accurate and up-to-date QAPP document directly supports the task outcome of producing a high-quality data set with data to support efforts throughout the watershed, including 303(d) and TMDL assessment.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will conduct the QA measures needed to ensure the quality of program-generated data. Staff will begin the QAPP update for 2024.

Pending Deliverables: QAPP for 2024.

## Project Effectiveness Monitoring

Objective: Complete monitoring to show project effectiveness for various restoration projects.

Status: Ongoing

Progress Toward Milestones: Staff conducted monitoring of the freshwater seeps at the bay's edge to assess the impacts of the Los Osos Water Reclamation Facility. The Estuary Program conducted monitoring for a project on Pennington Creek to assess the impacts of a water diversion improvement project. Staff also conducted monitoring of eelgrass in the bay. Staff completed reporting on a project to monitor water quality improvements in stormwater runoff following installation of bioswales at the State Park Marina parking lot.

Deliverables: Activities as described in the Semi-annual report (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities under this task support the outcome of conducting monitoring and developing analysis that informs future management and restoration efforts.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue monitoring the seeps. Staff will collect and share Pennington Creek flow data with Trout Unlimited. Staff will coordinate with California Polytechnic State University, San Luis Obispo (Cal Poly) researchers on future monitoring and potential publications. Staff will also communicate with project partners to share data results and coordinate efforts.

Pending Deliverable: None.

## Eelgrass Monitoring and Research

Objective: Monitor eelgrass to determine its condition and distribution in the bay.

Status: Ongoing

Progress Toward Milestones: Staff coordinated with Cuesta College faculty on their eelgrass research efforts. Planning is underway with Cal Poly to fly their drone in November and December 2023 and January 2024 to collect bay wide imagery to track eelgrass health. For creation of baywide map this spring, sonar and drone imagery were collected in the April to June timeframe, and imagery processing is underway to create a baywide eelgrass map of subtidal and intertidal eelgrass. Spring bed condition monitoring was conducted of eelgrass beds throughout the bay. Staff developed a macroalgae monitoring protocol and began implementation to track its presence throughout the bay and how it changes over time. The work will be conducted again in the fall.

Deliverables: Monitoring activities documented in the Semi-annual report (see above).

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

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will conduct ground truthing for the fall drone imagery collection and assist with related GIS tasks. Staff will conduct fall macroalgae monitoring. Staff will share the results of the 2023 baywide eelgrass map. Staff will complete the 2022 eelgrass report and begin work on the 2023 eelgrass report.

Pending Deliverables: 2022 Morro Bay Eelgrass Report. Bay wide eelgrass map for 2023.

## Partner Research Efforts

Objective: Support science partners in pursuing research efforts relevant to the goals of the Estuary Program.

Status: Ongoing

Progress Towards Milestones: Estuary Program staff coordinated and collaborated with Cal Poly, California Department of Fish & Wildlife (CDFW), the National Oceanographic and Atmospheric Administration (NOAA), Cuesta College, the Army Corps of Engineers (ACOE), the city of Morro Bay, and other project partners to research bay eelgrass and related water quality issues. Staff sought results of research efforts in Morro Bay and other areas on the west coast related to nutrients, macroalgae, sedimentation, ocean acidification, and other water quality data. Staff coordinated with Cal Poly on ocean acidification monitoring efforts in the bay. Staff collaborated with partners such as Cal Poly and USGS on future research efforts related to eelgrass, climate change, and marsh habitat. Monitoring of sedimentation and water levels was conducted in the tidal marsh to support a project with USGS to study impacts to the tidal marsh. Staff worked with Cal Poly to plan for the 2023 drone flight.

The Estuary Program has coordinated with Cal Poly on numerous ongoing monitoring efforts, including bay nutrient monitoring, Olympia oyster research, microplastic research, and phytoplankton monitoring.

The Estuary Program continued supporting a neighboring watershed whose stakeholders are working to create a bioassessment monitoring effort. Estuary Program staff helped guide the group's bioassessment monitoring in 2023, conducted by Cal Poly students in partnership with the city of San Luis Obispo.

Research efforts conducted in the Morro Bay estuary and watershed include:

- USGS tidal marsh elevation and plant species monitoring to help assess future impacts from sea level rise.
- Cal Poly research into the impact of crabs on eelgrass.
- Cal Poly research on the impact of brant grazing on eelgrass.
- Cal Poly research on marine mammal relationships with eelgrass.
- Cal Poly research on microplastics in Morro Bay.
- Cal Poly research on Olympia oysters in the bay.
- Cal Poly research on bay nutrient levels.
- Cal Poly research on bay phytoplankton populations in water and sediment.
- Cuesta College research on impact of *Labrynthula spp.* wasting disease on eelgrass.
- Cal Poly research on ocean acidification and water quality in Morro Bay, in partnership with Central and Northern California Ocean Observing System (CeNCOOS). Coordinated with Cal Poly

to assist in the purchase of updated equipment and a meteorological station to support the sensor arrays.

- Central Coast Wetland Group monitoring under the Estuary Marine Protected Area monitoring protocols planned for fall 2023.

We also track research that is occurring elsewhere but is relevant to Morro Bay, including nutrient target development in Elkhorn Slough and pathogen TMDL development in Southern California.

Deliverables: Water quality data collected by Cal Poly and shared on the CeNCOOS web portal for the [front bay](#) and [back bay](#).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Coordination with research partnership efforts directly supports the task outcome of improving understanding of resources in order to better target efforts such as monitoring and restoration.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will coordinate with Cal Poly and Cuesta on ongoing research efforts. Staff will work with USGS staff on salt marsh monitoring.

Pending Deliverables: 2022 eelgrass report.

## State of the Bay Analysis and Reporting

Objective: Analysis of trend and project effectiveness data for the triennial State of the Bay environmental report card.

Status: Ongoing

Progress Towards Milestones: Estuary Program staff completed analysis and creation of the 2023 State of the Bay (SOTB) report card. Staff compiled all report content for print and online versions. Staff compiled additional content for inclusion in the online version of the report. Staff shared results through presentations for the general public.

Deliverables: None.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Conducting analysis for the report card directly supports the task outcome of sharing the results of monitoring by the Estuary Program and its partners, with the goal of increasing education on nonpoint source pollution, climate change, restoration, etc.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to share report results with the community and partners.

Pending Deliverables: None.

## Public Participation, Education and Outreach

### Communications

Objective: Communicate with a variety of audiences using presentations, printed materials, online presence, social media, and other avenues.

Status: Ongoing

Progress Toward Milestones: Estuary Program staff regularly conducted the following communications tasks:

- Created regular blog posts that were shared via email, website, and social media. 539 subscribers receive the blog via email each week. The blog is posted on Facebook and corresponding content is posted to Instagram and LinkedIn when appropriate for the platforms. Popular blog posts have as many as 2,500 reads, not including subscribers. Created a new seasonal/quarterly newsletter that posts on the website, is sent to email subscribers, and is posted on social media channels.
- Maintained a Facebook feed for the Estuary Program that currently has 2,618 followers. Utilized two-way communication with these users, such as recognition of rain gauge network and cleanup participants.
- Maintained an Instagram feed for the Estuary Program that currently has 3,498 followers, and a Mutts for the Bay Instagram account that currently has 100 followers. New multi-media content on social media was implemented, including five educational Reels that had over 86,700 combined views.
- Maintained a LinkedIn account with 361 followers.
- Four news stories were published that covered Estuary Program-specific content and projects in the watershed. The Estuary Program has started a new column in the Morro Bay Life newspaper that publishes every other month.
- Updated the program website to refresh current content. Worked on updating various webpages with new content and projects completed. New pages include information on field trips, major CCMP projects, and educational resources. In the second half of FY23, the website had 36,778 visits.
- Implemented a new quarterly science talk series called Science on Tap that will rotate between different venues around the watershed and county. The first event was hosted in September 2023 and had over 30 attendees who learned about water quality, fish, and bioassessment monitoring.

Deliverables: Blog posts published on a regular basis at [www.mbnep.org/blog](http://www.mbnep.org/blog). Website and social media statistics (see above). Relevant news stories available online and press releases submitted at [www.mbnep.org/news](http://www.mbnep.org/news). Quarterly newsletter at <http://www.mbnep.org/newsletter>.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities listed above enhanced communication with residents, visitors, and the general public. This works toward the task outcome of increasing their understanding of their roles as stewards of the estuary and encouraging behaviors that protect clean water.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue the communications tasks outlined above including blog posts, published reports, seasonal newsletters, upcoming events, and stewardship tips.

Pending Deliverables: Regular blog posts. Social media statistics included in semiannual report. News stories posted to website.

## Education

Objective: Develop formal education partnerships and services and continue to maintain the Nature Center and other education efforts.

Status: Ongoing

Progress Toward Milestones: Efforts to support Education included the following:

- Maintained the Nature Center and its exhibits and had 12,000 visitors during the second half of FY23.
- Hosted a series of three Storytime events in the Nature Center with 37 attendees.
- Hosted seven field trips in the second half of FY23 in various locations around the watershed for school groups, youth organizations, and the El Camino Homeless Organization shelter, reaching 185 individuals. Topics included watershed health, careers in the environmental field, local wildlife, nature journaling, and estuarine habitats.
- Presented to three Cuesta College oceanography classes about eelgrass, monitoring, and nutrients that reached 55 students.
- Continued distribution of marine education focused coloring book and activity book available in English and Spanish. Project is a partnership of SLO and Monterey Marine Protected Area (MPA) Collaboratives. Working on a new version of this coloring book in Chinese to be printed and distributed in January 2024. They are available online in English at <https://www.mpacollaborative.org/project/mpa-coastal-explorer-guide-english-v2/> and in Spanish at <https://www.mpacollaborative.org/project/a-descubrir-areas-marinas-protégidas-guia-del-explorador-costero-de-california-2/>
- Worked with Camp Ocean Pines to start a watershed and marine lab at their campus location in Cambria. Estuary Program staff will support curriculum development and activities related to estuary and watershed science.
- Established an educational partnership with Cal Poly to support a new four-unit course at the university in the College of Science and Mathematics called “Environmental Literacy: An Integrative STEM Approach.” This partnership will also support the creation of professional development teacher training workshops.
- Established an educational partnership with the nonprofit One Cool Earth to create a watershed week for all of their classrooms across 28 schools in San Luis Obispo County. Estuary Program staff will also train One Cool Earth instructors about the estuary and Morro Bay watershed prior to the watershed week.
- Developed and hosted three teacher training workshops that focused on the Morro Bay estuary and watershed in FY23: Project WET, Project WILD, and How to Teach Nature Journaling. In

total, 64 educators attend the training workshops. These attendees included 29 traditional school teachers and eight outdoor and environmental education instructors. The other 27 attendees were a combination of informal educators, docents, volunteers, and more.

- Developed an educational partnership with California State Park Interpreters at the Morro Bay State Park Natural History Museum and the SLO Coastal district.

Deliverables: Fieldtrip and presentation statistics (see above in the Communications section).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities under this task directly support the outcome of providing formal education partnerships to share estuary-related messaging with local students.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue the Education tasks outlined above and host a series of three teacher training workshops in spring 2024.

Pending Deliverables: None.

## Nature Center Update

Objective: Update and maintain the content and displays in the Nature Center.

Status: Ongoing

Progress Toward Milestones: Staff are developing a steelhead trout interactive exhibit for the Nature Center. The saltwater tank in the Nature Center is now populated with species native to the Morro Bay estuary. In the second half of FY23, staff implemented a new “kids’ corner” in the Nature Center that has rotating activities for visitors to engage with. Staff also installed two new interactive exhibits including an Augmented Reality Topographic sandbox to show how water moves in a watershed with different landscapes, and a touchscreen kiosk to display additional information about the Nature Center and posters. A new logo and entrance artwork will be installed this fall/winter. Estuary Program staff are planning a redesign of the space for additional new exhibits and updates to maps and interpretive information. Staff conducted ongoing maintenance to keep the Nature Center functioning smoothly.

Deliverables: Visitor statistics for the Nature Center (see above in the Communications section).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The maintenance and updates to the Nature Center conducted as part of this task directly support the outcome of providing a learning center for the estuary that contains updated and engaging exhibits.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program will develop content to update additional exhibits in the Nature Center. The Estuary Program will continue to provide field trips and educational programming in the Nature Center.

## Other E&O Tasks/Community Partner Projects

Objective: Support outreach projects in the community that further goals of the Management Plan.

Status: Ongoing

Progress Toward Milestones: Efforts to support outreach projects in the community included:

- Continued discussions on partnering with ECOSLO to plan adopt-a-spot cleanups across San Luis Obispo County. ECOSLO will create and distribute cleanup kits to help keep marine debris out of the waters of San Luis Obispo County. The Estuary Program will be the organizational liaison for any adopt-a-spot cleanup groups formed in Morro Bay and Los Osos. The effort is expected to launch in spring 2024.
- The Estuary Program's Community Engagement Projects Manager serves as a co-chair for the SLO MPA Collaborative. As the Bay Foundation acts as the applicant and grant recipient for the Collaborative, taking on this role is a logical step for the organization.
- Worked with the SLO MPA Collaborative to develop and print new versions of the MPA coloring books that are bilingual English-Traditional Chinese.
- Worked with the SLO MPA Collaborative on new interpretive panels for the Morro Bay State Park Natural History Museum. These were installed in the summer of 2023.
- The Estuary Program hosted six cleanup events at various locations in the Morro Bay watershed that cumulatively collected approximately 75 pounds of litter.
- Staff opportunistically partnered with other organizations to engage the community including Woods Humane Society, Cal Poly Surfrider Foundation Club, Sea Otter Savvy, Camp Ocean Pines, Creek Lands Conservation, El Camino Homeless Organization, SLO Land Conservancy, SLO Beaver Brigade, and more.
- Staff began tabling at the Downtown SLO Farmers Market and Downtown Morro Bay Farmers Market on average every quarter. Tabling at farmers markets in the second half of FY23 reached approximately 500 people.

Deliverables: Outreach statistics (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities conducted under this task directly support the outcome of coordinating with partner organizations on developing and sharing key messages.

Problems Encountered: The Adopt-a-Spot cleanup partnership with ECOSLO has been delayed due to the storms and flooding. We will be assessing implementation of the cleanups for fall 2023 and beyond.

Activities Planned for Next Six Months: Staff will continue to work with ECOSLO to launch and manage the Los Osos and Morro Bay groups of adopt-a-spot cleanup crews. Staff will also continue to co-chair the SLO MPA Collaborative and to host and attend community event opportunities as they arise.

Pending Deliverables: Cleanup statistics. Event participation statistics.



## Mutts for the Bay

Objective: Support pet waste management program to prevent bacterial contamination in the bay.

Status: Ongoing

Progress Toward Milestones: The Estuary Program continued its work managing the program, which included accepting and managing donations, installing and maintaining dispensers, and coordinating volunteers. In 2018, the program received a grant from a private foundation to fund staff time and related costs for three years. In March 2021, the grant was extended and will now support the Mutts for the Bay Program through 2025. The grant also funds the development and sharing of outreach materials with pet owners. In the second half of FY23, one new dispenser was installed at the Baywood Pier in Los Osos. There are now 36 dispensers that are maintained by the program. More than 150,000 bags were given away to pet owners in the second half of FY23. These bags prevented an estimated 40,000 pounds of pet waste from reaching the estuary. The Estuary Program continued its Mutts for the Bay Instagram account (see above in Communications). The Estuary Program continued its partnership with a local humane society animal shelter, Woods Humane Society. Staff created two new educational pieces about the importance of picking up after your pet and how to be an eco-friendly dog owner, as well as three new outreach stickers. During FY23, staff brought Mutts for the Bay materials to all tabling events and reached over 3,000 people. Staff will continue to partner with the San Luis Obispo County Stormwater Program to fund the bags in all the Los Osos dispensers. An interactive map of dispenser locations is available at <https://www.mbnep.org/mutts-for-the-bay/>.

Deliverables: Mutts for the Bay program statistics (see above). Mutts for the Bay educational materials available [online](#).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities under this task directly support the outcome of encouraging responsible behavior by pet owners to reduce bacterial loading to the estuary, thus improving water quality and protecting beneficial uses such as shellfish farming and recreation.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will continue its financial management and coordination activities to maintain the program. Staff will also continue to develop more outreach materials and connect with pet owners. The partnership with Woods Humane Society's educational programming will be further developed to bring Mutts for the Bay curriculum and materials to students across SLO County. Estuary Program staff will continue to table at pet-focused events and farmers markets.

Pending Deliverables: Reporting on the private foundation grant. Outreach materials. Statistics on students reached as applicable.

## State of the Bay Events

Objective: Planning and implementing events for the triennial State of the Bay.

Status: New

Progress Toward Milestones: Every three years, the Estuary Program hosts a SOTB event series to share knowledge of the health of the estuary and watershed. Report design was completed, and reports were printed. Posters were designed and manufactured. Official SOTB events took place throughout the spring with the following reach:

- Staff tabled at the Downtown San Luis Obispo Farmers Market four times, reaching 433 people.
- At the Clean Water Talk and Beer Launch, the Estuary Program partnered with a local Morro Bay microbrewery, Three Stacks and a Rock, to create an estuary-themed beer. Estuary Program staff gave two talks about eelgrass, water quality, and shellfish in the bay. This event reached approximately 60 people.
- Staff tabled at the Morro Bay Farmers Market, reaching 70 people.
- The Estuary Program had a watershed trivia night at Bang the Drum brewery that reached 183 people.
- Staff hosted two earth day cleanups reaching over 135 people including volunteers and people coming to the table to learn more about the Estuary Program.
- The annual Science Explorations talk had 60 attendees who learned about the SOTB indicator questions including water quality, steelhead trout, and eelgrass.
- Staff attended the SLO Surfrider Foundation film festival to table for State of the Bay and reached about 51 people.
- Staff shared SOTB reports and engaged on report content throughout the year at all other tabling events, reaching approximately 504 people.
- In total, the SOTB events reached approximately 2,283 people.

Deliverables: None.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities under this task directly support the outcome of sharing the results of monitoring by the Estuary Program and its partners, with the goal of increasing education on nonpoint source pollution, restoration, etc.

Problems Encountered: None.

Activities Planned for Next Six Months: None.

Pending Deliverables: None.

## Program Management

### Manage Committees and Build Partnerships

Objective: Hold quarterly meetings and support partnerships.

Status: Ongoing

Progress Toward Milestones: Staff compiled meeting materials and coordinated quarterly meetings of the Executive Committee (EC) throughout the year. Technical Advisory Committee (TAC) members were called on as needed for review of Community Project applications, eelgrass efforts, water quality

monitoring, data analysis, pikeminnow management, and technical plans. Membership was updated for the EC and TACs.

Partnerships are also supported through collaborative project development and technical support. The Estuary Program continues its work on partnership projects developed and implemented in collaboration with partner organizations. These include:

- Staff conducted eelgrass monitoring and restoration under a USFWS grant awarded through the Pacific Marine and Estuarine Fish Habitat Partnership (PMEP).
- Staff attended PMEP's annual meeting in Newport, Oregon.
- Staff served on the PMEP Science and Data Committee and attended two meetings during this time period.
- The Estuary Program is a partner on the Santa Monica Bay National Estuary Program's vessel pump-out monitoring program, monitoring three pump-outs three times a year and providing data through a publicly-accessible app.
- The Estuary Program partnered with USGS to begin implementing a project to study tidal marshes and rising sea levels.
- The Estuary Program is working with Caltrans, SLO County, and other partners to study the feasibility of removing fish passage barriers on San Luisito Creek.
- Staff served on the California Coastal Dune Science Network Advisory Team. The organization strives to expand understanding of coastal dunes and their role in building a resilient, transitional, and adaptive coast for the future.
- Staff served on the Western Society of Naturalists (WSN) Diversity, Inclusion, and Equity committee.
- Staff served on the board of the California Shore and Beach Preservation Association (CSBPA), which is the state chapter of the American Shore and Beach Preservation Association (ASBPA).

Deliverables: Minutes, agendas, staff reports, and materials completed for each meeting. List of partnerships and project activities (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities conducted under this task directly supported the task outcome of providing input and direction for the program and ensuring that partnerships are well supported.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue to coordinate quarterly meetings and work with Management Conference members. We will continue to work with the TACs to develop projects, funding, and collaborations. We will continue to partner with the CSLRCD to seek funding to implement projects developed with Resource Legacy Funding and support work at the Los Osos Wetland property. Staff will continue monitoring efforts in partnership with USGS to support modeling and planning to address the impact of sea level rise on the tidal marsh.

## Grants and Contracts Administration and Financial Management

Objective: Develop workplan, administer grants, and complete annual financial management tasks.

Status: Ongoing

Progress Toward Milestones: Staff worked on financial reporting, progress reports to the EPA and the Management Conference, and participation in NEP conference calls and committees. We coordinated with EPA to provide required materials for oversight of the 320 and BIL grants and managed numerous outside grants to the Estuary Program to support our project work. Staff managed the 320 and BIL workplans and budgets for FY23. Staff completed development of a workplan and budget for FY24 for the 320 funding which was approved by the Management Conference. Staff continued implementation of the FY22 and FY23 BIL funding workplan. Work is underway to develop the BIL FY24 workplan and budget. The Executive Director and staff will attend the fall Association of National Estuary Programs (ANEP) meeting in Portland, Oregon in November.

Deliverables: Minority Business Enterprises-Women Business Enterprises (MBE-WBE) submitted to EPA Region 9 Grants Office. Semi-annual report for FY23 funding. 320 Workplan for FY24.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities under this task directly supported the outcome of conducting grant administration and financial management tasks in a timely and accurate manner.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program will continue to implement the FY24 230 Workplan. Staff will develop and implement the FY24 workplan and budget for BIL.

Pending Deliverables: Annual FFR and MBE-WBE.

## General Administration and Human Resources Management

Objective: Maintain accurate financial and human resources records and manage personnel.

Status: Ongoing

Progress Toward Milestones: Staff maintained the ongoing financial and administrative functions, including recordkeeping, filing, bookkeeping, and equipment and office space upkeep, as well as interacting with the general public. In addition, the Director spent time managing staff performance and workplan progress. Other HR tasks included training, professional development, recruitment, and keeping all personnel policies and procedures up to date. COVID-19 protocols were regularly reviewed and updated based on new state and federal guidance as well as changes in local restrictions. The Estuary Program hired two part-time Monitoring Technicians.

Deliverables: Summary of task activities (see above). Bookkeeping and other recordkeeping tasks contribute to the completion of the deliverables included for the previous tasks (financial management).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The administrative and human resources management tasks conducted in the second half of FY23 directly supported the outcome of providing the administrative support that allows the program to function smoothly so that staff can focus on attaining the goals of the organization.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will conduct all bookkeeping and recordkeeping tasks required for grant management. Staff will conduct all HR tasks including training and professional development. Staff will coordinate and support in a financial audit for FY23 funding.

## Tracking Implementation of the Management Plan and Workplan

Objective: Keep track of Workplan and Comprehensive Conservation and Management Plan (CCMP) implementation.

Status: Ongoing

Progress to Date: Tracked progress on CCMP implementation through biannual reports to the Executive Committee. Conducted analysis of status of CCMP Action Plans to develop a “dashboard” with implementation status for the public.

Deliverables: Semi-annual report to EPA submitted in spring 2023. Biannual Executive Committee reports.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The tasks completed directly support the outcome of conducting tracking to ensure that tasks are completed in a timely and accurate manner.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to report to the Executive Committee on Workplan progress.

Pending Deliverables: None.

## Community Projects

Objective: Provide support for Community Projects that further the goals of the Management Plan and engage the community.

Status: Ongoing

Progress Toward Milestones: Ongoing Community Projects are underway, with staff working with partners to complete the efforts. A project was developed for FY24 with One Cool Earth, a nonprofit focused on outdoor education in the county. A contract is in place and work is underway to bring school garden support, lessons, curriculum, and other activities to Baywood Elementary in Los Osos. The two projects approved for FY23 are ongoing. These include projects with a Cal Poly professor to study Morro Bay phytoplankton and with the Los Osos Community Services District to address trash management in Los Osos.

The Morro Bay Harbor Department Spill Response Program project was completed at the end of 2023, and the final report was submitted.

Staff are working with partners to develop additional projects for FY24.

Deliverables: Harbor Department Community Project final report.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities conducted under this task included working with existing funding recipients and coordinating with partners to develop new projects that support CCMP goals and Action Plans. These activities directly supported these goals, thus meeting the task outcomes of developing and completing projects that meet program guidelines on community involvement and CCMP nexus.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue to work with partners on ongoing Community Projects. Staff will work with the EC and TAC to review and approve projects for FY24.

Pending Deliverables: Final reports for completed Community Projects.

## Lab Competency Documentation

The Estuary Program utilizes laboratories that have met the certification requirements for their technical area. During FY23, the following labs were used:

For Water Quality: Following numerous struggles with Pace Analytical, staff decided during the summer of 2023 to switch analytical labs to Fruit Growers Laboratory (FGL). In 2023, we primarily used three labs, Pace Analytical (formerly BC Laboratories), FGL, and County of SLO Public Health Laboratory. All three labs maintained Environmental Laboratory Accreditation Program (ELAP) certification during this time period. The certification for Pace Analytical is available [online](#). Documentation for the county lab is [available online](#). The certification for FGL is [available online](#). Note that the state has been slow to update the certification status online. Staff contacted the labs to confirm that their certifications are still current.

For Bioassessment: The Estuary Program uses one lab, EcoAnalysts, Inc., for analysis of bioassessment samples. Bioassessment labs certify their individual taxonomists rather than the lab as a whole. They provided their taxonomists' certifications. Any of the lab's taxonomists listed could be assigned to our projects. The list of taxonomists' certifications is provided with the deliverables for this semi-annual report.

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.

## Budget Overview

Table 1: Costs expended during this semi-annual report period (April 1, 2023 to September 30, 2023) and cumulative since the beginning of the grant in October 2021.

Category	Subcategory	FY23 Period 2 320 Funds	FY23 Period 2 Cash Match	FY23 Period 2 TOTAL	Cumulative 320 Funds	Cumulative Cash Match	Cumulative TOTAL
Personnel	Salaries	\$255,120	\$12,935	\$268,055	\$854,541	\$32,337	\$886,878
	Fringe	\$25,824	\$300	\$26,124	\$85,696	\$730	\$86,426
	Management Conference	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Subtotal</i>	\$280,944	\$13,235	\$294,179	\$940,237	\$33,067	\$973,304
Travel	<i>(category includes local mileage)</i>	\$6,360	\$874	\$7,234	\$15,707	\$874	\$16,581
Supplies	Software	\$2,011	\$0	\$2,011	\$4,217	\$0	\$4,217
	Monitoring supplies	\$5,756	\$906	\$6,662	\$21,917	\$12,044	\$33,961
	Misc. office supplies, computers	\$207	\$0	\$207	\$11,796	\$0	\$11,796
	<i>Subtotal</i>	\$7,974	\$906	\$8,880	\$37,930	\$12,044	\$49,974
Contractual	Audit/Taxes/Accounting/Fees	\$17,070	\$2,993	\$20,063	\$34,271	\$13,351	\$47,622
	Education and Outreach	\$7,216	\$16,621	\$23,837	\$33,248	\$28,602	\$61,850
	Monitoring and Research	\$6,223	\$16,456	\$22,679	\$14,882	\$56,156	\$71,038
	Restoration and Protection	\$2,178	\$18,373	\$20,551	\$18,621	\$1,015,036	\$1,033,657
	<i>Subtotal</i>	\$32,687	\$54,443	\$87,130	\$101,022	\$1,113,145	\$1,214,167
Other	Rent	\$27,753	\$0	\$27,753	\$96,881	\$0	\$96,881
	Utilities	\$1,937	\$0	\$1,937	\$5,266	\$0	\$5,266
	Postage	\$154	\$0	\$154	\$513	\$0	\$513
	Copying, Printing	\$1,266	\$0	\$1,266	\$3,884	\$0	\$3,884
	Training, Prof. Dev.	\$0	\$0	\$0	\$3,039	\$0	\$3,039
	Telephone, Internet	\$2,437	\$0	\$2,437	\$8,341	\$0	\$8,341
	Repairs and Maintenance	\$1,425	\$0	\$1,425	\$11,278	\$0	\$11,278
	Insurance	\$0	\$0	\$0	\$3,894	\$0	\$3,894
	Vehicle maintenance, fuel	\$3,974	\$0	\$3,974	\$7,562	\$0	\$7,562
	Community Projects	\$0	\$3,260	\$3,260	\$0	\$15,815	\$15,815
	<i>Subtotal</i>	\$38,946	\$3,260	\$42,206	\$140,658	\$15,815	\$156,473
<b>TOTAL</b>	<b>\$366,911</b>	<b>\$72,718</b>	<b>\$439,629</b>	<b>\$1,235,554</b>	<b>\$1,174,945</b>	<b>\$2,410,499</b>	

Table 2: Costs by program area and task. Match numbers do not include in-kind match.

Program Area	Project	FY23 Period 2 320 Funds	FY23 Period 2 Match	FY23 Period 2 TOTAL	FY23 Overall TOTAL
Education and Outreach	Communications	\$4,424	\$0	\$4,424	\$4,704
	Bay Friendly Recreation	\$0	\$0	\$0	\$583
	Education and Nature Center	\$2,802	\$0	\$2,802	\$3,566
	Community Volunteer Program	\$550	\$0	\$550	\$550
	State of the Bay	-\$734	\$0	-\$734	\$11,043
	Mutts for the Bay	\$0	\$16,621	\$16,621	\$27,915
	Other E&O Tasks	\$174	\$0	\$174	\$1,130
	<i>Subtotal</i>	\$7,216	\$16,621	\$23,837	\$49,491
Monitoring and Research	Benthic Invertebrate Monitoring	\$0	\$12,445	\$12,445	\$13,210
	Stats	\$0	\$0	\$0	\$0
	Water Quality Monitoring	\$2,663	\$4,011	\$6,674	\$28,554
	Eelgrass Monitoring & Analysis	\$3,560	\$0	\$3,560	\$3,560
	<i>Subtotal</i>	\$6,223	\$16,456	\$22,679	\$45,324
Habitat Protection and Restoration	Restoration & Conservation Planning	\$0	\$0	\$0	\$0
	Eelgrass Restoration	\$0	\$0	\$0	\$0
	Chorro Creek Ecological Reserve	-\$125	\$17,909	\$17,784	\$20,444
	Restoration Project Maintenance	\$0	\$0	\$0	\$0
	Other Restoration	\$2,303	\$0	\$2,303	\$8,996
	State Park Marina Stormwater Project	\$0	\$0	\$0	\$93,765
	Invasive Species Management	\$0	\$464	\$464	\$8,060
	<i>Subtotal</i>	\$2,178	\$18,373	\$20,551	\$131,265
	Program Administration	Community Projects	\$0	\$3,260	\$3,260
	<b>TOTAL</b>	<b>\$15,617</b>	<b>\$54,710</b>	<b>\$70,327</b>	<b>\$233,211</b>