



**CLEAN WATER ACT SECTION 320 GRANT  
WORK PLAN & BUDGET  
FOR  
FISCAL YEAR 2024**

**MORRO BAY NATIONAL ESTUARY PROGRAM  
CLEAN WATER ACT SECTION 320 GRANT  
WORK PROGRAM & BUDGET  
FISCAL YEAR 2024**

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# 1. Introduction

The Morro Bay National Estuary Program (Estuary Program) works to protect and restore the Morro Bay estuary and its watershed through the implementation of our Comprehensive Conservation and Management Plan (CCMP) for Morro Bay, which was updated in 2022. The three Estuary Program programmatic focus areas are: (1) habitat protection and restoration, (2) environmental monitoring and research, and (3) public participation, education, and outreach. This Work Program describes our planned efforts for Fiscal Year (FY) 2024, which covers the period from October 1, 2023 through September 30, 2024.

Morro Bay was accepted into the National Estuary Program in 1995 when the Administrator of the U.S. Environmental Protection Agency (EPA) accepted Governor Wilson's nomination of the program. With financial support from EPA, Estuary Program staff worked with government agencies, non-profits, businesses, and the local community to develop a watershed-based management plan, the Comprehensive Conservation and Management Plan for Morro Bay (CCMP). The CCMP defines the priority issues facing the estuary and watershed, and identifies specific Action Plans to address them. It also defines the management structure of the organization, which is based on collaboration and partnerships between the many groups that make up the Estuary Program.

The EPA formally approved our CCMP in January 2001 and has continued to provide significant grant funding to further the implementation of that plan. Almost every CCMP action plan was initiated, and nearly half are either complete or fully in place and ongoing. The CCMP was revised in 2012 through a public process and approved by the Estuary Program's Management Conference in February 2013. The CCMP was updated in 2022, with approval by the Estuary Program's Management Conference. Various action plans from the CCMP are referenced in this workplan. The Estuary Program works with its many partners to implement these actions in the watershed.

Congress allocates funding for the National Estuary Program (NEP) under Section 320 of the Clean Water Act (CWA). EPA provides a portion of those funds to each of the 28 National Estuaries. The expected funding available to the Estuary Program through these Section 320 funds for FY24 is \$850,000.

The Bay Foundation of Morro Bay, a 501(c)(3) nonprofit corporation, will continue to serve as the legal and fiscal agent for the Estuary Program by employing staff, signing contracts, and applying for grants. The Estuary Program Executive Committee oversees the progress of the annual workplan and is the policy decision-making body for the Estuary Program. The Section 320 funding requires a non-federal match of at least one-to-one. The Estuary Program will meet that match through both direct expenditures of private, local, and state funds awarded directly to the Estuary Program, and through tracking the in-kind match that our many partner organizations are spending to help implement the Management Plan.

The Estuary Program is excited to continue our work to protect and restore the Morro Bay estuary and watershed, and we are thankful for the financial and technical support of EPA, as well as the ongoing participation of many partners in the Morro Bay watershed and beyond.

## **Management Conference Structure and Membership**

**Technical Advisory Committees** – The Technical Advisory Committees (TAC) are composed of experts in various areas that provide technical advice and input to the program. These TACs are formed for specific technical topics such as Sedimentation Monitoring, Fisheries Management, Estuarine Habitats, and Education and Outreach. These TACs provide advice to staff in many areas: collaborating and reviewing Community Project options, investigating technical issues, providing advisory oversight to monitoring, restoration, and education efforts,

recommending changes to the CCMP, and tracking and reporting on implementation. The TACs meet on an as-needed basis. Membership is not limited to a specific number of seats, and members are invited by staff to join.

**Executive Committee** – The Executive Committee (EC) is the key decision-making body for the Morro Bay National Estuary Program. It provides broad policy direction, approves priorities for CCMP implementation, seeks and develops funding sources, and approves CCMP changes, as necessary. Specific responsibilities include: approving funding requests for the Morro Bay Restoration Fund, monitoring and evaluating the performance of the program, approving the annual workplan, and providing leadership and overall direction for the Estuary Program. The EC meets quarterly. Membership includes representatives from specific agencies and interest group seats that are appointed through a majority vote of the EC and serve two-year terms.

**Bay Foundation Board of Directors** – The Bay Foundation is the nonprofit home of the Estuary Program, and its board of directors approves priorities for CCMP implementation, workplans, Community Projects, and other major components of the work of the Estuary Program. The Board of Directors works collaboratively with the Executive Committee on strategic direction and priorities of the Estuary Program.

## 2. Goals for CCMP Implementation in Fiscal Year 2024

This workplan describes the Morro Bay National Estuary Program’s broad goals, specific projects, and planned budget for FY24, which spans from October 1, 2023 to September 30, 2024. This workplan will guide Estuary Program efforts in FY24 and provide a mechanism to measure our success over the coming year. It is important to recognize that the nature of a collaborative, non-regulatory program such as the Estuary Program demands flexibility; just as some planned projects may be delayed, other unforeseen opportunities and partnerships to further implementation of the CCMP will present themselves. The program goals are summarized below.

**Water Quality Protection and Enhancement:** Water quality in the Morro Bay watershed and estuary supports diverse habitats and wildlife populations, safe recreation, clean drinking water, and well-balanced economic uses.

One of the main tenets of the NEP is to protect and restore water quality, as the NEP is part of the federal Clean Water Act. This goal illustrates the aspiration for clean water that supports a variety of uses by people and wildlife in Morro Bay.

**Ecosystem Restoration and Conservation:** The Morro Bay watershed and estuary sustain a resilient community with high habitat connectivity, ample biological integrity, proper ecosystem function, and a vibrant economy.

This goal illustrates the Estuary Program’s interest in conserving and restoring habitats, biodiversity, and ecosystem processes, all of which affect the local economy. The goal also envisions a healthy ecosystem and economy even in the face of change.

**Public Education, Outreach, and Stewardship:** Citizens and visitors around Morro Bay understand basic estuary science and the impacts of specific actions on estuary health and are engaged stewards of the Morro Bay estuary and watershed.

This goal represents the importance of informed and engaged citizens for the future health of Morro Bay and a vision that community members will increasingly become stewards of the estuary.

**Fostering Collaboration:** Citizens, local government, nonprofits, state and federal agencies, and public and private landowners collaborate and leverage resources to facilitate effective management and increased scientific knowledge of the Morro Bay estuary and watershed.

Another core tenet of the NEP is collaboration, as described in the Clean Water Act. This goal showcases the Estuary Program’s commitment to fostering collaboration to effectively understand and manage the resources of Morro Bay.

Actions to complete these goals are described in detail in Section 4.

### 3. Budget and Staff Elements

Tables 3.1, 3.2, and 3.3 provide an overview of the budget for FY24. The Estuary Program meets a portion of the EPA’s one-to-one match requirement using the Estuary Program-managed Morro Bay Restoration Fund. These funds are private, locally-controlled, and already committed and available for these projects. Other sources of match funds include local and state funds, private donations, volunteer time, and contributed services and facilities.

**Table 3.1: Budget Overview for FY24**

| Category        | Subcategory                       | FY23 Anticipated Request | Match            | Total              |
|-----------------|-----------------------------------|--------------------------|------------------|--------------------|
| Personnel       | Salaries                          | \$527,456                | \$6,701          | \$534,157          |
|                 | Fringe                            | \$65,691                 | \$519            | \$66,210           |
|                 | Management Conference             | \$0                      | \$20,387         | \$20,387           |
|                 | <b>Subtotal</b>                   | <b>\$593,147</b>         | <b>\$27,608</b>  | <b>\$620,755</b>   |
| Travel          | (category includes local mileage) | \$13,350                 | \$0              | \$13,350           |
| Equipment       | Restoration Project               | \$30,000                 | \$0              | \$30,000           |
| Supplies        | Computers, software               | \$3,000                  | \$0              | \$3,000            |
|                 | Monitoring supplies               | \$20,355                 | \$0              | \$20,355           |
|                 | Misc. office supplies             | \$8,150                  | \$0              | \$8,150            |
|                 | <b>Subtotal</b>                   | <b>\$31,505</b>          | <b>\$0</b>       | <b>\$31,505</b>    |
| Contractual     | Audit/Taxes/Accounting            | \$17,930                 | \$4,150          | \$22,080           |
|                 | Education and Outreach            | \$17,500                 | \$103,157        | \$120,657          |
|                 | Monitoring and Research           | \$19,000                 | \$354,865        | \$373,865          |
|                 | Restoration and Protection        | \$40,000                 | \$311,480        | \$351,480          |
|                 | <b>Subtotal</b>                   | <b>\$94,430</b>          | <b>\$773,652</b> | <b>\$868,082</b>   |
| Other           | Rent                              | \$57,384                 | \$13,740         | \$71,124           |
|                 | Utilities                         | \$2,854                  | \$0              | \$2,854            |
|                 | Postage                           | \$500                    | \$0              | \$500              |
|                 | Copying, Printing                 | \$2,086                  | \$0              | \$2,086            |
|                 | Training, Prof. Dev.              | \$2,000                  | \$0              | \$2,000            |
|                 | Telephone, Internet               | \$4,643                  | \$0              | \$4,643            |
|                 | Repairs and Maintenance           | \$9,000                  | \$0              | \$9,000            |
|                 | Insurance                         | \$3,601                  | \$0              | \$3,601            |
|                 | Vehicle maintenance, fuel         | \$5,500                  | \$0              | \$5,500            |
|                 | Community Projects                | \$0                      | \$35,000         | \$35,000           |
| <b>Subtotal</b> | <b>\$87,568</b>                   | <b>\$48,740</b>          | <b>\$136,308</b> |                    |
|                 | <b>TOTAL</b>                      | <b>\$850,000</b>         | <b>\$850,000</b> | <b>\$1,670,000</b> |

Note: \$20,000 of Community Projects match comes from Restoration Fund, with remaining match from partners.

**Table 3.2: Budget Detail of Direct Expenses by Program Area**

| Program Area                        | Project                                | 320 Grant Request | Match (non-federal) |                  | Total            |
|-------------------------------------|--|-------------------|---------------------|------------------|------------------|
|                                     |  |                   | MB Restoration Fund | Other            |                  |
| Education and Outreach<br><b>A</b>  | Communications 1                       | \$3,000           | \$0                 | \$10,151         | \$13,151         |
|                                     | Community Partners 2                   | \$500             | \$0                 | \$4,207          | \$4,707          |
|                                     | Bay Friendly Recreation 3              | \$0               | \$0                 | \$3,117          | \$3,117          |
|                                     | Clean Boating 4                        | \$1,000           | \$0                 | \$60,000         | \$61,000         |
|                                     | Education and Nature Center 5          | \$8,500           | \$0                 | \$25,682         | \$34,182         |
|                                     | Other E&O Tasks 6                      | \$4,500           | \$0                 | \$0              | \$4,500          |
|                                     | <b>Subtotal</b>                        | <b>\$17,500</b>   | <b>\$0</b>          | <b>\$103,157</b> | <b>\$120,657</b> |
| Monitoring and Research<br><b>B</b> | Benthic Invertebrate Monitoring        | \$0               | \$0                 | \$5,913          | \$5,913          |
|                                     | Eelgrass Monitoring 1                  | \$5,000           | \$0                 | \$0              | \$5,000          |
|                                     | Water Quality Monitoring 2             | \$14,000          | \$0                 | \$348,952        | \$362,952        |
|                                     | <b>Subtotal</b>                        | <b>\$19,000</b>   | <b>\$0</b>          | <b>\$354,865</b> | <b>\$373,865</b> |
| Habitat Protection and Restoration  | Restoration Maintenance and Monitoring | \$7,500           | \$0                 | \$0              | \$7,500          |
|                                     | Other Restoration                      | \$12,500          | \$0                 | \$305,980        | \$318,480        |
|                                     | Conservation & Restoration Proj Dev    | \$0               | \$0                 | \$5,000          | \$5,000          |
|                                     | Fisheries Management                   | \$50,000          | \$0                 | \$500            | \$50,500         |
|                                     | <b>Subtotal</b>                        | <b>\$70,000</b>   | <b>\$0</b>          | <b>\$311,480</b> | <b>\$381,480</b> |
|                                     | <b>TOTAL</b>                           | <b>\$106,500</b>  | <b>\$0</b>          | <b>\$769,502</b> | <b>\$876,002</b> |

Note: Total for Restoration Fund match is **\$20,000** for Community Projects. Expenses shown combined contractual, supplies, and equipment expenses by Program Area to more clearly represent the resources devoted to these aspects of the Estuary Program FY24 Work Program. This table does not include Estuary Program staff time or overhead. For the Habitat Protection and Restoration budget, the Equipment purchase from Table 3.1 is included in the Fisheries Management line item in Table 3.2.

Education and Outreach Expenses (section A):

1. Communications expenses include graphic design work and printing for the annual report; design and printing of pamphlets and publications; and ongoing maintenance expenses for our blog and website.
2. Community Partners includes support for partner education efforts such as cleanup events and local water conservation efforts.
3. Bay Friendly Recreation includes the Mutts for the Bay program to promote recreation while protecting water quality.

4. Clean Boating includes supplies or services to maintain bay pumpout facilities.
5. Education and Nature Center includes expenses such as aquarium maintenance, display repairs and upgrades, watershed model demonstration supplies, handouts, microscopes, educational activity supplies, and coloring supplies.
6. Other E&O Tasks category includes work on various community efforts as opportunities arise. Includes costs such as printing, development of education materials, and renting venues for scientific talks.

Monitoring and Research Expenses (section B):

1. Eelgrass Monitoring expenses includes imagery collection and analysis to track eelgrass extent in the bay and support for eelgrass health monitoring efforts.
2. Water Quality Monitoring expenses include analytical laboratory services (couriers, sample analysis, and data reporting), student fellowships to support monitoring efforts, and data management support (technical support for maintaining our data management system and submitting data to a state-wide data portal).



**Table 3.3: Summary of 320 Spending and Match for FY24**

| FY24 Workplan Task                    | 320 Budget Other Expenses | 320 Budget Staff time | Projected match  | Total              |
|---------------------------------------|---------------------------|-----------------------|------------------|--------------------|
| REST-1: Habitat Protection            | \$0                       | \$9,317               | \$0              | \$9,317            |
| REST-2: Restoration Maintenance       | \$7,500                   | \$19,497              | \$0              | \$26,997           |
| REST-3: Other Restoration             | \$12,500                  | \$28,987              | \$305,980        | \$347,467          |
| REST-4: Conservation Proj Dev         | \$0                       | \$37,942              | \$5,000          | \$42,942           |
| REST-5: Fisheries Management          | \$50,000                  | \$19,069              | \$500            | \$69,569           |
| MONITORING-1: Coordination            | \$30,966                  | \$38,760              | \$354,865        | \$424,591          |
| MONITORING-2: Reporting & Analysis    | \$0                       | \$24,948              | \$0              | \$24,948           |
| MONITORING-3: Data Management         | \$0                       | \$31,074              | \$0              | \$31,074           |
| MONITORING-4: Quality Assurance       | \$1,725                   | \$30,574              | \$0              | \$32,299           |
| MONITORING-5: Project Effectiveness   | \$1,664                   | \$31,750              | \$0              | \$33,414           |
| MONITORING-6: Eelgrass Monitoring     | \$5,000                   | \$24,472              | \$0              | \$29,472           |
| MONITORING-7: Partner Research        | \$0                       | \$23,419              | \$0              | \$23,419           |
| E&O-1: Communications                 | \$3,000                   | \$38,584              | \$10,151         | \$51,735           |
| E&O-2: Education                      | \$4,500                   | \$19,742              | \$25,682         | \$49,924           |
| E&O-3: Nature Center                  | \$4,000                   | \$16,211              | \$0              | \$20,211           |
| E&O-4: Other E&O                      | \$6,000                   | \$10,860              | \$64,207         | \$81,067           |
| E&O-5: Mutts for the Bay              | \$0                       | \$17,588              | \$3,117          | \$20,705           |
| PM-1: Manage Committees               | \$0                       | \$13,889              | \$20,387         | \$34,276           |
| PM-2: Grants & Contracts              | \$30,530                  | \$61,510              | \$4,150          | \$96,190           |
| PM-3: General Administration          | \$99,468                  | \$62,168              | \$20,961         | \$182,597          |
| PM-4: Tracking Implementation of CCMP | \$0                       | \$16,880              | \$0              | \$16,880           |
| PM-5: Community Projects Program      | \$0                       | \$15,909              | \$35,000         | \$50,909           |
| <b>TOTAL Budget</b>                   | <b>\$256,853</b>          | <b>\$593,147</b>      | <b>\$850,000</b> | <b>\$1,700,000</b> |

**Program Staffing Anticipated for FY24**

All personnel are employees of the Bay Foundation of Morro Bay. As in any small organization, the roles of personnel are fluid to change with the needs of the organization.

- **Executive Director:** Leads the organization and Management Plan implementation. Responsible for CCMP update. Manages CWA 320 and other grant, staffs committees, and nonprofit board. Oversees general operations – budgeting, accounting, records management, and human resources. Supervises Estuary Program staff. Principal liaison to other agencies and organizations. Principal liaison to EPA. Serves as the public face of the organization. Represents the Estuary Program on local and regional committees. Oversees CCMP tracking, annual report, and workplan. Attends Association of NEP (ANEP)/EPA meetings.
- **Assistant Director:** Responsible for assisting the Executive Director with CCMP implementation, managing CWA 320 and other grants, and staffing committees and nonprofit board. Supports budgeting, accounting, records management, and managing NEP staff. Assists with CCMP tracking,

annual reports, and workplan. Coordinates project development and grant management across the organization. Manages monitoring program strategy and other special projects, such as State of the Bay. Manages match tracking and NEPORT submission. Attends ANEP/EPA meetings.

- Restoration Projects Manager: Develops and implements restoration efforts. Oversees restoration projects, including partner agency coordination, grant management, permitting, and outside services procurement. Manages monitoring and maintenance of restoration projects. Coordinates a diverse set of external experts to assist with technical aspects of specific projects.
- Community Engagement Coordinator: Responsible for public relations and marketing work to engage community, targeted outreach campaigns geared towards increasing environmental stewardship, blog posts, social media, website updates, and representing the Estuary Program at public events. Implements the Finance Plan with Executive Director and nonprofit board. Other projects include field trips and tours, educational brochures, press releases, planning outreach efforts, and various other public outreach projects. Represents the Estuary Program in outreach settings, including on relevant local and regional committees.
- Monitoring Projects Manager: Coordinates Estuary Program monitoring efforts. Assists with staff and volunteer management. Manages budgeting, invoicing, contracting, etc. for monitoring projects. Reviews and updates Quality Assurance Project Plan (QAPP), monitoring protocols, and indicators/baseline work. Coordinates data management and submittal of data to the state. Manages and shares data with partners and the general public.
- Monitoring Coordinator: Conducts Estuary Program monitoring efforts. Completes data analysis, reports, and protocols. Assists with volunteer recruitment, training, and fieldwork. Manages QA/QC functions. Manages and shares data with partners and the general public.
- Finance & Operations Administrator: Manages day-to-day bookkeeping and accounting, financial records, annual audit requirements, and provides administrative support for human resources. Responsible for ensuring all operational accounting and financial support is timely, accurate, and consistent with all organization policies and procedures. Coordinates match tracking and supports NEPORT data collection and synthesis.
- Intern(s) and Technician(s) (as needed): Assists with field work, data management, analysis, and outreach. These are part-time, temporary positions.

**Fringe Details: \$65,691**

- Expenses:
  - Workers' Compensation – Workers' compensation insurance as required by law and specific to each position.
  - Health Insurance – Health insurance costs that the Bay Foundation of Morro Bay covers for eligible full-time employees.
  - IRA Match – Bay Foundation match payments for eligible employees' IRA contributions.

**Miscellaneous Office Supplies: \$11,150**

- Expenses:
  - Office supplies (paper, toner, batteries, etc.)
  - Water delivery
  - Office furniture
  - Meeting space rentals and materials
  - Phone maintenance and repairs

- Forms, checks, and employee policy posters and guides
- First aid supplies and CPR training

**Monitoring Supplies: \$20,355**

- Expenses:
  - Bacteria monitoring supplies – Reagent, supplies, and other ancillary items needed to monitor bacteria levels. This includes supplies needed for health and safety and for quality assurance procedures.
  - Water quality monitoring supplies – Reagent, calibration supplies, small equipment, batteries, and other ancillary items for monitoring conventional water quality parameters in the estuary and creeks. This includes necessary items for health and safety and for quality assurance procedures.
  - Field gear – Protective gear to ensure that staff and volunteers can work effectively and safely.

## 4. New and Ongoing Project Information

Where applicable, the estimated budgets include project and staff costs.

The Estuary Program is fortunate to receive funds from the Bipartisan Infrastructure Law (BIL) that funds projects that support CCMP implementation. Although many direct projects costs such as contracting, analysis, and equipment purchases are funded with BIL money, Estuary Program staff time to manage these projects are funded with both BIL and 320 grant funding. Thus, BIL-funded projects are listed in the 320 workplan where appropriate due to time spent by 320-funded staff to support those efforts.

### Habitat Protection and Restoration Activities

**REST-1: Land Conservation and Planning**

**Project Status:** *Ongoing*

**Objective:** Conserve land as opportunities arise.

**Description:** The CCMP calls for protection of ecologically-valuable habitats in part to help minimize nonpoint sources of pollution entering the estuary and to promote clean water in the bay. Over 5,000 acres of land have been protected through conservation easements and fee title acquisitions by the Estuary Program and partners. In FY24, the Estuary Program expects to work with The Land Conservancy of San Luis Obispo County (LCSLO) and other partners to develop conservation easements with interested landowners in the watershed. The Estuary Program is participating in community efforts within Morro Bay to support open space preservation around the city. This task represents an anticipated share of staff time to develop these opportunities and support partner efforts. Land Conservancy will be meeting with a landowner along Chorro Creek in spring 2023 to discuss a possible easement protecting floodplain habitat.

**Partners and Their Roles:** LCSLO is experienced in working with landowners to develop easements and acquisitions, obtaining funds for these deals, and overseeing the monitoring and management of the protected lands. Their role is to interface with landowners and the funders to develop easements and acquisitions. Other partners with interest in land conservation in Los Osos and Morro Bay include Morro Bay Open Space Alliance, California Department of Fish & Wildlife (CDFW), California State Coastal Conservancy (SCC), Wildlife Conservation Board, Morro Coast Audubon Society, California State Parks, Coastal San Luis Resource Conservation District (CSLRCD), and private landowners.

**Output/Deliverables:** The deliverable will be a map or similar documentation of acquisitions or easements.

**Estimated Milestones:** Easement timelines are dependent on landowner and funding timelines.

**Estimated Budget:** Depends on acquisition and easement opportunities. Staff time: \$9,317. Match: \$0.

**Long-Term Outcomes:** Achieve land conservation projects as opportunities arise, with a focus on the Los Osos Valley.

**CWA Implementation:** Addressing diffuse nonpoint sources of pollution. Protecting wetlands. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** LP-1 (Protect Special Habitats/Species), LP-3 (Direct Urban Development)

## **REST-2: Restoration Maintenance and Monitoring**

**Project Status:** *Ongoing*

**Objective:** Complete maintenance for conservation easements and restoration projects, as necessary.

**Description:** The Estuary Program with its partners has implemented multiple complex restoration projects that require ongoing maintenance. This work includes maintenance of Chorro Creek Ecological Reserve (CCER), riparian fencing, and off-creek water systems as well as best management practice (BMP) projects. At CCER, efforts for 2024 include plant monitoring to ensure survival targets are getting met and additional monitoring and analysis of how the site performs during high flow events. Ongoing site maintenance such as weeding and irrigating will be conducted in 2024.

**Partners and Their Roles:** Army National Guard Base Camp San Luis Obispo (Camp SLO), CDFW, California Polytechnic State University San Luis Obispo (Cal Poly), Pacific Gas & Electric, and US Forest Service. Their role is to permit land access and maintain project sites.

**Outputs/Deliverables:** Activities documented in semi-annual reports.

**Estimated Milestones:** Work is on an as-needed basis.

**Estimated Budget:** Staff time: \$19,497. Supplies and gear: \$7,500. Match: \$0.

**Long-term Outcomes:** Work with landowners to maintain restoration work so that it continues to be effective.

**CWA Core Program Project Supports:** Addressing diffuse, nonpoint sources of pollution. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** BMP-1 (Agricultural and Grazing BMPs), BMP-2 (Rural Road Erosion), ECR-1 (In-Stream Habitat), ECR-2 (Riparian Corridors), ECR-3 (Wetland Protection and Enhancement)

## **REST-3: Other Restoration Efforts**

**Project Status:** *Ongoing*

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

**Description:** Additional water quality and habitat restoration opportunities often arise in the course of the year that are worthy of immediate attention. This task reserves some staff time for these opportunities. Some examples include riparian fencing, the San Luis Obispo (SLO) County Integrated Regional Water Management Group, supporting partner restoration projects on private property, and supporting the city of Morro Bay and stakeholders in eelgrass management efforts. The Estuary Program will act as a partner on water conservation, habitat restoration, and steelhead projects as needed. The Estuary Program will work with partners such as United States Geological Survey (USGS) to develop projects to study future sea level rise impacts on the estuary habitats such as the salt marsh, mudflats, eelgrass, sandspit, and transition zones. The Estuary Program will work with State Parks to conduct invasive sea lavender monitoring and removal and to map invasives and special status species. The Estuary Program worked with partners to create a habitat Conservation Planning Initiative. The plan identifies the indicators, projects, and partners involved in protecting and preserving each habitat type. The Estuary Program will work with partners to finalize and implement the Conservation Planning Initiative.

**Partners and Their Roles:** Potential partners include SLO County, the city of Morro Bay, the Los Osos Community Services District, CSLRCD, Cal Poly, Camp SLO, the Morro Bay Harbor Advisory Board, CDFW, State Parks, and others. These are partners in funding, planning, and implementation. Partners for the Conservation Planning

Initiative are numerous and include the city of Morro Bay, California State Parks, SLO County, local consultants, and local experts.

**Output/Deliverables:** If the opportunity arises and work is conducted for this item, then a description will be provided in the semi-annual progress report provided to the EPA Project Officer (semi-annual report).

**Estimated Milestones:** As opportunities arise.

**Estimated Budget:** Staff time for partnership support and participation on committees: \$28,897. Support of partner projects: \$12,500. Other expenses depend on opportunities that arise. Match: \$305,980.

**Long-term Outcomes:** Restoration efforts support CCMP implementation and partner projects.

**CWA Core Programs the Project Supports:** Addressing diffuse, nonpoint sources of pollution, protecting wetlands. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** Depending on project opportunities that arise, work could impact the following Action Plans: BMP-1 (Agricultural and Grazing BMPs), ECR-1 (In-stream Habitat), ECR-2 (Riparian Corridors), ECR-3 (Wetlands Protection and Enhancement), ECR-14 (Support Recovery Plans), ECR-15 (Steelhead Barriers and Habitat), ECR-16 (Invasive Species Action Plan), FWR-5 (Water Conservation)

#### **REST-4: Conservation and Restoration Project Development**

**Project Status:** *Ongoing*

**Objective:** To develop project plans and initial scoping for conservation and restoration efforts.

**Description:** Often plans, permits, and initial monitoring must be conducted before a project is eligible for funding. This task reserves some staff time to work with partners to conduct these initial efforts. Estuary Program staff will support Camp SLO in stormwater management projects. Efforts may also include engaging landowners in implementing BMPs on private property throughout the watershed. Discussions are underway with Caltrans, SLO County, and other partners on a fish passage barrier removal project on San Luisito Creek, with the Estuary Program planning to provide support for preliminary work needed for project development. Another potential effort is a CSLRCD project with 319(h) funding (applied) to implement BMPs on private property in the watershed as well as two projects on Camp SLO property. Additionally, studies or implementation projects may also be completed (e.g., identify sediment basins, floodplains, migration space) that were identified in the Conservation Planning Initiative. Numerous energy related projects are under development in the watershed and near-shore area that could impact Morro Bay and its watershed. Staff will track these potential projects and provide input where appropriate. Staff will work with project partners such as Cal Poly, Sea Grant, The Nature Conservancy, and others on studying native oyster restoration viability in the bay. Work could potentially take place at Pasadena Point to protect sensitive habitats, and staff will work with partners such as SLO County and the SLO Land Conservancy on this effort as it develops. The Estuary Program has provided some initial support to develop stormwater projects on Camp SLO, and this work is expected to continue into FY24. Staff will seek opportunities to develop water conservation projects such as groundwater recharge or rainwater catchment efforts. Staff are communicating with UC Santa Barbara and other partners to consider additional beneficial pilot projects/restoration techniques on the Morro Bay sand spit. Efforts are also underway to work with the partners on synthesizing existing efforts on coastal dune systems on the coast of California to share lessons learned. Staff is also looking into completing a Chorro Creek watershed invasive species survey to inform management of invasives such as Arundo. The Estuary Program is also in coordination with Creek Lands Conservation and the San Francisco Estuary Institute on starting a historical ecology study of the estuary and possibly portions of the watershed.

**Partners and Their Roles:** The primary partners for landowner best management practices are the CSLRCD and the National Resource Conservation Service. Instream flow projects could potentially include Creek Lands Conservation with the role of winning and managing funding and providing technical expertise; the CCC, who would contribute technical expertise, materials and field support; and potential landowners. The primary partners for the steelhead habitat efforts are Creek Lands Conservation, the city of SLO, and CDFW with the role of providing technical expertise; the California Conservation Corps (CCC) who would contribute technical expertise, materials, and field support; and the city of SLO who would provide technical expertise. For

conservation planning and invasive species management, primary partners include California State Parks and SLO County, who provide technical expertise and field support. Partners for stormwater projects include Camp SLO, Creek Lands Conservation, and the CCC. Partners on energy related projects include the city of Morro Bay, SLO County, and the Coastal Commission. These entities take on the role of providing guidance and oversight as these efforts develop. Partners on oyster restoration projects include Sea Grant, Cal Poly, The Nature Conservancy, and Elkhorn Slough National Estuarine Research Reserve as technical resources, and local oyster farms as research partners. Protecting habitats at Pasadena Point would involve SLO County (as the landowner and implementation partner) and private citizens who have an interest in protecting the area. Camp SLO, as a landowner and funding partner, will be involved in developing stormwater projects on the base. Potential partners for water conservation efforts include Creek Lands Conservation (technical resource) and Camp SLO and Cal Poly as potential partners and landowners.

**Output/Deliverables:** If this condition arises (need before funding) and work is conducted for this item, then a description will be provided in the semi-annual report.

**Estimated Milestones:** Depends on funding deadlines. For conservation and steelhead projects, the milestones are to be determined depending on funding and permitting.

**Estimated Budget:** Staff: \$37,942. Match: \$5,000.

**Long-term Outcomes:** Expand steelhead access to areas in the watershed with the habitat and water quality to support sensitive species. Expand landowner water conservation efforts to protect surface flows. Best management practices to address sediment and water quality concerns. Enhance habitat quality through native species restoration. Assist in development of sustainable energy projects while protecting environmental resources.

**CWA Core Programs the Project Supports:** Addressing diffuse, nonpoint sources of pollution.

**CCMP Action Plans Addressed:** Depending on project opportunities that arise, work could impact the following Action Plans: BMP-1 (Agricultural and Grazing BMPs), ECR-1 (In-stream Habitat), ECR-2 (Riparian Corridors), ECR-3 (Wetlands Protection and Enhancement), ECR-14 (Support Recovery Plans), ECR-15 (Steelhead Barriers and Habitat), ECR-16 (Invasive Species Action Plan), FWR-5 (Water Conservation)

## **REST-5: Fisheries Management**

**Project Status:** *New*

**Objective:** To implement projects to benefit native species and other opportunities as they arise.

**Description:** Steelhead recovery in Chorro Creek is inhibited by invasive Sacramento pikeminnow (*Ptychocheilus grandis*). Pikeminnow were introduced to the watershed and inhibit steelhead recovery by reducing juvenile abundance and survival through predation and competition for food and habitat. A management plan to control pikeminnow was developed in 2017. Recent efforts have nearly eliminated the source pikeminnow population in Chorro Creek Reservoir, and annual efforts have demonstrated an effective approach of suppressing pikeminnow to increase abundance of steelhead. In FY22, the Estuary Program conducted pikeminnow management in Chorro Creek as well as Chorro Reservoir. In FY23, the Estuary Program conducted pikeminnow management efforts. FY24 will be the third year of a three-year grant from CDFW to manage pikeminnow in the watershed. Other work includes efforts to track steelhead use of lower Chorro Creek during key life cycle stages. Efforts are also underway using BIL funding to conduct fisheries studies in the estuary to track changes in fish species composition following eelgrass recovery.

**Partners and Their Roles:** The primary partners for this project will include Stillwater Sciences who hold the permit for implementation. CCC will provide technical input and field support. CDFW will provide technical support. USFWS offers project oversight and issues the permit for the work. CDFW is a funder of the pikeminnow management project and a landowner in the watershed.

**Output/Deliverables:** A summary report of pikeminnow management efforts (e.g., number of fish caught) will be completed yearly. Summary reports of the results of fish studies will be completed at the conclusion of those efforts.

**Estimated Milestones:** The number of steelhead in relation to pikeminnow observed in select sampled reaches of Chorro Creek will increase after management. A better understanding of steelhead use of the mainstem creek helps target projects to improve habitat, water quality, and water quantity.

**Estimated Budget:** Staff time: \$19,069. Project costs: \$20,000. Equipment costs: \$30,000. Match: \$500.

**Long-term Outcomes:** Measurable targets are met in the 2017 Pikeminnow Management Plan. For example, the ratio of steelhead (all ages) to pikeminnow (all ages) of greater than one-to-one in habitat units sampled with multiple pass electrofishing within five years of full funding (\$60K annually). Improve fish habitat on lower Chorro Creek to support steelhead recovery.

**CWA Core Programs the Project Supports:** Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** ECR-14 (Support Recovery Plans), ECR-15 (Steelhead Barriers and Habitat), ECR-16 (Invasive Species Action Plan)

## Environmental Monitoring and Research

Work for all Environmental Monitoring and Research tasks is aimed at achieving results for the following Outcomes:

1. Project effectiveness evaluations conducted in partnership with relevant agencies and parties are shared broadly.
2. Understanding of TMDL effectiveness and the actions needed to eventually de-list local waterbodies is improved.
3. Overall understanding of waterbody status for 303(d) listed waterbodies in the watershed is improved.
4. Increase understanding of the effectiveness of stormwater management efforts.
5. Understand the impact of implementation actions on long-term, watershed-wide trends.
6. Strengthen collaboration among watershed partners while implementing actions laid out in the CCMP.

### MONITORING-1: Monitoring Program Coordination

**Project Status:** *Ongoing*

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

**Description:** The Estuary Program has an extensive and rigorous volunteer monitoring program. The Volunteer Monitoring Program (VMP) plays a lead role in the program's monitoring efforts. Without volunteers, the program could not collect as extensive a dataset. The VMP will continue ongoing volunteer monitoring, tracking of key environmental indicators, and developing new efforts to monitor effectiveness of implementation projects. This task includes monitoring coordination, volunteer recruitment and training, equipment maintenance, and program management tasks.

**Partners and Their Roles:** Primary partners in the Estuary Program monitoring effort include the Central Coast Regional Water Quality Control Board (CCRWQCB), whose Central Coast Ambient Monitoring Program (CCAMP) lends technical advice, monitoring equipment, and field support. Landowners such as California State Parks, Cal Poly, Camp SLO, SLO County, the city of Morro Bay, and numerous private landowners are also partners, allowing access on their land for monitoring. Cuesta College provides technical support, access to their property, and lab space. Program coordination follows the approved QAPP (a deliverable under Task MONITORING-4) and data is submitted to the California Environmental Data Exchange Network (CEDEN) database (a deliverable under Task MONITORING-3).

**Outputs/Deliverables:** A summary of work conducted for this item will be provided in the semi-annual report.

**Estimated Milestones:** As appropriate, monitoring protocols are updated to reflect changes to sites, monitoring methodologies, etc.

**Estimated Budget:** Staff time: \$38,760. Monitoring supplies, lab analysis, and student fellowships: \$30,966. Match: \$354,865.

**Long-Term Outcomes:** An increase in understanding of the long-term trends in ambient water quality in the watershed and estuary. Identification of potential projects and assessment of existing projects.

**CWA Core Programs the Project Supports:** Identifying polluted waters and developing plans to restore them (TMDLs). Addressing diffuse, nonpoint sources of pollution. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-4 (Maintain VMP), MON-5 (Support Partners), MON-6 (Support Research Activities)

## **MONITORING-2: Monitoring Program Reporting and Analysis**

**Project Status:** *Ongoing*

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

**Description:** The Estuary Program continuously 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 general public to help inform decision-making. A series of data summary memos will be completed in FY24. This includes an analysis of the sediment impacts to macroinvertebrate populations and overviews of bay and creek health. The task also includes responding to data requests from partners, landowners, and others.

**Partners and Their Roles:** Primary partners in the reporting and analysis of monitoring data include the CCRWQCB, whose CCAMP lends technical advice to the program. Public and private landowners make use of the data in their own land management and monitoring efforts. Cal Poly also lends technical expertise.

**Outputs/Deliverables:** When work occurs for this item, a summary will be provided in the semi-annual report.

**Estimated Milestones:** Monitoring updates for bioassessment, creek health, and bay health are expected in 2024.

**Estimated Budget:** Staff time: \$24,948. Match: \$0.

**Long-Term Outcomes:** Outcomes include making analysis available for agencies, project partners, and others throughout the state to inform and improve their own efforts to protect and restore.

**CWA Core Programs the Project Supports:** Identifying polluted waters and developing plans to restore them (TMDLs). Addressing diffuse, nonpoint sources of pollution. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-4 (Maintain VMP), MON-5 (Support Partners), MON-6 (Support Research Activities)

## **MONITORING-3: Monitoring Program Data Management**

**Project Status:** *Ongoing*

**Objectives:** Maintain data in SWAMP-compatible format.

**Description:** This task includes the on-going maintenance of program-generated data in a SWAMP-compatible data format. The Surface Water Ambient Monitoring Program (SWAMP) is a State Water Resources Control Board (SWRCB) program to increase usability and compatibility of water quality data from various sources. Data is quality controlled and entered into a SWAMP-compatible database to increase access for groups, including the general public, throughout the state.

**Partners and Their Roles:** Primary partners in the Estuary Program monitoring effort include the CCRWQCB, whose CCAMP lends technical advice and data management support to the program. The SWRCB is a partner, providing support for the state's California Environmental Data Exchange Network (CEDEN).

**Outputs/Deliverables:** When work is conducted for this item, a summary will be provided in the semi-annual report. Program data available on the [CEDEN website](#).



**Estimated Milestones:** Input of data into SWAMP-compatible database. Semi-annual submittals of data to the CEDEN and/or SWAMP system.

**Estimated Budget:** Staff time: \$31,074. Match: \$0.

**Long-term Outcomes:** A high-quality dataset available to the public and the state for use in TMDL analysis, 303(d) assessment, land management, etc.

**CWA Core Programs the Project Supports:** Identifying polluted waters and developing plans to restore them (TMDLs).

**CCMP Action Plans Addressed:** MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-4 (Maintain VMP), MON-5 (Support Partners), MON-6 (Support Research Activities)

#### **MONITORING-4: Monitoring Program Quality Assurance**

**Project Status:** *Ongoing*

**Objective:** Maintain an approved Quality Assurance Project Plan and implement necessary quality assurance methods.

**Description:** The monitoring program maintains a Quality Assurance Project Plan (QAPP), approved by EPA, which documents the program's monitoring methodologies, sites, and equipment. This task includes laboratory sample analysis to aid in assessment of quality assurance. In addition, some staff time is necessary to keep the QAPP up-to-date. The monitoring program collects scientifically rigorous data valued by many of our partners, and the QAPP ensures that the data collection and analysis methods maintain this high level of scientific quality. Data submitted to CEDEN now requires that an accompanying QAPP be included to document the data quality.

**Partners and Their Roles:** The EPA Region 9 Office of Quality Assurance is the primary partners, providing oversight of the QAPP and technical assistance. The SWRCB Quality Assurance Officer also provides review and oversight of the QAPP. Other partners include laboratories that analyze Estuary Program samples and partners conducting monitoring in the area such as the CCRWQCB's CCAMP, Central Coast Water Quality Preservation, Inc., and others.

**Output/Deliverables:** The deliverable will be an EPA-approved QAPP document.

**Estimated Milestones:** The updated document is submitted on an annual basis. The timing is dependent upon the EPA approval schedule.

**Estimated Budget:** Staff time: \$30,574. QA laboratory analysis: \$1,725. Match: \$0.

**Long-term Outcomes:** A high quality data set with data supporting efforts throughout the watershed including 303(d) and TMDL assessment.

**CWA Core Programs the Project Supports:** Identifying polluted waters and developing plans to restore them (TMDLs).

**CCMP Action Plans Addressed:** MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-4 (Maintain VMP), MON-5 (Support Partners), MON-6 (Support Research Activities)

#### **MONITORING-5: Project Effectiveness Monitoring**

**Project Status:** *Ongoing*

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

**Description:** Many monitoring efforts to demonstrate effectiveness of restoration or other projects are conducted by program staff (rather than volunteers) due to safety concerns, technical challenges, or a landowner's request. This task encompasses protocol development and monitoring work that falls into this category. This task will include monitoring of restoration projects and monitoring the freshwater seeps in Los Osos. The seeps are expected to demonstrate reduced nitrate contamination of groundwater by septic systems since the Los Osos Water Reclamation Facility came online in 2016. Monitoring data will be compiled to support restoration projects, partner data requests, etc. Staff monitor flows on Pennington Creek to assess the impacts

of a project to improve a diversion. These activities will continue.

**Partners and Their Roles:** Project partners include landowners or responsible entities such as Cal Poly, Camp SLO, and the SLO County Office of Education. Project partners lending expertise and funding include Trout Unlimited, Creek Lands Conservation, Stillwater Sciences, the California Department of Public Health, and others.

**Output/Deliverables:** When work is conducted for this item, a summary will be provided in the semi-annual report.

**Estimated Milestones:** Monitoring and data reports will be compiled as needed.

**Estimated Budget:** Staff time: \$31,750. Laboratory analysis of seeps samples: \$1,664. Match: \$0.

**Long-term Outcomes:** Conduct monitoring and develop analysis that informs future management and restoration efforts. Conservation easement monitoring is completed annually and landowner communications continue.

**CWA Core Programs the Project Supports:** Identifying polluted waters and developing plans to restore them (TMDLs).

**CCMP Action Plans Addressed:** MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-4 (Maintain VMP), MON-5 (Support Partners), MON-6 (Support Research Activities)

### **MONITORING-6: Eelgrass Monitoring and Research**

**Project Status:** *Ongoing*

**Objective:** Conduct research and monitoring efforts for eelgrass to determine distribution in the bay as well as bed health.

**Description:** Seasonal eelgrass monitoring is conducted to aid efforts to protect and restore eelgrass habitat. In FY24, the Estuary Program will continue to monitor according to the robust approach designed to maximize data quality. The effort is engaging experts and agency participants to help inform the monitoring approach and to seek funding to support research and monitoring (see more information under Task MONITORING-7). This task also involves a component of research collaboration with partners to understand eelgrass stressors. Partner efforts include water quality monitoring, analysis related to ocean acidification, and other efforts. In FY24, the Estuary Program will conduct monitoring and mapping of eelgrass to track changes in eelgrass acreage and location over time.

**Partners and Their Roles:** Project partners include Cal Poly, whose expertise is supporting expanded monitoring and research efforts to study sedimentation, circulation, and water quality. Cuesta College, the local community college, conducts research related to wasting disease and eelgrass health. Other partners include CDFW, a potential funder for the effort. NOAA, USFWS, and others have provided funding and technical support for the effort. EPA provides both funding and technical support. Secondary partners with an interest in eelgrass in Morro Bay include the SCC, the Pacific Marine and Estuarine Fish Habitat Partnership (PMEP), the city of Morro Bay, State Parks, local oyster farms, the Black Brant Group, and local businesses.

**Output/Deliverables:** The deliverables include an eelgrass monitoring report and reporting required by funders for research efforts.

**Estimated Milestones:** Provide a summary in the semi-annual report when work is conducted for this item.

**Estimated Budget:** Staff time: \$24,472. Contract to assess eelgrass extent: \$5,000. Match: \$0.

**Long-term Outcomes:** To better understand eelgrass dynamics and stressors, thus enabling the Estuary Program to track eelgrass health in the bay.

**CWA Core Programs the Project Supports:** Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-4 (Maintain VMP), MON-5 (Support Partners), MON-6 (Support Research Activities), ECR-7 (Eelgrass Data and Research), ECR-8 (Eelgrass Restoration)

## **MONITORING-7: Partner Research Efforts**

### **Project Status: *Ongoing***

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

**Description:** The Estuary Program collaborates with partners such as Cal Poly to facilitate research projects through data sharing, the pursuit of project development, and contributed time. Potential efforts include planning to address sea level rise around the bay, bay water quality including ocean acidification (OA), bay sediment characteristics, native oyster restoration, microplastics monitoring, and others. Reports and results will be compiled in the Estuary Program library. A decadal review of MPA monitoring data is currently underway. Estuary Program staff will participate in the effort to share program data and learn from other program's monitoring efforts.

**Partners and Their Roles:** Cal Poly is a primary partner in these joint efforts. Cal Poly will conduct monitoring of water quality parameters, eelgrass mapping, and analysis. Other research collaboration partners have included University of San Francisco, Southern California Coastal Water Research Program, USGS, Cuesta College, and others. The Central Coast Wetland Group, who is leading the decadal MPA data review, serves as a technical resource.

**Output/Deliverables:** Deliverables are dependent on partner projects and vary by funding sources. A list will be provided in the semi-annual report of partner efforts during the reporting period.

**Estimated Milestones:** Variable, depending on funding sources.

**Estimated Budget:** Staff time: \$23,419. Match: \$0.

**Long-term Outcomes:** Improve understanding of resources in order to better target efforts such as monitoring and restoration.

**CWA Core Programs the Project Supports:** Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-4 (Maintain VMP), MON-5 (Support Partners), MON-6 (Support Research Activities), ECR-7 (Eelgrass Data and Research), ECR-8 (Eelgrass Restoration)

## **Public Participation, Education and Outreach**

### **E&O-1: Communications**

#### **Project Status: *Ongoing***

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

**Description:** The Estuary Program's Education and Outreach program conducts regular communication with a variety of audiences. Several channels will be employed during FY24 to reach these audiences with meaningful information to educate the public about the program's efforts. These efforts include the following:

- **Website:** The Estuary Program website ([www.mbnep.org](http://www.mbnep.org)) will be updated with content on a regular basis.
- **Blog:** The Estuary Program will continue the [Estuary Program blog](#), with regular posts that can be viewed on the website or by subscription. They are also shared via social media.
- **Social Media:** The Estuary Program utilizes Facebook, Instagram, and LinkedIn extensively; these have proven to be important tools to communicate with the community. Photos and status updates are posted to the Facebook page multiple times a week (<https://www.facebook.com/mbestuary>), and Instagram posts (<https://www.instagram.com/morrobaynep/>) are made at least once per week. Posts are strategic and integrated with the messaging incorporated into our website and blog. Messages cover a variety of topics, such as project and fieldwork highlights, volunteer opportunities, community events, presentations given by Estuary Program staff, and other information related to the Estuary Program mission. Currently, the Estuary Program has more than 2,543 Facebook followers, 2,804 Instagram followers, and 320 LinkedIn followers. In FY24, the Estuary Program will continue to increase two-way communication using social media tools.

- **Annual Report:** The annual report summarizes the reach and impact made by the Estuary Program across all programs. The report is created annually and is available online and in limited print.
- **Speaking and Exhibit Engagements:** Estuary Program staff present watershed and estuarine information for interested groups throughout the area.
- **News Releases:** News releases will be distributed for news-worthy activities or milestones, such as volunteer opportunities and completed major projects. Key messages will be drafted and incorporated into the news releases. These key messages will be integrated into other communication channels.
- **Brochures and Other Print Materials:** Brochures and other print materials about the Estuary Program, issues related to the health and stewardship of the Morro Bay estuary, volunteer opportunities, and formal educational opportunities will be distributed at the Morro Bay Estuary Nature Center, community events, and presentations in which Estuary Program staff participate. They will also be made available online when possible. In FY24, the Estuary Program will continue to work to translate some of our most popular materials into target languages to better serve visitors and residents whose primary language is not English.

**Partners and Their Roles:** Partners in Estuary Program communication efforts include the city of Morro Bay, SLO County, the Morro Bay Natural History Museum, California State Parks, the San Luis Obispo Marine Protected Area Collaborative (SLOMPAC), and others. These partners provide resources and expertise, promote Estuary Program events, and share our materials and message with the public.

**Output/Deliverables:** A summary of work conducted for this item will be included in the semi-annual report.

**Estimated Milestones:** The Estuary Program maintains a social media and blog schedule that addresses current events and other topics and is updated in real time.

**Estimated Budget:** Staff time: \$38,584. Design and printing, website maintenance, hosting and design, translation of materials: \$3,000. Match: \$10,151.

**Long-term Outcomes:** Residents and visitors better understand their roles as stewards of the Morro Bay estuary. They practice behaviors that help keep our waters clean.

**CWA Core Programs the Project Supports:** Protecting coastal waters through the National Estuary Programs.

**CCMP Action Plans Addressed:** EO-1 (Public Education and Outreach), EO-2 (State of the Bay), EO-3 (Nature Center), EO-4 (Formal Education Programs)

## **E&O-2: Education**

**Project Status:** *Ongoing*

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

**Description:** In FY24, the Estuary Program will continue working with partners to integrate estuary-focused activities into existing formal educational programming. The Estuary Program is partnering with Camp Ocean Pines on an education partnership to support expanded fieldtrip opportunities. Potential educational activities include watershed model demonstrations in virtual or in-person classrooms, microplastics monitoring with local high school students, hosting estuary fieldtrips for student groups, and supporting other watershed education by partners. The Estuary Program will also continue to provide trainings to local docents, online educational resources, and a select number of educational opportunities that are unique to the program (e.g., Mutts for the Bay education efforts). The Estuary Program will also seek out opportunities to host teacher trainings such as Project WET and Project Wild. The Estuary Program staff will also continue to provide presentations and talks as requested for K-12 students as well as undergraduate and graduate classes. In addition, the Estuary Program will maintain the Estuary Nature Center. During years in which travel and visitorship are not affected by a pandemic, the Nature Center receives approximately 5,200 individuals monthly during the high season, with an average of 25,000 people visiting each year. In addition, Estuary Program staff and guest speakers present research and projects that relate to the health of the Morro Bay estuary through our annual Morro Bay Science Explorations with the Estuary Program speaker series. The goal of this speaker series is to educate the general public about issues facing the Morro Bay estuary as well as stewardship actions that people can take to help protect it. In

FY24, the Estuary Program will host recurring science talk events throughout the year.

**Partners and Their Roles:** Partners include the Morro Bay Museum of Natural History, a direct collaborator in creating education programs. Camp Ocean Pines brings students to Morro Bay for field trips. Teachers, parents, and volunteers from local schools reach out to the Estuary Program for direct support in developing education programs on topics such as watersheds and the water cycle. Cal Poly and Cuesta College faculty are also partners, bringing classes to the estuary to conduct research and field trips. Staff also visit or present remotely to classrooms from primary through college-level to share the results of our work. The San Luis Obispo and Monterey Marine Protected Area (MPA) Collaboratives are also key partners, helping to produce and distribute estuary and marine-focused stewardship education materials across the state of California.

**Outputs/Deliverables:** The deliverables will be Nature Center statistics, presentation statistics, and field trip statistics. Included in semi-annual reports to EPA.

**Estimated Milestones:** The Nature Center promotional materials and statistics will be ongoing. The statistics on speaking engagements and field trips will be included in the semi-annual report.

**Estimated Budget:** Staff time: \$19,742. Supplies: \$4,500. Match: \$25,682.

**Long-term Outcomes:** Formal educational partnerships disseminate estuary-related messages to local students. The Estuary Nature Center serves as a learning center about the estuary with updated and engaging exhibits.

**CWA Core Programs the Project Supports:** Addressing diffuse, nonpoint sources of pollution. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** EO-1 (Public Education and Outreach), EO-2 (State of the Bay), EO-3 (Nature Center), EO-4 (Formal Education Programs)

### **E&O-3: Nature Center Maintenance & Operations**

**Project Status:** *Ongoing*

**Objective:** Maintain the content and displays in the Nature Center.

**Description:** About 25,000 visitors have stopped by the Estuary Program's Nature Center each year since it was established in 2005. A fish tank, a watershed mural, a wildlife viewing station with high-powered viewing scopes, a touch-screen educational kiosk, and stereoscopic photo images are some of the most popular exhibits. To keep the center running smoothly requires maintenance and coordination by Estuary Program staff. Four new exhibits and interactive activities were added during FY23, as well as updating the Nature Center entrance, logo, and outdated and faded signage. In FY24, Estuary Program staff will host recurring education events in the Nature Center, utilize the space for field trip opportunities, and update the new digital poster kiosk with new posters on a regular basis. Various upgrades to upkeep the existing exhibits will take place, including replacing faded images, updating maps, and implementing touch-ups to the visual aspects of the space. Estuary Program staff will also aim to update two exhibits as part of the BIL funding to include more hands-on, interactive activities.

**Partners and Their Roles:** The Morro Bay Museum of Natural History will be a partner in this effort, helping direct visitors to the center and lending their expertise. Camp Ocean Pines will also be a partner in this effort, bringing students to the Nature Center during their field trips to Morro Bay.

**Output/Deliverables:** A summary description of work conducted for this item will be included in the semi-annual report.

**Estimated Milestones:** Maintain operations at the Nature Center.

**Estimated Budget:** Staff time: \$16,211. Exhibit updates and maintenance: \$4,000. Match: \$0.

**Long-term Outcomes:** The Estuary Nature Center serves as a learning center about the estuary, with updated and engaging exhibits.

**CWA Core Programs the Project Supports:** Addressing diffuse, nonpoint sources of pollution. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** EO-1 (Public Education and Outreach), EO-2 (State of the Bay), EO-3 (Nature Center), EO-4 (Formal Education Programs)

#### **E&O-4: Other E&O Tasks/Community Partner Projects**

**Project Status:** *Ongoing*

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

**Description:** Opportunities for projects with partners will be maximized throughout the year as they arise.

Beyond these new opportunities, standing community partner projects include:

- San Luis Obispo Marine Protected Areas Collaborative: The Estuary Program is a key member of the SLOMPAC, which provides education and outreach materials for students and community groups related to local MPAs, including the Morro Bay estuary. The group also provides training related to MPAs for local enforcement agencies and provides a collaborative space for community members and enforcement agencies to meet and share concerns related to the health of MPAs. SLOMPAC projects are collaboratively devised and executed. The Estuary Program houses the SLOMPAC's remotely operated vehicle (ROV) unit and facilitates the checkout and reporting procedures for it. An education staff member from the Estuary Program participates in collaborative meetings. The Estuary Program has received and managed grant funding to implement SLOMPAC projects, as well as collaborative projects between the SLOMPAC and the Monterey Marine Protected Area Collaborative.
- Sewage Pumpout Monitoring: In partnership with the Bay Foundation of Santa Monica and the San Francisco Estuary Partnership, the Estuary Program participates in an effort to monitor the usability and efficacy of pumpout units in the Morro Bay estuary. The Estuary Program monitors pumpout units three times a year, provides signage for pumpout stations, and provides or facilitates the purchase of replacement parts or servicing for these sewage pumpout units. The pumpout units serviced through this program are owned by the Harbor Department of Morro Bay and the Morro Bay Yacht Club.

Staff will continue to seek opportunities for partnership on water conservation, marine debris, and efforts to protect bay waters.

**Partners and Their Roles:** Partners include the 28 member organizations of the SLOMPAC, California State Parks through their SeaLife Stewards program, the city of Morro Bay's Harbor Department, the Morro Bay Yacht Club, San Francisco Estuary Partnership, Bay Foundation of Santa Monica, the Los Osos Community Services District, and local recreational boating business owners. This effort also includes supporting ECOSLO, a local nonprofit organization, in executing annual cleanups within the Morro Bay watershed.

**Outputs/Deliverables:** Materials completed as projects develop.

**Estimated Milestones:** Materials are completed as projects develop.

**Estimated Budget:** Staff time: \$10,860. Miscellaneous expenses: \$6,000. Match: \$64,207.

**Long-term Outcomes:** Coordinate with partner organizations about key messages associated with each community project. Rollout of the messages and education and outreach material will be closely tied to the project implementation.

**CWA Core Programs the Project Supports:** Addressing diffuse, nonpoint sources of pollution.

**CCMP Action Plans Addressed:** EO-1 (Public Education and Outreach), EO-2 (State of the Bay), EO-3 (Nature Center), EO-4 (Formal Education Programs)

#### **E&O-5: Mutts for the Bay**

**Project Status:** *Ongoing*

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

**Description:** The Estuary Program has managed a Mutts for the Bay Program since 2008. The effort involves accepting donations, installing dispensers, coordinating volunteers, and working with partners to install and maintain pet waste bag dispensers throughout the watershed. By using the bags, pet owners prevent bacteria from pet waste from reaching the estuary, where shellfish farms and recreational bay users require clean water. In FY24, Estuary Program staff will expand the outreach components of the Mutts for the Bay program. This includes partnering with Woods Humane Society, SLO County Animal Services, and local pet-related

businesses/organizations. Estuary Program staff will attend tabling events to share information about environmentally-friendly dog ownership, including the Morro Bay farmers market, the Woods Humane Society Fall Festival, and other opportunities as they arise.

**Partners and Their Roles:** Partners include the City of Morro Bay and SLO County, the two entities responsible for stormwater management efforts in the urban areas surrounding the estuary. A portion of the effort involves public education to share a clean water message and encourage responsible pet owner behavior. A private foundation awarded the Estuary Program multiple years of funding to support operational and educational costs related to the effort.

**Outputs/Deliverables:** Program statistics and milestones will be provided in the semi-annual reports.

**Estimated Milestones:** Program statistics will be ongoing.

**Estimated Budget:** Staff time: \$17,588. Match: \$3,117.

**Long-term Outcomes:** Responsible behavior by pet owners reduces bacterial loading to the estuary, protecting beneficial uses such as shellfish farming and recreation.

**CWA Core Programs the Project Supports:** Addressing diffuse, nonpoint sources of pollution. Protecting wetlands. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** EO-1 (Public Education and Outreach), EO-2 (State of the Bay), EO-3 (Nature Center), EO-4 (Formal Education Programs), BMP-6 (Reduce Pet Waste)

## Program Management

Work for all Program Management tasks is aimed at achieving results for the following Outcomes:

1. Morro Bay National Estuary Program will maintain good standing with the EPA and ANEP.
2. Morro Bay National Estuary Program will continue to improve administration and program management to successfully support environmental goals and manage resources in a fiscally responsible manner.
3. Morro Bay National Estuary Program will facilitate effective partnerships and stakeholder engagement in implementation of the CCMP.

### PM-1: Manage Committees and Build Partnerships

**Project Status:** *Ongoing*

**Objective:** Hold quarterly committee meetings and support partnerships.

**Description:** The Estuary Program will continue to coordinate the Executive Committee on a quarterly basis. Staff create meeting materials and help facilitate the meetings. The Estuary Program will convene technical advisory committees on an as-needed basis to provide support for project development, etc. Staff participate in collaborative efforts to build partnerships on a broader scale. As a member of the Central Coast Climate Collaborative, staff participate in this regional partnership to develop equitable climate solutions and build resilience on the Central Coast. The Chumash National Marine Sanctuary (NMS) effort is underway in the area, and staff will participate in stakeholder meetings related to monitoring, restoration, and education issues.

**Partners and Their Roles:** The Management Conference committees are made up of representatives from various governmental, economic, environmental, and educational organizations. The TACs that support monitoring, restoration, and education are made up of local experts who can advise the Estuary Program in these various programmatic areas. The Bay Foundation board includes community members, local educators, business owners, and volunteers.

**Outputs/Deliverables:** Deliverables include Executive Committee meeting minutes, agendas, staff reports, and other materials.

**Estimated Milestones:** These deliverables are produced quarterly.

**Estimated Budget:** Staff time: \$13,889. Match: \$20,387.

**Long-term Outcomes:** Committees meet as needed to provide input and direction for the Estuary Program and to ensure that other partnerships are well supported.

**CWA Core Programs the Project Supports:** Support contribution toward all CWA core programs.

**CCMP Action Plans Addressed:** This task supports all Action Plans.

### **PM-2: Grants and Contracts Administration and Financial Management**

**Project Status:** *Ongoing*

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

**Description:** Each year, the Estuary Program evaluates the prior year's progress, anticipates the upcoming year's potential, and develops a workplan and budget. The workplan for FY25 is due to EPA Region 9 in May 2024. Other grants and financial management tasks include reporting and tracking for grants, preparing financial reports for the Bay Foundation and management committees, and completing year-end financial statements and an annual audit. Estuary Program staff will attend the fall 2023 and spring 2024 NEP Tech Transfer meetings. Staff will develop projects, administer contracts, and conduct reporting related to the Bipartisan Infrastructure Bill (BIL) funding for FY24.

**Partners and Their Roles:** Partners include the Bay Foundation, the board that serves as the bursar for the Estuary Program. EPA is a primary partner, providing oversight and guidance for the program.

**Outputs/Deliverables:** The deliverables include the work program and budget (Spring 2024), biannual EPA grant reports (Fall 2023 and Spring 2024), an annual/end of year report (Fall 2023), annual financial statements submitted to the federal clearinghouse (Spring 2024), and annual state and federal tax submissions to the State of California and the IRS (Spring 2024).

**Estimated Milestones:** See above.

**Estimated Budget:** Staff time: \$61,510. Accounting/auditing and travel: \$30,530. Match: \$4,150.

**Long-term Outcomes:** Grant administration and financial management tasks are completed in a timely and accurate manner.

**CWA Core Programs the Project Supports:** Support contribution toward all CWA core programs.

**CCMP Action Plans Addressed:** This task supports all Action Plans.

### **PM-3: General Administration and Human Resources Management**

**Project Status:** *Ongoing*

**Objective:** Maintain accurate financial and human resource records and manage personnel.

**Description:** The Estuary Program requires ongoing financial and administrative functions, including recordkeeping and filing, bookkeeping, preparing audited financial statements, maintaining equipment and office space, and interacting with the general public. In addition, the Director spends time managing staff performance and workplan progress. Other human resources tasks include training and professional development, recruitment, managing staff, and keeping all personnel policies and procedures current, including those related to emergency preparedness for operations. Staff maintains up-to-date bookkeeping records, public-friendly office space, orderly and properly operating office and field equipment, annual staff performance reviews, and updated policies and procedures. Regular staff meetings will be conducted.

**Partners and Their Roles:** The primary partner for this task is the Bay Foundation board. As the employer of Estuary Program staff, they set the policies and procedures for the organization.

**Outputs/Deliverables:** The Estuary Program provides program management updates in the EPA semi-annual reports.

**Estimated Milestones:** See above.

**Estimated Budget:** Staff time: \$62,168. Professional development and operational expenses: \$99,468. Match: \$20,961.

**Long-term Outcomes:** Policies and procedures must remain up to date so that the organization can function smoothly, allowing staff to focus on attaining the goals of the organization.

**CWA Core Programs the Project Supports:** Support contribution toward all CWA core programs.

**CCMP Action Plans Addressed:** This task supports all Action Plans.



#### **PM-4: Tracking Implementation of the Management Plan and Workplan**

**Project Status:** *Ongoing*

**Objective:** Track workplan and CCMP implementation.

**Description:** The Estuary Program tracks progress on the CCMP Action Plans on a biannual basis. Workplan implementation is tracked with biannual reports on deliverables. Tracking project and program effectiveness is ongoing and includes biannual reports, NEPORT reporting, grant reporting, monitoring, and general project management. Staff are working to develop a public-friendly version of CCMP Action Plan tracking to be shared on our website.

**Partners and Their Roles:** The primary partner is the Bay Foundation board who oversees the organization's finances.

**Outputs/Deliverables:** The deliverables include semi-annual reports to EPA (Fall 2023 and Spring 2024) and NEPORT data (Summer 2024).

**Estimated Milestones:** See above.

**Estimated Budget:** Staff time: \$16,880. Match: \$0.

**Long-term Outcomes:** Management Plan and workplan tracking occurs to ensure that tasks are completed in a timely and accurate manner.

**CWA Core Programs the Project Supports:** Support contribution toward all CWA core programs.

**CCMP Action Plans Addressed:** This task supports all Action Plans

#### **PM-5: Community Projects Program**

**Project Status:** *Ongoing*

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

**Description:** Community Projects allow community members to be active participants in conservation efforts by helping to implement the Management Plan. The Community Projects Program has a special focus on projects that engage the community. The Estuary Program staff meets with community members to develop projects, prepare contracts, and monitor and evaluate products. The Estuary Program will continue to oversee current projects and develop new projects in FY24.

**Partners and Their Roles:** Partners for past Community Projects have included the City of Morro Bay Harbor Department, Cal Poly and Cuesta College researchers, California State Parks, SLO County, and the SLOMPAC.

**Outputs/Deliverables:** The semi-annual report will detail the projects completed in FY24. Final reports from Community Projects.

**Estimated Milestones:** Project ideas are considered twice a year, dependent on budget, and will be listed in the semi-annual reports.

**Estimated Budget:** Staff time: \$15,909. Match: \$35,000 in Restoration Fund money and from partner match.

**Long-term Outcomes:** All projects meet guidelines on community involvement and Management Plan nexus.

**CWA Core Programs the Project Supports:** Addressing diffuse, nonpoint sources of pollution. Protecting wetlands. Protecting coastal waters through the National Estuary Program.

**CCMP Action Plans Addressed:** This task can support all Action Plans, depending on the project type and partners involved.

## **5. Accomplishments**

This section reports on major projects that were completed by December 2022. These accomplishments are also included in the semi-annual reports submitted to the EPA in October 2022 and April 2023.

## **Monitoring Efforts**

Project Objective: Conduct technical transfer with partner organization to expand their monitoring capacity.

Technical transfer of knowledge is a core tenet of the National Estuary Program. The Estuary Program has conducted a rigorous bioassessment monitoring effort since the early 2000s. This high-quality data set allows for tracking of long-term conditions for the biota in the creeks and indicates habitat quality for steelhead and other aquatic species. This work has been funded over a ten-year period by a private foundation. The trust wanted to see the monitoring method expand into the neighboring watershed, the San Luis Obispo (SLO) Watershed. The Estuary Program worked with the trust and with the city of San Luis Obispo and Cal Poly to develop a bioassessment monitoring effort.

Estuary Program staff assisted with protocol development, equipment selection, site selection, and training of partners and Cal Poly students. Staff shared their extensive experience with coordinating and managing the complex project. The project provided training to future environmental professionals in a real-world monitoring method. Staff also assisted with permit management, data reporting, and data analysis. This transfer of knowledge provides Cal Poly and the city of SLO with the tools they need to conduct this monitoring into the future. The data also allows for comparisons between conditions in a neighboring watershed with different land uses.

The Estuary Program's monitoring efforts focus on the collection of high-quality data to support tracking of long-term trends, to help identify potential restoration projects, and to assess the effectiveness of project implementation. In working with these partners, the Estuary Program shared program knowledge and experience to ensure that the new effort focused on data quality and usability to create a dataset to help inform management.

The trust is providing funding for the effort for two additional years, during which time Estuary Program staff will continue to be available for project support. The goal is for these partners to be ready to continue the effort on their own at the end of the three-year joint effort.

The efforts supported the following CCMP Action Plans: MON-1 (Support Development of TMDLs), MON-2 (Monitor Environmental Indicators), MON-3 (Monitor Project Effectiveness), MON-5 (Support Partners), MON-6 (Support Research Activities)

## **Chorro Creek Ecological Reserve Floodplain Storm Activation**

Project Objective: The objective of the project is to restore and enhance floodplain connectivity and riparian vegetation within approximately five acres adjacent to Chorro Creek for steelhead and other wildlife/aquatic species, while reducing sediment loading to the Morro Bay estuary.

In 2003, the Chorro Creek Ecological Reserve, a 580-acre parcel at the base of Hollister Peak, was purchased with Estuary Program support and leadership to prevent future development. The Estuary Program completed a five-acre floodplain restoration project on site, which included excavating a new side channel, lowering the floodplain along two side channels, and planting extensive riparian plants throughout the project area. The side channels were activated by a ten-year storm event in January 2021 and then this past winter by a 40 plus-year storm event.

The site has seen many changes with these high flows. In general, there have been more pools and gravel bars created. The channels have also been activated much of this winter due to multiple storm events with heavy

rainfall. The channels were still active in early April and likely will have some water into the summer. Areas where we saw erosion during the 2019 storm have eroded further with some steep banks forming. At least some erosion is expected with storms of that size, and these areas are expected to settle over time. The downstream side channel has been more resilient with some down cutting. Overall, the channel bed and banks have held up well. We did see loss of plantings during both events. However, the floodplain area still maintains a diversity of native cover and plantings. We will focus on maintenance of the existing plantings moving forward.

This greater floodplain connection will allow for better groundwater recharge and overall improved water quality. We also hope that steelhead trout will access the floodplain side channels and seek refuge there when waters rise due to storms. No fish strandings have been observed to date. The riparian vegetation established during the project will also provide vital habitat for wildlife.

These efforts support the following CCMP Action Plans: LP-2 (Restore Floodplains), ECR-1 (In-stream Habitat), ECR-2 (Riparian Corridors)

### **Education Partnerships**

**Project Objective:** Develop formal education partnerships to teach students about estuarine and watershed science and train educators in related curriculum.

In 2022, the Estuary Program established two new education partnerships. One of these partnerships is with Camp Ocean Pines (COP) located in the town of Cambria, approximately 20 miles north of Morro Bay on the coast. COP runs both a summer camp and an outdoor education institute for schools to bring students for three to five-day field trips during the school year. The Estuary Program supports COP's excursions to Morro Bay for these students. Schools have the option to bring their students to Morro Bay for kayaking and to learn about the estuary and local habitats. The Estuary Program provides a watershed model lesson in the Nature Center for students during these visits. The Estuary Program is also working to build curriculum and activities for students during their Morro Bay visit. In addition, the Estuary Program helps to train the COP naturalists each season on Morro Bay and estuarine habitat curriculum. For school groups coming from low-income and/or underserved communities, the Estuary Program helps to fund the additional costs of the Morro Bay visit.

In 2022, the Estuary Program established an education partnership with Cal Poly. The Estuary Program partnered with the School of Education and the College of Science and Mathematics to create a new course on environmental literacy that will be offered in 2023 in the College of Science and Mathematics. In this course, students will have the opportunity to visit the Morro Bay estuary and get hands-on experience with field trips. The Estuary Program works with the College of Science and Mathematics and student teachers in the School of Education who are working to earn their teaching credentials. These student teachers are available to aid the Estuary Program in educational efforts such as field trips. In this partnership, the Estuary Program and Cal Poly will co-host new teacher/educator trainings focused on Morro Bay, such as Project WET and Project Wild, and will continue to co-host teacher training opportunities together.

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

### **Community Projects**

**Project Objective:** Provide support to Community Projects that address the goals of the Estuary Program.

The Estuary Program's Community Projects Program involves staff working closely with partners to develop projects that directly address our goals and support our Action Plans. The total annual Community Project budget for FY24 is \$20,000.

Recently completed projects are as follows:

- **Microplastics Monitoring in Morro Bay:** A Cal Poly researcher monitored microplastics at three locations within Morro Bay over the course of a year. The project involved developing and adapting the monitoring protocols and training students to conduct the sampling and analysis. The results showed that microplastics were present at all monitored locations in the bay, although at levels lower than more densely populated areas in the region. The professor is continuing the work utilizing funding from other sources and has plans to expand the efforts.
- **City of Morro Bay Spill Prevention Program:** The city of Morro Bay purchased approximately a four-year supply of oil absorbent pads. Harbor Department staff run an exchange program where boaters bring in used pads and can exchange them for clean ones. Staff take the opportunity to distribute the Estuary Program's clean boating materials and interface with boat owners on protecting bay water quality.

Two projects are underway using FY23 funding. A Cal Poly researcher is studying plankton in Morro Bay with the long-term goal of supporting aquaculture management, and the Los Osos Community Services District (LOCSO) will be installing trash receptacles in the popular Baywood area of Los Osos as well as educational signage related to preventing marine debris.

All projects help implement the CCMP with an emphasis on engaging the community in the project. Funds used to support Community Projects come from the Morro Bay Restoration Fund, a match source to the EPA 320 funding.

## 6. Areas of Special Interest

The EPA's Office of Water has several priority areas of interest relevant to the NEPs. The following summarizes Estuary Program activities in these four areas.

### Reductions in Nutrient Pollution

The issue of elevated nutrients is one of the priority problems facing the Morro Bay estuary and its watershed. The monitoring, restoration, and education efforts of the Estuary Program and its partners often focus on this issue. Multiple efforts are on-going and planned to specifically address nutrient management.

- **Resource Conservation District Partnerships to Address Nutrients:** The Estuary Program previously worked with the CSLRCD through a grant to develop plans for BMPs on private property. The CSLRCD is currently managing a Water Board grant to implement these efforts throughout the watershed, thus reducing nutrient and sediment pollution.
- **Monitoring Data Support for Regulators:** The Estuary Program collects nutrient data from throughout the watershed. The data is submitted to the California Environmental Data Exchange Network (CEDEN), where it is then available to the CCRWQCB and SWRCB to support TMDL assessment, 303(d) review, implementation of a new Agricultural Order, etc. The program is conducting bay nutrient monitoring in partnership with Cal Poly researchers.
- **Los Osos Water Reclamation Facility Effectiveness:** The Estuary Program collects nutrient data from the bay shoreline seeps in the community of Los Osos to track changes in nitrate concentrations in the shallow

groundwater. The Los Osos Water Reclamation Facility coming online in 2017 should result in reductions in nitrates.

- Stormwater Management Efforts: The Estuary Program partnered with the Ocean Protection Council (OPC) and State Parks to complete implementation of a parking lot upgrade at the State Park Marina to reduce stormwater pollution reaching the bay. Post-project monitoring of runoff from the site was recently completed with the results and analysis available later this year. Staff is also collaborating the CSLRCD and Camp SLO to develop designs for stormwater projects on the Camp SLO Army National Guard base.
- Central Coast Regional Water Quality Control Board Irrigated Lands Program: The CCRWQCB regulates discharges from irrigated agricultural lands to protect surface water and groundwater. Also known as the Agricultural Order, it applies to owners and operators of irrigated land used for commercial crops. The effort focuses on priority water quality issues such as pesticides and toxicity, nutrients, and sediment. Nitrate impacts to drinking water is a particular focus area. For more information, visit [https://www.waterboards.ca.gov/centralcoast/water\\_issues/programs/ilp/](https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/)

## Water Reuse and Conservation

- Community of Los Osos Water Conservation Efforts: The LOCSO is one of the principal water purveyors for the community of Los Osos. As such, one of their roles is to work with the community to encourage water conservation. In 2022 to 2023, the LOCSO water conservation program gave out rebates for water metering devices that allowed customers to view their water usage rate in real time via a smart phone or computer. Rebates were also available for low flow toilets, clothes washing machines, tank-less water heaters, hot water recirculation systems, and rain catchment. For more information, visit <https://www.lososocsd.org/water-conservation>
- City of Morro Bay Water Conservation Efforts: The city of Morro Bay manages the municipal water supply for city residents. As they receive State Water where the delivered amounts can fluctuate, the city has a system in place with different levels of conservation required depending on supply. Additionally, the city provides materials for restaurants and hotels explaining water saving efforts such as serving water only upon request and laundering bedding and towels only upon request. The city offers a rebate program to residents for toilets, washing machines, rain barrels, removing grass, and SMART irrigation control systems. The city also funds a Green Building Incentive Program that provides a 20% permit fee rebate for eligible graywater projects. The city website also has general water conservation tips for residents. For more information, visit <https://www.morro-bay.ca.us/320/Water-Conservation>
- Estuary Program Water Conservation Outreach: The Estuary Program shares water conservation messaging via various outreach venues. On our website, we spotlight our [rainwater catchment tank project with Cal Poly](#) and share [guidelines for bay-friendly gardening](#). Our outreach efforts include blogs, social media, and publications such as the State of the Bay report card with What You Can Do messaging that includes water conservation tips.
- Flow Study: As part of our Conservation Planning Initiative effort to identify potential projects to protect and restore habits in the bay and watershed, the Estuary Program is following recommendations set out in an analysis of the watershed's rainfall and surface flows. The effort includes installing a network of water depth sensors to track flows during crucial times of year for fish (spring and summer) and to conduct intensive surface flow monitoring during those two critical seasons. A goal of the monitoring is to identify locations that would benefit from water conservation efforts that could help maintain flows for fish. As part of the BIL funding, expansion of drought monitoring efforts has already begun.

## Marine Litter Reduction

- Microplastics Monitoring: In FY21, the Estuary Program partnered with Dr. Nikki Adams of Cal Poly on a Community Project to develop a microplastics monitoring protocol for sediment in the estuary. The project

is now complete and results detected the presence of microplastics at the three locations monitored in the estuary. Dr. Adams is continuing the work with funding from other sources, and she is partnering with the Estuary Program on coordinating education and outreach efforts related to the project. In addition, Morro Bay High School biology classes are conducting microplastics monitoring in the bay during the 2022 to 2023 school year with materials and support provided by the Estuary Program.

- **Trash Management in Baywood:** In FY23, the Estuary Program developed a Community Project with the LOCSO to install trash receptacles in the Baywood area and to install signage related to preventing marine debris. The need for further management is the result of changes in business ownership in the area which reduced the number of available trash receptacles. During the pandemic, trash management issues increased due to an increase in food takeout containers and efforts are underway baywide to address this need.
- **Central Coast Clean:** SLO County is leading a county-wide effort to address trash, in partnership with the city of Morro Bay and other municipalities in the county. The campaign targets the major sources in each community. For Morro Bay and Los Osos, the campaign focused on reducing cigarette butt litter with the slogan “The world is your oyster, not your ashtray,” and the message is shared on social media, signage, etc. throughout Morro Bay and Los Osos.
- **Creeks to Coast Cleanup Day:** Each year, a local environmental organization hosts a county-wide cleanup day focused on waterways in this effort formerly known as Coastal Cleanup Day. The Estuary Program has been a long-time supporter of the effort. In 2022, we donated free materials for cleanup kits for volunteers including Mutts for the Bay dog waste bag leash dispensers, MPA Collaborative coloring books, Estuary Program pamphlets, and stickers. We also hosted one cleanup location on the Embarcadero in Morro Bay and helped to publicize the event.
- **Morro Bay Triathlon Post-Race Cleanup:** In November 2022, the Estuary Program was the official nonprofit of the Morro Bay triathlon, which included a cleanup event after the race was over. This event was hosted at the race location and had volunteers picking up trash left behind on the beach, parking lot, and Morro Bay Harbor walk.

## **Green Infrastructure and Resiliency**

Assessment of vulnerabilities in our study area and implementation of efforts to increase coastal environment resiliency are important goals for the Estuary Program.

- **Green Infrastructure Restoration Efforts:** The Estuary Program conducted eelgrass restoration and related efforts to increase eelgrass in the bay. This plant, which puts down roots in the bay bottom, serves to improve water quality, reduce wave action, and provide valuable habitat. Additionally, the Estuary Program completed construction on a floodplain restoration project on the Chorro Creek Ecological Reserve. Efforts to monitor and remove invasive sea lavender and ice plant on the sandspit help increase the resiliency of the coastal dunes and tidal marsh areas, both delicate habitats surrounding the bay. Native oyster restoration efforts are also getting started, with an interest in reintroducing this native species that was once abundant. Staff are coordinating with UC Santa Barbara and other partners on an effort to develop pilot projects and identify restoration techniques, with the Estuary Program representing the San Luis Obispo county region. The Morro Bay sand spit may be a pilot project location for the effort.
- **Green Infrastructure Monitoring Efforts:** The Estuary Program is involved in sediment elevation table (SET) monitoring which maps elevation change in the fragile salt marsh area. The Estuary Program is also working with the USGS to monitor sediment accumulation during storm events and high tides in the winter and summer seasons in the Chorro/Los Osos delta and Sweet Springs tidal marsh areas. Summer vegetation surveys will also be conducted to look at vegetation change over time. Models predict that this habitat could switch over from marsh to mudflats as sea levels rise, if management actions are not taken. This fragile area

provides ecosystem services such as mitigating flooding impacts to nearby infrastructure, including the only road directly connecting Morro Bay and Los Osos.

## 7. Travel Expenses

The following table contains the travel expenses charged to 320 funds in the first half of FY23.

| Event  | Location               | Trip Purpose                                       | Dates                    | Staff Attended        | Costs Included                      | Total Amount |
|--|------------------------|--|--------------------------|-----------------------|-------------------------------------|--------------|
| Elkhorn Slough visit                                   | Elkhorn Slough, CA     | Technical transfer with NERR staff                 | 10-14-2022               | Nick Soares           | Mileage                             | \$175        |
| USGS fieldwork   | Morro Bay, CA          | Conduct fieldwork to track marsh elevation change  | 10-24-2022 to 10-26-2022 | Lyndsay Rankin, USGS  | Lodging                             | \$437        |
| USGS fieldwork   | Morro Bay, CA          | Conduct fieldwork to track marsh elevation change  | 10-24-2022 to 10-26-2022 | McKenna Bristow, USGS | Lodging                             | \$437        |
| Santa Barbara Wetlands Conference                      | Santa Barbara, CA      | Habitat and climate change                         | 11-9-2022                | Mel Grubbs            | Lodging, per diem, parking, mileage | \$677        |
| Santa Barbara Wetlands Conference                      | Santa Barbara, CA      | Habitat and climate change                         | 11-9-2022                | Carolyn Geraghty      | Parking                             | \$8          |
| Restore America's Estuaries Conference                 | New Orleans, Louisiana | Conference on estuarine restoration and monitoring | 12-4-2022 to 12-8-2022   | Mel Grubbs            | Lodging, airfare, per diem, parking | \$1,224      |
| Restore America's Estuaries Conference                 | New Orleans, Louisiana | Conference on estuarine restoration and monitoring | 12-5-2022 to 12-7-2022   | Carolyn Geraghty      | Airfare, lodging, per diem          | \$1,328      |
| Association of National Estuary Program spring meeting | Washington, D.C.       | Tech transfer with other NEPs                      | 3-19-2023 to 3-24-2023   | Mel Grubbs            | Airfare, lodging, per diem          | \$2,874      |

The following table contains the travel expenses projected to be charged to 320 funds in the second half of FY23.

| Event                         | Location          | Trip Purpose  | Dates                  | Staff Attending | Costs Included                | Estimated Amount |
|-------------------------------|-------------------|---|------------------------|-----------------|-------------------------------|------------------|
| PE visit to Galveston Bay NEP | Galveston Bay, TX | Act as ex-officio member of PE review for Galveston Bay | 6-11-2023 to 6-14-2023 | Mel Grubbs      | Airfare, car rental, per diem | \$1,200          |

## 8. Glossary

The following terms and acronyms are used in this workplan:

| Acronym         | Explanation  |
|-----------------|--|
| ANEP            | Association of National Estuary Programs                                   |
| BIL             | Bipartisan Infrastructure Law  |
| BMP             | Best management practice   |
| Cal Poly        | California Polytechnic State University, San Luis Obispo                   |
| Caltrans        | California Department of Transportation                                    |
| Camp SLO        | Army National Guard Base Camp San Luis Obispo                              |
| CCAMP           | Central Coast Ambient Monitoring Program                                   |
| CCC             | California Conservation Corps  |
| CCER            | Chorro Creek Ecological Reserve  |
| CCMP            | Comprehensive Conservation and Management Plan                             |
| CCRWQCB         | Central Coast Regional Water Quality Control Board                         |
| CDFW            | California Department of Fish and Wildlife                                 |
| CEDEN           | California Environmental Data Exchange Network                             |
| CRAM            | California Rapid Assessment Method   |
| CSCI            | California Stream Condition Index  |
| CSLRCD          | Coastal San Luis Resource Conservation District                            |
| CWA             | Clean Water Act, the enabling legislation for the National Estuary Program |
| CWG             | Coastal Watersheds Grant   |
| EC              | Executive Committee  |
| EPA             | Environmental Protection Agency  |
| Estuary Program | Morro Bay National Estuary Program   |
| FY              | Fiscal Year  |
| LCSLO           | The Land Conservancy of San Luis Obispo County                             |
| LIDAR           | Light Detection And Ranging  |
| LOCSD           | Los Osos Community Services District                                       |
| MBNEP           | Morro Bay National Estuary Program   |
| MPA             | Marine Protected Area  |
| NEP             | National Estuary Program   |
| NEPORT          | National Estuary Program Online Report Tool                                |
| NMS             | National Marine Sanctuary  |
| NOAA            | National Oceanic and Atmospheric Administration                            |
| NPS             | Non-Point Source   |
| OA              | Ocean acidification  |
| OPC             | Ocean Protection Council   |
| PMEP            | Pacific Marine and Estuarine Fish Habitat Partnership                      |
| QAPP            | Quality Assurance Project Plan   |
| QA/QC           | Quality Assurance/Quality Control  |
| RAE             | Restore America's Estuaries  |
| ROV             | Remotely Operated Vehicle  |
| SCC             | State Coastal Conservancy  |
| SET             | Sediment Elevation Tables  |
| SLO             | San Luis Obispo  |
| SLOMPAC         | San Luis Obispo Marine Protected Area Collaborative                        |
| SOTB            | State of the Bay   |



| Acronym | Explanation                              |
|---------|--|
| SWAMP   | Surface Water Ambient Monitoring Program |
| SWRCB   | State Water Resources Control Board      |
| TAC     | Technical Advisory Committees            |
| TMDL    | Total Maximum Daily Loads                |
| USFWS   | United States Fish & Wildlife Service    |
| USGS    | United States Geological Survey          |
| VMP     | Volunteer Monitoring Program             |