

Semi-Annual Report: October 2016 –March 2017

The Morro Bay National Estuary Program has moved forward on completing new and ongoing tasks in the FY17 workplan. All workplans are approved by the Environmental Protection Agency and the Estuary Program’s Implementation and Executive Committees. The budget report below shows that our Section 320 expenses under the current grant in the first half of the fiscal year were \$249,489. As of March 31, we have expended 97% of our current 320 grant (started in FY12), with a remainder of approximately \$95,299. The EPA extended the end date of the FY16 grant, so it will end April 28, 2017. MBNEP has met 100% of its match requirement for the cumulative grant with cash match and estimated current in-kind contributions (at approximately \$3,215,818).

The Estuary Program requests EPA’s continued participation on the Executive Committee and assistance with meeting relevant administrative and programmatic grant conditions. During this reporting period, the Estuary Program continues to work to meeting the requirements of the final program evaluation letter, which was completed in the last fiscal year.

The following table summarizes activities completed during the semi-annual report period. Completed deliverables from the workplan are listed. Activities that will continue into the second half of FY17 are described in the “Pending Deliverables” section. Clean Water Act implementation roles for each task are also listed.

Table 1: Reporting on activities from past six months and planned for next six months

Goals and Tasks	Progress To Date and Deliverables Completed
5.1 Habitat & Water Quality Protection and Restoration	
Land Conservation <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Conserve land to achieve Management Plan goals as opportunities arise. • Estuary Program continues to partner with the Land Conservancy on potential land conservation deals in the watershed. • Estuary Program coordinated with the Land Conservancy to provide support for a grant application to secure additional funding for conservation easements. • The Land Conservancy is currently working to develop easements with interested landowners. • NEP’s CWA Implementation Role: Significant contribution toward <i>Controlling Nonpoint Source Pollution (NPS) on a Watershed Basis</i>
Freshwater Flow <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Identify projects in lower Chorro Valley and Camp San Luis Obispo area to promote water conservation. • Trout Unlimited (TU) began a project on San Luis Obispo County Office of Education property to improve a fish barrier and address a diversion. • Estuary Program continues to support a Central Coast Salmon Enhancement (CCSE) project with funding from a Prop 1 Wildlife Conservation Board grant to collect and analyze of streamflow data to assess conservation project effectiveness. • Pending Deliverables: <ul style="list-style-type: none"> ○ Project documents related to the TU effort, potentially including permits and plans. ○ Completed conservation easements, if warranted by landowner interest.

	<ul style="list-style-type: none"> • NEP's CWA Implementation Role: Significant contribution toward <i>Controlling Nonpoint Source Pollution (NPS) on a Watershed Basis</i> and support contribution toward <i>Strengthening Water Quality Standards</i>.
Restoration Maintenance and Monitoring <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Complete monitoring for conservation easements and restoration projects, as necessary. • Ongoing riparian fence program and conservation easement monitoring continued. • Post-project monitoring of stream flow and instream habitat in Pennington Creek to show effectiveness of water catchment system at Cal Poly. • Eelgrass monitoring for restoration bed condition and other variables. • Post-project monitoring of bacteria concentrations to show effectiveness of riparian fencing. • Post-project monitoring of road erosion prevention project sites. • Completed Deliverables: <ul style="list-style-type: none"> ○ Pre-project flow monitoring and analysis for Cal Poly Rainwater Harvesting System project. ○ Monthly memos with riparian fencing effectiveness data. ○ Ongoing photo documenting of Road Erosion Prevention Project. ○ Conservation easement monitoring for Maino ranch. ○ Project data submittal to NEPORT database. • Pending Deliverables: <ul style="list-style-type: none"> ○ Eelgrass restoration bed monitoring, to be conducted in fall of 2016. • NEP's CWA Implementation Role: Primary contribution toward <i>Improving Water Quality Monitoring and Controlling Nonpoint Source Pollution (NPS) on a Watershed Basis</i>.
Eelgrass Restoration <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Meet eelgrass restoration goals with plantings and partnership efforts. • Eelgrass restoration planting monitoring was conducted. • Conducted an experimental small-scale eelgrass planting effort in the spring to determine which planting methods, locations, etc. would be successful. Applied for permits, coordinated with partners. • Deliverables: <ul style="list-style-type: none"> ○ Monitoring protocol in partnership with Cal Poly. • Pending Deliverables: <ul style="list-style-type: none"> ○ Restoration bed condition monitoring report. ○ New data from Cal Poly/CDFW partnership. • NEP's CWA Implementation Role: Primary contribution toward <i>Controlling Nonpoint Source Pollution (NPS) on a Watershed Basis</i>.
Chorro Creek Ecological Reserve Restoration Planning <i>(New Task)</i>	<ul style="list-style-type: none"> • Objective: Update restoration plans for the Chorro Creek Ecological Reserve to prepare for implementation. • Coordinate with CDFW and consultants to update planning, permitting and design for the project. • Seek additional funding for implementation phases of the project. • Deliverables: <ul style="list-style-type: none"> ○ 100% project designs • Pending Deliverables: <ul style="list-style-type: none"> ○ Required permits and surveys for restoration effort. • NEP's CWA Implementation Role: Primary contribution toward <i>Controlling Nonpoint Source Pollution (NPS) on a Watershed Basis</i>.
Other Restoration Efforts <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Engage in other restoration efforts that arise and help achieve Management Plan goals. • Participated in Tri-County Fish Team and San Luis Obispo Steelhead Initiative meetings. • Participated in public process for wastewater treatment facility in Morro Bay. • Participated in City of Morro Bay Harbor Advisory Board sub-committee for planning a boat haul-out facility.

	<ul style="list-style-type: none"> • Participated in City of Morro Bay Harbor Advisory Board subcommittees on eelgrass. • Conducted general outreach on invasive species as part of Estuary Program watershed tours and presentations. • Provided support to Coastal San Luis RCD for a bank stabilization project along a stretch of Los Osos creek. • Participated in Regional Water Management Group meetings and provided project recommendations to the County of San Luis Obispo. • Coordinated with SLO County and Caltrans on an upcoming project to replace the bridge on South Bay Boulevard. • Estuary Program supported an effort by the Los Osos Basin Management Committee (local groundwater management group) to analyze future climate change precipitation patterns and how predictions may affect the basin yield models for the Los Osos groundwater basin. The basin has flow connection to Los Osos Creek. • Completed Deliverables: <ul style="list-style-type: none"> ○ Documents and reports generated from these efforts, including planning and impact reports from the Morro Bay wastewater treatment facility project. • Pending Deliverables: <ul style="list-style-type: none"> ○ Final conservation planning document. • NEP's CWA Implementation Role: Primary contribution toward <i>Strengthening Water Quality Standards and Controlling Nonpoint Source Pollution (NPS) on a Watershed Basis.</i>
<p>Conservation and Restoration Project Development <i>(New Task)</i></p>	<ul style="list-style-type: none"> • Objective: To develop projects and funding for conservation and restoration. • Provided assistance with technical overview of plans for a wetland restoration project on Los Osos Creek. • Completed a pikeminnow management plan with input from a technical advisory committee. Conducted a removal effort in the Chorro Reservoir. Conducted planning and permitting for pikeminnow removal on Chorro Creek mainstem. • Completed Deliverables: <ul style="list-style-type: none"> ○ Submitted grant application for pikeminnow management project. ○ Completed pikeminnow management plan and final report from removal effort in the reservoir. • NEP's CWA Implementation Role: Primary contribution toward <i>Strengthening Water Quality Standards and Controlling Nonpoint Source Pollution (NPS) on Watershed Basis.</i>
<p>5.2 Environmental Monitoring and Research</p>	
<p>Monitoring Program Coordination <i>(Ongoing Task)</i></p>	<ul style="list-style-type: none"> • Objective: Continue coordination of Volunteer Monitoring Program and collect data that meets QAPP guidelines. • Ongoing monitoring in the watershed and estuary to track long-term ambient trends and project implementation effectiveness. • Estuary Program staff coordinated with CA Department of Public Health and local shellfish growers on monitoring related to toxic plankton blooms and bacteria. • Monitoring program staff continued a long-term partnership with Cuesta College, teaching two college laboratory and lecture sessions in oceanography. • Planning for 2017 macroinvertebrate data collection in the spring of 2017. • Completed Deliverables: <ul style="list-style-type: none"> ○ Updated monitoring protocols. ○ 2016 macroinvertebrate data. • NEP's CWA Implementation Role: Primary contribution toward <i>Improving Water Quality monitoring.</i> Significant contribution toward <i>Strengthening Water Quality Standards and Developing Total Maximum Daily Loads (TMDLs).</i>

<p>Monitoring Program Reporting and Analysis</p> <p>(Ongoing Task)</p>	<ul style="list-style-type: none"> • Objective: Analyze data and share results with grantors, partners, local land owners, and the public. • Monthly bacteria reports have been completed and distributed on schedule. • Responses to data requests from regulatory agencies and private landowners are completed as requested. • Monitoring data was incorporated into the 303(d) update process for the Central Coast Regional Water Quality Control Board. • Conducted analysis of program data and partner data for inclusion in the State of the Bay environmental report card. • Completed Deliverables: <ul style="list-style-type: none"> ○ Monthly bacteria memos. ○ Data requests. ○ Water Board approval of proposed 303(d) list for Central Coast Region. ○ SOTB environmental report card analysis. • Pending Deliverables: <ul style="list-style-type: none"> ○ Monthly bacteria memos. • NEP's CWA Implementation Role: Primary contribution toward <i>Improving Water Quality monitoring</i>. Significant contribution toward <i>Strengthening Water Quality Standards</i> and <i>Developing Total Maximum Daily Loads (TMDLs)</i>.
<p>Monitoring Program Data Management</p> <p>(Ongoing Task)</p>	<ul style="list-style-type: none"> • Objective: Maintain data in SWAMP-compatible format. • Data management work included ongoing maintenance of program data in a SWAMP-compatible data format and ongoing maintenance of program Quality Assurance (QA) data. • Submitted 2016 bioassessment data into CEDEN. • Submitted 2016 water quality and bacteria data into CEDEN. • Formatting of historic bioassessment data for inclusion in CEDEN. • Completed Deliverables: <ul style="list-style-type: none"> ○ Submitted data to CEDEN. • Pending Deliverables: <ul style="list-style-type: none"> ○ Continual submittal of data to CEDEN. ○ State of the Bay data analysis. • NEP's CWA Implementation Role: Primary contribution toward <i>Improving Water Quality monitoring</i>. Significant contribution toward <i>Strengthening Water Quality Standards</i> and <i>Developing Total Maximum Daily Loads (TMDLs)</i>.
<p>Monitoring Program Quality Assurance</p> <p>(Ongoing Task)</p>	<ul style="list-style-type: none"> • Objective: Maintain an approved Quality Assurance Project Plan and implement necessary quality assurance methods. • Ongoing Quality Assurance (QA) activities, including analysis of replicate and split samples, equipment calibration, and maintenance of QA-related data in Access database. • Updated QAPP document and submitted to EPA Office of QA for review. Received approval on February 14, 2017, and QAPP was finalized. • Deliverable: <ul style="list-style-type: none"> ○ QA data managed in database. ○ Annual QAPP update submission to EPA. ○ Results of Sediment Lab Quality Assurance testing. • Pending Deliverables: <ul style="list-style-type: none"> ○ Management of QA activity data in database. • NEP's CWA Implementation Role: Primary contribution toward <i>Improving Water Quality monitoring</i>. Significant contribution toward <i>Strengthening Water Quality Standards</i> and <i>Developing Total Maximum Daily Loads (TMDLs)</i>.
<p>Project Effectiveness Monitoring</p> <p>(Ongoing Task)</p>	<ul style="list-style-type: none"> • Objective: Complete monitoring to show project effectiveness for various restoration projects. • Maintained sediment sampling sites for annual monitoring. • Conducted upstream/downstream monitoring to assess the effectiveness of bacterial reductions on riparian fencing projects. • Conducted monitoring of freshwater seeps around the bay to assess impacts of recently completed Los Osos Wastewater Treatment Facility.

	<ul style="list-style-type: none"> • Conducted monitoring of eelgrass restoration beds. • Completed Deliverables: <ul style="list-style-type: none"> ○ Monthly bacteria memos. • Pending Deliverables: <ul style="list-style-type: none"> ○ Monitoring report for restoration bed monitoring. • NEP's CWA Implementation Role: Primary contribution toward <i>Improving Water Quality monitoring</i>. Significant contribution toward <i>Strengthening Water Quality Standards</i> and <i>Developing Total Maximum Daily Loads (TMDLs)</i>.
Eelgrass Monitoring <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Monitor eelgrass to determine distribution in the bay. • Completed fall round of eelgrass bed condition monitoring. • Coordinate with Cal Poly on research and monitoring efforts. • Conducted monitoring for experimental outplanting effort conducted in Spring 2017. • Developed scope and contract to conduct subtidal eelgrass mapping of the bay. Selected a contractor and coordinated the effort. • Began planning for bay-wide aerial flight to create a map of intertidal eelgrass in the bay. • Completed Deliverables: <ul style="list-style-type: none"> ○ Updated monitoring protocol and datasheets for bed condition monitoring and restoration bed monitoring. • Pending Deliverables: <ul style="list-style-type: none"> ○ Bed condition monitoring data. ○ Bay-wide map of subtidal eelgrass. • NEP's CWA Implementation Role: Primary contribution toward <i>Improving Water Quality monitoring</i>. Significant contribution toward <i>Strengthening Water Quality Standards</i> and <i>Developing Total Maximum Daily Loads</i>.
Partner Research Efforts <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Support science partners in pursuing research efforts relevant to the goals of the Estuary Program. • Coordination and collaboration with Cal Poly, CDFW, NOAA, Southern California Coastal Water Research Project (SCCWRP), and other partners to research causes of eelgrass decline and related water quality issues. • Communicated with USGS researchers to learn more about monitoring efforts in the area. • Completed Deliverables: <ul style="list-style-type: none"> ○ Monitoring results and protocols for monitoring efforts. • Pending Deliverables: <ul style="list-style-type: none"> ○ Monitoring results and protocols for Cal Poly research projects. • NEP's CWA Implementation Role: Primary contribution toward <i>Improving Water Quality monitoring</i>. Support contribution toward <i>Strengthening Water Quality Standards</i> and <i>Supporting sustainable wastewater infrastructure</i>.
2.3 Public Participation, Education and Outreach	
Communications <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Communicate with a variety of audiences using presentations, printed materials, online presence, social media, and other venues. • Weekly blog posted on website and social media platforms, and emailed to subscriber list. (List is currently 142 members.) • Regular website updates to share program news and upcoming events. • Seventeen presentations and field trips given, reaching 310 individuals. • Continued circulating the Clean Water pledge. We now have more than 750 pledges. • Continued to increase the number of followers of the Facebook page to 1,200 users. Continued to increase two-way communication with these users, as well as their participation in Estuary Program activities and projects. Estuary Program also maintained a Twitter feed that currently has 480 followers, and an Instagram feed that currently has 1,200 followers. • Created and distributed press releases for our public outreach events including the State of the Bay. The upcoming events were featured in news articles, local network news coverage, and a feature story in a local food magazine. The

	<p>events were also shared via community calendar, print ads, and distribution of posters and post cards with event information.</p> <ul style="list-style-type: none"> • Created new outreach materials for display in our Nature Center. • Compiled the FY16 Annual Report for distribution in Spring 2017. • Completed Deliverables: <ul style="list-style-type: none"> ○ Blog posts. ○ Website and Facebook statistics. • Pending Deliverables: <ul style="list-style-type: none"> ○ Clean Water Pledge follow-up survey results. ○ FY16 Annual Report. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
<p>Education (Ongoing Task)</p>	<ul style="list-style-type: none"> • Objective: Develop formal education partnerships and services and continue to maintain the Nature Center and other education efforts. • Ongoing work to maintain the Nature Center and its exhibits continued in FY17. • Work continues on the Coastal Conservancy grant for creation of content for an app to draw visitors to the coast. App content is under development for local points of interest. • Implementing grant from Harold J. Miossi Charitable Trust to develop new educational content for our interactive touchscreen kiosk in our Nature Center and to move that content online so that it can be used outside of the Nature Center. Equipment purchased and content under development. Worked with a Cal Poly Capstone Project group to create a unique video game that teaches users about steelhead, their life cycle, and their habitat needs. • Nature Center Docent Program continued for its third summer season with a few docents beginning early in the spring and a few continuing on into the fall. From April through September, eight individual docents interacted with more than 490 visitors. • Four watershed model demonstrations completed in grades kindergarten through sixth, reaching 100 students. • Completed Deliverables: <ul style="list-style-type: none"> ○ Nature Center promotional materials and statistics. ○ Fieldtrip and talks statistics. ○ Video game for use on the Nature Center kiosk and the Estuary Program website. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
<p>Community Grants (Ongoing Task)</p>	<ul style="list-style-type: none"> • Objective: Provide support for community projects that further the goals of the Management Plan and engage the community. • Nearing completion on a grant awarded for the creation of a short documentary film about the challenges facing Morro Bay and the formation of the Estuary Program. The film debuted at the San Luis Obispo Film Festival in March and won Best Documentary Short in the Central Coast Filmmaker Showcase. • Contact community groups to assist with project development and encourage them to apply for community grants. • Pending Deliverables: <ul style="list-style-type: none"> ○ Grant final reports. ○ Completed education materials from grant results. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
<p>Outreach for Boating and Harbor Best Management Practices (Ongoing Task)</p>	<ul style="list-style-type: none"> • Objective: Conduct outreach to boaters about responsible waste disposal practices and other clean boating best management practices. • Engaged in focused outreach to live-aboard and boating organizations, in conjunction with partners such as the city of Morro Bay Harbor Department and the Morro Bay Coast Guard Auxiliary. • Updated educational materials for distribution and drafted a survey to gauge the effectiveness of those materials and the clean boating services offered in the bay.

	<ul style="list-style-type: none"> • Completed Deliverables: <ul style="list-style-type: none"> ○ Updated educational materials. ○ Survey, ready for administration. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
Bay Friendly Recreational Uses <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Support partner efforts to disseminate messages to the public about recreating on the bay while minimizing impacts to wildlife and other competing uses. • Support partner efforts to engage people on recreating while minimizing impacts to wildlife. • Draft survey to gauge public perception of and interest in kayak docent program. • Deliverables: <ul style="list-style-type: none"> ○ Statistics from outreach efforts. • Pending Deliverables: <ul style="list-style-type: none"> ○ Survey, ready for administration. State Parks data on wildlife interactions. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
State of the Bay Analysis and Planning <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Complete analysis and report planning for triennial State of the Bay report. • Completed compilation of data, development text, and review of layouts for 2017 State of the Bay report. Document was printed in Spring 2017 and distributed via hard copy and the Estuary Program website. • Conducted planning for triennial conference/event to share knowledge about the status of the estuary and watershed, to take place in April 2017. Contacted speakers, reserved venues, created promotional materials, and advertised the events. • Deliverables: <ul style="list-style-type: none"> ○ State of the Bay 2017 environmental report card and summary brochure. ○ Promotional materials for State of the Bay events. • Pending deliverables: <ul style="list-style-type: none"> ○ Statistics from State of the Bay outreach events. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
Other E&O Tasks/Community Partner Projects <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Support outreach projects in the community that further goals of the Management Plan. • Fourteen presentations and field trips given in and out of the watershed, reaching 753 individuals. • Completed Deliverables: <ul style="list-style-type: none"> ○ Completed presentation materials. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
2.4 Program Management	
Manage Committees and Build Partnerships <i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • Objective: Hold quarterly meetings and support partnerships. • Quarterly meetings of the Implementation Committee and Executive Committee were held throughout the fiscal year. When appropriate, working group meetings were also held prior to committee meetings. Membership was updated for both committees as needed. Staff coordinated guest speakers for the IC meetings and recruited new members. • Completed Deliverables: <ul style="list-style-type: none"> ○ Minutes, agenda, staff reports, and materials were completed for each meeting. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
Grants and Contracts Administration and Financial Management	<ul style="list-style-type: none"> • Objective: Develop workplan, administer grants, and complete annual financial management tasks.

<i>(Ongoing Task)</i>	<ul style="list-style-type: none"> • FY17 work for this task included financial reporting, progress reports to the EPA and management conference, and attendance on ANEP conference calls and committees. • Worked with auditors to complete a federal single audit for the Estuary Program. • Completed Deliverables: <ul style="list-style-type: none"> ○ Monthly financial reports completed and approved by the Bay Foundation board. ○ ANEP conference calls were attended by Executive Director. ○ Biannual Executive Committee report. ○ Audit and taxes work. ○ Annual financial statements. ○ Attendance at ANEP meeting in New Orleans in December 2016. • Pending Deliverables: <ul style="list-style-type: none"> ○ FY18 Workplan and budget. ○ Attendance at ANEP meeting in DC in May 2017. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
<p>General Administration and Human Resources Management</p> <p><i>(Ongoing Task)</i></p>	<ul style="list-style-type: none"> • Objective: Maintain accurate financial and human resource records and manage personnel. • MBNEP requires ongoing financial and administrative functions, including record keeping and filing, bookkeeping, equipment and office space upkeep, as well as interacting with the general public. In addition, the Director spends time managing staff performance and workplan progress. Other HR tasks include training, professional development, recruitment when applicable, and keeping all personnel policies and procedures up to date. • Hired Communications and Outreach Intern to support State of the Bay and other education efforts. • Completed Deliverables: <ul style="list-style-type: none"> ○ Up-to-date bookkeeping records. ○ Public friendly office space. ○ Orderly and properly operating office and field equipment. ○ Bi-weekly staff meetings. ○ Safety meetings held at least monthly. ○ Annual audited financial statements, including required Federal Single Audit. ○ Updated policies and procedures. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.
<p>Tracking Implementation of the CCMP and Work Plan</p> <p><i>(Ongoing Task)</i></p>	<ul style="list-style-type: none"> • Objective: Keep track of Workplan and Management Plan implementation. • Tracking progress on CCMP implementation is done through biannual reports to the Executive Committee and through NEPORT data submissions, and project management. • Completed Deliverables: <ul style="list-style-type: none"> ○ Biannual Executive Committee reports. ○ NEPORT data submitted. • NEP's CWA Implementation Role: Support contribution toward <i>all CWA core programs</i>.

Status of Major Projects

This section reports on the status of major projects from the second first of FY17 (October 1 to March 31, 2017). During this reporting period, the Estuary Program made substantial progress on a number of Workplan tasks.

Project Name: Eelgrass Monitoring and Restoration

Project Objective: Improve understanding of eelgrass decline in the Morro Bay estuary to inform restoration efforts. Conduct experimental outplantings to inform restoration targets.

Project Description: The Estuary Program and its partners have been collaborating to obtain funding and conduct monitoring and research to support understanding of eelgrass decline. Our mapping efforts have documented a steep decline in eelgrass acreage since 2007 when 344 acres were mapped. Data from 2015 indicates that less than 20 acres remain.

During this reporting period, the Estuary Program implemented funding obtained in the last fiscal year. This includes a grant from NOAA for \$35,000 to support bed condition monitoring by the Estuary Program and equipment and staff time to support California Polytechnic State University San Luis Obispo (Cal Poly) research efforts. For this project, the Estuary Program completed its round of bed condition monitoring. Cal Poly purchased and deployed water quality monitoring sensors. Cal Poly hired a technician to assist with data collection and management. The grant also supported a small-scale experimental outplanting which took place in March. The Estuary Program and Cal Poly will continue to monitor the plantings to determine their success.

A grant from the California Department of Fish and Wildlife (CDFW) Duck Stamp Program supports eelgrass restoration bed monitoring as well as a small experimental planting effort. A round of restoration bed monitoring was conducted in the fall of 2016, and results show little survival of eelgrass transplanted between 2012 and 2014. During the fieldwork, numerous patches of eelgrass were documented in the mid and back bay, in the areas hit hardest by the recent decline. The small-scale experimental outplanting and upcoming monitoring were also funded in part by this grant.

Cal Poly is making progress on multiple eelgrass-related research projects. Data collection is underway on water quality, eelgrass genetics, sedimentation impacts, predation, and impacts of eelgrass decline to biota such as fish and birds. All monitoring is taking place in close consultation with the Estuary Program, in order to coordinate all efforts. Data from some preliminary work indicates waters in the back bay may take longer to turn over than previously thought and have higher salinity levels than previously observed, likely due to evaporation from the shallow waters. The initial results from the genetic analysis indicate that the eelgrass is genetically diverse (not clones) within individual eelgrass beds and that the eelgrass in different parts of the bay are not genetically distinguishable from each other. This directly supports restoration efforts since this data indicates that one would get sufficient genetic diversity by harvesting eelgrass from one area in the bay and replant it in another area. Research efforts will continue to collect data, conduct analysis, and explore connections between these conditions and eelgrass growth.

The Estuary Program has a project underway to create a bay-wide map of subtidal eelgrass. The fieldwork was completed in April, with data collected using side-scan sonar via boat and aerial images via drones. The complete map should be available in Summer 2017 and will give a more complete picture of the location of subtidal eelgrass.

Lead Implementer, Partner, and Their Roles: The Estuary Program served as the lead implementer and was the partner that obtained funding and is managing the grant and project work. NOAA and the CDFW, as funders, are project partners. Cal Poly is a partner, as they were awarded Cal Poly grants to support their research and because they are an active partner in the monitoring and research efforts. The effort involves a large technical advisory committee, which includes members from EPA, USFWS, NMFS, Pacific Northwest National Laboratory, California State Parks, the city of Morro Bay, consultants, and numerous universities.

Accomplishments and Deliverables: Deliverables include technical reports, presentations, and brief publications that showcase eelgrass-related data and research results. Deliverables also include a bay-wide map of subtidal eelgrass.

Amount of 320 grant/cooperative agreement funds: 320 funds supported staff time to foster partnerships, develop grant applications, and test monitoring methods. Staff time also oversees the contract for the subtidal eelgrass mapping. The cost of the data collection and map creation is \$31,290.

Expected Long-Term Outcomes: The expected long-term outcomes include a long-range plan for addressing eelgrass loss in the bay.

Primary or Significant Role: The Estuary Program plays a primary role in this effort, including securing and managing the funding, directing monitoring and restoration activities, and creating products with the data.

External Constraints: Delays in contracting pushed back the start date for the CDFW and the NOAA funding. Permitting for the planting effort required a great deal of coordination and in the end, the permit was received in time due to internal support for the project by CDFW staff.

Project Name: Chorro Creek Ecological Reserve Planning and Permitting

Project Objective: Conduct the designs, permitting and planning necessary for a restoration project on the Chorro Creek Ecological Reserve.

Project Description: In 2003, the Chorro Creek Ecological Reserve (580-acre parcel at the base of Hollister Peak) was purchased with Estuary Program support and leadership to prevent future development. The property was transferred to the California Department of Fish and Wildlife (CDFW) for ownership and management. Restoration plans were completed in 2008 to address floodplain restoration and gully remediation, but the plans were not approved by CDFW. As a result of efforts in FY16 to obtain funding and begin planning, coordination with CDFW is underway to facilitate a restoration effort. The effort involves updating the restoration plans, undergoing environmental review, securing necessary permits, and applying for implementation funding.

Based on information from the test pits excavated in September 2016, the 100% designs were completed in the spring of 2017.

The next steps involve applying for implementation funding and conducting the permitting and surveys required to move on to the construction phase.

Lead Implementer, Partners and Their Roles: The Estuary Program served as the lead implementer and was the partner that applied for funding and will be managing the grant and project work. CDFW, as a funder and landowner, is a project partner. Other partners include the State Coastal Conservancy, who provides review and feedback as a potential funder, and EPA, who offers technical assistance.

Accomplishments and Deliverables: The 100% designs are now complete, which included a series of other supplemental reports completed: 100% Basis of Design Report, Hydrology and Hydraulic Report, and Geotechnical and Soil Characteristic Assessment. Future deliverables include final grant applications and awarded permitting.

Amount of 320 Grant/cooperative agreement: 320 funds supported staff time to foster partnerships, manage a grant application, coordinate with contractors, and conduct environmental monitoring.

Expected Long-term Outcomes: Reduction in sediment loading to the watershed creeks and the estuary. Improvements to instream and floodplain habitat in Chorro Creek.

Primary or Significant Role: The Estuary Program played a primary role in the project, which included applying for and managing the grant, overseeing grant tasks, and producing grant deliverables.

External Constraints: The intricacies of the permitting process were a challenge that delayed the project schedule. Until the Streambed Alteration permit was obtained, initial geotechnical pit testing could not be conducted. The test pit surveys were needed to inform the overall direction of the project designs.

Project Name: Documentary Film “Of Marshes and Morros”

Project Objective: Develop a short documentary explaining the environmental challenges facing the estuary and describing how the Estuary Program was formed.

Project Description: A local filmmaker, Simo Nylander, has collaborated with the Estuary Program on other educational video projects in recent years. As part of the process, he became interested in the grassroots efforts that led to the creation of the Estuary Program. Using historical photos, interviews, and documents from the program formation, Nylander developed a 20-minute short documentary. The film was entered into the San Luis Obispo Film Festival where it won Best Documentary Short in the Central Coast Filmmaker Showcase. Estuary Program staff attended a screening of the film at the festival to a standing-only crowd of 124. Staff participated in the Q&A session following the film, which was a further opportunity to introduce viewers to the Estuary Program and its

work. The film was screened later in the year for a crowd of 80 in conjunction with other environmentally-focused documentary. Estuary Program staff attended the screening and participated in the Q&A session. Additional screenings are planned and the filmmaker has submitted the film to additional festivals.

Future plans for the film including screenings in Morro Bay as a fundraiser to raise money for a further educational component. Nylander plans to share the film with local educators and get input on how the piece could be altered to fit with science curriculum. He will then release a version of the film for classrooms. The Estuary Program will help promote these events and distribute the film to local educators. The film's audio track is also slated to be used for a local NPA affiliate news show.

Lead Implementer, Partners, and Their Roles: Nylander, as the filmmaker, was the lead implementer of the project. The Estuary Program served as a partner. The Estuary Program awarded Nylander a Community Grant award to help fund the effort. We also assisted Nylander in obtaining a local grant from PG&E. The Estuary Program provided content for the film, including interviews, documents, and historic photos.

Accomplishments and Deliverables: The completed film will be available online with a link on our website. It reached over a hundred people in the initial screening, and future screenings are planned. The classroom version will be distributed to classrooms locally and beyond to support science curriculum.

Amount of 320 Grant/cooperative agreement: 320 funding supports staff time for coordination with Nylander, awarding and managing of our Community Program grant, management of the PG&E grant (the Estuary Program was the recipient), promoting the film, and helping to publicize it.

Expected Long-term Outcomes: The opportunity to reach so many members of our community helps spread our message of protection, restoration, and conservation. The film may attract new volunteers and monetary support, strengthen existing partnerships, and introduce us to new potential partners.

Primary or Significant Role: The Estuary Program played a primary role in this project, providing the funding for the film and helping manage other supporting grant funds. Also provided content for the project. The Estuary Program will play a role in the next phase, refining the film for classrooms and helping get the word out to educators.

External Constraints: While the Estuary Program was heavily involved in the project, ultimately the filmmaker had control over the film content. While the message of the film aligns well with that of the Estuary Program, we do not take responsibility for the content or specific phrasing.

Budget Overview

The following table describes costs incurred during the semi-annual report period and cumulative since the beginning of the current Section 320 grant (FY12). Match numbers do not include in-kind match.

Table 2: Costs expended during this semi-annual report period (extension of FY16 grant from 10-1-16 to 3-31-17) and cumulative since beginning of grant

Category	Subcategory	FY16 Period 3 320 Funds	FY16 Period 3 Cash Match	FY16 Period 3 TOTAL	Cumulative 320 Funds	Cumulative Cash Match	Cumulative TOTAL
Personnel	Salaries	\$142,913	\$0	\$142,913	\$1,785,736	\$48,088	\$1,833,824
	Fringe	\$15,168	\$0	\$15,168	\$216,792	\$1,880	\$218,672
	Management Conference	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Subtotal</i>	\$158,081	\$0	\$158,081	\$2,002,528	\$49,968	\$2,052,496
Travel		\$4,228	\$0	\$4,228	\$33,730	\$7	\$33,736
Supplies	Computers, software	\$326	\$0	\$326	\$5,951	\$0	\$5,951
	Vehicle maintenance, fuel	\$803	\$0	\$803	\$8,087	\$0	\$8,087
	Monitoring supplies	\$5,269	\$0	\$5,269	\$27,345	\$2,723	\$30,068
	Misc. office supplies	\$4,709	\$0	\$4,709	\$35,688	\$25	\$35,712
	Rent	\$0	\$0	\$0	\$255,069	\$0	\$255,069
	Utilities	\$1,148	\$0	\$1,148	\$18,531	\$0	\$18,531
	<i>Subtotal</i>	\$12,255	\$0	\$12,255	\$350,671	\$2,747	\$353,418
Contractual	Audit/Taxes/Accounting	\$1,271	\$0	\$1,271	\$56,645	\$0	\$56,645
	Education and Outreach	\$20,021	\$0	\$20,021	\$97,045	\$36,625	\$133,670
	Monitoring and Research	\$15,850	\$0	\$15,850	\$65,737	\$135,309	\$201,046
	Restoration and Protection	\$24,236	\$0	\$24,236	\$78,505	\$502,747	\$581,252
	<i>Subtotal</i>	\$61,378	\$0	\$61,378	\$297,932	\$674,681	\$972,613
Other	Postage	\$804	\$0	\$804	\$7,962	\$694	\$8,656
	Copying, Printing	\$1,488	\$0	\$1,488	\$17,325	\$384	\$17,709
	Training, Prof. Dev.	\$1,635	\$0	\$1,635	\$9,614	\$0	\$9,614
	Telephone, Internet	\$1,264	\$0	\$1,264	\$30,421	\$0	\$30,421
	Repairs and Maintenance	\$5,526	\$0	\$5,526	\$17,991	\$34	\$18,025
	Insurance	\$2,829	\$0	\$2,829	\$26,737	\$0	\$26,737
	<i>Subtotal</i>	\$13,546	\$0	\$13,546	\$110,049	\$1,112	\$111,161
	TOTAL	\$249,489	\$0	\$249,489	\$2,794,909	\$728,516	\$3,523,425

Table 3 lists costs by program area and task. Match numbers do not include in-kind match.

Table 3: Detailed costs expended by program area and task

Program Area	Project	FY16 Period 3 320 Funds	FY16 Period 3 Match	FY16 Period 3 TOTAL	FY16 Overall TOTAL
Education and Outreach	Communications	\$3,691	\$0	\$3,691	\$4,153
	Community Projects	\$999	\$0	\$999	\$1,274
	Community Grants	\$0	\$0	\$0	\$3,628
	Education and Nature Center	\$1,518	\$0	\$1,518	\$3,305
	State of the Bay	\$6,638	\$0	\$6,638	\$10,488
	Other E&O Tasks	\$3,257	\$0	\$3,257	\$3,803
	<i>Subtotal</i>	\$16,102	\$0	\$16,102	\$26,650
Monitoring and Research	Benthic Invertebrate Monitoring	\$0	\$0	\$0	\$5,960
	Stats	\$0	\$0	\$0	\$2,113
	Water Quality Monitoring	\$12,909	\$0	\$12,909	\$17,898
	Eelgrass Monitoring & Analysis	\$2,041	\$0	\$2,041	\$5,175
	<i>Subtotal</i>	\$14,950	\$0	\$14,950	\$31,146
Habitat Protection and Restoration	Restoration & Conservation Planning	\$0	\$0	\$0	\$0
	Freshwater Flow	\$0	\$0	\$0	\$0
	Chorro Creek Ecological Reserve	\$4,500	\$0	\$4,500	\$13,392
	Restoration Project Maintenance	\$0	\$0	\$0	\$0
	Other Restoration	\$19,736	\$0	\$19,736	\$39,530
	<i>Subtotal</i>	\$24,236	\$0	\$24,236	\$52,922
Program Administration		\$0	\$0	\$0	\$0
	TOTAL	\$55,289	\$0	\$55,289	\$110,718