Sarasota Bay Estuary Program

2012-2017
Program Evaluation Package

Submitted March 2018

TABLE OF CONTENTS

I. Executive Summary

The SBEP would like to thank the citizens and technical advisors for their thousands of volunteer hours, and for the contributions of federal, state, and local government staff in making Bay restoration a reality.

The SBEP and EPA recently closed out a seven-year cooperative agreement covering the period of October 1, 2010 to September 30, 2017, substantially covering the period of performance. The SBEP received a letter from EPA indicating that all required final reports and necessary forms to close out the above referenced reward have been received. Based upon administrative, programmatic and fiscal reviews, all documents have been deemed acceptable, the terms and conditions satisfied and the grant has been physically closed (**#65**).

Background and Status of EPA Core Programs Implementation

The Sarasota Bay Estuary Program (SBEP) was established in 1989. Approximately three years of technical assessment and studies led to a preliminary management plan that was presented to the community in the "Framework for Action Report 1993". After two years of review, the CCMP was formally adopted in June 1995. The CCMP was most recently updated in 2014.

The original programmatic goals were reviewed during the development of the Comprehensive Conservation and Management Plan (CCMP) in 1995, and were again revised in 2014 during the CCMP update process:

1. Improve water transparency,
2. Reduce the quantity and improve the quality of stormwater runoff to the Bay,
3. Restore lost seagrasses and shoreline habitats, and eliminate further losses,
4. Establish an appropriate management structure for Sarasota Bay,
5. Provide increased levels of managed access to Sarasota Bay and its resources, and
6. Restore and sustain fish and other living resources in Sarasota Bay.
7. Engage, educate, and encourage environmental stewardship of Sarasota Bay and its resources.

Support for implementing EPA Core Programs has been a major element of CCMP implementation:

- Strengthening Water Quality Standards (WQS) – WQS were set in 2012 via the Numeric Nutrient Criteria (NNC) process.
- Improving Water Quality Monitoring – The Sarasota Bay Water Quality monitoring program was established in 1992 and continues today with monthly sampling.
- Developing Total Maximum Daily Loads (TMDLs) – No TMDLs were required due to improved water quality in the Bay and tributaries.
- Controlling Nonpoint Source Pollution (NPS) on a Watershed Basis – Low Impact Design (LID) policies

are in place regionally. Regional stormwater retrofit projects have been constructed or planned to reduce pollution.

- Strengthening National Pollutant Discharge Elimination System (NPDES) Permits – All WWTP permits have been modified to eliminate wastewater discharge. The NPDES stormwater operating permits are implementing programs developed by the SBEP to help restore and protect the Bay.
- Supporting Sustainable Wastewater Infrastructure – New reclaimed wastewater infrastructure has been installed, reclaiming approximately 65% of the area's wastewater for alternative supply.
- Deep well injection systems have also been constructed to eliminate discharge.

Exhibit A highlights major program accomplishments during the review cycle.

Exhibit A

Environmental Results: Accomplishments

Sarasota Bay was designated an estuary of national significance in 1989 and joined the U.S. EPA National Estuary Program (NEP).

SBEP supports regional projects to improve water quality, expand habitat and enhance fishery productivity.

The SBEP developed new water quality standards (Numeric Nutrient Criteria) for Sarasota Bay that were approved by EPA and FDEP. The program and its partners enhanced or restored 882 acres of seagrass between 2014-2016, 678 acres of coastal wetland habitat, and 4,420 linear feet of shoreline. These projects helped promote local and regional economies that rely on tourism, recreational fishing, boating and other water-dependent industries.

SBEP effectively uses EPA funds to leverage additional support. During the period 2012–2017, the Sarasota Bay Estuary Program used its annual NEP grant to secure $267 million in leveraged resources from public and private funding sources. The funding helped address Sarasota Bay's priorities related to habitat loss/degradation, stormwater runoff, and wastewater treatment.

ACCOMPLISHMENTS

SBEP and its partners have achieved the following key results during this review period:

- A 3% total nitrogen load reduction (67% since 1989).
- Seagrass coverage has increased 9% (to levels 34% above 1950).
- Restored and enhanced approximately 678 acres of habitat.
- Deployed 354 habitat modules on nine artificial reef sites.
- Completed two new oyster projects in Manatee County.
- Replaced signs and developed a phone tour to accompany Gulf Coast Heritage Trail sites.
- Continued implementation of a comprehensive public education program that reached approximately 25,000 students.
- Disbursed $112,800 in grant funding to support 25 diverse organizations for Bay-friendly projects throughout the watershed.
- Conducted comprehensive workshops on tidal creeks, living shorelines, and sea level rise.
- Engaged the public in watershed management during the Sarasota Bay Watershed Symposium.
- Completed a comprehensive climate change vulnerability assessment of the CCMP.
- Completed an economic valuation of Sarasota Bay.
- Engaged 1,625 volunteers in 36 Bay Guardians workday events, resulting in 4,875 hours donated to Sarasota Bay restoration.
- Updated technical and research priorities.

Progress Report

The SBEP CCMP contains seven action plans: (1) Wastewater Treatment and Reclamation, (2) Stormwater Treatment and Prevention, (3) Fresh and Saltwater Wetlands, (4) Fish and Other Living Resources, (5) Recreational Use, (6) Governance, and (7) Citizen Participation Chapter.

The CCMP Action Plans are interrelated. The underlying themes are to: (1) improve water transparency by reducing nitrogen loading and (2) expand juvenile fish habitat (seagrass, reefs, and wetlands) while (3) providing managed access to the Bay and its resources.

From 2012 to 2017, $267 million (**#55**) has been spent by SBEP partners to improve and restore Sarasota Bay. The funds have supported a wide variety of infrastructure, research, education, pollution control, land acquisition and habitat restoration projects. See Exhibit A on page 5 of this document for a summary of accomplishments during the reporting period.

Water Quality

Successful augmentation of NPDES and NPS programs in the Sarasota Bay area has resulted in a 67% reduction in nitrogen pollution (an estimated 3% reduction in this review period) and a 54% increase in seagrass coverage (9% in this review period) since 1988. Due to declining trends in chlorophyll *a*, all Bay waters were delisted as "impaired" in 2010 by FDEP/EPA.

Utilizing the extensive water quality monitoring database initiated by the SBEP, NNC were developed and adopted into State Rule. EPA adopted these criteria in December 2012. No TMDLs have been required in Sarasota Bay thanks to improving water quality conditions.

Sustainable wastewater infrastructure has been constructed that recovers 65% of the area's wastewater for alternative supply, thereby reducing demand on the Floridian Aquifer. Regional stormwater treatment systems have been constructed and an LID manual supports LID application regionally. Fertilizer ordinances prohibiting nitrogen and phosphorus-based application in the summer wet season continue to be implemented in all jurisdictions around the Bay. During this review period, the local governments have continued to operate and improve existing programs. The City of Sarasota removed its discharge to the Bay in May 2017 and Sarasota County continued constructing the Phillippi Creek Septic-to-Sewer program during the period. Approximately 2,000 septic tanks were removed along with one wastewater treatment plant. Utilizing deep well injection, surface wastewater discharge has been reduced with only one surface water discharge to Sarasota Bay remaining. Total nitrogen (TN) concentrations in the Bay are relatively low (<1.0 mg/L), but a few Bay segments have shown a slight but significant increase over the period.

Seagrass acreage, a primary indicator of ecosystem health, has recovered to above 1950 levels, with a 9%

improvement during the reporting period. Water quality improvement has resulted in 882 additional acres of new seagrass during the reporting cycle (**#50**).

A project to understand the dynamics of macro-algae populations in the Bay and the primary sources of nutrients available to these algae was completed in 2013 (**#61**). Sarasota Bay has maintained very low macroalgae abundances over the past four years.

Habitat Restoration

Wetlands

The SBEP updated its Five-Year Habitat Restoration Plan in January 2016 (**#57**). The plan prioritizes habitat restoration projects in the watershed to meet the CCMP goal of restoring or creating 18 acres of intertidal wetlands and 11 acres of non-forested freshwater wetlands annually. During this review cycle, habitat restoration projects were undertaken that resulted in a cumulative increase of 678 acres and 4,420 linear feet of created or enhanced habitat (**#55**).

Reefs

The Sarasota Bay program area contains 14 Bay and 38 coastal artificial reefs. Historically, reef deployments have consisted of concrete culverts, reef balls, limestone boulders and other materials of opportunity. During this reporting period, In Manatee County, one hundred fifty limestone boulders were deployed on the offshore Borden Reef during this reporting period. For the Sarasota County offshore reefs, 117 reef balls were deployed on Silvertooth Reef while 17 reef balls and 117 tons of limestone boulders were deployed on M-8 Reef during the reporting period.

SBEP had the opportunity to add new reef material on six existing Bay reefs during the reporting cycle. Side scan sonar maps of three of these reefs (from Sarasota County waters) prior to adding these supplemetal materials, are found in attachment **#66**. The following table summarizes the type of material and their respective quantity deployed on these Bay reefs.

Materials installed on Sarasota Bay reefs 2013-2017.

	Sarasota County			Manatee County		
MODULE TYPE	Harts	Walker	Anglers	Bayshore North	Bayshore South	Whale Key
Deep Cover	2	2	2	2	2	2
Block	2	1		2	1	
Two Tier Reef Cubes	3	3	3	3	3	3
Bay Ball Layer Cake	3	2	2	3	2	2
Bay Ball w/ Eco Ring	2	2	2	2	2	2
Mini Bay Layer Cake	3	2	2	3	2	2
Juvenile Habitat Insert	10	10	10	10	10	10
Pallet Ball		2			2	
Bay Ball		5			5	
Mini Bay		16			16	
Lo Pros		18			18	
Three Tier Reef Cube	1			1		
TOTAL	26	63	21	26	63	21

Two new oyster reefs were created in Manatee County estuarine waters during the cycle. New oysters have settled on these reefs and fisheries monitoring by FWRI shows newly recruited fisheries to these reefs. FIM sampling found many more individuals of the following species over the created oyster reefs than the surrounding mud or sand bottom: jenny mojarras, scaled sardines, silversides and Atlantic thread herring. These species are important bait fish (**#67**).

Fisheries

Fisheries monitoring continued during this period to build a systematic fisheries database relating habitat and water quality requirements within Sarasota Bay. Fisheries community analyses of the five main Sarasota Bay segments and between the Bay segments of three Southwest Florida estuaries provided similar results. Nekton community structure, regardless of gear type, tended to differentiate into three groupings: 1) small Sarasota embayments, 2) larger Bay segments closely linked to the Gulf of Mexico and receiving little direct freshwater inflow, and 3) larger Bay segments not linked closely to the Gulf and receiving relatively large amounts of freshwater inflow. The taxa that discriminated between the groupings tended to have higher abundance in smaller rather than in larger Bay segments. The most obvious morphological differences between the grouping of small Sarasota embayments and the other bay segments is their relatively small surface area, relatively high freshwater inflow from Phillippi Creek, and absence of a direct connection to the Gulf of Mexico. The grouping of small Sarasota embayments was least like the grouping of larger bay segments that received relatively high freshwater inflow and lacked direct connections to the Gulf of Mexico. The smaller Sarasota Bay embayments are relatively closer to the Gulf than are the larger bay segments with freshwater influence, possibly indicating that proximity to the Gulf of Mexico and/or embayment size were more important in determining nekton composition than was freshwater inflow.

In September 2016, SBEP focused technical efforts on tidal creeks and streams leading to Sarasota Bay. SBEP has begun a comprehensive look at regional tidal tributaries to relate flora and fauna, habitats, hydrology, and water quality in these systems. SBEP is also leading an effort to develop nutrient criteria for Southwest Florida tidal creeks. The recent emphasis (post 6/30/17) has been on improving juvenile fish habitat and water quality in these environs (**#51** and **#52**). The concepts will be discussed at a June 2018 workshop with state and regional partners.

Education and Outreach

Bay-Related Education

The SBEP's long-time Bay education program reached 32,038 students with hands-on environmental educational opportunities and field trips (**#41**). Thrice yearly SBEP-sponsored teacher training workshops continue to equip K-12 educators in Sarasota and Manatee Counties with innovative lesson plans and activities for watershed education (**#37**). SBEP staff members routinely present in K-12 and college classrooms and organize Bay-related activities for summer camps. SBEP has collaborated with multiple university professors to use the SBEP as a case study for students to learn about environmental education and communication.

Outreach

SBEP focuses on informal and adult education to reach the largely elderly population of the Sarasota Bay watershed. The SBEP outreach staff presented to thirty community groups, including neighborhood and homeowner associations, Rotary clubs, and continuing education programs during the reporting period (**#41**). To expand outreach to the general population, the SBEP awards mini-grants to engage local neighborhoods in Bay-friendly landscaping and other stewardship initiatives. Fifty-four Bay Partners Grants were awarded to 25 area organizations to support community efforts in Bay Restoration, Bay-Friendly Landscaping, and Bay Education (**#38**).

The Sarasota Bay Guardians volunteer program engaged 1,625 volunteers in 36 workday events, resulting in 4,875 hours donated to Sarasota Bay restoration. Local natural resources managers continue to rely on the Bay Guardians program to implement large plantings and invasive removal projects.

SBEP outreach staff participate in multiple local collaborative environmental networks including the Science and Environment Council of Southwest Florida, the Climate Council of Sarasota-Manatee, and the Sarasota-area Intergovernmental Climate Change Working Group. The SBEP Public Outreach Manager sits on the Sarasota County Program for Public Information (PPI) Committee and the Sarasota County Sustainable Communities Workshop Advisory Committee.

Citizens Advisory Committee Activities and Priorities

Eight local citizens joined the SBEP Citizens Advisory Committee (CAC). Activities outlined in the Citizens Participation Chapter of the 2014 CCMP reflect the CAC's recommendations to prioritize climate change and economic valuation projects (**#28**). In 2016, the CAC voted to focus CAC efforts on promoting living shorelines.

In 2017, the SBEP completed a Climate Vulnerability Assessment of the CCMP to determine which CCMP goals and activities could be vulnerable to projected climate hazards (**#49**). The Assessment identified 54 risks across six CCMP action plans. Twenty-four of these threats were deemed to be high likelihood and high consequence. The process of stakeholder and expert engagement also highlighted priority research questions related to climate change vulnerability. Questions were incorporated into a summary of research and technical needs that will be used by SBEP staff to inform resource allocation for research in future work plans.

The SBEP completed an economic valuation study of Sarasota Bay in 2014 that valued the Bay's resources at $11.8 billion (**#33**). The study summed several different types of economic values: 1) the economic value for recreation trips to Sarasota Bay, 2) the economic value for living near Sarasota Bay, 3) the economic value of key Sarasota Bay resources, and 4) the economic impact of visitor-based recreation. This study has equipped SBEP staff and CAC members with the language required to contextualize the value of Sarasota Bay and its ecological resources within the larger Southwest Florida economy. Local media regularly quote the value figure for Sarasota Bay when covering news items related to the Bay.

The SBEP organized a multi-stakeholder workshop in 2016 to investigate the opportunities for living shorelines implementation throughout the Sarasota Bay watershed (**#20**). Following this workshop, the SBEP began developing a guidance document for designing living shorelines projects in the SBEP study area with the assistance of the Wetland Coordinator. The document is in review.

Pressures (+/-) – Applies to all CCMP Goals and Objectives and Program Activities

There have been major cuts to environmental programs in Florida including the abolishment of the Southwest Florida Water Management District (SWFWMD) Manasota Basin Board, which historically provided $12 million annually to Manatee and Sarasota Counties. SWFWMD has also reduced regional cooperative funding available to the SBEP and the local governments. SWFWMD and FDEP funding and staffing levels have also been reduced. SBEP has been forced to focus on other sources of funding for CCMP implementation (**#7**, **#13**). State and local governments throughout the region have cut and reorganized environmental programs and have had many administrative staffing changes at the senior level. Term limits for elected officials have increased turnover within the SBEP Management Conference. These changes have resulted in a loss of institutional knowledge, program continuity, and participation in SBEP management structure and activities.

II. Program Management Core Elements

Overview

The SBEP has made significant progress on all Program Management Core Elements. Supporting documents for each Core Element are provided as hyperlink attachments.

On October 1, 2004 the SBEP became an independent State agency under Chapter 163 of Florida law. On September 30, 2017, the SBEP had expensed all EPA grant funds awarded during the review cycle (**#65**) and has received independent Federal A-133 audits receiving the highest results achievable under Federal standards (**#11**). Additionally, the SWFWMD Inspector General reviewed all expenses for the FY13 through FY15 period with no significant findings (**#62**). EPA also conducted a special financial desk review of two months in 2016 with no significant findings (**#63**). The period that was reviewed (2016) was within the reporting cycle. These reviews demonstrate that SBEP operates with substantiated financial management.

Core Element: Program Implementation and Reporting

Sub-element: Financial Management

NOTE: The EPA expects that, in order to be a *Fully Performing* Program, all baseline expectations are met. Performance measures in the *Good* and *Excellent* levels are not required. They are benchmarks for what the Program can do to improve performance given the Program's priorities and organizational capacity.

EXCELLENT	PERFORMANCE MEASURES (FINANCIAL MANAGEMENT)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program researches, identifies, and tracks prospective donors and funding opportunities (applicable for non-profit organizations).	SBEP routinely identifies applicable grant opportunities (**#1**). SBEP provides donation opportunities through its website (**#2**) and a thank you letter acknowledging donations is provided. SBEP tracks donations in the financial management system (**#3**).
√	Program staff, Management Conference members and volunteers have received finance/fundraising training if appropriate.	Director and Finance Director have had multiple meetings with various local community foundations to develop the Sarasota Bay Environmental Fund (**#4**).
√	The majority of the Program's outreach materials contain funding information (e.g., thanking donors, acknowledging project funding, including a membership form, etc.).	The SBEP acknowledges program partners on a variety of outreach materials (**#5**).
GOOD	**PERFORMANCE MEASURES (FINANCIAL MANAGEMENT)**	**EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS**
√	The Program has a current finance plan (approved by the Management Conference within the past six years) that includes estimated costs, funding sources, goals, responsibilities, and milestones.	The Program prepared a long-range finance plan, which was approved in 2016 (**#7**). Annual workplans provide a basis for estimated costs, funding sources goals, responsibilities, and milestones (**#6**). Local participants contribute to the Program through the Interlocal Agreement (IA) (**#8**). In-kind match is derived from local Capital Improvement Plans (CIP) to implement the CCMP (**#12**).
√	The Program integrates finance planning into its annual workplan (i.e. an assessment of funding obtained in the previous year, current funding, and funding to be pursued in the coming year.)	Annual workplan budgets serve as the basis of implementing the financial plan (**#9**).

√	The Program has a monthly revenue and expenditure tracking system.	SBEP tracks expenditures routinely (**#10**); the Policy Board approves quarterly. Financial status is reviewed annually and approved through the A -133 federal audit processes (**#11**).
√	The Program has a case statement (a brief statement outlining accomplishments and results that could occur with additional resources).	The website contains case statements, including volunteer work days and habitat restoration projects.
FULLY PERFORMING	PERFORMANCE MEASURES: *Baseline Expectations* (FINANCIAL MANAGEMENT)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program meets its non-federal match obligation and provides detail in the annual workplan submittal to the EPA about match funding sources and uses (e.g., workplan tasks).	The SBEP base funding levels are set under the IA (**#8**). SBEP consistently meets in-kind match requirements. In-kind match documentation from local partners is provided (**#12**). SBEP has been audited accordingly. All EPA federal funds have been expensed and matched during reporting cycle (**#11**, **#65**).
√	The Program has a plan for diversifying and augmenting funding sources that is approved by the Management Conference and includes estimated costs, goals, responsibilities, and milestones.	SBEP has an approved long-term finance plan (**#7**). Director has the authority to receive grants. Grants requiring match are approved by the Policy Board, as described in the Operating Procedures Manual (**#43**).
√	The Program has the partnerships and strategic alliances to identify and secure resources to implement its CCMP.	The SBEP is a part of the Florida Estuary Alliance containing the four Florida NEPs, established in 2016 (**#14**). Federal, State, and local agencies signed the SBEP IA or MOU (**#8**) and continue to commit revenue to CCMP implementation (**#55**).

Core Element: Program Implementation and Reporting

Sub-element: Program Planning and Administration

NOTE: The EPA expects that, in order to be a *Fully Performing* Program, all baseline expectations are met. Performance measures in the *Good* and *Excellent* levels are not required. They are benchmarks for what the Program can do to improve performance given the Program's priorities and organizational capacity.

EXCELLENT	PERFORMANCE MEASURES (PROGRAM PLANNING and ADMINISTRATION)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program encourages professional development opportunities for staff members.	SBEP staff routinely attends national, state, and local conferences for development. A list of meetings and classes is provided (**#15**, **#16**, **#42**).
√	The Program is a leader in the transfer of lessons learned in watershed management.	SBEP Numeric Nutrient Criteria (NNC) (**#17**) were adopted by the state of Florida in December 2012. SBEP developed a water quality optical model for more accurate seagrass management (**#44**). SBEP developed a management framework for Southwest Florida tidal creeks to assist local governments in managing water quality (**#18**). SBEP held a stakeholder forum on climate change in 2016 (**#19**) and completed a CCMP vulnerability assessment in 2017 (**#49**). The SBEP held a living shoreline workshop in 2016 (**#20**) and is a producing a guidance document for homeowners.

GOOD	PERFORMANCE MEASURES (PROGRAM PLANNING and ADMINISTRATION)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
	The Program has a Management Conference that: G. has a written vision statement and/or mission and goals; H. is fully engaged in developing and implementing the workplan; I. assists in building active partnerships; J. ensures broad stakeholder representation in priority setting and Program oversight; K. provides a clear and transparent decision-making process that includes the public (e.g. operating procedures, agreement and/or bylaws for committees, etc.); and has a mechanism for identifying existing and emerging issues.	G. Mission and goals were published in the revised CCMP in 2014 (**#21**). H. The SBEP Management and Policy Board meet regularly (**#22**). I. The Interlocal Agreement (**#8**) solidified partnerships and stakeholder involvement. J. Management Board has members in addition to IA partners. These members include Florida Fish & Wildlife Research Institute, Florida Sea Grant, and US Fish and Wildlife Service. (See member list on SBEP website.) Multiple local NGOs and citizens participate in the Management Conference through the Citizens Advisory Committee. (See member list on SBEP website.) K. CAC meets bi-monthly and has bylaws (**#24**), TAC meets quarterly (**#23**). Management and Policy Boards meet quarterly (**#22**). Recommendations are integrated into annual workplans (**#6**) while the IA (**#8**) establishes partnership agreement and representation. Emerging issues were identified in the 2012 Watershed Symposium (**#25**) and integrated into the CAC Citizens Participation Chapter, published in 2014 (**#26**). CAC action plans are annually integrated into the annual workplans (**#6**). The TAC has developed technical needs prioritization monitoring the research and management needs (**#27**).

√	The Program is seen as a leader in watershed management.	SBEP has established Numeric Nutrient Criteria (**#17**) for the main bay and is routinely tracking progress in meeting those standards. Sarasota Bay has been a leader in a regional effort to understand water quality dynamics in Southwest Florida tidal creeks (**#18**).
FULLY PERFORMING	PERFORMANCE MEASURES: *Baseline Expectations* (PROGRAM PLANNING and ADMINISTRATION)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program has a Management Conference that: 1) is fully staffed; 2) provides Program direction; 3) oversees development and approves annual budget and workplan; 4) ensures sufficient Program resources; 5) sets a framework for bringing together diverse interests in a collaborative fashion (e.g., develop synergy among various organizations); 6) ensures communication between Program committees; 7) ensures Program actions are based on both stakeholder priorities and good science; 8) communicates about and supports the Program; and 9) has a process for reevaluating its priorities.	Program has both a Policy Board and Management Board that meet regularly to establish direction and approve workplans (**#22**). SBEP IA sets the framework for bringing together diverse interests in a collaborative fashion (**#8**). CAC and TAC priorities have been integrated into the 2014 CCMP (**#28**). A public participation chapter was added in 2014 to meet CAC priorities (**#26**).
√	The Program staff coordinates and supports Management Conference responsibilities.	The CAC meets bi-monthly while TAC meets quarterly (**#23**), and the Management and Policy Boards meet quarterly (**#22**). CAC/TAC sub-committees have been established to address priority issues. Recommendations made by the CAC and TAC are integrated into annual workplans (**#6**).
√	The Program has human resources principles in place (e.g., staff members have position descriptions and periodic performance reviews).	Position descriptions were revised (**#29**); staff reviews descriptions annually. Position descriptions are also in the grant packages and workplans (**#6**); human resource policy is required under IA and has been adopted accordingly. Personnel Policy, Rules, and Procedure Manual is reviewed as needed (**#30**).

√	The Program office has autonomy with regard to the host entity (e.g., sets and follows its own priorities, exhibits visibility in the watershed, etc.)	SBEP is an Independent Special District to the state of Florida (**#8**).
MINIMALLY PERFORMING	PERFORMANCE MEASURES (PROGRAM PLANNING and ADMINISTRATION)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
	The Program does not meet all of the performance measures in the *Fully Performing* level.	

Core Element: Program Implementation and Reporting

Sub-element: Outreach and Public Involvement

NOTE: The EPA expects that, in order to be a *Fully Performing* Program, all baseline expectations are met. Performance measures in the *Good* and *Excellent* levels are not required. They are benchmarks for what the Program can do to improve performance given the Program's priorities and organizational capacity.

EXCELLENT	PERFORMANCE MEASURES (OUTREACH and PUBLIC INVOLVEMENT)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program supports citizen recommendations by implementing and supporting priority projects via the annual workplan.	Program has an active CAC that provides recommendations via an annual Citizens Action Plan workplan budget (**#6**) and via priority setting processes through the Citizens Participation Chapter of the CCMP (**#26**).
√	The Program has a media/marketing campaign underway, such as a social marketing campaign, with a specific behavior change message related to a CCMP priority issue(s).	Social marketing is a key component of SBEP Communications Plans (**#31**) and the Florida Yards & Neighborhoods Program.
√	The Program has a brand/image and related graphics, tag lines, etc. that effectively promote and create widespread recognition of the Program.	The SBEP has a recognizable logo and tagline (**#32**).
√	The Program has socio-economic indicators to monitor and report on the impact of outreach and public involvement activities.	The Program developed an Economic Valuation Study of Sarasota Bay resources (**#33**) and produced an infographic to communicate those study findings to the public and federal, state, and local policy makers (**#34**), sustaining funding to the Program. Media outlets regularly cite the value of Sarasota Bay resources in reports on Bay-related issues.

√	Efforts exist to achieve and document behavior change.	SBEP supports native plant and water-wise landscaping programs in Sarasota and Manatee Counties through the University of Florida Extension. Fertilizer ordinances that prohibit summer application of nitrogen- and phosphorus-based fertilizers have been adopted in both counties. Area water use has dropped from 140 gallons per day to less than 90 gallons per day locally. A revised Bay Repair Kit (**#35**) containing tips for Bay-friendly lifestyles was published to promote behavioral change. The SBEP is collaborating with various local partners to achieve behavioral change in municipal landscape management through revisions to code language (**#36**). The SBEP is leading a community discussion about developing a strategy for homeowners to consider nature-based shoreline stabilization solutions in lieu of seawalls (**#20**).

GOOD	PERFORMANCE MEASURES (OUTREACH and PUBLIC INVOLVEMENT)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program has an active CAC or analogous structure that proposes workplan projects and is represented during Management Conference or executive committee meetings.	Citizens' Action Plan budgets (**#6**) are approved annually by the Policy Board as part of the annual SBEP workplan. The Chair of CAC sits on the Management Board (**#8**). SBEP Director incorporates CAC priorities in workplans.
√	The Program, through the communication plan, actively conducts outreach through such things as signage, radio/TV spots, special events, public presentations, topic-specific workshops, etc.	SBEP Marketing and Communications Plans are provided (**#31**). The SBEP maintains an online public calendar of public meetings and Bay-related events on the SBEP website. SBEP regularly appears in local media (Press Coverage) and presents to neighborhood associations and other citizen groups.

√	The Program supports efforts to develop and implement such things as environmental education curricula, teacher training, ecotourism programs, small grant programs, estuary celebrations, and/or citizen recognition programs.	The SBEP Citizens Action Plan workplan budgets (**#6**) provide funding for a variety of outreach and education projects, including: - the Protection, Involvement, Education, and Restoration (P.I.E.R.) program: P.I.E.R. includes funding for three full-day teacher training and curriculum workshops (**#37**), "Tech Kits" that bring hands-on watershed activities into local classrooms, and at least 30 paid-in-full field trips with expert naturalists to natural areas throughout the Sarasota Bay watershed for K-12 classrooms. - The Bay Wise Kayak Tour program, which enhances local ecotourism with eleven free tours each year with a trained naturalist - The Bay Partners Grants community grant program (**#38**), which awards at least $20,000 annually to non-profit, school, and business partners for Bay restoration and education projects. A subcommittee of the Citizens Advisory Committee makes project funding recommendations to SBEP staff. - The annual Sarasota Bay Seagrass Survey (**#39**). In past years, the CAP budget supported the Sarasota Bay Water Festival. - The Sarasota Bay Dolphin Awards (**#40**), which recognize local citizen stewards.
√	The Program shares innovations and lessons learned at regional and national meetings (e.g., Estuarine Research Federation (ERF) biennial meeting, The Coastal Society (TCS) biennial meeting, Coastal Zone (CZ) biennial meeting, NEP national meeting, etc.).	SBEP routinely shares innovations at national, state, and local conferences (**#15**, **#16**, **#42**).
√	The Program reports annually programmatic results to the public and stakeholders (via the Program's website, public database, hard copies, and/or other media) as specified in the NEP Funding Guidance and describes progress linked towards annual workplan goals and milestones.	The SBEP has a newly-designed website, sarasotabay.org, that includes news, reports, and media releases. The SBEP also releases a quarterly e-newsletter, Bay Reflections.

FULLY PERFORMING	PERFORMANCE MEASURES: *Baseline Expectations* (OUTREACH and PUBLIC INVOLVEMENT)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	Citizens are involved in Program decision-making and implementation (e.g., Citizens Advisory Committee (CAC) or analogous structure, system for public input, open meetings, public notice of meetings and events, and/or opportunities for reviewing and prioritizing outreach and public involvement projects, etc.).	CAC meetings are advertised on the SBEP website and minutes are prepared by a member secretary (**#23**). SBEP staff reports on the success of CAC initiatives in outreach reports to Management and Policy Boards (**#41**). CAC and TAC members participate in prioritizing projects (**#27**) and Program objectives (**#26**).
	The Program reports programmatic results to the public and stakeholders (via the Program's web-site, public database, hard copies and/or other media) as specified in the NEP Funding Guidance.	The SBEP website's Media Center lists media releases and media coverage. The SBEP also makes regular updates to its Accomplishments webpage. A State of the Bay report is published every 5 years to report on Bay restoration progress by SBEP and its partners (**#28**).
√	The Program has a multi-year, strategic communication plan that includes needs, target audience(s), objectives, project descriptions, deliverables, and deadlines.	The SBEP relies on annual Communication Plans (**#31**) to plan outreach projects. A multi-year Strategic Communications Plan is in development for the 2019 CCMP revision.
√	The Program has multi-media communication tools (e.g., newsletters, annual reports, fact sheets, website, list serves, and/or videos/CDs, etc.) that are updated as needed.	SBEP releases quarterly e-newsletters. The SBEP website was completely redesigned in summer 2017 to include creative communication tools such as a "Find Your Watershed" map. The SBEP produced a new video about sea level rise in 2017.

MINIMALLY PERFORMING	PERFORMANCE MEASURES (OUTREACH and PUBLIC INVOLVEMENT)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
	The Program does not meet all of the performance measures in the *Fully Performing* level.	

Core Element: Ecosystem Status and Trends

Sub-element: **Research***

NOTE: The EPA expects that, in order to be a *Fully Performing* Program, all baseline expectations are met. Performance measures in the *Good* and *Excellent* levels are not required. They are benchmarks for what the Program can do to improve performance given the Program's priorities and organizational capacity.

**The Program has the option to report a "not applicable" for the Research sub-element. However, if not applicable, the Program must include justification that either (1) research is not a priority for the Management Conference, or (2) lack of resources does not allow the Program to conduct or support research efforts.*

EXCELLENT	PERFORMANCE MEASURES (RESEARCH)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	Research is used to change policy.	The EPA adopted NNC for Sarasota Bay in December 2012, based on seagrass and chlorophyll targets established by the Program (**#17**). The SBEP NNC were submitted and adopted by FDEP and EPA. FDEP incorporated SBEP NNC into state rule in December 2011. SBEP is now leading a regional effort to develop surface water quality standards for Southwest Florida tidal creeks, which will guide restoration efforts in these systems (**#18**).
√	The Program shares its science and technology research and findings at regional and national meetings (e.g., Estuarine Research Federation (ERF) biennial meeting, The Coastal Society (TCS) biennial meeting, Coastal Zone (CZ) biennial meeting, NEP national meeting, etc.).	SBEP routinely shares its findings at regional and national meetings (**#15**). A list of travel is provided (**#16**). Conference abstracts are provided (**#42**).
√	Scientific and technical reports produced by the NEP are peer reviewed.	Technical reports are sent to the TAC for a 30-day review period prior to submittal of final report. In addition, principle investigators present results at TAC meetings (**#23**). TAC members provide additional comments per the peer review process.

√	Program staff sits on state and national science boards and committees.	SBEP Director sits on ANEP Nominating and Finance Committees, is chair of SWFMWD Environmental Committee, and is a member of Palma Sola Scenic Highway Committee. The Finance Director is vice chair of the Sarasota County Water and Sewer Advisory Committee. SBEP Senior Scientist chairs the Sarasota County Coastal Advisory Committee and sits on the Manatee and Sarasota Counties Sea Grant Marine Advisory Councils. The Public Outreach Manager represents the Program at the Science and Environment Council of Southwest Florida, the steering committee of the Climate Council of Sarasota-Manatee, and the Program for Public Information Committee for Sarasota County.
GOOD	PERFORMANCE MEASURES (RESEARCH)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	Research is conducted by appropriate partners.	All technical work authorized or conducted on behalf of SBEP is awarded under State procurement regulations. The Operating Procedures Manual is attached (**#43**).
√	Research identifies significant, missing data that warrants additional monitoring or sampling.	TAC began updating its technical needs priority assessment in 2016 (**#27**). The climate vulnerability assessment identified additional research needs relating to climate change adaptation (**#49**).
√	The Program uses research results to develop management options and implement solutions.	Based on the Program's success in developing estuarine NNC in 2012, SBEP used this experience to lead a regional effort to develop nutrient criteria for Southwest Florida tidal creeks (**#17**). SBEP developed an optical model in 2017 to improve bay water quality management related to seagrass targets (**#44**). The Program began sampling fisheries in 2016 to provide options for stormwater management operators (**#45**).

√	Results from research are combined and translated into plain English for reporting to the public.	State of the Bay 2014 is provided (**#28**) and the SBEP regularly reports on research findings to the public via the website and e-newsletter.
√	The Program or its partners have established a process to regularly reevaluate its research needs.	The SBEP reevaluated its research needs in 2017 (**#27**).
FULLY PERFORMING	PERFORMANCE MEASURES: *Baseline Expectations* (RESEARCH)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program or its partners has a process to identify research needs.	The SBEP is required to re-evaluate the CCMP every five years and held a watershed symposium in February 2012 to evaluate research needs (**#25**). See CCMP (**#28**) for timeline on CCMP activities.
√	The research needs are consistent with CCMP goals and actions.	The research and technical needs assessment (**#27**) is structured to address specific action items in the current CCMP.
√	The Program's research needs are approved by the Management Conference.	The Management and Policy Boards review and approve projects to address priority needs.
MINIMALLY PERFORMING	PERFORMANCE MEASURES (RESEARCH)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
	The Program does not meet all of the performance measures in the *Fully Performing* level.	

Core Element: Ecosystem Status and Trends

Sub-element: **Assessment and Monitoring**

NOTE: The EPA expects that, in order to be a *Fully Performing* Program, all baseline expectations are met. Performance measures in the *Good* and *Excellent* levels are not required. They are benchmarks for what the Program can do to improve performance given the Program's priorities and organizational capacity.

EXCELLENT	PERFORMANCE MEASURES (ASSESSMENT and MONITORING)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The monitoring plan produces sufficient data to support a comprehensive and integrated analysis of environmental conditions.	A comprehensive and integrated analysis of environmental conditions can be queried on the Sarasota Bay Water Atlas.
√	The Program or its partners seeks more efficient and cost-effective technologies for monitoring as appropriate.	The methodologies used to collect all environmental data are reported on the Sarasota Water Atlas (click the link "Learn more about how this report was created").
√	The Program trains volunteer groups to improve the quality of data collection.	Volunteers undergo training prior to the annual Sarasota County Seagrass Survey (**#39**) and the Great Scallop Search.
GOOD	**PERFORMANCE MEASURES (ASSESSMENT and MONITORING)**	**EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS**
√	The Program uses monitoring data to assess and re-direct management actions and programs implemented under the CCMP as necessary.	Monitoring data was used to develop NNC for Sarasota Bay (**#17**). The Program is currently developing NNC for tidal creeks.
√	The monitoring plan has a schedule for review/updates that is approved by the Management Conference.	SBEP updates its monitoring plan as needed. QAPPs have been approved by EPA for the following projects: tidal creek water quality grant from EPA in 2016 and the EPA SESD tidal creek diurnal sampling program in 2017 (**#58**).
√	The Program uses monitoring data to identify gaps in knowledge.	The SBEP and partners conduct supplemental and project-specific data collection efforts to fill data gaps. For example, the SBEP identified data gaps in tidal creek water quality (**#18**), fisheries independent monitoring (**#46**), and red tide nutrient dynamics (**#47**). The SBEP conducted technical needs assessment in 2017 (**#27**).
√	Available data is analyzed for ecosystem status and trends.	See State of the Bay 2014 (**#28**) and the Sarasota Water Bay Atlas Water Quality Trends page.

√	The Program promotes the establishment of volunteer monitoring groups to supplement NEP monitoring efforts.	The SBEP promotes two large annual citizen science efforts, the Sarasota County Seagrass Survey and the Great Scallop Search (**#39**).
FULLY PERFORMING	PERFORMANCE MEASURES: *Baseline Expectations* (ASSESSMENT and MONITORING)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program has a Scientific and Technical Advisory Committee (STAC) or analogous structure to ensure that Program decision-making is tied to good science.	TAC meets quarterly (**#23**). TAC members are listed on the SBEP website.
√	The Program has indicators in use that are recognized by the Management Conference.	The Management Conference has recognized seagrass as the primary indicator for water quality trends (**#50**). The Program also uses water quality targets developed in 2012 to assess Bay conditions (**#28**).
√	The Program has a monitoring plan in use that is recognized and/or approved by the Management Conference and: • meets QA/QC requirements • identified various parties' roles and responsibilities for monitoring • has a timetable for collecting and reporting on data, and • identifies funding needs and/or commitments for the monitoring program.	Sarasota and Manatee Counties have approved water quality monitoring plans (**#48**) that meet current state QA/QC requirements. These data area collected monthly using the stratified random approach. All data are submitted to the Florida STORET database. The SBEP supplements this monitoring program to address time sensitive needs (e.g. red tide blooms, tidal creeks, etc.).
√	The monitoring plan produces data to support an analysis of specific environmental conditions.	The Sarasota Water Atlas and the Manatee Water Atlas use monitoring data to evaluate current trends and conditions within Sarasota Bay. Both Water Atlas sites are updated regularly.
MINIMALLY PERFORMING	PERFORMANCE MEASURES (ASSESSMENT and MONITORING)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
	The Program does not meet <u>all</u> of the performance measures in the *Fully Performing* level.	

Core Element: Ecosystem Status and Trends

Sub-element: **Reporting***

NOTE: The EPA expects that, in order to be a *Fully Performing* Program, all baseline expectations are met. Performance measures in the *Good* and *Excellent* levels are not required. They are benchmarks for what the Program can do to improve performance given the Program's priorities and organizational capacity.
**Refers to Reporting of Ecosystem Status and Trends in the Program study area.*

EXCELLENT	PERFORMANCE MEASURES (REPORTING)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	Reports discuss adaptive management strategies.	The 2014 CCMP update (**#28**) process identified several new and emerging issues, including hydrology, tributary restoration, and climate change. These materials were presented to the Management and Policy Boards and have been incorporated into the CCMP as well as projects in annual Work Plans (**#6**).
√	Reports recognize new and emerging issues to be considered in updates or revisions to the CCMP.	New and emerging issues are identified in the CCMP Citizens Participation Chapter (**#26**). The 2017 Climate Vulnerability Assessment (**#49**) identified emerging climate-related issues for the 2019 CCMP update. Emerging issues identified in the climate assessment were communicated to the public in a new video in 2017 (**#60**).
GOOD	**PERFORMANCE MEASURES (REPORTING)**	**EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS**
√	The Program has an environmental progress report that communicates ecosystem status and trends to the public every three to five years (e.g., "State of the Bay" report, Environmental Report Card, significant newspaper insert, newsletters, websites, etc.).	The SBEP IA requires a State of the Bay report every five years. The most recent report was completed in 2014 (**#28**). The Sarasota Water Atlas reports on water quality trends in each Bay segment annually using a Pass/Fail report card format. (See 2016 Sarasota Bay example.)

√	Major reports: • discuss the Program's goals and priorities, indicators in use, ecosystem status and trends, and maps of study area; discuss the health of the estuary (i.e., habitat, water quality, and living resources); and • include conceptual models that represent the best understanding of current ecosystem processes.	The State of the Bay report (**#28**) provides discussion of program goals and priorities, indicators in use, ecosystem status and trends, maps of the study area, and a discussion on the health of the estuary. NNC developed for Sarasota Bay were based on conceptual paradigm models (**#17**). Conceptual models were also developed for tidal creeks (**#18**) and an optical model for Sarasota Bay (**#44**). The 2017 Climate Vulnerability Assessment (**#49**) of the SBEP CCMP discusses recent trends in local air and water temperature, precipitation, and sea levels. The report is focused on a discussion of SBEP goals for water quality, living resources, and community stewardship.
FULLY PERFORMING	PERFORMANCE MEASURES: *Baseline Expectations* (REPORTING)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
√	The Program has an environmental progress report that communicates ecosystem status and trends to the public on a periodic basis (e.g., "State of the Bay" report, Environmental Report Card, significant newspaper insert, newsletters, websites, etc.).	The State of the Bay report (**#28**) was published in 2014. The Sarasota Water Atlas produces report cards for each Bay segment annually.

√	Major reports: • are linked to CCMP actions, goals, priorities, indicators, and monitoring systems; • feature a narrative description of the Program's study area in plain English explaining the relationship between human activities and impacts on resources; and • are approved by the Management Conference.	The Annual Work Plan (**#6**) is approved by the Management Conference and submitted to EPA with linkages to core EPA Programs with CCMP actions, goals, priorities and monitoring systems. Work Plan Core Elements of this report also provide linkages. The State of the Bay report (**#28**) provides the linkages between CCMP action goals, priorities, indicators and monitoring systems. The State of the Bay (**#28**) is a report to the public describing the SBEP study area and the relationship between human activities and impacts on resources. The Bay Repair Kit (**#35**) contains lists of easy behaviors for local residents to adopt to help reduce human impacts on Bay resources. The 2017 Climate Vulnerability Assessment of the CCMP (**#49**) describes the SBEP study area in detail. The report assesses each CCMP goal considering projected climate change stressors. Results of the technical and outreach projects are presented to the citizen and technical advisors and Policy and Management Boards. Results are summarized and approved as prior year accomplishments in the Annual Work Plans (**#6**).
MINIMALLY PERFORMING	PERFORMANCE MEASURES (REPORTING)	EVIDENCE/WORKPLAN CITATION and, if necessary, CLARIFYING COMMENTS
	The Program does not meet all of the performance measures in the *Fully Performing* level.	

III. Sarasota Bay Work Plan Core Elements Narrative

The SBEP develops Annual Workplans (**#6**) with priorities established in concert with the citizen and technical committees and later approved by the Management and Policy Boards. These workplans address specific Action Plans in the revised 2014 CCMP. The SBEP became a State Agency with the adoption of the Sarasota Bay Interlocal Agreement in July 2004 and enacted on October 1, 2005 providing continued local government funding for the SBEP throughout the performance period.

To address the goals of the program, seven Action Plans were updated in the 2014 CCMP. Each Action Plan included specific objectives, partnerships, and financing arrangements. The projects listed in the Annual Workplans referenced the CCMP Action Plan(s) and include a short summary and the following information required under the PE:

- Funding Source
- Responsible Partner(s)
- Short-Term Outputs
- Outcomes
- CCMP Action Plan
- Clean Water Act Support
- Project Inception

The SBEP has divided the workplan activities (projects) by goal and sub-element followed by a discussion on short term, intermediate and long- term outcomes described above. The PE Cycle Report provides specific information on each activity during the performance period and associated project accomplishments. Short term outcomes (STO) are primarily project reports and related documents. Intermediate Outcomes (IO) are completed capital projects or completed actions in the CCMP. Long-term Outcomes (LTO) are major Bay improvements or completed CCMP objectives that have been achieved and documented over the cycle.

This component of the document also includes discussion on CWA implementation and expected outcomes as relevant. A CAC Public Participation Chapter was approved by the Policy Board and incorporated into the CCMP rewrite in 2014.

The 2014 CCMP and State of the Bay (**#28**) provides a complete and in-depth overview of programmatic activities through 2014 by Action Plan assessing program performance (**#28** pages: 25, 34, 43, 54, 66 and 70-79) based on measures to evaluate system recovery. Progress reports are also provided in the document (**#28** pages: 26, 29, 36, 44, 62, 66, and 70) by Action Plan. A complete reading of the CCMP (**#28**) will provide the basic understanding of the breadth and comprehensiveness of the SBEP.

Although the periods of record overlap, the following outlines programmatic expenditures by line item in the SBEP budget report (**#10**) showing actual expenditures for the PE reporting cycle. Final project reports are included in the grant closeout packet (**#59**).

Work Plan Goal #1: Improve Water Transparency

Sub-Element: Wastewater and Stormwater Action Plans

Environmental Quality Objective: Reduce nitrogen pollution by 48%.
CCMP Goals: Wastewater Action Plan – Improve water transparency. Stormwater Action Plan – Manage the quantity and improve the quality of stormwater runoff to Sarasota Bay.

To meet the objectives in the CCMP Wastewater and Stormwater Action Plans, the following projects and activities have been undertaken:

1. Participation on Advisory Boards

SBEP staff continue to participate as appointed members to boards and committees designed to oversee implementation of this component of the CCMP including: Water/Sewer Advisory Committee, SWFWMD Environmental Committee, FYN (Florida Yards & Neighborhoods) Workgroup, Sarasota County/City Stormwater Coordinating Committee, Sarasota County Coastal Advisory Committee, Science and Environment Council and Watershed Management Planning Committee.

Funding Source: Interlocal Agreement (IA) Responsible Partners: SBEP
Short-term Outputs: Annual Reporting on Progress in Workplan - SBEP Tracking System input.
Outcomes: Shared information for full implementation of the CCMP: to improve water quality, habitat, and recreational opportunities.
CCMP Action Plan: Governance – Objective 1: Maintain existing committee structure and staff.
CWA (Clean Water Act) Support: All core programs
Project inception: FY95

PE Cycle Report: This project is designed to align the local and state policies with the CCMP, namely: promote sustainable wastewater infrastructure, promote Florida friendly landscaping principles and fertilizer ordinances, promote local environmental policies and coordinate projects, establish LID techniques for controlling non-point source pollution, and reduce pollution.

2. TMDL/Tributary Analysis – Tidal Creek Wetlands – Water Quality Monitoring

The TMDL/Tributary Analysis, Tidal Creek and Water Quality projects have evaluated impaired waters in Sarasota Bay watershed to develop restoration strategies.

Funding Source: (IA) Responsible Partners: SBEP
Outputs: TMDL Verification, Watershed Management Plan, Water Quality targets, NNC
Short-term Outcomes: Raising awareness among partners. Analysis results in improved water quality

and habitat through prioritization of impaired waters for action.
CCMP: Stormwater Action Plan. Objective 2: Treatment of priority basins.
CWA Support: (3) Developing total maximum daily loads; (5) Strengthening National Pollutant Discharge Elimination System permits
Project inception: FY04

PE Cycle Report: During this period, the SBEP established scientifically based numeric nutrient criteria (NNC) for all bay segments and assessed the condition of the Bay in relation to these impairment criteria. The SBEP also recommended a method for determining numeric nutrient criteria for tidal creeks. In developing the method, the Program conducted extensive technical work on tidal creeks in Southwest Florida characterizing 16 creeks from Pinellas to Collier counties. A reevaluation of the SBEP pollutant loading model in 2016 resulted in an adjustment from a 64% reduction in TN load reduction in 2014 (State of the Bay) to a 67% reduction in 2017.

3. Macro-Algae

The SBEP TAC and CAC identified macro-algae as an issue of concern for the Bay and Gulf waters. This study characterized the type and extent of macro-algae in the Bay and likely sources of nitrogen causing the productivity.

Funding Source: SBEP Responsible Partners: SBEP
Outputs: Final Report – December 2012. (Data suggest that algal species exhibit nutrient preference.)
Short-term Outcomes: Changes in knowledge – Possible management action to remediate nitrogen loads or species or nitrogen entering the system
CCMP Action Plan: Stormwater Treatment and Prevention – Objective SW 4: Reduce or mitigate the impact of future development on stormwater loadings to Sarasota Bay.
CWA Support: (4) Controlling non-point source pollution on a watershed basis; (5) Strengthening National Pollutant Discharge Elimination System permits.

PE Cycle Report: SBEP observed very low levels of macro-algae in the Bay.

4. Long-term Water Quality Monitoring Plan

Based on EMAP (Environmental Monitoring and Assessment Program) protocols, a long-term water-quality monitoring program was undertaken by both Manatee and Sarasota Counties, focusing on nutrients and light attenuation. The program ensures continuity among the following programs: Tampa Bay, Sarasota Bay and Charlotte Harbor and provides water quality trend information. Data were used to assess impairment and establish water quality targets and NNC.

Funding Source: Local governments
Responsible Partners: Manatee County and Sarasota County
Outputs: State of the Bay Reports (FY14) - Trend Report; Preparation of water quality targets
Short-term Outcomes: Decisions and involvement among partners tracks progress in implementing CCMP

CCMP Action Plan: Stormwater Treatment & Prevention – Objective 4: Reduce or mitigate the impact of future development on stormwater loadings in Sarasota Bay.
CWA Support: (2) Improving water quality monitoring
Project inception: FY 89

PE Cycle Report: The monthly Bay monitoring data was utilized in NNC development and in evaluating impairment. The condition is evaluated annually and reported on the Sarasota and Manatee County Water Atlas sites.

5. 2014 CCMP Update

The CCMP was rewritten in 2014 and included a State of the Bay report (**#28**).

Funding Source: Interlocal Agreement (IA) Responsible Partners: SBEP
Short-term Outputs: Annual Reporting on Progress in Workplan - SBEP Tracking System input.
Outcomes: Shared information for full implementation of the CCMP: to improve water quality, habitat, and recreational opportunities
CCMP Action Plan: Governance – Objective 1: Maintain existing committee structure and staff.
CWA (Clean Water Act) Support: All core programs
Project inception: FY 95

PE Cycle Report: SBEP assessed water quality data in relation to attainment of water quality standards bay-wide. All bay segments met water quality standards.

The City of Sarasota wastewater discharge was removed from Whitaker Bayou in May 2017. The final surface water discharge (Siesta Key Wastewater Treatment Plant) is scheduled for removal in June 2018. Stormwater retrofit projects were completed throughout the Hudson Bayou basin and have been initiated in the Whitaker Bayou basin in accordance with watershed management plans. Three of the five top priority basins (Phillippi, Hudson and Catfish) have now been retrofitted for stormwater improvement. Manatee County initiated a comprehensive stormwater assessment in the Bowlees Creek watershed during the cycle.

SBEP shifted focus to the tributaries in 2014 conducting analyses on 16 creeks in Southwest Florida.

SBEP conducted community workshops on sea level rise and living shorelines and has assessed the importance of habitats in relation to fish productivity. The SBEP will be evaluating the possibility of revitalizing hundreds of miles of man-made canals and ditches throughout the region (**#51** and **#52**).

Work Plan Goal #2: Increase Juvenile Fish Habitat

Sub-Element: Wetlands Action Plan
Environmental Quality Objective: Increase saltwater wetlands by 18 acres and freshwater wetlands by 11 acres annually.
CCMP Goal: Restore shoreline and wetland habitats and eliminate further losses.

Wetlands enhancement and restoration is part of a long-term initiative to enhance juvenile fish habitat.

1. Wetland Restoration

This project provides for in-ground habitat restoration and management, including exotic species removal, shoreline contouring, and revegetation with proper native species. Project areas are listed in the five-year plan.

Funding Source: SBEP, US F&WS, NOAA, FDEP, SWFWMD, Private and IA Responsible Partners: SBEP
Outputs: 678 acres restored since 2012
Short-term Outcomes: Changes in condition – Improved juvenile fish habitat and enhanced recreational opportunities
CCMP Action Plan: Fresh & Saltwater Wetland - Objective 1: Implement comprehensive wetland protection and restoration
CWA Support: Wetlands
Project inception: FY95

2. Wetlands Restoration and Protection – Coordination

This project assists the SBEP in further identifying wetland areas for restoration and/or protection; coordinating design and permitting activities, construction management and providing graphics for presentations to citizens and various boards for approval. The consultant works closely with FDEP and other agencies to insure maximum use of resources via the adopted five-year restoration plan.

Funding: Federal and IA Responsible Partners: SBEP
Outputs: Permitting and design - See accomplishments report (Exhibit A)
Short-Term Outcomes: Changes in condition – Expansion of juvenile fish habitat
CCMP: Fresh & Saltwater Wetland Action Plan. Objective 1: Implement comprehensive wetland protection and restoration
CWA Support: EPA Wetlands Program
Project inception: FY96

Partnerships:
Lead Organizations: Manatee County, Sarasota County
Cooperating Organizations: Florida Department of Environmental Protection, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, Florida Fish & Wildlife Commission, SWFWMD, USFWS

PE Cycle Report: As reported in GPRA/NEPORT, 678 acres of wetland habitat and 4,420 feet of shoreline were created or enhanced during this cycle (**#55**). The design, permitting and construction management is funded through the Wetland Coordinator while restoration is funded via multiple sources in the workplan or grants made by or to other entities. A five-year restoration plan was produced during the reporting period (**#57**).

Sub-Element: Reefs (Fish and Other Living Resources Action Plan)

Environmental Quality Objective: Increase the overall productivity of Sarasota Bay through improved water quality and habitat, thus enhancing finfish and shellfish populations.

CCMP Goal: Restore and sustain fish and other living resources in Sarasota Bay.

Activities (summary of related workplan projects):

Enhancement of the Bay's bottom habitats is a significant activity of the SBEP, supported by partner agencies.

3. Artificial Reefs and Shoreline Enhancement

This project supplements existing funding for the continued construction of artificial reef structures throughout the Bay to enhance juvenile fisheries. A comprehensive approach is being implemented to refine the types of materials deployed on bay reefs. This project focuses on planning, permitting, construction, deployment, and monitoring.

Funding Source: Federal and Interlocal
Responsible Partners: Florida Sea Grant; Sarasota County; Manatee County
Outputs: Progress report - August 2014; Final report - August 2017
Outputs: Deployed 374 reef modules in reporting period – monitoring continues
Short-Term Outcomes: Changes in condition– Expansion of juvenile fish habitat
CCMP: Fisheries and Other Living Resources Action Plan. Objective 1: Increase available habitat for juvenile fish.
CWA Support: Fisheries* Project inception: FY99
* CWA does not currently support fisheries issues as approved under the CCMP.

PE Cycle Report: Nine artificial reefs in Sarasota Bay were replenished with new reef modules. The SBEP manufactured and deployed 374 reef modules during the reporting cycle.

4. Oyster Reefs/Living Shorelines

Given the amount of hardened shorelines, restoration of mangrove and wetland shoreline is limited. The use of the American oyster (*Crassostrea virginica*) to filter bay water and provide habitat is being implemented. While oysters are still common in Sarasota Bay, opportunities have emerged for creating additional habitat. By simple cultch deposition and spat seeding, it should be possible to restore enough reef area to make a significant improvement in habitat and localized water quality.

Much of Sarasota Bay shoreline is hardened. SBEP is considering living shoreline techniques for softening these shorelines.

Funding Source: IA Responsible Partners: SBEP
Outputs: Six artificial reefs in Sarasota Bay were replenished with new reef modules.
Short-Term Outcomes: Changes in condition – Improved juvenile fish habitat and enhanced recreational opportunities

CCMP Action Plan: Fisheries and Other Living Resources - Objective 3: Restore and enhance shellfish habitats.
CWA Support: Fisheries* and Water Quality (TMDLs)
Project inception: FY02
* CWA does not currently support fisheries issues as approved under the CCMP.

PE Cycle Report: The SBEP constructed two oyster reefs in Manatee County.

Sub-Element: Seagrass Restoration (Fish and other Living Resources Action Plan)
Environmental Quality Objective: Increase the overall productivity of Sarasota Bay through improved water quality and habitat, thus enhancing finfish and shellfish populations.
CCMP Goal: Restore and sustain fish and other living resources in Sarasota Bay.

5. Seagrasses

SBEP conducted a statistical analysis of the Sarasota County Seagrass Monitoring Program. This analysis determined that the program is designed appropriately to detect significant changes in seagrass composition and abundance. Biannual SWFWMD aerial coverage was performed in 2012, 2014, and 2016.

Funding Source: SBEP Responsible Partners: SBEP
Short-term Outputs: Seagrass levels increased 9 percent from 2012 to 2016.
Short-term Outcomes: Changes in knowledge results will be used in seagrass and water quality target setting
CCMP Action Plan: Fish and Other Living Resources - Objective 5: Maximize opportunities for reestablishing and protecting seagrass habitat throughout the Bay.
CWA Support: (4) Controlling non-point source pollution on a watershed basis; (5) Strengthening National Pollutant Discharge Elimination System permits
Project inception: FY08

Partnerships:
Lead Organization: SWFWMD, Manatee County, Sarasota County
Cooperating Organizations: Florida Department of Environmental Protection, U.S. Fish & Wildlife Service, U.S. Army Corps of Engineers, private industry.

PE Cycle Report: Seagrasses in Sarasota Bay increased 9% (882 acres) between 2012-2016.

Sub-Element: Monitoring (Fish and Other Living Resources Action Plan)
Environmental Quality Objective: Increase the overall productivity of Sarasota Bay through improved water quality and habitat, thus enhancing finfish and shellfish populations.
CCMP Goal: Restore and sustain fish and other living resources in Sarasota Bay.

Activities (summary of related workplan projects):

6. Fisheries Independent Monitoring

The Fish and Wildlife Research Institute's (FWRI) Fisheries Independent Monitoring (FIM) Program is a long-term program designed to monitor the relative abundance of fishery resources in Florida's major estuarine, coastal and reef systems. The FIM program's primary goals include: 1) to address the critical need for effective assessment techniques for an array of species and sizes of fishes and invertebrates, 2) to provide timely information for use in management plans, and 3) to monitor trends in the relative abundance of fishes and selected invertebrates in a variety of estuarine and marine systems throughout Florida. Sarasota Bay is similar to other estuaries in abundance and diversity.

Funding Source: SBEP
Responsible Partners: FWRI
Outputs: Progress Report – Annually; Final Report – Every five years
Short-Term Outcomes: Changes in condition– Expansion of juvenile fish habitat
Long-Term Outcomes: Evaluate fishery abundance in comparison to other Florida waters
CCMP: Fisheries and Other Living Resources Action Plan. Objective 3: Restore and enhance shellfish habitats.
CWA Support: Fisheries*

* CWA does not currently support fisheries issues as approved under the CCMP.

PE Cycle Report: The FIM Program results continue to show high fisheries productivity and diversity throughout Sarasota Bay and tributaries.

Work Plan Goal #3: Increase Access to the Bay

Sub-Element: Recreational Use Action Plan

Environmental Quality Objective: Recreational use of Sarasota Bay shall not adversely impact Bay resources.

CCMP Goal: Provide increased levels of managed access to Sarasota Bay and its resources.

Major changes to this Action Plan in 2014 retired many of the accomplished tasks, including management of high use areas near the inlets and causeways, marking of the Intracoastal Waterway, and reductions in speed zones for manatee protection.

Activities (summary of related workplan projects):

1. Gulf Coast Heritage Trail – Distribution of Materials

The Gulf Coast Heritage Trail (GCHT) was established in 2000 to enhance local awareness of ecological heritage while promoting stewardship and a sense of place in the community. Included in the first phase of implementation was the creation of a brochure highlighting destinations reachable by car, a recreational opportunity guide for Sarasota Bay, a resource book for the boater, and a road sign system to assist motorists in finding the GCHT destinations. The SBEP continues managing the GCHT by distributing brochures and pocket guides to Trail destinations and works with the GCHT destinations to help preserve the natural, cultural and historical resources at the sites. The GCHT brochures continue to be distributed at the tourist information

centers. A new brochure was released in 2012.

Responsible Partners: SBEP
Cooperating Partners: Science and Environment Council of Southwest Florida, Manatee County, Sarasota County
Outputs: Annual Reporting on Progress in Workplan/System Established in 2000. System upgraded in FY08.
Outcomes: Shared information; Raising Awareness; Increased managed access to Sarasota Bay and its resources (enhanced environmental education)
CCMP Action Plan: Recreation – Objective 3.0 Improve recreational access to Sarasota Bay
CWA Support: Education
Project inception: FY98

PE Cycle Report: The Science and Environment Council of Southwest Florida developed an audio tour to accompany many GCHT "stops" that enhanced and modernized the GCHT. Scenic highways, including Palma Sola, Gulf Drive, and Tamiami Trail are being developed throughout the region to promote multiple recreational uses. The Heritage Trail and Blueways system has been fully implemented with the assistance of the National Park Service. The Blueways and GCHT maps and guides continue to be popular and are regularly used and distributed at information centers. The SBEP replaced multiple GCHT signs.

2. Citizens Action Plan (CAP) (Supports all CCMP Action Plans)

To increase citizen involvement, the SBEP Citizen Advisory Committee (CAC) annually develops a Citizen Action Plan (CAP) focusing on education and citizen involvement in Bay-related activities and special projects to support CCMP implementation (**#41**). The goal of the CAP is to create public awareness of the issues impacting Sarasota Bay and to increase environmental stewardship. Key components of the CAP include the P.I.E.R. Program, Bay Partner Grants, publications, workshops, presentations, and community events related to the environment.

Funding Source: Federal and Interlocal
Responsible Partners: SBEP
Outputs: Annual Progress Report
Outcomes: Changes in knowledge and behavior – Improved environmental stewardship
CCMP Action Plan: Recreational Use - Objective 4: Improve education of users to protect the resources of the bay.
CWA Support: All CWA core programs- primarily: Controlling non-point source pollution on a watershed basis.
Project inception: FY00

PE Cycle Report: CAP reports are included in attachment **#41**. The SBEP continues to offer twelve free Bay Wise Kayak Eco-Tours (BWKT) to the public each year. Each trip hosts 10-15 participants, many of whom are seasonal residents or tourists. The Florida Society for Ethical Ecotourism certified SBEP as a sustainable ecotour provider in 2017 due to the BWKT program's focus on educating participants about Sarasota Bay ecology and restoration.

Work Plan Goal #4: Establish an Appropriate Institutional Structure to Implement the CCMP

Sub-Element: Governance

Environmental Quality Objective: Improve Sarasota Bay to the maximum extent possible, given best-available technology and economic constraints.

CCMP Goal: Establish an appropriate institutional structure to oversee implementation of the CCMP.

Activities (summary of related workplan projects):

1. Grant Writing

This effort pursues grants to fund specific projects in the CCMP.

Funding Source: Federal and Interlocal
Responsible Partners: SBEP
SBEP Outputs: Status Reports
Short-Term Outcomes: Changes in knowledge and behavior
CCMP Action Plan: Governance - Objective 1: Maintain existing committee structure and staff.
CWA Support: All core programs
Project inception: FY06

PE Cycle Report: Partners and contractors, including the Wetland Coordinator, have assisted SBEP with grant writing. A report of projects funded through additional grants can be found in attachment **#13**.

2. Sarasota Bay Foundation

The Sarasota Bay Estuary Program has established a foundation to further support the goals of the CCMP.

Funding Source: Federal and Interlocal
Responsible Partners: SBEP
Output: Establish Foundation
Short-Term Outcomes: Changes in knowledge – enhanced environmental steward and by restoration
CCMP Action Plan; Governance- Objective 1: Maintain existing committee structure and staff.
CWA Support: All core programs
Project inception: FY05

PE Cycle Report: The Sarasota Bay Environmental Fund was developed and established through the Gulf Coast Community Foundation (**#4**).

3. Program Administration and Operations

This line item supports the operations of the SBEP.

Funding Source: Federal and Interlocal
Responsible Partners: SBEP
Outputs: Revised CCMP and State of the Bay 2014
Short-Term Outcomes: Changes in Knowledge
CCMP Action Plan: Governance - Objective 1: Maintain existing committee structure and staff.
CWA Support: All core programs
Project inception: FY89

PE Cycle Report: SBEP remains fully staffed.

4. CCMP Re-Examination and Update

The SBEP Interlocal Agreement requires a re-examination of the CCMP every five years.

Funding Source: Federal and Interlocal Agreement
Responsible Partners: SBEP
Outputs: CCMP and State of the Bay 2014
Short-Term Outcomes: Changes in knowledge
CCMP Action Plan: Governance - Objective 1: Maintain existing committee structure and staff
CWA Support: All core programs

PE Cycle Report: A revised CCMP was published in 2014.

Sub Element: Conduct an independent strategic assessment of program performance at intervals not to exceed five years, subsequent to approval by Florida's governor and the U.S. EPA administrator.

PE Cycle Report: EPA completed an independent assessment (Program Evaluation) in 2013.

Sub-element: Expand financial opportunities to benefit Sarasota Bay.

PE Cycle Report: A long range financial plan (**#7**) was developed and approved in September 2016.

Work Plan Goal #5: Increase Public Awareness, Foster Behavioral Change and Promote Environmental Stewardship (Public Participation Chapter)

Sub-Element: Education and Outreach

Environmental Quality Objective: None set.
CCMP Goal: To engage, educate, and encourage environmental stewardship of Sarasota Bay and its resources.

Activities (summary of related workplan projects):

1. Florida Yards and Neighborhoods Program (FY & N)

This project further institutionalizes the Florida Yards and Neighborhoods Program (FYN) within the University of Florida Institute of Food and Agricultural Sciences (IFAS), regional agencies, SWFWMD, and County Cooperative Extension Agencies. The FYN Program emphasizes reduction in the use of pesticides, herbicides, and insecticides, water conservation, urban and suburban habitat creation, use of slow-release fertilizers, improved landscape design, and efficient and environmentally friendly maintenance methods. Manatee County and Sarasota County added a FYN coordinator position and SWFWMD has funded a major community outreach initiative addressing new development. SBEP regularly awards mini grants to homeowners' associations to fund transitions to FYN landscapes. A regional workgroup meets periodically to assess FY&N program needs.

Funding Source: Federal and Interlocal
Responsible Partners: SBEP, University of Florida Institute of Food and Agricultural Sciences, Manatee and Sarasota County Cooperative Extension Services
Outputs: Year-end report
Outcomes: Changes in condition – Improved water quality; expansion of existing seagrass beds
CCMP Stormwater Action Plan. Objective 1.0: Promote pollution prevention
CWA Support: Controlling non-point source pollution on a watershed basis
Project inception: FY 93

PE Cycle Report: The SBEP continues to support implementation of the FYN program through sponsorship of applicable projects. The SBEP awarded 17 mini-grants for FYN landscaping projects during the reporting period (**#38**).

2. Water Atlas (Supports Citizen Action Plan)

The objective of this project is to produce a web-based Water Resources Atlas for Sarasota and Manatee Counties. This atlas consolidates surface water quality information and makes it available to the public, decision makers, and scientists.

Funding Source: SBEP
Responsible Partners: Manatee and Sarasota County
Outputs: Continuous updates to the Water Atlas
Outcomes: Changes in knowledge and raising awareness results in improved environmental awareness
CCMP Action Plan: Recreational Use - Objective 4: Improve education of recreational users.
CWA Support: Improving water quality monitoring; Controlling non-point source pollution on a watershed basis
Project inception: FY03

PE Cycle Report: The Sarasota and Manatee Water Atlas sites are updated regularly. SBEP and partners contribute reports, Bay-related news, and other information to both Atlas sites.

3. Public Outreach

The Policy Committee has consistently encouraged the participation of the SBEP at community functions. Funds provided support these and other activities of the program and the Citizens Advisory Committee (CAC).

Funding Source: Federal and Interlocal
Responsible Partners: SBEP
Outputs: Annual progress report delivered to the CAC.
Outcomes: Changes in knowledge – Improved environmental stewardship
CCMP: Recreational Use Action Plan. Objective 4: Improve education to protect bay resources.
CWA Support: All CWA core programs
Project inception: FY89

PE Cycle Report: See Public Involvement Core Element and annual outreach reports in attachment folder **#41**.

4. Citizens Action Plan (CAP) (Supports all CCMP Action Plans)

To increase citizen involvement, the SBEP Citizen Advisory Committee (CAC) annually develops a Citizen Action Plan (CAP) focusing on education and citizen involvement in Bay-related activities and special projects to support CCMP implementation. The goal of the CAP is to create public awareness of the issues facing Sarasota Bay and to increase environmental stewardship. Key components of the CAP include the P.I.E.R. Program, Bay Partners Grants, publications, workshops, presentations, and community events related to Sarasota Bay.

Funding Source: Federal and Interlocal
Responsible Partners: SBEP
Outputs: Annual Progress Report
Outcomes: Changes in knowledge and behavior – Improved environmental stewardship
CCMP Action Plan: Recreational Use - Objective 4: Improve education of users to protect the resources of the bay.
CWA Support: All CWA core programs- primarily: Controlling non-point source pollution on a watershed basis.
Project inception: FY00

PE Cycle Report: The Citizens Advisory Committee (CAC) has been active during the PE cycle as indicated by the activities sponsored through the Citizen Action Plans (see Public Involvement Core Element section of this document and annual outreach reports in folder **#41**).

The CAC helped develop a Citizens Participation Chapter of the CCMP containing public priorities for Sarasota Bay restoration. The chapter was approved by the Policy Board and added to the 2014 CCMP (2014). The Citizens Participation Chapter initiated SBEP's work on Climate Change and Economic Valuation.

IV. Workplan Narrative – Required Supplemental Information

Standardized Performance Measures

The relationships between standardized performance measures and workplan goals and activities are covered in the discussion of performance measurements and results in the 2014 CCMP (**#28**) for each Action Plan.

Habitat Accomplishments

A summary of habitat restoration projects is provided (**#55**). A discussion of seagrass recovery (**#50**) and water quality improvement is provided in workplan narratives (**#6**).

External Factors

Funding from state and local agencies has become more difficult to obtain during the reporting period. The SBEP has initiated an Environmental Fund to open opportunities for additional revenue sources (**#4**).

Challenges

The following challenges were recognized in the 2013 Triennial Review Letter from EPA.

1. EPA Challenge: Financial Strategy – see 2013 EPA PE letter page 5 (#54)

"The combined impact of the economic downturn in Florida and legislatively-mandated reductions in local taxes has limited the amount of funding available for restoration, which slowed the pace of CCMP implementation during the review period. The PE Team recommends that the Program revisit and update its Financial Sustainability Strategy Report from 2006. The updated strategy should reassess current funding sources and prioritize possible new funding opportunities to explore. It also should establish specific finance targets and goals, including development of an enhanced portfolio. If RESTORE Act funds become available to the SBEP, the Program should integrate those funds into its new portfolio and develop a plan for funds expenditure that would specifically track RESTORE Act projects."

SBEP Response: The long-term financial plan (**#7**) was approved by the Policy Board in September 2016 addressing federal, state, local and private sources.

2. EPA Challenge: Employee Handbook - see 2013 EPA PE letter page 5 (#54)

"EPA believes that Human Resources (HR) policies are essential for an NEP's success. HR policies help lay the foundation for an organization that relies on highly skilled and committee employees dedicated to SBEP's missions and goals. Also, HR policies help employees to understand the expectations of the organization and become knowledgeable of existing policies and procedures. EPA applauds the Program's efforts to develop an

Employee Handbook, but is concerned that after several years and three drafts, the Program still has no formal HR policies. Given the importance of those policies, the EPA looks forward to learning in the near future that the Program has adopted a final Employee Handbook. Before the Handbook is finalized, however, the Program's HR contact and the SBEP Policy Board should review a final draft to ensure that the document effectively supports and helps build the desired organizational culture of the Program. EPA expects that the SBEP has a draft final Employee Handbook by December 21, 2013, and a final Handbook by September 2014."

SBEP Response: The employee handbook was approved in 2013 and revised by the Policy Board in May 2016 (**#30**)**.**

3. EPA Challenge: Assessment: Macro Algae – see 2013 EPA PE letter page 6 (#54)

"The Technical Advisory Committee (TAC) and the Citizens Advisory Committee have identified macro-algae as an issue of concern for the Bay and Gulf waters. The PE Team recommends that the Program increase its water quality monitoring efforts to identify sources and pathways of nitrogen throughout the watershed. The monitoring efforts will allow the Program to improve the understanding of the linkages between nitrogen and macro-algae. The monitoring should be designed to help develop management actions that reduce impacts of nitrogen loads leading to the grown of macro-algae."

SBEP Response: The study completed by Harbor Branch showing macroalgae levels in the Bay was completed in July 2013 (**#61**). The SBEP is presently studying nutrient dynamics in tidal creeks in Southwest Florida (**#18**).

4. EPA Challenge: Climate Change – see 2013 PE letter page 6 (#54)

"Although progress has been made on addressing climate change (e.g., developing an online sea level rise viewer), EPA recommends that the SBEP: (1) continue to look for ways to integrate climate change resiliency into future habitat planning and restoration projects and (2) incorporate climate change into the next CCMP update/rewrite. In addition, given the potential impacts of climate change on the Bay's ecosystem and water quality, EPA encourages SBEP to evaluate whether "restoring the historic balance" of seagrass to 1950s ratios will still be a valid strategy for the Program to continue pursuing. Finally, EPA also encourages the SBEP to continue its leadership supporting climate change by doing the following: (3) continue being an active partner of the Climate Ready Estuary Program when funding is available; (4) promote the development of NEP coastal watershed management plans that consider climate change, and (5) promote the development of vulnerability assessments in Sarasota Bay."

SBEP Response:

1. Climate resiliency has been incorporated into habitat restoration project planning. Living shorelines have potential in resiliency planning (**#19** and **#20**) for replacing failing seawalls while creating juvenile fish habitat (**#52**).

2. Climate change was prioritized in the Citizen Participation Chapter of the CCMP in 2014 (**#28** page 60 – objective #6). Seagrass coverage across all Sarasota Bay segments is up 34% over 1950 levels.
3. Two grants were received from EPA Climate Ready Estuaries Program to fund a climate change vulnerability assessment of the SBEP CCMP (**#49**), an outreach video (**#60**), and an outreach brochure (**#64**).
4. All local governments in the SBEP region are considering or have already adopted resiliency-related amendments to their Comprehensive Plans.
5. The SBEP and the City of Sarasota have completed climate change vulnerability assessments (**#49** and **#56**). The SBEP Public Outreach Manager participates in the Sarasota Intergovernmental Climate Working Group, which brings together local government staff to discuss regional climate vulnerabilities and resiliency planning.

5. EPA Challenge: Nutrients – see page 6-7 EPA 2013 PE letter (#54)

"The three Southwest Florida NEPs have posited that tidal creeks require different criteria than those derived for freshwater streams for open estuary systems that are "predominantly marine." EPA recommends that: (1) the SBEP continue its ongoing monitoring and conduct new monitoring efforts to learn more about the complex relationship between nutrients in Southwest Florida tidal creeks and the establishment of management options to support full aquatic life in these systems. EPA encourages the Program to implement the following: (2) create ad hoc TAC/workgroups with members from each of the three Southwest Florida NEPs to establish goals for developing and implementing NNC for Southwest Florida tidal creeks; (3) provide criteria supported by sound monitoring data along with information on full aquatic life support and use for consideration by EPA."

SBEP Response:

1. SBEP provided a management framework for total nitrogen in Southwest Florida creeks during the 2012 EPA Wetland Development Grant.
2. SBEP was awarded a second Wetland Development Grant from EPA Region 4 to further study nutrient dynamics within these tidal creeks. This grant is focusing on sediment nutrient resuspension, watershed inputs, and water column nutrient processing.
3. SBEP created regional technical working groups to assist with both EPA wetland development grants that focus on tidal creek water quality.

V. Budget Summary

FUNDING OF ONGOING PROJECTS BY FISCAL YEAR

During the performance period, the Policy Board established budgets and workplan elements to support CCMP implementation as shown below.

PROJECT	FY11	FY12	FY13	FY 14	FY15	FY16	FY17
Participation on Advisory Boards	0	0	0	0	0	0	0
Heritage Trail	0	0	0	0	0	0	0
LID/Land Development Code Review	0	0	0	0	0	0	0
Wetlands Restoration/ Maintenance	0	0	5,000	0	0	5,000	5,000
Oysters/Scallops/Living Shorelines	0	10,000	5,000	5,000	5,000	10,000	10,000
Water Quality Monitoring	10,000	10,000	15,000	10,000	15,000	0	0
Non-point Source Pollution/Hydrology	0	0	0	0	0	0	0
Seagrass	0	0	0	0	5,000	0	0
Trib/TMDL Support	38,800	30,000	15,000	15,000	30,000	30,000	18,500
Sarasota Bay Foundation	0	0	0	0	0	0	0
Grant Writing	0	0	0	0	0	0	0
FY&N Outreach	5,000	5,000	5,000	0	0	0	0
Wetlands – Coordination	40,000	30,000	30,000	30,000	30,000	30,000	30,000
Artificial Reefs and Shoreline Enhancement	10,000	10,000	10,000	5,000	0	0	0
Red Tide Support	0	0	0	0	0	0	0
Macro-Algae	20,000	10,000	10,000	0	0	0	0
Public Outreach and Education	10,000	10,000	10,000	5,000	10,000	7,200	7,200
Citizens Action – PIER	120,000	120,000	120,000	110,000	125,000	120,000	107,500
Wetlands – Restoration Match	298,800	290,000	290,000	222,500	300,000	282,000	337,000
State of the Bay	0	0	0	0	0	0	0
FIM	25,000	50,000	50,000	37,500	50,000	50,000	50,000
CCMP Re-write	0	0	0	0	0	0	33,000
Econ Evaluation	20,000	15,000	15,000	0	0	0	0
Climate Change	25,000	0	0	0	29,000	0	0
Program Development	0	0	0	15,000	0	0	0

In addition to the workplan budget shown above, additional funds are received through external grants and other sources to supplement the initial budgets approved by the Policy Board. Actual expenditures for the reporting period can be found in **#10** with associated project deliverables

found in the EPA grant closeout packet (**#59**). Additional projects outside of approved initial workplans and funding source can be found in **#13**.

Expenditures for program staff for the reporting period can be found in **#10**. The long-range finance plan (**#7**), approved by the Policy Board in September of 2016, addresses funding needs for the program.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 29 2018

OFFICE OF WATER

Mr. Mark Alderson, Director
Sarasota Bay Estuary Program
111 South Orange Avenue, Suite 200W
Sarasota Bay, Florida 34236

Dear Mr. Alderson:

The purpose of this letter is to provide the results of the Environmental Protection Agency's (EPA) 2018 Program Evaluation (PE) and to thank you and the Sarasota Bay Estuary Program's (SBEP) staff, as well as your partners, for contributing to the 2018 PE process. We recognize that you put considerable effort into both the PE package and the responses to our follow-up questions. We also appreciate your facilitation of the PE Team's site visit that enabled the Team to meet your staff and visit projects in your study area.

I would like to note that your evaluation benefited from the voluntary participation of Mr. Chris Bason, Executive Director of the Center for Inland Bays (CIB), who served in an ex officio capacity on the PE Team. Mr. Bason's participation provided the Team members (Noemi Mercado, EPA HQ and Felicia Burks, EPA Region 4) with an invaluable National Estuary Program (NEP) perspective. Mr. Bason also shared information about the CIB that may be useful for your Program, and took several lessons learned back to his NEP. Also, Mark Nuhfer, EPA Region 4 and Brian Frazer, Acting Director of EPA's Oceans, Wetlands, and Communities Division attended the site visit and had the opportunity to get familiar with the PE process and see results of the SBEP efforts first hand.

The primary purpose of the EPA PE is to help EPA determine whether the 28 programs included in the NEP are making adequate progress implementing their Comprehensive Conservation and Management Plans (CCMPs). The evaluation process has considerably enhanced EPA Headquarters and Regional knowledge of each individual NEP and promoted sharing of innovative projects and approaches across all 28 NEPs. In addition, EPA uses the evaluation process to assess how the NEPs support Clean Water Act (CWA) core programs and to evaluate the extent and effectiveness of the NEPs' contributions to achievement of one relevant EPA *2016 - 2020 Strategic Plan* goal--Goal 2: Protecting America's Waters, Objective 2.1, Protect Human Health and Objective 2.2, Protect and Restore Watersheds and Aquatic Ecosystems.

Based on the PE Team's findings, your Program continues to make significant progress in implementing the SBEP's CCMP. EPA is pleased to announce that you have passed the 2018 PE and are eligible for funding authorized by CWA §320.

2018 Program Evaluation Findings

The following summary highlights the Team's key findings by identifying the SBEP's: (I) Progress Made in the Areas Highlighted in the 2013 Program Evaluation, (II) Support of CWA Core Programs, (III) Strengths, and (IV) Challenges. This summary is intended both to recognize the Program's successes and to recommend efforts to further strengthen the Program. The Program's response to these recommendations will be evaluated in the next PE cycle in 2023.

I. Progress Made in the Areas Highlighted in the 2013 Program Evaluation Review

Program Implementation and Reporting – Financial Management

Financial Strategy

In 2013, the PE Team recommended that the Program revisit and update its financial strategy from 2006. The Program updated its long-term financial strategy. It was approved by the Policy Board in September 2016 addressing federal, state, local, and private funding sources.

Program Implementation and Reporting – Program Planning and Administration

Need to Adopt a Final Employee Handbook

The Employee Handbook describing human resources policies was approved in 2013 and revised by the Policy Board in May 2016. Also, during this time the SBEP adopted a succession plan.

Ecosystem Status and Trends – Assessment and Monitoring

Increase Water Quality Monitoring for Macro-Algae

In 2013, the SBEP completed a study addressing the ecology and nutrition of macro-algae in Sarasota Bay. Sarasota Bay has maintained very low macro-algae abundance over the past four years. As a result, water quality indicators (e.g., *chlorophyll a*, nitrogen, and phosphorus) have improved. During this review period, successful augmentation of NPDES and nonpoint sources programs in Sarasota Bay has resulted in an estimated three percent reduction in nitrogen pollution and nine percent increase in seagrass coverage.

Climate Change Integration

Climate change was prioritized in the Citizen Participation Chapter of the CCMP in 2014.
The SBEP received funding from EPA Climate Ready Estuaries Program to fund a climate change vulnerability assessment of Sarasota Bay, completed in 2017. In addition, the Program developed an outreach video and brochure on climate change issues (https://sarasotabay.org/new-video-preparing-Sarasota-Bay-for-sea-level-rise). The SBEP Public Outreach Manager participates in the Sarasota Intergovernmental Climate Working Group that brings together local government staff to discuss regional climate vulnerabilities and resiliency planning.

Need to Understand Nutrient Dynamic in Tidal Creeks in Southwest Florida

The SBEP provided a management framework for total nitrogen in Southwest Florida (SW FL) creeks during the 2012 EPA Wetland Development Grant (WDG) to assist local government in managing water quality. The Program was awarded a second WDG to further study nutrient dynamics within these tidal creeks. This grant is focusing on sediment nutrient resuspension, watershed inputs, and water column nutrient processing. Some of the principal findings of the study revealed that: 1) those creeks with low fish species diversity did not correlate with higher nutrient concentrations; in fact, creeks with the highest diversity tended to have higher nutrient concentrations indicating that tidal creeks are a complex system that supports species in low dissolve oxygen conditions; 2) observed nutrient levels have not yet resulted in highly eutrophic or dystrophic conditions in the 16 creeks sampled; and 3) existing dissolved oxygen and *chlorophyll a* criteria are not reliable indicators of nutrient impairment in SW FL tidal creeks.

II. Support of CWA Core Programs

Water Quality Monitoring

According to EPA, nutrient pollution is one of America's most widespread, costly, and challenging environmental problems. During this review period, the SBEP established scientifically-based numeric nutrient criteria (NNC) for all Bay segments and assessed the condition of the Bay in relation to these impairment criteria. Also, the SBEP recommended a method for determining NNC for tidal creeks. In developing the method, the Program conducted extensive technical work on tidal creeks in SW FL characterizing 16 creeks from Pinellas to Collier counties. A reevaluation of the SBEP pollutant loading model in 2016 resulted in an adjustment from 64 percent reduction in Total Nitrogen load in 2014 to a 67 percent reduction in 2017. All Bay waters now meet state/federal water quality standards and are rated "good" to "excellent." The SBEP will continue work to better understand the relationship of dissolved oxygen and nutrients in these complex systems to propose NNC to the regulators for tidal creeks in SW FL. EPA encourages the SBEP to share final results of the tidal creek study, including lessons learned, with other agencies and entities at national workshops and conferences.

Controlling Nonpoint and Point Source Pollution

The SBEP continues to track sewer system expansion and wastewater treatment plant consolidation by direct participation on the Sarasota County Sewer and Water Advisory Committee. Significant progress was made in FY 17 with continued implementation of the septic-to-sewer program and wastewater treatment plant consolidation. In May 2017, the Program worked with the City of Sarasota to remove the wastewater treatment plant at Whitaker Bayou, and completed construction of the deep well injection system. The final surface water discharger, Siesta Key Wastewater Treatment Plant, was decommissioned in June 2018. As of June 2018, all surface water discharges were eliminated in Sarasota Bay.

Treated wastewater retains low levels of nutrients; therefore, removing any wastewater discharges reduces nitrogen loads and helps restore salinity regimes to Sarasota Bay. Approximately 65 percent of the wastewater in the Sarasota Bay watershed is treated and reclaimed for irrigating agriculture fields, golf courses, and newer residential communities, thereby reducing water demand on the Floridan aquifer. The remaining 35 percent of the region's wastewater output that is not reused is treated and sent about 2,000 feet underground into confined deep injection wells underneath the Floridan aquifer. Deep well disposal disperses the impact of the discharge by allowing the water to filter through

thousands of feet of karst limestone before reaching other bodies of water, including oceans and drinking water sources. This is a significant accomplishment for the Program, and EPA looks forward to hearing how the SBEP will share lessons learned at the local and national level.

In addition, through work done between the Program and its partners, stormwater retrofit projects were completed throughout the Hudson Bayou basin in accordance with watershed management plans. Three of the five top priority basins (Phillippi, Hudson, and Catfish) have now been retrofitted for stormwater improvement. Manatee County initiated a comprehensive stormwater assessment in the Bowlees Creek watershed during the review period.

III. Strengths

Ecosystem Restoration and Protection

Water Quality

The SBEP and SW FL Wastewater Management District co-chaired a task force comprised of local government staff in the region. The task force developed a regional plan to reclaim wastewater. Wastewater was determined to be a valued source of alternative supply to reduce demand on the aquifer. Approximately 65 percent of the wastewater used in the Sarasota Bay basin is reclaimed for water reuse. As part of the regional effort, water conservation programs were implemented that cut per capita consumption from 150g/day to 86 g/day, reducing the amount of effluent possibly polluting the Bay. The replacement of septic tanks and small wastewater treatment plants in Sarasota County also provided increased opportunities to reclaim wastewater, as the systems have greater capability to process wastewater for water reuse. The septic-to-sewer replacement program goal in the original CCMP (1995) consisted of about 13,500 septic tanks for connection. The program was later expanded to over 15,000 septic tanks. The septic-to-sewer replacement program, 65 percent completed, has stalled due to a lack of funding. The septic-to-sewer replacement program was on the County's priority list and submitted to the Gulf Council in the SW FL regional plan for potential RESTORE Act funding. EPA encourages the SBEP to continue to work with partners to identify resources to complete this program.

Habitat

The degradation of Sarasota Bay began in the 1920's with large-scale freshwater marsh drainage projects that provided excessive nutrients to the Bay damaging seagrass; and extensive dredge and fill projects covering saltwater marsh while creating 100 miles of hardened seawalls. Due to the high rate of population increase and development in the region, 80 percent of the Sarasota Bay shoreline is hardened by bulkheads and seawalls, which makes it very difficult for aquatic life to survive along the shores of Sarasota Bay.

During the review period, the SBEP and its partners enhanced or restored 882 acres of seagrass (nine percent increase from the previous review period and 34 percent above 1950 levels, which is the target year); 678 acres of coastal wetland habitat totaling 1650 acres since 1988 (and approximating 1950 levels overall) and 4,420 linear feet of shoreline - this is less than .1 percent of the hardened shoreline available for restoration. These accomplishments are laudable, however, restoring Sarasota Bay to pre-1950s levels will require innovative methods and partnerships because land use in an urbanized watershed precludes restoring thousands of acres of historic wetlands and other habitats. The SBEP works with its partners to implement Low Impact Development, living shorelines, and stream restoration projects to help approximate the ecosystem services of historical habitats.

These projects helped promote local and regional economies that rely on tourism, recreational fishing, boating and other water-dependent industries. During the on-site review, the PE Team visited several of the many important projects in the study area. These projects included: 1) Oscar Scherer State Park, 2) FISH Preserve, 3) Bayfront Park, 4) Robinson Preserve final phase, and 5) Celery Fields. Key activities associated with these projects included:

- removal of exotic vegetation and planting native plants;
- creation of a freshwater wetland;
- installation of a living seawall;
- creation of ponds and trails; and
- construction of a series of canals for stormwater runoff retention, flood protection, and water filtration system.

EPA applauds the SBEP for leading an effort through its SW FL NEPs tidal creeks study to explore linking nutrient reductions from habitat restoration to trading credits. The study is designed to assess water quality, habitat and fisheries and it will assess the potential benefits of trading credits from habitat restoration projects. The proposed nutrient management framework fits well within the existing state and federal water quality standards and is not counter to any regulatory mechanism currently in place. Because of this study, policy changes may be recommended.

Living Resources

In 1996, the SBEP developed a master artificial reef plan and since 2000, the Program and its partners have constructed more than 3,500 artificial reef modules. The SBEP currently has eight active reef sites created primarily from reef balls. During the review period, the Program added new reef material on six of the eight existing Bay reefs. Monitoring has documented a variety of marine life taking up residency within the reef balls (e.g., gag groupers and stone crabs).

Also, two new oyster reefs were created in Manatee County estuarine waters during the review period. New oysters have settled on these reefs and fisheries monitoring shows newly recruited fisheries (e.g., jenny mojarras, scaled sardines, and Atlantic thread herring). These species are essential bait fish.

Program Implementation and Reporting

Financial Management

The SBEP has secured and assembled a significant amount of funding from sources other than EPA for CCMP initiatives. During the review period, the Program leveraged $276 million from public and private funding sources, with 71 percent of grants successfully winning awards. Also, the SBEP excels in administering and expending the money. Many NEPs subcontract financial management responsibility; however, the SBEP uses financial database software to manage day to day financial schedules and other fiscal responsibilities. The SBEP undergoes routine CPA quarterly reviews and is subject to an independent annual federal audit, receiving the highest results achievable under federal standards. This is a testament to sound financial management by all the Program's staff, with special recognition to the Finance Director.

Outreach and Public Involvement

The SBEP does an excellent job of reaching out to the public and educating citizens who support the SBEP's objectives. Highlights of the SBEP outreach and public involvement activities appear below.

- Completed an Economic Valuation Study of Sarasota Bay in 2014. The study concluded that Sarasota Bay accounts for $11.8 billion in value to the local economy. This also includes 21,000 jobs, which account for $751 million in total revenue.
- Engaged 1,625 volunteers in 36 Bay Guardians workday events, resulting in 4,875 hours donated to Sarasota Bay restoration.
- Engaged the public in watershed management during the Sarasota Bay Watershed Symposium.
- Re-designed its website to include news, reports, and media releases.
- Supported an active Citizen Advisory Committee that provides recommendations via an annual citizens action plan workplan budget.
- Awarded 17 mini-grants for the Florida Yard and Neighborhoods landscaping project emphasizing reduction in the use of pesticides, water conservation, and use of slow-release fertilizers.

IV. Challenge

Program Implementation and Reporting - Outreach and Public Involvement

Communicating Successes

The SBEP is a leader in watershed management and has achieved outstanding progress across a wide array of policy, education, water quality, and habitat restoration programs. However, a more effective story should be crafted to communicate such successes to a diverse audience of local and national stakeholders. EPA recommends the SBEP enhance its communication across media types with a clear understanding of effective messaging and targeted audiences. This will ensure that successes in Sarasota Bay are sustainable and that recognition of the value of the NEP model and brand continues to increase.

V. Outreach Opportunities

The outreach opportunities described below are not presented as a challenge and are only for your consideration. As such, EPA does not expect a written response in the 2023 SBEP PE process.

As the first and only SBEP Director, you continue to be a great asset for the Program. Under your leadership, the Program has been very effective in getting everyone behind a shared vision, securing funds, pooling resources, and coordinating Program efforts for continued CCMP implementation. This has resulted in environmental improvements in areas such as water quality and habitat in Sarasota Bay. You have shared with the SBEP staff and Management Conference members that you will be retired prior to the next EPA PE in 2023. It is therefore vitally important to capture, preserve and share your historical institutional knowledge and perspective going forward. EPA encourages the SBEP, where possible and appropriate, to review its current succession plan and to seek opportunities for staff to shadow you and learn from your more than three decades of knowledge and experience.

EPA encourages you to continue your high-level communication efforts with staff, EPA, and partners to effectively highlight and market the Program's success in annual technical workshops, meetings,

conferences, etc. to "share the good news in Sarasota Bay." For example, the Program could explore developing a SBEP narrated documentary as a creative way to share and preserve the history of Sarasota Bay. Other options could include a video history of Sarasota Bay or social media, building on the concept "Throwback Thursdays" with old photos of the Sarasota Bay in the early years of the Program. See also Tampa Bay's example at http://exhibits.lib.usf.edu/exhibits/show/ohp-tampabayestuary .

Thank you again for participating in the PE process. We welcome any additional thoughts you may have either about the evaluation process itself or about EPA's involvement in the implementation of the SBEP's CCMP. If you have any questions or comments, please contact me at (202) 566-2954 or Noemi Mercado at (202-566-1251).

Sincerely,

Robert S. Benson,
Acting Chief, Partnership Programs Branch
Office of Wetlands, Oceans and Watersheds
U.S. Environmental Protection Agency

cc: John Goodin, U.S. EPA, Acting Director, Office of Wetlands, Oceans and Watersheds
Brian Frazer, U.S. EPA, Acting Director, Oceans, Wetlands, and Communities Division
Mindy Eisenberg, U.S. EPA, Associate Director, Oceans, Wetlands, and Communities Division
Chris Thomas, U.S. EPA Region 4, Chief, Sustainable Communities and Watershed Branch, Water Protection Division
Felicia Burks, U.S. EPA Region 4
Mark Nuhfer, U.S. EPA Region 4
Chris Bason, Director, Center for Inland Bays
Noemi Mercado, U.S. EPA Headquarters