

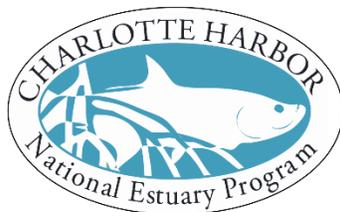
FISCAL YEAR 2019

Work Plan



Alligator Creek Cleanup – Citizen Scientist Project, February 2018

Charlotte Harbor National Estuary Program Revised May 29, 2019



326 W. Marion Avenue
Punta Gorda, FL 33950
(941) 575-5090
www.CHNEP.org

The Charlotte Harbor National Estuary Program (soon to be named Coastal & Heartland National Estuary Partnership effective June 1, 2019) is a partnership of citizens, elected officials, resource managers and commercial and recreational resource users working to improve the water quality and ecological integrity of the greater Charlotte Harbor watershed. A cooperative decision-making process is used within the program to address diverse resource management concerns in the 4,700-square-mile study area (soon to be approx. 5,400 with expansion area included effective June 1, 2019). Many of these partners also financially support the Program, which, in turn, affords the Program opportunities to fund projects. The entities that have financially supported the program include the following:

U.S. Environmental Protection Agency
Southwest Florida Water Management District
South Florida Water Management District
Florida Department of Environmental Protection
Peace River/Manasota Regional Water Supply Authority
Polk, Sarasota, Manatee, Lee, Charlotte, and Hardee Counties
Cities of Sanibel, Bartow, Cape Coral, Fort Myers, Punta Gorda, North Port,
Venice, Arcadia, Winter Haven, and Bonita Springs, as well as the Village of Estero
and the Town of Fort Myers Beach

Table of Contents

Previous Year – FY2018 – Program accomplishments.....	6
CCMP Goals Focus in FY 2019.....	10
Budget Overview.....	12
Budget Details.....	13
Staff and their Official Responsibilities.....	19
New and ongoing Projects.....	20
Task 1 Management Conference, Program Planning, Administration, Finance, Operations.....	21
Task 1.1 Ongoing Project: CCMP Revision.....	22
Task 1.2 Ongoing Project: Micro-Grants.....	23
Task 1.3 Ongoing Project: Public Outreach Grants.....	25
Task 1.4 Ongoing Project: Sponsorships.....	26
Task 1.5 Ongoing Project: Program Office Collateral/Reprints.....	27
Task 2 Public Engagement.....	28
Task 2.1 Ongoing Project: 2019 Calendar and four issues of <i>Harbor Happenings</i>	30
Task 2.2 Ongoing Project: Children’s Book.....	31
Task 2.3 Ongoing Project: Public Engagement – Targeted Projects and Events.....	32
Task 3 Research Coordination.....	33
Task 3.1 Ongoing Project: Charlotte Harbor Water Quality and Seagrass Monitoring Programs.....	35
Task 3.2 Ongoing Project: CHNEP Water Atlas Maintenance.....	37
Task 3.3 New Project: CHNEP Water Atlas Study Area Expansion.....	38
Task 3.4 New Project: CHNEP Economic Valuation Study.....	39
Task 3.5 New Project: South Lee County Watershed Initiative Hydrological Modeling Project.....	40
Task 3.6 New Project: City of Punta Gorda Climate Adaptation Plan Revision.....	42
Task 3.7 New Project: Charlotte Harbor Flatwoods Initiative Geotechnical Surveying.....	43
Task 3.8 New Project: Quantifying the WQ Benefits of SAV.....	44
Task 4 Watershed Coordination.....	46
Task 4.1 Ongoing Project: Habitat Restoration Needs.....	48
Task 4.2 Ongoing Project: Habitat Resiliency to Climate Change.....	51
Task 4.3 Ongoing Project: Oyster Restoration in Charlotte Harbor.....	52
Task 4.4 Ongoing Project: CHNEP Submerged Aquatic Vegetation (SAV) Restoration.....	53
Task 4.5 New Project: Lake Hancock Circle B Bar Reserve Shoreline Restoration Project.....	54
Task 4.6 New Project: Warm Mineral Springs Run Restoration.....	55
Task 4.7 New Project: Gateway to Myakka River State Park – Marsh Restoration & Education.....	57
Task 4.8 New Project: CHNEP Caloosahatchee Cyanobacteria Rapid Response Pilot Program.....	58
Task 4.9 New Project: Native Upland Plantings at Wildflower Preserve.....	59
Task 4.10 New Project: Alligator Creek Stream Restoration Project.....	61
Task 4.11 New Project(s): Restoration Project Grant(s).....	62
Task 5 Policymaker Education.....	63
Completed FY18 Major Projects and Actions.....	64
Clean Water Act Core Program Support.....	66
Applicable EPA-Approved State Strategies and Programs.....	67
Glossary of Acronyms.....	70

Tables

Table 1: Fiscal Year 2019 Proposed Budget.....	12
Table 2: FY 2019 Work Plan Budget.....	13
Table 3: FY 2019 Work Plan Funding Sources.....	13
Table 4: FY 2019 EPA Cooperative Agreement Budget.....	13
Table 5: Charlotte Harbor NEP FY 2019 Cooperative Funding Table.....	14
Table 6: Completed FY2018 Travel.....	15
Table 7: Projected FY2019 Travel.....	15
Table 8: Outreach and Education Projects.....	16
Table 9: FY2019 Technical Projects Funding Table.....	17
Table 10: FY2019 SWFWMD Funding by Task.....	18
Table 11: FY2019 Budgeted Administrative Costs.....	18

Charlotte Harbor National Estuary Program

Policy Committee

Mr. Brian Smith, Co-Chair

Water Protection Division
U. S. Environmental Protection Agency, Region 4

Mr. Jon Iglehart, Co-Chair

South District Director
Florida Department of Environmental Protection

Cities

Hon. Robert Heine Jr.

City of Arcadia

Hon. Billy Simpson

City of Bartow

Hon. Fred Forbes

City of Bonita Springs

Hon. Jessica Cosden

City of Cape Coral

Hon. Fred Burson

City of Fort Myers

Vacant

Town of Fort Myers Beach

Hon. Debbie McDowell

City of North Port

Hon. Gary Wein

City of Punta Gorda

Hon. Mick Denham

City of Sanibel

Hon. Mitzie Fiedler

City of Venice

Mr. M. J. Carnevale

City of Winter Haven

Hon. Katy Errington

Village of Estero

Counties

Hon. Bill Truex

Charlotte County

Hon. Judy Schaefer

Desoto County

Hon. Colon Lambert

Hardee County

Hon. Frank Mann

Lee County

Hon. Misty Servia

Manatee County

Ms. Gaye Sharpe

Polk County

Hon. Nancy Detert

Sarasota County

Agencies

Mr. Thomas Graef

Florida Fish & Wildlife Conservation Commission

Ms. Patricia M. Steed

Central Florida Regional Planning Council

Mr. Don McCormick

Southwest Florida Regional Planning Council

Mr. John Henslick

Southwest Florida Water Management District

Mr. Chauncey Goss

South Florida Water Management District

Management Committee Co-Chairs

Mr. James Evans

Mr. Corey Anderson

Technical Advisory Committee Co-Chairs

Mr. Justin Saarinen

Ms. Lizanne Garcia

Citizens Advisory Committee Co-Chairs

Ms. Sheila Scolaro

Ms. Debi Osborne

Staff

Jennifer Hecker, Executive Director

Danielle Berhel, Finance & Grants Specialist

Nicole Iadevaia, Research & Outreach Manager

Previous Year – FY2018 - Program Accomplishments

FW-1: Protect, enhance, and restore native habitats where physically feasible and within natural variability, including: Submerged aquatic vegetation (SAV); Submerged and intertidal unvegetated bottoms; oyster; mangrove; salt marsh; freshwater wetland; native upland; and water column.

- CHNEP continued to work with Southwest Florida Oyster Working Group partners on designing, permitting and constructing oyster restoration projects in Charlotte Harbor. Specifically staff collaborated with the Nature Conservancy and the City of Punta Gorda on developing a living shoreline concept for Charlotte Harbor.
- CHNEP completed work on the grant-funded Volunteer Oyster Habitat Monitoring project in December 2016. The project resulted in the recruitment, training and maintaining a cohort of volunteer citizen scientists that conduct monthly water quality data collection, periodic whelk monitoring and 6-month, 1-year, 18-month and 2-year oyster habitat monitoring.
- CHNEP staff worked with partners to develop the grant-funded Citizens Seagrass Gardening project for the tidal Caloosahatchee River. The project was submitted to the Florida Department of Environmental Protection's Coastal Partnership Initiative for funding. The CHNEP was notified that the project funding was awarded. Staff, working with partners, drafted and obtained the required permits for siting the seagrass gardens on submerged lands of Florida. The seagrass was planted and monitored. A progress report was submitted on October 4, 2018.
- The CHNEP Habitat Conservation Subcommittee was convened to guide development of the restoration targets, and the Restoration Needs Plan Update approach. The contractor presented the Management Conference with the "Additive Hybrid Approach" for review and comment.
- In FY15, the CHNEP, in partnership with DeSoto County with funding from Mosaic and the SWFWMD, initiated the process to develop and implement a Peace River shoreline stabilization and habitat restoration project in Morgan Park in Arcadia. Morgan Park is an important conservation area on the Peace River, but river erosion and exotic vegetation are problems within the park. CHNEP continued working with project partners to address shoreline erosion and stabilization and to conduct habitat restoration activities. The Site design was completed and draft permits were developed.

FW-2: By 2020, achieve a 100 percent increase in conservation, preservation, and stewardship lands within the boundaries of the CHNEP study area. The increase will be based upon 1998 acreage.

- Lee County Conservation 2020 program acquired the 3,996 acre property known as Edison Farms. This agriculturally zoned land in southeast Lee County's Density Reduction/Groundwater Recharge area contains significant natural flow-ways and critical species habitat. Future site improvements could provide enhanced water quality, flood attenuation and aquifer recharge. The CHNEP supported the re-authorization of Conservation 2020 in 2016 and the acquisition of Edison Farms.
- CHNEP organized and held the Conservation lands Workshop, with more than 80 attendees. Presentations focused on large-scale, landscape level restoration and included interactive sessions for participants to provide expertise on the CHNEP's revision of the CCMP.

FW-3: By 2020, achieve controllable levels of invasive exotic plants, as defined by the Florida Exotic Pest Plant Council, and exotic nuisance animals, as defined by the Florida Fish and Wildlife Conservation Commission on publicly managed lands. Encourage and support the removal and management of invasive exotic plants and exotic nuisance animals on private lands.

- The CHNEP provided micro-grants to assist engaged citizens in exotic plant removal on public lands.

HA-1: By 2020, identify, establish and maintain a more natural seasonal variation (annual hydrograph) in freshwater flows for Caloosahatchee River, Peace River and its tributaries, Myakka River, and Estero Bay and its tributaries.

- CHNEP held a workshop to provide background information and answer technical questions regarding the proposed MFLs for the Caloosahatchee River.

HA-2: By 2020, restore, enhance and improve where practical historic watershed boundaries and natural hydrology for watersheds within the CHNEP study area, with special attention to Outstanding Florida Waters and Class I water bodies.

- CHNEP worked with partners to design and attract funding to significant hydrologic restoration projects including Charlotte Harbor Flatwoods Initiative, the South Lee County Watershed Initiative, Vital Tidal Creeks, C-43 Reservoir and Lehigh Watershed Initiative.
- CHNEP assumed leadership of the South Lee County Watershed Initiative, at the request of the South Florida Water Management District for a period, and continued to actively participate in the work group.

HA-3: By 2020, enhance and improve to more natural hydrologic conditions water bodies affected by artificially created structures throughout the CHNEP study Area.

- CHNEP continues to actively participate in the review of Western Everglades projects, serving as a Science Advisory Board member of the South Florida Ecosystem Restoration Task Force.
- CHNEP participated in the 2018 Everglades Coalition meeting.
- CHNEP worked with Polk County to develop a project design to restore Lake Hancock shoreline.

HA-4: By 2020, for each watershed, identify and recommend additional reforms to improve linkages between local, waters management districts, state and federal government development permitting and capital programs affecting water storage, flood control and water quality.

- CHNEP is working with partners to identify funding g sources to facilitate capital programs that coordinate water storage, flood control, water quality and disaster planning.

WQ-1: Maintain or improve water quality from 2000 levels. By 2018, bring all impaired water bodies into a watershed management program such as reasonable assurance or basin management action plan. By 2015, remove at least two water bodies from the impaired list by improving water quality.

- CHNEP conducted a special TAC meeting devoted to the Impaired Waters rule and TMDLs focusing on Outstanding Florida Waters. Impaired waters workshop.
- The SWFWMD initiated the Charlotte Harbor SWIM Plan update and provided an overview of the SWIM Plan development process and preliminary results of water quality data analyses.

WQ-2: By 2020, develop and meet water quality criteria that are protective of living resources for dissolved oxygen, nutrients, chlorophyll a, turbidity, salinity and other constituents.

- CHNEP continues to support the Coastal Charlotte Harbor Monitoring Network (CCHMN), providing funding and staff support. CCHMN monitoring.

- The CCHMN data is available for review and analyses on the CHNEP Water Atlas.

WQ-3: By 2025, reduce severity, extent, duration and frequency of harmful algal blooms (HABs), including macroalgae, phytoplankton and periphyton, through the identification and reduction of anthropogenic influences.

- Information about harmful algal blooms is provided for review and analysis on the CHNEP Water Atlas.

WQ-4: By 2025, meet shellfish harvesting standards year round for the Myakka River conditionally restricted-area and the conditionally approved areas of Lemon Bay, Gasparilla Sound, Myakka River, Pine Island.

- Charlotte County is continuing its design and planning to conduct septic to sewer conversions in those areas that were determined to be high priority.
- Cape Coral is conducting septic to sewer conversions and installing re-use water lines in its northwest area.
- In FY2018, Watershed Education Training Ponds, Lakes and Neighborhoods (WET PLAN) conducted 1 all day workshop with 90 attendees and 10 service providers. The WET PLAN partners revised the workshop curriculum into 4 modules: Stormwater Pond Purpose, Basic Stormwater Pond Design, Plants and Algae, and Human Impacts. WET PLAN partners continued to present the materials to interested residents and professionals.

SG-1: By 2025, a minimum of 75 percent of the all residents will have recalled attending a watershed event, reading watershed material or hearing watershed/estuary information on radio, or TV. A minimum of 50 percent of all residents in the CHNEP study area can recognize estuaries and watersheds. A minimum of 10 percent of all residents will be able to claim personal actions that protect the estuaries and watersheds.

- CHNEP planned and hosted the Charlotte Harbor Nature Festival with over 1,000 attendees ranging in age from infants to seniors. Attendees self-identified their “home” on a map of the CHNEP study area.
- CHNEP published 35,000 copies of the 2018 Calendar which were distributed throughout the study area and to the part-time residents outside the area.
- Four issues of Harbor Happenings were published, with more than 4,000 mailed directly to subscribers and another 4,000 begin distributed through partners.
- CHNEP continued to support projects that engage citizens through micro-grants and Public Outreach Grants.
- CHNEP completed work on the Volunteer Oyster Habitat Monitoring project in December 2016. The project resulted in the recruitment, training and maintaining a cohort of volunteer citizen scientists that conduct monthly water quality data collection, periodic whelk monitoring and 6-month oyster habitat monitoring. CHNEP will continue to support the VOHM citizen scientists through FY2018.
- CHNEP will continue to provide information about opportunities for Management Conference participants and interested citizens via our Constant Contact notifications.
- CHNEP initiated monthly Citizen Science workshops to provide engaged citizens with hand-on opportunities to be involved in research, monitoring and restoration activities.

SG-2: By 2020, The CHNEP will expand its role as a recognized resource to elected officials or their agents from local, state and federal government for policy advice.

- The CHNEP completed work on the broad, risk-based climate change vulnerability assessment to identify climate stressors that affect the CHNEP’s ability to achieve its CCMP goals.
- The CHNEP contracted for the development of an analysis of habitat resiliency to climate change utilizing existing data sets and coordinating with state, regional and local partners to inform restoration planning.
- The Village of Estero became an active Management Conference member and the Cities of Bartow and Arcadia became contributing members.

SG-3: Through 2020, the CHNEP long-term monitoring strategy and data management strategy will continue and be enhanced. The resulting internet-based Water Atlas will be maintained systematically.

- CHNEP continues to support the Water Atlas, encouraging partners to utilize the resource to make their data available to the public and researchers. CHNEP is working with partners to ensure that data is appropriately analyzed and presented to the public.

SG-4: Through 2020 key geographic and scientific information will be presented in ways that are meaningful to the majority of people.

- CHNEP staff conducted deep review of Water Atlas functionality and data analytical tools; working with University of South Florida, a new introductory page was developed with an interactive map to assist users in identifying and reviewing data.
- CHNEP initiated work on the Watershed Status Report.

CCMP Goals Focus in FY 2019

The Fiscal Year 2019 Work Plan and Budget reflects the Management Conference's direction to focus on the following CCMP Goals in FY2019. In addition, CHNEP will complete the revision and update of the CCMP including a broad risk-based climate change vulnerability assessment of the CCMP's 15 Quantifiable Objectives. [Note: At the time of the this Work Plan and Budget, the CHNEP Management Conference is revising the 2013 CCMP which may result in further modifications to the Quantifiable Objectives and FY2019 CCMP Goals.]

WQ-1: Maintain or improve water quality from 2000 levels. By 2018, bring all impaired water bodies into a watershed management program such as reasonable assurance or basin management action plan. By 2015, remove at least two water bodies from the impaired list by improving water quality.

- CHNEP will continue working with partners to collect water quality monitoring data and uploading it to the CHNEP Water Atlas for access by interested parties.

WQ-2: By 2020, develop and meet water quality criteria that are protective of living resources for dissolved oxygen, nutrients, chlorophyll a, turbidity, salinity and other constituents.

- CHNEP continues to support the Coastal Charlotte Harbor Monitoring Network (CCHMN), providing funding and staff support. CCHMN monitoring.
- CHNEP will work with partners to conduct an inclusive Caloosahatchee River water quality summit.

FW-1: Protect, enhance and restore native habitats where physically feasible and within natural variability, including: Submerged aquatic vegetation (SAV); Submerged and intertidal unvegetated bottoms; oyster; mangrove; salt marsh; freshwater wetland; native upland; and water column.

- CHNEP will continue participating in the Southwest Florida Oyster Working Group toward designing, permitting and constructing oyster restoration projects in Charlotte Harbor.
- CHNEP will support the submerged aquatic vegetation (SAV) working group and the restoration of the Caloosahatchee River SAV.
- The CHNEP will work with partners to complete and implement restoration projects identified in the Habitat Restoration Needs Plan Update.

HA-1: By 2020, identify, establish and maintain a more natural seasonal variation (annual hydrograph) in freshwater flows.

- CHNEP will continue working with partners to fund integrated ground and surface water models to improve decision-making.

HA-2: By 2020, restore, enhance and improve where practical historic watershed boundaries and natural hydrology for watersheds within the CHNEP study area, with special attention to Outstanding Florida Waters and Class I water bodies.

- CHNEP worked with partners to design and attract funding to significant hydrologic restoration projects including: Charlotte Harbor Flatwoods Initiative, the South Lee County Watershed Initiative,

Vital Tidal Creeks, C-43 Reservoir, Alligator Creek Watershed (Sarasota) and Lehigh Watershed Initiative.

HA-3: By 2020, enhance and improve to more natural hydrologic conditions water bodies affected by artificially created structures throughout the CHNEP study Area.

- CHNEP will continue working with Polk County to conduct shoreline restoration on Lake Hancock.
- CHNEP will continue participating in Western Everglades restoration through project review, meeting participation and coordination of related planning and restoration efforts.

SG-1: By 2025, a minimum of 75 percent of the all residents will have recalled attending a watershed event, reading watershed material or hearing watershed./estuary information on radio, or TV. A minimum of 50 percent of all residents in the CHNEP study area can recognize estuaries and watersheds. A minimum of 10 percent of all residents will be able to claim personal actions that protect the estuaries and watersheds.

- CHNEP will host the Charlotte Harbor Nature Festival at Laishley Park, Punta Gorda.
- CHNEP will publish the 2019 Calendar and four issues of Harbor Happenings are distributed throughout the study area and to the part-time residents outside the area.
- CHNEP will continue to support projects that engage citizens through micro-grants and Public Outreach Grants.
- CHNEP will maintain a presence on social media and its website www.chnep.org
- CHNEP will continue to support Watershed Education Training, Ponds, Lakes and Neighborhoods (WETPLAN) program to assist neighborhood groups with stormwater pond management.
- The Adventures in the Charlotte Harbor Watershed book will be converted into an interactive on-line publication accessible to teachers, students and the public.
- CHNEP will conduct a Florida-friendly fishing workshop in conjunction with the Arcadia All-Florida Championship Rodeo.

SG-2: By 2020, the CHNEP will expand its role as a recognized resource to elected officials or their agents from local, state and federal government for policy advice." CHNEP continued to implement its advocacy and review procedures by reviewing and providing comments on critical projects. CHNEP continued working with local governments to address climate change resiliency.

- The CHNEP will complete the CCMP Revision, incorporating the climate change vulnerability assessment addressing how identified climate stressors may affect achieving CCMP goals.
- The CHNEP will complete an analysis of habitat resiliency to climate change utilizing existing data sets and coordinating with state, regional and local partners to inform restoration planning.

SG-3: Through 2020, the CHNEP long-term monitoring strategy and data management strategy will continue and be enhanced. The resulting internet-based Water Atlas will be maintained systematically.

- CHNEP will fund the Water Atlas and expand its use for recording, storing and analyzing data collected throughout the study area.
- CHNEP will work with our partners to develop a seagrass information page on the Water Atlas.

Budget Overview

Table 1: Fiscal Year 2019 Proposed Budget

Proposed Budget for Fiscal Year 2019		
Charlotte Harbor National Estuary Program		
<i>(Federal Fiscal Year 2018)</i>		
		2018-2019
Revenue		
Federal (programmatic 320 funds)		600,000
Partner Contributions (Local)		122,000
Technical Project Local		148,650
Partner Contributions (District)		272,770
Grants (Non-Federal)		55,000
In Kind Services		1,580
Total Revenue		\$ 1,200,000
Operating Expenditures		
Personnel		412,435
ANEP Membership		4,500
Travel, Conferences		25,000
Outreach - printings, grants, events		154,052
Research and Restoration Contracts		437,407
Office Rental		3,425
Computer/IT		17,380
Administrative Fee		86,465
Communications		2,600
Office Supplies and Materials/Postage		2,500
Promotional/Meeting Support		2,500
Reserves		51,736
Total Operating Expenditures		\$ 1,200,000

Budget Details

Table 2: FY 2019 Work Plan Budget

Task #	Task	Personnel	Fringe	Travel	Other	Total
1	Mgmt. Conference	\$171,304	\$58,135	\$25,000	\$114,870	\$369,309
2	Outreach	\$44,311	\$14,157		\$154,052	\$212,520
3	Research	\$8,475	\$3,502		\$149,662	\$161,639
4	Restoration	\$71,683	\$24,002		\$287,555	\$383,240
5	Legislation	\$12,852	\$4,014		\$4,500	\$21,366
Total		\$308,625	\$103,810	\$25,000	\$714,449	\$1,148,074

Table 3: FY 2019 Work Plan Funding Sources

Sub-Task #	Sub-Task	Federal	FDEP	SWFWMD	Peace Manasota Water	SFWMD & Charlotte Co.	Grants	Local	Total
1	Mgmt. Conference	\$351,106		\$8,030	\$3,500		\$5,000		\$375,131
2	Outreach	\$113,418	\$26,439				\$5,000	\$100,634	\$245,491
3	Research	\$89,533	\$4,124	\$69,855					\$151,017
4	Restoration	\$45,943	\$58,707	\$52,115		\$198,650	\$50,000		\$405,415
5	Legislation							\$21,366	\$21,366
(rounded)		\$600,000	\$89,270	\$130,000	\$3,500	\$198,650	\$60,000	\$122,000	\$1,203,420

Table 4: FY 2019 EPA Cooperative Agreement Budget

Task #	Task	Personnel	Fringe	Travel	Other	Total
1	Mgmt. Conference	\$165,339	\$55,920	\$25,000	\$104,847	\$351,106
2	Outreach	\$25,569	\$6,297		\$81,552	\$113,418
3	Research	\$3,540	\$1,331		\$84,662	\$89,533
4	Restoration	\$16,059	\$5,884		\$24,000	\$45,943
5	Local					
	In-Kind				\$600,000	\$600,000
Total		\$210,507	\$69,432	\$25,000	\$895,061	\$1,200,000

Table 5: Charlotte Harbor NEP FY2019 Cooperative Funding Table

Funding Source	Amount	Change from FY18	Type
Federal:			
Section 320 Funding 2018 – 2019	\$600,000	(\$32,000)	Clean Water Act, Section 320
Total Federal	\$600,000		
Non-Federal:			
Sarasota County	\$25,000	0	County Appropriation
Charlotte County	\$15,000	0	County Appropriation
Charlotte County Restoration Project	\$148,650	\$148,650	County Appropriation
Lee County	\$25,000	\$10,000	County Appropriation
Polk County	\$15,000	0	County Appropriation
Manatee County	\$5,000	0	County Appropriation
Hardee County	\$500	\$500	County Appropriation
DeSoto County	\$500	\$500	County Appropriation
City of Cape Coral	\$7,500	0	City Appropriation
City of Fort Myers	\$5,000	0	City Appropriation
City of Punta Gorda	\$5,000	0	City Appropriation
City of Sanibel	\$2,500	0	City Appropriation
City of Bonita Springs	\$2,500	0	City Appropriation
City of Fort Myers Beach	\$2,500	0	City Appropriation
City of Venice	\$2,500	0	City Appropriation
City of North Port	\$1,000	0	City Appropriation
City of Winter Haven	\$1,500	0	City Appropriation
Village of Estero	\$5000	0	Village Appropriation
City of Arcadia	\$500	0	City Appropriation
City of Bartow	\$500	\$500	City Appropriation
Total Local Government	\$270,650	\$160,150	(CASH MATCH)
DEP	\$75,000	0	District Appropriation
SFWMD	\$50,000	\$50,000	District Appropriation
SWFWMD	\$130,000	0	District Appropriation
Peace Manasota Water Supply Authority	\$3,500	0	District Appropriation
FDEP CPI Seagrass Gardening (FY18)	\$14,270	0	District Appropriation
Total District	\$272,770	\$50,000	(CASH MATCH)
Mosaic Company Foundation	\$50,000	0	Grant
Charlotte County MAC	\$5,000	\$5,000	Grant
City of Punta Gorda Climate Change Grant	\$5,000	\$5,000	Grant
Total Grants	\$60,000	\$10,000	(CASH MATCH)
(CASH MATCH)	\$603,420		
Non-Federal Match Requirement	\$600,000		
TOTAL COOPERATIVE AGREEMENT	\$1,203,420	\$193,150	

Table 6: Completed FY2018 Travel

Date	Purpose	# Travelers	Location	Length of Stay	Travel Mode	Reg. Fee	Actual Travel Cost
Nov. 2-5, 2017	EPA Tech Transfer	2	Boston, MA	4 days	Air/ Train	\$85	\$1,826.07
Nov. 5-9, 2017	CERF	1	Providence RI	4 days	Air	\$655	\$1,696.41
Feb. 20-22, 2018	NEP Directors Mtg	1	Tallahassee, FL	3 days	Auto	\$30	\$519.17
Apr. 23, 2018	AWRA	1	Orlando, FL	1 day	Auto	\$425	\$547.21
March 12-15, 2018	NEP/EPA Spring Mtg.	2	Washington, DC	4 days	Air	\$91	\$2,699.08
Apr 25-27, 2018	SEC'18 Env Summit	1	Sarasota, FL	3 days	Auto	\$42	\$340
June 11-14, 2018	GOMA	3	St. Petersburg, FL	4 days	Auto	\$300	\$1,397.49
July 15-17, 2018	Congressional Estuary Caucus	1	Washington, DC	3 days	Air	\$0	\$880.30
FY 18	Local Travel/Meetings	4	Various	<1 day	Auto	\$211	\$6,264.24
			Subtotal			\$1,839	
			Total				\$18,008.97

Table 7: Projected FY2019 Travel

Date	Purpose	# Staff	Location	Length of Stay	Travel Mode	Reg. Fee	Estimated Travel Cost
Oct. 3-5, 2018	EPA Tech Transfer	1	San Fran., CA	4	Air	\$400	\$2,264
Dec. 2018	RAE/Coastal States Organization	2	Long Beach, CA	6	Air	\$585	\$5,150
January, 2019	Everglades Coalition	1	Florida	3	Auto	\$355	\$1,031
Feb. 2019	AWRA	1	Fort Myers, FL	1	Auto	\$75	\$25
Spring 2019	NEP/EPA Spring Mtg.	3	Washington, DC	4	Air	\$300	\$3,224
Spring 2019	GOMA	1	Miss/Ala.	4 days	Air	\$100	\$1,845
Spring 2019	PFLCC/estuarine	1	Florida	3	Auto	\$0	\$752
Summer 2019	NEP Program Evaluation for Bay Foundation	1	Santa Monica, CA	4 days	Air	\$0	\$3,112
FY 19	Local Travel/Meetings	4	Various	<1 day	Auto	\$300	\$5,482
			Subtotal			\$2,115	\$22,885
			Total				\$25,000

Table 8: Outreach and Education Projects

FY	Code	Title	Amount
2019	CH2AST	CHNEP Special Projects	\$4,552
2019	CH2MIC	CHNEP Micro-grants	\$10,000
2019	CH2POG	CHNEP Public Outreach Grants	\$20,000
2019	CH2ADV	CHNEP Adventures in the Charlotte Harbor Watershed (Manatee)	\$5,000
2019	CH2MAC	CHNEP Adventures in the Charlotte Harbor Watershed	\$5,000
2019	CH2CAL	CHNEP Calendar (5K Mosaic)	\$25,000
2019	CH2CAS	CHNEP Calendar support	\$5,000
2019	CH2COL	CHNEP collateral, etc. + posters	\$6,000
2019	CH2HH	CHNEP Harbor Happenings	\$18,000
2019	CH2TAR	CHNEP Target audience programs	\$16,500
2019	CH2NF	CHNEP Charlotte Harbor Nature Festival	\$7,500
2019	CH2SPO	CHNEP Sponsorships	\$6,500
2019	CH2CMP	CCMP Revision Project Phase II	\$25,000
		Total FY2019	\$154,052

Table 9: FY2019 Technical Projects Funding Table

Fiscal Year	Code	Funder	Project Title	Amount
2016	CH4LH	Mosaic	CHNEP Restoration Project - Lake Hancock	\$40,000
2016	CH4HRN	SWFWMD	CHNEP Habitat Restoration Needs Phase I	\$40,000
Remaining Carry-over from FY16 =				\$80,000
2017	CH4HRN	Mosaic	CHNEP Habitat Restoration Needs Phase I	\$33,349
2017	CH3WA	TBD ^M	Warm Mineral Springs Run Restoration	\$6,651
2017	CH4HRN	SWFWMD	CHNEP Habitat Restoration Needs Phase I	\$40,000
Remaining Carry-over from FY17 =				\$80,000
2018	CH3SGG	FDEP	CHNEP Citizen Seagrass Gardening	\$14,270
2018	CH4LH	SWFWMD	CHNEP Restoration Project- Lake Hancock	\$25,000
2018	CH4LH	Mosaic	CHNEP Restoration Project- Lake Hancock	\$23,490
2018	CH3WA	TBD ^M	Warm Mineral Springs Run Restoration	\$16,510
Remaining Carry-over from FY18 =				\$79,270
2019	CH3CMN	SWFWMD	CHNEP CCHMN-Upper Charlotte Harbor	\$65,000
2019	CH3LCH	EPA	CHNEP CCHMN-Lower Charlotte Harbor	\$11,000
2019	CH3LCH	EPA	CHNEP CCHMN assistance (contractor)	\$1,572
2019	CH3WA	EPA	CHNEP Water Atlas Maintenance	\$62,000
2019	CH3WA	EPA	CHNEP Water Atlas Study Area Expansion	\$7,995
2019	CH3CC	FDEP	City of Punta Gorda Climate Change Plan	\$2,000
2019	CH3YP	Char. Co.	Charlotte Harbor Flatwoods Initiative Geotech/Surveying - Yucca Pens Unit	\$148,650
2019	CH3TBD	TBD ^{SF}	S. Lee Co. Watershed Initiative Modeling	\$50,000
2019	CH4TBD	TBD ^M	Warm Mineral Springs Run Restoration	\$40,000
2019	CH4TBD	TBD ^{SWF}	Native Planting at Wildflower Preserve	\$25,190
2019	CH4TBD	EPA	CHNEP EPA Funded Project	\$24,000
Total FY19 =				\$437,407
2019	CH3TBD	TBD ^{NCE}	Quantifying WQ Benefits of SAV Restoration	\$45,000
2019	CH3TBD	TBD ^{NCE}	CHNEP Economic Valuation Study	\$200,000
2019	CH3TBD	TBD ^{NCE}	S. Lee Co. Watershed Initiative Modeling	\$200,000
2019	CH4HRN	TBD ^{NCE}	CHNEP Habitat Restoration Needs Phase II- adding Glades & Hendry Counties	\$80,586
2019	CH4TBD	TBD ^{NCE}	CHNEP Cyanobacteria Rapid Response	\$65,000
2019	CH4TBD	TBD ^{NCE}	Gateway to Myakka Marsh Restoration	\$28,500
2019	CH4TBD	TBD ^{NCE}	Alligator Creek Stream Restoration Project	\$130,900
2019	CH4TBD	TBD ^{NCE}	Warm Mineral Springs Run Restoration Bal.	\$1,839
Total NCE =				\$751,825

TBD^M = potential funding to be negotiated, Mosaic

TBD^{SF} = potential funding to be negotiated, SWFWMD

TBD^{SWF} = potential funding to be negotiated, SWFWMD

TBD^{NCE} = potential funding, EPA No Cost Extension (NCE). NCE projects will be completed by September 30, 2021.

Table 10: FY2019 SWFWMD Funding by Task

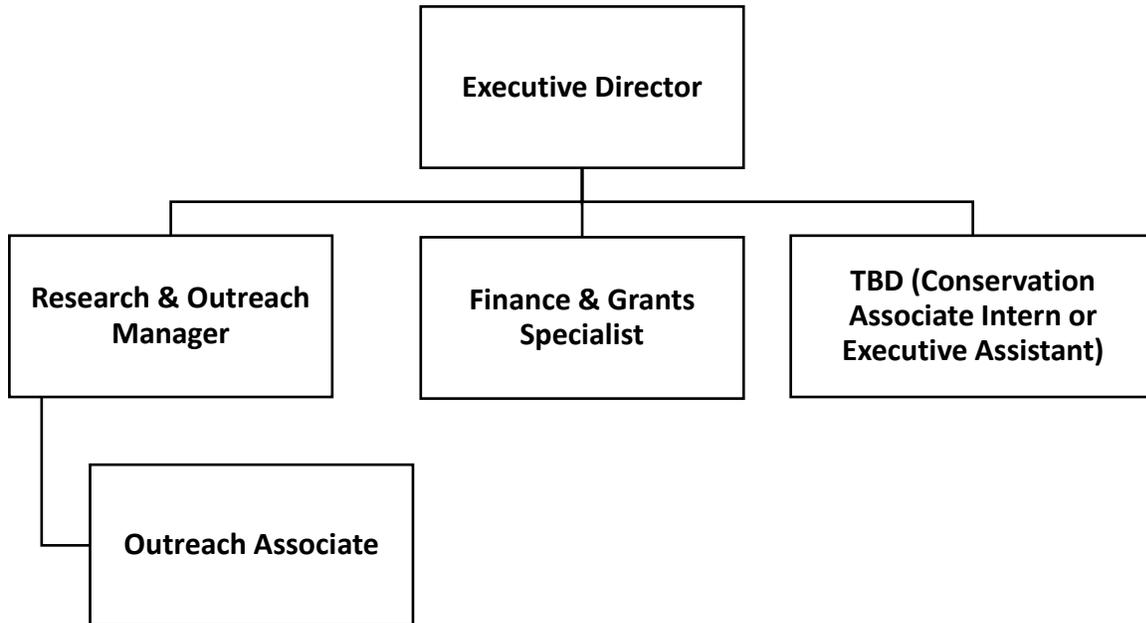
Task	Project	SWFWMD	Project Total
1 (Work Plan Task 3.1)	Coastal Charlotte Harbor Monitoring Network	\$65,000	\$65,000
2 (Work Plan Task 4.4)	Restoration Project	\$25,000	\$25,000
3 (Work Plan Tasks 1, 3 and 4)	Staff Support	\$40,000	\$80,000
Totals:		\$130,000	\$170,000

Table 11: FY2019 Budgeted Administrative Costs

Fiscal Year	Code	Funder	Expense Title	Amount
2019	CHEPA1	EPA	CHNEP Pre-employment expenses	\$310
2019	CH1COM	EPA	CHNEP Communications	\$2,600
2019	CH1MAT	EPA	CHNEP Materials and Supplies	\$2,500
2019	CH1OAD	EPA	CHNEP Overhead Administrative Charges	\$86,465
2019	CH1OCP	EPA	CHNEP Overhead Computer	\$17,830
2019	CH1ORN	EPA	CHNEP Overhead Office Rent	\$3,425
2019	CH1PRO	Local	CHNEP Promotional Activities-Meeting Support	\$0
2019	CHFOOD	Local	CHNEP Meeting Support	\$2,500
2019	CH1SER	Local	CHNEP Unanticipated Contractual Costs	\$3,500
2019	CH5ANEP	Local	CHNEP ANEP Dues	\$4,500
Total FY18 =				\$123,630

Staff and their Official Responsibilities

The FY'19 CHNEP staffing plan includes up the five full-time professional positions.



Executive Director (Jennifer Hecker): Responsible for overall program management including cultivating and strengthening partnerships, soliciting funding for the program and projects, and is the liaison to Policy Committee.

Research and Outreach Specialist (Nicole Iadevaia): Responsible for research and restoration initiatives, public engagement and education initiatives, and is the staff liaison to Technical Advisory Committees.

Finance and Grants Specialist (Danielle Berhel): Responsible for finance, grants and contracts administration, and is the liaison to the Management Committee.

Outreach Associate: Responsible for assisting public engagement and education initiatives, volunteer management, and is the staff liaison to the Citizens Advisory Committee. This position is presently filled by intern, eventually to be converted to regular position.

Executive Assistant or Conservation Associate Intern: Office support, time tracking, procurement assistance, public engagement, events and publications, meeting support, correspondence, social media.

New and Ongoing Projects

CHNEP projects are organized according to task. There are five tasks, as follows:

Task 1: Management Conference

- 1.1 CCMP Revision Phase I & II
- 1.2 Micro-Grants
- 1.3 Public Outreach Grants
- 1.4 Sponsorships
- 1.5 Program Office Collateral / Reprints

Task 2: Public Engagement

- 2.1 2019 Calendar and four issues of Harbor Happenings
- 2.2 *Adventures in the Charlotte Harbor Watershed* E-learning Module Development
- 2.3 Public Engagement – Targeted Projects and Events

Task 3: Research Coordination

- 3.1 Charlotte Harbor Water Quality and Seagrass Monitoring and Mapping Programs
- 3.2 CHNEP Water Atlas Maintenance
- 3.3 CHNEP Water Atlas Study Area Expansion
- 3.4 CHNEP Economic Valuation Study
- 3.5 South Lee County Watershed Initiative Hydrological Modeling Project
- 3.6 City of Punta Gorda Climate Change Adaptation Plan
- 3.7 Charlotte Harbor Flatwoods Initiative Geotech/Surveying - Yucca Pens Unit
- 3.8 Quantifying the Water Quality Benefits of Submerged Aquatic Vegetation (SAV) Restoration

Task 4: Watershed Coordination

- 4.1 Habitat Restoration Needs Phase I & II
- 4.2 Habitat Resiliency to Climate Change
- 4.3 Oyster Restoration in Charlotte Harbor
- 4.4 Submerged Aquatic Vegetation Restoration/Caloosahatchee Citizen Seagrass Gardening
- 4.5 Lake Hancock Circle B Bar Reserve Shoreline Restoration Project
- 4.6 Warm Mineral Springs Run Restoration
- 4.7 Gateway to Myakka River State Park - Marsh Restoration & Education
- 4.8 CHNEP Caloosahatchee Cyanobacteria Rapid Response Pilot Program
- 4.9 Native Upland Plantings at Wildflower Preserve
- 4.10 Alligator Creek Stream Restoration Project
- 4.11 Restoration Project TBD

Task 5: Policymaker Education

CWA CORE PROGRAM GOALS TASKS & PROJECTS ARE DESIGNED TO ADDRESS:

- 1) Establishing water quality standards
- 2) Identifying polluted waters and developing restoration plans
- 3) Permitting discharges of pollutants from point
- 4) Addressing diffuse, nonpoint sources of pollution
- 5) Protecting wetlands
- 6) Protecting coastal waters through the National Estuary Program
- 7) Protecting large aquatic ecosystems

Task 1 Management Conference, Program Planning, Administration, Finance, Operations

Work Plan Objective: Provide committee structure that supports the implementation of the CCMP; support administration of the CHNEP; ensure compliance with grant and agreement requirements as awardee and awarder; and seek additional funding support for identified projects.

Description: The CHNEP Program Office provides staff support to the Management Conference, furnishes operations and finance support, ensures compliance with Host Agency procedures, secures funding from partners, and assists partners seeking grants and contracts to implement the CCMP.

CCMP Elements Implemented: All

Outputs/Deliverables, Milestones

- Management Conference committee meetings
- Management Conference adoption of Annual Work Plan, no later than June 1, 2019
- Evidence of extending CHNEP partnership, by September 30, 2019
- GPRA Reporting through EPA's NEPORT app, by September 14, 2019
- Administration of Program Office operations and finances, ongoing
- Collaborate with partners on CCMP implementation, ongoing
- Comply with Host Agency finance and procurement requirements, ongoing
- Initiate compilation of materials for Performance Evaluation
- Funding opportunities posted to CHNEP website, ongoing

320 Budget: \$221,259

FY 19 Budget:

Staff:

320 Funds: \$221,259

SWFWMD: \$8,030

Staff: \$221,259

Travel: \$25,000

Admin Costs: \$117,342

Estimated Total Budget: \$363,601

Outcomes

- Fully informed and engaged CHNEP Management Conference with members participating in Committee, subcommittee and work group meetings
- CCMP Implemented
- Funding obtained to sustain the CHNEP Program Office and accomplish annual Work Plan
- CHNEP remains eligible for Federal, State and non-profit grants and funding
- Compliance with Florida Government in the Sunshine laws
- Increased understanding of CHNEP program office and NEP mission by partners
- Commitment from partners to fund CHNEP
- Funding opportunities and assistance provided to partners

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program and (7) protecting large aquatic ecosystems.

Task 1.1 Ongoing Project: CCMP Revision Phase I & II

Phase I:

Project Objective: To complete the CCMP revision, including initiation of updating the strategic plans.

Project Description: The CHNEP is encouraged by U.S. EPA to revise its CCMP at least once every ten years. The CHNEP has adopted a five year cycle for assessing the CCMP and amending the document. In addition, the CHNEP has developed two amendment processes: one for minor amendments and one for major updates.

Major revision of the CCMP began in FY2018. The funding for the contractor was included in the FY2018 budget. In FY 2019, program staff will continue working with the Management Conference to revise the four required Strategic Plans and begin implementing the revised CCMP.

CCMP Elements Implemented: All

Outputs/Deliverables

- Approved Final Revised CCMP interactive electronic document and pdf
- Monitoring Approach, revision
- Finance Strategy, revision initiated
- Habitat Protection/Restoration Strategy, completed
- Communication/Outreach Strategy, initiated

Estimated Milestones

- CCMP revision reviewed and approved by Management Conference by May 2019
- Habitat Protection/Restoration Strategy by September 2019
- Monitoring Approach, revision initiated
- Finance Strategy, revision initiated
- Communication/Outreach Strategy, initiated

320 Budget: Staff time

FY 19 Budget:

- **320 Funds:** Staff time
- **SWFWMD** Staff time

Estimated Total Budget: \$52,000 (obligated in FY2018) + Staff time

Outcomes

- CCMP consistent with EPA Guidelines
- Identification of Management Conference contributions towards CCMP implementation.
- CCMP relevant to partner needs including: budget, Comprehensive Plans and capital improvement plans
- Increased collaboration among Management Conference partners
- Review and revision of Strategic Plans initiated

CWA Core Program addressed: (2) identifying polluted waters and developing restoration, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, and (6) protecting coastal waters through the National Estuary Program.

Phase II:

Project Objective: The objectives to support the project purpose of completing the CHNEP CCMP Revision include that it:

- Conforms with current NEP Funding Guidance
- Conforms with current NEP CCMP Revision and Update Guidelines (5-3-2016)
- Conforms to a style and design that are easily accessible and understandable to the public

Project Description: Graphic design and layout of the Revised CCMP is required to complete publication and distribution of the CCMP. A Public Summary version of the Revised CCMP is also needed for distribution. US EPA Guidance on CCMP Revisions also requires four supplemental documents to be completed within 3 years of the final Revised CCMP: Monitoring Strategy, Finance Strategy, Habitat Protection/Restoration Strategy, and Communication/Outreach Strategy. Completion of the Habitat Protection/Restoration Strategy is currently under contract with ESA (Habitat Restoration Needs Plan (HRN) and Habitat Resiliency with Climate Change (HRCC)).

CCMP Elements Implemented: All

Outputs/Deliverables

- Complete the graphic design and layout of the Final Draft CCMP Revision
- Draft of the Public Summary version of the Revised CCMP
- Draft of three CCMP Strategy documents
- Present drafts to Management Conference for approval

Estimated Milestones

320 Budget: Staff time

FY 19 Budget: \$25,000 + Staff time

- **320 Funds:** \$25,000 + Staff time
- **SWFWMD:** Staff time

Estimated Total Budget: \$25,000 + Staff time

Outcomes

- CCMP Revision and all supporting documents completed and published

CWA Core Program addressed: (2) identifying polluted waters and developing restoration, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, and (6) protecting coastal waters through the National Estuary Program.

Task 1.2 Ongoing Project: Micro-Grants

Project Objective: Implementation of CCMP through award of “seed” funding for small, sometimes pilot, projects.

Project Description: The CHNEP offers micro-grants, usually \$500 to \$1,000, to assist others in their efforts to help implement the CCMP. Citizens, organizations, businesses, government agencies, schools, colleges and universities may apply for grants to support projects that occur within the CHNEP study area. Applicants are reimbursed funds once a final report and an invoice for work accomplished are accepted.

CCMP Elements Implemented: All

Outputs/Deliverables

- Outputs vary with project, but all projects submit a final project report as a deliverable.

Estimated Milestones

- All funds awarded, obligated and payments processed by September 30, 2019.

320 Budget: \$0

FY 19 Budget:

Local funds: \$10,000

Estimated Total Budget: \$10,000

Outcomes

- Further partnerships to protect and restore the greater Charlotte Harbor estuarine system and watershed
- Engage citizens in opportunities to be involved in research, monitoring, and restoration activities
- Expand CHNEP outreach and education through citizen actions
- Protect the environment
- Solve local, small scale issues of concern identified in the CCMP

CWA Core Program addressed: (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, and (6) protecting coastal waters through the National Estuary Program.

Task 1.3 Ongoing Project: Public Outreach Grants

Project Objective: Implementation of CCMP through award of funding for small projects.

Project Description: The CHNEP offers Public Outreach Grants (POGs) once a year. The maximum grant award is capped at \$5,000 but most applications are funded in the \$2,500 to \$3,000 range. Any citizen, organization, business, government agency, school, college or university may apply for a Public Outreach Grant but the project must occur within the greater Charlotte Harbor watershed. In this document, the word Applicant is used to refer to the individual, organization, business, government agency, school, college or university that is submitting the Public Outreach Grant application. An Applicant may submit more than one application but each must be independent and complete on its own.

CCMP Elements Implemented: All

Outputs/Deliverables

- Outputs vary with project, but all projects submit a final project report as a deliverable

Estimated Milestones

- All proposals reviewed and recommendations for funding completed by November 30, 2018
- All project awards determined by December 30, 2018
- All funds obligated by January 31, 2019
- All payments processed by December 30, 2019
- FY2020 request for proposal approved by Policy Committee by May 31, 2018

320 Budget: \$0

FY 19 Budget:

Local funds: \$20,000

Estimated Total Budget: \$20,000

Outcomes

- Further partnerships to protect and restore the greater Charlotte Harbor estuarine system and watershed
- Engage citizens in opportunities to be involved in research, monitoring, and restoration activities
- Expand CHNEP outreach and education through citizen actions
- Protect the environment
- Solve local, small scale issues of concern identified in the CCMP

CWA Core Program addressed: (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, and (6) protecting coastal waters through the National Estuary Program.

Task 1.4 Ongoing Project: Sponsorships

Project Objective: Implementation of CCMP through support of conferences, workshops, and events.

Project Description: The CHNEP receives requests to sponsor conference, workshops, symposia, etc., that implement the CCMP. In prior budgets these sponsorships were supported through Micro-Grant funds.

CCMP Elements Implemented: All

Outputs/Deliverables

- CHNEP acknowledged as event sponsor, with logo on event materials

Estimated Milestones

- All funds awarded, obligated and payments processed by September 30, 2019

320 Budget: \$6,500

FY 19 Budget:

320 Funds: \$6,500

Estimated Total Budget: \$6,500

Outcomes

- Further partnerships to protect and restore the greater Charlotte Harbor estuarine system and watershed
- Engage scientists, researchers, stakeholders and decisions makers in events that educate and inform about research, monitoring, and restoration activities relevant to the CHNEP
- Inform general public, potential partners, targeted audience about CHNEP's mission

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 1.5 Ongoing Project: Program Office Collateral/Reprints

Project Objective: To provide outward looking Program Office information, materials to partners, decision makers and interested public.

Project Description: The CHNEP Program office utilizes letterhead, labels, and other support materials on a day to day basis. In addition, the CHNEP participates in conferences, festivals, and events as an exhibitor. This task supports the development and purchase of the needed materials and supplies.

CCMP Elements Implemented: All

Outputs/Deliverables

- Uniform branding of CHNEP products and materials, ongoing
- Reprints of CHNEP posters published in Harbor Happenings

Estimated Milestones

- CHNEP branded materials available to staff and partners as needed

320 Budget: \$6,000

FY 19 Budget:

320 Funds: \$6,000

Estimated Total Budget: \$6,000

Outcomes

- Expand CHNEP partnerships
- Engage decision-makers and citizens in CHNEP activities
- Protect the environment

CWA Core Program addressed: (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, and (6) protecting coastal waters through the National Estuary Program.

Task 2 Public Engagement

Work Plan Objective: Provide essential ongoing communications so CHNEP can address specific requirements and issues associated with the CCMP; support CHNEP Management Conference and partners' public outreach initiatives to further the CCMP.

Description: Tools used to provide continuous support of the overall program include website, social media and media. They range from events (workshops, festivals and trainings), to publications (magazines, calendars and books), to videos and target audience initiatives.

The website, www.CHNEP.org, provides information to the general public, technical community and Management Conference including technical and public engagement information produced or sponsored/supported by the Program.

Social media tools currently used include:

- YouTube. More than 400 videos and talks (PDF files with linked with audio) are posted.
- EventBrite. CHNEP events requiring registration are promoted on this site.
- Tumblr blog. Weekly online posts since 2013 spread awareness on the importance of the estuary system and its inhabitants.
- FaceBook. Weekly posts promote CHNEP projects.
- Constant Contact. Notices of Management Conference meetings and events and requests for document review and comment are sent to subscribers.
- CHNEP website. The CHNEP program office utilizes its website to provide current information about projects, meetings, grant opportunities, and volunteer activities.
- Water Atlas. The water Atlas publishes a calendar that lists events open to the public.

This task also includes assistance required to accomplish diverse outreach tasks.

CCMP Elements Implemented: All but those that specially call for an outreach component include SG-A to SG-S, WQ-K, WQ-L, WQ-M, HA-P, FW-H, FW-I, FW-J, FW-K, FW-N, FW-O and FW-P.

Partners and their roles

The CHNEP conducts all projects in cooperation with and in support of its partners:

Outputs

- Continuously update website for Management Conference meetings and activities, promote projects and serve as a repository of all materials produced by the CHNEP
- Weekly posts on social media via Facebook
- Use EventBrite to promote and handle registrations for events
- Post videos and talks (PDF with audio) on YouTube as completed
- Prepare and distribute email messages via Constant Contact to announce Management Conference meetings and promote CHNEP projects
- Work with local media to promote one story a month
- Citizen science workshops and events

Estimated Milestones

- 2019 Calendar will be mailed by November 17, 2018
- CHNEP staff will assist with a regional Nature Festival
- CHNEP will update the website weekly
- CHNEP will coordinate with local media regularly

320 Budget: \$31,866

FY 19 Budget:

Staff:

320 Funds: \$31,866

FDEP Funds: \$26,439

Estimated Total Budget: \$58,305

Outcomes

- A public educated and engaged about the CHNEP and the natural environment of southwest Florida. Many of the items help people become engaged by enjoying the environment through outdoor experiences, by asking them to be citizen scientists and by engaging in events, such as the Watershed Summits and the Charlotte Harbor Nature Festival, and CHNEP and our partners' programs that help implement the CCMP. Many people have volunteered that they have changed their behavior as a result in learning more about an issue.
- Continuously introduce the CHNEP to new populations and new residents through events, publications and social media
- Establish new partnerships and strengthen existing partnerships through funding opportunities for projects that implement the CCMP
- Residents and seasonal visitors within CHNEP study area develop a sense of stewardship for the natural environment within the CHNEP study area
- Increase the number of partners who conduct projects that help fulfill the CCMP

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 2.1 Ongoing Project: 2019 Calendar and four issues of Harbor Happenings

Project Objective: Educate, motivate and engage the public and partners through contributing articles and by donating up to three images that show the beauty and diversity of the native, natural environment.

Project Description: The CHNEP designs, publishes and distributes an annual calendar that showcases images donated by citizens that depict the beauty and diversity of the native, natural environment. The calendar encourages people to learn about and become involved in the CHNEP. With permission, the images are used in other ways by CHNEP, including weekly Tumblr posts, in *Harbor Happenings* and on the www.CHNEP.org website.

The CHNEP publishes the quarterly magazine *Harbor Happenings* to report on environmental “happenings,” including watershed issues, events and updates on Program activities and progress towards implementing the CCMP. One issue is now incorporated into the calendar.

CCMP Elements Implemented: SG-D, SG-B, SG-C, SG-I, SG-J, HA-P, FW-P, WQ-K, WQ-L, WQ-M, HA-P, FW-J, FW-N, and FW-P.

Partners and their roles: Articles and images are donated by interested citizens and Management Conference partners. The images are reviewed and selected for publication by the CAC. The calendars are distributed in multiple ways, including U.S. Mail to individual citizens and in bulk to 200+ partners that volunteer to redistribute in their area and at events.

Outputs/Deliverables: Four issues of *Harbor Happenings* (one of which is included in the calendar) and annual calendar featuring donated images that depict the beauty and diversity of the native, natural environment and highlighting the CHNEP and its programs.

Estimated Milestones

- *Harbor Happenings* printed and distributed 4 times a year: January, April, July, and November
- Receive calendar entries by July 15. Images reviewed by CAC in August
- The calendar is written, designed and reviewed by October
- Requests for calendars are due by Sept. 15
- The calendar published and distributed by November

320 Budget: \$47,552

FY 19 Budget:

320 Funds:	\$47,552
Grant Funds:	\$5,000

Estimated Total Budget: \$52,552

Outcomes: The interested public and CHNEP partners all become more knowledgeable and engaged in the stewardship of the natural environment in which they live. CHNEP projects are featured.

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 2.2 Ongoing Project: CHNEP Adventures in the Charlotte Harbor Watershed

Project Objective: Help students better understand the natural environment of southwest Florida so they can become better stewards of it.

Project Description: The CHNEP published a 64-page book *Adventures in the Charlotte Harbor Watershed: A Story of Four Animals and Their Neighborhoods*. In this 64-page book readers learn about the environment of southwest Florida through the adventures of a yellow-crowned night-heron on the Caloosahatchee River, an alligator on the Peace River, an otter on the Myakka River and a mullet in the estuaries. CHNEP has received a grant to assist with development of an interactive online version of the book with input from educators. From 2008 to 2017, the book has been given to the school districts in the counties that participate in the CHNEP for distribution to students.

CCMP Elements Implemented: SG-H, SG-D, and SG-C.

Partners and their roles: The project included Carol Mahler, author; Rachel Renne, illustrator; and 12 people who wrote sidebars and reviewed drafts. All seven school districts in the counties that participate in the CHNEP distribute the books to their students at a single grade level (third to fifth, their choice). Books have also been distributed to private schools, home school associations and summer camps. Educators have created resources and curriculum, and Lee County School District created read-a-long videos.

Outputs/Deliverables: An interactive, on-line version of *Adventures in the Charlotte Harbor Watershed*.

Estimated Milestones

- Create interactive, online version by Sept. 30, 2019

320 Budget: \$0

FY 19 Budget:

Charlotte Co. Marine Advisory Committee grant: \$5,000

Manatee County: \$5,000

Estimated Total Budget: \$10,000

Outcomes: School districts, teachers and staff and students all become more knowledgeable and engaged in the stewardship of the natural environment in which they live.

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 2.3 Ongoing Project: Public Engagement - Targeted Projects and Events

Project Objective: Support projects, initiatives, and workshops that educate and engage people about the issues that affect the natural environment of southwest Florida so they become better stewards.

Project Description: Target projects “fill in the gaps” by educating and providing resources to reach specific audiences such as the Watershed Education Training Ponds Lakes and Neighborhoods initiative (www.wetplan.org), and the monthly citizen scientist events initiated in 2018.

Events provide information and activities for various audiences, ranging from citizens to environmental professionals to decisions makers. Events also provide opportunities for partners to network, collaborate and learn about projects and solutions to issues in southwest Florida.

The Charlotte Harbor Nature Festival showcases local environmental agencies, nonprofit organizations and businesses that focus on the natural environment of southwest Florida. Approximately 60 exhibitors participate.

CCMP Elements Implemented: All, and specially: SG-A to SG-S, WQ-K, WQ-L, WQ-M, HA-P, FW-H, FW-I, FW-J, FW-K, FW-N, FW-O, and FW-P.

Partners and their roles: CHNEP Management Conference members, other partners and the public participate in all of these events. Local nonprofit and government partners provide support.

Outputs/Deliverables

- WET PLAN workshop
- Charlotte Harbor Nature Festival
- Workshops
- Targeted projects

Estimated Milestones

- Plan, promote and participate in a regional Nature Festival
- By April 1, 2019, hold at least one WET PLAN workshop
- By Sept. 30, 2019 support projects that are identified after the work plan is approved which help fulfill the CCMP

320 Budget: \$21,500

FY 19 Budget:

320 Funds	\$21,500
Grant:	\$2,500
Estimated Total Budget:	\$24,000

Outcomes

- Increase understanding of how personal actions affect the environment
- Citizens develop a sense of stewardship for the natural environment in the CHNEP study area
- Increase numbers of partners conducting projects that help fulfill the CCMP

CWA Core Program addressed: (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, and (6) protecting coastal waters through the National Estuary Program.

Task 3 Research Coordination

Work Plan Objective: To ensure collection, reporting and access to consistent region-wide, technically sound water quality and biological data throughout the CHNEP Study Area. To identify and resolve gaps in scientific data and emerging research needs through partnerships and innovative research.

Description: CHNEP coordinates the Coastal Charlotte Harbor Monitoring Network (CCHMN) and supports the FDEP Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network (CHEVWQMN) and the Water Management Districts' seagrass aerial mapping projects. CHNEP works with partners to identify and resolve gaps in water quality and biological data, specifically through refinements to the Research Needs Inventory and environmental indicators. An identified data gap in understanding nutrient dynamics in tidal creeks will be addressed by a partnership research project of the three NEPs in southwest FL, with technical and field contributions from CHNEP staff. In addition, CHNEP assists partners with compiling, analyzing, mapping and conveying complex technical information in an understandable manner so it can be used to implement effective resource protection and restoration projects. The resulting data is used to assess resource status and trends, determine TMDLs and Minimum Flows and Levels, and be incorporated into resource management plans such as the Southwest Florida Feasibility Study and the SWFWMD Charlotte Harbor and SFWMD Lower Charlotte Harbor SWIM plans.

CHNEP staff work with USF to revise and update the Water Atlas as needed, and to ensure WQ data is uploaded. In FY2019 CHNEP plans to work with the Aquatic Preserves to design a Water Atlas page that presents the seagrass transect data to the public.

CCMP Elements Implemented: WQ-1, WQ-2, WQ-3, WQ-B, WQ-M, FW-1, FW-A, FW-C, FW-D, FW-P, SG-1, SG-2, SG-3, SG-4, SG-B, SG-D, SG-F, SG-J, SG-K, SG-R, and SG-S.

Partners and Roles

- U.S. Environmental Protection Agency – Support CCHMN
- Southwest Florida Water Management District – Support CCHMN and seagrass aerial mapping.
- South Florida Water Management District – Support seagrass aerial mapping
- Florida Department of Environmental Protection – Support CCHMN, CHEVWQMN, seagrass and rookery monitoring
- Friends of Charlotte Harbor Aquatic Preserves and Estero Bay Buddies – Support CHEVWQMN, oyster restoration, seagrass transect and rookery monitoring
- Charlotte County – Support CCHMN
- Lee County – Support CCHMN
- Florida Fish and Wildlife Conservation Commission – Support CCHMN. Cape Coral – Support CCHMN
- Sarasota County – Support CCHMN, and oyster monitoring

Outputs/Deliverables, Milestones

- Water Atlas: Review and assess uploaded water quality sampling data
- Water Quality Monitoring: Monthly water quality data, quarterly RAMP participation, and CCHMN annual field audits
- Seagrass Monitoring: Annual seagrass data
- Seagrass Aerial Mapping: Biennial and 5 year seagrass aerial mapping
- Data Management: Biannual up-dates of water quality data
- Data Access: Ongoing access to water quality data, graphing and analyses and response to data requests
- Data Analysis and Use: Annual up-dates of water quality contour maps and, and periodic

refinement of Research Needs Inventory and environmental indicators

320 Budget: \$4,871

FY 19 Budget:

Staff:

320 Funds: \$4,871

FDEP Funds: \$4,124

SWFWMD Funds: \$2,928

Estimated Total Budget: \$11,923

Outcomes

- Provide consistent region-wide, technically sound water quality and biological data needed to assess resource status, trends and complex interactions
- Provide access to water quality and seagrass data to partners via CHNEP Water Atlas
- Provide data analyses, maps and graphs to enhance and evaluate protection and restoration efforts
- Increase collaboration of monitoring, mapping and management among resource managers and agencies from throughout the CHNEP Study Area
- The data is used by partners to assess resource conditions, manage resources and implement effective and efficient management programs and restoration projects

CWA Core Program addressed: (1) establishing water quality standards, (2) identifying polluted waters and developing restoration plans, (3) permitting discharges of pollutants from point, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 3.1 Ongoing Project: Charlotte Harbor Water Quality and Seagrass Monitoring Mapping Programs

Project Objective: To ensure collection, reporting and mapping of consistent, technically sound long-term water quality and seagrass data throughout the Charlotte Harbor estuaries and tidal creeks. The resulting data is shared with partners to be used for assessing resource status and trends and implementing effective management programs and restoration projects.

Project Description: CHNEP participates in four coastal water quality and seagrass monitoring and mapping programs. CHNEP coordinates the Coastal Charlotte Harbor Monitoring Network (CCHMN), which is a partnership of agencies that provides monthly water quality data using a probabilistic sampling design. CCHMN field and laboratory partners collect and analyze water samples from 60 randomly selected field sites throughout 10 waterbodies each month, including: Lemon Bay, Cape Haze/Gasparilla Sound, Charlotte Harbor, Pine Island Sound, Matlacha Pass, San Carlos Bay, Estero Bay and the Tidal Myakka, Peace and Caloosahatchee Rivers. Water quality parameters include: depth, clarity, temperature, salinity, dissolved oxygen, pH, conductivity, photosynthetically active radiation (PAR), chlorophyll, color, nitrogen components, phosphorus components, turbidity, suspended solids, and organic Carbon. CHNEP coordination activities for the CCHMN include: developing and updating Standard Operating Procedures and field Quality Assurance plans, conducting annual field audits, hosting annual meetings, participating in quarterly Regional Ambient Monitoring Program (RAMP) quality assurance meetings, providing access to the data through the CHNEP Water Atlas, including data graphing, mapping and reporting, and assisting with field sampling and equipment repair as needed.

CHNEP support activities for the Aquatic Preserves seagrass monitoring include providing access to the data through the CHNEP Water Atlas and assisting with monitoring as needed.

CHNEP support activities for the seagrass aerial mapping including: reviewing draft results and providing maps of the seagrass results for each of the 13 CHNEP estuary sub-basins (strata).

CCMP Elements Implemented: *CCHMN and CHEVWQMN:* Implement Quantifiable Objectives and Priority Actions WQ-1, WQ-2, WQ-3, WQ-B, and WQ-M and support Environmental Indicators WQ-b, WQ-E, and WQ-G; *Seagrass monitoring and mapping:* Implement Quantifiable Objectives and Priority Actions FW-1, FW-A, FW-C, FW-D, and FW-P, and support Environmental Indicators FW-a and FW-d.

Partners and Roles

CCHMN:

Water Quality monitoring support:	\$65,000	SWFWMD
	\$14,667	EPA 320 funds
	In-kind	Charlotte County, Lee County, Cape Coral, FDEP
	In-house	CHNEP Staff (Primary)
RAMP WQ quality assurance:	In-kind	Charlotte County, Lee County, Cape Coral, FDEP, FWRI
	In-house	CHNEP Staff (Primary)

CHEVWQMN:

Water Quality monitoring support:	In-kind	FDEP CHAP, EBAP
	In-kind	Friends of CHAP and EBAP
	In-kind	Charlotte Harbor Environmental Center
<i>Seagrass Transects:</i>	In-kind	FDEP CHAP, EBAP, South District
<i>Seagrass Aerial Mapping:</i>	In-kind	SWFWMD, SFWMD
	In-house	CHNEP Staff

Outputs/Deliverables

- **CCHMN:** Monthly water quality data, annual field audit results, annual meeting, and quarterly RAMP participation
- **CHEVWQMN:** Monthly water quality data and biannual quality assurance results
- **Seagrass Monitoring:** Annual seagrass transect data
- **Seagrass Aerial Mapping:** Seagrass aerials and maps from SWFWMD every 2 years and from SFWMD every 5 years
- **RAMP:** participation in meetings

Estimated Milestones

- **CCHMN and CHEVWQMN:** Water quality samples collected monthly, analyzed within holding periods, reported quarterly and uploaded to state water quality data base within 6 months
- **Seagrass Monitoring:** Seagrass data collected annually and reported within 18 months
- **Seagrass Aerial Mapping:** Seagrass aerial mapping conducted every 2 years by SWFWMD and every 5 years by SFWMD and reported and maps provided within 18 months

320 Budget: \$14,667 + Staff time

FY 19 Budget:

320 Funds: \$14,667
SWFWMD Funds: \$65,000

Estimated Total Budget: \$79,667 + Staff time
~\$253,000 in kind from partners for CCHMN

Outcomes

- Coordinate monthly water quality sampling and assist with seagrass monitoring each year and seagrass aerial mapping every 2-5 years.
- Provide consistent region-wide, technically sound water quality and seagrass data needed to assess resource status, trends and complex interactions.
- Provide consistent region-wide, technically sound water quality and seagrass data for resource management, regulatory programs, including TMDLs and water quality standards, and education of the public and elected officials throughout the CHNEP.
- Provide access to water quality and seagrass data to partners via CHNEP Water Atlas.
- Provide data needed to assess effectiveness of protection and restoration efforts.
- Increase collaboration on monitoring and mapping between SWFWMD and SFWMD.

CWA Core Program addressed: (1) establishing water quality standards, (2) Identifying polluted waters and developing restoration plans, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 3.2 Ongoing Project: CHNEP Water Atlas Maintenance

Project Objective: To ensure continuing access to technical information from throughout the CHNEP Study Area to scientists, resource managers and users, elected officials and the public through a user-friendly web-based tool. The resulting data, maps and graphs are easily accessible for use evaluate resource conditions, answer site and topic specific questions, and convey scientific information in an understandable manner to support effective management programs and restoration projects.

Project Description: CHNEP contracts on an annual basis with the University of South Florida (USF) to maintain and enhance the *CHNEP Water Atlas*. The Water Atlas is a web-based, data management and mapping system that provides historical information, scientific data, water resource maps, resource management actions, volunteer opportunities and current events from throughout the CHNEP Study Area. Tools are available to map, analyze and graph data related to specific locations and topics to assists partners with identifying, prioritizing and implementing projects that address CCMP water quality, habitat, hydrology and stewardship goals. CHNEP support includes maintenance, improvements and enhancements of all the Water Atlas components, including home page design and data base updates. Additionally, approved for FY19 is the addition of the Seagrass Monitoring Page at an additional cost of \$5,000.

CCMP Elements Implemented: SG-1, SG-2, SG-3, SG-4, SG-B, SG-D, SG-F, SG-J, SG-K, SG-R, and SG-S.

Outputs/Deliverables Milestones

- Management of all data sources, web-site hosting, maintenance, up-dates and enhancements, and quarterly and annual reports
- Water quality data uploaded from the state water quality data base every 6 months
- Water quality contour maps up-dated annually
- Water Clarity Report Card updated annually
- Events up-dated as appropriate
- Technical documents posted as they are provided
- Completed webpages with content as described with current, historical and future seagrass coverage data in the CHNEP study area via GIS-based mapping and analyses tool

320 Budget: \$62,000

FY 19 Budget:

320 Funds: \$62,000 + Staff time

Estimated Total Budget: \$62,000

Outcomes

- Water quality data updated every 6 months
- Water quality contour map up-dates annually and Water Clarity Report Card updated annually
- Data entry access provided to volunteer oyster monitors weekly, bi-monthly and every 6 months
- Increased collaboration among resource managers and agencies from throughout the CHNEP area

CWA Core Program addressed: (2) identifying polluted waters and developing restoration plans, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 3.3 New Project: CHNEP Water Atlas Study Area Expansion

Project Objective: To update the CHNEP Water Atlas to include CHNEP Study area boundary eastward to Lake Okeechobee; to add the West and East Caloosahatchee basins and call it the Caloosahatchee River Watershed.

Project Description: The project includes realigning watershed/basin boundaries, the addition of new data sources, database work for adding new water resources and sampling locations, and overhead. Tasks are to update spatial layers, adding features within boundary expansion, update data tables, Water Quality Trends Page, real-time Data Mapper updates, Watershed page updates, and content management.

CCMP Elements Implemented: SG-1, SG-2, SG-3, SG-4, SG-B, SG-D, SG-F, SG-J, SG-K, SG-R, and SG-S.

Outputs/Deliverables Milestones

- All current Water Atlas deliverables within the additional study area footprint

320 Budget: \$7,995

FY 19 Budget:

320 Funds: \$7,995

Estimated Total Budget: \$7,995

Outcomes

- Water quality data updated every 6 months for expansion area
- Water quality contour map up-dates annually and Water Clarity Report Card updated annually for expansion area
- Data entry access provided to volunteer oyster monitors weekly, bi-monthly and every 6 months for expansion area
- Increased collaboration among resource managers and agencies from throughout the CHNEP area – including in new CHNEP expansion area

CWA Core Program addressed: (2) identifying polluted waters and developing restoration plans, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 3.4 New Project: CHNEP Economic Valuation Study

Project Objective: The Coastal and Heartland National Estuary Partnership (CHNEP) desires to contract with a firm with expertise in economic valuation studies to conduct an Economic Valuation Study of the 6,877 square mile CHNEP study area.

Project Description: The focus of the economic valuation analysis is to quantify the economic activity tied to natural resources (water primarily, as well as wildlife and habitat protection). This would be in terms of tax revenues, jobs, tourism, real estate revenues and other income generating activity. The natural resources within the CHNEP program area play a key role in the popularity and growth of the region. As population pressure grows, it is important to improve understanding of the connection to these resources to the economy in order to better meet the needs of the public.

CCMP Elements Implemented: FW-3 and PE-4.

Outputs/Deliverables Milestones:

- Data and Model Input Technical Memorandum
- Economic Impact and Fiscal Impact Modeling & Analysis Technical Memorandum
- Distributional Analysis Technical Memorandum
- Draft Economic Valuation Report
- Revised Final Report, presentation, and summary

320 Budget: \$200,000 estimated from No Cost Extension funds

FY 19 Budget:

320 Funds: \$0

Estimated Total Budget: \$200,000

Outcomes

- The Final Report will quantify economic activity tied to natural resources in the overall CHNEP Study Area (based on Fiscal Impact Model /Economic Impact Model), plus break out the results by each basin. Additionally, it will include the results of the Distributional Analysis (overall and by basin), including funding mechanisms in creating more economic equity amongst stakeholders in the ongoing protection and restoration of natural resources in the CHNEP area.

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 3.5 New Project: South Lee County Watershed Initiative Hydrological Modeling Project

Project Objective: The goal of this project is to develop a science-based, data-driven, strategic hydrological planning tool that will provide guidance to resource management agencies related to the appropriate restoration and management of surface waters currently flowing from the South Lee County Watershed (SLCW) comprised of the Estero River, Spring Creek and Imperial River watersheds, and discharging into the Estero Bay Aquatic Preserve. The conversion of native wetland habitats to agriculture or development, installation of drainage canals, surface mining, and construction of major roadways such as Corkscrew Road, SR. 82, US 41 and I-75, has significantly altered the historic sheet flow from the southern region of Lehigh Acres south to the Corkscrew Sanctuary and southwest to Estero Bay – resulting in flooding, habitat changes, water quality degradation, and decreased water storage. Phase I objective is to restore more natural hydrology and water quality to improve environmental conditions, as well as increase storage and moderation of high flow events to provide greater flood protection.

Project Description: Phase I of this project will update and enhance the existing South Lee County Watershed Plan Update (SLCWP) MIKE SHE/MIKE 11 integrated surface/ground water model, as well as enhance the ecological data available to determine the appropriate hydropatterns, timing and quantity of water flows required to improve the hydrological conditions to wetlands, flowways, tributaries and coastal waters as well as habitat. The deliverables produced from Phase I are necessary for, and will be fed into, future phases of modeling.

CCMP Elements Implemented: HR-1, HR-2, and HR-3.

Partners and Roles: CHNEP (funder), Southwest Florida Regional Planning Council, City of Bonita Springs, Lee County, Village of Estero, Bonita Springs Utilities, Florida Department of Transportation, Conservancy of Southwest Florida, Audubon Society, and the Estero Council of Community Leaders.

Outputs/Deliverables Milestones:

- MIKE 11 into MIKE Hydro imported and debugged
- Ecologic Studies
- Updated Land Use Files
- Improved Groundwater Performance for the Lower Tamiami aquifer and refine irrigation for residential areas and farms north and south of Corkscrew Road

320 Budget: \$200,000 No Cost Extension Funds

FY 19 Budget:

TBD Funds: \$50,000

320 Funds: \$0

Estimated Total Budget: \$250,000

Outcomes

The product of this effort will be an integrated surface/ground water hydrologic model that is capable of simulating water levels and flows in the Estero and Imperial River watersheds and will be sufficient for evaluating wetland hydroperiods and depth ranges in the Corkscrew Swamp Sanctuary. The model will be able to be used to evaluate scenarios such as replacement of willow habitat with Sawgrass. The project will also provide the needed information to determine the timing, distribution, quantity and quality of the water needed to improve the historic surface water flows of the Estero River, Spring Creek, Imperial

River to Estero Bay. These riverine and tidal creek systems are primary nursery areas for fisheries, providing food and habitat to numerous species of fish and shellfish including snook, redfish, tarpon and oysters. The rivers and creeks draining the SLCW area have been heavily impacted by changes in hydrology over the past 100 years and are now experiencing significant flooding during storm events and very low flows during the dry season.

CWA Core Program addressed: (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 3.6 New Project: City of Punta Gorda Climate Adaptation Plan Revision

Project Objective: The goal of this project is to perform tasks for the City of Punta Gorda in support of their Climate Adaptation Plan Update.

Project Description:

Task 1: Public Stakeholder Engagement

City staff working for the Charlotte Harbor National Estuary Program will assist with organizing, hosting, and assisting facilitation of a public workshop to review the identified vulnerabilities, adaptation strategies being developed as part of the 2009 Climate Adaptation Plan Addendum.

Task 2: Technical review of final report

The Charlotte Harbor National Estuary Program, one of the entities who assisted with the drafting of the City of Punta Gorda's initial Climate Adaptation Plan, will provide technical review of the draft Climate Adaptation Plan Update.

CHNEP has entered into an interlocal agreement with Southwest Florida Regional Planning Council for their technical review and comments of the Climate Change Adaptation Plan Update.

CCMP Elements Implemented: SG-Q

Outputs/Deliverables Milestones:

- A Public Stakeholder Engagement Opportunity being provided to the City of Punta Gorda and its Consultant through the CHNEP's Technical Advisory Committee public meeting on April 18, 2019
- Written technical comments on City of Punta's Gorda's Final Report

320 Budget: \$0

FY 19 Budget:

City Funds: \$2,000 (CHNEP receives \$5,000 for the total project)

320 Funds: \$0

Estimated Total Budget: \$2,000

Outcomes

- The revised City of Punta Gorda Adaptation Plan

CWA Core Program addressed: (2) identifying polluted waters and developing restoration plans to restore them, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting Large Aquatic Ecosystems.

Task 3.7 New Project: Charlotte Harbor Flatwoods Initiative Geotechnical and Surveying in Yucca Pens

Project Objective: To restore hydrologic function of the Yucca Pens Unit of the Cecil Webb Wildlife Management Area.

Project Description: This is a high priority cooperative hydrological project at the Yucca Pens Unit of the Cecil Webb Wildlife Management Area, managed by the Florida Fish and Wildlife Conservation Commission. It requires geologic borings, installation of monitoring wells, installation of two water supply wells, and surveying of cross sections at key locations. Because portions of Yucca Pens are flooded for a portion of the wet season, some of the borings, monitoring wells, and surveying of cross sections will have to be scheduled at the end of the wet season.

CCMP Elements Implemented: HA-1, HA-A, HA-B, HA-2, HA-G, HA-3, HA-I, and HA-P.

Partners and Roles: South Florida Water Management District, Charlotte Harbor National Estuary Program and FWC with the SWFWMD, Lee County, Charlotte County, the City of Cape Coral, USGS, FDOT, FDEP, etc.

Outputs/Deliverables Milestones

- Project Management
- 30 Borings
- Work up Boring Field Data
- 15 In-situ Rugged Data Loggers Installed
- Two Fire Wells
- Survey of 30 Wells

320 Budget: \$0

FY 19 Budget:

Charlotte County Road Mitigation Funds: \$148,650

Estimated Total Budget: \$148,650

Outcomes

- Geotechnical and Surveying to assist with Charlotte Harbor Flatwoods Initiative
- Restored hydrology in the Yucca Pens Unit State Wildlife Management Area

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 3.8 New Project: Quantifying the Water Quality Benefits of Submerged Aquatic Vegetation (SAV) Restoration

Project Objective: This project will quantify the nutrient removal capacity of submerged aquatic vegetation (SAV) in the CHNEP area. It will focus on tapegrass (*Vallisneria americana*), a species native to the area and historically abundant in freshwater and low-salinity estuarine habitats. *Vallisneria americana* has been identified as a Valued Ecosystem Component for Everglades restoration and is the species used to establish minimum flows and levels for the Caloosahatchee River Estuary. This project has direct applications for evaluating the effectiveness of SAV for nutrient removal in stormwater treatment systems, canals, and natural water bodies. It also has implications for NPDES permit compliance, BMAPs, and wet detention pond design BMPs. The project links with the Citizen Seagrass Gardening project implemented in 2018 to inform the public and involve citizens in using personal BMPs in local waterways.

Project Description: The project will have two components: 1) a series of aquatic mesocosm experiments at Florida Gulf Coast University's Buckingham facility, and 2) a field component making use of a large-scale *Vallisneria americana* restoration project currently underway in the Caloosahatchee River Estuary. The combined field-mesocosm approach will provide experimental control as well as ecological realism. Mesocosm experiments at the Buckingham facility will involve manipulating nitrogen and phosphorus dosing in a recirculating system with *Vallisneria americana* plantings (and in unvegetated control treatments), and tracking the flux of those nutrients through the biotic components of the system. Nitrogen and phosphorus will be measured in the plant tissue, epiphytes, soils, and water column, and nutrient removal due to sequestration and transformation will be quantified. The field study will use a similar approach, sampling the nutrient constituents in the plant tissue, epiphytes, soils and water to provide real data from an impaired water body inferring quantities of nutrient removal by the restored SAV.

CCMP Elements Implemented: WQ-B, WQ-D, WQ-E, WQ-I, WQ-M, FW-A, FW-D, FW-E, SG-B, SG-K, SG-O, and SG-P.

Partners and Roles: Florida Gulf Coast University (Co-PI for Research and Facilities), Angler Action Foundation (Public Outreach and Education), Sea and Shoreline LLC (plant sourcing and support) and Johnson Engineering, Inc. (Co-PI for research and project management).

Outputs/Deliverables Milestones: This project will result in a formal Technical Report to the CHNEP summarizing the experimental results based on NELAC certified laboratory data. The report will identify the nutrient (TN, TP and C) assimilation capacity of SAV beds being restored in the Caloosahatchee River estuary with applications to freshwater and upper estuarine systems throughout the CHNEP study area. Additional products from this work are expected to include formal presentations at the next CHNEP Watershed Summit, the next Greater Everglades Ecosystem Restoration (GEER) Conference in 2021, and a peer-reviewed journal article. This project will likely result in numerous presentations to agencies and municipalities for the purpose of stormwater treatment enhancements, NPDES and BMAP actions, and habitat improvements that benefit water quality.

320 Budget: \$45,000 No Cost Extension Funds

FY 19 Budget:

320 Funds: \$0

Estimated Total Budget: \$45,000

Outcomes:

1. Nutrient removal rates determined for the SAV species *Vallisneria americana* in the Southwest Florida environment.
2. Total nutrient removal achieved by the large scale *Vallisneria americana* restoration effort currently underway in the Caloosahatchee Estuary will be quantified.
3. An easily-cited statistic for SAV nutrient removal will be created. It will be analogous the widely-cited statistics for oyster filtration rates that have been used to successfully bolster support for oyster restoration projects. This should increase public interest in SAV restoration and conservation, particularly in waterways and along shorelines of developed areas, e.g., in stormwater conveyances, wet detention ponds, and canals where the ecosystem services of vegetation tend to be underappreciated.

CWA Core Program addressed: (2) identifying polluted waters and developing restoration plans to restore them, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting Large Aquatic Ecosystems.

Task 4 Watershed Coordination

Work Plan Objective: To develop and update a CHNEP Restoration Plan and participate in activities which will implement this plan and CCMP objectives and actions relating to restoration. To support development and implementation of Everglades Restoration.

Description: Provide staff support for restoration mapping efforts. Tracking of restoration plan implementation is performed annually through the annual development of the Government Performance and Review Act (GPRA) report. This task also includes staff participation in watershed initiatives such as: Southern Water Use Caution Area (SWUCA) Recovery Strategy, Minimum Flows and Levels, Reasonable Assurance Plans, Basin Management Action Plans, Southwest Florida Comprehensive Watershed Management Plan, Charlotte Harbor Flatwoods Initiative, Lehigh Watershed Initiative, South Lee County Watershed Initiative, and Caloosahatchee River Watershed Protection Plan. CHNEP also participates in state and federal processes to identify landscape scale conservation corridors with public and private partnerships to provide habitat and species migration and climate change adaptation. As opportunities arise, CHNEP assists partners in conducting restoration activities.

The CHNEP participates in Everglades Restoration projects relevant to the CHNEP Study Area; this includes participating on the Science Coordination Group on behalf of Southwest Florida.

CCMP Elements Implemented: All

Partners and their roles

Florida Gulf Coast University, Florida SeaGrant, Coastal Wildlife Club, Lee County Parks and Recreation Department, Lee County Department of Natural Resources, Charlotte Harbor Environmental Center, Sanibel-Captiva Conservation Foundation, Friends of Charlotte Harbor Aquatic Preserves, Lee County Conservation 2020 Program, Calusa Land Trust, City of Fort Myers, Mote Marine Lab, Sarasota Estuary Program, and Tampa Bay Estuary Program.

Outputs/Deliverables Milestones

- Habitat Restoration Needs Update and Habitat Resiliency to Climate Change Project
- GPRA Report
- Public/Private Conservation Cooperative Support
- Watershed Management Plans, Verified List review
- Minimum Flows and Levels review
- Charlotte Harbor Flatwoods Initiative, Lehigh Watershed Initiative, South Lee County Watershed Initiative
- CHIMMP and OIMMP
- Marine Debris, micro-plastics project participation
- Science Coordination Group

320 Budget: \$21,943

FY 19 Budget:

Staff:

320 Funds:	\$21,943
FDEP Funds:	\$44,437
SWFWMD Funds:	\$29,065

Estimated Total Budget: \$95,445

Outcomes

- To most effectively restore water quality, hydrology and habitat, CHNEP participates in a variety of partnership resource management and planning activities. Funding under this program supports CHNEP staff review of watershed assessments and plans and provision of maps and data to partners which guide restoration priorities and track implementation of projects
- CHNEP will provide annual summaries of partners' restoration activities through the GPRA report and will assist partners with compiling and analyzing data to develop and implement technically sound, consensus-based resource management plans
- Increase in the number and effectiveness of implemented water quality and resource management Best Management Practices (BMPs), plans and restoration activities

CWA Core Program addressed: (2) identifying polluted waters and developing restoration plans to restore them, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.1 Ongoing Project: Habitat Restoration Needs

Habitat Restoration Needs Phase I

Project Objective: To develop CHNEP habitat restoration needs vision, goal, and plan project through the next 50 years and to make the information easily accessible to resource managers. The resulting information will be used by partners to identify, prioritize and implement effective habitat restoration and conservation projects, including land acquisition.

Project Description: CHNEP hired a contractor to work with partners to develop the CHNEP habitat restoration vision and goals and prepare a CHNEP Habitat Restoration Needs Plan.

CCMP Elements Implemented: FW-1, FW-F, and SG-N.

Partners and Roles: CHNEP, SWFWMD and Mosaic are funders. CHNEP and its contractor are working with the CHNEP Management Conference, local and regional resource managers and other partners to develop the habitat restoration vision and goals.

Outputs/Deliverables

- Databases, maps and tables of past and current habitats and restoration projects
- Databases, maps and tables of habitat status and trends
- List and evaluation of alternative approaches for calculating habitat restoration vision and goals
- CHNEP habitat restoration vision and goals, including databases, tables and maps
- List of priority habitat restoration and land acquisition projects
- CHNEP Habitat Restoration Needs Plan

Estimated Milestones

- Habitat data and projects compiled and analyzed for status and trends within 7 months
- Access to habitat restoration information via Water Atlas implemented within 7 months
- Approach for calculating habitat restoration goals developed within 8 months
- CHNEP habitat restoration vision and goals developed within 13 months
- List of priority future restoration and acquisition projects developed within 13 months
- CHNEP Habitat Restoration Needs Plan completed within 18 months

320 Budget: Staff time

FY 19 Budget: (these funds were all appropriated in FY16 or FY17)

320 Funds: \$30,000 (FY16 & FY17)
SWFWMD: \$80,000 (FY16 & FY17)
Grant: \$40,000 (FY16)

Estimated Total Budget: Staff time + \$150,000 appropriated in FY16 & FY17

Outcomes

- Provide up-to-date region-wide habitat data, status, trends, vision and goals to be used to focus cost-effective and efficient restoration and acquisition activities
- Provide habitat data to assess the effectiveness of restoration and protection efforts
- Provide increased collaboration across boundaries between the SFWMD and SWFWMD

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Habitat Restoration Needs Phase II

Project Objective: For the CHNEP Expansion area (freshwater Caloosahatchee basin), develop CHNEP habitat restoration needs vision, goal, and plan project through the next 50 years and to make the information easily accessible to resource managers. The resulting information will be used by partners to identify, prioritize and implement effective habitat restoration and conservation projects, including land acquisition. Also, identify priority habitat restoration sites in the 100-year floodplains of freshwater Caloosahatchee watershed to rank priority restoration sites and to develop restoration guidelines and conceptual designs for representative restoration sites.

Project Description:

Task 1: Technical committee workshop (e.g. HCS or TAC) for project kickoff and refinement of project objectives and methodology:

Task 2: Document Status and Trends of Habitats. Utilize same time period and data as HRN Phase I Task 1 for consistency.

Task 3: Document Completed, Ongoing and Planned Habitat Restoration, Conservation and Land Acquisition Projects. Utilize same methodology as HRN Phase I Task 2 for consistency.

Task 4: Develop CHNEP Expansion Habitat Restoration Goals. With consensus of the TAC and/or HCS, develop a list of priority habitats for targeting future habitat restoration, conservation, and land acquisition activities. Use same Additive Hybrid Approach methodology as HRN Phase I Task 4 for consistency.

Task 5: Data compilation and GIS analysis and mapping of potential restoration areas (e.g. reclaimed mine, dewatered agricultural fields, etc.) in the Expansion Area.

- Compile and analyze existing data for applicable mine reclamation areas and develop GIS layers
- Compile and analyze existing data for over-drained agricultural areas and develop GIS layers

Task 6: Assessment of ecological conditions and restoration potentials:

- Assemble a list of pilot restoration sites to assess their restoration potential
- Perform desktop analyses of representative project sites to formulate a list of the top four sites focusing on highly degraded systems within existing preservation/conservation lands or abutting these preservation/conservation lands
- Perform field investigations of the top four pilot sites to assess their restoration potentials (maximum of five field days)
- Develop restoration guidelines and methodologies, and conceptual restoration designs for the four pilot sites (i.e. template design approach for the various classes of potential restoration areas that are identified)

Task 7: Analysis and ranking of restoration sites:

- Conduct screening level analysis of field work results to rank all identified restoration priority sites
- Prepare GIS maps of identified and priority restoration sites
- Identify potential funding sources to implement restoration of the top ranked sites

Task 8: Technical committee meeting (e.g. HCS or TAC) to present preliminary results and gather feedback.

Task 9: Prepare report:

- Develop draft report
- Review and incorporate comments
- Develop final report

Task 10: Final technical committee meeting (e.g. HCS or TAC) to present draft report.

Task 11: Project Management:

- Includes project management, invoicing, and reporting

Task 12: Expenses

CCMP Elements Implemented: FW-1, FW-F, and SG-N.

Partners and Roles: CHNEP and its contractor are working with the CHNEP Management Conference, local and regional resource managers and other partners to develop the habitat restoration vision and goals.

Outputs/Deliverables Milestones

- Workshop presentation and meeting notes
- Technical memo of habitat status and trends
- Database and GIS files of completed habitat restoration, conservation and acquisition projects
- CHNEP Expansion Area habitat restoration goals maps and tables
- GIS database
- Technical memorandum summarizing Task 6 results
- Technical memorandum summarizing site rankings and potential funding sources
- Meeting presentation and notes
- Draft and Final Report
- Monthly invoices and quarterly progress reports

320 Budget: \$80,586 No Cost Extension Funds

FY 19 Budget:

320 Funds: \$0

Estimated Total Budget: \$80,586

Outcomes

- Habitat restoration needs vision, goal, and project plan for the next 50 years for the new CHNEP study area.

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.2 Ongoing Project: Habitat Resiliency to Climate Change

Project Objective: complete a GIS-based analysis of climate change impacts to habitat quality and connectivity and provide resiliency solutions.

Project Description: This project was initiated in FY 2018, with funds obligated for the project contract. CHNEP will use mapping tools (30 m x 30 m grid) to establish habitat resiliency and migration pathways in the CHNEP Study Area in response to climate change. Specifically, we will look at habitat quality to: 1) establish habitat connectivity and barriers to migration, and 2) identify habitat types and locations for restoration and/or acquisition to increase climate change adaptation and resiliency. This is an area of special interest – climate resiliency. The funding for the contractor was included in the FY2018 budget.

CCMP Elements Implemented: SG-2, SG-D, SG-Q, and SG-K.

Partners and their roles: CHNEP, SWFWMD and Mosaic are funders. CHNEP and its contractor are working with the CHNEP Management Conference, local and regional resource managers and other partners to develop the habitat restoration vision and goals.

Outputs/Deliverables/Estimated Milestones

- GIS library
- Bibliography of research
- Draft Model
- TAC Comments
- Revised Model
- Draft Final Report
- Presentation of Draft Final Report and Model
- Report and Model results in user friendly print and online format
- eLearning Module
- Final Poster published in Harbor Happenings and available digitally
- Written and electronic reports to EPA

320 Budget: Staff time

FY 19 Budget:

320 Funds: Staff time

Estimated Total Budget: \$33,390 (EPA obligated in FY 2018) + Staff time

Outcomes

- Integration of results into the Habitat Restoration Needs Update
- No later than FY2019, the CHNEP's CCMP visions will be informed by this focused approach to identifying factors to increase habitat resiliency and connectivity to ensure habitat areas for potential retreat, as well as identify critical barriers and essential conservation parcels needed to enable effective habitat migration
- The Final Report will present decisions-makers with opportunities for integrating appropriate responses to climate change impacts to habitat into long range planning efforts

CWA Core Program addressed: (5) protecting wetlands, and (6) protecting coastal waters through the National Estuary Program

Task 4.3 Ongoing Project: Oyster Restoration in Charlotte Harbor

Project Objective: To facilitate the restoration of oyster habitats and related ecosystem functions throughout the CHNEP estuaries and tidal rivers.

Project Description: CHNEP collaborates with three partnership approaches to oyster restoration throughout the Study Area: 1) The Southwest Florida Oyster Working Group (SWFOWG) facilitates region-wide oyster restoration that addresses endangered Smalltooth Sawfish critical habitat. 2) In partnership with The Nature Conservancy (TNC), the Charlotte Harbor Aquatic Preserves, the Trabue Harborwalk Volunteer Oyster Habitat Monitoring program was developed and continues data collection to assess the success of the project. 3) CHNEP works with partners to identify technical and funding sources for new oyster restoration projects. Efforts continue to identify a technically sound, consistent cost-effective method for mapping oyster acreage and locations throughout the Study Area estuaries.

CCMP Elements Implemented: WQ-E, WQ-4, FW-1, FW-F, HA-A, and SG-B.

Partners and their roles: CHNEP, TNC, FDEP Charlotte Harbor and Estero Bay Aquatic Preserves, FWC, Lee County, Charlotte County, Sarasota County, SCCF, NOAA National Marine Fisheries (NMFS), WCIND, SWFWMD and SFWMD.

Outputs/Deliverables Milestones

- Utilization of the CHNEP Oyster Habitat Restoration Plan, methods and priority sites to seek partnership grant funding for restoration projects
- Exchange of technical information to improve oyster restoration success and monitoring
- Transfer of the Volunteer Oyster Habitat Monitoring manual and methods to guide volunteer monitoring at oyster restoration sites throughout the CHNEP study area as opportunities arise
- Education of volunteers and the public of the ecological value of oyster habitats via the VOHMN daily, biweekly and biannually
- Reporting and showcasing the success of the Trabue Harborwalk and SCCF oyster restoration sites through CHNEP publications

320 Budget: Staff time

FY 19 Budget

320 Funds: Staff time

Estimated Total Budget: Staff time

Outcomes

- Restore natural systems, obtain sufficient region-wide water quality, biological and physical data and analyses that are needed to understand the status, trends and complex interactions of the systems
- Coordinate implementation of Oyster Restoration Plan, sharing of lessons learned and subsequent adaptation of oyster restoration projects
- Increase collaboration across boundaries between the SFWMD and SWFWMD
- Restoration of oyster population to state where it assists with improving water quality the CHNEP estuaries and tidal rivers

CWA Core Program addressed: (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.4 Ongoing Project: Submerged Aquatic Vegetation Restoration/Caloosahatchee Citizen Seagrass Gardening

Project Objective: To ensure development of technically sound Submerged Aquatic Vegetation (SAV) restoration targets; implement restoration initiatives and projects which restore and protect SAV throughout the CHNEP estuaries and tidal rivers.

Project Description: CHNEP coordinates and participates in collaborations to develop technically sound SAV restoration targets and implement restoration projects throughout the Study Area. The CHNEP Management Conference adopted SAV targets in 2005 and refined targets in 2009, with the understanding that additional field assessment is needed to capture full extent of SAV distribution in the tidal rivers due to naturally highly colored river water. CHNEP convened the Caloosahatchee River SAV Targets Working Group (CRSAVTWG) in 2013 to begin developing sound SAV targets for the tidal and some oligohaline reaches of the Caloosahatchee River. CHNEP also participates in the Southwest FL Seagrass Working Group and FWC Seagrass Integrated Monitoring and Mapping (SIMM) technical team. In FY2018 the CHNEP was awarded funding to conduct the Citizen Seagrass Gardening project to provide seed source in the Caloosahatchee River, this project will continue in FY2019.

CCMP Elements Implemented: FW-1, FW-A, FW-C, FW-D and FW-P.

Partners and Roles: CHNEP coordinates the TAC subcommittees and CRSAVTWG. Together these collaborative groups include: FDEP Charlotte Harbor and Aquatic Preserves, FWC, SWFWMD, SFWMD, Lee County, Charlotte County, Sarasota County, SCCF, FGCU and Johnson Engineering.

Outputs/Deliverables

- Exchange technical information, monitoring and mapping methods, and emerging SAV issues
- Reporting and showcasing success of SAV restoration projects

Estimated Milestones

- SAV restoration grant applied for by September 2019
- Exchange of SAV information ongoing

320 Budget: Staff time

FY 19 Budget

320 Funds: Staff time

FDEP Funds: Staff time

Estimated Total Budget: \$14,720 (obligated in FY2018) + Staff time

Outcomes

- Protect and restore natural systems, obtain sufficient region-wide water quality, biological and physical data and analyses that are needed to understand the status, trends and complex interactions of the systems
- Development of SAV Targets for Caloosahatchee River
- Adaptation of SAV restoration projects based on lessons learned
- Increase SAV seed source in the Caloosahatchee River

CWA Core Program addressed: (5) protecting wetlands and (6) protecting coastal waters through the National Estuary Program.

Task 4.5 New Project: Lake Hancock Circle B Bar Reserve Shoreline Restoration Project

Project Objective: During Hurricane Irma a significant amount of erosion occurred to a management road and trail at Circle B Bar Reserve referred to as Alligator Alley. This project is to repair the erosion damage caused by restoring the 12' wide trail, installing coir erosion control blankets and logs, and planting native vegetation to re-establish the shoreline to pre-Irma dimensions.

Project Description: This project consists of 16 site shoreline restoration project areas including repairing trail berm to pre-hurricane conditions width, depositing clean fill to match pre-Irma shoreline dimensions, installing erosion control blankets and logs, planting aquatic and shoreline stabilizing vegetation along the shoreline and slope. Shoreline native vegetation will be planted.

CCMP Elements Implemented: WQ-1, WQ-D, FW-1, and FW-C.

Partners and Roles: Polk County Board of County Commissioners, Circle B Bar Reserve, & CHNEP

Outputs/Deliverables Milestones

- Shoreline clear of floating debris
- Floating or staked silt fences installed
- Re-graded shoreline
- Clean fill deposited/compacted from original top of bank to toe of slope
- Coir erosion blankets and logs installed and secured with bio-degradable stakes
- Native vegetation planted

320 Budget: \$0

FY 19 Budget:

SWFWMD Funds:	\$25,000
Grant:	\$63,490

Estimated Total Budget: \$88,490

Outcomes

- Shoreline restored
- Restoration and success monitoring methods will be available to designing and implementing future restoration project
- Collaboration and technical information exchange will be enhanced between partners
- Identified CHNEP restoration needs will be filled

CWA Core Program addressed: (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.6 New Project: Warm Mineral Springs Run Restoration

Project Objective: To improve passage for the Federally threatened Florida manatee to critical warm water refuge habitat, stabilize areas of eroding shoreline, and replace invasive plant species with native riparian vegetation.

Project Description: The long-term conservation of Florida manatees (*Trichechus manatus latirostris*), a Federally threatened species, relies on having enough healthy, suitable habitats available throughout their range in Florida. Warm-water habitat is essential for manatee survival during the winter and maintaining sufficient regional networks of warm-water sites may be the single most important habitat issue to face the Florida manatee population in the future. Springs provide critical and dependable warm-water habitat and the protection and restoration of these habitats is critical to ensuring protection of the Florida manatee.

Warm Mineral Springs is located in southwest Florida in Sarasota County near the city of North Port and within the Myakka basin of the CHNEP program area. The spring run consists of Warm Mineral Springs Creek, which is approximately 1-mile in length and flows into Salt Creek. Salt Creek continues for another approximately 1.2 miles southwest from its confluence with Warm Mineral Springs Creek to the lower Myakka River. The spring waters originate from Florida's deep-water aquifer at a very warm 29 degrees C. Deep pools serve as warm-water habitat for the federally threatened Florida Manatee at multiple locations along the middle stretch of Warm Mineral Springs Creek. Over 100 Florida manatees have been documented using Warm Mineral Springs Creek as a refuge during the winter months; making this location the largest, and arguably the most important natural warm-water refuge in southwest Florida. Historical and current land use alteration and management, bank erosion, excessive sedimentation, and invasive riparian plant species are identified as the primary factors degrading the spring run. Restoration opportunities to improve accessibility for the Florida manatee and the habitat value of the stream include restoring fluvial geomorphological conditions, stabilizing stream banks, and removing invasive species.

The restoration of Warm Mineral Springs run will provide multiple benefits to this system. Removal of sediments will provide better manatee access to vital warm-water habitat, as well as increasing the volume of warm-water habitat. Shoreline restoration and stabilization will decrease erosion and sedimentation reducing the need for future maintenance work in this system. In addition, the restoration of the bathymetry of these two creeks will increase their connectivity to the Myakka River, which is a tributary to Charlotte Harbor. Reestablishing complete system flows and strategic removal of shoals will provide an enhanced connection of unique aquatic habitats; a mineral salt spring to a freshwater river to an estuarine ecosystem. Along with these enhanced connections will be better access to the creeks by the Florida manatee and fish species, including Redbreast Sunfish, Pickerel, Spotted Sea Trout, Redfish, and Blue Catfish. Habitat improvements will also benefit wading bird species, including Great Blue Heron, Great Egret, White Ibis, Tricolored Heron, Reddish Egret, and Wood Stork.

The first phase of the engineering study, funded by the Florida Fish and Wildlife Conservation Commission (FWC), will be completed in FY18-19 before July 2019. FWC worked with the US Army Corps of Engineers to complete hydraulic and hydrodynamic modeling as well as preliminary analysis of structural and non-structural solutions to implement an ecosystem restoration project in the focal area. Funding is needed to complete the second phase of the engineering services, including final design plans and permitting. Construction is tentatively scheduled to begin in the summer of 2020. This project is necessary and urgent to improve manatee access to critical warm-water habitat as well as improving the overall habitat value of the spring run located within the Myakka basin of the CHNEP program area.

CCMP Elements Implemented: HA-C, HA-I, HA-J, FW-C, FW-D, FW-E, and FW-F.

Partners and Roles: CHNEP – funding , U.S. Army Corps of Engineers - completed engineering and modeling through Planning Assistance to States cost share agreement (\$187,500.00); Sarasota County -

technical assistance in project design and community outreach, and through provision of access to construction sites and venues for project meetings; FWC - completion of engineering services and permitting (>\$200,000.00); The City of North Port - technical assistance in project planning.

Outputs/Deliverables Milestones: Engineering services and final design plans will be completed toward restoration and enhancement of approximately 2 miles of Myakka River headwater tributary to establish more natural hydrologic conditions and allow enhanced manatee access critical warm-water habitat.

320 Budget: \$0

FY 19 Budget:

Grant: \$65,000

Outcomes: Final design plans and permitting will allow project to proceed to implementation. Fully implemented, manatee access to critical warm-water habitat will be improved and more natural hydrologic conditions will be restored within the Myakka basin of the CHNEP program area.

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.7 New Project: Gateway to Myakka River State Park- Marsh Restoration & Education

Project Objective: To restore three acres of floodplain marsh and one mile of river front on the Myakka River at the headwaters of Myakka River State Park, and to communicate conservation methods and impact to the public, influencing a community conservation ethic.

Project Description: To restore floodplain marshes on the Myakka River and influence the community's conservation ethic by communicating conservation methods and impact to the public.

The Conservation Foundation, the USDA Natural Resources Conservation Service (NRCS), and the Southwest Florida Water Management District (SWFWMD) acquired fee and conservation easement interests totaling 2,408 acres and protecting four miles of the Myakka River within Manatee County. Much of this work surrounds the 2,500-acre Tatum Sawgrass Marsh, a floodplain marsh similar to Upper Myakka Lake, but more than three times its size. In June 2019, Conservation Foundation and NRCS will complete the protection of an additional 534 acres, and Conservation Foundation will finish a restoration plan in partnership with the National Fish and Wildlife Foundation (NFWF) and NRCS. This project will be implemented over the next few years using NRCS funds obligated for this purpose in addition to CHNEP funding. While restoration of the Tatum Sawgrass is underway, Myakka River State Park (MRSP) is simultaneously pursuing restoration of Upper and Lower Myakka Lakes and Big Flats.

CCMP Elements Implemented: FW-F, FW-I, SG-D, SG-J, and SG-K.

Partners and Roles: Conservation Foundation of the Gulf Coast - Project design and oversight; (2) Charlotte Harbor National Estuary - Program Funding; (3) Beautiful Ponds, Inc. – invasive plant removal and native plantings; (4) Myakka River State Park / FDEP - Technical input; (5) National Fish and Wildlife Foundation – hydrologic restoration modelling of Tatum Sawgrass; The following partners are associated with Tatum Sawgrass marsh acquisition and restoration: (6) USDA Natural Resources Conservation Service; (7) Southwest Florida Water Management District; (8) Disney Conservation Fund; (9) Selby Foundation; and (10) numerous other private landowners, foundations, and donors.

Outputs/Deliverables Milestones:

- (1) July 2020: native plants installed
- (2) September 2020: educational video(s) finished and distributed
- (3) June 2020: exotic plants treated along 1 mile of riverfront
- (4) September 2021: one year of follow up control performed on exotic plants covering 1 mile of riverfront

320 Budget: \$0

FY 19 Budget: TBD

Estimated Total Budget: \$28,500

Outcomes:

- (1) Three acres of floodplain marsh will be planted with native plant species
- (2) One or more communication videos will be created
- (3) One mile of river shoreline will be controlled for exotic grass species
- (4) Achieve the objectives of the Wild and Scenic Myakka River Management Plan
- (5) Achieve the objectives of the Myakka River State Park Unit Management Plan

CWA Core Program addressed: (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.8 New Project: CHNEP Caloosahatchee Cyanobacteria Rapid Response Pilot Program

Project Objective: A rapid response pilot program to remove cyanobacteria and nutrients from the Caloosahatchee River.

Project Description: The outbreak of cyanobacteria and red tide in the waters of Southern Florida is gaining national attention. New approaches and technologies for rapid response remediation are needed. Given that cyanobacteria feeds on excess nitrogen and phosphorus, it appears that the Open-Cell foam technology may be a suitable rapid response technology worthy of a pilot program to address the cyanobacteria outbreak in the Caloosahatchee River - as it has proven to be very good at absorbing/sequestering particle reactive phosphorus and metals along with hydrocarbons and other contaminants including the cyanobacteria itself and toxins produced by cyanobacteria. This project would be to conduct a larger pilot project to deploy the remediation technology, doing pre and post-deployment water quality monitoring to record its efficacy in uptaking nutrients, cyanobacteria, and microcystis toxin.

CCMP Elements Implemented: WQ-I

Partners and Roles: CHNEP (funder), Sea and Shoreline Aquatic Restoration (field technicians), Florida Gulf Coast University (researchers), and AquaFlex Holdings LLC (remediation technology proprietors).

Outputs/Deliverables Milestones

- Deployment of open-cell foam rolls for surface removal of the cyanobacteria in approximately one acre of cyanobacteria infected water in the tidal Caloosahatchee River. [Note the foam removes up to 32 times its weight in contaminants and this will include measuring the cyanobacteria removed along with evaluation of disposal in waste to energy facilities where there is no risk of further contamination or human exposure as in a landfill.
- Open-Cell foam eelgrass and environmental indicators to be deployed in the water column and submitted to approved Florida laboratories for analysis of cyanobacteria, phosphorus, toxins, and other substances as deemed necessary.

320 Budget: \$65,000 No Cost Extension Funds

FY 19 Budget:

320 Funds: \$0

Estimated Total Budget: \$65,000

Outcomes

- Removal of problem cyanobacteria
- Research results to determine efficacy of remediation technology tested

CWA Core Program addressed: (2) identifying polluted waters and developing restoration plans, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.9 New Project: Native Upland Plantings at Wildflower Preserve

Project Objective: The Wildflower Preserve Habitat Restoration Project will restore natural systems to 80-acres of coastal habitat on the Cape Haze peninsula in Charlotte County, FL. This preliminary grant application seeks funding for the planting of native trees and shrubs on approximately 45 acres within the Wildflower Preserve site.

Project Description: In 2010, Lemon Bay Conservancy acquired the abandoned Wildflower Golf Course with the intent to restore the property as a nature preserve. The property is an interesting site in that it contains uplands, freshwater ponds, and portions of estuarine Lemon Creek. As Lemon Creek leaves the property to the west, it has a tidal connection to Lemon Bay. To the south of the Wildflower property, Lemon Creek connects to Lemon Lake in Charlotte County's Amberjack Preserve.

The Lemon Bay Conservancy is currently working in partnership with the Southwest Florida Water Management District and NOAA to restore the Wildflower site. The project plans call for expanding the estuarine wetlands from the present five acres to approximately fourteen acres, expanding and interconnecting the existing ponds to create enhanced freshwater wetlands, removing invasive plants and restoring native plantings on the uplands. The project design was completed in 2016 and an initial phase of invasive clearing was completed in 2017. Construction work on the wetland modifications began in the summer of 2018.

However, in late September 2018, excavation work was stopped when the presence of arsenic in soils on the site was identified. Subsequent study has indicated that the arsenic levels are within acceptable ranges for the intended recreational use of the site and we anticipate that construction work will resume in July 2019. The soil conditions have led to a change in the original project plan. The original plan was to allow the construction contractor to sell excess soil offsite. The new design will use the creation of a large observation mound and berms to keep all soil excavated from the project onsite. The design change, combined with the related delays that required the contractor to demobilize and remobilize, will require diversion of some existing project funds to cover the new expenses. This has created a shortfall in project funding for the last planned phase of the project: the upland plantings.

This project would be to assist with the funding shortfall to complete the upland plantings and the project. Assuming the excavation work resumes this summer, all the wetland work should be completed by late summer 2020. Upland restoration planting in the eastern portions of the preserve is planned to commence by late 2019 and the upland planting work completed in 2020.

CCMP Elements Implemented: FW-F and FW-H.

Partners and Roles:

The Southwest Florida Water Management District is providing overall project management for the Wildflower Preserve restoration project and \$825,000 in grant funding. NOAA is providing \$422,500 in grant funding. Lemon Bay Conservancy purchased Wildflower for \$750,000 and has committed \$75,000 in funding for the restoration work. LBC will also be responsible for the ongoing management and maintenance of the property.

Outputs/Deliverables Milestones:

Timing and sequence of these steps may vary depending on schedules for other project elements and timing the plantings in relation to seasonal rains.

- Mow the eastern upland areas to prepare for planting – 3rd quarter 2019
- Plant natives in the eastern upland areas of the property – Late 2019. Begin planting as soon as the freshwater wetlands work on the eastern half of the property is complete.
- Mow the western upland areas to prepare for planting – Late spring 2020

- Plant natives on the western areas of the property – Summer 2020
- Maintain the uplands via mowing and selective treatment of invasives – until September 2021

320 Budget: \$25,190 No Cost Extension Funds

FY 19 Budget:

320 Funds: \$0

Estimated Total Budget: \$25,190

Upland plantings:

4,580 1-gallon plants \$25,190

The plantings are scheduled to include saw palmetto, gallberry, coco plum, Florida swamp privet, firebush, yaupon holly, wax myrtle, red cedar, and South Florida slash pine. Planting density will average 20’ on center.

The overall restoration project budget, including the upland planting work above, is \$1,394,275.

Outcomes

- Contribute to restoring natural systems on 80-acres of coastal habitat estuarine wetlands, freshwater wetlands and associated uplands
- Improve water quality within the preserve and in neighboring Lemon Bay by filtering high nutrient water before the water reaches the Bay
- Expand and enhance estuarine and freshwater fisheries-improve 11 acres of existing wetland habitat and add 14 acres of habitat, expand juvenile tarpon habitat
- Enhance wading and shorebird habitat-create new littoral zones and rookery islands
- Enhance coastal resilience-include 9 acres of marsh within the restored wetlands
- Improve overall ecosystem function within the Charlotte Harbor watershed by mitigating impacts of coastal development
- As part of the project, nature trails are being planned throughout the site and Lemon Bay Conservancy intends to use the property for guided nature walks and educational programs. We work closely with the teachers at Lemon Bay High School on programs involving their STEM students and we anticipate continuing that collaboration going forward

CWA Core Program addressed: (2) identifying polluted waters and developing restoration plans, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.10 New Project: Alligator Creek Stream Restoration Project

Project Objective: Design and permit the restoration of hydrology and flow of freshwater to the Lemon Bay estuary through restoration of approximately 9,500 linear feet of Alligator Creek and riparian buffer.

Project Description: Alligator Creek is a tidal creek in southern Sarasota County that flows to Lemon Bay, one of Florida's 41 Aquatic Preserves and an Outstanding Florida Water. The highly urbanized Alligator Creek Basin, approximately 11 square miles in size, comprises approximately 20% of the Lemon Bay Watershed. Creek conditions range from marine to brackish water in the lower half to fresh water upstream of Jacaranda Boulevard. Historically, Alligator Creek was tidally connected to an extended slough system upstream of present-day US 41. By the 1940s, hydrologic alterations had eliminated connection to the historic floodplain and adjacent wetlands. Nuisance/invasive vegetation replaced native stream and shoreline vegetation; thereby, degrading the natural habitat for wildlife and water quality. The creek was over-excavated to a typical trapezoidal cross-section to increase conveyance and capacity. Since original construction, the canal has been maintained in that state, resulting in steep sides prone to excessive erosion that contributes to sediment transport and deposition within important benthic and fisheries habitat.

This overarching project is to restore approximately 40 acres of Alligator Creek corridor will include removal of nuisance/invasive vegetation, planting of native and/or Florida-friendly vegetation, reshaping of banks, and enhancement of historical wetlands. Results will include reduced erosion and sediment transport, improved mangrove habitat in the lower portion of the project, and improved benthic and fisheries habitat throughout the project site. This phase of the project covers only the design and permitting.

CCMP Elements Implemented: HA-J and FW-C.

Outputs/Deliverables Milestones:

- Project design and permitting will be complete by September 30, 2021.
- Construction/restoration will be complete by December 31, 2023.

320 Budget: \$130,900 No Cost Extension funds

FY 19 Budget:

320 Funds: \$0

Estimated Total Budget: \$130,900

Outcomes

- Reduction of creek bank erosion
- Reduction of sediment transport and deposition on benthic habitat
- Improvement to benthic and fisheries habitat
- Elimination of nuisance/invasive vegetation
- Establishment of native vegetation for improved wildlife utilization
- Enhancement of mangrove habitat
- Enhancement of historical wetlands

CWA Core Program addressed: (1) establishing water quality standards, (2) identifying polluted waters and developing restoration plans, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 4.11 New Project(s): Restoration Project Grant(s)

Project Objective: To solicit and award funding for a restoration project that addresses the CCMP Priority Actions has long-term applicability and serves as a model for addressing habitat restoration and improvement and resource management challenges.

Project Description: CHNEP will fund a restoration project that implements CCMP Priority Actions, has long-term applicability, and serves as a model for addressing habitat restoration and resource management challenges. Assurances of long term conservation use of the area after restoration is completed is an essential component of the project, as are monitoring restoration success and informing and educating the public about habitat values and restoration methods. Proposed projects should address at least one Priority Problems and implement one Priority Action, be transferable, demonstrate value to the community, and include monitoring and educational components.

CCMP Elements Implemented: Will be determined upon award.

Partners and Roles: Will be determined upon award.

Outputs/Deliverables Milestones

- Habitats will be restored and protected within 2 years of project selection and remain in conservation use long term.
- Restoration techniques will be transferable to other projects and locations following completion of the project.
- Success monitoring methods, results and educational tools will be available to guide design and implementation of additional cost-effective restoration following completion of the project.

320 Budget: \$24,000

FY 19 Budget:

320 Funds: \$24,000

Estimated Total Budget: \$24,000

Outcomes

- Habitats will be protected and restored.
- Restoration and success monitoring methods will be available to designing and implementing future restoration project.
- Collaboration and technical information exchange will be enhanced between partners.
- Identified CHNEP restoration needs will be filled.

CWA Core Program addressed: (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

Task 5 Policymaker Education

Work Plan Objective: Support policymaker education and legislative action to support the implementation of the CCMP; implementing the Policy Review Procedures.

Description: This project is to support staff time to conduct policymaker education that implements the CCMP. Additionally, membership dues (\$4,500) in the Association of National Estuary Programs (ANEP) are included in this task as they are not eligible for EPA funding.

CCMP Elements Implemented: SG-2 and SG-L.

Outputs/Deliverables, Milestones

- Letters of support for legislation as directed
- In-person meeting with policymakers to educate them about CHNEP and its CCMP, as well as funding and support needed for its implementation
- Continue ANEP membership
- Provide input on CCMP topics as requested by policymakers on the Management Conference
- Legislative updates to Management Conference as appropriate

320 Budget: \$0

FY 19 Budget:

Local partners:	\$21,366
Staff:	\$16,866
ANEP:	\$4,500

Estimated Total Budget: \$21,366

Outcomes

- Informed policymakers as the CHNEP and the CCMP recognized and utilized as a resource by legislators (local, state and Federal) and their staff
- Improved policies and funding that assist in implementing the CCMP

CWA Core Program addressed: (1) establishing water quality standards, (2) identifying polluted waters and developing restoration plans, (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, and (6) protecting coastal waters through the National Estuary Program.

Completed FY18 Major Projects and Actions

FY18 Public Outreach Grant Awards

APPLICATION PROJECT	APPLICANT	REQUEST	TOTAL PROJECT COST	AMOUNT FUNDED
Charlotte County Public School 2nd grade busing for CHEC Wading Trips	Charlotte Harbor Environmental Center	\$5,000	\$11,750	\$5,000
Cutting Horse Eco-Center	Coccoloba Chapter Florida Native Plant Society	\$3,000	\$23,382	\$3,000
Happe Summer Eco-Camp River Lab Project	Happehatchee Center, Inc.	\$4,150	\$16,457	\$4,150
Elementary Science Olympiad Tournament (Still in progress)	North Fort Myers High School	\$3,000	\$TBA	\$TBA
	Total			\$12,150

FY18 Micro-Grants

AWARDEE	PROJECT	AMOUNT FUNDED
Myakka River Management Coordinating Council (MRMCC) Website	MRMMCC Website Maintenance	\$220
Keep Lee County Beautiful, Inc.	Monofilament Madness	\$1,000
Lemon Bay High School	Exploring the Seasonal Changes Within Lemon Bay	\$600
Southwest Florida Gulf Coast Regional Envirothon, Inc.	Southwest Florida Gulf Coast Regional Envirothon 2017	\$900
Hickory Bluff Chapter, NSDAR	Charlotte Harbor Cemetery Beautification Project	\$250
Polk County BOCC	Polk County Water School	\$756.36
Rosaline Young	Weaving Water Art Installation	\$250
Keep Charlotte Beautiful (KCB)	Great American Cleanup	\$500
Downtown Bait & Tackle Shop	Kid's Pier Fishing Tournament	\$250
Friends of the Charlotte Harbor Aquatic Preserves, Inc.	2018 Public Outreach Project & CHNEP Calendar Assist.	\$2,500 \$2,500
Pond Watch Coordinator, Lee County Hyacinth Control District	Pond Watch Annual Workshop 2018	\$670
Cape Coral Friends of Wildlife, Inc.	Burrowing Owl Festival 2018	\$579.55
Church Environmental, LLC	Harmony Ranch Estates Drone Environmental Lands Survey	\$1,500
Church Environmental, LLC	Caloosahatchee River Drone Wading Bird Nest Survey	\$1,500
Bocilla Islands Conservancy, Inc.	Bocilla Native Plant Identification, Signage, and Education Project	\$752.46
Gulf Coast Heritage Association	Summer Adventure Camp	\$753.25
School Board of Hardee County	Ecocamp Field Trip for Microplastics Research	\$250
Florida Wildlife Corridor	"Forgotten Coast" Documentary Screening	\$650
Pelican Media	Revise Audio of Yes on Conservation 20/20 Campaign Video	\$1,000
Unitarian Universalist Church of Fort Myers	Wetlands Water Quality Improvements at Holton Eco Preserve	\$1,000.00
	Total	\$18,381.62

Clean Water Act Core Program Support

The CHNEP supports the Clean Water Act (CWA) core programs through direct funding of projects, staff assistance to partners and partner activities. Provided below are representative activities of CHNEP support for CWA core programs during Fiscal Year 2015.

Water Quality Monitoring

CHNEP staff continues participating in the **Coastal Charlotte Harbor Monitoring Network (CCHMN)** monthly probabilistic sampling in the estuarine and tidal waters of the Study Area. Annual field monitoring audits of the field sampling partners are conducted by CHNEP. Results of the field audits and potential corrections are discussed at an annual meeting of field and laboratory partners. The CCHMN data are entered into the state and federal STORET water quality data base. The CHNEP completed a Quality Assurance Project Plan for the Lower Charlotte Harbor Monitoring Network in 2015. CHNEP is supporting Charlotte County with water quality data collection matters.

The CHNEP participates in the **Regional Ambient Monitoring Program (RAMP)** which holds quarterly meetings. RAMP participants share current water quality field and laboratory issues and conduct quality assurance field sampling and laboratory analyses.

The CHNEP provides ongoing support to **Charlotte Harbor Estuary Volunteer Water Quality Monitoring Network (CHEVWQMN)**. CHNEP staff serves as a volunteer coordinator, assisting with annual quality control training, quality control compliance and monthly water quality monitoring. The data are uploaded into the Florida STORET database.

Controlling Non-Point Sources

WET PLAN: Watershed Education Training - Ponds, Lakes and Neighborhoods is an education program and resource for anyone interested in improving and caring for their neighborhood lakes and ponds. The program provides workshops several times a year with a panel of experts and assistance for home/condo owners associations and individuals upon request. WET PLAN is a partnership of water quality and lake management experts including members from the Charlotte Harbor National Estuary Program, the City of Bonita Springs, Lee County Natural Resources, Lee County Hyacinth Control District, Florida Gulf Coast University, Lee County Extension Services, the Florida Native Plant Society, and private partners including GHD, Conestoga-Rovers & Associates and Kimley-Horn. WETPLAN partners developed and held 6 workshops in Lee County in Fiscal Year 2015 with more than 200 attendees. WET PLAN continues to conduct workshops in FY2018. In addition, the WET PLAN website continued to be enhanced with content. www.wetplan.org CHNEP established a partnership with LE/AD to adapt WETPLAN to the northern portion of the Study Area.

Applicable EPA-approved State Strategies and Programs

Listed below are the EPA-approved State Strategies and Programs that CHNEP was able to identify.

1) **State Nonpoint Source Management Program** - Section 319 of CWA funds used on SWIM water bodies

- Florida began full implementation of its revised NPS Program in May of 1989 following submission, review, and approval of the State's NPS Management Program and Assessment Report to the United States Environmental Protection Agency (EPA).
- Coastal Nonpoint Source Management Program – Section 6217 of Federal Coastal Zone Act
- Clean Lakes Program – Section 314 of CWA
- NNC: On November 30, 2012, June 27, 2013, and September 26, 2013, EPA approved numeric nutrient standards adopted by the state of Florida for certain waters in the state.
- TMDLs:
 - Group 3 Basin – Caloosahatchee Peace River Basin
 - Group 2 Basin – Charlotte Harbor
 - Group 1 Basin – Hendry Creek and Hendry Creek Marine, Imperial River

2) **National Pollutant Discharge Elimination System (NPDES)**

In October 2000, EPA authorized the Florida Department of Environmental Protection (DEP) to implement the NPDES stormwater permitting program in the State of Florida (in all areas except Indian Country lands). DEP's authority to administer the NPDES program is set forth in Section 403.0885, Florida Statutes (F.S.). The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the State of Florida from certain municipal, industrial and construction activities. As the NPDES stormwater permitting authority, DEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement activities

Municipal Separate Storm Sewer System (MS4)

Section 402(p), adopted in 1987 amendments to the FCWA, and established the NPDES Stormwater Program which regulates stormwater discharges from three potential sources: municipal separate storm sewer systems (MS4s), construction activities, and industrial activities. These stormwater discharges are considered point sources under Federal law, and operators of these sources may be required to receive an NPDES permit before they can discharge. This permitting mechanism is designed to reduce the impact of stormwater runoff in washing harmful pollutants into local surface waters such as streams, rivers, lakes or coastal waters.

A municipal separate storm sewer system (MS4) is defined as a conveyance or system of conveyances (like roads with stormwater systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels, or storm drains) that is designed or used for collecting or conveying stormwater, that discharges to waters of the United States, and is:

- (a) Owned or operated by a State, city, town, county, special district, association, or other public body (created by or pursuant to State Law) having jurisdiction over management and discharge of stormwater and which discharges to surface waters of the state;
- (b) Designed or used for collecting or conveying stormwater;
- (c) Which is not a combined sewer; and
- (d) Which is not part of a Publicly Owned Treatment Works (POTW). POTW means any device or system used in the treatment of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality." This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment. An MS4 can be operated by municipalities, counties, drainage districts, colleges, military bases, or prisons, to name a few examples. By definition, the

components of an MS4 system do not include waters of the United States. Instead, the MS4 ultimately discharges into such waters.

The FCWA establishes two types of MS4 permits - Phase 1 and Phase 2. Phase I rules were adopted by EPA in 1990 and address discharges of stormwater runoff from "medium" and "large" MS4s. All Phase I large and medium MS4s were previously designated by EPA, based on the total population within the geo-political boundaries of the municipalities: a large MS4 is any MS4 that is located in an incorporated place or county with a population of 250,000 or greater. A medium MS4 is any MS4 that is located in an incorporated place or county with a population between 100,000 and 249,999. In addition, other MS4s located in areas with populations below 100,000 can also be designated and brought into the program as Phase I MS4s by EPA. In Florida, this was done extensively at the beginning of the program since most municipal stormwater systems within Florida are interconnected resulting in a large number of co-permittees for most of the Phase 1 MS4 permits. Chapter 62-624, F.A.C. establishes the permitting requirements for MS4s within Florida. There are 14 primary components of a Phase 1 MS4 permit. In addition, all permittees must address legal authorities and financial and other resources needed to implement the program.

DEP was required to develop a set of designation criteria to use for the evaluation of all Phase II MS4s that are located outside of urbanized areas (UAs). These have been adopted in Chapter 62- 624.800, F.A.C. The public also may petition the Department to designate a Phase II MS4 as a regulated MS4 using the designation criteria.

3) Performance Partnership Agreement

DEP entered into a Performance Partnership Agreement (PPA) to further increase the efficiency and flexibility needed to accomplish Florida and federal environmental goals. The PPA serves as the workplan for EPA grants awarded to the state. The following federal programs are covered by the PPA:

- Water Pollution Control (CWA Section 106, surface and ground water)
- Public Water System Supervision (SDWA Sections 1443(a) and 1451(a)(3))
- Underground Water Source Protection (UIC) (SDWA Section 1443(b))
- Resource Conservation & Recovery (RCRA) (SWDA Section 3011(a))
- Clean Air Act Grant (CAA Section 105)

4) Comprehensive Everglades Restoration Plan

During 2012, EPA and the state of Florida reached consensus on new water quality restoration strategies for improving water quality in the Everglades. Discharge permits and consent orders issued by the Florida Department of Environmental Protection require:

- a science-based stringent discharge limit for phosphorus that will result in meeting the water quality standard
- an additional 6500 acres added to one of the wetlands dedicated to phosphorus treatment (called Stormwater Treatment Areas, or STAs)
- dedication of about 110,000 acre-feet of water storage areas (flow equalization basins) that will slowly release water to the STAs in order to maximize their performance
- an enforceable compliance schedule for \$880 million of projects with completion dates of 2018 to 2025
- a robust monitoring and research plan to confirm that the performance of all five STAs is optimized and restoration is moving forward

To assure that progress is being made and milestones are being met, the Regional Administrator for EPA Region 4 will meet twice annually with the Secretary of the Florida Department of Environmental Protection until each STA meets the phosphorus discharge limit. Technical representatives from state and federal agencies also meet at least twice annually to:

- review research,
- evaluate operation of the STAs, and
- assess water quality and progress in achieving the deadlines.

5) **RESTORE**

The Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (RESTORE Act) was passed by Congress on June 29, 2012 and signed into law on July 6, 2012 by the President. The RESTORE Act established the Gulf Coast Ecosystem Restoration Council (Council), which is comprised of governors from the five affected Gulf States, the Secretaries from the U.S. Departments of the Interior, Commerce, Agriculture, and Homeland Security as well as the Secretary of the Army and the Administrator of the U.S. Environmental Protection Agency. The Gulf States recommended and President Obama appointed the Secretary of Commerce as the Council's Chair.

Florida's 23 Gulf Coast Counties formed the Consortium to meet requirements of the RESTORE Act to develop a State Expenditure Plan for economic and environmental recovery of the Gulf coast in Florida following the Deepwater Horizon oil spill. The Gulf Consortium is a public entity created in October 2012 by Inter-local Agreement among Florida's 23 Gulf Coast counties, from Escambia County in the western panhandle of Florida to Monroe County on the southern tip of Florida and the United States.

The Consortium Board of Directors consists of one representative from each county government. As a public entity, the Consortium must meet all government transparency requirements in Florida, including open public records and meetings, ethics and state auditing obligations. Since its inception, the Consortium has met seven times and held several committee meetings to begin developing Florida's State Expenditure Plan.

To avoid duplication and to effectively utilize available resources, Florida's local governments are working in partnership with the State of Florida: to fully recover the Gulf of Mexico following the Deepwater Horizon disaster. The Florida Department of Environmental Protection (FDEP) has established an on-line project submittal form to allow the public to submit projects for consideration by the RESTORE Council. The CHNEP works with its partners to update projects that have been submitted. FDEP coordinates with the Florida Fish and Wildlife Conservation Commission to review and select projects to be submitted by the Governor for inclusion on the Funded Priorities List.

6) The State of Florida Wetland Program Plan, 2013-2016, 3rd Edition February, 2013 – has been published on the US EPA Region 4 website but remains “draft.” The plan is referenced by the CHNEP and partners when applying for Federal funding.

Florida's Wetland Program Plan addresses all 4 elements recommended by US EPA:

- Monitoring & Assessment
- Regulation
- Voluntary Restoration & Protection
- Water Quality Standards for Wetlands

The CHNEP Management Conference certifies that the proposed work program contained in this FY19 Work Plan is consistent with the above elements. (Pursuant to 40 CFR 35.9094)

GLOSSARY OF ACRONYMS

BMAP	Basin Management Action Plan
BMP	Best Management Practice
CAC	Citizens Advisory Committee
CAMA	Coastal and Aquatic Managed Areas
CCHMN	Coastal Charlotte Harbor Monitoring Network
CCMP	<i>Comprehensive Conservation and Management Plan</i>
CFRPC	Central Florida Regional Planning Council
CHEC	Charlotte Harbor Environmental Center
CHEVWQMN	Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network
CHNEP	Charlotte Harbor National Estuary Program
CH-RAMP	Charlotte Harbor-Regional Ambient Monitoring Program
CWPRA	Coastal Wetlands Planning, Protection and Restoration Act
CZM	Coastal Zone Management
EPA	Environmental Protection Agency
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FWC	Florida Fish & Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
GIS	Geographical Information System
GPRA	Government Performance and Results Act
HAS	Hydrological Alterations Subcommittee
HCS	Habitat Conservation Subcommittee
LID	Low Impact Development
MFL	Minimum Flows and Levels
NRCS	Natural Resources Conservation Service
NEP	National Estuary Program
NNC	Numeric Nutrient Criteria
NOAA	National Oceanic and Atmospheric Administration
NWR	National Wildlife Refuge
PR/MRWSA	Peace River/Manasota Regional Water Supply Authority
RPC	Regional Planning Council
SFWMD	South Florida Water Management District
SRPP	Strategic Regional Policy Plan
SWFWMD	Southwest Florida Water Management District
SWFRPC	Southwest Florida Regional Planning Council
SWIM	Surface Water Improvement Management
SWUCA	Southern Water Use Caution Area
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
USACOE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service
VOHM	Volunteer Oyster Habitat Monitoring
WCIND	West Coast Inland Navigation District
WMD	Water Management District
WQ	Water Quality
WQQOS	Water Quality Quantifiable Objectives Subcommittee