COASTAL & HEARTLAND NATIONAL ESTUARY PARTNERSHIP

FISCAL YEAR 2022 WORK PLAN

CHNEP staff at the Vertical Oyster Garden Volunteer Event in January 2021.

Originally approved May 27, 2021
Last amended May 26, 2022

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The Coastal & Heartland National Estuary Partnership (CHNEP) is comprised of citizens, elected officials, resource managers and commercial and recreational resource users working to improve water quality and ecological integrity of other natural resources in its boundaries. A cooperative decision-making process is used to address diverse resource management concerns in the 5,416-square-mile study area. Many of these partners also financially support the Partnership. The governmental entities in the CHNEP and its service area include:

U.S. Environmental Protection Agency

U.S. Fish & Wildlife Service

U.S. Army Corps of Engineers

U.S. Geological Survey

U.S. Department of Agriculture

National Oceanic & Atmospheric Administration

Florida Department of Environmental Protection

Florida Fish & Wildlife Conservation Commission

Florida Department of Economic Opportunity

Florida Department of Agriculture

Central Florida Regional Planning Council

Southwest Florida Regional Planning Council

Southwest Florida Water Management District

South Florida Water Management District

West Coast Inland Navigation District

Peace River/Manasota Regional Water Supply Authority

Florida Gulf Coast University

University of South Florida

University of Florida

Polk, Sarasota, Manatee, Lee, Charlotte, DeSoto, Hardee, Hendry, Highlands and Glades Counties and the incorporated Cities and Towns of Dundee, Haines City, Auburndale, Lake Alfred, Lake Wales, Lake Hamilton, Lakeland, Winter Haven, Eagle Lake, Bartow, Fort Meade, Bowling Green, Wauchula, Zolfo Springs, Arcadia, Venice, North Port, Punta Gorda, Fort Myers, Fort Myers Beach, Cape Coral, Sanibel, Estero, Bonita Springs, LaBelle, Moore Haven, and Clewiston.

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COASTAL & HEARTLAND NATIONAL ESTUARY PARTNERSHIP

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U. S. Environmental Protection Agency, Region 4

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Florida Department of Environmental Protection

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Central Florida Regional Planning Council

Management Committee Co-Chairs
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Technical Advisory Committee Co-Chairs
Mr. Ernesto Lasso de La Vega Mr. Mark Walton

Citizens Advisory Committee Co-Chairs
Mr. Harry Phillips Ms. Debi Osborne

Staff

Jennifer Hecker, Executive Director
Nicole Iadevaia, Research & Outreach Manager
Sarina Weiss, Research Specialist
Jessica Scott-Dunda, Public Outreach Specialist

PREVIOUS YEAR – FY2021 - PROGRAM ACCOMPLISHMENTS

WQ-1: Support a comprehensive and coordinated water quality monitoring and assessment strategy

- CHNEP continued to support the Coastal Charlotte Harbor Monitoring Network (CCHMN), providing funding and staff support including conducting the annual auditing and convening the various sampling entities to hold an annual meeting.
- CHNEP staff continued to support the Florida Department of Environmental Protection's Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network (CHEVWQMN) this included updating the Water Seagrass pages.
- CHNEP staff worked with USF to revise and update the CHNEP Water Atlas as well as ensure all publicly available water quality data is being uploaded. Additionally, CHNEP staff worked with stakeholders to make updates to the Charlotte Harbor Flatwoods Initiative page.

WQ-2: Develop water quality standards, pollutant limits, and clean-up plans

- CHNEP continued to review and provide comments as appropriate on water quality standards (including tidal creeks numeric nutrient targets), Total Maximum Daily Load pollutant limits and Basin Management Action Plan clean-up plans within the CHNEP area.

WQ-4: Reduce wastewater pollution

- CHNEP continued to support its partners, including Charlotte County and the city of Cape Coral, in their septic to sewer conversions of those areas that were determined to be high priority.

WQ-5: Reduce harmful algal blooms

- CHNEP's website was updated to provide more information about harmful algal blooms and their relationship to nutrient pollution.
- CHNEP hosted a virtual summit where multiple presenters discussed the effects of harmful algal blooms.

HR-1: Conduct data collection, modeling, and analyses to support hydrologic restoration

- CHNEP project-managed the Charlotte Harbor Flatwoods Initiative (CHFI) hydrologic restoration project, completing extensive surface and ground water data collection in the Yucca Pens Wildlife Management Area in Charlotte County. This data is vital to the current project underway, which is collecting additional data and then using all of it to conduct integrated surface groundwater modeling to determine how and where flow restoration can occur on a large regional scale.
- CHNEP procured and project managed the South Lee County Watershed Initiative (SLCWI) in the hydrological restoration of that area through a science-based, data-driven, strategic hydrological planning tool being developed. This tool 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.

HR-2: Increase fresh surface water and groundwater availability to support healthy natural systems

- CHNEP and its partners continued to support the implementation of recovery strategies and projects related to upholding the Minimum Flows and Levels and Minimum Aquifer Levels in the CHNEP area. This included the aforementioned C-43 Reservoir Water Quality Summit, as the C-43 Reservoir is the sole project in the Recovery Strategy for meeting the minimum flow and level designated for the Caloosahatchee River in Lee County.
- CHNEP continued to use its educational outreach materials and events to reinforce water conservation and the need of sufficient freshwater for healthy natural wetlands, rivers and estuaries.

HR-3: Preserve and restore natural flow regimes

- CHNEP funded the Yucca Pens Geotechnical and Surveying Project, to gather surface and groundwater data in support of restoring a more natural flow regime in the Yucca Pens Unit of the Cecil Webb Wildlife Management Area (associated with the CHFI hydrological restoration project).

FW-1: Protect, restore, and monitor estuarine habitats

- CHNEP continued to support the Southwest Ecosystem Restoration Team (SWERT). SWERT partners focus on the restoration and enhancement of estuarine habitat including coastal marsh, mangroves, oyster reefs and seagrass. This is done by: identification of information gaps, restoration techniques, planning needs and regional priorities; development of maps of completed and planned restoration projects in the region; partner workshops to gather input on partner priorities and associated programs, and gain concurrence on implementation strategy; and to coordinate with partners to direct future habitat restoration funding priorities.

FW-2: Protect, restore, and monitor environmentally sensitive lands and waterways including critical habitat areas

- CHNEP completed a Habitat Restoration Needs Plan - Phase II project which created a comprehensive science-based plan of exactly where and how much of each different habitat should be preserved, conserved, reserved, restored, and managed in the original CHNEP area. This Plan includes critical habitats for listed species, upland and wetland environmentally sensitive lands, as well as areas that are important to keep open to facilitate habitat migration. The resulting information will be used by partners to identify, prioritize and implement effective habitat restoration and conservation projects, including land acquisition.

FW-3: Assess and promote the benefits of land, waterway, and estuary protection and habitat restoration

- CHNEP project managed a team of economists to complete an Economic Valuation Study project to assess the economic benefits derived from natural resource protection with regards to important industries in Florida such as tourism, agriculture, and real estate. This study will assist policymakers and the public understanding the economic return on investment related to investments in natural resource protection and restoration in the CHNEP area.

PE-1: Promote environmental literacy, awareness, and stewardship through expanded education and engagement opportunities for the general public

- CHNEP designed, published, and distributed 35,000 copies of the 2021 Calendar, which included an educational Harbor Happenings insert on the results of the Economic Valuation of Natural Resources in the CHNEP area study by basin.
- CHNEP also designed, published, and distributed three other educational publications including CHNEP's Harbor Happenings magazine, with more than 5,000 mailed directly to subscribers and another 2,000 begin distributed through partners.
- CHNEP continued to support projects that engage citizens in natural resource protection CHNEP Conservation Grants, as well in organizing monthly volunteer events to educate and provide citizens with hand-on opportunities to be involved in research, monitoring and restoration activities.
- CHNEP's *Adventures in the Charlotte Harbor Watershed* book was converted into an interactive on-line educational module, which was made accessible to teachers, students and the public.

PE-2: Expand reach of education and engagement opportunities to new target audiences

- CHNEP has expanded its outreach to attend non-traditional events such as the Swamp Cabbage Festival, and the *Chalo Nitka* Rodeo in Hendry and Glades counties. Outreach activities and lesson plans have been tailored to address concerns in specific communities.
- The CHNEP CCMP Brochure has been translated into Spanish and this has been handed out at multiple events to be able to reach multiple languages.

PE-3: Strengthen non-profit partner collaboration in education and engagement programs

- CHNEP worked with multiple non-profit organizations to present and provide education and engagement programs.

PE-4: Increase outreach to policymakers to enhance understanding and support for CCMP implementation

- CHNEP staff met with numerous local, state and federal policymakers to educate them about CHNEP, its CCMP, and the current research and project funding needs of our partners.
- CHNET staff drafted 2021 state and federal legislative priorities, which were approved by the CHNEP Policy Committee, and were sent to all local, state, and federal elected leaders.

CCMP FOCUS IN FY 2022

The Fiscal Year 2022 Work Plan and Budget reflects the approved 2019 CCMP, which has the following vision, goals, objective, and strategy:

Water Quality	Hydrologic Restoration	Fish & Wildlife Habitat Protection	Public Engagement
VISION: Waters that meet their designated human uses for drinking, shellfish harvesting, or swimming and fishing, while supporting appropriate and healthy aquatic life.	**VISION:** Natural freshwater flow across the landscape to the estuaries.	**VISION:** A diverse environment of interconnected, healthy habitats that support natural processes and viable, resilient native plant and animal communities.	**VISION:** An informed, engaged public making choices and taking actions that increase protection and restoration of estuaries and watersheds.
GOAL: Water Quality Improvement.	**GOAL:** Enhanced and improved waterbodies with more natural hydrologic conditions.	**GOAL:** Natural habitat protection and restoration.	**GOAL:** Public education and engagement.
OBJECTIVE: Meet or exceed water quality standards for designated uses of natural waterbodies and waterways with no degradation of Outstanding Florida Waters.	**OBJECTIVE:** Adequate aquifer recharge and freshwater volume and timing of flow to support healthy natural systems.	**OBJECTIVE:** Permanently acquire, connect, protect, manage, and restore natural terrestrial and aquatic habitats.	**OBJECTIVE:** Increase the proportion of the population that supports and participates in actions to protect and restore estuaries and watersheds.
STRATEGY: Support comprehensive and coordinated water quality monitoring programs and projects and programs that reduce pollutants entering waterways.	**STRATEGY:** Support data-driven watershed planning and hydrological restoration projects to preserve or restore natural flow regimes and provide sufficient fresh surface and groundwater to natural systems.	**STRATEGY:** Promote and facilitate permanent acquisition and effective protection and management of critical natural habitats including wildlife dispersal areas, movement and habitat migration corridors, wetlands, flowways, and environmentally sensitive lands and estuarine habitats.	**STRATEGY:** Promote environmental awareness, understanding, and stewardship to the general public, new target audiences, and policy-makers; and strengthen non-profit partner collaboration in education and engagement programs.

WQ-1: Support a comprehensive and coordinated water quality monitoring and assessment strategy

- 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 and the public. CHNEP will work with our partners to develop new information pages on the Water Atlas as needed.
- CHNEP will continue to fund and support the Coastal Charlotte Harbor Monitoring Network (CCHMN).

WQ-2: Develop water quality standards, pollutant limits, and clean-up plans

- CHNEP will continue to support, providing technical comment as appropriate, the development and implementation of water quality standards, pollutant limits and clean-up plans.

WQ-3: Reduce urban stormwater and agricultural runoff pollution

- CHNEP will continue to provide public presentations and information on urban stormwater and agricultural runoff pollution.
- CHNEP will continue to support partners in the implementation of stormwater and agricultural runoff reduction projects.

WQ-4: Reduce wastewater pollution

- CHNEP will continue to support partners in the implementation of wastewater discharge reduction and reuse projects, as well as septic to sewer conversion projects.

WQ-5: Reduce harmful algal blooms

- CHNEP will continue to provide public presentations and information on harmful algae blooms and nutrient pollution, as well as research algae bloom remediation techniques.

HR-1: Conduct data collection, modeling, and analyses to support hydrologic restoration

- CHNEP will continue to actively participate in gathering data and supporting modeling and analyses as well as fund integrated ground and surface water models to improve decision-making with regards to hydrological restoration projects.

HR-2: Increase fresh surface water and groundwater availability to support healthy natural systems

- CHNEP will continue to promote water conservation and sufficient flows and levels of freshwater to support natural systems.

HR-3: Preserve and restore natural flow regimes

- CHNEP will work with partners to identify funding sources to facilitate capital programs that coordinate water storage, flood control, water quality and disaster planning.
- CHNEP will continue participating and providing technical assistance in Everglades restoration through project review, meeting participation and technical comment.

FW-1: Protect, restore, and monitor estuarine habitats

- CHNEP will continue to work with Southwest Florida Estuarine Restoration Team (SWERT) partners on designing, permitting and constructing seagrass, oyster, and other estuarine restoration projects in CHNEP area.
- CHNEP will fund and work with researchers from a local university to quantify the nutrient removal efficiency of Tapegrass, to incentive its replanting and restoration.

FW-2: Protect, restore, and monitor environmentally sensitive lands and waterways including critical habitat areas

- CHNEP will continue to offer grants to assist engaged citizens that promote the protection and management of public environmental lands and waterways.

FW-3: Assess and promote the benefits of land, waterway, and estuary protection and habitat restoration

- CHNEP will use its recently completed comprehensive regional Economic Valuation study that assessed the economic benefits of land, waterway, and estuary protection and restoration to promote the economic return on investment from land, water and estuarine protection and restoration investments.

PE-1: Promote environmental literacy, awareness, and stewardship through expanded education and engagement opportunities for the general public

- CHNEP will continue to host volunteer events, as well as host and participate in community events to provide environmental education and public engagement opportunities.
- CHNEP will publish the 2022 Calendar with magazine insert, as well as three other educational publications with environmental educational content, distributed throughout the CHNEP area.
- CHNEP will continue to disseminate information through Constant Contact, on social media, and on the www.chnep.org website.

PE-2: Expand reach of education and engagement opportunities to new target audiences

- CHNEP will continue to conduct a Florida-friendly fishing workshop and other educational events in underserved communities, as a way to introduce key water resource protection information to new target audiences in that area.

PE-3: Strengthen non-profit partner collaboration in education and engagement programs

- CHNEP will continue to administer a Conservation Grant program to foster community natural resource protection projects and initiatives that support CCMP implementation.
- CHNEP will continue to seek and work with non-profit organizations on collaborative initiatives.

PE-4: Increase outreach to policymakers to enhance understanding and support for CCMP implementation

- CHNEP will continue to meet at least annually with as many of its local, state and federal policymakers as they are available to do so, explaining CHNEP's role in supporting CCMP implementation.

BUDGET OVERVIEW

Table 1: Fiscal Year 2022 Proposed Budget

Coastal & Heartland National Estuary Partnership *(Federal Fiscal Year 2022)*	
Revenue	**2022**
Federal (Section 320 Funding)	$ 700,000
Federal (Section 320 Allocated Carryover)	$ 5,104
Federal (Bipartisan Infrastructure Law Funding)	$ 909,800
Partner Contributions (Local)	$ 140,500
Partner Contributions (State)	$ 205,000
Total 2022 Revenue	**$ 1,960,404**
Expenditures	
Personnel	$ 451,373
ANEP Membership	$ 4,500
Travel	$ 25,000
Outreach	$ 134,400
Research & Restoration Contracts	$ 1,170,487
Office Rental	$ 3,425
Computer/IT	$ 28,760
Host Administrative Fee	$ 99,715
Communications Software & Fees	$ 9,600
Materials and Supplies	$ 2,500
Meeting Support	$ 2,500
Added Reserves	$ 28,144
Total 2022 Expenditures	**$ 1,960,404**

Table 2: CHNEP FY2022 Cooperative Funding Table

Funding Source	2022 Budget	Type
Federal:		
Section 320 Funding	$ 700,000	Clean Water Act, Section 320
Section 320 Allocated Carryover	$ 5,104	Clean Water Act, Section 320
Bipartisan Infrastructure Law Funding	$ 909,800	EPA Bipartisan Infrastructure Funding
Total Federal:	**$ 1,614,904**	
Non-Federal:		
Sarasota County	$ 25,000	County Appropriation
Charlotte County	$ 25,000	County Appropriation
Lee County	$ 25,000	County Appropriation
Polk County	$ 15,000	County Appropriation
Manatee County	$ 5,000	County Appropriation
DeSoto County	$ 500	County Appropriation
Hardee County	$ 500	County Appropriation
City of Cape Coral	$ 7,500	City Appropriation
City of Fort Myers	$ 5,000	City Appropriation
City of Punta Gorda	$ 5,000	City Appropriation
City of Sanibel	$ 2,500	City Appropriation
City of Bonita Springs	$ 2,500	City Appropriation
City of Fort Myers Beach	$ 2,500	City Appropriation
City of Venice	$ 2,500	City Appropriation
City of North Port	$ 1,000	City Appropriation
City of Winter Haven	$ 1,500	City Appropriation
Village of Estero	$ 5,000	City Appropriation
City of Arcadia	$ 500	City Appropriation
City of Bartow	$ 500	City Appropriation
Peace Manasota Water Supply Authority	$ 3,500	District Appropriation
Fish & Wildlife Foundation of Florida	$ 5,000	Foundation Contribution
Total Local Government	**$ 140,500**	
FDEP	$ 75,000	District Appropriation
SFWMD	$ -	District Appropriation
SWFWMD	$ 130,000	District Appropriation
Total State/District	**$ 205,000**	
Non-federal Funding Total	**$ 345,500**	
Total Cooperative Funding	**$ 1,960,404**	
Non Federal Match Requirement	**$ 700,000**	

Table 3: Projected FY2022 Travel

Date	Event	# Staff	Location	Length of Stay	Travel Mode	Reg. Fee	Estimated Travel Cost
Oct. 2021	CERF	1	Virtual	N/A	N/A	$ 595	$ -
Jan. 2022	Everglades Coalition	1	Islamorada, Florida	3	Auto	$ -	$ 1,300
Feb. 2022	ANEP-BASIS	3	Tampa, Florida	4	Auto	$ 525	$ 1,800
April 2022	Florida Wildlife Corridor Summit	1	Orlando, Florida	1	Auto	$ -	$ 200
April 2022	GOMA	1	Baton Rouge, Louisiana	4	Air	$ 625	$ 1,875
Jun 2022	SJBNEP Program Evaluation	1	San Juan, Puerto Rico	3	Air	$ 300	$ 1,200
Oct. 2021 - Sep. 2022	Local Travel/Meetings	6	Various, Florida	<1 Day	Auto	$ 300	$ 15,980
Subtotal						$ 2,645	$ 22,355
TOTAL							**$ 25,000**

Table 4: FY2022 Outreach and Education Projects

FY	Code	Funder	Title	Amount
2022	TBD	EPA 320	CHNEP Special Project	$ 9,000
2022	CH2POG	Local	CHNEP Conservation Grants	$ 30,000
2022	CH2TAR	Manatee	CHNEP Target Audience	$ 5,000
2022	CH2TAR	EPA 320	CHNEP Target Audience Programs	$ 19,900
2022	CH2CAL	EPA 320	CHNEP Calendar	$ 25,000
2022	CH2CAS	Local	CHNEP Calendar Support (Contractor)	$ 5,000
2022	CH2COL	EPA 320	CHNEP Collateral, Posters, etc.	$ 2,000
2022	CH2HH	EPA 320	CHNEP Harbor Happenings	$ 20,000
2022	CH2SPO	EPA 320	CHNEP Sponsorships	$ 6,500
2022	CH2EVE	EPA 320	CHNEP Event TBD	$ 2,000
2022	TBD	Local	Policymaker Education Contractor	$ 10,000
TOTAL				**$ 134,400**

Table 5: Technical Projects Funding Table

FY	Code	Funder	Project Title	Amount
2019	CH4TBD	SWFWMD	Myakka Headwaters Project	$25,000
Non-EPA FY19 Carry-Over Total				**$25,000**

2020	TBD	EPA 320	Cyanobacteria Rapid Response	$66,061
2020	CH4CHF	SWFWMD	LCHFI Hydrologic Restoration	$14,805
2020	CH4CHF	FDEP-NRDA	Lower Charlotte Harbor Flatwoods Hydrologic Restoration Initiative (LCHFI)	$532,283
Non-EPA and EPA FY20 Carry-Over Total				**$613,149**

2021	TBD	EPA 320	Pine Island Restoration Project	$96,000
2021	TBD	SWFWMD	Myakka Headwaters Project	$31,000
Non-EPA and EPA FY21 Carry-Over Total				**$127,000**

2022	CH3CMN	SWFWMD	CCHMN - Upper Charlotte Harbor	$74,000
2022	CH3LCH	EPA 320	CCHMN - Lower Charlotte Harbor	$13,000
2022	CH3LCH	EPA 320	CCHMN - assistance	$3,240
2022	CH3WA	EPA 320	CHNEP Water Atlas Maintenance & Improvements	$88,038
2022	CH3WA	EPA 320	CHNEP Water Atlas Updating & Expanding Water Quality Analysis Trends	$49,959
2022	CH3WA	FWFF	Place-based Fisheries Conservation in Charlotte Harbor on Water Atlas	$5,000
2022	CH4TPP	EPA BIL	Tiki Point Living Shoreline Project	$709,800
2022	CH4PIR	EPA 320	Pine Island Restoration Project	$17,450
2022	TBD	EPA BIL	Charlotte County Vulnerability Assessment	$200,000
2022	TBD	Local	TBD Project money to cover unanticipated costs	$10,000
Non-EPA and EPA FY22 Total				**$1,170,487**

Table 6: FY2022 SWFWMD Funding by Task

Task	Project	SWFWMD	Project Total
1 (Work Plan Task 3.1)	CCHMN - Upper Charlotte Harbor	$74,000	$74,000
2 (Work Plan Tasks 3 & 4)	Staff Support	$56,000	$112,000
TOTAL		**$130,000**	**$186,000**

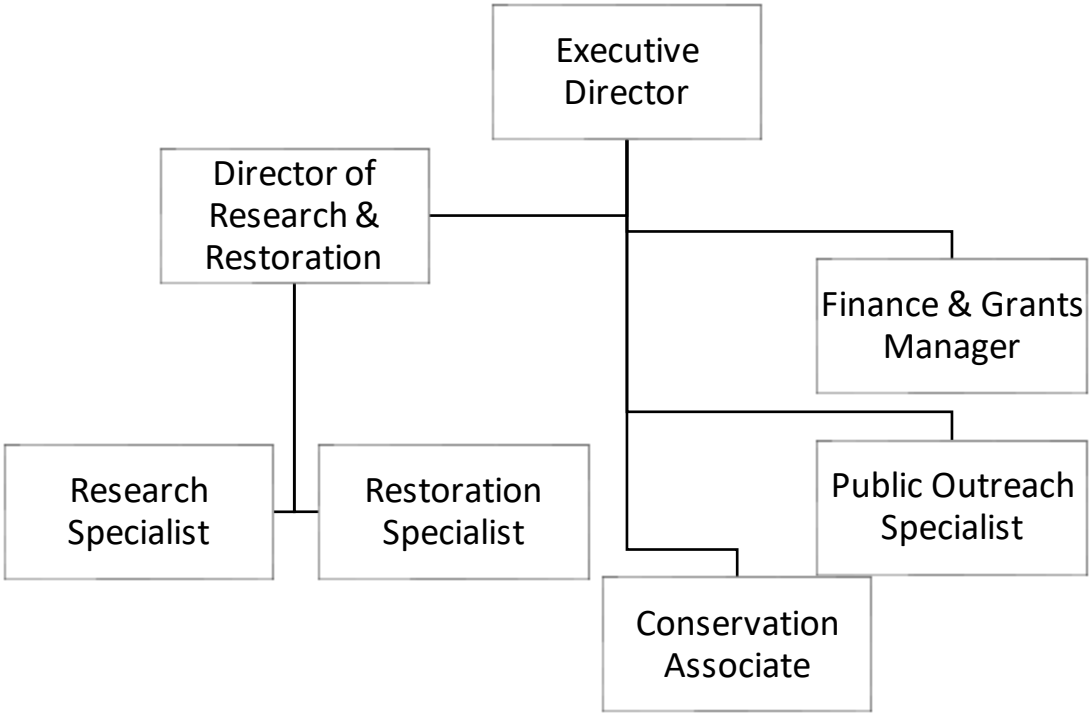
Table 7: FY2022 Budgeted Administrative Costs

FY	Code	Funder	Title	Amount
2022	CHEPA1	EPA	CHNEP Pre-employment Expenses	$500
2022	CH1COM	EPA	CHNEP Communications Software & Fees	$9,600
2022	CH1MAT	EPA	CHNEP Materials and Supplies	$2,500
2022	CH1OAD	EPA	CHNEP Overhead Administrative Charges	$99,215
2022	CH1OCP	EPA	CHNEP Overhead Computer	$28,760
2022	CH1ORN	EPA	CHNEP Overhead Office Rent	$3,425
2022	CHFOOD	Local	CHNEP Meeting Support	$2,500
2022	CH4ANEP	Local	CHNEP ANEP Dues	$4,500
TOTAL				**$151,000**

Note: FY21 EPA Carryover funds will be reserved for CHNEP Added Overhead for a potential new City staff position.

STAFF AND THEIR OFFICIAL RESPONSIBILITIES

The FY22 CHNEP staffing plan includes seven full-time professionals to provide general programmatic support as needed, as well as a potential dedicated procurement professional position embedded in CHNEP's fiscal host.



Executive Director: Responsible for overall program management including cultivating and strengthening partnerships and soliciting funding, as well as is the liaison to Policy and Management Committees.

Director of Research & Restoration: Responsible for management of research and restoration projects and initiatives, as well as is the staff liaison to Technical and Citizens Advisory Committees.

Finance & Grants Manager: Responsible for finance, grants and contracts administration.

Public Outreach Specialist: Responsible for organizing and conducting public engagement and education initiatives, as well as overseeing volunteer management.

Research Specialist: Responsible for providing assistance with scientific research projects and initiatives, as well as drafting the technical content for articles, grant proposals and reports.

Restoration Specialist: Responsible for providing assistance with restoration projects and initiatives, as well as drafting the technical content for articles, grant proposals and reports.

Conservation Associate: Paid internship position to provide a variety of program support functions including administrative support, outreach, marketing, research, etc.

NEW AND ONGOING PROJECTS

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

Task 1: Management Conference
- 1.1 Conservation Grants
- 1.2 Sponsorships
- 1.3 Program Office Collateral / Reprints

Task 2: Public Engagement
- 2.1 2022 Calendar and four issues of Harbor Happenings
- 2.2 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 & Improvements
- 3.3 Lower Charlotte Harbor Flatwoods Hydrologic Restoration Initiative, Yucca Pens Unit
- 3.4 South Lee County Watershed Initiative Hydrological Modeling Project
- 3.5 Charlotte County Climate Change Vulnerability Assessment

Task 4: Watershed Coordination
- 4.1 Submerged Aquatic Vegetation Restoration
- 4.2 New Project(s): Restoration Project Grant(s)
- 4.3 Pine Island Sound Restoration
- 4.4 Myakka Headwaters Project
- 4.5 Cyanobacteria Rapid Response Pilot
- 4.6 Tiki Point Harborwalk Living Shoreline Pilot Project

Task 5: Policymaker Education

CLEAN WATER ACT (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: Administration, Finance, Operations

Work Plan Objective: Provide committee structure that supports the implementation of the CCMP; support administration of 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 for 4 committees, 3x/yr.
- Management Conference adoption of Annual Work Plan, no later than October 1, 2021
- GPRA Reporting through EPA's NEPORT, by September 14, 2022
- Administration of Program Office operations and finances, ongoing
- Collaborate with partners on CCMP implementation, ongoing
- Comply with Host Agency finance and procurement requirements, ongoing
- Comply with Funders' grant reporting requirements, ongoing

FY 22 Budget:

EPA 320 Funds (FY22):		
Personnel Staff Time:	$ 280,017	($451,373 Total)
Travel:	$ 25,000	
Admin Costs (Rent, Computer, Admin. Fee):	$ 131,900	
Communications Software & Fees:	$ 9,600	
Materials & Supplies:	$ 2,500	
EPA 320 FY 22 Total	$ 449,017	
FY22 FDEP Personnel:	$ 75,000	
FY22 SWFWMD Personnel:	$ 56,000	
FY22 Local Personnel:	$ 40,356	
Total Personnel Staff Time Budget:	$ 451,373	
FY22 Local Meeting Support:	$ 2,500	
FY22 Budget Total	$ 622,873	
FY21 Potential Host Staff Position:	$ 75,000	

Outcomes

- Fully informed and engaged CHNEP Management Conference with members participating in Committee, subcommittee and work group meetings
- Other federal, state and non-profit grants obtained to funding CCMP implementation
- Compliance with federal and state laws, including Florida's Government Sunshine laws
- Increased participation, understanding and support of NEP mission by partners
- Continued commitment from partners to fund CHNEP and CCMP activities
- Funding opportunities and assistance provided to partners to implement initiatives and projects that further CCMP implementation
- Successful passage of financial audits and program evaluations

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

Task 1.1 Ongoing Project: Conservation Grants

Project Objective: To implement the CCMP through award of funding to community partners for CCMP-related community projects and initiatives.

Project Description: Conservation grant proposals are solicited and awarded in the $500 to $3,000 range to selected citizens, organizations, businesses, government agencies, schools or universities that are undertaking activities outlines in the CHNEP CCMP.

CCMP Elements Implemented: All

Outputs/Deliverables

- Outputs vary with project, but all projects submit a final project report with supporting documentation

Estimated Milestones:

- All proposals reviewed and recommendations for funding completed according to the cycle schedule:
  Summer Deadline is August 1, 2021 for October 2021 award notice
  Winter Deadline is December 1, 2021 for February 2022 award notice
  Spring Deadline is April 1, 2022 for June 2022 award notice
- All payments are expected to be processed by September 30, 2022

FY 22 Budget:

Local Funds:	$30,000
Estimated Total Budget:	$30,000

Outcomes:

- Strengthened and expanded partnerships to protect and restore the CHNEP area
- Engaged citizens assisting in environmental education, research, monitoring, and restoration activities
- Expanded CHNEP outreach and education
- Enhanced natural resource protection

CWA Core Program addressed: potentially all

Task 1.2 Ongoing Project: Sponsorships

Project Objective: Implement of CCMP through support of CCMP-related conferences, workshops and events.

Project Description: Support for environmental conference, workshops, symposia, etc. through sponsorships, which support implementation the CHNEP CCMP.

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, 2022

FY 22 Budget:

EPA 320 Funds:	$6,500
Estimated Total Budget:	$6,500

Outcomes:

- Strengthened and expanded partnerships to implement the CCMP
- Engaged scientists, researchers, stakeholders and decision-makers in events that educate and inform about research, monitoring, and restoration activities relevant to CHNEP
- Informed general public, potential partners, and targeted audiences 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 1.3 Ongoing Project: Program Office Collateral/Reprints

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

Project Description: CHNEP produces a wide variety of educational materials and resources to the public. In addition, CHNEP participates in numerous community conferences, festivals, and events as an exhibitor to disseminate these materials. This task supports the development and purchase of the needed materials and supplies.

CCMP Elements Implemented: All

Outputs/Deliverables

- Uniform branded educational products and materials, ongoing

Estimated Milestones:

- CHNEP branded educational resources and materials available to staff and partners as needed

FY 22 Budget:

EPA 320 Funds:	$2,000
Estimated Total Budget:	$2,000

Outcomes:

- Increased awareness of CHNEP and CHNEP's CCMP
- Expanded CHNEP partnerships
- Engaged decision-makers and citizens in CHNEP activities

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; as well as to support the CHNEP Management Conference and partners' public outreach initiatives to further CCMP implementation.

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.

Media tools currently used include:

- YouTube: Videos and talks (PDF files with linked with audio) are posted and updated continuously
- EventBrite: CHNEP events requiring registration are promoted on this site
- 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.org website provides current information about projects, meetings, grant opportunities, and volunteer activities
- CHNEP Water Atlas: The Water Atlas publishes a calendar that lists events open to the public

CCMP Elements Implemented: PE-1, PE-2, PE-3, and PE-4.

Partners and their roles
CHNEP is lead in conducting its public outreach activities, doing so in cooperation with and in support of its partners

Outputs

- Updated website for Management Conference meetings and activities
- Routine posts on Facebook social media
- EventBrite messages to promote and handle registrations for events
- Constant Contact messages to announce Management Conference meetings
- Citizen science workshops and events

Estimated Milestones

- 10 CHNEP Volunteer Events and 10 External Outreach events per year

FY 22 Budget:

EPA 320 Funds:	$9,000 + Staff Time (Special Education Project)
FDEP Funds:	Staff Time
Total Budget:	$9,000 + Staff Time

Outcomes

- Educated and engaged citizenry who are knowledgeable about the CHNEP and the natural environment of southwest Florida.
- Educational resources and events that enhance protection of natural resources and CCMP implementation
- New partnerships and strengthened existing partnerships through funding opportunities for projects that implement 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: 2022 Calendar and CHNEP *Harbor Happenings* Magazine

Project Objective: Educate, motivate and engage the public and partners through creating an annual nature calendar and periodic magazines that showcase the importance and diversity of the native, natural environment, as well as raise awareness of CHNEP and its efforts to implement the CHNEP CCMP.

Project Description: CHNEP designs, publishes and distributes an annual calendar with an educational insert section, with images donated by citizens. Additionally, the CHNEP also produces periodic *Harbor Happenings* magazines to report on environmental "happenings," including watershed issues, events and updates on CHNEP activities and progress towards implementing the CCMP.

CCMP Elements Implemented: PE-1, PE-2, PE-3, and PE-4.

Partners and their roles: Articles and images are donated by interested citizens and Management Conference partners. 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: The *Harbor Happenings magazine* (one of which is included in the calendar) and annual CHNEP Calendar.

Estimated Milestones:

- Magazine printed seasonally
- Calendar published and distributed annually

FY 22 Budget:

EPA 320 Funds:	
Calendar Printing/Mailing	$25,000
Magazine Printing/Mailing	$20,000
Local Funds:	$ 5,000 (Calendar Support Contractor)
Estimated Total Budget:	$50,000 + Staff Time

Outcomes: Informed public and CHNEP partners 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 2.2 Ongoing Project: Public Engagement - Events

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

Project Description:
Events provide information and activities for various audiences, ranging from citizens to environmental professionals to decision-makers. Events also provide opportunities for partners to network, collaborate and learn about projects and solutions to environmental issues. CHNEP organizes and hosts routine citizen science and volunteer events that involve presentations followed by resource-protection activities.

CCMP Elements Implemented: PE-1, PE-2, PE-3, and PE-4.

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
- 10 volunteer events

Estimated Milestone:
- Plan, promote and facilitate 10 citizen science and volunteer events annually

FY 22 Budget:

EPA 320 Funds	$21,900	(Target Audiences)
Local Funds	$ 5,000	(Manatee County contribution)
Estimated Total Budget:	$26,900	

Outcomes
- Increased understanding of how personal actions affect the environment
- Enhanced sense of stewardship in natural resource protection
- Increased numbers of partners conducting activities that help fulfill the CCMP
- Professional exchange and technological information transfer amongst partners

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 area. To identify and resolve gaps in scientific data and address emerging research needs through partnerships and innovative research.

Description: CHNEP coordinates some water quality sampling as well as works with partners to identify and resolve gaps in water quality and biological data, specifically through refinements to the Monitoring Strategy. 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, to be incorporated into resource management plans.

CCMP Elements Implemented: WQ-1, WQ-2, HR-1, FW-2, and PE-1.

Partners and Roles: outlined below in the respective subtasks

Outputs/Deliverables, Milestones:

- ***CHNEP 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

FY 22 Budget:

320 Funds:	Staff Time
FDEP Funds:	Staff Time
SWFWMD Funds:	Staff Time
Estimated Total Budget:	Staff Time

Outcomes

- Consistent region-wide, technically sound water quality and biological data needed to assess resource status, trends and complex interactions
- Public access to water quality and seagrass data to partners via CHNEP Water Atlas
- Increased data analyses, maps and graphs to enhance and evaluate protection and restoration efforts
- Increased collaboration of monitoring, mapping and management among resource managers and agencies from throughout the CHNEP Area
- Expanded used of data 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: Water Quality and Seagrass Monitoring and Mapping Programs

Project Objective: To ensure collection, reporting and mapping of consistent, technically sound long-term water quality and seagrass data throughout the CHNEP 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. Additionally, CHNEP supports 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 also supports 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: WQ-1, WQ-2, HR-1, FW-1, FW-2, FW-3, PE-1, and PE-3.

Partners and Roles:

CCHMN:		
Water Quality monitoring support:	$74,000	SWFWMD
	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
Seagrass Transects:	In-kind	FDEP CHAP, EBAP, South District
Seagrass Aerial Mapping:	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

FY 22 Budget:

FY22 EPA 320 Funds:	$16,240
FY22 SWFWMD:	$74,000
Estimated Total Budget:	$90,240 (~$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 asses 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 CHNEP
- Provide access to water quality and seagrass data to partners via CHNEP Water Atlas
- Provide data needed to asses effectiveness of protection and restoration efforts
- Increase collaboration on monitoring and mapping between SWFWMD and SWFWMD

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 & Improvements

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 to 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, 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 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 CHNEP Water Atlas components, including home page design and database updates.
In addition to maintenance the CHNEP Water Atlas make upgrades and improvements on an annual basis, the descriptions below include possible enhancements to the CHNEP Atlas for FY 2022.

New Water Atlas Features/Enhancements:

- Habitat Restoration Needs (HRN) Interactive Mapper Update
- Incorporate Site-Specific Water Quality Criteria into Water Body Pages
- Estuarine Water Quality Map
- Annual Updates for Water Quality Trends and Seagrass Pages
- Coordination with University of Florida on Grant-Funded Project
- Clam Habitat Suitability Map
- Updated Water Quality Trends Analysis and Dashboard

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

Outputs/Deliverables Milestones:

- Post and provide access to water quality data updates every 6 months
- Post and provide access to water quality contour map updates annually
- Post and provide access to data analyses, maps and graphs as requested
- New aforementioned Water Atlas features and enhancements

FY 22 Budget:

FY22 320 Funds:	$137,997
FWFF Funds:	$ 5,000
Estimated Total Budget:	$142,997 ($88,038 USF Maintenance & Improvements + $49,959 UF Expanding Water Quality Analysis trends + $5,000 Place-based Fisheries in Charlotte Harbor from Fish & Wildlife Foundation of Florida)

Outcomes

- Data publicly provided to public and resource managers to assess effectiveness of protection and restoration efforts
- Increased coordination on sampling and monitoring efforts amongst resource managers and agencies in 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 Ongoing Project: Lower Charlotte Harbor Flatwoods Hydrologic Restoration

Project Objective: 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 Cecil Webb/Babcock Wildlife Management Area and Yucca Pens Unit Wildlife Management Area through tidal creeks discharging into eastern Charlotte Harbor and the Caloosahatchee River.

Project Description: This project will collect and synthesize data using an integrated, three-dimensional, hydrological model to determine the appropriate hydropatterns, timing and quantity of water flows required to improve the hydrological conditions and habitat within the (80,000 Acres) Cecil Webb/Babcock and Yucca Pens Wildlife Management Areas (WMA) both managed by the Florida Fish and Wildlife Commission and the creeks flowing into the eastern Charlotte Harbor and Caloosahatchee estuaries. The outcomes from the Future conditions modeled scenarios will be known as the Lower Charlotte Harbor Flatwoods 'Strategic Hydrological Restoration Planning Tool' and Report. The Report will provide guidance to local governments and agencies for how best to restore connections and manage surface waters flowing from the Babcock-Webb WMA and Yucca Pens Unit through tidal creeks discharging into eastern Charlotte Harbor and the Caloosahatchee River.

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

Partners and Roles: CHNEP (Funder), Charlotte County (Funder), SWFWMD, SFWMD, FWC, etc.

Outputs/Deliverables Milestones:

- Groundwater and Flow Monitoring Plans and Monitoring Equipment Installation
- Updated MIKE SHE/MIKE 11 hydrological model files
- Ecologic Studies
- Integrated ground/surface water Model Results
- Lower Charlotte Harbor Flatwoods 'Strategic Hydrological Restoration Planning Tool' and Report

FY22 Budget:	Remaining funds to be extended + Staff Time
Prior Funding:	
FDEP FY20-23 NRDA Funds:	$ 508,250 ($475,000 contactor + $33,250 project overhead)
FDEP FY20-23 Contingency Funds:	$ 57,283 (subject to increase based on FDEP approval)
SWFWMD FY20 Funds:	$ 39,509
Local Funds FY21:	$ 4,805
Estimated Total Budget:	$ 609,847 + Staff Time + FDEP Contingency Funds

Outcomes

- A Strategic Hydrological Planning Tool which will summarize the results of each model run and provide recommendations on priority restoration and management projects and actions, the resulting benefits and approximate implementation costs.

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 3.4 Completed 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 restoration 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. Modeling is needed to assess the natural system water level and flow needs in the remaining portion of the Estero Bay watershed not covered in the efforts to upgrade MIKE SHE/MIKE 11 model of the Big Cypress Basin for the Corkscrew Swamp Sanctuary.

Project Description: This project will expand and enhance the MIKE SHE/MIKE 11 model for the Big Cypress Basin used to conduct modeling for the Corkscrew Swamp Sanctuary area. It will expand the modeling, mapping, and data collection work to include the entire South Lee County Watershed. This integrated surface/ground water model, will incorporated both groundwater and flow monitoring data along with and ecological data collected on high water marks 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 work will be done in partnership with SFWMD and other members of the South Lee County Watershed Initiative.

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

Outputs/Deliverables Milestones:

- Groundwater and Flow Monitoring Plans and Monitoring Equipment Installation
- Updated MIKE SHE/MIKE 11 hydrological model files
- Ecologic Studies
- Integrated ground/surface water Model Results
- Updated Land Use Files
- South Lee County Watershed Initiative 'Strategic Hydrological Restoration Planning Tool' and Report

FY22 Budget:

Prior Year Funding	Remaining funds to be extended + Staff Time
FY21 SFWMD:	$ 64,960
EPA NCE 320 funds:	$149,249
Total Budget:	$214,209

Outcomes

- Data to be incorporated into an integrated surface/ground water hydrologic model that is capable of simulating both wet and dry season water levels and flows in the Estero and Imperial River watersheds and will be sufficient for evaluating wetland hydroperiods and depth ranges in the South Lee County Watershed adjacent to Corkscrew Swamp Sanctuary.

- A Strategic Hydrological Planning Tool which will summarize the results of each model run and provide recommendations on priority restoration and management projects and actions, the resulting benefits and approximate implementation costs.

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 3.5 Charlotte County Climate Change Vulnerability Assessment

Project Objective: To identify local climate change impacts and vulnerabilities and present adaptation responses that can help reduce community vulnerability and/or increase resilience in Charlotte County, Florida.

Project Description: This project will use the climate adaptation planning process to conduct public workshops and data analysis to identify pre-existing conditions and climate stressors, including vulnerability modeling to develop recommended Adaptation Action Areas (AAA's) for Charlotte County. The Consultant will gather and update the County's vulnerability assessment utilizing new elevation data, updated sea level rise projections, shoreline information, capital project data, social vulnerability index, and stormwater management data. Vulnerability modeling with new elevation data will be used to determine infrastructure and habitat impacts as well as areas of increasing vulnerability for a 2030, 2060, and 2100 sea level rise assumption horizon. Using the best available data, the contractor will also incorporate an analysis of stormwater management and social vulnerability using best practices such as the Center for Disease Control's Social Vulnerability Index or other evaluation strategy (identifying vulnerable populations and potential public health risks).That information and input will be synthesized into a summary of current and projected climate changes for the community, with particular focus on addressing the needs of disadvantaged communities as defined by the US EPA. The contractor will then use these vulnerability assessments to develop proposed adaptation strategies. One of the foundational concepts of Fla Stat 380.093 and FEMA's CRS program is to assess the flood risk of a community using best available tools, data, and methodologies. The larger goal of both programs is to capture multiple types of weather-related scenarios to project and model how various flood risks would affect the community. This project will produce a final Climate Change Vulnerability Assessment for Charlotte County that meets all Florida Statutory requirements to create a final product that is acceptable to the Florida Department of Environmental Protection in order to qualify the County to access additional state funding sources, for which that is a prerequisite for.

CCMP Elements Implemented: potentially all CCMP elements

Partners and Roles: CHNEP (Funder), Charlotte County

Outputs/Deliverables Milestones

- Data Collection and Analysis
- Vulnerability Modeling and Analysis (including stormwater, social, etc.)
- Summary of Current and Project Climate Changes
- Summary of Proposed Adaption Strategies and recommended Adaptation Action Areas

FY22 Budget:

EPA FY22 BIL Funds:	$ 200,000 (*Note: If BIL monies do not come in FY22 FY 23 BIL funds will be used for this in lieu of new CCVAs below*)
Estimated Total Budget:	$ 200,000 + Staff Time

Outcomes

- Climate Change Vulnerability Assessment for Charlotte County that meets state Statutory requirements

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 coordinate partner efforts around protection and restoration on a watershed scale.

Description: CHNEP to coordinate protection and restoration efforts including mapping, monitoring, reporting (including in the annual development of the Government Performance and Review Act (GPRA) report). Additionally, CHNEP staff will provide technical support 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. Southwest Florida Estuarine Restoration Team (SWERT) facilitates region-wide estuarine habitat restoration that addresses endangered smalltooth sawfish critical habitat. 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. Additionally,_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. As opportunities arise, CHNEP also assists partners in conducting restoration activities.

CCMP Elements Implemented: All

Partners:
CHNEP, 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
- GPRA Report
- Technical support for Charlotte Harbor Flatwoods Initiative, Lehigh Watershed Initiative, & South Lee County Watershed Initiative

FY 22 Budget:

320 Funds:	Staff Time
FDEP Funds:	Staff Time
SWFWMD Funds:	Staff Time
Estimated Total Budget:	Staff Time

Outcomes
- Improved resource management
- Annual summaries of partners' restoration activities through the GPRA report
- Increased number and effectiveness of 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: Submerged Aquatic Vegetation Restoration

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.

CCMP Elements Implemented: FW-1, FW-2, PE-1, PE-2, and PE-3.

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:

- Exchange of SAV information ongoing

FY 22 Budget

320 Funds:	Staff time
Estimated Total Budget:	Staff time

Outcomes

- Increased protection and restoration of natural systems
- More region-wide water quality, biological and physical data
- Advancement on the development of SAV Targets for Caloosahatchee River
- Adaptation of SAV restoration projects based on lessons learned
- Increased 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 4.2 New Project(s): Restoration/Research TBD Projects

Project Objective: To solicit and award funding for a restoration/research 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/research 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/research 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/research 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/research 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

FY 22 Budget:

Local Funds:	$ 10,000
Estimated Total Budget:	$ 10,000

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 4.3 New Project(s): Pine Island Flatwoods Preserve Wetland Habitat Enhancement

Project Objective: This project will increase the area of restored wetland habitat through hydrological restoration. Wetlands naturally filter out pollutants and provide freshwater base flow to maintain healthy salinity levels in tidal creeks and estuaries. As a result of increasing wetlands on-site, cleaner and more appropriate flows of freshwater will be flowing across and off-site — supporting healthier and more abundant aquatic life downstream

Project Description: Pine Island Flatwoods Preserve (part of the Lee County Conservation 20/20 Program) is a 919-acre passive area which supports 134 wildlife species. This project is identified in the Pine Island Flatwoods Preserve Land Stewardship Plan, to control exotic plant species, provide freshwater to wildlife outside of the wet season, and restore hydrology of the site. The proposed 1.27 acre project area presently includes four abandoned shrimp farm ponds surrounded by multiple earthen spoil berms. The planned construction activities include the removal of these berms, construction of 100 feet of new berm to ensure wetland water retention, and re-contouring of the current shrimp pond area to create two distinctive water management areas for habitat enhancement purposes. Following construction, the enhanced freshwater marsh will be approximately 2 to 2.5 feet deeper and will connect to the Pine Island Sound estuary through an estuarine pond and outfall. Restoration of these old shrimp ponds will provide wetland habitat and a freshwater source to wildlife year-round. The project will also improve water quality and flows downstream.

CCMP Elements Implemented: HR-3, FW-1, FW-2, FW-3

Partners and Roles: Lee County is the site owner manager as well as permit applicant, FWC will serve as a project consultant, and CHNEP is the restoration project funder and manager.

Outputs/Deliverables:

- Gopher tortoise site survey, permitting and relocation tech memo
- Site construction plans, mobilization, earthwork, and demobilization tech memo
- Native planting and maintenance technical memo

Estimated Milestones:

- Completed hydrological restoration and wetland habitat creation project with positive impacts on downstream estuary water quality

FY 22 Budget	Remaining funds to be extended + Staff Time
Prior Year Funding	
FY21 EPA 320 Funds:	$ 96,000
FY22 EPA 320 Funds:	$ 17,450
Estimated Total Budget:	$113,450 + Staff Time

Outcomes

- Increased protection and restoration of natural systems and habitats
- 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: (5) protecting wetlands and (6) protecting coastal waters through the National Estuary Program.

Task 4.4 New Project(s): Myakka Headwaters Project

Project Objective: This project will increase the area of restored wetland habitat through exotic invasive plant removal. Wetlands naturally filter out pollutants and provide freshwater base flow to maintain healthy salinity levels in tidal creeks and estuaries.

Project Description: Myakka Headwaters Preserve is part of both the Myakka River and the greater Gulf Coast ecosystem. Located within a larger protected area, Myakka Headwater Preserve forms an important part of Flatford Swamp, the River's largest forested wetland. Surrounding the preserve are an additional 2,457 acres of Flatford Swamp, preserved by Southwest Florida Water Management District (SWFWMD). The purchase of Myakka Headwaters Preserve further protected this rare treasure. At the same time, restoration work is necessary to realize the property's full environmental potential.

CCMP Elements Implemented: FW-1, FW-2, FW-3

Partners and Roles: Conservation Foundation of the Gulf Coast is the site owner manager. SWFWMD will serve as a project consultant and funder and CHNEP is the restoration project manager.

Outputs/Deliverables:

- Native Planting & Exotic Removals tech memo
- Site Management Plan to maintain and expand on the restoration work

Estimated Milestones:

- Completed native planting & exotic removal that will create a positive impact on downstream waters

FY 22 Budget	Remaining funds from below to be expended + Staff Time
Prior Year Funding	
FY19 SWFWMD Funds:	$25,000
FY21 SWFWMD Funds:	$31,000
Estimated Total Budget:	$56,000

Outcomes

- Increased protection and restoration of natural systems and habitats
- Restoration and success management 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: (5) protecting wetlands and (6) protecting coastal waters through the National Estuary Program.

Task 4.5 New Project(s): CHNEP Cyanobacteria Rapid Response Pilot Program

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

Project Description: Cyanobacteria and red tide are reoccurring problems in some waters in the CHNEP area. 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-5

Partners and Roles: CHNEP (funder), Florida Gulf Coast University (researchers), and AquaFlex Holdings LLC (remediation technology proprietors).

Outputs/Deliverables Milestones

- Open-Cell foam eelgrass and environmental indicators to be deployed in the water column during a cyanobacteria bloom, and then submitted to approved Florida laboratories for analysis of cyanobacteria, phosphorus, toxins, and other substances as deemed necessary.

FY 22 Budget	Remaining funds to be extended + Staff Time
Prior Year Funding	
FY20 EPA 320 Funds:	$66,061
Estimated Total Budget:	$66,061

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 4.6 New Project: Tiki Point Harborwalk Living Shoreline Pilot Project

Project Objective: CHNEP will work alongside the City of Punta Gorda to advance the Tiki Point Harborwalk (TPH) living shoreline project from conceptual design to construction. The project will increase resilience and mitigate the risks of flooding and SLR using a hybrid nature-based solution to improve habitat and water quality, reduce erosion, and buffer storm effects as outlined in the. It will include data collection, final design and permitting, and construction. CHNEP will be working alongside the City to raise public awareness and engage and educate local partners and citizens on the benefits of living shorelines.

Project Description: The project aims to further develop solutions to mitigate/adapt to the risks of flooding along the Charlotte Harbor shoreline by implementing nature-based features. Application of these nature-based solutions will decrease wave energy along the shorefront and assist in providing a buffer to SLR and flooding for the historic downtown district of Punta Gorda and US 41, a primary evacuation route for the region which is susceptible to flooding. CHNEP will work alongside the City of Punta Gorda, who will be procuring the construction, to educate and hold public workshops for the citizens of Punta Gorda. This will allow education as to why living shorelines are so important in the region. The Vulnerability Assessment (VA), included in the 2019 City of Punta Gorda Adaptation Plan, implemented a GIS-based analysis of the City's public infrastructure using SLR projections and tropical storm surge (stillwater) elevations. The project site is within the VA's Historic Downtown Focus Area and is identified as a low-lying flood prone area (54% flooded with 3 ft. of SLR). This shoreline includes a waterfront promenade connecting two City parks.

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

Outputs/Deliverables Milestones:

- Construction Plans
- Pictures/ Videos of before and after construction
- Fact Sheet on benefits of nature-based solutions such as a hybrid living shoreline

FY22 Budget:

EPA FY22 BIL Funds:	$709,800 (*Note: if BIL funding does not come in FY22, then FY23 BIL funds will be used for this project in lieu of TBD Restoration Projects below.*)
Estimated Total Budget:	$709,800 + Staff Time

Outcomes

- Mitigate flooding, erosion, and sea level rise along a portion of the Charlotte Harbor waterfront
- Collect data needed for final design and permitting of a nature-based solution, such as a hybrid living shoreline outlined
- Create a more resilient public park space with flood protection, habitat and eco-tourism benefits
- Provide an outline for future nature-based projects for other at-risk urban waterfront areas

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

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: PE-4.

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
- Hire a contractor to assist with policy maker education

FY 22 Budget:

Local ANEP:	$ 4,500
Local Contractor:	$10,000
Estimated Total Budget:	$14,500

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.

CLEAN WATER ACT CORE PROGRAM SUPPORT

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 2022.

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. CHNEP completed a Quality Assurance Project Plan for the Lower Charlotte Harbor Monitoring Network in 2022. CHNEP is supporting Charlotte County with water quality data collection matters.

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.

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

CHNEP funds **Conservation Grants**, many of which are aimed at educating or implementing non-point source pollution reduction. Examples include fertilizer restriction brochures and signs, native landscaping workshops, marine debris reduction, rain gardens, etc.

CHNEP undertakes **Research and Restoration Projects** that implement living shorelines, oyster restoration, seagrass restoration, and other measures aimed at uptaking and reducing pollutants in waterways.

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	*Comprehensive Conservation and Management Plan*
CFRPC	Central Florida Regional Planning Council
CHEC	Charlotte Harbor Environmental Center
CHEVWQMN	Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network
CHNEP	Coastal & Heartland National Estuary Partnership
CWPRA	Coastal Wetlands Planning, Protection and Restoration Act
CWA	Clean Water 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
RAMP	Regional Ambient Monitoring Program
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