

# COASTAL & HEARTLAND NATIONAL ESTUARY PARTNERSHIP FISCAL YEAR 2024 WORK PLAN



CHNEP contractor undertaking native plant restoration at the Myakka Headwaters Preserve. Photo courtesy of the Conservation Foundation of the Gulf Coast.

May 25, 2023  
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1050 Loveland Blvd.  
Port Charlotte, FL 33980  
(941) 833-6580  
[www.CHNEP.org](http://www.CHNEP.org)

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 its 5,416-square-mile 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, LaBelle, Moore Haven, and Clewiston.

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# COASTAL & HEARTLAND NATIONAL ESTUARY PARTNERSHIP

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Florida Department of Environmental Protection

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**Mr. Harry Phillips** & **Ms. Debi Osborne**

CHNEP Executive Director

**Ms. Jennifer Hecker**

## **PREVIOUS YEAR – FY2023 - 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 Atlas Aquatic Preserve pages and CHEVWQMN biannual data updates.
- 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.
- CHNEP staff presented on American Water Resources conference, Greater Everglades Ecosystem Restoration conference, Restore America's Estuaries conference and other large public events on water resource protection topics.
- CHNEP staff worked with Charlotte County and Southwest Florida Water Management District to fund Hurricane Ian water quality sampling in the Peace River watershed, as well as worked with entities in the Partnership to do emergency post-Hurricane water quality monitoring throughout the CHNEP area.

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

- CHNEP drafted and submitted a technical comment letter to the Florida Department of Environmental Protection regarding the prioritization of development of Total Maximum Daily Load pollutant limits within Outstanding Florida Waters in the CHNEP area.

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 continued to support its partners in their septic to sewer conversions of those areas that were determined to be high priority.

WQ-5: Reduce harmful algae blooms

- CHNEP added a Coastal Conditions mapper that displays harmful algae bloom data on the CHNEP Water Atlas, for the public to see and understand the magnitude of harmful algae blooms impact on water quality to build public support for taking actions to reduce blooms.

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

- CHNEP completed the Charlotte Harbor Flatwoods Initiative (CHFI) hydrologic restoration project, which entailed extensive surface and ground water data collection to create a model and hydrological restoration planning tool (available at the CHNEP Water Atlas).

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.
- CHNEP continued to use its educational outreach materials and events to reinforce the need of sufficient freshwater for healthy natural wetlands, rivers, and estuaries.

HR-3: Preserve and restore natural flow regimes

- CHNEP continues to support the South Lee County Watershed and Lower Charlotte Harbor Flatwoods Initiatives, that would restore more natural flow regimes to a large portion of the CHNEP area.

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

- CHNEP continued to support and participate in 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.
- CHNEP staff worked with USF to add new features and tools to the CHNEP Water Atlas, including updating the seagrass maps and data, as well as adding a Clam Habitat Suitability mapper.

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

- CHNEP funded habitat restoration on the Myakka Headwaters Preserve, which included replanting of native species and removal of exotic invasive plants.

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

- CHNEP drafted and submitted a technical comment letter in support of the proposed US Fish & Wildlife Service's Southwest Florida Fish & Wildlife Conservation Area.

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

- CHNEP designed, published, and distributed 26,000 copies of the 2023 Calendar, which included an educational Harbor Happenings insert on Blue Carbon.
- CHNEP organized and hosted the 2-day 2023 Southwest Florida Climate Summit, with more than 150 participants, as well as provided the proceedings and a Citizen Climate Change Action Guide on the CHNEP website.
- CHNEP created new funding and seagrass fact sheets, making them available on CHNEP website.

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

- CHNEP continued to support projects that engage citizens in natural resource protection including hosting a ReNew Year's clean-up, as well as hosting outreach booths at Highlands Hammock Civilian Conservation Corps festival, Chalo Nitka Rodeo, and the Water, Wings and Wild Things Festival, as well as other events that reach new target audiences.

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

- CHNEP provided Conservation Grants to numerous area non-profits, including for several volunteer clean-ups, volunteer water quality monitoring, educational interpretive signs, habitat restoration and other activities that implement CHNEP Comprehensive Conservation & Management Plan priority actions.
- CHNEP worked with the Myakka River Management Coordinating Council (MRMCC) to support updates to the MRMCC website, an educational resource about the watershed.

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.

## **CCMP FOCUS IN FY 2024**

The Fiscal Year 2024 Work Plan and Budget reflects the approved 2019 CCMP, which outlines the 5-year organizational strategic plan and has the following visions, goals, objectives, and strategies:

### **WATER QUALITY**

**VISION:** Waters that meet their designated human uses for drinking, shellfish harvesting, or swimming and fishing, while supporting appropriate and healthy aquatic life.

**GOAL:** Water Quality Improvement.

**OBJECTIVE:** Meet or exceed water quality standards for designated uses of natural waterbodies and waterways with no degradation of Outstanding Florida Waters.

**STRATEGY:** Support comprehensive and coordinated water quality monitoring programs and projects and programs that reduce pollutants entering waterways.

**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 algae 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.

### **HYDROLOGIC RESTORATION**

**VISION:** Natural freshwater flow across the landscape to the estuaries.

**GOAL:** Enhanced and improved waterbodies with more natural hydrologic conditions.

**OBJECTIVE:** Adequate aquifer recharge and freshwater volume and timing of flow to support healthy natural systems.

**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.

**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. Currently, these include the South Lee County Watershed Initiative and the Charlotte Harbor Flatwoods Initiative 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.

## **FISH & WILDLIFE HABITAT PROTECTION**

**VISION:** A diverse environment of interconnected, healthy habitats that support natural processes and viable, resilient native plant and animal communities.

**GOAL:** Natural habitat protection and restoration.

**OBJECTIVE:** Permanently acquire, connect, protect, manage, and restore natural terrestrial and aquatic habitats.

**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.

**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.

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

- CHNEP will continue to share the Habitat Restoration Needs report and maps to support the conservation, management and enhancement of environmentally sensitive lands and critical habitat areas necessary for habitat resilience and migration.
- CHNEP will continue to offer grants to assist engaged citizens that promote the protection and management of public environmental lands and waterways.
- CHNEP will continue to directly engage in funding and project managing habitat restoration projects.

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



- CHNEP will continue to use its comprehensive regional Economic Valuation study to promote the economic return on investment from land, water and estuarine protection and restoration investments.

## **PUBLIC ENGAGEMENT**

**VISION:** An informed, engaged public making choices and taking actions that increase protection and restoration of estuaries and watersheds.

**GOAL:** Public education and engagement.

**OBJECTIVE:** Increase the proportion of the population that supports and participates in actions to protect and restore estuaries and watersheds.

**STRATEGY:** Promote environmental awareness, understanding, and stewardship to the general public, new target audiences, and policymakers; and strengthen non-profit partner collaboration in education and engagement programs.

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

- CHNEP will continue to host routine volunteer events, as well as routinely host and participate in community events to provide environmental education and public engagement opportunities.
- CHNEP will continue to produce free educational materials and distribute them throughout the CHNEP area.
- CHNEP will continue to disseminate information about public engagement opportunities through Constant Contact, on social media, and on the [www.chnep.org](http://www.chnep.org) website.

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

- CHNEP will continue to conduct educational workshops and events, including in underserved communities, as a way to introduce natural 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, including with non-profit partners.
- CHNEP will continue to seek and work with non-profit organizations on collaborative initiatives.
- CHNEP will continue to sponsor events that foster non-profit partner collaboration to educate and engage the public on issues relating to CCMP implementation.

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

- CHNEP will continue to meet and send information to local, state, and federal policymakers, explaining CHNEP's role in supporting CCMP implementation.

## FISCAL YEAR 2024 ANNUAL BUDGET

**Table 1: Fiscal Year 2024 Budget Overview**

<b>Revenue</b>	
Federal (EPA FY24 Programmatic 320 Funding)	\$850,000
Federal (EPA FY24 Novated FY20-22 320 Funding)	\$333,876
Federal (EPA FY24 Bipartisan Infrastructure Law (BIL) FY24 Funding)	\$909,800
Federal (EPA FY23 Programmatic 320 Funding Carryover)	\$175,000
Partner FY24 Contributions (Local)	\$133,000
Partner FY24 Contributions (State)	\$205,000
<b>Total Revenue without Novated Funds</b>	<b>\$2,272,800</b>
<b>Total Revenue with Novated Funds</b>	<b>\$2,606,676</b>
<b>Expenditures</b>	
Personnel	\$669,810
Overhead Administrative	\$250,869
Public Outreach	\$115,068
Research and Restoration	\$1,116,291
Policymaker Education	\$84,500
Added Reserves	\$36,262
<b>Total Expenditures without Novated Funds</b>	<b>\$2,272,800</b>
<b>Total Expenditures with Novated Funds</b> ((\$333,876 applied to personnel, releasing 320 to fund added TBD Research/Restoration)	<b>\$2,606,676</b>

Note: The Federal BIL and Novated FY24 EPA 320 funding is also further detailed in separate BIL and Novated FY24 Work Plans and Budget per EPA BIL and EPA Grant Novation Funding Guidance.

**Table 2: Fiscal Year 2024 Overhead Administrative Costs Budget**

<b>Funder</b>	<b>Title</b>	<b>Amount</b>
EPA 320	Host Fees	\$184,869
Local	Materials and Supplies / Printer Lease	\$25,000
EPA 320 / EPA BIL*	Staff Travel	\$25,000
Local	Meeting Support	\$7,000
EPA 320	Communication Software & Fees	\$9,000
<b>Total</b>		<b>\$250,869</b>

Note: \$10,000 from EPA BIL and \$15,000 from EPA 320

**Table 3: Fiscal Year 2024 Cooperative Funding Table**

<b>Funding Source</b>	<b>2024 Budget</b>	<b>Type</b>
<b>Federal:</b>		
EPA Section 320 Funding	\$ 850,000	Clean Water Act Section 320 Grant
EPA Bipartisan Infrastructure Law	\$ 909,800	EPA Bipartisan Infrastructure Grant (FY22 & FY23)
<b>Total Federal:</b>	<b>\$ 1,759,800</b>	
<b>Local Government:</b>		
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 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	Village Appropriation
City of Arcadia	\$ 500	City Appropriation
City of Bartow	\$ 500	City Appropriation
Peace River Manasota Regional Water Supply Authority	\$ 3,500	District Appropriation
<b>Total Local Government</b>	<b>\$ 133,000</b>	
<b>State/District:</b>		
FDEP	\$ 75,000	District Appropriation
SWFWMD	\$ 130,000	District Appropriation
<b>Total State/District</b>	<b>\$ 205,000</b>	
<b>Non-Federal Fund Total</b>		
<b>Non-Federal Fund Total</b>	<b>\$ 338,000</b>	
<b>Total FY24 Cooperative Funding</b>		
<b>Total FY24 Cooperative Funding</b>	<b>\$ 2,097,800</b>	
<b>Non-Federal Match Requirement</b>		
<b>Non-Federal Match Requirement</b>	<b>\$ 850,000</b>	SFWMD-funded project(s)

**Table 4: Fiscal Year 2024 Travel Budget**

Date	Purpose	# Staff	Location	Length of Stay	Travel Mode	Reg. Fee	Estimated Cost
October 2023	RAE Living Shorelines Tech Workshop	1	Galveston, TX	3	Air	\$ 150	\$ 950
Nov. 2023	Coastal Estuarine Research Federation Meeting	2	Portland, OR	5	Air	\$ 1,590	\$ 3,700
Jan. 2024	Everglades Coalition	1	Coral Springs, FL	4	Auto	\$ 0	\$ 1,300
Feb. 2024	American Water Resources	4	Fort Myers, FL	N/A	Auto	\$ 300	\$ 200
Feb. 2024	Gulf of Mexico Conference	4	Tampa, FL	4	Auto	\$ 1,800	\$ 4,000
Mar. 2024	NEP/EPA Spring Mtg.	1	Washington, DC	4	Air	\$ 300	\$ 2,000
April 2024	League of Environmental Educators in Florida	1	Ocala, FL	2	Auto	\$ 150	\$ 600
Sept. 2024	Resiliency Florida	1	Fort Lauderdale, FL	3	Auto	\$ 500	\$ 200
Oct. 2023 - Sept. 2024	Local Meetings/ Mileage	6	Various FL Locations	N/A	Auto	\$ 800	\$ 6,460
Subtotal						\$ 5,590	\$ 19,410
<b>Total</b>							\$ 25,000

Note: \$10,000 from EPA BIL and \$15,000 from EPA 320

**Table 5: Fiscal Year 2024 Public Outreach Budget**

Funder	Title	Amount
Local	CHNEP Sponsorships	\$ 6,500
Local	CHNEP Conservation Grants	\$ 24,500
EPA 320	CHNEP Calendar	\$ 45,107
Local	CHNEP Calendar Support (Contractor)	\$ 5,000*
EPA 320	CHNEP Harbor Happenings	\$ 29,723
Local	CHNEP Events	\$ 4,238
<b>Total</b>		<b>\$ 115,068</b>

\*Note: Calendar Support is funded by targeted audience outreach funding from Manatee County.

**Table 6: Fiscal Year 2024 Research and Restoration Projects Budget**

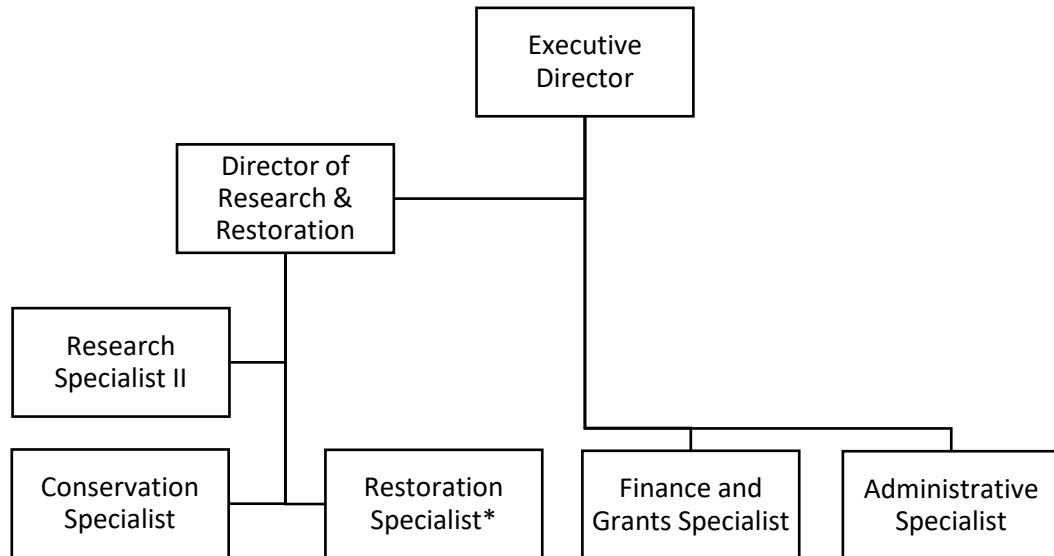
<b>FY</b>	<b>Funder</b>	<b>Project Title</b>	<b>Amount</b>
2022	EPA BIL	Pine Island Restoration Project	\$113,450
2022	EPA BIL	Charlotte County Vulnerability Assessment	\$200,000
2022	EPA BIL	Lee County Vulnerability Assessment	\$200,000
2022	EPA BIL	Tiki Point Living Shoreline Project	\$320,000
2022	EPA BIL	Yucca Pens Hydrological Restoration Project Phase I	\$76,350
<b>EPA BIL FY22 Total</b>			<b>\$909,800</b>
2023	EPA BIL	Polk County Vulnerability Assessment	\$200,000
2023	EPA BIL	Highlands County Vulnerability Assessment	\$200,000
2023	EPA BIL	CHNEP Water Atlas Maintenance & Improvements	\$130,588
2023	EPA BIL	Yucca Pens Hydrological Restoration Project Phase I	\$346,170
<b>EPA BIL FY23 Total</b>			<b>\$876,758</b>
2024	SWFWMD	Upper CCHMN Water Quality Monitoring	\$74,000
2024	EPA 320	Lower CCHMN Water Quality Monitoring	\$13,000
2024	Local	TBD Project money to cover unanticipated costs	\$20,000
2024	EPA320	TBD Research/Restoration (Note: If novated \$333,876 is received, this number will increase by that amount.)	\$14,491
<b>Non-EPA and EPA 320 FY24</b>			<b>\$121,491</b>
2024	EPA BIL	CHNEP Water Atlas Maintenance & Improvements	\$85,000
2024	EPA BIL	DeSoto County Vulnerability Assessment	\$200,000
2024	EPA BIL	Hardee County Vulnerability Assessment	\$200,000
2024	EPA BIL	Yucca Pens Hydrological Restoration Project Phase I	\$327,480
2024	EPA BIL	TBD Research/Restoration	\$87,320
<b>EPA BIL FY24 Total</b>			<b>\$899,800</b>
2024	EPA 320 FY23 CO	Water Quality Trends Analysis	\$60,000
2024	EPA 320 FY23 CO	FY24 Research Project TBD	\$35,000
<b>EPA 320 FY23 Carryover Total</b>			<b>\$95,000</b>
<b>FY24 Total Research &amp; Restoration Project Budget</b>			<b>\$1,021,291</b>

**Table 7: Fiscal Year 2024 SWFWMD Funding by Task**

<b>Task</b>	<b>Project</b>	<b>SWFWMD</b>	<b>Project Total</b>
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
<b>Total</b>		\$ 130,000	\$ 186,000

## STAFF ORGANIZATION CHART AND RESPONSIBILITIES

The FY24 CHNEP staffing plan includes seven full-time professionals, including the following positions:



**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 Specialist:** Responsible for finance, grants, and contracts administration.

**Research Specialist II:** Responsible for assisting project management of 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. [*\* Note: this position would be filled as 1-year locally funded contractor position if filled in FY24*]

**Conservation Specialist:** Responsible for providing a variety of public outreach and engagement duties, including environmental education programs, volunteer and member support, marketing, etc.

**Administrative Specialist:** Responsible for providing a variety of administrative support functions relating to payroll, database management, donation processing, meeting preparation, 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 Materials and Supplies

### Task 2: Public Engagement

- 2.1 Conservation Grants
- 2.2 2025 Calendar and 2024 Harbor Happenings Magazines
- 2.3 Public Engagement Events
- 2.4 Sponsorships

### Task 3: Research Coordination

- 3.1 Water Quality and Seagrass Monitoring and Mapping Programs
- 3.2 CHNEP Water Atlas
- 3.3 Charlotte County Comprehensive Vulnerability Assessment
- 3.4 Polk County Comprehensive Vulnerability Assessment
- 3.5 Highlands County Comprehensive Vulnerability Assessment
- 3.6 Lee County Comprehensive Vulnerability Assessment
- 3.7 DeSoto County Comprehensive Vulnerability Assessment
- 3.8 Hardee County Comprehensive Vulnerability Assessment

### Task 4: Watershed Coordination

- 4.1 Submerged Aquatic Vegetation Restoration
- 4.2 Pine Island Flatwoods Preserve Wetland Habitat Enhancement
- 4.3 Tiki Point Harborwalk Living Shoreline Pilot Project
- 4.4 Restoration/Research Project(s) TBD

### Task 5: Policymaker Education

- 5.1 Comprehensive Conservation & Management Plan Updating and Reprinting

## **CLEAN WATER ACT (CWA) CORE PROGRAM GOALS & TASKS THAT 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
- 8) Ensure clean and safe water for all communities
- 9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

## Task 1 Management Conference: Administration, Finance, Operations

**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 awardee; and seek additional funding support for identified projects.

**Description:** The CHNEP 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

- Management Conference committee meetings for 4 committees, 3x/yr.
- Management Conference adoption of Annual Work Plan before June 1, 2024
- GPRR Reporting through EPA's NEPORT, by September 14, 2024

### Milestones

- Administration of Program Office operations and finances, ongoing
- Collaborate with partners on CCMP implementation, ongoing
- Compliance with Host Agency finance and procurement requirements, ongoing
- Compliance with Funders' grant reporting requirements, ongoing

### FY 24 Budget

#### EPA 320 Funds:

Personnel (Salaries & Benefits)	\$538,810
Staff Travel	\$15,000
Overhead Host Administrative Fees	\$184,869
Communications Software and Fees	\$ 9,000

#### EPA BIL Funds:

Staff Travel	\$10,000
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#### SWFWMD Funds:

Personnel (Salaries & Benefits)	\$56,000
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#### FDEP Funds:

Personnel (Salaries & Benefits)	\$75,000
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Note: Total personnel costs are \$669,810

#### Local Funds:

Meeting Support	\$7,000
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Total Budget	\$895,679
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### Outcomes

- Fully informed and engaged CHNEP Management Conference
- Other federal, state, and non-profit grants obtained to fund CCMP implementation
- 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

**CWA Core Program Goals/Objectives Addressed:** Potentially all



## **Task 1.1 Materials and Supplies**

**Project Objective:** To provide the necessary supplies for the program office to function

**Project Description:** CHNEP the development and purchase of the needed materials and supplies to operate the CHNEP program office.

**CCMP Elements Implemented:** All

### **Outputs/Deliverables/Estimated Milestones**

- Supplies obtained necessary to maintain effective and efficient CHNEP office operations
- Copier leasing

### **FY 24 Budget**

Local Funds:	\$25,000
Total Budget:	\$25,000

### **Outcomes**

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

**CWA Core Program Goals/Objectives Addressed:** (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

## 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 regular media. They range from events (workshops, festivals, and trainings) to publications (magazines, calendars, and books), to videos and target audience initiatives.

CHNEP Staff create all the public education and engagement content for the following:

- YouTube: Videos and talks (PDF files with linked with audio) posted share presentations online
- Facebook/Instagram: Routine posts promote CHNEP projects
- Constant Contact: Notices of Management Conference meetings and events are sent to subscribers
- CHNEP website: The CHNEP.org website provides current information about projects, meetings, grant opportunities, and volunteer activities

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

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

### Outputs/Deliverables

- Updated website for Management Conference meetings and activities
- Routine posts on Facebook and Instagram 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+ public education and engagement events per year

### FY 24 Budget

EPA 320 Funds:	Staff Time
FDEP Funds:	Staff Time
Total Budget:	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 Goals/Objectives Addressed:** (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

## **Task 2.1 Conservation Grants**

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

**Description:** Conservation grant proposals are solicited and awarded in the \$500 to \$4,999 range to selected citizens, organizations, businesses, government agencies, schools or universities that are undertaking activities outlined 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, 2023 for October 2024 award notice
- Winter Deadline is December 1, 2023 for February 2024 award notice
- Spring Deadline is April 1, 2024 for June 2024 award notice
- All payments are expected to be processed by September 30, 2024

### **FY 24 Budget**

Local Funds:	\$24,500
Total Budget:	\$24,500 + Staff Time

### **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 Goals/Objectives Addressed:** Potentially all

## Task 2.2 2025 Calendar and 2024 Harbor Happenings Magazines

**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:** CHNEP publications including the Harbor Happenings magazine (one of which is included in the calendar) and the annual CHNEP Calendar.

### Estimated Milestones

- Magazine printed periodically
- Calendar published and distributed annually

### FY 24 Budget

EPA 320 Funds:

Calendar Printing/Mailing \$45,107

Magazine Printing/Mailing \$29,723

Local Funds:

Calendar Support Contractor \$5,000

(from \$5,000 Manatee County contribution)

Total Budget: \$79,830 + Staff Time

**Outcome:** 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 Goals/Objectives Addressed:** (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

## **Task 2.3 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 at least 10 citizen science and volunteer events annually

### **FY 24 Budget**

Local Funds:	\$4,238
Total Budget:	\$4,238 + Staff Time

### **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 Goals/Objectives Addressed:** (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

## Task 2.4 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

**Milestone:** All funds awarded, obligated and payments processed by September 30, 2024.

### FY 24 Budget

Local Funds:	\$6,500
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 Goals/Objectives Addressed:** (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting large aquatic ecosystems.

### **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 and meetings
- Seagrass Monitoring: Annual seagrass data
- Seagrass Aerial Mapping: Biennial and 6-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 24 Budget**

EPA 320 Funds:	Staff Time
FDEP Funds (Staff Time):	Staff Time
SWFWMD Funds (Staff Time):	Staff Time
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 Goals/Objectives Addressed:** All

### Task 3.1 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, 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 Project Plan (QAPP), 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 Florida Department of Environmental Protection’s Aquatic Preserves water quality monitoring project known as the Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network (CHEVWQMN) this included uploading and analyzing data collected by on the CHNEP Water Atlas. CHNEP also supports the Aquatic Preserve seagrass monitoring program by 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:	\$13,000	EPA 320 (Lower CCHMN)
	\$74,000	SWFWMD (Upper CCHMN)
	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, SWFWMD
	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 aeriels 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 6 years by SFWMD and reported and maps provided within 18 months

### **FY 24 Budget**

EPA 320 Funds:	\$13,000 + Staff Time
SWFWMD Funds:	\$74,000
Total Budget:	\$87,000 (~\$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 2-6 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 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 Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

### **Task 3.2 CHNEP Water Atlas**

**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 maintains and enhances 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 assist 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 works with USF to make upgrades and improvements on an annual basis. New Water Atlas Features/Improvements planned for 2024 include:

- *Annual Adjustment of WBID Boundaries, NNC Values, and Water Quality Dashboard:* This task will compare the most recent WBID run data from the Florida DEP and adjust the Waterbodies GIS layer and associated data tables. Waterbodies shall be classified to be aligned to WBID boundaries and waterbody classifications used by the Florida Department of Environmental Protection (FDEP). The Water Quality Dials and NNC Calculator tools will be updated to reflect changes to FDEP WBID boundaries, classifications, and NNC/threshold values.
- *Seagrass Analysis:* This task is to update seagrass and algae trend charts, spatial data and calculated acreages on basin pages and interactive map.
- *Analysis of Water Quality Trends:* will run the analyses once during the project period to produce the results of the WQ trends to include the period of January 1, 2023 to December 31, 2023. Quality assurance will be conducted to ensure that the results represent the data being used, which included only data meeting the same FDEP QAQC standards.
- *Adding Non-Assessed Waterbody Pages:* The CHNEP area contains several types of altered/artificial waterbodies that are not assessed by Florida Department of Environmental Protection, since they have no water quality standards and therefore, cannot be impaired or non-impaired. These include stormwater ponds/lakes and other non-assessed altered artificial waterbodies. Because the original waterbody pages have water quality dashboards, impairment status and other features that do not apply to non-assessed waterbodies, but because these waterbodies are displayed in CHNEP Water Atlas because there is data associated with them being collected and conveyed by partners to the CHNEP Water Atlas, these waterbody pages need to be treated differently in order to appropriately share the information that pertains to these non-assessed waterbodies without inappropriate or non-applicable features.

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

**Partners and Roles:** All entities creating publicly accessible water quality data

#### **Outputs/Deliverables Milestones:**

- Post and provide access to water quality data updates every 6 months
- Post and provide access to data analyses, maps and graphs as requested
- Annual Update of WBID Boundaries and NNC Values
- Conducting trend analysis on water quality data annually and providing in user friendly format
- Conducting analysis on seagrass and macroalgae data annually and providing in user friendly format

**FY 24 Budget:**

EPA BIL Funds:	\$85,000
Total Budget:	\$85,000 + Staff Time

**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 Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

### Task 3.3 Charlotte County Comprehensive 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. This will qualify Charlotte County to access additional state funding sources.

**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

**FY24 Budget** (continuing into FY24): Remaining funds from below to be expended + Staff Time

#### Prior Funding:

EPA FY22 BIL Funds:	\$ 200,000
Total Budget:	\$ 200,000 + Staff Time

#### Outcomes

- Climate Change Vulnerability Assessment for Charlotte County meeting statutory requirements

**CWA Core Program Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

### Task 3.4 Lee County Comprehensive 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 Lee 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 Lee 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. The updated 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. 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 Lee County that meets all Florida Statutory requirements. This will qualify Lee County to access additional state funding sources.

**CCMP Elements Implemented:** potentially all CCMP elements

**Partners and Roles:** CHNEP (Funder), Lee 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

**FY24 Budget** (continuing into FY24): Remaining funds from below to be expended + Staff Time

#### Prior Funding:

EPA FY22 BIL Funds:	\$ 200,000
Total Budget:	\$ 200,000 + Staff Time

#### Outcomes

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

**CWA Core Program Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

### Task 3.5 Polk County Comprehensive 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 Polk 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 Polk 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 Polk County that meets all Florida Statutory requirements. This will qualify Polk County to access additional state funding sources.

**CCMP Elements Implemented:** potentially all CCMP elements

**Partners and Roles:** CHNEP (Funder), Polk County, Central Florida Regional Planning Council

#### 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 Adaptation Strategies and recommended Adaptation Action Areas

#### FY24 Budget (continuing into FY24):

Remaining funds from below to be expended + Staff Time

#### Prior Funding:

EPA FY23 BIL Funds:	\$ 200,000
Total Budget:	\$ 200,000 + Staff Time

#### Outcomes

- Climate Change Vulnerability Assessment for Polk County that meets statutory requirements

**CWA Core Program Goals/Objectives 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, (7) protecting large aquatic ecosystem, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

### **Task 3.6 Highlands County Comprehensive 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 Highlands 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 Highlands 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. The updated 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. 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 Highlands County that meets all Florida Statutory requirements. This will qualify Highlands County to access additional state funding sources.

**CCMP Elements Implemented:** potentially all CCMP elements

**Partners and Roles:** CHNEP (Funder), Highlands 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

#### **FY24 Budget** (continuing into FY24):

Remaining funds from below to be expended + Staff Time

#### Prior Funding:

EPA FY23 BIL Funds:	\$ 200,000
Total Budget:	\$ 200,000 + Staff Time

#### **Outcomes**

- Climate Change Vulnerability Assessment for Highlands County that meets statutory requirements

CWA Core Program Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

### **Task 3.7 DeSoto County Comprehensive Vulnerability Assessments**

**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 DeSoto 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 DeSoto 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. The updated 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. 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 DeSoto County that meets all Florida Statutory requirements. This will qualify DeSoto County to access additional state funding sources.

**CCMP Elements Implemented:** potentially all CCMP elements

**Partners and Roles:** CHNEP (Funder), DeSoto 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 Adaptation Strategies and recommended Adaptation Action Areas

#### **FY24 Budget:**

EPA BIL Funds:	\$ 200,000
Total Budget:	\$ 200,000 + Staff Time

#### **Outcomes**

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

**CWA Core Program Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.



### **Task 3.8 Hardee County Comprehensive Vulnerability Assessments**

**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 Hardee 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 Hardee 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. The updated 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. 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 Hardee County that meets all Florida Statutory requirements. This will qualify Hardee County to access additional state funding sources.

**CCMP Elements Implemented:** potentially all CCMP elements

**Partners and Roles:** CHNEP (Funder), Hardee 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

#### **FY24 Budget:**

EPA BIL Funds:	\$ 200,000
Total Budget:	\$ 200,000 + Staff Time

#### **Outcomes**

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

**CWA Core Program Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

### Task 3.9 Water Quality Trend Analysis

**Work Plan Objective:** To support a comprehensive and coordinated water quality monitoring and assessment strategy by providing additional analysis and information on water quality trends for individual monitoring stations and hydrologic regions throughout CHNEP estuaries where data is collected monthly by agencies, municipalities and community science programs. This data will be shared through the CHNEP Water Atlas to ensure continuing access to technical information from the CHNEP 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 supports partner objectives to make updates of water quality data to the CHNEP Water Atlas, a web-based, data management and mapping system scientific communication tool that the program also funds and maintains. The Water Atlas can be utilized for research and science communication; it provides historical information, scientific data, water resource maps, and analysis tools. This project would involve data mining and cleaning to create a complete period of record dataset suitable for both traditional and novel trend analysis methods using long-data available through the state assessment database FDEP WIN (Watershed Information Network) and its predecessor STORET. A Trend Analysis for individual stations, strata and parameters will be conducted and shared via user-friendly maps and graphs using an open science data visualization tool such as a Shiny Dashboard. Code used to run these programs and analyses would be publicly available and the analyses could be conducted on an annual basis when new data is made available by sampling agencies.

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

**Partners and Roles:** All entities creating publicly accessible water quality data

**Outputs/Deliverables Milestones:**

- Full Period of Record dataset for water quality monitoring stations and strata suitable for trend analyses as well as instructions and other metadata
- Trend analysis on water quality data for individual stations, strata and parameters provided in user friendly format
- Code used to run trend analyses

**FY 24 Budget:**

EPA BIL Funds:	\$60,000
Total Budget:	\$60,000 + Staff Time

**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 Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

## 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 24 Budget

EPA 320 Funds:	Staff Time
FDEP Funds:	Staff Time
SWFWMD Funds:	Staff Time
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 Goals/Objectives 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, (7) protecting large aquatic ecosystems, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

## **Task 4.1 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 collect data on SAV status and trends 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 and has been working since to assist with the implementation of activities to assist meeting those targets. 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 subcommittee and other SAV working groups including the SWER and SWFLSWG. Other partners in the TAC or working groups include: FDEP Charlotte Harbor and Aquatic Preserves, Florida Sea Grant, FWC, SWFWMD, SFWMD, Lee County, Charlotte County, Sarasota County, SCCF, and FGCU.

### **Outputs/Deliverables:**

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

### **Estimated Milestone**

- Exchange of SAV information ongoing

### **FY 24 Budget**

EPA 320 Funds:	Staff time
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
- Adaptation of SAV restoration projects based on lessons learned

**CWA Core Program Goals/Objectives Addressed:** (6) protecting coastal waters through the National Estuary Program and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan

## Task 4.2 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

- CEI (construction engineering and inspection) support services for construction
- Site construction plans, mobilization, earthwork, and demobilization tech memo
- Native planting and maintenance technical memo

### Estimated Milestone

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

### FY24 Budget

Remaining funds from below to be expended + Staff Time

#### Prior Funding:

EPA FY22 BIL Funds:	\$113,450
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 Habitat Restoration Needs plan activities for the area will be addressed

**CWA Core Program Goals/Objectives Addressed:** (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

### Task 4.3 Tiki Point Harborwalk Living Shoreline Pilot Project

**Project Objective:** Create the Tiki Point Harborwalk (TPH) living shoreline project, working with the City of Punta Gorda. 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 also assist in raising public awareness and engage and educate local partners and citizens on the benefits of living shorelines, using this project as an example.

**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 both CEI (construction engineering and inspection) support services for construction and the construction contractor, 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 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.

**Partners and Roles:** City of Punta Gorda is the site owner manager as well as permit applicant, CHNEP will assist with aspects of public outreach for this project. The project will be partially funded by CHNEP along with FDEP and the City of Punta Gorda.

#### 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

#### FY24 Budget

Remaining funds from below to be expended + Staff Time

##### Prior Funding:

EPA BIL FY22 Funds	\$320,000
Total Budget:	\$320,000 + 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

**CWA Core Program Goals/Objectives Addressed:** (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

## **Task 4.4 Yucca Pens Hydrological Restoration Project Phase I**

**Project Objective:** This project will be completed in partnership with the South Florida Water Management District, Florida Fish & Wildlife Conservation Commission, and the other members of the Charlotte Harbor Flatwoods Initiative. The primary objectives are to work with a contractor and partners to conduct monitoring and modeling as well as created final design and permitting for a large-scale hydrologic restoration project in the Yucca Pens Unit State Wildlife Management Area (located in the Charlotte Harbor Flatwoods area in Charlotte and Lee Counties). This project is meant to aid the restoration of more natural flow to approximately 8,000 acres of wetlands, which will increase fresh surface water and groundwater availability and substantially improve hydrology as well as water and habitat quality for fish and wildlife species of concern.

### **Project Description:**

The CHNEP has already created a Lower Charlotte Harbor Flatwoods Strategic Hydrologic Restoration Plan, as well as a preliminary conceptual surface and groundwater hydrologic model that simulates appropriate timing and quantity of water flows required to improve wetland habitat conditions, minimize erosion and offsite flooding, improve groundwater recharge, and reduce the risk of wildfires. This project is a recommendation of that Plan to further plan, engineer and design water management features on the Yucca Pens Wildlife Management Area (WMA) to restore more natural freshwater retention and sheet flow across the property. Using the existing Plan modeling and recommendations, additional hydraulic and hydrologic local-scale modeling will inform the final design, which will include 1) earthen ditch blocks in smaller ditches that will increase storage and surface water hydrology (a green solution), 2) the re-establishment of connections to several tidal creeks to the west of Yucca Pens Unit will be designed with concrete low water fords installed through existing off-road vehicle ruts and ditches in Yucca Pens (a green-gray solution providing additional stability as well as access for management vehicles and recreational users) and, 3) a groundwater seepage barrier is planned at the southern boundary of Yucca Pens Unit along the Gator Slough Canal (to address the significant effects the canal has on the local water table). The intent is for the project to be ‘shovel-ready’.

Together all proposed solutions will, once implemented, restore flows from the Yucca Pens Unit to Charlotte Harbor at several locations rather than as point source flowing into Charlotte Harbor and Gator Slough Canal. This will improve the hydrology in Yucca Pens which will also improve habitat quality for species of concern. It will also improve the water quality in the Charlotte Harbor estuary due to a return to a more natural hydroperiod and better timing of downstream flows. By holding additional water, the hydrologic restoration will also protect aquifer recharge and reduce the potential for saltwater intrusion with sea level rise further protecting water supply.

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

**Partners and Roles:** FWC is the site owner manager as well as permit applicant, CHNEP is the planning and design project funder and manager. The USFWS as well as the SWFWMD and SFWMD will serve as project consultants.

### **Outputs/Deliverables Milestones**

- Construction Plans
- Cost Estimates and Implementation Phasing Plan
- State, Local and Federal Permits

**FY 24 Budget**

EPA BIL Funds \$327,480

**Prior Funding:**

FY22 EPA BIL Funds \$76,350

FY23 EPA BIL Funds \$346,170

Total Budget \$750,000 + Staff Time

**Outcomes**

- Collect data/conduct modeling needed for final design and permitting for large scale hydrological restoration
- Mitigate flooding as well as water quality and habitat degradation and sea level rise in the Charlotte Harbor Watershed
- Improve resilience and ecosystem functions of important wetlands and tidal creeks, this will also increase aquifer recharge

**CWA Core Program Goals/Objectives Addressed:** (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.



## Task 4.5 Restoration/Research TBD Project(s)

**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(s) 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 24 Budget

EPA BIL Funds:	\$87,320
EPA 320 Funds:	\$49,491
Local Funds:	\$ 20,000 for unanticipated project-related expenses
Total Budget:	\$156,811 + Staff Time

### Outcomes

- 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 Goals/Objectives Addressed:** (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, (7) protecting large aquatic ecosystems, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

## **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
- Meetings 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 24 Budget** (all from local funding only):

Local Funds:

ANEP Dues	\$4,500
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Total Budget:	\$4,500 (Local \$ only)
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### **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 Goals/Objectives 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, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

## Task 5.1 Comprehensive Conservation & Management Plan Updating and Reprinting

**Work Plan Objective:** Create an updated CHNEP Comprehensive Conservation and Management Plan (CCMP) 5-year strategic plan, reprint, and disseminate to all local, state, and federal elected leaders in the CHNEP area.

**Description:** EPA requires each National Estuary Program entity to update their CCMP every 5 years. The CHNEP undertook a major revision of its CCMP in 2019, which was approved by the EPA then. Therefore, at least an updating is required in 2024 and this task would be to undertake that updating with the assistance of a contractor to facilitate gathering and incorporating Management Conference committee input, updating all graphics and maps, helping to update design elements and prepare for printing, as well as to work with printer to ensure printed appropriately. Once printed, this task would also pay for the mailing costs associated with mailing to all local, state, and federal elected leaders in the CHNEP Area to provide them education on the collective CHNEP goals, objectives, actions, and activities needed to guide the organization and regional natural resource protection and restoration efforts from 2024-2029.

**CCMP Elements Implemented:** PE-4.

### Outputs/Deliverables, Milestones

- Updated 2024 CHNEP CCMP printed document

### FY24 Budget

Remaining funds from below to be expended + Staff Time

### Prior Funding:

FY23 EPA 320 Carryover Funds:	\$80,000
Total Budget:	\$80,000 +Staff Time

### 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 Goals/Objectives 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, (8) Ensure clean and safe water for all communities, and (9) Protect and restore waterbodies and watersheds of the EPA Strategic Plan.

## **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 2024.

### Water Quality Monitoring for Water Quality Standards

The CHNEP manages the Coastal Charlotte Harbor Monitoring Network (CCHMN), a regional partnership of agencies that collect monthly water quality data using consistent, technically-sound sampling design. The long-term random sampling of strategically located stations allows for the scientific assessment of water quality status and trends. The CCHMN was created to fill gaps in coastal water monitoring and initiate a unified sampling approach throughout the CHNEP area. CHNEP also contributes to this project by assisting in the monitoring of upper and lower Charlotte Harbor within the project area. CHNEP creates and maintain the EPA approved Quality Assurance Project Plan (QAPP) and Standard Operating Procedures for the CCHMN, conducts annual field audits and meetings, contracts and assists with field sampling, and compiles and analyzes collected water quality data through the CHNEP Water Atlas. CHNEP and CCHMN partners also participate 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 the CCHMN and the Charlotte Harbor Estuary Volunteer Water Quality Monitoring Network (CHEVWQMN), as their data is entered into the state Watershed Information Network (WIN) database and is used to evaluate status and trends of state, regional, and local estuarine conditions. The data is used locally by CHNEP to develop future water quality targets and numeric nutrient data. Charlotte Harbor is also a Southwest Florida Water Management District (SWFWMD) Surface Water Improvement and Management (SWIM) priority Water Body.

The continuation of consistent data collection throughout this project area will help to assess impairments, determine total maximum daily load limits (TMDL), and develop basin management action plans for the watershed. The gathering of water quality data results in valuable information that is used for guidance on the improvement of water quality based on records starting in 2000.

### 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.

The CHNEP hosts the CHNEP Water Atlas site, a web-based resource center providing both technical users and interested community members and policy makers with a one-stop shop to find local data on water quality, flow, and habitat to information about educational events and volunteer resources in Central and Southwest Florida. The site includes up to date and historical data, trend analysis, historical maps and studies, water resource maps, and much more. It is a readily accessible way to find more information about local waterways.

### Protecting Wetlands and Coastal Waters

CHNEP undertakes Research and Restoration Projects that implement living shorelines, flowway and wetland restoration, oyster and seagrass restoration, and other measures aimed at up taking and reducing pollutants in waterways.

## GLOSSARY OF ACRONYMS

ANEP	Association of the National Estuary Program
BIL	Bipartisan Infrastructure Law
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
CERF	Coastal and Estuarine Research Federation
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
SFWMD	South Florida Water Management District
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