

Albemarle - Pamlico

National Estuary Partnership



DRAFT

FY22-FY27 Work Plan & Budget Bipartisan Infrastructure Law Cooperative Agreement

USEPA
Cooperative Agreement 4T - 02D41823

*Approved by the
APNEP Leadership Council
on _____ 2024*

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Executive Summary

Purpose

For the timeframe of October 1, 2022, to September 30, 2027, Albemarle-Pamlico National Estuary Partnership (APNEP) anticipates receiving a total of \$4,549,000 under Cooperative Agreement 4T - 02D41823 to support activities geared towards Comprehensive Conservation and Management Plan (CCMP) implementation and its mission pursuant to the *2021 Infrastructure Investment and Jobs Act* (P.L. 117-58) / Bipartisan Infrastructure Law (BIL).

This document provides an FY22-27 Work Plan and Budget for the BIL grant funds from the U.S. Environmental Protection Agency (EPA) to support implementation of the Partnership's CCMP. This work plan builds upon the EPA approved initial two-year (FY 2022-2024) BIL Work Plan and Long-Term Strategy and is supported by the EPA approved Equity Strategy.

This work plan incorporates and supersedes all previous versions of the budget proposed in previously approved plans, outlined below and available on the [BIL page](#) of the [APNEP website](#):

- The [initial two-year \(FY 2022-2024\) BIL Work Plan](#) and associated budget were approved by the Leadership Council in October 2022 and supported the initial application BIL funds. In February 2023, APNEP received \$1,819,600 from EPA under the BIL to support a 2022-2024 Work Plan for the timeframe of October 1, 2022, through September 30, 2027, under Cooperative Agreement 4T - 02D4182-0.
- The Partnership submitted the APNEP BIL Long-Term Strategy to serve as the initial overall strategic narrative work plan for the associated cooperative agreement for the entire BIL funding cycle and included an initial budget. It was approved by the Leadership Council May 2023 and approved by EPA October 2023.
- This document contains the 3rd iteration of the Work Plan and Budget and builds upon the Long-Term Strategy. It is supported by the [APNEP BIL Equity Strategy](#) approved by EPA Headquarters on November 29, 2023.
- During implementation of this strategy, funding may be allocated from non-primary focus areas undesignated funds due to support the cross-cutting nature of needs as described in the strategy.

This FY22-27 Work Plan contains project information and proposed budget where more detail is available. APNEP anticipates requesting the remainder of grant funds (\$2,729,400) through this document and will submit an annual updated work plan in June each year per guidance detailed by a July 26, 2022, [NEP BIL Funding Implementation Memorandum](#) from EPA Assistant Administrator, Radhika Fox.

Cooperative Agreement (4T-02D41823)

Actions described within this Work Plan and referenced Long-term Strategy and Equity Strategy occur under EPA-North Carolina Department of Environmental Quality (NC-DEQ) Cooperative Agreement 4T-02D41823. The plan supports implementation of management strategies outlined in APNEP’s CCMP to support our mission of identifying, protecting, and restoring the significant resources of the Albemarle-Pamlico estuarine system. The period of performance under this Cooperative Agreement is expected to run from October 1, 2022, through September 30, 2027, although time limitation of the use of funds is open-ended per EPA guidance.

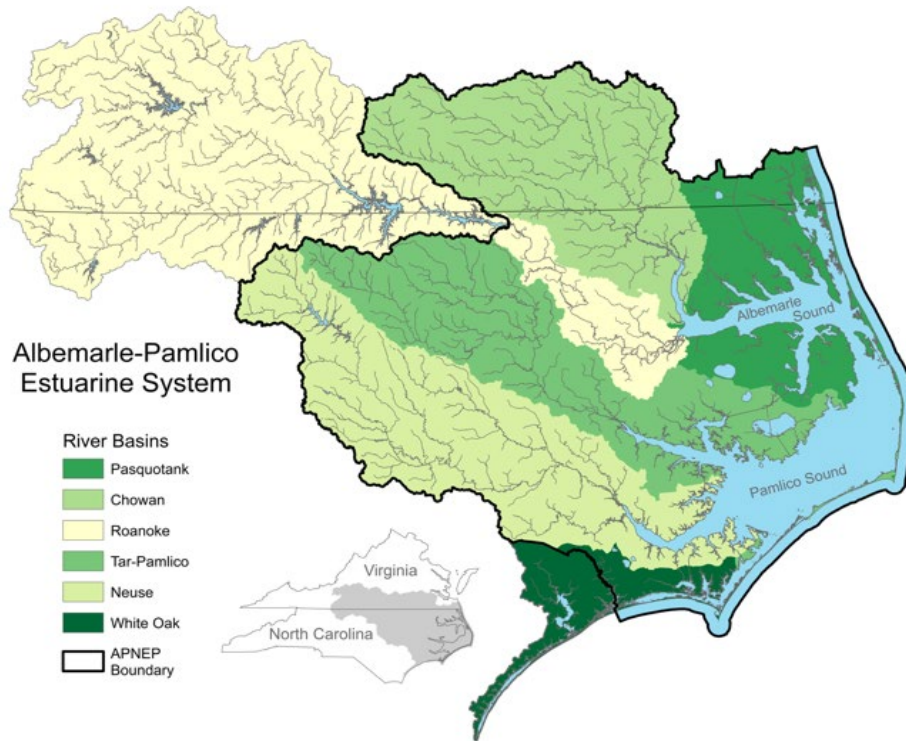
Document	Timeframe	Leadership Council Approval	EPA Region 4 Approval	EPA Headquarters Approval	Funds applied for/received
BIL Initial Two-Year Work Plan	2022-2024	October 6, 2022		N/A	February 2023
BIL Long-Term Strategy	2022-2027	May 23, 2023	October 16, 2023	N/A	N/A
BIL Equity Strategy	2022-2027	May 23, 2023	N/A	November 29, 2023	N/A
BIL FY22-27 Long Term Work Plan	2022-2027	<i>Anticipated April 2024</i>	TBD	N/A	<i>Anticipated May 2024</i>
BIL Annual Work Plans	Submit annually by June 1	<i>Anticipated annually April/May</i>	Annually	N/A	TBD

Principal Contacts

Name	Role	Affiliation	Address	Phone
Ms. Stacey Feken	BIL Program Management	Albemarle-Pamlico NEP	1601 Mail Service Center, Raleigh, NC 27699-1601	(919) 707-8657
Dr. Bill Crowell	APNEP Director	Albemarle-Pamlico NEP	1601 Mail Service Center, Raleigh, NC 27699-1601	(919) 707-8633
Ms. Heather Jennings	APNEP Program Manager	Albemarle-Pamlico NEP	1601 Mail Service Center, Raleigh, NC 27699-1601	(919) 707-8632
Dr. Kirk Havens	Leadership Council Chair	Virginia Institute of Marine Science	VIMS P.O. Box 1346 Gloucester Pt, VA 23062	(804) 684-7380
Ms. Rachel Hart	EPA Project Officer	Environmental Protection Agency	US EPA, Region IV 61 Forsyth Street Atlanta, GA 30303	(404) 562-9279
Ms. Angela Padeletti	EPA Region III Liaison	Environmental Protection Agency	1650 Arch Street Philadelphia, PA 19103	(215) 814-2314
Mr. Vince Bacalan	EPA HQ Lead	Environmental Protection Agency	1301 Constitution Ave NW Washington, DC 20460	(202) 566-0930

Albemarle-Pamlico National Estuarine System

The Albemarle and Pamlico Sounds comprise the nation’s largest semi-lagoonal estuarine system. The system is composed of eight sounds and five major river basins draining over 30,000 square miles of watershed in North Carolina and Virginia. The sounds, rivers, creeks, wetlands, and terrestrial areas provide habitat for an abundance of animal and plant species. People depend on the system for residential and resort development, food, recreation, mining, forestry, agriculture, business, and industry.



Albemarle-Pamlico National Estuary Partnership

The Albemarle-Pamlico National Estuary Partnership (APNEP) is a component of the U.S. Environmental Protection Agency’s (EPA) National Estuary Program. It was one of the first programs established under amendments to the Clean Water Act in 1987. APNEP’s mission is to identify, protect, and restore the significant resources of the Albemarle-Pamlico estuarine system. The Partnership is a cooperative effort currently hosted by the North Carolina Department of Environmental Quality (NC-DEQ) under a cooperative agreement with the EPA, guided by Regions III and IV. APNEP works closely with the Commonwealth of Virginia through a 2020 Memorandum of Understanding (MOU) to foster interstate collaboration within the shared waterways of the Albemarle-Pamlico region.

APNEP’s initial Comprehensive Conservation and Management Plan (CCMP) was ratified by the Governor of North Carolina and approved by the EPA in November 1994. A revised [CCMP](#) was created in 2012 through a stakeholder-driven process with an ecosystem-based management approach. An updated CCMP is currently being developed by the Management Conference and is

expected to be completed in 2024. The Partnership Office is advised by a Management Conference as currently authorized under [North Carolina Governor's Executive Order #250 \(2022\)](#).

Infrastructure Investment and Jobs Act of 2021

Funds supporting this Work Plan are provided under a cooperative agreement and grants from the EPA under the Infrastructure Investment and Jobs Act, which was passed by Congress November 2021. This Act, also known as the Bipartisan Infrastructure Law (BIL), is designed to be a significant investment in the nation's infrastructure and resilience.

The BIL references EPA's underlying authority under CWA §320 to fund the implementation of the National Estuary Programs (NEPs) CCMPs. As with annual appropriations distributed to NEPs to implement CWA §320, the funds distributed under the BIL must be directed to implement a management conference and approved CCMP and work plan. The BIL funding is available to the NEPs until fully expended and will be distributed over five years.

In signing the final bill into law ([Executive Order 14052 Implementation of the Infrastructure Investment and Jobs Act](#)), the President identified six priorities that should be implemented by all federal agencies. As such, EPA expects NEPs to prioritize projects within their CCMPs that are consistent with these six priorities:

- Invest public dollars efficiently, avoid waste, and focus on measurable outcomes for the American people,
- Increase the competitiveness of the United States economy, including through implementing the Act's Made-in-America requirements and bolstering United States manufacturing and supply chains,
- Improve job opportunities for millions of Americans by focusing on high labor standards for these jobs, including prevailing wages and the free and fair chance to join a union,
- Invest public dollars equitably, including through the [Justice40 Initiative](#), which is a government-wide effort toward a goal that 40 percent of the overall benefits from Federal investments in climate and clean energy flow to disadvantaged communities,
- Build resilient infrastructure that can withstand the impacts of climate change and help combat the climate crisis, and
- Coordinate effectively with State, local, Tribal, and territorial governments in implementing these critical investments.

National Estuary Program BIL Priorities

A core emphasis of the NEP BIL funding is the acceleration of environmental and community restoration goals in the CCMPs. The substantial one-time increase in funding appropriated in the BIL is expected to significantly enhance capacities to do this work, and enable the NEPs to develop and strengthen partnerships necessary to make the most effective use of the new funds.

Environmental Justice (EJ) and addressing climate change are key EPA priorities reflected in the Agency's [FY 2022–2026 EPA Strategic Plan](#), which provides the framework for EPA to integrate EJ considerations into its programs, plans, and actions, and to ensure equitable and fair access to the benefits from environmental programs for all individuals.

The Strategic Plan's first two goals are to:

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- “Tackle the Climate Crisis” by reducing emissions that cause climate change and accelerating resilience and adaptation to climate change impacts; and
- “Take Decisive Action to Advance Environmental Justice and Civil Rights” by promoting EJ and protecting civil rights at the federal, state, and local levels.

EPA embedded these goals in its programs, policies, and activities, including the implementation of the NEP BIL funds. NEP projects funded through BIL should seek to:

- **Accelerate and more extensively implement CCMPs:** The significant and multi-year expansion of funds through the BIL provides an opportunity for NEPs to execute long-term projects within the communities they serve, leverage additional resources, and work with their management conferences and other key stakeholders to advance a wide range of projects identified in CCMPs.
- **Ensure that benefits reach disadvantaged communities¹:** In identifying priority actions, management conferences should prioritize projects with benefits that flow to historically disadvantaged communities. Specifically, the NEP BIL funds are covered under the Justice40 Initiative, and the EPA has a target of ensuring that at least 40% of the benefits from the BIL flow to disadvantaged communities nationwide. Each estuary program will be required to develop an equity strategy that will outline the approach it will take to contribute to the nationwide NEP Justice40 target.
- **Build the adaptive capacity of ecosystems and communities:** NEPs have long been at the forefront of efforts to address climate change impacts in their watersheds, working with federal, state, and local partners, often using green infrastructure and nature-based solutions. NEPs should use BIL resources to continue to expand on their climate change adaptation, hazard mitigation, and resilience activities, where appropriate, including protection and restoration of key habitats that increase resiliency and carbon sequestration. In identifying priority actions, NEPs should select projects that advance the climate resilience of ecosystems and communities and deliver climate emissions mitigation co-benefits. Moving forward, NEPs’ reporting on BIL funding will include metrics addressing climate benefits. Where possible and aligned with the priorities identified in their CCMPs, NEPs should engage and educate the public and private sectors on key climate-related vulnerabilities and solutions and provide technical and financial assistance to accelerate progress in response to a changing climate. NEPs should elevate climate efforts through BIL implementation including, but not limited to:
 - Assessment and planning projects that involve climate change vulnerability assessments, community resilience and adaptation plans, or hazard mitigation plans;
 - Restoration, water infrastructure, green infrastructure, stormwater management, and nonpoint source projects that prioritize innovative climate adaptation, hazard mitigation, and resilience solutions;

¹ Executive Order [14008](#): Executive Order on Tackling the Climate Crisis at Home and Abroad uses the phrase “disadvantaged communities,” and this term has been used in existing Federal and state programs to prioritize funding for environmental justice. Some community members and advocates prefer alternative terminology, and specifically the use of “overburdened and underserved communities.” Until subsequent guidance can address the question of the most appropriate terminology, the EPA BIL guidance memorandum relies on the language used in Executive Order 14008.

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- Projects focused on climate-related research, including those that measure, monitor, and increase carbon sequestration; and
- Projects focused on climate-related outreach and education.
- **Leverage additional resources:** As NEPs select BIL projects, EPA expects programs to collaborate with other federal agencies and new partners and identify opportunities to leverage other EPA and federal agencies' funds (including other BIL funds), as well as state, local, and nongovernmental organization funds as available and appropriate. NEPs are particularly encouraged to explore significant new funding streams in the BIL including an additional \$11.7 billion for EPA's Clean Water State Revolving Funds (CWSRFs), over \$2 billion in new and existing water programs at the Department of Interior, and over \$30 billion in resiliency funding across multiple federal agencies. Although BIL funds cannot serve as non-federal cost-share, NEP BIL funds can be combined with other funding sources, and during distinct phases of projects already identified in work plans that implement approved CCMPs.

NEP BIL Authority and Eligible Uses

The BIL references EPA's underlying authority under CWA §320 to fund the implementation of the NEP CCMPs. As with annual appropriations distributed to NEPs to implement CWA §320, the funds distributed under the BIL must implement the management conference and EPA-approved CCMP and work plan.

As described in CWA §320, NEPs should have a CCMP that:

- (A) *recommends priority corrective actions and compliance schedules addressing point and nonpoint sources of pollution to restore and maintain the chemical, physical, and biological integrity of the estuary, including restoration and maintenance of water quality, a balanced indigenous population of shellfish, fish and wildlife, and recreational activities in the estuary, and assure that the designated uses of the estuary are protected;*
- (B) *addresses the effects of recurring extreme weather events on the estuary, including the identification and assessment of vulnerabilities in the estuary and the development and implementation of adaptation strategies; and*
- (C) *increases public education and awareness of the ecological health and water quality conditions of the estuary.*

Since each NEP characterizes and reflects the priority needs in its own estuary and surrounding watershed in its CCMP, eligible actions and activities will vary across programs. The EPA states that BIL funds can support CCMP implementation activities that include, but are not limited to:

- Protecting and restoring critical habitats, including wetlands, and addressing challenging issues that threaten the ecological and economic well-being of NEP watersheds and communities,
- Supporting water quality protection and restoration, including Total Maximum Daily Load plan implementation,
- Monitoring and addressing toxics, pathogen loads and contamination,
- Implementing stormwater management practices that reduce non-point source pollution impacts,

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- Promoting the adoption of green and nature-based infrastructure approaches,
- Preventing the spread of aquatic invasive species and/or managing their impacts,
- Developing and implementing nutrient reduction strategies,
- Measuring, monitoring, and increasing carbon sequestration,
- Conducting climate vulnerability assessments, developing, and implementing climate change adaptation strategies and using adaptation tools to promote coastal resilience, and
- Developing and implementing strategies to increase opportunities for disadvantaged communities to access, enjoy, and benefit from surface waters and waterways, participate in ecosystem restoration, and engage in capacity-building or educational activities.
- To support other activities identified in CCMPs, including projects that build organizational or financial capacity.

BIL Funding Requirements

APNEP's BIL [Long-Term Strategy](#) was approved by the Leadership Council on May 22, 2023, by EPA on October 16, 2023, and is supported by the EPA approved [Equity Strategy](#). This work plan incorporates the documents by reference and will be updated annually per the guidelines below.

Annual BIL Work Plans

A detailed management conference approved annual BIL work plan must be submitted by June 1 of each year. Annual BIL Work plans can be submitted in the same format as annual appropriations work plans per the NEP funding guidance. APNEP will update this document annually and refine projects and budgets as needed and submit as the annual BIL Work Plan.

Equity Strategy

Each National Estuary Program (NEP)'s Equity Strategy must detail how the NEP will contribute to requirements under the Justice 40 Initiative. This includes meeting a national program-wide goal of ensuring that at least 40% of the benefits and investments from BIL funding flow to disadvantaged communities (term utilized in current EPA and other Federal guidance).

The purpose of the Equity Strategy is to ensure that each NEP is reviewing potential projects and utilization of BIL funds through the lens of equitable and fair access to the benefits from environmental programs for all individuals. The strategy follows a template provided to the NEPs by the EPA, which required inclusion of a definition of disadvantaged communities, and identification of tools and mechanisms for tracking benefits and funding to meet the national goal. The strategy should outline how BIL funds will be utilized to increase investments in disadvantaged communities and the benefits that flow to them.

The equity strategy was required to be submitted as part of each NEP's BIL long-term plan no later than June 1, 2023. The strategy will be reviewed prior to awarding FY 2024 – FY 2026 BIL funds and approved by EPA's Assistant Administrator for Water. APNEP worked with its Management Conference (Citizen Advisory Committee, Science and Technical Advisory Committee, and the Leadership Council), and partners to develop the long-term plan and the required equity strategy.

The [APNEP BIL Equity Strategy](#) is referenced as a supporting document to this Work Plan and Budget as it received separate EPA review and approval.

- APNEP’s initial draft Equity Strategy and BIL Long-Term Strategy was approved by the Leadership Council May 22, 2023, and submitted for EPA review May 30, 2023.
- APNEP submitted 4 revisions of the Equity Strategy for review with the final version submitted October 3, 2023.
- The BIL Long-Term Strategy was approved by EPA Regions 3 & 4 October 16, 2023.
- EPA Headquarters approved APNEP’s Equity Strategy November 29, 2023, which is incorporated by reference in this Work Plan and Budget application for the remainder of BIL funds for FY 2024-2027.

Partnership Priorities

The Partnership anticipates having an approved updated CCMP in 2024. This guiding document for APNEP will serve as an update to the current [CCMP \(2012-2022\)](#) and targets the following five years. The updated CCMP is based primarily on direction from the Management Conference determined during the Strategic Planning meeting held in January 2020 and subsequent guidance on CCMP development and Partnerships foci. An additional facilitated workshop was held January 2023 with the Leadership Council to identify CCMP and BIL priority areas based on the CCMP actions as drafted at the time and subsequently amended (see Appendix 1 for the most recently approved version). Revised BIL foci below were approved by the Leadership Council on February 22, 2024.

APNEP’s BIL Focus Areas for the next five years are:

- Wetlands,
- Submerged Aquatic Vegetation,
- Water Quality, and
- Community Resilience.

Our work is also closely aligned with the Clean Water Act Core Programs, which are:

1. Establishing water quality standards
2. Identifying polluted waters and developing plans to restore them (total maximum daily loads), Permitting discharges of pollutants from point sources (National Pollutant Discharge
3. Elimination System permits)
4. Addressing diffuse, nonpoint sources of pollution
5. Protecting wetlands
6. Protecting coastal waters through the National Estuary Program, and
7. Protecting Large Aquatic Ecosystems.

The updated CCMP will remain consistent with APNEP’s ecosystem-based management approach. A number of actions are prioritized for BIL funds as directed by the Leadership Council (**Appendix 1**). Other actions in the updated CCMP will align with 320 work plans and funding or will be opportunity driven. There will be additional required CCMP-associated documents developed in the coming years: monitoring plan expansion, financial strategy, protections and restoration strategy,

and an updated engagement strategy to support CCMP implementation. APNEP is budgeting BIL funding through this FY22-27 workplan to build capacity to complete some of these elements required by EPA of all NEPs for CCMP updates.

Overall BIL Budget Proposal

For the timeframe of October 1, 2022, to September 30, 2027, Albemarle-Pamlico National Estuary Partnership (APNEP) anticipates receiving a total of \$4,549,000 under Cooperative Agreement 4T - 02D41823 to support activities geared towards Comprehensive Conservation and Management Plan (CCMP) implementation and its mission pursuant to the *2021 Infrastructure Investment and Jobs Act* (P.L. 117-58) / Bipartisan Infrastructure Law (BIL).

This document provides an FY22-27 Work Plan and Budget for the BIL grant funds from the U.S. Environmental Protection Agency (EPA) to support implementation of the Partnership's CCMP. This work plan builds upon the EPA approved initial two-year (FY 2022-2024) BIL Work Plan and Long-Term Strategy and is supported by the EPA approved Equity Strategy. This document will be utilized to request the remainder of funds (\$2,729,400) and amend the existing cooperative agreement.

This work plan incorporates and supersedes all previous versions of the budget proposed in previously approved plans, outlined below and available on the [BIL page](#) of the [APNEP website](#):

A timeline of previous versions is provided below:

- The initial two-year BIL work plan and associated budget were approved by the Leadership Council in October 2022 and is available on the [BIL page](#) of the [APNEP website](#). In February 2023, APNEP received \$1,819,600 from EPA under the BIL to support a 2022-2024 Work Plan for the timeframe of October 1, 2022, through September 30, 2024.
- The Long-Term Strategy approved by EPA October 16, 2023 included the general work plan narrative and an updated budget.
- This document contains the 3rd iteration of the Work Plan and Budget and builds upon the initial two-year BIL Work Plan, the Long-Term Strategy, and is supported by the Equity Strategy approved by EPA Headquarters on November 29, 2023. This document will be utilized to request the remainder of funds (\$2,729,400) and amend the existing cooperative agreement.
- Funding proposed in previous versions of the budget has been realigned as described below after directions from the Leadership Council's February 22, 2023 meeting.

This FY 22-27 Work Plan and Budget serves as the overall narrative for the associated cooperative agreement and entire funding cycle for BIL funds. An overview of proposed uses for this funding is shown in Table 1 and 2, with detailed information described within the Proposed Activities & Projects section below.

Table 1: BIL Budget Proposal Overview

BIL Budget Proposal Summary			
Activity	Years 1-2	Years 3-5	Total
Capacity Building Projects	\$845,000	\$720,000	\$1,565,000
Wetlands Projects	\$238,650	\$470,225	\$708,875
SAV Projects	\$238,650	\$470,225	\$708,875
Water Quality Projects	\$238,650	\$470,225	\$708,875
Community Resilience Projects	\$238,650	\$470,225	\$708,875
Administration*	\$ 20,000	\$128,500	\$ 148,500
Total Grant Funds	\$1,819,600	\$2,729,400	\$ 4,549,000

**Travel, supplies, contractual support, other costs. Does not does not include indirect, personnel and fringe benefits.*

Detailed workplan entries for projects that cover multiple focus areas are included in Capacity Building or included in the primary Focus Area where funds are budgeted from or currently categorized for other programmatic reasons, as shown in Table 2 and described in the workplan entry for each project.

Table 2: Detailed Budget by Project and BIL Focus Area Integration

Project	Estimated Total Cost (FY22-27)	Wetlands	SAV	Water Quality	Community Resilience
CCMP Financial Plan*	\$90,000	X	X	X	X
Spatial Decision Support *	\$300,000	X	X	X	
STAC Focus Area Workshops*	\$200,000	X	X	X	
High Resolution Land Use Mapping (NOAA C-CAP) *	\$425,000	X	X	X	X
Restoration Projects *	\$300,000	X	X	X	X
CAC Community Projects	\$200,000	X		X	X
BIL Outreach, Communication and Engagement*	\$50,000	X	X	X	X

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Project	Estimated Total Cost (FY22-27)	Wetlands	SAV	Water Quality	Community Resilience
Natural and Working Lands Support	\$160,000	PF	X	X	X
Currituck Sound Marsh Conservation Plan Implementation	\$200,000	PF	X	X	X
Wetlands Undesignated	\$101,875	PF			
Assessment of SAV Protection Policies	\$50,000	X	PF	X	X
High-Salinity SAV Monitoring/Mapping	\$130,000	X	PF	X	X
Low-Salinity SAV Monitoring Protocols Development	\$188,650	X	PF	X	X
Analysis of Low-Salinity SAV Sentinel Site Data	\$120,000	X	PF	X	X
SAV - Undesignated	\$245,225	X	PF		
Stormwater Management (RISE)	\$200,000	X	X	PF	X
Algal Bloom Coordination and Nutrient Management in the Chowan/Pasquotank River Basins and Albemarle Sound (RISE)	\$105,000	X	X	PF	X
Virginia Healthy Waters & Watershed Roundtable Coordination	\$85,000	X		PF	X
Water Quality - Undesignated	\$168,875			PF	
Scuppernong Water Management Study	\$250,000	X		X	PF
Tribal Coastal Resilience Connections	\$350,000	X		X	PF
Green Infrastructure, Local Government Assistance (RISE)	\$105,000	X	X	X	PF
Water Level Monitoring Stations	\$103,875	X	X	X	PF
Downeast Resilience Network	\$150,000	X		X	PF
Virginia Resilience Planning & Implementation	\$100,000	X	X	X	PF
Community Resilience - Undesignated	\$0				PF

* = Capacity Building or Broad-Based

PF= Primary Focus Area project is budgeted out of / categorized under in this workplan and budget.

Proposed Activities & Projects

This FY22-27 BIL Work Plan and Budget provides an overview of APNEP's proposed projects and activities for the timeframe of October 1, 2022, to September 30, 2027 to implement the Partnership's CCMP and mission with BIL funds. The following narrative includes both designated projects and budget where available, and undesignated items to provide examples of potential projects and topics that are presently consistent with APNEP's CCMP and its developing update. It incorporates APNEP's approved BIL Long-Term Strategy and Equity Strategy by reference, and is organized into the following categories:

- 1) **Capacity Building:** broad based, overarching projects that support CCMP implementation and integrate across all or multiple focus areas.
- 2) **CCMP Implementation Projects** by BIL Focus Area. Projects that may integrate across multiple focus areas are grouped into the primary focus area that funds are budgeted out of where feasible.
 - a. Designated Projects with details and budgets
 - b. Undesignated Funds with summaries from the BIL Long-Term Strategy within each Focus Area for a comprehensive overview of potential projects, since this version will accompany the application for the remainder of grant funds and covers all years.
- 3) **Administrative Items:** Items related to Partnership administration of the BIL funds and project management.

Project detail and budgets are provided where available through designated work plan project entries. These projects include:

- direct support for continuation of existing APNEP led initiatives,
- support of partner led initiatives, and
- potential opportunities to develop competitive grant opportunities / requests for proposals.

APNEP will work with its management conference and partners to refine this Work Plan and Budget annually to ensure effective use of BIL funds and efficient project implementation. In addition to focusing accelerating CCMP implementation in accordance with the intent of NEP BIL funding, the plan builds upon efforts supported by the Management Conference including the Leadership Council, STAC, CAC, Action Teams, and Monitoring and Assessment Teams, and includes capacity to further implementation of the MOU to collaborate in our shared waterways with Virginia for the first time in over a decade.

External working groups and teams that may be able to assist with further prioritization of projects and identifying communities for Equity Strategy implementation, and potential regional initiatives that APNEP may be able to leverage to maximize BIL funds are also identified.

This FY 22-27 Work Plan also includes support for partners to assist with implementing complimentary plans that further CCMP implementation including, but not limited to the NC Coastal Habitat Protection Plan (CHPP), Currituck Sound Coalition Marsh Conservation Plan, ecosystem and

community resilience objectives under the NC Climate Risk and Resilience Plan (RARP) and Virginia Coastal Master Plan, NC Natural and Working Lands Action Plan, and the Regions Innovating for Strong Economies & Environment (RISE) Regional Resilience Portfolios. A list of plans referenced in this Workplan can be found in **Appendix 2**.

Capacity Building

CCMP Implementation Financial Plan

Objectives: Develop a financial strategy to support CCMP implementation.

Description: Per EPA NEP guidance (Oct. 2020), an updated APNEP CCMP must be accompanied by several components including a Monitoring Plan, a Protection/ Restoration Strategy, a Communication Strategy, and a Finance Plan. While the current CCMP was adopted by the Leadership Council in 2012 and serves as a long-term framework for action in the sounds and their watersheds, the updated CCMP will provide priorities for the next five years. Each document will each be developed under Management Conference guidance, with updates to existing plans to support the revised CCMP. A Financial Plan is inherently a component of a strategic planning document. It will assist APNEP and its partners in effectively implementing the CCMP Addendum during the next five years and beyond by focusing on funding to implement CCMP objectives and actions, as well as guiding long-term financial stability for the Partnership.

The Financial Plan is not intended to document funding commitments or quantitatively track costs. Neither is it intended to be an exhaustive list of all activities and their full cost of implementation throughout the watershed by all entities and partners. It is recognized and accepted that every action will not have currently identified funding nor precise estimates of funding needs.

Progress to Date: New

FY24-25 Plans: To be determined

Year(s)/Project Status:	New
Lead / Partners / Roles:	Management Conference, NC-DEQ, VA-DEQ, others
Outputs/Deliverables:	Summary Report - Finance Plan, Recommendations.
Outcomes:	Strategy and plan to identify funding opportunities for CCMP implementation
Estimated Cost:	\$ 90,000
BIL Focus Ares:	Water Quality, Wetlands, Community Resilience, SAV
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	SOW will include considerations for Equity Strategy Implementation and budgeting and tracking funds for J40.

Spatial Decision Support for CCMP Implementation

Objectives: To 1) develop a spatial targeting strategy whose findings will guide Leadership Council (LC) near-term decisions on allocating Bipartisan Infrastructure Law (BIL) funds toward restoration and protection of priority resources. and 2) assess the uses of estuarine waterscapes and associated interactions with natural resources, including those of CCMP priority.

Description: The 2024-2028 CCMP will focus on water quality, SAV, coastal wetlands, and community resilience. Currently, two needs have been identified where spatial information can guide both near-term and long-term decisions on CCMP implementation. The first addresses an immediate need to strategically initiate BIL project planning and the second addresses a broader need to incorporate impacts from human activities on the regional ecosystem in resource conservation and management practices. A Project Steering Committee (PSC) representing the APNEP Management Conference, who with support of staff will provide guidance throughout the duration of both initiatives.

- 1) **Spatial Targeting Strategy:** In addition to identifying and targeting conservation and management actions that maximize net ecosystem service delivery, a unique federal funding requirement is that 40% of the BIL allocation should directly benefit disadvantaged communities. As such, one of the first APNEP initiatives to be undertaken with BIL funding is a spatial analysis that will provide guidance for strategic siting of projects. Area selection based on 1) suitability for conservation and management actions relative to natural resources of CCMP focus and 2) likelihood to support resilience of disadvantaged communities will help ensure that BIL investments have maximum benefit for CCMP implementation and adhere to federal guidance on use of funds. The short timeline to begin BIL project implementation means APNEP must start with guidance based on currently available information and best available technical advice. So that implementation can begin within the year, the Science and Technical Advisory Committee (STAC) has provided initial guidance on the criteria and spatially explicit information that can be used to characterize site suitability relative to SAV, living shorelines, and disadvantaged communities. The next step is to work with the PSC to refine the STAC initial guidance, compile targeted spatial data sets, develop spatial analysis models/algorithms, and create preliminary maps for LC and Citizen Advisory Committee feedback.
- 2) **Estuarine Spatial Planning Assessment:** A comprehensive spatial plan for the Albemarle-Pamlico estuarine system (APES) has never been attempted, despite the region's challenges arising from many diverse uses of estuarine waterscapes, declining water quality and vulnerable coastal habitats, and significant threats associated with adverse climate change impacts. Problems resulting from competing and expanding uses are rapidly increasing and include user conflicts, environmental degradation, and regulatory inefficiencies. Estuarine spatial planning directly aligns with the APNEP's ecosystem-based management principles and can advance the region's ability to meet current and future demands for ecosystem services from the system. Like established land-use planning practices, techniques for estuarine spatial planning seek to identify and define all existing and emerging human activities that are compatible or incompatible, assess the individual and collective impacts of those activities on ecological integrity and ecosystem service provisioning, and determine the optimal spatial and

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temporal uses of areas to maximize net gains in achieving economic, environmental, and social objectives. Additionally, integrating available geographic information system (GIS) data on climate change scenarios, including sea-level rise vulnerability assessments, expands the utility of estuarine spatial planning to support coastal resilience decision making. With BIL funding, APNEP will initiate the development of a spatial plan for APES by conducting an inventory of uses of estuarine waterscapes and assessing associated interactions with natural resources of CCMP focus, including impacts to ecosystem services. The first step is to work with the PSC to develop a detailed scope of work, including goals, objectives, and deliverables.

Progress to Date: STAC devoted their winter 2023 workshop to jumpstart the project through breakout sessions devoted to identifying known datasets of select targeted resources (wetlands, SAV) and the leading stressors associated with those resources. The Project Steering Committee held their inaugural (virtual) meeting in September 2023.

FY24-25 Plans: A cooperative agreement for spatial analysis support by North Carolina State University's Center for Geospatial Analytics is anticipated in Spring 2024.

Year(s)/Project Status:	Ongoing
Partners:	Management Conference, NC-DEQ, NC CGIA, others
Outputs/Deliverables:	<ul style="list-style-type: none"> • Summary Report – Spatial Targeting: <ul style="list-style-type: none"> ○ Tool and suitability maps, ○ Written Strategy to guide implementation that addresses BIL implementation guidance and requirements from the Equity Strategy that includes recommendations for specific projects for future BIL workplans. • Summary Report – Spatial Planning Assessment: <ul style="list-style-type: none"> ○ Use and resource maps and assessments.
Outcomes:	Improved scientific basis to guide coastal habitat restoration, enhancement, and conservation decisions; Informed management for CCMP implementation; Improved management of estuarine resources. Information to guide BIL funding for CCMP implementation
Estimated Cost:	\$ 300,000
BIL Focus Areas	Water Quality, Wetlands, Community Resilience, SAV
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Assist with project identification and prioritization, J40 tracking

STAC Focus Team Support

Objectives: Provide enhanced facilitation and support for forming STAC Focus Teams by recruiting dedicated graduate or post-doctoral contractors. The primary objective of this dedicated facilitation and support is to accelerate implementation for select CCMP actions where technical guidance is crucial while advancing through preliminary stages. A secondary objective is to create an attractive

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shorter-term (six-to-nine months) option to offer STAC members for advisory participation, as a complement to their longer-term contributions while serving as members of one or more APNEP monitoring and assessment teams (MATs).

Description: The concept of a creating STAC Focus Teams was spurred by a recognition that the previous model of individual CCMP Action Teams addressing multiple CCMP actions (thus helping to implement the management “wedge” of adaptive management cycle) had serious shortcomings with initial implementation, largely revolving around facilitation capacity. As a result, assigned STAC members often had limited opportunity to contribute. The requested facilitation support, modeled after a successful Chesapeake Bay Program initiative, will work to ensure that CCMP implementation of action will be solid from the start.

Funding Strategy: Funding for STAC Focus Teams that are not BIL priorities may be budgeted from the 320 workplan. BIL funding will not be utilized for the STAC to further assess Action D3.2 (new draft CCMP Action C3.2). As further described in the Community Resilience section, APNEP has been directly engaged in resilience planning in the region the past few years. Numerous action plans and workgroups and have been developed that are well into implementation. As such, the Spatial Targeting Exercise and STAC Focus Teams will not be utilized to guide project prioritization or BIL funding for the Community Resilience Focus Area.

Progress to Date: During the STAC winter 2024 meeting, STAC leadership offered members an initial opportunity to serve on Focus Teams aligned with ten CCMP actions, whose selection was based on consultation with the Leadership Council. The initial Focus Teams will be those who receive sufficient commitment from STAC members at the winter meeting and/or subsequent member feedback.

FY24-25 Plans: Pending STAC leadership approval of a particular Focus Team with assigned STAC team leader, next steps include recruiting additional non-STAC partners (technical, policy, public) whose expertise aligns with the CCMP action to be addressed plus staff assigning a facilitator contractor. It is anticipated that initially a contractor will facilitate at least two Focus Teams.

Year(s)/Project Status:	New
Lead / Partners:	APNEP
Outputs/Deliverables:	Focus Team report recommendations for subsequent implementation phases.
Outcomes:	Dedicated facilitation and support to accelerate implementation for select CCMP actions and to create an attractive shorter-term option to offer STAC members for advisory participation.
Estimated Cost:	\$100,000 for two years for 3 of 4 BIL focus areas (SAV, Wetlands, Water Quality) and CCMP actions deemed BIL priorities; other proposed focus groups will be budgeted out of 320 funds.
BIL Focus Areas:	SAV, Wetlands, Water Quality
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Spatial Targeting exercise to inform

High Resolution Land Use Mapping (NOAA C-CAP)

Objectives: To improve the spatial accuracy and timeliness of areal extent estimates for major land cover and land use types within the Albemarle-Pamlico Basin, thus supporting CCMP habitat conservation actions such as developing a wetland protection and restoration strategy.

Description: APNEP by collaborating with the NC Division of Marine Fisheries Habitat Section and other NC Coastal Habitat Protection Plan (CHPP) partners will provide matching funds to NOAA Office for Coastal Management’s Coastal Change Analysis Program (C-CAP), whose contractors will produce a Level 2 (20-class) interpretation of the APNEP programmatic area at one-meter resolution, plus an enhanced classification for coastal wetlands. APNEP will pursue additional funds so the same protocol can be applied to the Upper Roanoke, thus allowing the entire Albemarle-Pamlico Basin to have the same Level 2 high-resolution C-CAP interpretation.

Background: For more than two decades, NOAA’s Office for Coastal Management has been producing consistent, accurate 30-meter land cover and change information through its Coastal Change Analysis Program (C-CAP). Thanks to funding from the Bipartisan Infrastructure Law and other sources, new 1-meter land cover data are now available for the coastal United States, including the Great Lakes. High-resolution land cover data is used to document key geographic and landscape features covering Earth’s surface for coastal communities across the country.

Initial high-resolution land cover products, [released in January 2024](#), include three feature layers—impervious surfaces, tree canopy, and water features. By providing more detail (900 times that of the 30-meter regional land cover), these new land cover data sets [support a wide range of local and site-level applications](#) that are critical for climate adaptation and resilience planning.

Land cover mapping is foundational for understanding complex and pressing issues related to climate equity, hazard mitigation, and sustainability. Communities are provided open access to C-CAP land cover data with an unprecedented 1-meter resolution. This data provides communities with the foundational data needed to assess coastal resources, analyze land use, prepare for disaster risks, and adapt to a changing climate. [Learn more](#).

Progress to Date: APNEP has assumed responsibility for collaborating with C-CAP to establish a NC-DEQ contract that allow collective funding from various state partners be transferred to C-CAP, who in turn will negotiate with their contractors to produce the deliverables.

FY24-25 Plans: The contract should be in place by early summer 2024. Continue coordinating with Virginia agency partners to apply the protocol to the Upper Roanoke.

Year(s)/Project Status:	New
Lead / Partners/ Roles:	APNEP, NC-DEQ
Outputs/Deliverables:	Land cover data for North Carolina and APNEP program area in Virginia and NC
Outcomes:	Improved scientific basis to guide coastal habitat restoration, enhancement, and conservation decisions; Informed management

	for CCMP implementation; Improved management of estuarine resources
Estimated Cost:	\$ 425,000
BIL Focus Ares:	Wetlands, Community Resilience, SAV,
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Will help refine spatial targeting. Many communities rely on NOAA data and Digital Coast Resources for resilience and land use planning.

Restoration Projects (Grant Opportunity)

Objectives: Establish funding opportunities tailored to the AP region for restoration projects that draw from multiple focus areas and support implementation of multiple CCMP actions with guidance from the Leadership Council, STAC, and CAC as appropriate.

Description: APNEP will offer funding to support a Restoration Projects Request for Proposals (RFP) that furthers ecosystem restoration components of the CCMP and is tailored to regional needs with input from partners. Additional funding may be pulled from undesignated funding from the Wetlands, SAV, and Water Quality focus areas to increase the grant program upon Leadership Council direction.

The RFP will be created through a process recommended by staff with input from the Management Conference. Potential projects that the grant program could support include, but are not limited to: wetland, riparian, or hydrologic restoration; estuarine shoreline management, living shorelines, anadromous fish habitat and passage restoration (including fish ladders and removal of migration obstacles); oyster habitat creation or restoration, green infrastructure and nature based solutions, address impacts of sea level rise and rising groundwater tables, installation of stormwater best management practices and restoration of impaired waters.

APNEP will seek input from the Management Conference to tailor this funding source to regional needs, create opportunities for smaller projects that struggle to be competitive on statewide and national scales. APNEP can fill gaps by creating an RFP tailored specifically to the AP region that meets CCMP goals and objectives and supports partners regionally.

Where feasible, projects should align or further Equity Strategy implementation or include a discussion of secondary benefits to communities from traditional ecosystem restoration and protection efforts. Grant requests may represent a component of a larger project, leverage and partnerships will be encouraged.

Progress to Date: New

FY24-25 Plans: To be determined

Year(s)/Project Status:	New
Lead / Partners:	APNEP
Outputs/Deliverables:	Creation of regional grant opportunity to support partner projects

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Outcomes:	Restore habitats (including SAV, wetlands, oysters, riparian buffers, etc.) and water quality
Estimated Cost:	\$300,000
BIL Focus Ares:	SAV, Wetlands, Water Quality
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Spatial targeting could inform project selection when available; offer use of Spatial Equity tool to assist applicants with Equity Strategy considerations.

CAC Community Projects

Objectives: Establish funding opportunities for community-based local projects to support CCMP implementation that draw from multiple focus areas with guidance from the Citizen Advisory Committee (CAC).

Description: Develop proposals and fund cross-cutting interdisciplinary projects with guidance from the CAC to solicit applications for projects that implement the CCMP and provide environmental benefits and promote stewardship of the Albemarle-Pamlico region. Project type and selections will be made through a process recommended by staff based on input from the CAC.

Topic areas discussed by the CAC in meetings and in membership questionnaires throughout 2023-2024 include local government and community planning and capacity, supporting a database or mapping exercise of all community groups or community led-initiatives in the region, infrastructure assessments and planning of failing septic and green infrastructure, wetlands education opportunities, harmful algal bloom education and response, stormwater improvements, urban waters engagement efforts, community-based participatory science, and stakeholder engagement.

Progress to Date: New

FY24-25 Plans: Work with the CAC to develop the funding protocol.

Year(s)/Project Status:	New
Lead / Partners:	APNEP Citizen Advisory Committee
Outputs/Deliverables:	Community Demonstration Projects
Outcomes:	Increased stewardship of the AP region; increased community and citizen involvement in watershed protection. On-the-ground projects that demonstrate environmental benefits
Estimated Cost:	\$200,000
BIL Focus Ares:	SAV, Wetlands, Water Quality, Community Resilience
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Spatial targeting to inform; offer use of Spatial Equity tool to assist applicants with Equity Strategy considerations. It is anticipated that CAC members will be very helpful in thinking through Equity Strategy implementation across multiple projects and focus areas.

BIL Outreach, Communications and Engagement

Objectives: Raise awareness of and increase access to APNEP’s BIL funding and Equity Strategy implementation to maximize benefits associated with BIL funding. Increase knowledge and understanding of Albemarle-Pamlico region issues and promote environmental stewardship behaviors that further CCMP implementation. Develop and highlight targeted communications strategies and materials for specific initiatives funded through BIL and to implement the Equity Strategy and showcase success of the federal investment in the AP region.

Description: In accordance with its Engagement Strategy, APNEP produces a wide variety of communications materials to improve the Partnership’s ability to reach different audiences, including its partner organizations, local government, community leaders, the public, and scientists and researchers. APNEP accomplishes this through print and digital materials, including its website, social media platforms, blog, e-newsletter, and printed fact sheets and brochures.

APNEP will utilize BIL funding to support capacity building and diversity, equity, inclusion, and justice external review for targeted BIL communications through hiring interns, contract positions, and costs associated with printed materials, displays, newspaper ads, and other media.

APNEP has hosted several Science Communications and Outreach interns through the Department of Administration State of NC Internship since 2018, and other programs including AmeriCorps and NC-DEQs STEP Internship. Past interns have developed ArcGIS Story Maps, GIS-based project maps for our website, analysis of communication and outreach strategies for aquatic invasive and nuisance species, strategies for targeted SAV Outreach, recommendations for Diversity, Equity, Justice, and Inclusion into the Partnership’s outreach activities, and most recently, targeted communications and tools for BIL and Equity Strategy Implementation.

Future workplans will be developed to highlight specific project initiatives and success stories related to BIL implementation and address other BIL needs as they evolve. Other intern programs will be explored to augment APNEP staff capacity including the NC-DEQ HBCU Internship Program, NC Sea Grant STEM Fellowship Program, NCSU Kenan Climate Leaders Fellowship Program, and programs that may be developed by other partners for resilience and inclusivity initiatives.

Progress to Date: In 2023 we participated in the STEP Internship Program funded by NC-DEQ. The summer intern’s workplan was focused on assisting with communication and outreach related to BIL implementation. The intern assisted in creating content for webpages, fact sheets, and other public facing information to allow APNEP to share information regarding funding opportunities. Their primary project was to assist with development of an interactive, GIS based web tool that combines the 6 tools identified in the Equity Strategy to assist with ensuring BIL funds benefit disadvantaged, underserved, underrepresented communities in the AP region.

FY24-25 Plans: Staff submitted a proposal to the NCDOA Summer Intern Program to continue these activities and will develop a detailed workplan once a candidate has been selected. Funds will be allocated towards other intern and fellowship programs as opportunities arise and staff capacity allows.

Year(s)/Project Status:	Ongoing
Lead / Partners:	APNEP
Outputs/Deliverables:	Communication products and tools (see intern ad)
Outcomes:	Student experiential learning and training, professional development
Estimated Cost:	\$50,000
BIL Focus Ares:	SAV, Wetlands, Water Quality, Community Resilience
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Assist with project identification and prioritization, utilization of the Equity Tool for J40 tracking

Capacity Building Support Activities

MOU Implementation Support: APNEP will continue to work through agency designees and regional partners to identify projects that support implementation of APNEP’s interagency MOU with Virginia. The designees agreed upon climate resilience as an overarching theme, with an initial focus on working in the Chowan River Basin, in the 2021 MOU report. There is currently no funding dedicated to supporting MOU implementation from any of the agencies involved. Seed funding for projects could foster broader support of the MOU and a positive opportunity for agencies and other regional partners to demonstrate commitment to implementation.

Funding is currently budgeted for projects that would assist with MOU Implementation out of all focus areas, with the following budget currently specifically allocated to support Virginia based plan implementation and initiatives: Virginia Healthy Waters and Watershed Roundtable Coordination and Virginia Resilience Planning. APNEP is funding NOAA CCAP mapping for the entire Program Area including Virginia and is seeking funding / partnerships to expand coverage of the Upper Roanoke. Funding to support other initiatives including Currituck Sound Coalition, Natural and Working Lands, CAC Community Projects, and the Restoration Project RFP will provide additional opportunities to benefit MOU Implementation.

Albemarle-Pamlico Federal Partnership: APNEP has been participating in the Albemarle-Pamlico Federal Partnership initiated by the USFWS in 2022. This effort is geared towards increasing regional coordination amongst federally funded partners to promote national attention towards the Albemarle-Pamlico region; while also seeking to leverage and maximize the benefits of the significant federal investments being directed towards the region through BIL, IRA, ARPA, and others. Based on initial conversations staff anticipate opportunities through this effort to guide project planning, prioritization, and implementation. Updates will be included in future iterations of this work plan. As with the MOU, multiple projects identified below complement this effort, so funding is not currently designated for this effort, though APNEP staff assist with planning, coordination, and meeting facilitation. The effort has recently expanded to include state agencies and ultimately will include other local, university, and NGO partners once a more refined vision has been established.

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In 2023, the Albemarle-Pamlico region was identified by the Council for Environmental Quality (CEQ) Coastal Resilience Interagency Working Group (CRIWG) as one of three national focus areas for shared learning across different locations at different stages on place based collaborative resilience planning. The CRIWG was established by the National Climate Task Force and is co-led by CEQ and NOAA with a goal to elevate, coordinate, and accelerate Federal efforts to increase resiliency of coasts and coastal communities to climate change. The AP Partnership team intends to build upon this recent national recognition, and over three decades of similar efforts to elevate the status of the nation's second largest estuary to be able to compete for funding and resources at a national scale with other more well-known and better financially resourced coastal programs including Chesapeake Bay, Puget Sound, and Everglades.

As part of this regional coordination and with support and encouragement from the NC Governor's office, APNEP partnered with the USFWS and the NC Office of Recovery and Resilience in July 2022 to submit a grant application, with APNEP as the applicant in cooperation with NC-DEQ, through the National Fish and Wildlife Foundation America the Beautiful Challenge. The team worked together again in 2023, again with support from the Governor's office and the chair of the White House CEQ Committee, to submit a similar proposal to the NOAA CCRC with NCORR as the applicant.

Though these grant applications were unsuccessful, there is interest in partnering for future funding opportunities and using the framework proposed to incorporate community engagement and research support in efforts to protect and restore natural and working lands. The framework will be revisited for other grant opportunities and ideas to implement the Equity Strategy.

CCMP Implementation Projects by BIL Focus Area:

The Leadership Council has encouraged projects to cross BIL and CCMP focus areas to provide more efficient and effective use of resources. **Table 2** shows this relationship among the proposed individual projects. Project work plan entries are generally grouped into the focus area where funds are primarily budgeted from; but may draw from multiple sources as project scopes, budgets, and contracts are executed.

A good example of APNEP's current efforts to integrate across multiple categories and build upon existing initiatives is our leadership in establishing the connection between SAV and Water Quality. Over the past five years, APNEP has led efforts to convene diverse interdisciplinary partners together to establish these relationships, which are informing current implementation activities tied to the CCMP, CHPP, and other partner plans. Highlights are included below:

- The APNEP facilitated SAV team, which has been collaborating for over two decades, has determined that assessment and monitoring is necessary to establish a baseline so that the condition of the resource can be quantified to better direct restoration efforts.
- APNEP-supported research is leading to policy recommendations that will have long term implications towards protection our sounds.
- As described below, staff have been talking with partners through groups such as WRIT and the Coastal Resilience Community of Practice to help incorporate other focus areas and inform the Spatial Targeting exercise described above, bridging connections between groups

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SAV & Coastal Habitat partners to water resources and community resilience practitioners, and local governments.

Pilot demonstration projects will be considered as appropriate under each category to show the connection between projects that fall under the Assessment, Identification, and Protection components of APNEP's current CCMP to the Restoration and Engagement aspects where short term, measurable progress towards protecting the resource can be made.

APNEP staff and Leadership Council will work with the Advisory Committees, associated Teams, and partners to identify projects that need guidance, leadership, financial support, or administrative support from APNEP for CCMP implementation. Approved projects and activities may either be directly contracted or subject to request for proposals as appropriate for the task and under the guidance of the Leadership Council. The CAC, STAC, or specific ad-hoc groups will evaluate requests and provide recommendations to the APNEP office regarding administering the funding for priority projects and activities as established by the Leadership Council.

At the February 22, 2024 Leadership Council meeting, members agreed to remove Oyster Habitat as a BIL Focus Area but keep it as one of the CCMP priority areas. During the facilitated workshop held January 2023 with the Leadership Council none of the oyster specific CCMP actions were identified as BIL priorities (see **Appendix 1**).

Wetlands Focus Area:

Wetlands

Wetlands are extremely important in the Albemarle Pamlico region and currently under threat due to policy changes at national, state, and local levels. Recently, APNEP's focus on wetlands has largely been associated with living shorelines and Submerged Aquatic Vegetation. One APNEP staff member coordinates closely with the NC-DEQ on the NC Coastal Habitat Protection Plan (CHPP). APNEP has been involved in other initiatives described below that promote identification, protection, and restoration of wetlands, as well as public engagement. These include supporting research to inform policy, development nutrient criteria standard, for coastal plain ecological flows, promoting the use of living shorelines, coordination of landscape scale hydrologic wetland restoration strategies, development of marsh conservation plans, and wetlands mapping.

Funding Approach: Staff will work through the STAC, MATs, CAC, external workgroups and teams, and the results of the Spatial Targeting exercise as appropriate to further refine the budget annually. In addition to budgeting funds to ensure completion of future phases of the Scuppernong Study, staff have made progress towards working with partners to identify and consider direct support for projects as described below, including implementation of the Currituck Sound Marsh Conservation Plan and NC Natural and Working Lands Action Plan. Projects may also be funded under the interdisciplinary, overarching projects identified in the Capacity Building Section. *Funding may also be allocated from other focus areas due to the cross-cutting nature and interdisciplinary actions identified in these plans.*

Natural and Working Lands Support

Objectives: Support implementation of wetland actions in the NC Natural and Working Lands Action Plan (NWL Plan), newly signed NC Executive Order 305 and similar efforts in Virginia.

Natural and Working Lands: APNEP participated in the development of the [NC Natural and Working Lands Action Plan](#), which is included as an appendix to the 2020 [NC Climate Risk and Resilience Plan \(RARP\)](#). APNEP continues to serve as a member of the NWL Steering Committee, Coastal Habitats, and Pocosins workgroups which consist of diverse agency, university, and non-governmental stakeholders. APNEP's works to identify regional gaps and needs, integrate resilience into existing programs and initiatives, and ensure plans complement the goals and objectives of both APNEP's CCMP and N.C. Coastal Habitat Protection Plan.

Additionally, on February 12, 2024 Governor Cooper signed [Executive Order No. 305](#) to protect and restore NC's most critical natural and working lands. The goals and directives in this order were developed based on years of public engagement and seeks to implement transformative recommendations from the NWL plan and other existing efforts.

In Virginia, there is not currently a comprehensive analogous plan, but coordination efforts align with Healthy Waters, Watershed Roundtables and Resilience Planning entries included in the Water Quality and Community Resilience focus area sections, MOU, and the AP Federal Partnership described above. APNEP will continue to work closely with partners to align grant opportunities with complimentary NWL efforts in Virginia.

Funding Approach: Work with the NWL Steering Committee (and VA counterparts) to boost NWL Action Plan implementation and provide immediate funding opportunities, along with direct support for wetland projects identified as high priority by the Steering Committee. Partners have submitted multiple proposals for actions needed to inform future work, such as the Pocosin Ditch Mapping Project, but have been unsuccessful at obtaining needed funding. Some projects are needed to inform implementation grants with larger funding pots such as the EPA CPRG grant and multi-state coalition grant but may not be considered eligible activities under those opportunities.

APNEP can help fill gaps by funding known priority projects so that implementation or access to other funding sources is not delayed. Staff will continue to work closely with the NC Natural Heritage Program (NC-NHP) who oversee plan implementation, the Steering Committee, and workgroups and committee chairs to identify opportunities to fund implementation of the [recommended actions](#) from the NWL Action Plan. Example projects include:

A. Coastal Habitats – APNEP participates as a team member and worked to ensure both the CCMP and CHPP were prioritized during plan development. Example actions include:

- Providing incentives to assist with coastal habitat protection;
- Facilitating the migration of coastal habitats through protection of migration corridors; and
- Prioritizing climate change and sea level rise considerations in coastal habitat restoration planning.

B. Pocosin / Peatlands Restoration – APNEP participates as a member of this workgroup and has focused effort on facilitating the Scuppernong Regional Water Management Study, partially fulfilling the NWL action on targeted interventions to protect peatlands from sea level rise and saltwater intrusion guided by scenario-based modeling. Funding is budgeted from this category but the workplan entry is included in the Community Resilience section since external funding is currently funding the Study itself and initial BIL funding is budgeted to continue community engagement and ongoing regional resilience coordination. Other projects include:

- Addressing concerns of farmers that may be reluctant to try new proposed approaches to attenuate flow and relieve flooding if it means taking productive land out of production, even temporarily. There may be some opportunities to assist with conservation easement payments or economic studies to encourage voluntary participation to evaluate these methods in the coastal plain. Partners have also suggested that APNEP consider covering transactional costs for projects that traditional funders are unable to cover.

Progress to Date: APNEP reports annually through NC-DEQ, NCORR, and the NC-NHP on multiple initiatives that further NWL Action Plan implementation including overall CHPP and CCMP implementation with special emphasis on SAV Mapping/Monitoring, the Scuppernong Study, and toolkits and resources for local governments to protect coastal habitats and promote nature-based solutions (NNBF project described below). APNEP is working with the NWL Steering Committee, workgroup members and VA partners about needs and gaps in available resources and funding.

FY24-25 Plans: Assist with implementation of the wetland and coastal habitat actions of the NC NWL Action Plan and/or NC Executive Order 305. Priorities will be aligned with those established by the NWL Steering Committee in the 2023 NWL Action Tracker. Preference for project funding will given to active committee member organizations and those that participated in the development of the NWL Plan. Where possible, activities will be coordinated with the developing NC-DCR and VA-DEQ EPA CPRG state agency grants and the multi-state coalition application.

Year(s)/Project Status:	New
Lead / Partners:	NC-NHP, NWL Steering Committee (multiple members), NC-DEQ / DMF, VA-DEQ/DCR, TNC, NCCF, NC-WRC, Wetlands Watch, VA Conservation Network, SWCD, Cooperative Extension, State Parks, USFWS, VADOF, NCDACS
Outputs/Deliverables:	NWL Action Plan implementation (varies by action)
Outcomes:	Accelerate implementation of the NWL Action Plan and EO 305; create funding opportunities to implement similar efforts in Virginia
Estimated Cost:	\$200,000
BIL Focus Ares:	Wetlands, SAV, Water Quality, Community Resilience
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	To be informed by the Spatial Targeting Exercise as appropriate.

Currituck Sound Coalition Marsh Conservation Plan Implementation

Objectives: Support implementation of the [Currituck Sound Coalition’s Marsh Conservation Plan](#). Build upon collaborative efforts to protect and restore Currituck Sound and its tributaries including the Back Bay, North Landing and Northwest Rivers which originate in the Great Dismal Swamp.

This supports implementation of recommended actions from multiple plans including the RISE Albemarle Commission Project Portfolio, NC-DEQ Pasquotank River Basin Plan, APNEP MOU implementation, and APNEP SAV Team efforts to link water quality and SAV protection.

Description: APNEP participated as a member of the [Currituck Sound Coalition](#) since it reconvened in 2019 and served as committee members to help develop the 2021 Marsh Conservation Plan. In addition to the primary target of protecting and restoring marshes and marsh migration corridors, secondary targets include water quality, SAV, fisheries, and birds. The CSC has been exploring regional collaboration on water quality issues over the past year, which complements efforts of APNEP’s SAV team and Wetland and Water Quality MATs, and may provide an opportunity for a pilot for an integration regional monitoring plan. In addition, regional partners identified water quality monitoring as a need in the Albemarle Commission’s RISE Resilience Project Portfolio:

The state does not conduct ambient water quality sampling in Currituck Sound, North Landing River, or the Northwest River watersheds. Establish a standard water quality sampling program to test for potential contaminants and harmful algal blooms. This would include using a numeric nutrient criterion to test for potential eutrophication issues.

Progress to Date: Staff have met with Audubon and are coordinating to include key Coalition members at the next SAV Partnership meeting to explore where synergies may align. Funding may be allocated from other focus areas due to the cross-cutting nature of known needs, such as mapping and monitoring SAV and water quality.

FY24-25 Plans: Work with Audubon, Coalition partners, and the APNEP SAV team and/or Wetlands MAT team to determine needs, detailed projects, or creation of a regional funding source that furthers plan implementation. APNEP staff are coordinating with Audubon, CSC Coalition members, and the APNEP SAV Team to identify specific projects and will include detail in future workplans.

Year(s)/Project Status:	Ongoing
Lead / Partners:	Audubon, multiple CSC members including CSI, NCCF, local governments, USFWS, NC Coastal Reserve/NERR
Outputs/Deliverables:	TBD
Outcomes:	Accelerate implementation of the Currituck Sound Coalition’s Marsh Conservation Plan
Estimated Cost:	\$200,000
BIL Focus Ares:	Wetlands, SAV, Community Resilience, Water Quality
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Staff will work with CSC members primarily to utilize local knowledge to inform project development related to Equity

	Strategy Considerations and will be informed by the Spatial Targeting Exercise as appropriate.
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Wetlands -Undesignated

APNEP will work through the STAC, MATs, CAC, external workgroups and teams, and the results of the Spatial Targeting exercise as appropriate to further refine the budget annually. The following are examples of projects and activities that were included include in the Long-Term Strategy and may arise (updates are provided where available):

- **STAC & MAT Guided Projects:** Establish funding opportunities for identification, monitoring and assessment, research, and other activities with guidance from the STAC, MATs, and other advisory teams as appropriate. Initial funding has been allocated toward STAC Spatial Decision Support Tool and Focus Group Workshops described in the Capacity Building section.
- **Ecological Flows Project Phase III:** APNEP will work with the Ecological Flows team to identify needs and develop a scope for Phase III. A pilot project was completed in 2023 as described in the 320 annual work plans, which will contain preliminary recommendations to meet the relevant CCMP actions and needs for further project phases. Establishment of ecological flows protects aquatic ecosystems and coastal habitats including wetlands and SAV. *Note: this was not identified as a BIL priority by the Leadership Council, so the budget currently prioritizes other projects. Future funding will likely be considered under 320 funds.*
- **Facilitate the Expansion of Living Shorelines:** APNEP co-leads the NC Living Shorelines Steering Committee with the North Carolina Coastal Federation. Work by these members includes research and monitoring of natural marshes and living shorelines, wave attenuation and transformation, and the use of alternative living shoreline construction materials. Education and outreach efforts by members have increased awareness and shown the benefits of living shoreline techniques to the public as well as to real estate agents, contractors, and engineers. APNEP will work with the committee to determine whether developing an RFP and application review process to support the design and installation of living shorelines on public property would be beneficial.
- **Sentinel Landscapes:** APNEP has participated in the Eastern North Carolina Sentinel Landscapes Partnership since its inception in 2016. ENCSL is an innovative partnership focused on collaboration and coordination between farmers and foresters, conservationists, and military installations to provide mutual benefits to protect the state’s two largest economic sectors – Agriculture and Defense. This regional initiative works to preserve agricultural lands, contribute to national defense readiness, and restore and protect wildlife habitat in 33 eastern counties (24 of which are in the Albemarle Pamlico watershed).
- **Southeast Regional Partnership for Planning and Sustainability (SERPPAS):** APNEP participates in a voluntary collaboration among State leaders from natural resources, working lands, and environmental protection agencies in North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi; regional leaders from their federal agency

counterparts; and leaders from the Department of Defense and the military services in the Southeast. Formed in 2005, SERPPAS is an unconventional partnership that harnesses strategic planning and promotes collaborative decision-making between public and private partners to support the military mission, conserve key habitats and species, sustain rural economies and industries, and foster better coordination among local, state, and federal stakeholders in the region. SERPPAS serves as a forum to build effective working relationships between diverse partners, identify overlapping interests, and implement mutually beneficial actions that support the missions of all the partners. SERPPAS foci currently include Sentinel Landscapes; At-Risk, Threatened & Endangered Species; Southeast Prescribed Fire; Coastal Resilience and Regional Adaptation, and Energy Development and Siting.

- **South Atlantic Salt Marsh Initiative's (SASMI):** The South Atlantic coast is home to an expansive network of salt marsh and tidal creeks stretching over one million acres. Salt marshes are the ecological guardians of our coast, and this habitat is facing increasing pressures from rising seas and encroachment. SASMI is a voluntary, collaborative, and non-regulatory effort that brings together diverse partners from North Carolina, South Carolina, Georgia, Florida and beyond to achieve landscape-scale conservation of one of the last vast areas of salt marsh in the United States. SASMI seeks to add value to ongoing efforts and create a framework and catalyst for cross-agency and organization collaboration supported by implementation at the state and local level by developing a regional conservation plan.

Submerged Aquatic Vegetation (SAV) Focus Area:

Submerged Aquatic Vegetation (SAV)

Since 2004, APNEP has facilitated a SAV partnership that aims to promote the conservation of this key APNEP estuarine habitat indicator, along the entire coast of North Carolina and southeastern Virginia. Monitoring SAV is vital because among other benefits it serves as an indicator of habitat condition for various aquatic fauna, shoreline resilience to extreme weather events, and overall water quality. Given the prior lack of accurate information on SAV presence across this region, the group's initial focus was on monitoring trends in a single SAV metric: overall extent and density in both low- and high-salinity waterscapes. With the development of an APNEP SAV monitoring strategy in 2021, additional metrics such as relative abundance and species composition have been included to gain a more robust tracking of SAV condition.

The partnership has been successful at publishing a baseline map in 2011 and updated maps in 2019 and 2022, as well as an initial assessment report of high-salinity SAV in 2021. Such assessments reveal locations where areal declines are most dramatic and thus can direct efforts at SAV restoration. Current restoration efforts are focused on those SAV stressors associated with water clarity (see "Water Quality" below). The partnership and APNEP have also successfully facilitated efforts to promote SAV protection including policy development to inform updates to the NC CHPP, NC Nutrient Criteria Development Plan, direct investments in projects, synthesis of research, and establishing linkages with water quality protection and policy development efforts described further below. The projects listed below build upon this foundation. [Learn more.](#)

Funding Approach: Staff are working primarily with the SAV Team to flesh out proposed projects and will include detail in future iterations of the annual BIL Workplan. Funding estimates below are budgeted based on past projects. Staff will work through the STAC, APNEP’s Monitoring and Assessment Teams, CAC, external workgroups and teams, and the results of the Spatial Targeting exercise as appropriate to further refine the budget annually. *Funding may be allocated from other focus areas due to the cross-cutting nature of needs for mapping and monitoring SAV and water quality as described in the strategy.*

Assessment of SAV Protection Policies

Objectives: To 1) compile all existing federal and state laws and regulations regarding the conservation and management of SAV, 2) assess the policies and management practices used to guide and implement rule making pertaining to SAV, and 3) identify and report any regulatory inconsistencies, inadequacies, and inefficiencies, and recommend necessary improvements.

Description: SAV in the Albemarle-Pamlico Estuarine System is afforded protection primarily through its federal designation as *Essential Fish Habitat* by the Magnuson-Stevens Fishery Conservation and Management Act. In North Carolina, adherence to federal regulations regarding SAV is managed through various state and regional (multi-state) policies, some of which are not specific to SAV conservation initiatives but in some way include management considerations for SAV. These policies may not necessarily align or be sufficient to maximize success in achieving shared SAV conservation goals and objectives. A comprehensive review of these policies, including common and competing policy interests, policy development and implementation practices, and resulting policy outcomes may help to identify regulatory inefficiencies and opportunities for improved coordination and collaboration among APNEP partners working to protect SAV.

Progress to Date: New

FY24-25 Plans: Staff will work with members of the SAV Team to develop a draft scope of work for this project, which will be used to solicit contracted support for implementation.

Year(s)/Project Status:	New
Lead / Partners:	SAV Team, NC-DEQ, VA-WRC, VA-DEQ, others
Outputs/Deliverables:	Summary report with annotated bibliography
Outcomes:	Improved understanding of the regulatory needs regarding the conservation and management of SAV.
Estimated Cost:	\$50,000
BIL Focus Areas:	SAV, Wetlands
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Spatial Decision Support project to inform as appropriate.

High-Salinity SAV Monitoring

Objectives: To implement the high-salinity component of the APNEP SAV Monitoring Strategy by conducting 1) aerial imagery acquisition and interpretation for mapping (Tier 1) and 2) associated

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field surveys of relative abundance and species composition (Tier 2), and 3) developing a sentinel-site network for higher-level (mechanistic) understanding of change and condition (Tier 3).

Description: For nearly two decades, APNEP has led a regional effort to design and implement long-term and comprehensive monitoring of SAV in the APES in support of addressing critical data needs for ecosystem assessment. Through a multi-disciplinary and highly collaborative approach, APNEP brings together numerous experts and diverse organizations with a shared goal of understanding changes in the status and condition of the region's SAV. This monitoring is critical to developing effective conservation and management strategies for SAV protection, including informed decision making and greater public awareness and engagement.

Progress to Date: A baseline map was released in 2011 followed by updated maps in 2019 and 2022. The APNEP SAV Monitoring Strategy was approved in 2021 with implementation beginning that same year for Tier-1 and Tier-2 data collection. An initial assessment report of high-salinity SAV areal extent by density class was published in 2021.

FY24-25 Plans: An updated assessment is underway and scheduled to be published in 2024.

Year(s)/Project Status:	Ongoing
Lead / Partners:	NC-DEQ, NCDOT, UNC-W, UNC-CH
Outputs/Deliverables:	Maps and assessments of SAV distribution, change, and condition
Outcomes:	Accurate and current information on SAV health to inform decision making, including CCMP implementation and state management actions (e.g., NC Coastal Habitat Protection Plan).
Estimated Cost:	\$130,000
BIL Focus Areas:	SAV, Wetlands
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	Spatial Decision Support project to inform

Low-Salinity SAV Monitoring Protocols Development

Objectives: To implement the low-salinity component of the APNEP SAV Monitoring Strategy by developing refined or new sampling methodology that meets data needs while also allowing for greater interest and engagement from existing SAV partners in the region.

Description: There long has been a recognition that SAV monitoring protocols developed for low-salinity waterscapes within the Albemarle-Pamlico Estuarine System will differ from those developed for high-salinity waterscapes. The primary reason for the difference is water clarity which inhibits the use of aerial imagery as key input for Tier-1 (remote sensing) and Tier-2 (boat-based) efforts. While APNEP funding devoted to protocols testing has been directed to high-salinity Tier 2, there is a parallel need to advance low-salinity Tier-1 and -2 protocols development as well.

Progress to Date: From 2012-2020, with funding support from proceeds of the sales of the NC Coastal Recreational Fishing License (CRFL), the National Fish and Wildlife Foundation, and APNEP, the SAV Team developed and implemented standardized boat-based protocols utilizing underwater

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sonar and cameras that were accompanied by in-water (quadrat-based) protocols to monitor SAV at designated sentinel sites in the Neuse River, Pamlico River, and Albemarle Sound. While the sonar and camera protocols are effective sampling methods for monitoring SAV in low-visibility conditions, they are laborious, require special equipment and training, and are costly to implement. As such, it has been challenging to sustain partner engagement and support of this work.

FY24-25 Plans: Work with SAV team to identify next steps

Year(s)/Project Status:	Ongoing
Lead / Partners:	ECU, NC-DEQ, others
Outputs/Deliverables:	Updated protocols for effective and efficient sampling of low-salinity SAV that can be sustained through existing partner collaborations.
Outcomes:	Accurate and current information on SAV health to inform decision making, including CCMP implementation and state management actions (e.g., NC Coastal Habitat Protection Plan).
Estimated Cost:	\$188,650
BIL Focus Areas:	SAV
2024 CCMP Categories:	Understand, Engage, Monitor
Equity Strategy:	Spatial Decision Support project to inform

Analysis of Low-Salinity SAV Sentinel Site Data

Objectives: To compile, assess, and report on all low-salinity SAV sentinel-site data collected to date for metrics supported by the 2021 APNEP SAV Monitoring Strategy.

Description: Despite members of APNEP’s SAV Team, funded by a CRFL grant, conducting in 2012 an evaluation of remote sensing technologies (side-scan sonar and underwater cameras) to support SAV Tier-2 protocols in low-clarity waters, during the mid-2010s there were limited near-term prospects for funding being allocated to support comprehensive surveys of low-salinity SAV. In response, Team members took a Tier-3 “sentinel-site” approach and began establishing a limited network of non-probability survey sites: beginning in 2015 with ten sites in Albemarle Sound, followed in 2016 with six sites in Pamlico River Estuary, and in 2017 ten sites in Neuse River Estuary. Unlike SAV Tier-2 survey protocols where site-visitation times are often under 30 minutes, site-visitation times at sentinel sites are significantly more intensive (six-plus hours). Since 2015, all sites have been surveyed at least twice, and some sites in Albemarle Sound have been surveyed five-plus times. APNEP’s SAV Team seeks to compile and analyze these survey data, which in turn will support the development of an initial assessment of low-salinity metric(s) to complement APNEP’s 2021 high-salinity SAV areal extent metric report.

Progress to Date: Most of the low-salinity SAV sentinel site data resides with researchers at East Carolina University. Various project final reports to funders as well as a graduate thesis and dissertation have been generated using these data. However, no comprehensive analysis of these survey data to date, including additional data collected by NC-DWR, has been done, which is necessary to for producing a low-salinity SAV metric report as part of APNEP’s updated Ecosystem

Assessment.

FY24-25 Plans: Staff will work with members of the SAV Team to develop a draft scope of work for this project, which will be used to solicit contracted support for implementation.

Year(s)/Project Status:	Ongoing
Lead / Partners:	ECU, NC-DWR, others
Outputs/Deliverables:	Summary document in the form an APNEP low-salinity metric report.
Outcomes:	Improved understanding of the status and change over time for low-salinity SAV sentinel-sites
Estimated Cost:	\$120,000
BIL Focus Areas:	SAV, Wetlands
2024 CCMP Categories:	Understand, Engage, Monitor
Equity Strategy:	Spatial Decision Support project to inform

SAV –Undesignated

Funding Approach: Staff are working primarily with the SAV Team to flesh out the proposed projects and will include detail in future iterations of the annual BIL Workplan. Staff will work through the STAC, APNEP’s Monitoring and Assessment Teams, CAC, external workgroups and teams, and the results of the Spatial Targeting exercise as appropriate to further refine the budget annually. The following are examples of projects and activities that were included include in the Long-Term Strategy and may arise (updates are provided where available):

- **SAV Team Guided Projects:** Establish funding opportunities for identification, monitoring and assessment, research, and other activities with guidance from the SAV Team, STAC and MATs, and other advisory teams as appropriate. Develop proposals with guidance from the STAC and MATs to solicit applications for projects that implement the CCMP and provide environmental benefits in the Albemarle-Pamlico region. Project type and selections will be made by the STAC and MATs.
- **Currituck Sound SAV Mapping and Monitoring:** APNEP is coordinating with Audubon, CSC Coalition members, and the APNEP SAV Team to identify specific projects and will include detail in future workplans. Detail will be added to the Currituck Sound entry under the Wetlands Focus area as projects are developed.

Water Quality Focus Area:

As a Clean Water Act funded program, water quality, with a focus on estuarine water quality improvements, is a central tenet of the National Estuary Program (NEP). APNEP considers multiple stressors throughout the watershed as part of its ecosystem-based management approach, as the major population centers are generally at the headwaters of the region and most of the pollutant load is delivered through the tributaries that flow into the sounds.

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Many of the river basins in the APNEP region have numerous dedicated partners working towards addressing nutrient pollution, Harmful Algal Blooms (HABs), atmospheric deposition, human pathogens, chemical pollutants, and other water quality stressors. Therefore, APNEP's Leadership Council has directed staff to focus on portions of the watershed more directly adjacent to the sounds.

However, several river basins (Pasquotank, Chowan) in the region in Virginia and North Carolina lack the regulatory requirements compared to other areas of the Albemarle-Pamlico region and beyond (e.g., buffer rules, nutrient reduction strategies, TMDLs, etc. that exist for the Neuse and Tar-Pamlico River Basins in NC, and Chesapeake Bay watersheds in VA). Additionally, many VA partners are often not supported to devote time to working in the southern watersheds that flow into Albemarle Sound, but rather are directed to prioritize addressing Chesapeake Bay TMDL requirements. Interagency designees identified the Chowan River Basin as a focus area for implementation of APNEP's MOU with Virginia, so APNEP continues to work in the upper portions of these watersheds to protect and restore water quality downstream.

In addition to facilitating and supporting research and monitoring to support the NC Nutrient Criteria Development Plan described below, APNEP has been working to assist regional partners in supporting research and studies to identify watershed sources and the causes of the blooms, fund monitoring and rapid detection test kits to improve communication to the public, and to leverage its status as a bi-state program by connecting partners and agency staff across state lines.

Funding Strategy

APNEP is working with multiple partners to refine proposed projects and will include detail in future iterations of the annual BIL Work Plan. Funding may be allocated from other focus areas undesignated funds due to the cross-cutting nature of many projects. Budget estimates are provided below based on past projects and estimates of known current needs.

Currently, APNEP anticipates allocating funding towards regional coordination, research, monitoring, and project implementation needs with an initial focus on the Chowan River Basin and Albemarle Sound and Currituck Sound, and project implementation for RISE projects throughout the region.

Staff will work through the STAC, APNEP's Monitoring and Assessment Teams, CAC, external workgroups and teams, and the results of the Spatial Targeting exercise as appropriate to further refine the budget annually.

Stormwater Management (RISE Project Portfolio Implementation)

Stormwater: Intersection of Flooding, Water Quality, Health and Economic Development

Objectives: Assist NCORR, the NC Rural Center, and Regional Councils of Government (COGs) with implementation of projects identified during the Regions Innovating for Strong Economies & Environment (RISE) program. This work plan entry will focus on stormwater management needs; more detailed background for RISE is described in the Community Resilience section.

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Description: Throughout the Albemarle Region, stormwater infrastructure is undersized, failing, or in need of maintenance. All of these factors increase the risk of flooding, especially as heavy rainfall events increase in frequency and severity, and development increases the volume of stormwater runoff. Establish a Working Group to evaluate the region’s stormwater capabilities, identify needs, and develop collaborative approaches to reducing stormwater flooding in the Albemarle Region.

The proposal came out of discussions regarding community readiness to develop watershed plans such as Nine Element Plans to allow eligibility for 205j/319 and other funding sources. This area of the state lacks the regulatory requirements that exist in other river basins. It was recognized that further education and community conversations are needed to encourage communities and local governments to pursue voluntary action. In addition, conversations tend to focus on quantity and flooding impacts and further education and outreach is needed to tie water quality and quantity considerations together (e.g. reduce unintended impacts such as creation of water quality problems downstream by upsizing infrastructure).

Background: APNEP is working with NCORR, the NC Rural Center, and Regional Councils of Government (COGs) to assist with implementation of projects identified during the Regions Innovating for Strong Economies & Environment (RISE) program, described in more detail below in the Community Resilience section. There are opportunities to assist with implementation of the project portfolios developed for each of the participating COGs through several initiatives described below that address water quality. RISE support assists APNEP in meeting Leadership Council direction to work more closely with local governments in addition to implementing multiple CCMP focus areas.

Progress to Date: Multiple stormwater projects were among the top ideas from the matrix and ranking system for RISE projects that staff developed in 2023 to identify projects that complement CCMP implementation, BIL focus areas and other APNEP priorities.

Staff are also contributing in-kind resources serving on committees and other initiatives being developed to further flesh out RISE projects that have a water quality component, including the Algal Bloom Coordination and Virginia Healthy Waters and Watershed Roundtable projects described below.

FY24-25 Plans: APNEP is working with NCORR to develop a SOW and anticipates entering into a contract with their host agency, NC Department of Public Safety, in 2024.

Year(s)/Project Status:	Ongoing
Lead / Partners:	NCORR, Councils of Government, NC Rural Center, local governments and communities, APNEP, NCDOT, Albemarle RC&D, Albemarle Regional Health Services, Albemarle Commission, Coastal Federation, The Nature Conservancy, NC Sea Grant
Outputs/Deliverables:	Convene working group of local jurisdictions, Map of infrastructure, Report on recommendations for projects, technical assistance on projects and funding strategies

Outcomes:	Increase in voluntary action to protect water quality
Estimated Cost:	\$200,000
BIL Focus Ares:	Water Quality, SAV, Community Resilience
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	This initiative will be one of APNEP’s initial uses of the Spatial Equity Database and Mapper to quantify the spatial extent of the most vulnerable, disadvantaged communities to guide project prioritization and planning and document the approach for Equity Strategy Implementation.

Algal Bloom Coordination and Nutrient Management in the Chowan and Pasquotank River Basins and Albemarle Sound (RISE Project Portfolio Implementation)

Objectives: Build upon collaborative effort from the past five years is assisting partners with understanding the return of algal blooms in the Chowan River and tributaries to Albemarle Sound after an absence of three decades, and near-term management of nutrient pollution in the sounds.

- Continue efforts to focus on the relationship between water quality and clarify, nutrient loads, and ecosystem health with an emphasis on SAV and aquatic wildlife.
- Support implementation of community resilience needs identified by regional and local partners including algal bloom event preparedness and topical communal knowledge base and resources.
- Continue to work towards identifying tangible projects to implement APNEP’s MOU to collaborate in the shared waterways between Virginia and North Carolina (this entry integrates with VA Healthy Waters / Roundtables described below).

Description: In recent years, harmful algal blooms (HABs) and fish kills in the Albemarle Sound and its tributaries of the Chowan and Pasquotank River Basins have become more frequent and more widespread after significant declines of over three decades. Regional partners identified this as a priority need in the Albemarle Commission’s RISE Project Portfolio:

Harmful Algal Blooms (HABs) present unique ecosystem and health hazards. HABs have occurred in the past in the region but have become a more frequent problem in the last ten years. While there has been research and involvement by many partners, an exact cause has not yet been determined. Conduct outreach to educate the public on the harms of HABs, identification, and reporting of blooms, and how to reduce exposure. Work with partners to develop a response protocol for notification of the blooms to stakeholders in the region.

As a long-time partner working towards this effort and participant in the RISE planning process, APNEP is building upon efforts to support regional collaboration and research to better understand the causes of increasing algal blooms frequency and magnitude, strengthen communication amongst universities, agencies, local governments, and the public; and identify strategies to reduce nutrient pollution.

Background: The Blackwater, Nottoway, and Meherrin rivers make up Chowan River basin north of the NC state line. These headwater rivers converge in NC and drain into the Chowan River on NC Coastal Plain where waters reach the Albemarle Sound. The Pasquotank River basin includes southeastern Virginia and northeastern North Carolina. The North Carolina portion of the river basin contains five sounds (Albemarle, Currituck, Roanoke, Croatan and Pamlico) and six primary rivers (Pasquotank, Little, Perquimans, Alligator, Scuppernong and Yeopim). Establishment of an algal bloom coordination network brings stakeholders and community members to one table from both basins, and across state lines to organize and formulate ideas for identifying causes and mitigating the impacts of HAB's in these shared waterways.

Many of the environmental organizations in the area are smaller grassroots, community led organizations that do not have staffed positions and rely largely on volunteer efforts and partnerships. Through BIL, APNEP will balance its long-term annual funding of staffed agencies and organizations through 320 that include water quality protection efforts, and consider direct support of community led organizations including the Chowan Edenton Environmental Group, Green Saves Green, and the Albemarle RC&D in support of this important regional collaborative effort.

Progress to Date: In 2023, APNEP co-led the reconvening of a collaborative effort alongside N.C. Office of Recovery and Resilience, Sea Grant of North Carolina, Albemarle Regional Health Services, and Chowan-Edenton Environmental Group to assemble working group that hosts stakeholder and community workshops to synthesize up and coming research, identify knowledge gaps, and listen to community needs and concerns. Assembling a group of broad perspectives and needs has led to the identification of next steps for improving conditions and alleviating the negative consequences of HAB events on people, wildlife, and the health of our estuarine waters. BIL funds were utilized to assist in updating communication products and hosting a regional workshop November 2, 2023.

FY24-25 Plans: In addition to providing staff time on the NC based coordination team, APNEP assists with continuing to connect the group with Virginia based agencies and partners in support of the MOU, and focusing coordination on the Chowan watershed as agreed to by agency designees in the 2021 MOU report and implement recommendations from agency and partner plans across state lines. See also the entry for Virginia Healthy Waters and the Watershed Roundtables, which have historically had an emphasis on the Chowan Basin. Staff will work through the regional coordination team and the CAC as appropriate to flesh out specific projects to fund. *NOTE: Other workplan entries may be created for specific projects to support research, monitoring, and nutrient management strategies.*

Examples of projects that were brainstormed during the summit include:

- Continued funding for workshops, convenings, and public meetings.
- Local government support of planning for hazard and HAB event preparedness.
- Community-science/monitoring support.
- Public education and outreach materials for homeowners, citizens, and landowners related to nutrient management best management practices for lawns (e.g., Don't Mow to the Edge Program).
- Riparian buffer protection, restoration, and wetland demonstration projects with signage to raise public awareness.
- Social science, community engagement and participation focused grant opportunities

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(collaborative academic and local government research).

- Working through WRIT and regional team members to support Watershed Action Plan development and technical support for grant applications. For instance, the Albemarle Commission has been interested in applying for 205j funding but have not had staff capacity or time to develop grant proposals.

Year(s)/Project Status:	Ongoing
Lead / Partners:	NCORR, Albemarle RC&D, NC Sea Grant, Green Saves Green, Chowan Edenton Environmental Group, NC State Climate Office, NC-DEQ, NC Department of Health and Human Services, UNC-IMS, NC Coastal Federation, USGS, NC Museum of Life & Science, NOAA + VA partners described in the next entry
Outputs/Deliverables:	Workshops, Bloom response planning and public resources, HAB ecological educational opportunities, communication and education materials, research recommendations (social and ecological science)
Outcomes:	Increase collaboration on understanding the causes of algal bloom to streamline nutrient management strategy development, improved understanding of the relationship between public and ecosystem health, increase in voluntary action to protect watersheds.
Estimated Cost:	\$105,000, staff time
BIL Focus Ares:	Water Quality, Wetlands, SAV, Community Resilience
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	This initiative will be one of APNEP’s initial uses of the Spatial Equity Database and Mapper to quantify the spatial extent of vulnerable, disadvantaged communities in the Pasquotank and Chowan basins to steer project implementation and engagement strategies and assess the effectiveness of the implementing the partnerships approach outlined in the BIL Equity Strategy. This process will allow for adaptation of the strategic approach for use in other communities in the region.

Virginia Healthy Waters and Watershed Roundtable Coordination

Objectives: Support implementation of watershed protection efforts in the Virginia portion of the region to complement the regional algal bloom coordination described above, and resilience planning efforts below. Increase coordination and collaboration across state lines to further MOU implementation.

Description: APNEP has been engaged in Virginia based watershed protection programs for over a decade, both of which have limited resources and staff support compared to Chesapeake Bay Programs. In the past, the Virginia Department of Environmental Quality provided support through a position to work with APNEP, but the position has experienced frequent turnover, been vacant, or staff directed to focus on other priorities (namely Chesapeake Bay) for several years. However, staff

from the Virginia Department of Conservation and Recreation Natural Heritage Program (VA-NHP) have been functionally serving in this role and assisting with implementation support for the VA-NC Memorandum of Understanding. Key programs include:

Virginia Healthy Waters Program: APNEP will continue to coordinate with VA-NHP Healthy Waters Program Staff to identify opportunities to implement recommendations from the *Stream Ecological Health Assessment for the Chowan River Basin, Virginia, and North Carolina*, which includes the *Watershed-based Ecological Healthy Conservation Plan for the Raccoon Creek, Nottoway River, Chowan Basin*. Healthy Waters is a proactive program endorsed by EPA to devote resources to watershed protection vs. costly restoration. APNEP continues to work and support VA partners to attempt to secure grant funding to implement these recommendations and other projects identified through partners (that also focus on anadromous fish spawning areas and passage) through programs including the Forest Legacy Program, Enviva Conservation Fund, NFWF, NOAA Habitat Protection, and others. Implementation of this plan will also help meet recommendations from APNEP MOU with Virginia, NC-DEQ Chowan River Basin Plan, and the Tribal Coastal Resilience Connections project.

Watershed Roundtables: APNEP was engaged with the Albemarle Chowan Watershed Roundtable (ACWRT) which had been dormant until recently. Funded through VA-DEQ EPA Nonpoint Source Funding, the ACWRT was composed of members who work to maintain the well-being of the watershed in which they live. Members included Soil and Water Conservation Districts, Cooperative Extension, Forestry, Wildlife Resources, and local governments was committed to helping its citizens learn about the watershed and ways in which they can help better their environment. The ACWRT conducted outreach at festivals and watershed events to provide information about regional water quality concerns, and hosted events including rain barrel and soil health workshops and oil recycling programs.

APNEP assisted with funding projects including water quality demonstration, environmental education, and schoolyard projects, Chowan River basin booklets, and signage for trails (Tobacco Heritage Trail). Staff have maintained relationships with former active members to keep them apprised of MOU development, interstate coordination, algal bloom issues, funding opportunities, and have assisted with writing support letters for partner grants.

Progress to Date: APNEP continues to maintain relationships with multiple Virginia partners for these programs despite formal MOU coordination remaining stagnant with the present VA administration. Over the past decade, significant effort has been spent to re-strengthen relationships and coordinate closely with the VA-NHP on the Chowan Healthy Waters Program and maintain relationships with the Virginia DEQ Tidewater Regional office despite frequent staff turnover. Staff have fostered new relationships with other programs and divisions in DCR and DEQ and external partners, and often assist with coordination across state lines.

FY24-25 Plans: Support the Crater Planning District Commission (PDC) with reconvening the Albemarle-Chowan Watershed Roundtable through staff time and providing funding for regional workshops and projects. Explore similar opportunities through Hampton Roads, Southside, and other PDCs. Continue to connect partners across state lines to strengthen regional coordination efforts in watersheds that flow into Albemarle Sound. Continue to seek ways to support

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implementation of the Chowan Healthy Waters Plan and integrate with regional efforts to deal with algal blooms in Albemarle Sound.

Year(s)/Project Status:	New
Lead / Partners:	VA-DEQ, VA-DCR, Crater PDC, HRPDC, SWCD, TNC, Cooperative Extension, VADOF, VAWRC, local governments, land trusts
Outputs/Deliverables:	Reconvene roundtables in the APNEP portion of the VA watershed.
Outcomes:	Protect watersheds that flow into Albemarle Sound
Estimated Cost:	\$85,000
BIL Focus Ares:	Water Quality, Community Resilience
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	The Crater PDC is located in both the Chesapeake and AP regions. The majority of the AP portion is rural and ranks high on ADAPT Virginia’s Social Vulnerability Index. To complement the Algal Bloom, VA Resilience Planning and RISE projects, this initiative will be one of APNEP’s initial uses of the Spatial Equity Database and Mapper to quantify the spatial extent of the most vulnerable, disadvantaged communities in the Virginia portion of the Chowan basin to steer project implementation, engagement strategies and assess the effectiveness of implementing the approach outlined in the BIL Equity Strategy.

Water Quality –Undesignated

APNEP will work through the STAC, APNEP’s Monitoring and Assessment Teams, CAC, external workgroups and teams, and the results of the Spatial Targeting exercise as appropriate to further refine the budget annually. The following are examples of projects and activities that were included include in the Long-Term Strategy and may arise (updates are provided where available):

- **STAC & MAT Guided Projects:** Establish funding opportunities for identification, monitoring and assessment, research, and other activities with guidance from the STAC and MATs, and other advisory teams as appropriate. Initial funding has been allocated toward STAC Focus Group Workshops and included in the Capacity Building section.
- **NC Nutrient Criteria Development Plan:** APNEP staff and select STAC members are active in the NC Nutrient Criteria Development Plan (NCDP) pilot focused on the Albemarle Sound and Chowan River. APNEP staff assisted NC-DWR with gaining a complete understanding of the system and recommended candidates for the NCDP’s Scientific Advisory Council (SAC) who are experts in high- and low-salinity SAV, and water quality issues. NC-DWR has selected SAV as a biological indicator for the health of the Albemarle Sound and Chowan River. APNEP will continue to actively participate until recommendations are accepted by NC-DWR, approved by the NC Environmental Management Commission, and submitted to EPA.

To further APNEP indicators, metrics, and monitoring and assessment activities, along with supporting NC’s NCDP, APNEP developed multiple projects including Development of Chlorophyll-*a* Standards for SAV Protection, Calibration of a bio-optical model for low-salinity

SAV, and Fill Data Gaps on Optical Water Quality Constituents in Currituck Sound. APNEP will continue to work with NC-DWR on developing water revised quality standards in the Albemarle Sound and Chowan River for NCDP implementation. APNEP will continue to fund research and water quality monitoring to assist with further water quality standards development.

- **Currituck Sound SAV Mapping and Monitoring:** Build upon collaborative efforts to protect and restore Currituck Sound and its tributaries including the Back Bay, North Landing and Northwest Rivers which originate in the Great Dismal Swamp. APNEP is coordinating with Audubon, CSC Coalition members, and the APNEP SAV Team to identify specific projects. Detail will be added to the entry under the Wetlands Focus area as projects are developed.
- **Watershed Restoration Prioritization:** APNEP is an active member of the Watershed Restoration Improvement Team (WRIT) led by the NC-DWR. WRIT is a team of interagency state employees dedicated to breaking down “silos” and working collaboratively in identifying solutions and finding ways to work synergistically on water resources and non-point solutions projects across the state. WRIT includes representatives from several divisions within NC-DEQ and several from outside including the NC Wildlife Resources Commission (NC-WRC), NC Division of Soil & Water Conservation (SWCD), NC Forest Service (NCFS), NCORR, and the NC Land & Water Fund (NCLWF). WRIT collaborates on water resources and nonpoint source pollution issues including TMDL/303d listing, Nine Element and community-driven Watershed Action Plans (WAPs), ecological flows, watershed restoration projects, BMP implementation, and implementing recommendations in the state’s river basin plans which are updated on 5-year cycles.
- Staff involvement in this team has led to collaboration on numerous projects. APNEP will work with WRIT members to identify targeted needs and prioritize projects that support CCMP implementation and complement the work the STAC is conducting for the Spatial Targeting Assessment. Many WRIT members are also active in the NC Watershed Stewardship Network (WSN) and the NC Aquatic Data Hub.
- **Support Coastal Counties with Building Resilient Water Quality Infrastructure:** In addition to coordination through RISE, WRIT, and other partners; the Spatial Targeting exercise may help identify and prioritize specific projects within the AP region. APNEP will partner with NCORR and DCM to help address needs identified during the RISE and RCPP programs, and with the NC Division of Water Infrastructure (NC-DWI) and partners administering ARPA funding to ensure efforts are not duplicated. Potential projects include the following.
 - Flood-proofing Wastewater Infrastructure Strategies of Coastal Counties
 - Conduct targeted vulnerability analyses – Wastewater, Stormwater, etc.
 - Identify opportunities to incorporate natural and nature-based infrastructure into coastal community planning.
- **Stormwater Projects-** If deemed a need by partners, APNEP could develop an RFP and application review process to implement stormwater retrofits, BMPs, and LID projects on public property in the region. Many projects in the RISE portfolio described below align with this category. APNEP will coordinate through WRIT as described elsewhere to target priority areas and communities for project implementation. The RISE Stormwater Working Groups and targeting exercise will be used to identify needs and guide project prioritization.

- **Urban Waters:** Many APNEP partners are dedicated to alleviating the impacts of poor water quality and contaminant loads in many of the urban centers throughout the region. Water quality and increased flows in urban waterways decrease biological diversity within our creeks and rivers and raise human health concerns due to the proximity of our urban waters to a larger human population. Often the greatest environmental concerns in densely populated urban areas with historically greater disinvestment in communities with higher percentage minority populations (e.g., Durham’s Goose Creek, and Raleigh’s Walnut Creek). APNEP could support partners including Partners for Environmental Justice, Carolina Wetlands Association, WRRRI, NC Sea Grant, and NC-DWR to facilitate communities’ water quality efforts in urban waterways. APNEP can provide support in programs that offer education and stewardship opportunities to residents particularly in Rochester Heights and surrounding southeast Raleigh through groups like the Walnut Creek Watershed Partnership. Walnut Creek was recently selected as the twenty-first watershed to be added to the EPA [Urban Waters Federal Partnership](#) (UWFP). APNEP could support the UWFP and will seek additional opportunities to support similar efforts elsewhere in our region.

Community Resilience Focus Area:

APNEP has a long history of working to protect and restore estuarine ecosystems and watersheds and the communities that depend on them as they face climate and natural hazard challenges. In addition to supporting research and the development of tools and models to help resource managers make informed decisions, APNEP continues to dedicate resources towards connecting communities to the best available science and tools as they develop resilience and adaptation planning strategies, and conduct outreach and raise awareness about the linkages between protecting estuarine ecosystems to build community resilience. APNEP’s CCMP action for this focus area is focused on assisting local governments and communities with incorporating climate resilience and adaptation into local planning processes but integrates across the other focus areas.

APNEP continues to participate in activities stemming from implementation of the NC RARP (including the NWL Steering Coastal Habitats and Pocosin Wetlands Subcommittees), Resilience Exchange Steering Committee, Coastal Resilience Community of Practice, and the Regions Innovating for Strong Economies & Environment (RISE) program (all described in more detail below and listed in Appendix 2). Involvement in regional resilience planning has led to the identification of regional gaps and needs, notably related to the inclusion and capacity of disadvantaged, underserved and under-represented communities to participate in resilience planning activities. To fill gaps, APNEP has led efforts to develop project proposals in collaboration with interdisciplinary partners, secure funding, and facilitate regional partnerships for project implementation for projects including the Scuppernong Study and Tribal Resilience project.

Funding Approach: The proposed budget fills known gaps and needs in resilience funding based on direct involvement in resilience planning since 2018. Numerous action plans have been developed that are well into implementation and APNEP participates on several active resilience working groups. As such, the Spatial Targeting Exercise and STAC Focus Teams will not be utilized to guide project prioritization or BIL funding for this category.

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The budget focuses on increasing investment in APNEP led initiatives which benefit the known needs of disadvantaged, underrepresented and underserved communities outlined in the Equity Strategy. Funds will also help directly support partner-led initiatives, and continued development of tools and resources for local governments and communities. APNEP is prioritizing funding towards known needs and gaps expressed by partners, particularly programs that have not been able to access or identified as recipients of the recent increase in resilience funding through the NC state legislature and federal funding sources.

Funding will also be allocated from other focus areas given the cross-cutting interdisciplinary nature of community resilience needs (e.g., Scuppernong funding is allocated from both Wetlands and Resilience, and RISE from both Water Quality and Resilience). Staff will work with established workgroups and teams and CAC as appropriate to further refine the budget annually. The Spatial Targeting Exercise may inform project refinement if requested by those teams or help demonstrate benefits to communities from the ecosystem resilience focus areas: Wetlands, SAV, Water Quality.

Scuppernong Regional Water Management Study and Community Engagement

Objectives: Ensure continued funding to support the Scuppernong Regional Water Management Study including future phases, community engagement, pilot demonstration projects to inform Study development and generate buy-in from local partners and stakeholders. Implement Study recommendations and expand the Study into broader geographic areas if deemed necessary and desired by partners. Further implementation of the NWL Action Plan and RISE.

Description: At the request of NC Division of Parks and Recreation (NC-DPR), APNEP has been leading collaborative efforts to conduct a hydrologic study of the northern Albemarle-Pamlico peninsula since 2018. APNEP facilitated a partnership between the NC-DPR, NC Soil and Water Conservation Districts (SWCD), US Fish and Wildlife Service (USFWS), the Albemarle Commission (ACOG), and Washington and Tyrell Counties and secured funding for a regional water management study including the headwaters of the Scuppernong River, Lake Phelps, Pocosin Lakes National Wildlife Refuge, and surrounding landscape. A contract was awarded for a NC-DWR Water Resources Development Grant for an engineering / feasibility study to the Albemarle Commission in March 2023 and subcontract awarded to Kris Bass Engineering (KBE) in May to develop the Scuppernong Regional Water Management Study (Study). [Learn more.](#)

In partnership with the NC Coastal Reserve, NC Sea Grant, and The Nature Conservancy, APNEP is using a grant from NOAA Digital Coasts and the National Estuarine Research Reserve Association (NERRA) to develop an Engagement Strategy to support Study development. The grant is geared towards assisting marginalized communities with flooding through equitable engagement. The team developed a Steering Committee, expanding the regional partnership beyond the grant partners to ensure development of a product that will help local decision makers with flooding, drainage, and regional water management issues.

Funding Approach: The NOAA/NERRA grant runs through November 2024. BIL funding is budgeted to ensure continued engagement with the Scuppernong Steering Committee and public through the duration of the Study, which is scheduled through 2025. Funding is also budgeted to

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implement Study recommendations, pilot demonstrations projects, future phases, and for project expansion beyond the current geographic scope.

Progress to Date: Phase 1 of the Study is being completed as scheduled and significant progress has been made on targeted community engagement. Local governments are requesting that new projects and initiatives be coordinated through our Scuppernong Engagement Team to streamline and reduce duplication of effort, so the team coordinates closely with other regional projects through RISE, RCPP, and an Audubon project to promote nature-based solutions in Tyrrell County.

FY24-25 Plans: It is not anticipated that BIL funding will be needed until FY24/25; the project will continue under state WRDG funds (2025) and NOAA/NERRA (Fall 2024). Separate work plan entries may be created for pilot demonstration projects, such as the FIMAN water level stations.

Year(s)/Project Status:	Ongoing
Lead / Partners:	APNEP, in partnership with engagement team: NC Coastal Reserve, NC TNC, NC Sea Grant, SWCA, Kris Bass Engineering, Albemarle Commission; multiple Study and Steering Committee partners.
Outputs/Deliverables:	Development and implementation of an Engagement Strategy to ensure equitable community engagement in marginalized communities impacted by flooding on the Albemarle-Pamlico peninsula. Community workshops, interactive GIS maps, communication tools, etc. to assist with communicating results of the engineering feasibility study to evaluate flood risk and future planning needs; stakeholder engagement process, scenario-based models and visualization, interactive stakeholder engagement tools such as augmented reality sandboxes, web-based maps, and data portals.
Outcomes:	In addition to meeting requests from local governments for state assistance to address flooding, and conservation managers for a neutral science-based partner to coordinate a regional collaborative approach to water management on the northern Albemarle-Pamlico peninsula, the project will help implement actions identified by the Pocosin Wetlands Sub-team in the NWL Action Plan, RISE Albemarle Portfolio, and CCMP Action B3.1. Increased regional coordination on resilience planning through RISE, RCPP, and other programs.
Estimated Cost:	\$250,000, staff time
BIL Focus Ares:	Wetlands, Community Resilience, Water Quality
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	The Scuppernong Study is one of two projects highlighted in the Equity Strategy as examples of APNEP led efforts and existing engagement with disadvantaged, underserved, and underrepresented communities. Throughout BIL funding deliberations and interactions with the Management Conference, staff have recommended that APNEP increase our investments and continue to directly support and focus on existing large scale,

	regional projects. The NOAA/NERRA grant was specifically designed to support marginalized communities and BIL funding complements the original intent of that grant opportunity.
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Tribal Coastal Resilience Connections

Objectives: Build capacity to support Tribal communities in the Albemarle-Pamlico region with considering climate risk and resilience into planning and community engagement processes. Educate resilience practitioners on best practices for including Tribes in agency, NGO, and university led environmental planning processes and environmental engagement.

Description: Using supplemental EPA 320 funds designated to work with underserved and under-represented communities on climate resilience, APNEP initially partnered with the NC Commission of Indian Affairs (NCCIA), NC State University (NCSU), and Virginia Coastal Policy Center to work with Tribal communities in the Albemarle-Pamlico region in 2019. The Tribal Coastal Resilience Connections (TCRC) project was developed by APNEP in partnership with Tribal community liaisons and scholars and is designed to increase engagement between Tribal organizations, government agencies, and university faculty during resilience planning, and incorporate the unique knowledge and cultural perspectives of Tribal communities surrounding climate change impacts.

The team’s overarching goal is to increase awareness among Tribal communities around the risks and threats of climate change, and foster discussions about adapting to these changes. The project concentrates efforts in the APNEP program area in southeast Virginia and northeastern North Carolina but aims to learn from, lift up, and highlight great work that Tribal communities are already doing throughout Virginia, North Carolina, and the southeast coastal plain. A major component also includes educating resilience practitioners from agencies, universities, and other organizations on best practices for engaging with Tribes, and ensuring all communities, regardless of recognition status, are included in resilience and adaptation planning processes.

The TCRC released its Phase I report in 2023, which documents the launch of the work, research on Tribal climate adaptation plans, experimentation with social media engagement, field work, partnership and network development, conducting outreach at conferences and events, and building the groundwork for a sustainable program. [Learn more.](#)

Phase II narrows the scope to focus on expansion of efforts and tools identified in Phase 1 (Terrastories, GIS Storymapping, and WAMPUM) through targeted work in the Chowan Watershed in the shared waterways of the Albemarle-Pamlico region between Virginia and North Carolina (also supporting APNEP MOU implementation), as well as deepening relationships between communities, agencies, and academia. The team will utilize these efforts to build towards creating a Tribal Coastal Resilience toolbox, utilizing community directed mapping to develop the basis for a regional adaptation framework to assist with future resilience planning. The information will also provide a platform that can be utilized to educate agency staff on considerations, perspectives, and traditional ecological knowledge unique to native communities.

In addition to planning events to foster community engagement, the team is lifting up and learning from other coastal plain communities, including the Coharie Tribe's Great Coharie River Initiative, development of co-management and stewardship policies between the Nottoway Indian Tribe and The Nature Conservancy, oyster restoration and living shoreline work being conducted by the Nansemond Indian Nation, and the Waccamaw Siouan STEM Studio.

The scope also includes building upon the recommendations from Phase I and documenting best practices for resilience practitioners to engage with Tribal communities and conducting education and outreach to universities, agencies, and NGOs, which can be initiated by staff with the information currently available. APNEP staff lead coordination of this aspect on behalf of the team, collaborating with agency and university partners including the Southeast Climate Adaptation Science Center (SECASC), UNC American Indian Center, NCORR, EPA and others to promote and raise awareness of the Phase I Report findings and recommendations to resilience practitioners and coastal management professionals.

Equity Strategy Considerations: The Phase I Report notes that the Albemarle Pamlico Watershed spans multiple federal regulatory jurisdictions (e.g., EPA Regions 3 and 4), two different states, many different localities, patchwork of recognition statuses with and numerous organized and self-identifying Tribal groups. The situation creates a complicated and diverse landscape that makes typical agency and university led resilience planning processes and inclusive community engagement challenging. The report's recommendations emphasize that recognition status and political boundaries should not be a barrier for inclusion for communities with present day and ancestral ties to the AP region. Rather, APNEP and other organizations should approach meaningful engagement through a diversity, equity, inclusion and justice lens, and thoughtfully consider strategies to assess community readiness to engage in technical discussions and formal climate resilience planning. Community engagement events including intertribal paddles, waterway cleanups, and tree plantings are being planned to overcome these challenges.

In addition to funding projects, careful consideration should be given to including funding to compensate Tribal members and liaisons for their time to share expertise and participate in resilience planning efforts. Tribal representatives are often asked to provide their time, advice, and information with no reciprocation.

As with many community engagement projects, it is critical to note that the timeframes for Tribal engagement will not likely match up with typical grant funding cycles, agency and university timelines, and contract milestones. Time must be taken to do research on community history and connections to land and water, past environmental justice issues and government interactions, develop relationships, and ultimately build trust through meaningful engagement. The TCRC also emphasizes not relying on easy sources of information, as many DEIJ tools rely on data that does not present the full picture of communities in the AP and coastal plain (e.g., may only show federally recognized Tribal Nations, census blocks may not recognize community members that may no longer live in the area or have ancestral connections, and self-identifying communities may not show up on local and regional maps at all).

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Progress to Date: The Phase I report was finalized by the team in 2022 and shared with the NCCIA and other parties before distribution to the APNEP Management Conference, partners, and public. The TCRC team presented the report to the Leadership Council October 2023 and during the NC United Tribes Conference held March 2024. Team members participated in events including the SECASC Intensive Fellows workshop August 2023, the Nottoway Indian Tribe Pow Wow September 2023, intertribal paddles to restore kinship connections and foster place-based learning on strategy development, and paddles and site visits hosted by the Sierra Club to raise showcase and learn from resilience and co-stewardship work being conducted by Tribal communities including the Nottoway and Coharie Tribe.

A part-time project coordinator, Chandler Allred, was hired in August 2023 using remaining funds budgeted under the 320 workplan. Those funds were drawn down as of December 2023 and expenses shifted to BIL. Program Director Beth Roach continues to provide oversight through leveraged funding in her role with the Sierra Club, but the budget includes consideration of contracted support to compensate her for time not covered by that role.

FY24-25 Plans: The team meets biweekly to coordinate project implementation and has reconnected with Terrastories to further develop the mapping platform designed pro-bono for the team in Phase I. The team is coordinating with Duke PI and graduate students to continue the scholarly aspect of the project and mapping support.

The team was included as a partner on a VA-DCR Natural Heritage Program proposal to the NOAA CZM Habitat Protection and Restoration BIL competition to assist with oversight and coordination with Tribal communities in both VA and NC for a land conservation project in southeastern VA. The expects to hear about project funding in March/April 2024. If funded, the project scope may shift.

Year(s)/Project Status:	Ongoing
Lead / Partners:	APNEP, Sierra Club, Duke University, NC Commission of Indian Affairs, UVA IEN, ODU, SECASC, UNC AIC, Triangle Native American Society, AISES, NCSU, EDF, multiple tribes and communities.
Outputs/Deliverables:	GIS based tools, workshops, asset mapping, risk & vulnerability assessments, social media engagement, recommendations for inclusion in state and local climate risk and resilience plans.
Outcomes:	Increase the number of communities in the APNEP region that incorporate resilience into local planning processes. Increase in agency and university resilience practitioners including Tribes in their processes. Build capacity to support the program, budget for a full-time coordinator and staff to lead the initiative. Work towards building a Tribal led program independent of APNEP. Increase in agency/university understanding of best practices for working with Tribal communities. Long term: build capacity for a Tribal led program.
Estimated Cost:	\$350,000
BIL Focus Ares:	Community Resilience, Water Quality, Wetlands

2024 CCMP Categories:	Understand, Engage, Monitor
Equity Strategy:	<p>The TCRC project is one of two projects highlighted in the Equity Strategy as examples of APNEP led efforts and existing engagement with underserved and underrepresented communities. Throughout BIL funding deliberations and interactions with the Management Conference, staff have recommended that APNEP increase our investment and continue to directly support and focus on these existing large scale, regional projects.</p> <p>Access to resilience funding for Tribal communities in the AP region is limited due to the patchwork of recognition statuses, and though attempts by agencies and universities to include Tribal communities in resilience planning has increased, the need still exists for development of tailored approaches that consider the unique perspectives, capacity, and meaningful inclusion of Tribes.</p> <p>Current tools and maps used to define disadvantaged and underserved communities do not accurately represent the complexity of Tribes with present day and ancestral connections to the AP region. The TCRC aims to update information to allow communities more equitable access to resources that are typically focused on federally recognized tribes and nations that own and manage sovereign territories and lands.</p>

RISE Implementation – Green Infrastructure, Local Government Assistance

Objectives: Assist NCORR, the NC Rural Center, and Regional Councils of Government (COGs) with implementation of projects identified during the Regions Innovating for Strong Economies & Environment (RISE) program. This work plan entry focuses on a suite of projects identified as needs by regional teams and local governments to assist with resilience planning (see also related entries on stormwater management and algal blooms).

Description: Assist with implementation of project portfolios developed for each of the six participating COGs throughout the AP region. In 2023, APNEP staff developed a matrix and ranking system for RISE projects that complement CCMP implementation, BIL focus areas and other APNEP priorities. A SOW has been drafted for the Stormwater Management project described in the Water Quality focus area. Additional funding is budgeted through this entry for other projects identified in the portfolios including: Comprehensive Plans and Zoning Ordinances Address Climate Change, Inform Elected Officials about Climate Resilient Decision Making, Regional CRS Coordination/Users’ Group, Green Infrastructure Projects, stream restoration, flood gauges, and technical assistance and capacity building for local governments to address sea level rise and climate change through grant writing, project management, and program administration. RISE support assists APNEP in meeting Leadership Council direction to work more closely with local governments in addition to implementing multiple CCMP focus areas.

Progress to Date: APNEP is working closely with NCORR to develop a SOW to implement projects. Staff also contribute in-kind resources serving on committees and other initiatives being developed to support RISE implementation.

FY24-25 Plans: Continue working with NCORR on project and SOW development.

Year(s)/Project Status:	Ongoing
Lead / Partners:	NCORR, Councils of Government, NC Rural Center, local governments, communities, APNEP, universities
Outputs/Deliverables:	Tools and resources for local governments
Outcomes:	Increase in the number of communities in the APNEP region that incorporate resilience into local planning processes. Raise awareness of the economic benefits of protecting natural systems. Promote the linkages between ecosystem and community resilience and use of nature-based solutions and natural infrastructure to help communities build resilience to climate impacts.
Estimated Cost:	\$105,000, staff time
BIL Focus Ares:	Water Quality, SAV, Community Resilience
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	This initiative will be one of APNEP’s initial uses of the Spatial Equity Database and Mapper to quantify the spatial extent of the most vulnerable, disadvantaged communities to guide project prioritization and planning and document the approach for Equity Strategy Implementation.

Water Level Monitoring Stations

Objectives: Place water-level monitoring stations that benefit local communities by increasing real-time knowledge of flood conditions in the Albemarle-Pamlico region. Contribute to data collection that can be used to address water management actions in the watershed. Increase regional partnerships to support the Southeast Water level monitoring network.

Description: Due to low elevation and proximity to waterways, many areas of the Albemarle-Pamlico region are susceptible to flooding. Water levels in the Albemarle-Pamlico Sound are driven primarily by wind and tidal influx, which results in unpredictable high tides and storm surges during extreme weather events. The impact of these events, including saltwater intrusion of freshwater streams, is expected to increase in occurrence and severity in the future. From 2019-2023, APNEP supported placement of 8 NC [Flood Inundation Mapping and Alert Network \(FIMAN\)](#) remote monitoring stations in the Albemarle-Pamlico region’s coastal plain in Engelhard and Pamlico Sound (Hyde County), Mackay Island National Wildlife Refuge (Currituck County), Newport (Carteret County), and Slocum Creek near Havelock (Craven County) through the NC Division of Emergency Management with support from non-320 funds from NC-DEQ and the Division of Coastal Management. Data from gauges provides a benefit to local communities by increasing real-time knowledge of flood conditions in the Albemarle-Pamlico region, and contributing to knowledge that can be used to address future water management actions in the watershed. [Learn more](#)

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Each station is equipped with meteorological monitoring equipment and maintained by NC Emergency Management's [Flood Inundation Mapping and Alert Network \(FIMAN\)](#). The data derived from the project will be used to address future water management actions across the watershed and will inform local governments, citizens, and low-lying communities who are subject strong storm surges in how to plan for future events. Since sea-level rise will influence these impacts, as well as saltwater intrusion into freshwater streams, the gauges will allow for maximum safety of citizens and protection of natural resources.

Recently, FIMAN has collaborated with NC Sea Grant and [Southeast Coastal Ocean Observing Regional Association \(SECOORA\)](#) on efforts to expand the Southeast Water Level Network in underserved areas of coastal North Carolina. NC Sea Grant is assisting with community engagement and has conducted an analysis of needs and vulnerabilities in coastal communities.

The [Southeast Water Level Network](#) is enhancing localized flood alerts, community resilience, and flood hazard monitoring in the face of storm surges, extreme rainfall, and rising sea levels. In collaboration with key partners and funding from NOAA's Integrated Ocean Observing System, the network is deploying over 200 new water level stations across the Southeast. The network will provide real-time local water level data to town managers, emergency managers, design engineers, and the public. This data is vital for monitoring coastal flooding, keeping citizens informed of hazardous conditions. Communities can use the data when designing resilience and adaptation strategies to sea level rise and other climate impacts.

Partners have indicated that flexibility in how the funding can be used to also support other needs beyond the sensors themselves including sensor and site selection, sensor requirements and surveying, maintenance, and data management to augment/ fill gaps in capacity of SECORRA/FIMAN would be beneficial to support the sustainability of those gauges. Additional discussions will be needed with FIMAN to understand needs and funding gaps beyond the CAMA counties where SECOORA is not able to partner and provide that capacity.

Progress to Date: The Scuppernong Engagement Team and partners have identified immediate needs for placement of gauges to support Study development. APNEP has had initial meetings with SECORRA, FIMAN, and Sea Grant to discuss partnering throughout the AP region.

FY24-25 Plans: Staff will continue discussions with the Scuppernong Engagement Team (APNEP, NC Sea Grant, TNC, NC Coastal Reserve) and partners to recommend locations for gauges that support development of the Scuppernong Study and communities in the area. The team will vet recommendations through study partners on final locations.

APNEP will work through NC Sea Grant to ensure placement aligns with Southeast Water Level Needs and assist with coordination with DPS/FIMAN and SECOORA. Staff will coordinate through the network to identify gaps and needs and suitable locations in other areas of the AP region.

Year(s)/Project Status:	Ongoing
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Lead / Partners:	NC Sea Grant, SECOORA, NC-DEQ, NC-DEM, NC Department of Transportation, Scuppernong Engagement Team and Steering Committee (multiple partners).
Outputs/Deliverables:	Flood gauge installation with monitoring equipment to include water level sensor, multi-weather parameter sensor, cellular transmission, battery/solar charging system and geodetic control monuments. Data collected will be analyzed and a flood inundation library will be developed.
Outcomes:	Contribution towards the interactive FIMAN will be produced with real-time storm surge information that will be used to inform local communities of flood inundation risk. It is anticipated that this program will be addressed in the upcoming APNEP monitoring plan for estuarine waters.
Estimated Cost:	\$103,875 (Approx. \$16,000 per station)
BIL Focus Ares:	Wetlands, Water Quality, Community Resilience
2024 CCMP Categories:	Understand, Monitor, Engage
Equity Strategy:	<p>APNEP will prioritize placement of gauges that support disadvantaged communities as identified by one or more of the tools identified in the Equity Strategy, supported by NC Sea Grant’s needs assessment and community engagement in the region and verified by local knowledge.</p> <p>APNEP will initially prioritize placement of gauges to support the Scuppernong Study and communities in Washington and Tyrrell counties on the Albemarle-Pamlico Peninsula. APNEP will work with NC Sea Grant to leverage their community needs assessment to help fill gaps in the region. Given existing funding streams and initial discussions, it may be beneficial to prioritize placement in mainland communities and non-CAMA counties. This will also support needs identified during RISE and RCPP.</p>

Downeast Resilience Network

Objectives: Targeted funding needs for bolstering capacity of the Down East Resilience Network (DERN) and local unincorporated Carteret County, NC townships (e.g., North River, Sea Level, Marshallberg, Davis Shores) engagement with the broader community, and piloting CCMP implementation projects that increase community and wetland resilience through investigation and education of water quality and quantity, wetland function, health and migration.

Description: APNEP has engaged with community organizers in Down East NC for years dating back to initiatives such as Saltwater Connections and the RISING project. Since the re-convening of the Down East Resilience Network (DERN) in late 2023, there continues to be increased need of the unincorporated communities for mitigating the chronic impacts of sea-level rise, storm and sunny-day flooding, saltwater intrusion, and surface and ground water quality. After attending multiple community forums and regional tours, APNEP connected with researchers and community leaders

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to identify ways for BIL funding to conduct pilot studies on ground-based hydrology and drainage network maintenance, wetland function and subsidence, and surface water quality caused by rising groundwater levels.

Staff capacity is also a critical short- and long-term need for network membership communication and planning, web-based presence, and effective community engagement through the DERN and the Core Sound Waterfowl Museum community engagement and coastal change education. This particular need has been supported by APNEP 320 funding as of March 2024.

Additional needs for research and support heard by the community are wetland subsidence due to parcel-level land management practice (e.g., wetland plant mowing, and development), and subsistence clamming in the region. There is little know about how clamming has been impacted by sea-level rise, changes in estuarine water quality, and the human health implications for consumption of clams in Down East.

Progress to Date: In September 2023, APNEP participated in a Down East Resilience Network community meeting that focused on the community's progress and experience 5-years post hurricane Florence. It was a commemorative meeting highlighting the progress and the lingering challenges of Down East and nearby communities related to flooding, sea level rise, saltwater intrusion, and economic hardship. The first night was a community meeting and ceremony, followed by day-long meeting of sessions focused on local fisheries, research (sea level rise, saltwater intrusion, flooding), government (DOT), and insurance. In, January 2024 a smaller group of researcher, stakeholders, and community members gathered at NC State University's Center for Marine Sciences and Technology (CMAST) to share all research efforts, updates, and project needs to form a collective documentation of all the work that is happening within the DERN. The outcome was to identify the biggest needs, next steps, and build connections and partnerships within the network to begin planning and implementation efforts.

It was from these two meetings that APNEP identified multiple initiatives were APNEP BIL funding would be well suited for meeting the immediate resilience and water quality needs of the community. Those include 1) building network coordination capacity and developing communications strategy (funded by 320); 2) surface water quality in waterways and flood waters, 3) hydrologic assessment and maintenance development, and 4) public and private property flood vulnerability assessments. In March 2024, a portion of the communications and community engagement needs were awarded through an APNEP Engagement and Stewardship Grant (EPA 320 Workplan) as a highly ranked project by EST and CAC external reviewers. BIL funding will be used towards surface and ground water quality monitoring, hydrological flood vulnerability assessment needs, and additional communications and capacity needs of the community. All other needs listed above are unfunded and critical for addressing immediate and long-term planning needs. Vulnerability assessments have been previous funded and conducted by West Carolina University's Program for the Study of Developed Shorelines, and hydrologic assessment and maintenance development previously conducted in other coastal communities in South Carolina. Therefore, successful approaches exist and can be leveraged for Down East.

FY24-25 Plans: Continue discussions with DERN and partners to develop project scopes.

APNEP FY22-27 BIL Work Plan and Budget

Year(s)/Project Status:	New
Lead / Partners:	Core Sound Waterfowl Museum/ Down East Resilience Network (Lead), NC State University, NC State Climate Office, Western Carolina University/Program for the Study of Developed Shorelines, East Carolina Council, NC Dept. of Transportation, Bryn Mawr College, Museum of Life and Science, Duke University, Duke Marine Lab, UNC-Chapel Hill, UNC-IMS, NCORR, NC Sentinel Landscapes, NC Sea Grant, NC Coastal Federation
Outputs/Deliverables:	Pilot studies; Flooding vulnerability assessments for public owned parcels; Community drainage network maps/models for reporting highlighting maintenance priorities; workforce development and professional development of students and under-served community members; Coastal Community Resilience Hub development.
Outcomes:	Building community resilience through environmental education; partnering on conducting pilot studies for targeted localized water management solutions and education of approaches to mitigating water quality concerns for ecosystem and human health.
Estimated Cost:	\$150,000
BIL Focus Areas:	Water Quality, Community Resilience, Wetlands, SAV
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor
Equity Strategy:	<p>A significant proportion of the region classified as disadvantaged because of climate, sea-level rise, human health concerns and lack of workforce opportunities in Carteret County. DERN has had challenges taking advantage of the available community resilience programs and funding streams due to a lack of support from local governments; BIL funding would help fill this gap.</p> <p>This initiative will be one of APNEP’s initial uses of the Spatial Equity Database and Mapper to quantify the spatial extent of the Downeast Community relative to other areas of the region to steer project implementation, engagement strategies and assess the effectiveness of the implementing the partnerships approach outlined in the BIL Equity Strategy. This process will allow for adaptation of the strategic approach for use in other communities in the region and developing a strategy for tracking expenditures of funds for Justice 40.</p>

Virginia Resilience Planning and Coordination

Objectives: Assist Virginia partners with implementation of projects identified through the VA Coastal Resilience Master Plan and other VA resilience initiatives. Integrate with NC Resilience initiatives across state lines (notably coordination wetland protection and voluntary watershed protection and water quality improvements to decrease nutrient loading to Albemarle Sound and its tributaries), and further MOU implementation.

Objectives: Support implementation of resilience planning efforts in the Virginia portion of the region. Increase coordination and collaboration across state lines to further MOU implementation.

Description: Resilience was identified as an overarching theme by agency designees in the 2021 report on APNEP’s MOU with Virginia. While APNEP has generally been more directly engaged in NC’s resilience planning, we have been actively meeting with partners to identify gaps and needs in the VA portion of the watershed and opportunities to integrate collaboration with programs such as RISE across state lines. As with NC resilience planning, regional needs are interdisciplinary, and funding budgeted out of other projects and focus areas can support resilience plan implementation. Relevant projects are described under other focus areas and projects (Virginia Healthy Waters and Watershed Roundtable coordination, RISE/Regional Algal Bloom Coordination, Tribal Coastal Resilience, Currituck Sound Coalition, etc.).

Progress to Date: APNEP is actively working with partners to expand our reach and more closely align with Virginia’s resilience initiatives, including the Virginia Coastal Resilience Master Plan, Virginia’s Community Flood Preparedness Fund, and Regional Adaptation Feasibility Tool (RAFT) program. Staff have met with VA-DCR, VA-CZM, UVA, and continued collaboration with the City of Virginia Beach, Wetlands Watch, VIMS, VA Planning District Commissions, and other partners.

FY24-25 Plans: Work through the agencies and partners described above and the CAC to identify a location suitable for initial RAFT planning and RISE integration, such as a locality near the state lines, or regional planning effort that benefits broader rural areas in Virginia with similar resilience needs (e.g., Crater PDC Resilience Plan Development or Hampton Roads project implementation in the more rural independent city/counties such as Chesapeake, Suffolk, etc.). Support community planning in southside Virginia and implementation of projects identified during VA Coastal Master Plan Workshops.

Year(s)/Project Status:	New
Lead / Partners:	VA-DCR, VA-CZM, UVA, ODU, Wetlands Watch, VIMS, local governments
Outputs/Deliverables:	Vulnerability assessments, project portfolios,
Outcomes:	Increase in local governments that incorporate consideration of climate resilience in planning processes. Increased awareness of the connection between ecosystem health and community resilience.
Estimated Cost:	\$90,000
BIL Focus Ares:	Resilience, Water Quality, Wetlands
2024 CCMP Categories:	Understand, Protect & Restore, Engage, Monitor

Equity Strategy:	Utilize Equity Strategy to guide community and project selection. Work closely with the CAC and resilience workgroups to identify local needs.
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Community Resilience Support Activities

In addition to the projects described above, staff also work closely to integrate resilience activities with external programs and initiatives, including working with WRIT and NC-DWR Basin Planning staff to identify opportunities to integrate resilience into water resources planning, and with NC Wildlife Resources Commission staff to incorporate resilience considerations in the NC Green Growth Toolbox. APNEP is also following the development of the NC Flood Resilience Blueprint. The following are examples of projects and activities that were included in the Long-Term Strategy and may arise (updates are provided where available):

Regional Needs Assessment: APNEP initially proposed a regional needs assessment to better inform use of the BIL funding to build both ecosystem and community resilience and help with implementation of the Equity Strategy.

UPDATE: Due to substantial progress in resilience planning and implementation in the region since the initial BIL workplan and strategy were developed, staff recommend building on existing needs and vulnerability assessments, and partnering with established community engagement programs including RISE, RCPP, and RAFT rather than creating a separate process for APNEP’s CCMP / BIL Focus Areas or waiting for the results of Spatial Targeting Exercise. As such, the Spatial Targeting Exercise and STAC Focus Teams will not be utilized to guide project prioritization or BIL funding for this category.

- This updated FY22-27 Budget and Workplan is built on gaps and needs identified through needs and vulnerability assessment that have already been completed for the region, and increased investments in initiatives that include targeted risk and vulnerability assessments (Scuppernong/Tribal/RISE).
- APNEP Staff advise focusing on implementation of known needs already identified and investing student intern / fellows and staff time to further develop the Spatial Equity Tool developed for the BIL Equity Strategy to verify assumptions and assist with Justice40 tracking.
- A regional needs assessment was being discussed as part of the USFWS AP Federal Partnership and proposed as part of collaborative grant applications with NCORR and USFWS but to date partners have been unsuccessful in obtaining funding to support this effort.

NC Sea Grant Community Resilience Planning: NC Sea Grant developed a framework to identify community climate resilience needs and priorities, and opportunities for developing or expanding extension programming, utilizing the NC Coastal Resilience Community of Practice as advisors. APNEP will coordinate closely to leverage Sea Grant’s framework to guide project planning. Sea Grant is also an active Scuppernong Engagement Strategy team member, which has been discussed as a potential model for working with other communities.

UPDATE: Sea Grant staff have advised that they too are partnering to support existing initiatives utilizing their framework rather than create a new program. Staff will continue to partner with Sea Grant and others on RISE, Algal Bloom Regional Coordination, Scuppernong, and Downeast

Resilience. A work plan entry for placement of FIMAN/SECOORA gauges has been added as an immediate need and initial follow up to these discussions.

Targeted Climate Vulnerability Assessments: build upon work being conducted through RISE, TCRC, and the Resilient Coastal Communities Program (RCCP). APNEP will work with partners to support targeted climate vulnerability assessments throughout the watershed. These assessments would present an analysis of the likelihood and severity of climate change effects on the targeted resource or community asset (i.e., wetlands, wastewater systems, oysters, SAV), as well as recommendations for adaptation plans to best prepare for such effects.

UPDATE: Vulnerability assessments have already been conducted as part of the numerous regional and local resilience planning process that have evolved over the past few years, particularly as part of statewide RARP, regional RISE and local RCPP in NC, the current budget reflects gaps that have been identified.

- A work plan entry has been added for the Downeast Resilience Network. Due to limited local government support/capacity, they have not been able to take advantage of state led resilience planning processes that require local government partners; so APNEP can fill a gap by providing direct support for some initiatives.
- Targeted vulnerability assessments are in the long-term scope for the TCRC project.
- Staff are in discussions regarding gaps, opportunities and needs in the VA portion of the region.

Natural and Nature-Based Features Project: APNEP partnered with Wetlands Watch to on a project designed to incentivize the use of natural infrastructure by local governments and communities to build resilience to storm driven flooding. Wetlands Watch conducted a NC focused needs assessment, built a template tool / database modeled after Virginia CZM tool, and developed outreach materials to identify the co-benefits of different coastal habitat types by highlighting their ability to generate credits for local governments in water quality (TMDL) and hazard mitigation (FEMA CRS) programs. The outreach materials will promote the use of natural infrastructure to build community and ecosystem resilience. Discussions are being held with CHPP staff and the Living Shorelines Action Team to tailor the templates for NC use. Funds will be needed to develop the actual toolbox and outreach materials further, if deemed useful by partners.

UPDATE: This project was completed in 2023 and is being incorporated into the NC Resilience Exchange and may be beneficial for regional councils of government and planning district commissions based on needs identified during RISE and VA resilience planning.

In addition, Natural and Nature-Based Features (NNBF) and green infrastructure projects in VA and NC offer opportunities for workforce development and training tailored to a trade, such as installation and maintenance of stormwater green infrastructure, living shorelines, etc. Green stormwater initiative will not only offer stormwater education through community engagement, but also alleviate water quality and quantity impacts.

NC Coastal Resilience Community of Practice (COP) – APNEP participates in this group which stemmed from a steering committee that planned workshops to solicit input from local governments and communities to inform development of the NC Risk and Resiliency Plan. The COP meets quarterly to bring together diverse coastal stakeholders to focus on how ecosystem resilience

can build local community resilience. Staff have collaborated with the COP on projects, notably the Scuppernong Engagement Strategy and will continue to coordinate on BIL implementation.

NC Statewide Resilience Clearinghouse – APNEP participates on the Steering Committee for this project developed to address actions from both the NWL Action Plan and RARP, geared towards providing resources for local governments and communities. Staff from NC-DEQ DMF and NCORR led development of this all-encompassing resilience resource guide for local governments to help bring organizations together to coordinate parallel efforts and decrease redundancies. APNEP worked to integrate the Wetlands Watch resilience database and Tribal Coastal Resilience Connections projects and will coordinate to ensure ecosystem resilience related APNEP projects are included (e.g., SAV mapping, Scuppernong Study report and recommendations, Air Quality MAT products, Spatial Decision Support, Equity Strategy Tool).

Update: The NC Resilience Exchange has been released for committee review and anticipated to go live Spring 2024. Staff will help promote its release and continue to contribute to information and resources to be offered through the collaborative platform. Staff will share success stories associated with the Scuppernong Study, Tribal Coastal Resilience, and other projects as they are implemented and showcase the value of BIL and other investments to the AP region.

Administration and Program Implementation

Programmatic Administration

APNEP staff is responsible for the coordination, planning, and successful completion of partnership functions, including Management Conference and Action Team meetings, workshops, and other APNEP-sponsored/partner events. In addition, staff monitor and often become involved in activities of federal and state resource management agencies, regional and local governments, and other organizations related to CCMP implementation and APNEP’s mission. Staff also attend meetings, conferences, and workshops to stay apprised of technological advancements that may prove beneficial in the APNEP region and the partnership. Although the Leadership Council and Advisory Committees are instrumental in identifying local environmental issues and prioritizing management actions within each basin, most management actions are implemented by various federal, state, and local agencies on a local, basin-wide, regional, or statewide basis and require staff involvement and interactions.

Host Entity

NC-DEQ currently serves as the host entity for the APNEP Office and the Partnership. The Department is responsible for assisting with administrative and fiscal management of the APNEP-EPA cooperative agreement, which provides federal funds for APNEP. The Department’s efficiency of operation and support of the Management Conference plays a key role in the success of APNEP, including assisting in the administration of the cooperative agreement and other funding sources.

Administrative Costs

Overall administrative costs for the term of the cooperative agreement are estimated at approximately \$148,500 total to cover expenses associated with travel, supplies to support activities and projects described in this work plan. For years 3-5 the estimated cost is \$128,500. At

present, APNEP intends to assign current staff to implement and track projects under this work plan as all activities are associated with CCMP implementation. Cost would cover supplies and materials, data fees, publishing, and other general business associated expenses. Additionally, APNEP maintains a boat to support SAV and other water-based work. Operational costs and maintenance will be included under administration costs. Temporary employees, fellows, and interns that may be added for specific project or activity support will be paid under the budgeted amount for the project. Temporary employees are contracted and not considered full-time employees.

Indirect Costs

Currently, no indirect costs are anticipated (see Administrative Costs) or associated with the activities funded under BIL to the host entity. However, if staff is added in the future under approval of the Leadership Council and upon EPA through a grant revision, an indirect rate will be charged under a currently authorized *Negotiated Indirect Cost Agreement* between NC-DEQ and EPA.

Personnel*

Presently, a majority of APNEP staff are housed at the APNEP office in Raleigh within the NC-DEQ Headquarters. This site houses the Director, Program Manager, Program Scientist, Policy and Engagement Manager, Partnership Coordinator, and Quantitative Ecologist. The APNEP field office in Washington, NC houses the Coastal Habitats Coordinator. The Virginia Department of Environmental Quality has historically provided some support for CCMP implementation; however, a position is not assigned at present. Staff from the Virginia Department of Cultural Resources have been providing support for MOU implementation for the past several years. These positions are not covered under program administration but support CCMP implementation and occur at no additional cost to the program.

Director

The Director administers and coordinates program activities and CCMP implementation, involving interaction with numerous federal and state resource management agencies, universities, interest groups, and the public. This position manages grants and associated contracts, provides staff support to the APNEP Leadership Council and Advisory Committees, and represents APNEP at local, state, regional and national meetings. Dr. Bill Crowell has been the Director since June 2002.

Program Manager

The Program Manager assists in the administration of the 320 Grant and coordinates and manages APNEP contracting and associated activities within NC-DEQ. The position also assists in the development and maintenance of broad support for the APNEP mission and CCMP implementation; develops tracking mechanisms for performance measures and CCMP implementation efforts; and provides staff support to the Leadership Council and Advisory Committees. Heather Jennings has been the Program Manager since June 2018.

Policy and Engagement Manager (State Funded)

This position assists with BIL program development and guides implementation and administration of BIL funding through development of budgets, contracts, tracking of projects, expenditures, ensuring compliance with EPA guidance and Justice 40 initiatives, and coordination with APNEP staff. The position works to raise awareness with partners and

communities about the availability of BIL funds, foster project development, and leverage federal, state, and local investments coming to the region. The position directly manages multiple projects and initiatives supportive of CCMP implementation including APNEP's MOU with Virginia, resilience coordination and planning, and support to local governments and Tribal communities. *This position is funded by NC-DEQ.* Stacey Feken has served in this role since March 2016, adding BIL responsibilities October 2022.

Program Scientist

The Program Scientist assists the Director with CCMP administration. This position helps design and implement a comprehensive monitoring strategy and reporting process, guides the Scientific and Technical Advisory Committee (STAC), and reviews project proposals and reports for merit. This position provides staff support to the Leadership Council and Advisory Committees. Dr. Dean Carpenter has served in this role since November 2003.

Partnership Coordinator

The Partnership Coordinator assists the Director and Management Conference with engagement, educational and outreach activities. The position oversees implementation of APNEP's Engagement Strategy, guides the CAC, pursues new partnership and funding opportunities, conducts GPRA reporting, and works with program staff to engage in new CCMP implementation actions. It also provides staff support for the Management Conference and serves as a liaison to various external working groups. Steve Anderson has served in this role since March 2023.

Quantitative Ecologist

The Quantitative Ecologist coordinates with staff and contributing scientists and managers to assess the environmental health of the Albemarle-Pamlico estuarine system. Responsibilities include working with partner agencies and researchers to analyze and report upon indicators of watershed and estuarine health, including identification of monitoring gaps, facilitating, and supporting APNEP Action Teams and Monitoring & Assessment Teams, and managing SAV fieldwork and the program's GIS functions. Dr. Tim Ellis has served in this role since March 2017.

Coastal Habitats Coordinator (State Funded)

This position serves as an APNEP liaison to local governments and state agencies. The Coastal Habitats Coordinator provides coordination and support to local governments and state agencies to enhance CCMP implementation. The position also directs coordinated implementation of the NC Coastal Habitat Protection Plan (CHPP), working closely with the Coastal Resource Commission, the Marine Fisheries Commission, and the Environmental Management Commission. *This position is funded by NC-DEQ.* Jimmy Johnson has served in this role since January 2006.

Coastal Data Analyst

The Coastal Data Analyst (contractor) assists Science Staff with coastal habitat monitoring and assessment support through remote sensing data (satellite and aerial) acquisition, analysis and interpretation, and guidance in spatial database designs. Focal projects include the production of seagrass survey station maps to support field crews, interpretation of aerial imagery to

delineate seagrass density classes, and creation of class-change tables to facilitate the assessment of seagrass trends. Dr. Don Field has served in this role since 2021.

Program Coordinator, Tribal Coastal Resilience Connections (BIL Funded)

The Tribal Coastal Resilience Program Coordinator assists the TCRC team with day-to-day operation of program including meeting coordination, research, and reporting. Focused projects include historical research and updating mapping of Tribal communities with ancestral and present-day ties to the AP region, inter-Tribal coalition building, and community engagement. This position is currently part-time, but BIL funding is proposed to increase capacity. Chandler Allred has served in this role since 2023.

**All positions are administered in compliance with NC Office of State Personnel rules and policies.*

Travel

APNEP proposes a budget of \$10,000 for each year to support travel associated with the implementation of this work plan outside of funds allocated to any particular project. Funds will cover the cost of travel by staff, Management Conference members, and/or stakeholders from other NEPs or watershed organizations who collaborate with the NEP on CCMP implementation. Stakeholders may include members of the public and of environmental and public interest organizations, business or industry representatives, academics, scientists, and technical experts.

- The funds may be used to cover costs associated with attending conferences, meetings, workshops, or events that advance CCMP implementation and BIL objectives. The funds may also be used to cover the cost of renting facilities for Management Conference activities and as necessary for CCMP implementation and BIL objectives.
- APNEP should use the least expensive means of travel whenever possible.
- EPA funds will not be used to cover the travel costs of Federal employees.

APNEP staff, the Management Conference, and EPA consider personal, face-to-face contact essential for information sharing and technology transfer. APNEP intends to use travel funds to support:

- 1) Management Conference, Action Team, Monitoring and Assessment Team (MAT), Tribal Coastal Resilience Connections team, and Ad-Hoc committee meetings,
- 2) Participation in watershed stakeholder meetings, workshops, and conferences relevant to CCMP implementation,
- 3) Participation in national or regional NEP and EPA meetings,
- 4) Participation in international, nation, regional, and local workshops, or conferences,
- 5) Travel to other NEPs or communities to provide peer-to-peer technical assistance,
- 6) Travel to other NEPs or watersheds for assistance,
- 7) Travel by NEP staff or stakeholders from other NEPs or watershed programs to provide NEP with assistance.
- 8) As a requirement of this grant agreement, a member of APNEP's core staff is required to participate in all meetings called on behalf of the NEPs by EPA.

Travelers may include Management Conference members, Action Team members and MAT members, Tribal Coastal Resilience Team members, citizens, and members of environmental or

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public interest organizations, business or industry representatives, academics, scientists, or technical experts as determined appropriate by the APNEP Director.

Food

While most travel funds are associated with staff, Management Conference members, and Action Team participants, travel funds and funds associated with specific work plan projects, APNEP funds awarded as grants or contracts may be used for light refreshments and/or meals served at meetings, conferences, training workshops and outreach activities (events), consistent with 41 CFR 301-74.7 and NC-DEQ travel policies, and as approved by the APNEP Director.

2022-27 Projected Travel

All travel is allocated into three categories: In-State, Out-of-State, and EPA Required. All travel, including non-staff travel, must be consistent with published NC-DEQ travel policies (2023) and regulations. Due to the dynamic nature of the Partnership, all travel cannot be scheduled a year ahead: therefore, only an estimate can be provided based on established NC-DEQ rates (below). Some travel is associated with specific projects, and travel costs are included in budgeted amounts.

NC-DEQ TRAVEL RATES*

Item	In-State	Out of State	Overnight Trip	Day Trip
Breakfast	\$ 10.10	\$ 10.10	Depart Office before 6:00 AM	Depart before 6:00 AM; Extend workday by 2 hours
Lunch	\$ 13.30	\$ 13.30	Depart Office by 12:00 Noon; Overnight return after 2:00 PM	NA
Dinner	\$ 23.10	\$ 26.30		Depart before 5:00 PM; Return after 8:00 PM; Workday extended by 3 hours
Hotel	\$ 89.10	\$105.20		NA

**1 July 2023 DEQ approved rates. Albemarle-Pamlico coastal area often exceeds posted hotel rates.*

In State:

In-state travel is primarily for APNEP staff to conduct routine business associated with daily operations, field work, staff training or topical meetings germane to the Partnership. It may also cover non-staff for APNEP business (i.e., council and committee members, guest speakers, and experts). Funds are also used to cover meetings as allowed under the NC-DEQ travel guidance.

Out-of-State:

Out-of-state travel is primarily for APNEP staff to conduct business associated with the NEP general meetings and to attend training or topical meetings germane to the Partnership. It may also cover non-staff (e.g., council and committee members, guest speakers, experts) for NEP-related activities.

Leveraged Funds

APNEP actively seeks alternative and supportive funding sources for activities and projects to support CCMP goals. In addition, APNEP pursues additional avenues for collaborating with partners to assist in targeting program funds towards CCMP and basin-wide goals. Where possible, APNEP works to cost-share projects to increase the effectiveness or the magnitude of projects, even though in several cases APNEP has not been the primary catalyst for a project or activity.

APNEP has been successful in promoting the needs, as well as the successes, associated with natural resource management, protection, and enhancement efforts in the Albemarle-Pamlico region.

For the BIL Funds, APNEP will continue to seek additional avenues for collaborating with various partners to assist in targeting funds to support CCMP implementation actions and the Partnership mission. Where possible, APNEP will actively seek additional sources of funding for APNEP activities and projects to support CCMP goals. We will work to maintain our goal of a minimum of 4:1 leverage ratio with these funds.

Partnership Entities

Host

The main APNEP office is located within the NC-DEQ Office of Secretary in Raleigh, NC, with additional personnel in Washington. In the past, the Virginia Department of Environmental Quality provided support through a position to working with APNEP, but the position has either been vacant, or staff directed to focus on other priorities (namely Chesapeake Bay) for several years. However, staff from the VA-DCR Natural Heritage Program have been functionally serving in this role and assisting with implementation support for the VA-NC Memorandum of Understanding.

Management Conference

Leadership Council

The Leadership Council is the main advisory body for APNEP and the Management Conference. It was established by a NC Governor's Executive Order to advise, guide, evaluate and support the CCMP implementation process, advance the CCMP and its management actions, and to ensure the highest level of collaboration, coordination and cooperation among state and federal agencies, local governments, the public and various interest groups. The Leadership Council consults with the advisory committees and the APNEP Office for recommendations pertaining to implementation of CCMP actions at the regional and local levels, and the coordination and development of research and monitoring priorities. A major duty of the Leadership Council is to maintain the relevance of the CCMP and to make recommendations to address emerging issues that may affect the significant natural resources of the Albemarle-Pamlico estuarine system. The Leadership Council, in cooperation with the APNEP Office, develops an annual report, budget and work plan.

Science and Technical Advisory Committee (STAC)

The STAC was established in 2004 to provide independent advice to the Leadership Council and the Citizen Advisory Committee on scientific and technical issues, including ecosystem assessment and monitoring, in support of CCMP implementation.

Citizen Advisory Committee

The current Citizen Advisory Committee (CAC) was formed and first convened in March 2023. The CAC will work with the Leadership Council on CCMP and BIL Strategy implementation and meaningful community engagement activities. Committee members shall serve as liaisons to citizens, agencies, tribes, and relevant parties regarding environmental and natural resource management relevant to CCMP implementation. The Committee shall work to engage diverse communities and populations in its decisions and represent diverse perspectives within the Management Conference.

Action Teams

APNEP has established several Action Teams focused on implementing CCMP objectives and actions. Action Teams are responsible for developing the outputs associated with each action deemed necessary to achieve desired ecosystem outcomes. Membership is open to any interested party. For the duration of implementation of the BIL Long Term Strategy, active Action Teams receiving staff facilitation priority will be those who most closely align with the focus areas as directed by the Leadership Council.

Monitoring and Assessment Teams

Two of the four phases of APNEP's adaptive management cycle, "Monitoring" and "Assessment", help ensure that stakeholders have regular, reliable decision support as to whether CCMP outcomes and actions are being achieved. To leverage program capacity and promote partner collaboration when implementing these two crucial phases, APNEP established in 2008-2009 six resource MATs whose missions each addressed a major sub-system of the Albemarle-Pamlico regional ecosystem.

Other Partnerships

APNEP is considered a boundary organization, or an organization that facilitates collaboration and information flow between diverse research disciplines and between the research and public policy community. As such, APNEP engages its partnering organizations and the public to improve awareness and understanding of environmental issues facing the Albemarle-Pamlico region. The various methods of partner engagement outlined in the [APNEP Engagement Strategy](#).

Much of this coordination occurs through relationships built via our partner network, independent of whether partners are participating on an APNEP team. APNEP is tracking issues of interest to the Partnership and providing support where feasible, such as Chowan algal blooms, offshore oil drilling, impacts to communities due to flooding and sea level rise, and fisheries issues. Engagement associated with these issues has led to letters of support for partners applying for grants, formal comments through the Leadership Council, technical advice and support to agency management, funding and logistical assistance, and hosting workshops to convene technical experts.

APNEP staff regularly participate in external workgroups and committees to expand our reach, facilitate regional collaboration, and reciprocate volunteer involvement. Where possible, APNEP seeks to prioritize projects that align with the complimentary missions of these external workgroups. Staff also seek opportunities to integrate external projects with CCMP implementation.

Appendix 1

2024 Draft CCMP Update Objectives & Actions with BIL Focus Areas and Proposed BIL Projects

11 March 2024 version

Understand

A1: Assess the condition and impacts of targeted ecosystems

- A1.1 Facilitate mapping the distribution of significant ecological, bathymetric, geologic, demographic, and cultural features. (BIL Priority)

BIL Projects: Spatial Decision Support, High Resolution Land Use Cover (NOAA-CCAP), SAV Mapping, Scuppernong Study

- A1.2 Facilitate improved projections of land and water use, and climate change related impacts on the ecosystem to enhance the coordination of multi-scale planning and management. (BIL Priority)

BIL Projects: Spatial Decision Support, High Resolution Land Use Cover (NOAA-CCAP), Scuppernong Study, Tribal Coastal Resilience Connections, RISE Implementation, Assessment of SAV Protection Policies

- A1.3 Develop and refine a regional ecosystem assessment and supporting assessments such as indicator metric reports and syntheses.

Protect and Restore

B 1: Protect and restore areas containing significant natural communities and habitats

- B 1.1 Refine and implement a submerged aquatic vegetation (SAV) protection and restoration strategy. (BIL Priority)

BIL Projects: Spatial Decision Support, High Resolution Land Use Cover (NOAA-CCAP), Assessment of SAV Protection Policies, SAV High & Low Salinity Monitoring, Analysis of Low-Salinity SAV

- B 1.2 Refine and implement a regional wetland protection and restoration strategy (BIL Priority)

BIL Projects: Spatial Decision Support, Restoration Projects Grant Opportunity, Natural and Working Lands, Currituck Sound, Wetlands Undesignated

- B 1.3 Protect and restore targeted natural communities, habitats, and ecosystem processes. (BIL Priority)

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***BIL Projects:** Spatial Decision Support, Restoration Projects Grant Opportunity, Natural and Working Lands, Currituck Sound, Wetlands Undesignated, SAV all projects, Virginia Healthy Waters and Roundtable Coordination, Tribal Coastal Resilience, RISE Implementation*

- B 1.4 Facilitate the development of policies to minimize dredge and fill activities in naturalized areas and sensitive habitats.
- B 1.5 Refine for federal approval and facilitate the implementation of a *North Carolina Integrated Aquatic Invasive Species Management Plan*.
- B 1.6 Facilitate the construction of new oyster habitats.
***BIL Projects:** Restoration Projects Grant Opportunity, Natural and Working Lands*

B2: Protect and restore water quality by minimizing or eliminating targeted sources of water pollution

- B2.1 Support the development of water quality standards and any subsequent development of new management strategies for estuarine waters. **(BIL Priority)**

***Proposed BIL Projects:** Stormwater Management (RISE), Algal Bloom Coordination and Nutrient Management, Virginia Healthy Waters and Roundtable Coordination, Water quality Undesignated*

- B2.2 Facilitate the implementation of existing contaminant management strategies.
- B2.3 Protect, restore, and enhance targeted shorelines and riparian buffers to reduce and treat runoff, and to support ecosystem function/services. **(BIL Priority)**
***Proposed BIL Projects:** Stormwater Management (RISE), Algal Bloom Coordination and Nutrient Management, Virginia Healthy Waters and Roundtable Coordination, Restoration Projects*
- B2.4 Facilitate voluntary retrofitting of existing development and infrastructure to reduce runoff.
- B2.5 Minimize the introduction of toxics into receiving waters by applying approved best management to marinas, boatyards, stormwater discharges and wastewater facilities.
- B2.6 Minimize contaminant loads to receiving waters through wastewater management and system upgrades. **(DWI Match Support)**
- B2.7 Apply approved best management practices (BMPs) on targeted agricultural and silvicultural lands to improve water quality for the protection, and restoration of SAV and oyster habitats.

***Proposed BIL Projects:** Stormwater Management, Algal Bloom Coordination and Nutrient Management, Scuppernong Study*

B3: Ensure hydrological processes in rivers and estuaries support significant natural communities and ecosystem functions

- B3.1 Facilitate the development and implementation of coordinated landscape-scale hydrological restoration strategies.

***Proposed BIL Projects:** Scuppernong Study, Downeast Resilience Network*

- B3.2 Facilitate the hydrologic restoration of floodplains and streams.
- B3.3 Develop and refine ecological flow requirements for each major river for inclusion in basin-wide water management plans.

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B4: Restore spawning areas for diadromous fish

- B4.1 Facilitate the installation of fish bypass infrastructure and operations protocols on existing dams and other permanent barriers.
- B4.2 Facilitate the removal of dams, culverts, and other in-stream barriers.
- B4.3 Restore degraded anadromous fish spawning habitats.

Engage

C 1: Foster watershed stewardship

BIL Projects: CAC Community Projects, Tribal Coastal Resilience

- C 1.1 Communicate the importance of stewardship and offer opportunities for volunteerism to further APNEP's mission.
- C 1.2 Provide and promote opportunities for outdoor experiences that connect individuals with the Albemarle-Pamlico ecosystem

C2: Conduct targeted environmental education efforts regarding estuarine habitats, water quality, and ecosystem services

- C 2.1 Provide environmental education training opportunities for educators.
- C 2.2 Increase public understanding of the relationship between ecosystem health and human health advisories relating to water, fish, and game.

Proposed BIL Projects: Algal Bloom Regional Coordination, Stormwater Management, Virginia Healthy Waters and Roundtable Coordination

C 3: Provide tools and training to support ecosystem-based management

- C 3.1 Develop and implement a strategy to improve decision-makers' understanding of the return on investments in environmental protection, restoration, planning, and monitoring.
- C 3.2 Enhance the coordination of targeted ecosystem management by federal, state, regional, and local governments, and communities by assisting with the incorporation of resilience, climate change and sea level rise considerations into planning processes. (BIL Priority)

Proposed BIL Projects: Scuppernong Study, Tribal Coastal Resilience Connections, Water Level Monitoring Stations, Downeast Resilience Network, Virginia Resilience Planning, Community Resilience, Stormwater Management, Algal Bloom Coordination, RISE Implementation

Monitor

D1: Develop and maintain an integrated monitoring network to collect and disseminate information for assessment of ecosystem outcomes and management actions associated with CCMP implementation

- D1.1 Facilitate the development and implementation of an integrated monitoring network through the guidance of regional monitoring and assessment teams. (BIL Priority)

Proposed BIL Projects: Spatial Decision Support, SAV Monitoring, STAC Focus Area Workshops, Algal Bloom Regional Coordination and Nutrient Management, Virginia Healthy Waters and Roundtable Coordination, Water Level Monitoring

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- D1.2 Facilitate the expansion of volunteer monitoring into a core element of the integrated monitoring network.
- D1.3 Develop and maintain an online resource that clearly conveys regional information in support of ecosystem-based management.

Appendix 2

List of guidance documents and plans referenced in the APNEP FY 22-27 Workplan and Strategy that BIL funding helps implement.

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Plan or Guidance Document Title	Year	Description
NEP BIL Funding Implementation Memo	2021	This NEP BIL Funding Implementation Memorandum provides guidance on uses of BIL funds, timeframes, how to award the funds, and tracking and reporting requirements. This memorandum describes the process for FY 2022 – FY 2026 BIL funds and may be supplemented by additional implementation memoranda as needed
Executive Order 14052	2021	Presidential order that identifies six priorities that should be implemented by all federal agencies in implementing the Infrastructure Investment and Jobs Act or Bipartisan Infrastructure Law.
Executive Order 14008	2021	Presidential Order on Tackling the Climate Crisis at Home and Abroad that directs the United States to move quickly to build resilience, both at home and abroad, against the impacts of climate change.
Justice40 Initiative	2021	The Justice40 Initiative, established through EO 14008, sets a nationwide goal that 40 percent of the overall benefits of certain Federal climate, clean energy, affordable and sustainable housing, and other investments flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution.
APNEP BIL Equity Strategy	2023	EPA required document established to guide APNEP in reviewing potential activities and projects that use 2021 Infrastructure Investment and Jobs Act (P.L. 117-58)/ Bipartisan Infrastructure Law (BIL) funds through the lens of equitable and fair access to the benefits from environmental programs for all communities. With an EPA approved Equity Strategy, NEPs can waive match for projects funded through BIL.
APNEP Engagement Strategy	2020	The strategy outlines a multi-pronged approach to engagement, including partner engagement, education and outreach, and communications
APNEP 2012-2022 CCMP	2012	APNEP’s Comprehensive Conservation and Management Plan provides a set of actions that define a healthy Albemarle Pamlico ecosystem. The plan is built from an ecosystem-based management model.
NC Executive Order #250	2022	APNEP’s overall structure and function within its host agency is dictated by a series of Executive Orders from the North Carolina Governor.
APNEP MOU	2020	APNEP facilitated Memorandum of Understanding (MOU) between six environmental and natural resources agencies from North Carolina and Virginia that affirms their commitment to foster interstate collaboration within the shared waterways of the Albemarle-Pamlico region.
NC Coastal Habitat Protection Plan	2022	A resource and guide created by the Department of Environmental Quality to assist the Marine Fisheries, Environmental Management, and Coastal Resources Commissions in development of goals and recommendations for protecting fisheries habitat in North Carolina.
Executive Order 80	2018	North Carolina Governor’s Order calling for integration of climate adaptation and resilience planning into cabinet agency policies, programs, and operations to make NC more resilient to both climate and non-climate related stressors.
NC Climate Risk and Resilience Plan	2020	A plan directed by Executive Order 80 and led by the North Carolina Department of Environmental Quality and statewide stakeholders to develop resilience strategies to adapt to climate change.
NC Natural and Working Lands Action Plan	2020	A plan to identify and create opportunities and outline specific projects for North Carolina’s natural and working lands that sequester carbon, build ecosystem and community resilience, provide ecosystem benefits, and enhance the economy.
NC Executive Order 305	2024	NC Order to protect and restore NC’s most critical natural and working lands.

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Plan or Guidance Document Title	Year	Description
VA Coastal Master Resilience Plan	2021	The 2021 Coastal Resilience Master Plan, Phase I modeled current and future land exposure to coastal flood hazards; estimated the impacts of exposure on key assets; identified areas with both high social vulnerability and coastal flood exposure; established an inventory of locally driven coastal resilience programs; established an inventory of grant and loan programs; and created an online coastal resilience database and web explorer.
APNEP Tribal Coastal Resilience Phase I Report	2023	The report summarizes research on Tribal engagement in climate and resilience planning efforts throughout the U.S., documenting information not well known about Southeast Tribes, engagement and outreach with Tribal communities and resilience practitioners, and includes recommendations for building coalitions and toolkits tailored to Tribal engagement in the coastal plain and AP region.
Currituck Sound Coalition Marsh Conservation Plan	2019	The plan identifies the complex web of threats facing the globally rare freshwater marsh ecosystem and offers a blueprint of how best to protect and restore Currituck Sound watershed for wildlife and people.
Chowan Healthy Waters Plan		Conservation Plan used to identify critical areas for protection and be used as the basis for the healthy watershed protection goals of APNEP’s CCMP. Assures that ecologically healthy streams are incorporated into the VA-DCR Natural Heritage Biotics Database and integrated into land conservation and land planning projects in Virginia.
Regional RISE Portfolios	2022	Identifies priority projects and strategies that reduce the risks associated with extreme weather events and enhance regional resilience for each NC COG. The portfolio aims to produce shovel-ready actions with detailed implementation steps, including estimated costs, potential implementing partners, likely project completion challenges and more.
Chowan River Basin Water Resources Plan	2021	A plan required under North Carolina General Statute 143-215.8B that identifies areas in need of additional protection, restoration, or preservation to ensure that waters of the state are meeting their designated use. The fourth Chowan River basin plan explores water quality and water quantity issues in the basin.
Pasquotank River Basin Water Resources Plan	2021	A plan required under North Carolina General Statute 143-215.8B that identifies areas in need of additional protection, restoration, or preservation to ensure that waters of the state are meeting their designated use.
APNEP MOU Interagency Report	2021	Interagency report on the 2020 Memorandum of Understanding in Support of Cooperative Conservation and Management of the Albemarle-Pamlico Region
APNEP SAV Metric Report	2021	Metric report produced by APNEP SAV Team that documents the extent of SAV in high salinity waters based on mapping and monitoring.
FY 2022-2026 EPA Strategic Plan	2022	EPA’s FY 2022-2026 Strategic Plan communicates the Agency’s priorities and provides the roadmap for achieving its mission to protect human health and the environment.