

Albemarle - Pamlico

National Estuary Partnership



Bipartisan Infrastructure Law Cooperative Agreement Long-Term Strategy

**US EPA
Cooperative Agreement 4T - 02D41823**

*Approved by the
APNEP Leadership Council
on 22 May 2023*

*Approved by EPA Region 3 & 4
on October 16, 2023*

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Executive Summary

Purpose

This document provides a Long-term Strategy for *2021 Infrastructure Investment and Jobs Act* (P.L. 117-58)/ Bipartisan Infrastructure Law (BIL) grant funds from the U.S. Environmental Protection Agency (EPA) to support implementation of the Comprehensive Conservation and Management Plan (CCMP) for the Albemarle-Pamlico National Estuary Partnership (APNEP) for 2022-2027. The document incorporates the approved 2022-2024 Work Plan (10/6/2023) for the timeframe of October 1, 2022, through September 30, 2024, though funds were not awarded until February 2023.

This Strategy serves as the initial overall narrative for the associated cooperative agreement for the funding cycle. APNEP anticipates requesting grant funds under BIL in June each year per guidance from the EPA as detailed by a July 26, 2022, [NEP BIL Funding Implementation Memorandum](#) from EPA Assistant Administrator, Radhika Fox. EPA guidance states that the BIL long-term strategy may have less detail than the annual workplans, and may be amended, modified, or revised at any time.

Cooperative Agreement (4T-02D41823)

Actions described within this Long-term Strategy will occur under EPA/North Carolina-Department of Environmental Quality (NC-DEQ) Cooperative Agreement 4T-02D41823 to support implementation of the management strategies recommended in APNEP's CCMP under the direction of the Leadership Council, as well as to support APNEP's 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.

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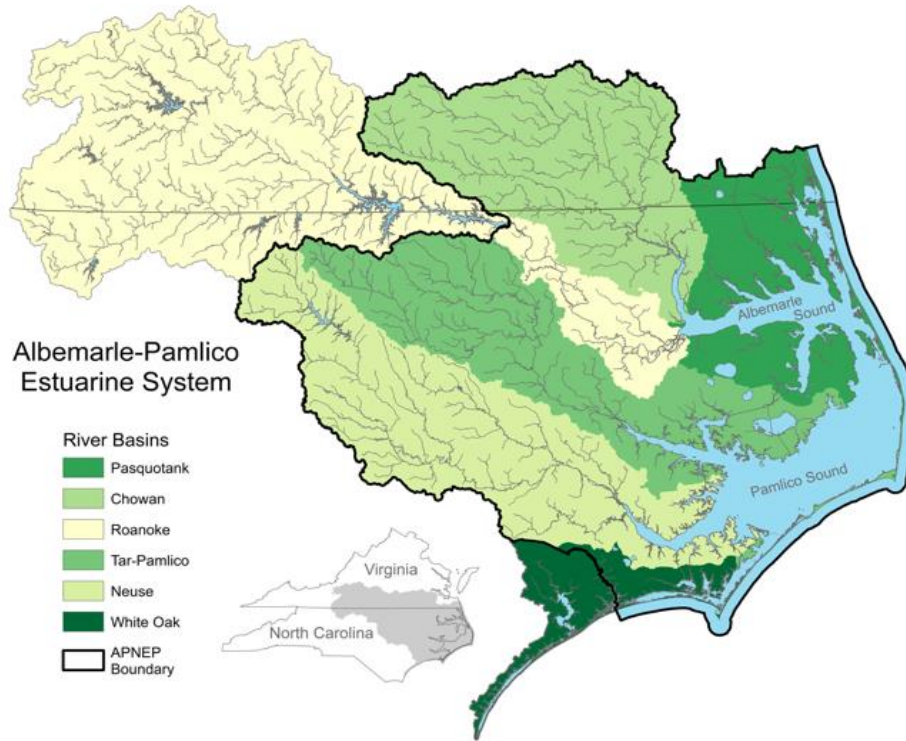
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Albemarle-Pamlico National Estuarine System

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 and works closely with the Commonwealth of Virginia. The Partnership also works closely with both EPA Regions III and IV.

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 by January 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 Strategy are provided under a cooperative agreement and grants from the EPA under the Infrastructure Investment and Jobs Act, which was passed by Congress in 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 workplan. 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.

Nation Estuary Program BIL Priorities

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

- “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:

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.

- 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;
 - Projects focused on climate-related research, including those that measure, monitor, and increase carbon sequestration;
 - 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 workplans 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 workplan.

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;
- 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.

NEPs may also use funds to support other activities identified in their CCMP, including projects that build organizational or financial capacity. NEP Regional Coordinators can answer specific questions on eligible uses.

BIL Funding Requirements

Due to the long-term nature of BIL funding, each NEP is required to develop a BIL Long-Term Strategy to submit no later than June 1, 2023, and submit an Annual BIL Workplan / grant application by June 1 of each year starting in 2024. The EPA expects funds to be available early in each fiscal year, so earlier workplan submissions are encouraged.

Annual BIL Workplans

A detailed management conference approved annual BIL workplan must be submitted by June 1 of each year. Regions and NEPs may want to consider a single incremental agreement combining at least FY 2022 and FY 2023 BIL funds to reduce the grant management workload and to capture efficiencies regarding the non-federal match waiver for these funding years. NEPs must provide a complete SF 424 application, including required forms and certifications, a management conference approved Workplan, and beginning in June 2023, an updated BIL Long-Term Strategy through Grants.gov. Annual BIL Workplans can be submitted in the same format as annual appropriations workplans per the NEP funding guidance and must contain the following workplan elements:

- CCMP Goals and BIL-supported tasks or activities related to each;
- Discussion of how projects reflect BIL priorities and implement their CCMP, particularly with respect to how the proposed work may benefit disadvantaged communities, provide climate adaptation or mitigation co-benefits, and support CCMP goals;

- Budget and personnel per SF 424 categories;
- New and ongoing project information, including the following for each project:
 - Project or activity name: indicate whether it is a “New” project or distinct phase of an “Ongoing” project;
 - Objective(s): describe in one or more sentences;
 - Description, describe the project briefly in one or more sentences (including location if known);
 - Leads, partners, and their role(s) (if available) – making note of coordination with Urban Waters Federal Partnership (UWFP) locations (where applicable), particularly on reaching disadvantaged communities;
 - Anticipated output(s) or deliverable(s);
 - Estimated milestones, where appropriate;
 - Anticipated long-term outcome(s); (including benefits to disadvantaged communities); and
 - Estimated project budget.

BIL Long-Term Strategy

Each NEP must develop a long-term strategy that describes the key activities each NEP will pursue with BIL funds through all years of BIL funding. The BIL long-term strategy may have less detail than the annual workplans, and may be amended, modified, or revised at any time. Changes may be submitted each year along with the annual BIL workplan. The initial BIL long-term strategy will be due no later than June 1, 2023. This document will be submitted to fulfill this requirement after Leadership Council review and approval. It also incorporates the 2-year BIL workplan submitted and approved by in October 2022 to ensure a comprehensive approach to BIL funding implementation.

The certainty of BIL funding for five years allows NEPs to develop a plan that organizes and communicates each program’s long-term expectations for using BIL funds. Importantly, NEP BIL funds are available until expended. As “no-year” funds, NEPs could leverage BIL funds to undertake initiatives that have long lead times or require multiple years of support, such as long-term environmental management projects or organizational capacity-building.

EPA encourages efficient spending of these funds. To ensure consistency with timelines for other complex construction or restoration projects, and with existing grants policy, EPA recommends a project/budget period of multiple years for each award, with the option for no-cost extensions. Since BIL projects are not expected to be completed within a year of funding, the requested long-term plan should include:

- Proposed types of projects and/or short project descriptions;
- Estimated timelines for projects for program activities;
- Potential additional sources of funding;
- Program capacity building needs to deliver BIL supported activities;
- Opportunities for potential coordination with other key stakeholder groups, including current or future Urban Waters Federal Partnership locations, where applicable; and
- Equity strategy.

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 equity strategy should 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.

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 equity strategy should outline how BIL funds will be utilized to increase investments in disadvantaged communities and the benefits that flow to them.

APNEP worked with its Management Conference, and partners to develop the long-term plan and the required equity strategy. The strategy document follows a template provided to the NEPs by the EPA. It requires inclusion of a definition of disadvantaged communities, and identification of tools and mechanisms for tracking benefits and funding to meet the national goal. APNEP worked to propose a definition with the intention of being consistent where practicable with partners' existing definitions and other related efforts to be consistent with the Justice40 Initiative.

The definition has been approved by APNEP's Management Conference (Citizen Advisory Committee, Science and Technical Advisory Committee, and the Leadership Council). APNEP plans to work closely through these standing committees to develop a stakeholder engagement plan to ensure benefits to communities in the Albemarle-Pamlico region are maximized. Attachment 1 contains the Equity Strategy following the EPA template. It is attached as a supporting document as it will be receiving separate EPA review and approval.

Partnership Priorities

The Partnership anticipates publishing an updated CCMP prior to January 2024. An updated CCMP will serve as an update to the current [CCMP](#) and targeted for the calendar years 2024 through 2029 and is based primarily on direction from the Management Conference determined during the Strategic Planning meeting held in January 2020 and subsequent guidance in May 2020 and September 2022. APNEP will focus themes for the next five years are:

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

The updated CCMP will remain consistent with APNEP’s ecosystem-based management approach. Actions not prioritized in the update will be opportunity driven. There will be additional CCMP-associated documents developed in 2023-24: monitoring plan expansion, financial strategy, and an updated engagement strategy to support the revised CCMP.

Overall Budget Proposal

For the timeframe of October 1, 2022, to September 30, 2027, NC-DEQ anticipates receiving \$4,531,500 under Cooperative Agreement 4T - 02D41823 through annual grants of \$1,819,600 to support activities geared towards implementing the Partnership’s CCMP and its mission under the “Infrastructure Investment and Jobs Act of 2021” (IIJA) or “BIL” - the Bipartisan Infrastructure Law, (P.L. 117-58). The proposed uses for this funding are highlighted below. Detailed information about each funding category is described within the narrative of this strategy.

Activity	Budget Proposal
CCMP Financial Plan	\$ 90,000
Spatial Decision Support	\$ 300,000
Water Quality Projects	\$ 802,000
SAV Projects	\$ 802,000
Coastal Wetlands Projects	\$ 802,000
Oysters Habitat Projects	\$ 802,000
Community Resilience Projects	\$ 802,000
Program Administration (5 yrs.) *	\$ 81,500
Travel / Meeting Support (5 yrs.)	\$ 50,000
Total Grant Funds	\$ 4,531,500

* *Supplies & equipment, other costs. Does not does not include indirect, personnel and fringe benefits.*

Proposed Activities & Projects

The following narrative provides an overview of APNEP’s proposed projects and activities for the timeframe of October 1, 2022, to September 30, 2027, to support activities implementing the Partnership’s CCMP Addendum and its mission with funds from the “Infrastructure Investment and Jobs Act of 2021” (IIJA) or “BIL” - the Bipartisan Infrastructure Law, (P.L. 117-58).

Our work is 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
7. Protecting Large Aquatic Ecosystems.

CCMP Implementation Financial Plan

Objectives: A financial strategy to support CCMP implementation.

Description: An updated APNEP CCMP needs several components including a Monitoring Plan, 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 Addendum will provide priorities for the next five years. Each document will each be developed by staff and the Management Conference, with updates to existing plans to support the revised CCMP (including APNEP’s Engagement Strategy which includes communications), as appropriate. Development of a Financial Plan will be guided by external expertise such as a member of the [Environmental Finance Center Network](#).

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.

This Financial Plan will consist of a narrative document and a subsequent Financial Plan table. The summary narrative would provide a summary of estimated costs and several larger funding opportunities within the APNEP program area. A response-to-comments table will also be produced to capture feedback and input from the Management Conference and other interested stakeholders, followed by staff responses.

Lead / Partners: Management Conference, NC DEQ, VA DEQ, others
Outputs/Deliverables: Summary Report - Finance Plan, Recommendations.
Estimated milestones: TBD
Outcomes: Funding opportunities for CCMP implementation
Anticipated long-term outcomes: Strategic approach to CCMP implementation
Estimated Cost: \$ 90,000
Estimated Leverage: \$ TBD
CCMP Actions: Supporting all in general
CCMP Outcomes: Supporting all in general
CWA Core Programs Addressed: Protecting coastal waters through the National Estuary Program
EPA Elements: Healthy Communities, Living Resources, Habitats, Water Quality

SPATIAL DECISION SUPPORT FOR CCMP IMPLEMENTATION

Objectives: To 1) develop a spatial targeting strategy for CCMP application of Bipartisan Infrastructure Law (BIL) funding, and 2) assess the uses of estuarine space and associated interactions with natural resources of CCMP focus.

Description: The Leadership Council (LC) has approved that CCMP implementation and BIL funds be focused for the next five years on water quality, SAV, coastal wetlands, oyster habitat, 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.

- 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 a steering committee, supported by staff, 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 space, 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 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 space and assessing associated interactions with natural resources of CCMP focus, including impacts to ecosystem services. The first step is to work with a steering committee, supported by staff, to develop a detailed scope of work, including goals, objectives, and deliverables.

Lead/Partners: Management Conference, NC DEQ, NC CGIA, others

Outputs/Deliverables: Summary Report – Spatial Targeting: 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: Use and resource maps and assessments.

Estimated milestones: TBD

Outcomes: Information to guide BIL funding for CCMP implementation and conservation and management of estuarine resources

Anticipated long-term 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: \$ 300,000

Estimated Leverage: \$ TBD

CCMP Actions: A1.1, A2.2, B2.2., C1.1, C1.2, C1.3, C2.1, C2.2, C2,3, C3.3., C5.1, D1.3, D3.1, D3.3

CCMP Outcomes: 1e, 2a, 3b

CWA Core Programs Addressed: Identifying polluted waters and developing plans to restore them; Permitting discharges of pollutants from point sources; Addressing diffuse, nonpoint sources of pollution; Protecting

wetlands; Protecting coastal waters through the National Estuary Program

EPA Elements: Healthy Communities, Living Resources, Habitats, Water Quality

Communications and Engagement

Objectives: Increase awareness of and access to APNEP’s BIL funding and Equity Strategy implementation. Increase awareness of and access to partner resources and other funding mechanisms that may be leveraged 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, 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 has hosted a Science Communications and Outreach intern through the Department of Administration State of NC Internship since 2018, and through AmeriCorps and other programs. 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 SAV, and recommendations for Diversity, Equity, Justice, and Inclusion into the Partnership’s outreach activities.

In 2023 we are participating in the STEP Internship Program funded by NCDEQ. The current proposed workplan for the intern is focused on assisting with communication and outreach related to BIL implementation. The intern will assist in creating webpages and public facing information to allow APNEP to share information regarding funding opportunities. The intern will assist with strategies to assist with implementation of the Equity Strategy and ensure benefits flow to underserved communities. The intern will assist with the spatial targeting and assessment activities related to 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 staff capacity including the NCDEQ HBCU Internship Program and programs that may be developed by NCORR and partner for resilience initiatives.

FY2023-2024 Plans:

- An intern has been hired for Summer 2023 to assist with communications and engagement materials. The proposed workplan is focused on updating APNEP’s website to include information on BIL funding and develop a strategy for distributing the information.
- Staff will update Engagement Strategy for the Partnership in-line with the 2023 CCMP Update, Equity Strategy, and DEI recommendations.

Undesignated CCMP Implementation Projects: Water Quality, SAV, Coastal Wetlands, Oyster Habitats, and Community Resilience

Objectives: Targeted CCMP Implementation Projects: Water Quality, SAV, Coastal Wetlands and Oyster Habitats, and Community Resilience.

Description: 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 Citizen Advisory and Science and Technical Advisory Committees 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.

Partners:	To be determined by project or activity
Outputs/Deliverables:	Partnership building, CCMP implementation
Outcomes:	CCMP implementation
FY2022-24 Cost:	Per each focus area as follows: Water Quality \$802,000; SAV \$802,000; Coastal Wetlands \$802,000; Oyster Habitats \$802,000; Community Resilience \$802,000
Estimated Leverage:	\$ 800,000 per each focus area
CCMP Actions:	TBD
CCMP Outcomes:	TBD
CWA Core Programs Addressed:	Healthy Communities, Living Resources, Habitats, Direct Assistance, Trainings, Water Quality
EPA Element(s):	Establishing water quality standards; Identifying polluted waters and developing plans to restore; Addressing diffuse, nonpoint sources of pollution; Protecting wetlands; Protecting coastal waters through the National Estuary Program

APNEP will work with its management conference and partners to refine this long-term strategy to ensure effective and efficient implementation. The long-term strategy builds upon efforts by the Leadership Council, STAC, Action Teams, and Monitoring and Assessment Teams, and partners in implementing the CCMP and complimentary plans including, but not limited to the NC Coastal Habitat Protection Plan (CHPP), Currituck Sound Coalition Marsh Conservation Plan, Oyster Blueprint, Virginia Coastal Master Plan, Virginia Shoreline Management Plan, NC Natural and Working Lands Action Plan, and ecosystem and community resilience objectives under the NC Climate Risk and Resilience Plan (RARP).

The following undesignated items provide examples of potential projects and topics that are presently consistent with APNEP's CCMP and its developing update. This is not an exhaustive list and per EPA guidelines on page 9, the BIL long-term strategy may have less detail than the annual workplans, and may be amended, modified, or revised at any time. The guidance states that the long-term strategy should contain the types of projects that may be funded with BIL funds, opportunities to leverage other funds, and potential coordination with other initiatives. APNEP has included projects categorized by the CCMP focus areas below. This section outlines continuation of existing APNEP led initiatives, support of partner led initiatives, identifies 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.

The Leadership Council encouraged staff to think about cross-pollinations amongst the categories below and looking for opportunities for projects that touch on one or more focus areas. Staff have created a table to demonstrate the relationships between initiatives and will generate a more detailed matrix once the CCMP update is final to assist with project identification and prioritization. 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.

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 bring partners together to establish these relationships, which are informing current implementation activities tied to the CCMP, CHPP, and other partner plans. The 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 already 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 SAV & Coastal Habitat partners to water resources and community resilience practitioners, and local governments.

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 presence 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 staff have also successfully facilitated efforts to promote SAV protection including policy development to inform updates to the NC Coastal Habitat Protection Plan (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.](#)

Assessment of SAV Protection Policies (RFQ)

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.

High-Salinity SAV Monitoring/Mapping

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.

Low-Salinity SAV Monitoring Protocols Development

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.

Analysis of Low-Salinity SAV Sentinel Site Data

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 this 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 extent metric report.

Water Quality

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. 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.

An area that APNEP can continue to assist and 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. This region lacks 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). Additionally, many VA partners are often not supported to devote time to working in the southern watersheds that flow into Albemarle Sound, as they are directed to prioritize working to meet Chesapeake Bay TMDL requirements. Interagency designees identified the Chowan River Basin as a focus area for implementation of APNEP’s MOU with Virginia, as further described in the Community Resilience Section below.

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. Significant effort has also been spent to re-strengthen relationships and coordinate closely with the Virginia Natural Heritage Program on the Chowan Healthy Waters Program (a proactive program endorsed

by EPA to devote resources to watershed protection vs. costly restoration) and maintain relationships with the Virginia DEQ Tidewater Regional office despite frequent turnover.

APNEP is also 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. Partnering to advance this program will also assist APNEP in meeting Leadership Council direction to work more closely with local governments in addition to implementing relevant focus areas of the CCMP.

NC Nutrient Criteria Development Plan: APNEP staff and select STAC members are active in the NC Nutrient Criteria Development Plan (NCDP) process, now focused on the Albemarle Sound and Chowan River. Staff assisted the NC Division of Water Resources (NCDWR) 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. NCDWR has selected SAV as a biological indicator for the health of the Albemarle Sound and Chowan River. APNEP staff will continue to actively participate in nutrient criteria development for the Albemarle Sound and Chowan River until recommendations are accepted by NCDWR, 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 the NC Division of Water Resources on developing water revised quality standards in the Albemarle Sounds and Chowan River for implementation of the NC Nutrient Criteria Development Plan. APNEP will continue to fund research and water quality monitoring to assist with further development of water quality standards in the Sound.

WRIT Prioritization: APNEP is an active member of the Watershed Restoration Improvement Team (WRIT) led by the NCDEQ Division of Water Resources. 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 NCDEQ and several from outside including the NC Wildlife Resources Commission (WRC), NCDA&CS Division of Soil & Water Conservation (DSWC) and NC Forest Service (NCFS), and the NC Land & Water Fund (NCLWF). The group includes staff working on nonpoint source pollution issues including basin planners, TMDL/303d listing, Nine Element and Watershed Action Plans, 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 and assisted with both CCMP and CHPP implementation. APNEP will work with WRIT members to

identify targeted needs and prioritize projects within the APNEP region 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 statewide NC Watershed Stewardship Network (WSN). APNEP has participated in past collaborative efforts led or supported by WSN including the NC Aquatic Data Hub and could also leverage this group for BIL implementation.

Harmful Algal Bloom Identification and Prevention: This is identified as a priority project for the Albemarle Commission in their RISE project portfolio. APNEP is currently participating in discussions led by NCORR to identify champions to move this project forward and will identify a more specific role to play to assist with this effort in future iterations of this workplan as these discussions evolve. APNEP will work with partners on similar efforts in other regions as needed. A summary of the RISE project is included below:

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.

Preliminary discussions with staff have included consideration of a workshop similar to the one held to inform the SAV Water Quality work described above and implement CHPP recommendations: [Making the Connection between Underwater Grasses and Water Quality](#). In March of 2020, APNEP, NC Division of Marine Fisheries, and The Pew Charitable Trusts, hosted a workshop in Raleigh, North Carolina, which brought together professionals from science, management, and conservation communities to discuss linkages between submerged aquatic vegetation (SAV) and water quality. After learning about the current state of knowledge regarding water quality and SAV in the state's estuaries throughout the morning, workshop attendees spent the afternoon in breakout groups identifying data gaps and management strategies that could be implemented in the near-term to facilitate SAV protection and restoration. A summary report from the workshop was published and recommendations integrated into the NC DMF- and APNEP-coordinated 2021 revision of the [N.C. Coastal Habitat Protection Plan](#) (CHPP).

Chowan Healthy Waters Program: APNEP will continue to coordinate with Virginia Natural Heritage 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*. APNEP have worked with VA staff and partners to secure grant funding to implement these recommendations and other projects identified through partners (that also focus on anadromous fish spawning areas and passage) but have not yet been successful. Implementation of this plan can also help meet recommendations from APNEP MOU with Virginia, NCDEQ Chowan River Basin Plan, and the Tribal Coastal Resilience Connections project.

Stormwater Projects (Potential RFP)- If deemed a need by partners, APNEP will 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.

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 seeks to support partners like Partners for Environmental Justice, Carolina Wetlands Association, WRRI, NC Sea Grant, and NCDWR to offer support 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), and APNEP aims to support this partnership and will seek additional opportunities to support similar efforts related to the UWFP elsewhere in our region.

Coastal Wetlands

APNEP’s focus on coastal wetlands has largely focused on Submerged Aquatic Vegetation as described above. One APNEP staff member coordinates closely with the Division of Marine Fisheries on NC Coastal Habitat Plan Coordination. Staff have been involved in other initiatives described below that promote identification, protection, and restoration of coastal wetlands. These include supporting research to inform policy development 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 coastal wetlands mapping. Leadership Council members identified this as a focus area for APNEP’s CCMP implementation for the next five years.

Coastal Wetlands Mapping

To address another gap in coastal habitat areal extent metrics APNEP will work with partners such as NC Wetlands Plan staff (NC-DWR), PEW, NC Division of Coastal Management, Coastal Habitat Protection Plan (CHPP) team members, South Atlantic Salt Marsh Initiative, and other groups to develop a needs assessment of mapping wetlands in the region. Working with APNEP’s Wetland Resources Monitoring and Assessment Team, a pilot mapping deliverable has been developed by applying a multi-platform approach through incorporation of databases such as NOAA’s C-CAP wetland classes and APNEP’s SAV infrared imagery. Like SAV, this mapping product will be valuable when developing an APNEP status and trends metric report.

Ecological Flows Project Phase III (Continuation of existing efforts). APNEP will work with the Ecological Flows team to identify needs and develop a scope for Phase III. A pilot project is currently being conducted under contract as described in the 320 workplan, 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.

Facilitate the Expansion of Living Shorelines (RFP): 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 Living Shorelines Action Team 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.

Natural and Working Lands Action Plan: APNEP participated in the development of the [NC Natural and Working Lands Action Plan](#), which is included as an appendix to the [NC Climate Risk and Resilience Plan](#). APNEP continues to participate in the NWL Coastal Habitats and Pocosin Restoration implementation workgroups which consist of diverse agency, university, and non-governmental stakeholders. APNEP's involvement in these efforts have led to identification of regional gaps and needs and integrating resilience activities with existing programs and initiatives, including working closely with N.C. Division of Marine Fisheries to develop actions that complement the goals and objectives of both APNEP's CCMP and N.C. Coastal Habitat Protection Plan. APNEP will work closely with the NC Natural Heritage Program staff who oversee plan implementation and committee chairs to identify opportunities to fund implementation of the [recommended actions](#) from the NWL Action Plan. Staff also participate as a member of the Statewide Resilience Clearinghouse Committee discussed in the Community Resilience section. Example projects include:

Coastal Habitats – APNEP participates as a member of this team and worked to ensure implementation of both the CCMP and CHPP were considered during plan development. Staff will continue to work closely with the team to identify projects to assist with implementing the action plan. These 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.

Pocosin Restoration – APNEP participates as a member of the NWL Pocosins Workgroup, which has identified implementation actions in the NWL Action Plan linked above. In addition to providing funding to assist partners with implementing the recommendations, ideas include:

- Addressing the concerns of the 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 some 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.
- APNEP is already assisting with the action regarding implementing targeted interventions to protect peatlands from sea level rise and saltwater intrusion guided by scenario-based modeling through the Scuppernong Study discussed below.

Scuppernong Regional Water Management Study (continuation of existing effort):

At the request of NC Division of Parks and Recreation and approval from the Leadership Council in 2018, APNEP has been leading collaborative efforts to conduct a hydrologic study of the northern Albemarle-Pamlico peninsula since 2018. Staff facilitated a partnership between the NC Division of Parks and Recreation, NC Soil and Water Conservation, US Fish and Wildlife Service, the Albemarle Commission, and Washington and Tyrell Counties on a hydrologic study of the northern Albemarle-Pamlico peninsula including the headwaters of the Scuppernong River, Lake Phelps, and the surrounding land including Pocosin Lakes National Wildlife Refuge. This project was included in the RISE project portfolio as a result. Funding will be needed for project expansion beyond the geographic scope of the Study being funded through the Water Resources Development Grant.

Currituck Sound Coalition Marsh Conservation Plan: Working closely with Audubon NC and other partners, APNEP recognizes the unique attributes of the freshwater marshes found in the Currituck Sound system. Not only is the sound among the most important places for birds in the world, but these wetlands also support human communities by filtering water, providing buffers against flooding and erosion, all while supporting a historically vibrant recreational economy. APNEP will provide funding for partners to implement actions recommended in the CSC Marsh Conservation Plan, which also furthers implementation of APNEPs MOU with Virginia.

Sentinel Landscapes: APNEP has been participating 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. Of these, 24 counties are in the Albemarle Pamlico watershed. The Sentinel Landscape designation is an opportunity to increase collaboration among a diverse group of partners in North Carolina to advance conservation efforts. A coastal coordinator was

hired by the NC Coastal Federation in 2021. Staff will seek opportunities to collaborate on regional projects as part of this initiative.

South Atlantic Salt Marsh Initiative's (SASMI): APNEP was invited to review the South Atlantic Salt Marsh Initiative's (SASMI) draft regional conservation plan and attend a virtual meeting for North Carolina state agency representatives in December 2022. 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 is bringing 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. Staff will continue to track this initiative to identify opportunities for collaboration given that coastal wetlands have been identified as a focus area under the new CCMP.

Oyster Habitats

As a member of the NC Oyster Steering Committee, APNEP has a long history of partnering with a diverse group of stakeholders involved in growing, harvesting, studying, managing, and eating oysters to protect and restore North Carolina's oyster habitats and fishery. Past efforts including a cost benefit analysis commissioned by APNEP to document how oyster habitat enhancement projects in North Carolina improve the coastal economy have led to significant investments from the NC General Assembly towards oyster restoration projects. APNEP has also directly invested in research and restoration projects and facilitated discussions to ensure protection and restoration of wild oyster populations. Current efforts are geared towards implementation of the NC Oyster Blueprint and CHPP.

Oyster Habitat Mapping

To aid and support the management of wild oysters, it is necessary to have up-to-date maps of oyster shell bottom and oyster reefs. While NC Division of Marine Fisheries (DMF) has been able to map all estuarine shell bottom in depths less than 12 feet, mapping the intertidal oyster habitat continues to be a challenge, given the short window of time between tides and the shallow waters that need to be navigated. APNEP could provide support to DMF's shellfish mapping program pilot study "Remote Sensing Estuarine Bottom Habitat Mapping". This pilot study will use remote sensing technology, Unmanned Aerial Systems (UAS), and focus on the natural intertidal oyster populations along the NC coast.

Provide Direct Support for the Restoration of Wild Oyster Habitat: Oyster restoration continues to be a priority with the General Assembly, DEQ and the NC Coastal Federation. The APNEP will continue to provide leadership serving on the Oyster Steering Committee as well as the Living Shorelines Steering Committee. As opportunities arise, APNEP can help facilitate securing cultch and oyster shell for

larval settlement in intertidal and subtidal oyster reefs. These recommendations mirror the CHPP and the NCCF's Oyster Blueprint.

Community Resilience

In conjunction with its partner organizations, APNEP has a long history of working to protect and restore coastal ecosystems and the communities that depend on them as they face climate and natural hazard challenges, with a focus on estuarine ecosystems and the river basins and surrounding watersheds that flow into the Albemarle-Pamlico estuarine system. 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. APNEP's focus on protecting and restoring water quality and submerged aquatic vegetation, protecting natural ecosystems and coastal habitats, supporting the use of natural infrastructure, and working with local governments and communities to incorporate climate resilience into local planning align with the coastal resources and infrastructure and ecosystem strategies outlined in the state and regional initiatives described below.

APNEP continues to participate in activities stemming from implementation of the [NC Climate Risk and Resilience Plan](#) (RARP) including the Natural and Working Lands Stakeholder Team, Coastal Habitats and Pocosin Wetlands Subcommittees, Statewide Resilience Clearinghouse Steering Committee, Coastal Resilience Community of Practice, and the Regions Innovating for Strong Economies & Environment (RISE) program (all described in more detail below). Involvement in these efforts has led to identification of regional gaps and needs, notably related to gaps in participation and capacity of underserved and under-represented communities to participate in resilience planning activities.

As a result, APNEP has focused effort on two regional projects: the Tribal Coastal Resilience Connections Project and Scuppernong Study described below, in addition to several projects geared towards developing resilience tools and resources for local governments and communities. APNEP has led efforts to develop project proposals in collaboration with interdisciplinary partners, secure funding, and facilitate regional partnerships for project implementation. We propose to use BIL funds to expand upon these efforts which benefit underrepresented and underserved communities:

Scuppernong Study Engagement Strategy Development (Continuation of existing effort/ or expansion/model for other projects and regions): In partnership with the NC Coastal Reserve, NC Sea Grant, and TNC APNEP is using funding from NOAA to develop an Engagement Strategy to support development of the Scuppernong Regional Water Management Study described further in the Coastal Wetlands section above. The grant is geared towards assisting marginalized communities with flooding through equitable engagement. Team members have discussed using this a template that can be utilized for developing strategies to engage with other communities in the AP region and coastal plain, including alignment with the NC Sea Grant community needs assessment discussed below.

Tribal Coastal Resilience Connections (Continuation of existing effort)

Using supplemental EPA 320 funds designated to work with underserved and under-represented communities on climate resilience, APNEP 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. The goal of this initiative is to develop a strategy for incorporating resilience into tribal planning and community engagement processes. The Tribal Coastal Resilience Connections (TCRC) Team has been successful in generating research on tribal engagement in climate and resilience planning efforts throughout the U.S., launching a social media campaign, conducting outreach at conferences and events, and creating partnerships and building the groundwork for a sustainable program. A final report was finalized by the team in 2022 and is being shared with the NCCIA and other parties before distribution to the APNEP Management Conference and public. The second phase of the project was initiated in 2022. [Learn more.](#)

TCRC team members have advised that further discussion and thoughtful consideration regarding equitable inclusion of Tribes in the AP region is warranted. The Phase I Tribal Coastal Resilience 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, and numerous organized and self-identifying tribal groups. The situation creates a complicated and diverse landscape in which tribal interests could be easily overlooked. Regardless of recognition status, excluding Indigenous peoples from meaningful input on decisions that impact their current or ancestral homelands is an environmental justice issue. Ultimately, these decisions have the potential to alter the identities and ways of life for Indigenous peoples who still retain connections to their ancestral homes.

TCRC team members have emphasized that Tribal considerations and diversity, equity, inclusion, and environmental justice are not mutually exclusive. Recognition status should not be a barrier for inclusion for communities in the AP region. Given that environmental justice principles include recognition of vulnerable communities and their perspectives, planners and practitioners who seek to implement just climate adaptation must find ways to bring Indigenous perspectives to the fore. APNEP staff and partners are working closely with the Tribal Resilience Program Director hired to facilitate project management and serve as a liaison to Tribal communities to best address this through project planning and implementation.

The second phase of the project was initiated in 2022 and will require additional funds and staffing to develop the Tribal Resilience Toolbox envisioned, which includes the development of regional climate adaptation frameworks and geospatial mapping platforms to collect water stories and present climate threats and vulnerabilities identified by Tribal communities in this region. Based on preliminary coordination for this phase, it has been recognized that more work is needed to assess community readiness to engage in these more technical discussions surrounding climate resilience. The team is taking a step back to consider a different approach at this stage. The scope does include 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.

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.

Ideas and initiatives to support continuation of the Tribal Resilience project include:

- Community projects have been identified as a mechanism for engaging tribal communities to build trust and assess community readiness to engage in more detailed conversations about climate risk and vulnerability and participation in planning and adaptation processes. Activities could include, but are not limited to planting trees, building rain gardens, river cleanups and increased access to ancestral lands and waterways, protecting cultural assets and traditional ecological knowledge, building food security and sustainability, and projects to alleviate flooding.
- The Phase II SOW 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. Funding could be utilized for workshops, printed materials, and other mechanisms to integrate project findings into resilience planning in the AP region.
- Preliminary discussions have been held about the possibility of creating a program similar to RISE that is tailored to Tribal communities. However, the community engagement described above is a priority to assess community readiness before more fully developing this idea. It may be a long-term goal to strive for a Tribal RISE program through this strategy and seek additional sources of funding as needed.
- The Sierra Club is developing a Southeastern Tribal Water Program designed to build a coordinated, diverse, and inclusive program to protect water quality and prevent pollution. The program focuses on building connection and power among Indigenous communities to address water issues and climate resilience. APNEP could support activities relative to CCMP implementation in the AP region.
- Projects that highlight cultural history could be utilized to educate the public on Indigenous perspectives and ties to the land and waterways of the AP region, and foster Tribal community support for watershed and environmental stewardship. Examples from other regions include the Virginia Indian Heritage Trail and Gullah Geechee Corridor. Phase I of the TCRC project included a #WaterStory social media campaign—Phase II plans include building on a Terrastories map created for the team to collect these stories and sharing via an interactive GIS platform. Initial connections have been made with staff managing the newly formed NC American Indian Heritage Commission, which could be a good partner for this project idea. TCRC team members have noted that coordination through this group may also help with the inclusion challenges posed by working through intertribal commissions and groups that are only authorized to work with federal and state recognized tribes.

- Other partners (The Conservation Fund, TNC, VIMS, ODU, and Environmental Defense Fund, to name a few) are working with Tribes throughout the coastal plain and there may be opportunities to collaborate. Given the increased interest from multiple partners in working with Tribal communities, there have been suggestions of centralizing efforts and creating collaborative opportunities to streamline and reduce the burden on Tribal communities to participate in multiple resilience and environmental planning processes.

APNEP will continue to work with the Tribal Coastal Resilience Connections Team and Program Director hired to serve as a liaison to Tribal communities in the AP region in Virginia and North Carolina and throughout the Coastal Plain to develop more detailed recommendations for future iterations of the BIL workplan. In addition, staff will work through the newly formed CAC for ideas and recommendations. A NC Commission of Indian Affairs representative will be serving on the CAC.

Other Ongoing Community Resilience efforts:

Staff continue to explore options to assist with implementation of the actions recommended in the RARP, including integrating recommendations into the 2023 CCMP Update. Resilience was also incorporated as an overarching theme into our 2020 MOU with Virginia. At the direction of the Leadership Council, APNEP staff continue to seek opportunities to work more closely with local governments and communities throughout the region, so staff have focused efforts on projects and initiatives with that in mind. In addition to the Tribal Resilience and Scuppernong Study, projects include developing tools for local governments to incentivize the use of natural infrastructure to build resilience to storm driven flooding, and development of an Engagement Strategy to ensure equitable community engagement in marginalized communities impacted by flooding on the Albemarle-Pamlico peninsula.

Staff also work closely to integrate resilience activities with external programs and initiatives, including working closely with NCDMF to develop actions that complement the goals and objectives of both APNEP's CCMP and CHPP, working with NCDWR 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 will also participate in activities associated with the NC Flood Blueprint and continue to work closely with NCORR on the RISE initiative described below.

Regional Needs Assessment: APNEP staff believe a regional needs assessment could be utilized to better inform use of the BIL funding to build both ecosystem and community resilience and help with implementation of the equity strategy that has been developed as part of this workplan. A regional needs assessment may be incorporated into the scope for the Spatial Decision Support projects described above. (Potential RFQ). A needs assessment could be utilized to inform development of future iterations of the long-term BIL strategy and workplans and flesh out more specific projects to expand upon the example projects identified under the Community Resilience category.

In addition, NC Sea Grant has 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. Staff are in preliminary discussions about leveraging the work Sea Grant has already done to conduct a regional needs assessment and opportunities to partner moving forward. Sea Grant is also a team member on the Engagement Strategy being developed for the Scuppernong Study described below, which has been discussed as a potential model for working with other communities. More detailed information will be included in future BIL workplans.

Other ongoing efforts can be utilized to inform development of a regional needs assessment tailored to the Albemarle-Pamlico, including:

Natural and Nature-Based Features Project: APNEP has partnered with Wetlands Watch to conduct a needs assessment for a project designed to incentivize the use of natural infrastructure by local governments and communities to build resilience to storm driven flooding. Wetlands Watch is assessing locality needs, building a template tool comparison database based on a project developed for Virginia, and developing outreach materials that 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. This project will be completed in 2023 and recommendations will be included in future BIL workplan updates.

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 like the installation and maintenance of stormwater green infrastructure. Green stormwater initiative will not only offer stormwater education through community engagement, but also alleviate water quality and quantity impacts. 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. This project will be completed in 2023 and recommendations will be included in future BIL workplan updates.

NC Coastal Resilience Community of Practice – 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 community of practice meets regularly to bring together diverse coastal stakeholders to focus on how ecosystem resilience can build local community resilience. Staff will work through this group to assess community needs in the AP region and identify mechanisms to utilize BIL funding to benefit underserved communities.

NC Statewide Resilience Clearinghouse – APNEP participates as a member of the Steering Committee for this project, which was developed to address actions from both the NWL Action Plan and RARP and is geared towards providing resources for local governments and

communities as one of the target audiences. Staff from NCDEQ DMF and NCORR are leading development of this all-encompassing resilience resource guide for North Carolina with multiple components to help bring organizations/stakeholders together to coordinate parallel efforts to decrease redundancies. APNEP will work with the committee to identify opportunities to assist with implementing the Clearinghouse to benefit communities in the APNEP region. Staff are already working with the team to integrate the Wetlands Watch resilience database described above.

Engagement and Stewardship Projects: APNEP's CCMP includes objectives geared towards fostering watershed stewardship and providing meaningful opportunities for citizens to engage in protection and restoration of the region's resources. In 2021, with input from its Engagement and Stewardship Action Team, APNEP initiated a request for proposal (RFP) process that is being utilized to fund targeted engagement and stewardship initiatives. APNEP will work with the team and the Citizen Advisory Committee to tailor this approach for BIL funding to identify mechanisms that engage and provide benefits to underserved communities, supporting Equity Strategy implementation.

MOU Implementation Support (Continuation of existing effort): 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 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.

Regional Resilience Planning Support: APNEP will continue to work 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. RISE aims to support resilience primarily in the storm-impacted regions of North Carolina including the majority of the APNEP region. Vulnerability assessments were conducted for each of the coastal COGs participating in the program and project portfolios were released in early 2023. APNEP participates in several regional teams and has been utilizing the opportunity to better understand regional and local community resilience needs.

During the process, staff identified project needs that complement CCMP, MOU, and CHPP implementation and can assist communities with building resilience, including development of regional water quality sampling programs, regional and county-wide stormwater/watershed plans, inflow and infiltration projects that protect estuarine water quality and coastal habitats, assisting communities with impacts from sea level rise to stormwater and wastewater infrastructure, agricultural best management practices, estuarine shoreline erosion, and dealing with harmful algal blooms.

Staff are working closely with NCORR to identify projects eligible for BIL funding from the RISE portfolios released in 2023, particularly those geared towards providing benefits to underserved communities, and will update future BIL workplans as specific projects are identified. Several

projects are also identified in the Water Quality section, including projects focused on the Chowan watershed that build upon current APNEP efforts focused on SAV and water quality protection, Equity Strategy and MOU implementation, and partner led initiatives.

APNEP will also work with partners and through our MOU with Virginia 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. Resilience has been identified by agency designees as an overarching theme in APNEP's MOU with Virginia.

Targeted Climate Vulnerability Assessments (potential RFQ) – to build upon the region wide needs assessment and work being conducted through the RISE program described above, the Tribal Coastal Resilience Connections Project, and 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.

Support Coastal Counties with Building Resilient Water Quality Infrastructure: In addition to coordination through RISE and through other partners described elsewhere; the spatial planning, targeting, and needs assessment exercises will be developed to 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 and Water Resources to ensure efforts are not duplicated. APNEP will also partner with NCDEQ staff and partners administering ARPA funding to identify needs and ensure efforts are not duplicated. Potential projects include the following.

- Development of 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.

Albemarle-Pamlico Federal Partnership (new effort): 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 workplan.

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 NCDEQ, through the National Fish and Wildlife Foundation America the Beautiful Challenge. Though the grant application was 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 ideas to implement the Equity Strategy.

This type of partnership could build upon regional efforts while considering new opportunities to partner with additional organizations. For example, work in Roanoke River watershed led by USFWS and The Nature Conservancy has focused on reconnecting and restoring historical hydrologic flows and flooding regimes on the expansive bottomland floodplain forests on public and private land that is critical habitat for fish reproduction and nutrient retention.

Water Level Monitoring Stations (continuation – expansion)

In partnership with the NC Division of Emergency Management (NCDEM), APNEP supported placement of additional NC Flood Inundation Mapping and Alert Network (FIMAN) remote monitoring stations in several coastal communities. Data from gauges located within the Albemarle-Pamlico watershed contribute to knowledge that can be used to address future water management actions as well as increase real-time knowledge of water levels and flow conditions in the Albemarle-Pamlico region. APNEP will work with DEM to identify locations near # disadvantaged communities to install stations to assist with storm preparation and community resilience.

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, APNEP forums, and other APNEP-sponsored/partner events. In addition, staff monitor and often become involved in activities of federal and state resource management agencies that relate to CCMP implementation, the APNEP mission. Additional interactions occur with local and regional governments as appropriate. 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 Office was moved back to NC-DEQ's Office of the Secretary in March 2018. 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 administration costs are estimated at approximately \$16,300 for each year to cover expenses associated with equipment, supplies to support activities and projects described in this work plan. 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.

Indirect Costs

Currently, no indirect costs are anticipated (see Administrative Costs). 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 the post-CCMP 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 NCDEQ. 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.

BIL Project Manager

The Watershed Project Manager will assist in the administration of the BIL Grant funds and coordinate and management of contracting and associated activities within NCDEQ. The position also assists in the development and maintenance of broad support for the APNEP mission and CCMP implementation; conducts BIL-GPRA reporting; and provides staff support to the Leadership Council and Advisory Committees. Additionally, the position also works towards implementation of the CHPP with the APNEP Coastal Habitats Coordinator. Ms. Stacey Feken began serving in this role since October 2022, and served as Policy and Engagement Manager from March 2016-September 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

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. Jimmy Johnson has served in this role since January 2006.

**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. Funds will cover the cost of travel by staff and/or stakeholders from other NEPs or watershed organizations who collaborate with the NEP on issues of common interest. 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.
- When using EPA funds for travel, 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, the Management Conference, and EPA consider personal, face-to-face contact essential for information sharing and technology transfer. APNEP intends to use budgeted travel funds to support:

- 1) Management Conference, Action Team, Monitoring and Assessment Team (MAT), 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

Travelers may include Management Conference members, Action Team members and MAT members, citizens, and members of environmental or public interest organizations, business or industry representatives, academics, scientists, or technical experts as determined appropriate by the APNEP Director.

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.

Food

While most travel funds are associated with staff, Management Conference members, and Action Team participants, travel funds and funds associated with specific workplan 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 (2018) 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. Rates are listed in the table below.

NC-DEQ TRAVEL RATES*

Item	In-State	Out of State	Overnight Trip	Day Trip
Breakfast	\$ 9.00	\$ 8.60	Depart Office before 6:00 AM	Depart before 6:00 AM; Extend workday by 2 hours
Lunch	\$ 11.80	\$ 11.80	Depart Office by 12:00 Noon; Overnight return after 2:00 PM	NA
Dinner	\$ 20.50	\$ 23.20		Depart before 5:00 PM; Return after 8:00 PM; Workday extended by 3 hours
Hotel	\$ 78.90	\$ 93.20		NA

*1 July 2022 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. Rates are listed above.

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 its ability to promote 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 Virginia Department of Conservation and Recreation 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 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. Action Team 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

In general, 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 APNEP engagement are discussed in greater detail 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 also 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 actively seek opportunities to integrate external workgroup projects with CCMP implementation.

Appendix A. APNEP’s Diversity, Equity, and Inclusion Statement

The Mission of the Albemarle-Pamlico National Estuary Partnership (APNEP) is to identify, protect, and restore the significant natural resources of the Albemarle-Pamlico estuarine system. As such, the Partnership is committed to addressing environmental inequities by continually reevaluating our partnerships, protection and restoration efforts, and engagement processes through the lens of increasing diversity, equity, and inclusion throughout the Albemarle-Pamlico estuarine system.

Our partnerships with governmental, academic, community, and nonprofit organizations are the foundation of how we work; through our funding processes, representation within citizen advisory groups, strategic planning efforts, and long-term ecosystem priorities, we can foster a Partnership that is inclusive of the diverse perspectives within the region and which works to identify, protect, and restore the region’s significant natural resources in ways that increase equity among its communities. By facilitating communication and collaboration among different organizations throughout the region, APNEP seeks to leverage its resources and those of its partners to accomplish more together than any individual organization could alone. This can only be accomplished with a diverse array of perspectives and voices.

Increasing diversity, equity, and inclusion through our work is integral to our ecosystem-based management perspective, which views human communities as a vital component of the overall ecosystem. We are committed to approaching this work in a way that is inclusive of diverse connections to the environment, inclusive of perspectives that may otherwise be unheard, and increases equity through ecosystem protection and restoration efforts. We are also dedicated to broad inclusion in our educational and engagement efforts.

Specifically, we commit to:

1. Engage communities and stakeholders that are representative of the broader populations within our programmatic boundaries to implement the 2012-2022 Comprehensive Conservation and Management Plan (CCMP) and the Partnership’s Mission.
2. Incorporate diversity, equity, and broad community inclusion as an ecosystem outcome(s) with associated objectives and actions into the 2022-2032 revision of the CCMP.
3. Work to engage diverse communities and populations in the organization’s decisions and diversify the perspectives represented within all of Partnership’s management and citizen advisory groups.
4. Conduct an internal organizational diversity, equity, and inclusion self-assessment and provide externally facilitated training for management and citizen advisory groups and staff as warranted.
5. Report annually on actions taken to enact these commitments in our Annual Work Plan.

Affirmed September 1, 2020, APNEP Leadership Council