Virginia Coastal Zone
MANAGEMENT PROGRAM

Virginia Coastal Management Program Assessment & Strategy

FY2026 to FY2030

Draft submitted to NOAA May 30, 2025

Contents

Introduction

The Virginia Coastal Zone Management Program (Virginia CZM) was established in 1986. The Virginia Department of Environmental Quality (DEQ) serves as the lead agency for the program's network of state agencies and local governments that administer state laws and policies to protect and enhance coastal resources. Other state agencies in the network include the Virginia Marine Resources Commission (VMRC), the Virginia Department of Conservation and Recreation (DCR), the Virginia Department of Wildlife Resources (DWR), the Virginia Department of Health (VDH), the Virginia Department of Forestry (DOF), the Virginia Department of Agriculture & Consumer Services (VDACS), the Virginia Department of Historic Resources (DHR), the Virginia Institute of Marine Science (VIMS), Virginia Sea Grant (VASG), the Virginia Department of Transportation (VDOT), and the Virginia Department of Energy (Virginia Energy). Local governments are represented by the eight (8) coastal Virginia planning district commissions (PDCs).

The Virginia Coastal Policy Team (CPT) is made up of representatives from each of the state agencies including representatives from major programs within each agency, as well as representatives from each coastal PDC. The CPT advises the Virginia CZM program on coastal policy issues, funding decisions, and other topics as relevant. The CPT plays a major role in the Section 309 process as described throughout this document.

Section 306/306A of the Coastal Zone Management Act (CZMA) provides Federal funds to implement federally approved CZM programs with a required 1:1 state/local match. In contrast, Section 309, known as the Coastal Zone Enhancement Program provides match-free Federal funds to enhance coastal programs through program and policy development. Section 309 funding requires states and territories to develop "program changes" -- changes to the state's enforceable policies or authorities -- that help the state make improvement(s) in one or more of the nine (9) coastal Enhancement Areas.

- Wetlands
- Coastal Hazards
- Public Access
- Marine Debris
- Cumulative & Secondary Impacts of Growth & Development (CSI)
- Special Area Management Planning (SAMP)
- Ocean Resources
- Energy & Government Facility Siting
- Aquaculture

Coastal Needs Assessment and Strategy Development Process: Every five (5) years the Virginia CZM program completes high-level Phase I Needs Assessments for each of the nine (9) Enhancement Areas with input from partners and subject matter experts. Then the CPT meets to review and ultimately prioritize (high, medium or low priority) the draft assessments for each of the nine (9) Enhancement Areas. Metrics that are considered in determining priority include:

- Feasibility: Can progress be made within the time and financial constraints? Is successful development of enforceable policies likely? Is adoption of enforceable policies likely?
- Importance: Is there a significant threat in this Enhancement Area? How valuable (economically or ecologically) is the coastal resource?
- Appropriateness for the CZM Program: Is this an issue that other agencies are not addressing? Is there a need for coordination of efforts within Virginia?

After Virginia CZM and the CPT identify high priorities based on the Phase I Needs Assessments, the program staff complete more detailed Phase II Needs Assessments to identify gaps/needs and management priorities for each high priority enhancement area, concluding with a decision as to whether a Strategy will be developed. If warranted based on the Phase II Needs Assessment, Virginia CZM develops Strategies to address the gaps and management priorities surfaced by the Needs Assessments. Both the Phase II Needs Assessments and Strategies are developed with substantial input from CPT members and other program's partners and constituencies through focus groups and strategy work group meetings. The completed Virginia Coastal Needs Assessments & Strategies document is made available for public comment on the Virginia CZM website, and retained there once finalized. NOAA's Office for Coastal Management (NOAA-OCM) reviews and approves the document and included Strategies.

Once NOAA's approval is received, specific grant projects are developed to accomplish the Strategies over the five-year period. The specific proposals for these projects are also approved by NOAA-OCM within Virginia CZM's annual application.

Past Strategies

In 1997, Virginia CZM developed a three-year Needs Assessment & Strategy that reviewed each Enhancement Area of Section 309 and identified five (5) High priority areas (Public Access, Hazards, CSI, SAMP, and Aquaculture). These areas were selected based on the recognized need for regulatory or program changes. Based on the highest priority of need and high likelihood for success, three (3) Strategies were developed for the FY1997-1999 period: SAMPs for Northampton and Southern Watershed Areas and Aquaculture.

In 2000, Virginia developed a five-year Needs Assessment & Strategy that identified five (5) High priority areas with seven (7) proposed Strategies:

1. Wetlands: Wetlands Regulatory Programs Strategy
2. Coastal Hazards: Dune Management Strategy
3. CSI: Shoreline Management Strategy and Clean Marina Program Strategy
4. SAMP: Southern Watershed Area Strategy and Dragon Run Area Strategy
5. Aquaculture: Aquaculture Management Strategy

In 2005, Virginia CZM developed a five-year Needs Assessment & Strategy that identified six (6) High priority areas:

1. Wetlands
2. Public Access
3. SAMP
4. Aquaculture
5. Coastal Hazards
6. CSI

To address these priorities, the Coastal Program developed six (6) key Strategies:

- Intergovernmental Decision-Making (CSI)
- Shoreline Management (CSI, wetlands, public access)
- Prioritizing Conservation Corridors (CSI, wetlands)
- Dragon Run SAMP Implementation (SAMP)
- Seaside of Virginia's Eastern Shore (SAMP)
- Management Initiatives for Shellfish Aquaculture (Aquaculture)

- Administrative Actions: Data Collection, Indicator Development, Program Changes, and the 2010 Coastal Needs Assessment & Strategy (Public Access and other areas)

In 2010, Virginia CZM developed a five-year Assessment and Strategy that identified three (3) High priority areas:

1. CSI (Working Waterfronts, Shoreline Management, and Land & Water Quality Protection)
2. SAMP (Seaside SAMP)
3. Ocean Resources (Virginia Marine Spatial Plan)

In 2015, Virginia CZM developed a five-year Needs Assessment & Strategy that identified three (3) High priority areas:

1. CSI (Working Waterfronts, Leveraging Economic Benefits of Land Conservation)
2. Coastal Hazards (Shoreline Plan & Policy Development, Community Resiliency Plans)
3. Ocean Resources (Stakeholder Coordination for Interjurisdictional Coordination (IJC) Actions, Sand IJC Action, Ocean Data Collection/Synthesis or Tools, Marine Debris).

In 2020, Virginia CZM developed a five-year Needs Assessment & Strategy that identified three (3) High priority areas:

1. Coastal Hazards (Shoreline Management Plans for Natural Resilience, Community Resilience through the Resilience Adaptation Feasibility Tool (RAFT) and the Community Rating System (CRS))
2. Ocean Resources (Adopt Virginia Ocean Management Plan)
3. Marine Debris (Specific Actions for the Virginia Marine Debris Reduction Plan)

Current Needs Assessment & Strategies

The primary purpose of this document is to present Virginia CZM's Coastal Needs Assessment for the nine (9) Enhancement Areas and Strategies for addressing high priority areas for the Fy2026-2030 cycle. The process was based on NOAA's Section 309 Guidance (updated February 2025).

During a February 2025 CPT meeting, Virginia CZM staff summarized the Phase I Needs Assessments for each Enhancement Area and provided suggested priority rankings to the CPT. CPT members then individually ranked each Enhancement Area using a Google Forms survey. Individual scores were combined, and the overall ranking was discussed and ultimately supported by the CPT. Virginia CZM will focus Strategies on the following four (4) high priority Enhancement Areas over the next five (5) years:

1. Coastal Hazards
2. Marine Debris
3. Ocean Resources
4. Wetlands

Virginia CZM staff coordinated working meetings to develop the Phase II Needs Assessments and Strategies with members of the CPT and other subject matter experts. Stakeholder engagement is detailed in the Summary of Stakeholder & Public Comment section.

[VIRGINIA CZM WILL UPDATE THIS SECTION FOLLOWING PUBLIC COMMENT]. A draft of this document, which includes the Phase I Needs Assessments, Phase II Needs Assessments, and Strategies was submitted electronically via email to NOAA-OCM on May 30, 2025, then was posted for a public review and comment period from July 1, 2025, to July 31, 2025. For both these periods, an announcement

of the opportunity to review and comment on the draft Section 309 Needs Assessments & Strategies was made in the Virginia Regulatory Town Hall web site as well as on the Virginia CZM web site. Written comments that were received during this timeframe are included in Appendix VII at the end of this document. Virginia CZM will submit a final draft of the Virginia Coastal Needs Assessments & Draft Strategies to NOAA-OCM for approval in September 2025.

Summary of Recent Section 309 Achievements

The following is a summary of work funded or otherwise supported by Virginia CZM that resulted in progress on the Strategies developed for the FY2021-2025 Section 309 cycle.

Coastal Hazards

The goal of the FY2021 – 2025 Coastal Hazards Strategy was to enhance state and local capacity to adapt to coastal hazards by evaluating and strengthening laws and policies, promoting shoreline resiliency through enhanced planning, and increasing community resilience. To date, the work supported by the Coastal Hazards Strategy has accomplished these goals through policy analysis and recommendations, development of a technical document to inform living shoreline design standards following new state policy and guidelines, and increased locality participation in resilience-building programs like the Federal Emergency Management Agency (FEMA)'s Community Rating System (CRS) and the Resilience Adaptation Feasibility Tool (RAFT). More details on specific projects and accomplishments supported by the Strategy are included below, including the following program changes:

- Technical resource document supporting the implementation of amendments to the Virginia Tidal Wetlands Act (a Virginia CZM enforceable policy) passed by the Virginia General Assembly (GA) in 2020 mandating the use of living shorelines as the default option for shoreline erosion control.
- Since 2021, enrollment of two (2) Coastal Zone localities (Henrico County and the City of Newport News) in the CRS program to receive discounts for their policyholders in FEMA's National Flood Insurance Program (NFIP) by taking steps to build community resilience.
- In 2024, the City of Petersburg Comprehensive Plan was adopted to include an Environmental chapter (pg. 199) that includes resilience and sustainability efforts supported by RAFT strategies and objectives.
- In 2025, the City of Petersburg developed a Strategic Tree Canopy Plan for the City (see "Department of Forestry - Community Forest Revitalization Program"), with plans to develop an ordinance to require a minimum tree canopy cover to provide resilience to extreme heat and flooding. At the time of writing this, the plan was scheduled to go to City Council for adoption in June 2025.

1. **FY2023 Project of Special Merit Task 1: Designing Living Shorelines for New Resilient Regulatory Standards**

   To further support the FY2021 – 2025 Coastal Hazards Strategy, this Project of Special Merit (PSM) led to the development of a new technical resource to support the implementation of amendments to the Virginia Tidal Wetlands Act (a Virginia CZM enforceable policy) passed by the GA in 2020 mandating the use of

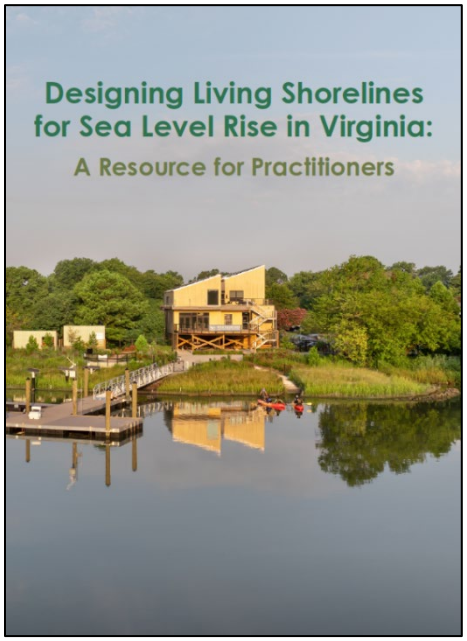


Figure 1. Final technical resource document authored by Wetlands Watch.

living shorelines as the default option for shoreline erosion control and requiring VMRC to update its Tidal Wetlands Guidelines to include the consideration of sea level rise (SLR) and resilience into all wetland regulatory permits. These resulting updated guidelines for wetlands permits issued by VMRC established important data requirements for shoreline projects but lack specific examples of adaptive living shoreline designs. This gap makes it difficult for design and construction professionals to implement effective solutions that address the dynamic challenges posed by SLR. The product developed as a result of this task, *Designing Living Shorelines for Sea Level Rise in Virginia* (**Figure 1**), directly addresses the challenges faced by shoreline professionals by offering detailed adaptive design examples and practical strategies. Living shorelines that utilize this technical document benefit from new design strategies and best practices to comply with the new enforceable policy, resulting in meaningful protection and conservation of Virginia's shoreline ecosystem.

2. **FY2021 – 2025, Task 91.02: RAFT Expansion, Assessments, & Workshops**

RAFT was developed by a core team from the University of Virginia Institute for Engagement & Negotiation (UVA-IEN), the former Virginia Coastal Policy Center (VCPC) at the College of William & Mary (W&M)'s Law School, and the Old Dominion University (ODU)/Virginia Sea Grant (VASG) Coastal Adaptation & Innovation Program. Following the closure of VCPC in 2023, Virginia Tech (VT) joined the three-university collaborative. The tool uses a scorecard that defines and measures local government environmental, economic and social resilience. After the scorecard is completed, the RAFT core team meets with local representatives to support their development of a resilience action checklist that identifies one-year actions to improve local resilience.

In the FY2016 – 2020 Coastal Hazards Strategy, Virginia CZM funded pilot implementation of RAFT in various Coastal Zone localities and then funded the expansion and implementation of RAFT to Virginia's Eastern Shore and Northern Neck regions. To build on this work, the FY2021 – 2025 Coastal Hazards Strategy supported the expansion of RAFT into the Middle Peninsula Planning District Commission (MPPDC) and Crater Planning District Commission (CPDC) through completion of scorecard assessments, workshops to develop resilience action checklists, and implementation technical assistance. The Strategy also supported pre-RAFT engagement with localities within the Hampton Roads region and the George Washington Regional Commission (GWRC) to prepare them for RAFT participation in the coming years and additionally provided support for RAFT alumni localities to continue supporting resilience activities.

In response to RAFT Activities, the City of Petersburg developed a Strategic Tree Canopy Plan for the City, with plans to develop an ordinance to require a minimum tree canopy cover to provide resilience to extreme heat and flooding. Petersburg also adopted a Comprehensive Plan with an Environmental chapter (pg. 199) that includes resilience and sustainability efforts supported by RAFT strategies and objectives.

Figure 2. RAFT Website

3. **FY2021 – 2025, Task 91.03: CRS Program Support & Growth**

One of the areas assessed through RAFT is whether localities participate in the CRS program under the NFIP. The CRS program provides an opportunity for participating localities to build resilience to flooding and reduce flood insurance rates for local flood insurance policy holders. The FY2021 – 2025 Coastal Hazards Strategy provided support for Coastal Zone localities to participate in CRS and improve their rating to receive greater discounts for flood insurance policy holders. Strategy funding has directly supported the Coastal Virginia CRS Workgroup where locality staff meet regularly as a community of practice to discuss and work to improve their CRS class. Additionally, Wetlands Watch provided technical assistance to eight (8) localities by evaluating the cost/benefit of participation in the CRS program based on the local government's unique characteristics. In addition to these evaluations, Wetlands Watch provided intensive CRS trainings for at least two (2) Coastal Zone localities per year. Since 2021 Wetlands Watch has provided 10 trainings (8 localities, 2 PDCs), and two (2) localities (Henrico County and City of Newport News) have newly enrolled in CRS. A total of 24 Coastal Zone localities have joined and participate in the CRS program to date.

4. **FY2023, Task 91.01: Working Waterfront Resilience Assessments**

In building on previous work via consecutive Section 309 CSI Strategies (FY2011-2018) by Virginia CZM to support working waterfronts (WWF) in Virginia's Coastal Zone, the FY2021 – 2025 Coastal Hazards Strategy provided support for assessments at approximately 20 WWF locations throughout the Coastal Zone to address flooding management and other coastal hazards challenges. The work involved creation of an memorandum of understanding (MOU) between WWF Executive Committee Members across various the four (4) participating coastal PDCs – Accomack-Northampton (ANPDC), Hampton Roads (HRPDC), MPPDC, and Northern Neck NNPDC), systematic identification of approximately five (5) WWFs per PDC for review, development and implementation of methodology for each PDC to assess their selected locations, and evaluation of each site's eligibility for funding from the Community Flood Preparedness Fund (CFPF). The assessments, conducted from January to December of 2024, focused on identifying infrastructure conditions, operational challenges, and vulnerabilities to coastal hazards, particularly flooding and SLR (**Figure 3** below). The methodology included site visits, interviews with harbormasters, and infrastructure reviews to create a comprehensive understanding of the current and future needs of each site. While not creating a new enforceable policy or program in and of itself, the WWF assessment provided valuable data and transferable methods to inform future resilience planning for Virginia's WWF infrastructure against coastal hazards.

Ocean Resources

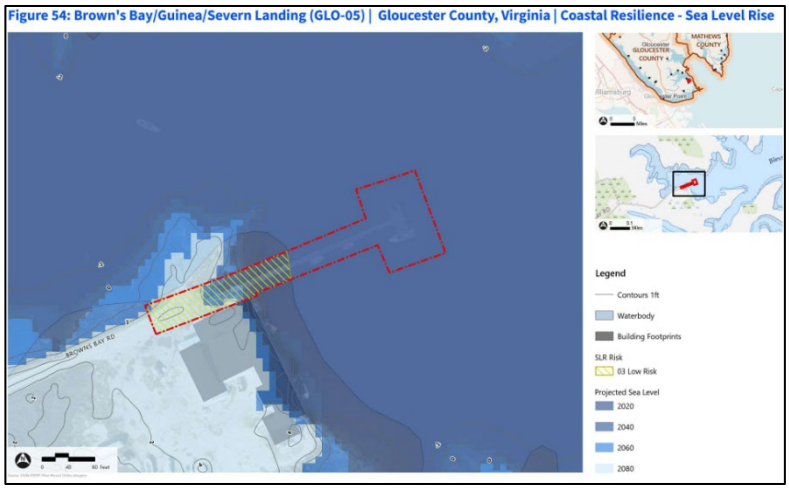


Figure 3. Desktop review of SLR projections for WWF in Gloucester County, Virginia.

The FY2021-2025 Ocean Resources Strategy proposed the development of the Virginia Ocean Plan (Plan). The Strategy provided funding for facilitation and policy analysis that was critical to developing the Plan. In addition to this capacity, Virginia CZM staff funded through Section 306 did much of the work in leading workgroup meetings and will continue to lead this effort as the draft is completed. Although many components of the Plan are still being drafted, 40 recommendations were produced through an extensive stakeholder engagement process with subject matter experts. A Steering Committee made up of relevant state agencies has been charged with reviewing these recommendations and suggesting proposed changes where applicable. Steering Committee members are also charged with speaking for their agencies such that support for recommendations is intended to represent support from the agency to participate directly or indirectly in implementation. The Plan is expected to be ready for state administration review in early 2026, with formal adoption either within the FY2021-2025 strategy timeframe, or within the first year of the FY2026-2030 strategy. The Plan is informed by many relevant projects supported through the FY2021 – 2025 Ocean Resources Strategy. In addition to assisting the development of the Plan, this Strategy supported the following program changes or material supports to pending program changes:

- Developed resources to inform a framework for the first Virginia Ocean Plan utilizing models from other coastal state programs.
- Virginia Department of Wildlife Resources (DWR) developed two (2) conservation plans that will be incorporated into the Plan and DWR's Wildlife Action Plan. Drafts of the Marine Mammal Conservation Plan and the Sea Turtle Conservation Plan are currently under review by state administration with formal adoption expected within the FY2021-2025 Strategy timeframe.
- Sustained programmatic approach to ocean stakeholder engagement, particularly with the fishing industry through a fisheries liaison.
- Draft MOU between VMRC, the Virginia Department of Conservation & Recreation (DCR), and the Virginia Aquarium which coordinates Virginia's sea turtle and marine mammal stranding network. The MOU identifies ways state agencies (including VMRC and DCR) can leverage existing resources to support the stranding program. For example, developing mechanisms to formalize VMRC marine police boats providing support to stranding network to include towing deceased marine mammals to landing sites. Pre-identification for suitable public lands (owned by DCR) for landing a large marine mammal carcass, and other resource supports, will be completed in an ongoing FY2024 project under the current Section 309 Ocean Resources Strategy.

Additional detail on these projects is provided below:

1. **FY2021-2022, Task 92.01: VCPC Virginia Ocean Plan Policies, & Virginia Ocean Plan Development**

   Initial work to develop a Virginia Ocean Plan began with support through the FY2021 – 2025 Ocean Resources Strategy to the former VCPC to facilitate meetings of an Ocean Planning Committee, review and report on other state ocean plans and associated policies, develop a communications plan, and draft an initial framework and outline for the plan based on the previous review. The second year of this project resulted in a report on the designation of prime fishing areas in Virginia and the necessary policy and law amendments needed to achieve similar designations in Virginia, as well as stakeholder feedback solicited to inform the mapping of areas designated for recreational fishing, recreation, conservation, and scientific research. In addition, FY2024 funding supported UVA-IEN providing technical and facilitation support during the stakeholder engagement (work groups) and Plan development process.

2. **FY2021 - 2022, Task 92.03 DWR Marine Mammal/Sea Turtles in Virginia Ocean Plan**

   To enhance the broader Virginia Ocean Plan, the FY2021 – 2025 Ocean Resources Strategy supported the development of updated Marine Mammal and Sea Turtle Conservation Plans by DWR. These two (2) plans are pending review by Virginia's Secretary of Natural & Historic Resources. The finalized plans will be part of the broader Virginia Ocean Plan and will help (1) guide the conservation and management of sea turtles and marine mammals in mid-Atlantic waters; (2) encourage buy-in from the regulated and conservation communities through participation in the development of the plans; (3) inform the development, implementation and/or evaluation of laws and policies designed to protect marine species in a manner acceptable to the regulated community; (4) strengthen cooperation in the region in the management of shared protected marine resources; (5) establish the framework needed to ensure cooperation among partners when managing unusual mortality events, fishery interactions, and other incidents involving sea turtles and marine mammals; and (6) ensure that conservation and management of these species is conducted through an informed planning process.

3. **FY2023, Task 92.01 VMRC Interagency Stranding MOU**

   Under the FY2021-2025 Ocean Resources Strategy, Virginia CZM supported work by VMRC, DWR, and the Virginia Aquarium to evaluate the resources required for large whale stranding response in Virginia and develop a draft MOU among these agencies to coordinate stranding response and provide state resources for the Virginia Aquarium. This Section 309-funded project was later continued with non-Section 309 funds to carry out the implementation of this work and codify the use of state resources to support stranding response.

4. **FY2021-2025, Task 92.02 VCU Virginia Ocean Plan Stakeholder Engagement, Ocean Fisheries Stakeholder Coordinator**

   The Ocean Resources Strategy has supported a Virginia Ocean Planning Stakeholder Engagement Coordinator role at Virginia Commonwealth University (VCU) to continue developing relationships with Virginia ocean stakeholders and provide policy input and analysis to support the Virginia Ocean Plan, specifically pertaining to the commercial fishing sector. In later years of this task, the role was changed to Ocean Fisheries Coordinator to specifically focus on building relationships with this industry. This project has also received match support from VMRC to make up for the lack of a central coordinating organization for Virginia's commercial fishing industry. The coordinator continues to be a primary point of contact for facilitating outreach and engagement with fishing industry stakeholders, arranging and establishing meetings, and

communicating with those stakeholders to inform them of relevant updates to Virginia's ocean uses and learn from their experience as it pertains to ocean issues. The Coordinator also obtains relevant data from the commercial fishing industry, works with regional plannings bodies such as the Mid-Atlantic Regional Council on the Ocean (MARCO), and coordinates with other Mid-Atlantic fisheries groups to maintain the sustainability and persistence of this industry despite increased marine development.

Marine Debris

The goal of the FY2021 – 2025 Marine Debris Strategy was to support the development and adoption of specific actions included in the updated 2021 – 2025 Virginia Marine Debris Reduction Plan (VMDRP). In 2014, Virginia became the first state on the East Coast to publish a marine debris reduction plan. The original VMDRP was developed in light of Virginia CZM's 2010 Section 309 Needs Assessment where Marine Debris was ranked as a High priority. The VMDRP has been periodically updated with the most recent comprehensive update occurring in 2021, and in subsequent years of this Marine Debris Strategy Virginia CZM provided funding to implement any number of the VMDRP's 50+ specific actions addressing consumer debris and single-use plastics, derelict fishing gear (DFG), microplastics and microfibers, and abandoned and derelict vessels (ADVs). More details on specific projects and accomplishments supported by the Strategy are included below, including the following program changes.

- In 2021, the GA passed House Bill 2159 which was signed into law banning the intentional release of nonbiodegradable balloons outdoors. This law (Virginia Code § 29.1-556.1) was enacted after two previously failed attempts. Data from beach balloon monitoring and general marine debris monitoring projects funded by this and previous Marine Debris Strategies were used by partners to prepare an information packet that was instrumental in communicating the severity of the pollution issue to policymakers and the public.
- In 2021, the Virginia General Assembly passed House Bill 1902 banning the use of expanded polystyrene food and beverage containers with varying dates of implementation for large restaurant chains and smaller establishments. The Marine Debris Strategy funded the 2022 public perception survey created by Virginia CZM, Clean Virginia Waterways (CVW), and OpinionWorks which demonstrated that 63% of responders supported this initiative. As the implementation dates for this ban were delayed, groups campaigning for a faster implementation timeline found the survey results critical to obtaining over 50,000 signatures of support. Political representatives were also moved by the level of support in both the survey and the petition. As a result, the implementation of this ban was moved to 2025.
- In 2022, the Virginia General Assembly allocated $3 million in state funding to VMRC for the creation and administration of an Abandoned or Derelict Vessel Program which has enabled the removal of 87 ADVs from Virginia's waters since 2023.
- In 2024, the Virginia General Assembly updated Virginia Code § 29.1-733.25 allowing subdivisions of the government to clear a title for an ADV once they accomplish a specific list of public notice tasks. This law provides legal protection against liabilities that previously only existed if a local government had an ordinance in place to provide those protections.

1. **FY2021-2025, Task 93: Implementation & Development of Marine Debris Reduction Strategies**

   Through this Task, Virginia CZM has provided funding to partner organization CVW to support implementation of the VMDRP. Virginia CZM and CVW have accomplished the following activities in support of the VMDRP:

ADV Removal

From January 2021 to July 2022, Virginia CZM and CVW co-led the creation of the Virginia Abandoned & Derelict Vessel Work Group (ADVWG), which was comprised of Federal, state, and local government staff as well as nonprofit and industry representatives. This large collaborative research project developed recommendations to address ADVs in Virginia's waterways. The ADVWG's 2022 report was reviewed and approved by state natural resource agency leadership. The work group's efforts resulted in the allocation of $3 million in state funding to VMRC for the creation and administration of an Abandoned or Derelict Vessel Program. This funding enabled the removal of 87 ADVs from Virginia's waters using approximately one half of the state funding via grants to localities or Virginia Tribes before the remaining half was reallocated in spring 2024.

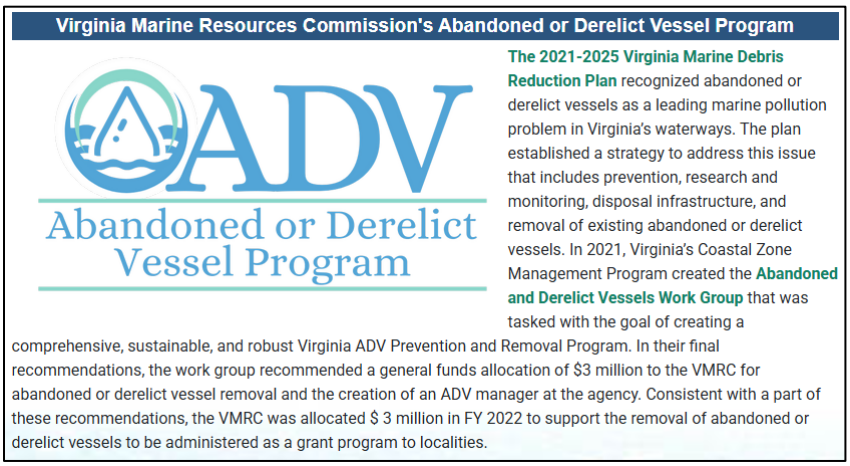


Figure 4. VMRC's Abandoned or Derelict Vessel Program webpage.

The Vessel Disposal & Reuse Foundation (VDRF), a nonprofit founded by U.S. veterans based in Virginia Beach, has also been very active in ADV removal (82 vessels to date) as well as public education and outreach. Virginia CZM staff continue to work with VDRF to ground-truth ADV locations and update a statewide ADV inventory created by Virginia CZM during the ADVWG process. Additionally, in 2024 a law was passed that updated § 29.1-733.25 of the Code of Virginia to allows subdivisions of the government to clear a title for an ADV once they accomplish a specific list of public notice tasks. This law provides legal protection from liabilities that previously only existed if a local government had an ordinance in place to provide those protections.

The effort from the ADVWG resulted in two (2) ADV-related grants being awarded to two (2) Virginia organizations. Lynnhaven River NOW (LRN), Virginia Beach-based environmental non-profit received a $2.9 million grant, *Removing Abandoned & Derelict Vessels in Virginia & Building Capacity for a Statewide Removal & Disposal Program* from NOAA in 2023 to remove ADVs in Virginia's Coastal Zone. Old Dominion University (ODU) also received $299,000 in NOAA funding via a 2023 grant to Virginia Sea Grant (VASG), *From Learning to Willing to Doing: A Collaborative Approach to Implementing the Virginia Marine Debris Reduction Plan* to help implement the VMDRP with an emphasis on prevention and educating citizens on proper disposal of ADVs and DFG in southside Hampton Roads. Virginia CZM is an active and official advisory partner in helping to implement both of these ADV grants.

BoatUS Foundation (BoatUS) is leading a nationally competitive $10 million grant program, also funded by NOAA, for the removal of ADVs throughout coastal and marine areas of the United

States, including the Great Lakes, U.S. territories, and Freely Associated States. In addition to the grant program, BoatUS is also developing a first-of-its-kind national ADV database. As noted above, Virginia CZM maintains an inventory of known ADVs in Virginia and is assisting BoatUS in the creation of a nationwide ADV inventory for NOAA as a grant deliverable using elements of the Virginia inventory as well as listed ADVs in the Commonwealth.

Virginia Marine Debris Summits

Two (2) Virginia Marine Debris Summits (VMDS) were held in 2022 and 2025, each gathering over a hundred stakeholders from all sections of government, the private sector, and academic institutions to exchange research outcomes, build collaborations, and generate new ideas for marine debris reduction. The 2025 VMDS, held in March of 2025, began the process of updating the 2021 – 2025 VMDRP for its next version by soliciting extensive feedback from stakeholders in attendance.

Figure 5. Attendees listen to presentations at the 2025 VMDS

Voter Interest Survey

CVW partnered with Opinionworks in 2022 to release a statewide survey exploring the perceptions and attitudes of Virginia's voters about plastic problems, and measured voters' support for plastic reduction policies that have been adopted in other states. The survey demonstrated broad concern for plastic debris in Virginia and strong support for relevant policies to address this problem. This survey inspired a similar effort that was supported by MARCO in 2024, addressing support for these policies across the mid-Atlantic.

Economic Impact of Plastic Pollution Literature Review

In collaboration with the George Mason Center for Regional Analysis, CVW staff completed an in-depth literature review examining peer reviewed studies on the economic impacts of consumer debris plastic pollution. This literature review was identified as an action in the 2021-2025 VMDRP.

Virginia Plastic Pollution Prevention Network

The Virginia Plastic Pollution Prevention Network (VPPPN), co-created by Virginia CZM, CVW and Eco Maniac Company in 2020, facilitates communication and increases collaboration among people and organizations working on all aspects of preventing or removing marine debris, litter, and single-use plastic items. The network also fosters collaboration in implementing aspects of the VMDRP. Members participate in monthly virtual meetings and receive a monthly e-newsletter.

Building Partner Capacity in the Use of Community-Based Social Marketing

In 2022, CVW partnered with the Virginia CZM office to co-host a three-day virtual Community-Based Social Marketing (CBSM) Workshop, provided by Dr. Doug McKenzie-Mohr. The workshop was offered to key partners of the VMDRP as well as Virginia CZM partners

working on native plantings, living shorelines, wetland protection/restoration, flood preparedness, resilience, and stormwater runoff. The workshop was held on February 27, February 28, and March 1 with 116 attendees.

Engaging the Stormwater Management Community

CVW hosted an annual stormwater and plastics pollution workshop each year of the Strategy to build local governments' capacities to prevent land-based sources of litter and marine debris from entering waterways. These workshops gathered stormwater professionals from across Virginia to spend a day each year sharing case studies, ideas, and strategies to address urban trash pollution. Workshops have also been important for implementing and updating the VMDRP.

Litter Cleanups

CVW has produced reports to summarize data from statewide litter cleanups. CVW also continues to conduct semi-annual surveys for marine debris and balloon litter on Fisherman Island National Wildlife Refuge (NWR).

VMDRP Video

Virginia CZM and CVW produced a video describing the goals and key components of the 2021 – 2025 VMDRP.

Five-Year (2021-2025) Budget Summary by Strategy

This table summarizes the funding for each year of the FY2021-2025 Section 309 cycle for each Strategy and components of those Strategies.

Strategy Area	Component Title	FY2021	FY2022	FY2023	FY2024	FY2025	TOTAL
Coastal Hazards	Resilient Enforceable Policies	$56,000	$56,000	$99,505	$50,000	$145,000	**$406,505**
	Community Resilience / RAFT & CRS	$120,000	$120,000	$119,125	$130,000	$125,000	**$614,125**
Ocean Resources	VA Ocean Plan Policies, Coordination & Development	$139,000	$110,000	$40,000	$120,000	$0	**$409,000**
	VA Ocean Plan Stakeholder Engagement	$44,000	$44,000	$55,000	$55,000	$85,000	**$283,000**
	Data Collection	$0	$39,000	$41,370	$0	$0	**$80,370**
Marine Debris	Marine Debris Reduction & Project Coordination	$170,000	$160,000	$160,000	$160,000	$160,000	**$810,000**
	TOTAL	**$529,000**	**$529,000**	**$515,000**	**$515,000**	**$515,000**	**$2,603,000**

Phase I Assessment

Wetlands

Section 309 Enhancement Objective: Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands. §309(a)(1)

> *Note: For the purposes of the Wetlands Assessment, wetlands are "those areas that are inundated or saturated at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." [33 CFR 328.3(b)]. See also pg. 14 of the CZMA Performance Measurement Guidance[1] for a more in-depth discussion of what should be considered a wetland.*

Phase I (High-Level) Assessment: (Must be completed by all states.)
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. Using the tables below as a guide, provide information on the status and trends of coastal wetlands. Be as quantitative as possible using state or national wetland trend data.[2] The tables are information presentation suggestions. Feel free to adjust column and row headings to align with data and time frames available in your state or territory. If quantitative data is not available for your state or territory, provide a brief qualitative narrative describing wetlands status and trends and any significant changes since the last assessment.

Qualitative data for wetlands in Virginia has not been sufficiently updated since the previous Section 309 Needs Assessment. In lieu of data tables, the following information describes wetlands status and trends.

Virginia has over 1 million acres of wetlands, 70% of which are in the Coastal Plain, and over 50% of those have been identified as high priority natural wetlands and floodplains.[3,4,5] Approximately 75% of Virginia's wetlands are palustrine vegetated, and the remaining 25% are estuarine.[4,6] Tidal wetlands in coastal Virginia total over 190,000 acres providing shoreline defense during tidal and storm events by reducing wave energy, and another 140,000 acres of non-tidal marsh wetlands exist in coastal Virginia.[5] From a shoreline perspective, Virginia's coastal wetlands consist of over 7,800 miles of natural shoreline, over 6,200 miles of tidal marsh shoreline, and over 68 miles of living shorelines (not including Eastern Shore barrier island shorelines).[7]

[1] coast.noaa.gov/data/czm/media/czmapmsguide.pdf
[2] National data on wetlands status and trends include NOAA's Land Cover Atlas (coast.noaa.gov/digitalcoast/tools/lca.html), the U.S. Geological Survey's National Land Cover Database (usgs.gov/centers/eros/science/national-land-cover-database), and the U.S. Fish and Wildlife Service's National Wetland Inventory data (fws.gov/program/national-wetlands-inventory).
[3] Virginia Wetland Program Plan 2021-2025
[4] Virginia State Wetlands Program Plan 2015-2020
[5] Virginia Coastal Resilience Master Plan Phase I
[6] 2016 DEQ Wetland Monitoring and Assessment Strategy
[7] VIMS Coastal Resources Tool

Historic wetlands data in Virginia remains limited since the last Section 309 Needs Assessment (fall 2019/winter 2020), making it difficult to evaluate long-term changes in wetlands from the past to present. While estimates do not exist for the entire Coastal Zone, some unpublished results suggest that in some rural areas of Virginia's Coastal Zone, wetlands decreased by ~2.7% from the 1970s to 2009.[8] However, the Virginia Department of Environmental Quality (DEQ) requires the replacement of wetlands that are impacted through permits with compensatory mitigation in order to ensure "no net loss" of wetland acreage or function and to maintain benefits to people, aquatic wildlife, and water quality. According to DEQ's statewide dataset, from 2002-2024 there were roughly 3,083 acres of permitted losses to non-tidal wetlands and 5,028 acres of non-tidal wetlands mitigated or compensated through the purchase of credits. Since tracking began in 2018, 39.5 acres of non-tidal wetlands have been lost through unauthorized activities statewide. Collectively, this amounts to a net gain of 1,905 acres in non-tidal wetlands statewide.[9] The Virginia Marine Resources Commission (VMRC) oversees the management of tidal wetlands in Virginia. The VMRC wetlands permits database shows that from 2013-2023, 8.63 total acres of tidal wetlands losses (4.85 non-vegetated acres and 3.78 vegetated acres) were permitted compared to 11.24 acres of required tidal wetland compensation. This alone represents a net gain of approximately 2.61 acres of tidal wetlands. VMRC states that a total of 154 acres in wetlands were gained when combining wetlands gained through compensation and permitted living shoreline projects. When subtracting the 8.63 total acres in permitted losses, the total gains are roughly 145 acres of tidal wetlands.[10]

When considering threats to wetlands, it is also important to look forward to projected losses. The release of Phase I of the Virginia Coastal Resilience Master Plan (VCRMP) in 2021 provided estimates for projected wetlands loss in the Commonwealth due to the effects of sea level rise (SLR). By 2040, roughly 36,000 acres of today's tidal wetlands are projected to become open water. By 2060, this figure is projected to rise to 93,000 acres, a 49% loss. By 2080, roughly 171,000 acres, or 89% of existing tidal wetlands may be permanently inundated or converted to open water. Wetland loss projections for each coastal Planning District and/or Regional Commission are shown in the table below.[5]

Region	2020 Tidal Wetlands Acres	2080 Tidal Wetlands Acres	% Loss
Hampton Roads PDC	40,600	2,940	-93%
Accomack-Northampton PDC	110,900	13,500	-88%
Middle Peninsula PDC	22,500	2,030	-91%
Northern Neck PDC	9,100	1,230	-87%
George Washington Regional Commission	2,450	350	-86%
Northern Virginia Regional Commission	1,100	165	-85%
Crater PDC	1,090	85	-92%
PlanRVA	4,150	340	-92%

Marshes are dynamic ecosystems that can adapt to rising sea levels under favorable conditions and may expand to new locations. The VCRMP evaluation looked only at the impacts of rising sea levels on

[8] Provisional Middle Peninsula Habitat Focus Area Assessment
[9] DEQ Virginia Water Protection Permit Program Database
[10] VMRC Permit Database

marshes as static entities. Alternatively, in a study funded by Virginia CZM, the Virginia Institute of Marine Science (VIMS) evaluated marsh migration pathways by decade from 2020-2100 using the definition of a tidal wetland established in state code (§ 28.2-1300 Code of Virginia) that is based on elevation.[11] In this analysis, they noted a similar level of wetland losses to the VCRMP, even while accounting for marsh migration (~100,000 acres by 2100 lost). In many of the potential marsh migration corridors, existing adjacent upland uses will likely limit the ability for the marshes to migrate upland. For example, by 2100 more than 9,700 acres of migration corridors will fall under impervious land use categories, nearly 40,000 acres will overlap with current coastal forests, and another 35,000 acres may overlap with current turf or grass on private and public lands.

Considering the information above, future wetland losses are projected to be much greater than those observed over the past few decades. Although uncertainty does remain regarding the potential extent of marsh migration to compensate for these losses, research indicates that wetland loss will greatly exceed any permitted losses that are mitigated by VMRC.

Management Characterization

1. Indicate any significant changes at the state or territory level (positive or negative) since the last assessment that could impact the future protection, restoration, enhancement, or creation of coastal wetlands.

Significant Changes in Wetland Management

Management Category	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y
Wetlands programs (e.g., regulatory, mitigation, restoration, acquisition)	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

In 2020, the Virginia General Assembly (GA) passed Senate Bill 776, amending The Tidal Wetlands Act to require Living Shorelines as the default shoreline erosion control practice, unless the best-available science suggests a site-specific need for a different practice. These amendments also required VMRC to update its wetlands permit standards to ensure newly installed living shorelines account for SLR and coastal hazards. Accordingly, VMRC prepared the VMRC Tidal Wetlands Guidelines Updated 2021, which aimed to accomplish the following:

- Aid citizens and local decision makers in making on-site jurisdictional determinations.
- Explain the risks and benefits provided by various shoreline treatments.
- Establish performance criteria for permitted shoreline activities including wetland mitigation.
- Ensure wetlands protection from SLR and coastal hazards.
- Identify criteria relating to living shorelines.

[11] VIMS Conservation Targeting Priorities Wetlands Migration and Land Use Conflicts data

- Identify preferred shoreline management options in the event the best available science shows that a living shoreline approach is not suitable.

Under a FY2023 Project of Special Merit (PSM) under the current Coastal Hazards Strategy funded by Virginia CZM, a technical resource document was developed to support these regulatory changes. This resource, which was released in January 2025, provides design strategies and case studies of living shorelines that are adaptable to SLR and resilient to the increasing intensity of coastal hazards.

The Center for Coastal Resources Management (CCRM) at VIMS has created a geospatial inventory of shoreline features in coastal Virginia including wetlands and erosion control practices like living shorelines. Virginia CZM is currently funding an update to this shoreline inventory. As a part of that update, the shoreline management model is also being updated. This model utilizes the best available science to recommend appropriate shoreline management practices in specific locations. CCRM is also mapping marsh migration corridors based on the combined outputs from four existing marsh migration corridor estimates. The original shoreline inventory including these updates is available on the Virginia Coastal Resources Tool.

New cost-share funding has been made available over the past five (5) years for the installation of living shorelines. In particular, the Colonial Soil & Water Conservation District (SWCD) was the first SWCD in Virginia to utilize funding from the Virginia Agricultural Cost Share (VACS) program for a living shoreline constructed at Berkeley Plantation. This project was also funded by the James River Association (JRA) and the Living Shoreline Collaborative (LSC) through a National Fish & Wildlife Foundation (NFWF) grant. A DEQ Agricultural Best Management Practice 0% interest loan was also used to secure up-front funding availability. Additionally, while Virginia Conservation Assistance Program (VCAP) funding was made available for living shorelines in 2017, there have been improvements in its geographic availability more recently. Under VCAP, shoreline property owners can receive funding to cover 80% of living shoreline installation costs up to $30,000. VCAP is administered by SWCDs, but not all SWCDs have the capacity to take on VCAP. While many SWCDs in the Coastal Zone do provide VCAP funding for living shorelines, there remain gaps. Recently, however, Colonial SWCD has entered into a memorandum of understanding (MOU) with the City of Hampton, the Three Rivers SWCD, and the Tidewater SWCD to implement VCAP on their behalf. Colonial SWCD has more memoranda of understanding in the planning stages.

Amendments to the Chesapeake Bay Preservation Act (CBPA) in 2020 now require local governments to encourage and promote coastal resilience and adaptation to SLR through performance criteria for evaluating development within Resource Protection Areas (RPAs). These changes may impact wetlands and non-tidal adjacent wetlands which can be included in RPAs. For more information on these changes, see the Coastal Hazards Phase I Needs Assessment.

In 2022, NOAA designated the Middle Peninsula of Virginia's Coastal Zone as a Habitat Focus Area with goals to restore habitat, improve water quality, and boost resilience. Wetlands restoration is a part of this initiative.

In 2023, the GA passed SB 1074 and HB 2181 to amend Virginia code §28.2-1203 so that any activity conducted in nontidal waters, provided that the activity is permitted under a Virginia Water Protection (VWP) permit from DEQ, no longer requires a submerged lands act encroachment permit from VMRC. In response, DEQ and VMRC enacted an MOA allowing VMRC to submit permit conditions for DEQ to consider when processing VWP permits, and DEQ is required to notify VMRC when not issuing a permit.

On May 25, 2023, the U.S. Supreme Court determined in *Sackett v. Environmental Protection Agency* that the jurisdiction of the Federal Clean Water Act (CWA) "extends only to those wetlands with a continuous surface connection to bodies that are waters of the United States in their own right, such that they are indistinguishable from those waters." With this decision, the U.S. Supreme Court reduced the geographical limits of wetlands and streams that are regulated under the CWA. Despite uncertainty regarding what changes will be implemented at the Federal level, Virginia's comprehensive definition of "state waters" in the Virginia State Water Control Law provides clarity on the geographical limits and type of wetlands and streams regulated at the state level in Virginia. Since Virginia's definition states that "'State Waters' means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands," no change in what constitutes a wetland in Virginia is anticipated.

On July 22, 2024, the U.S. Environmental Protection Agency (EPA) announced the award of a CPRG grant to a coalition of four (4) states, including Virginia (South Carolina, North Carolina, and Maryland being the others). As a part of this grant, DEQ received $50 million to protect and restore wetlands and forests on natural and working lands, which will be implemented by the Virginia Department of Wildlife Resources (DWR) and the Virginia Port Authority (VPA). The Nature Conservancy (TNC) was also included in this grant, with an additional ~$47 million of their funds going towards carbon sequestration projects in Virginia.

The 2014 Chesapeake Bay Watershed Agreement set goals of 1) creating or reestablishing 85,000 acres of tidal and non-tidal wetlands and 2) enhancing the function of an additional 150,000 acres of degraded wetlands by 2025. These outcomes advocate for voluntary wetland restoration and enhancement efforts which increase wetland acreage and function. Voluntary wetland restoration is separate from compensatory mitigation or restoration to comply with "no net loss" regulatory policies referred to above (i.e. mitigation banking). Between 2014 and 2022, only 4,310 acres of wetlands (5.07% of the goal) were gained in the Chesapeake Bay watershed and 60,666 acres of wetlands (40.44% of the goal) have been enhanced in the Chesapeake Bay watershed. Even though this includes areas outside of Virginia's Coastal Zone, it nonetheless represents a major shortfall of the Watershed Agreement goals.

Low reporting of activities may play a role in this low achievement, but according to the Chesapeake Bay Program 2020-2021 Wetlands Management Strategy and Wetlands Action Plan, the major factors influencing this low achievement include funding, staff capacity, incentives, landowner engagement, and leadership commitment. Furthermore, this tracking of progress does not include wetlands lost due to subsidence, SLR, or development, so it is possible that future wetlands losses may eclipse the small gains in wetland creation or enhancement that have occurred to date.

The Chesapeake Bay Program is now planning for 2025 and beyond where goals may be revised, but it is likely that a wetlands goal will remain despite potential modifications. This continuation of the 2013 Chesapeake Bay Watershed Agreement, however with a revised approach, is supported by the Chesapeake Executive Council in their November 2024 Charge to the Principals' Staff Committee: Charting a course Beyond 2025. Additionally, Governor Youngkin signed Executive Directive 10 on December 5th, 2024, acknowledging the Commonwealth's critical role in positioning Virginia for continued success in Chesapeake Bay restoration efforts. This Directive will "[launch] a series of strategic initiatives to ensure cleaner water, support our farmers and agricultural communities, and sustain the Bay's living resources, including oysters and blue crabs, which are vital to Virginia's economy," including the creation of a Statewide Wetlands Technical Team. Housed under DWR, this team will improve coordination and communication around the state's wetland strategy.

Subsequently, HB 2034 was passed in the 2025 GA Session directing the Secretary of Natural & Historic Resources (SNHR) to establish a policy task force to evaluate existing policies regarding wetlands protection, protection, restoration, creation, and mitigation in the Commonwealth and other states. The bill also enables the Task Force to recommend policy changes necessary to accelerate tidal and nontidal wetland identification, restoration, creation, and protection, and explore emerging science and innovation to ensure wetland health and survival. The Task Force must report its initial findings and recommendations by the end of 2025 and meet at least twice annually, with one (1) meeting held jointly with the Statewide Wetlands Technical Team to provide feedback on proposed recommendations.

On January 28, 2025, VMRC held a public hearing to consider a draft update of 1) their Guidelines for Establishment, Use, and Operation of Tidal Wetland Mitigation Banks in Virginia (January 1, 1998) and 2) their Wetlands Mitigation-Compensation Policy and Supplemental Guidelines Regulation (4VAC20-390), which was developed pursuant to the legislative mandate of HB 1950 passed by the GA in 2023. This legislation directed VMRC to "consider provisions relating to the generation of vegetated and unvegetated wetland credits from wetland creation, restoration, conversion, and enhancement activities, invasive species control, and the establishment of open water channels."

Despite the known benefits of reusing dredged material to restore coastal habitats such as tidal wetlands, beaches, and dunes, Virginia does not currently have a working process or policy to align dredging projects with the beneficial use of dredged material (BUDM). Myriad project elements including design, permitting, construction timeline, ecologic and socio-economic considerations, and financing must align between both the dredge and the proposed restoration project to properly coordinate and implement a comprehensive BUDM project. To address this lack of policy and to create a framework for BUDM partner collaboration, Virginia CZM has provided funding and support to VMRC via Section 306 funds (FY2023, Task 10) to develop a manual guiding BUDM in Virginia.

The project has involved robust stakeholder engagement via surveys, interviews, and an in-person meeting, and will end with an opportunity for stakeholders to review and offer feedback on the draft guidance document in January of 2025. The project concluded in June of 2025, but the guidance is intended to serve as a living document that will be updated by Virginia CZM, VMRC, and other partners with best practices, lessons learned, and future locations for BUDM as such projects begin to be implemented. In addition, Virginia CZM staff have also served in an advisory partner role to the Elizabeth River Project (ERP) as they develop a framework of best management practices for utilizing thin layer placement (TLP) of sediment for marsh restoration to mitigate the impacts of SLR in coastal Virginia. This project will also result in 1) a GIS tool to identify dredging locations and potential thin layer placement project sites, and 2) the creation of engineering designs for up to three one-acre demonstration projects. Both the VMRC guidance project team and the ERP TLP project teams have closely coordinated efforts with Virginia CZM staff support.

Similarly to living shorelines and other wetland restoration efforts, stakeholders have noted potential issues with BUDM project encroachment and potential impacts to submerged aquatic vegetation (SAV) and have begun to explore potential mitigation solutions to counteract these impacts.

In FY2024 Virginia CZM also provided $150,000 in non-competitive capacity funding under the Inflation Reduction Act (IRA) to the LSC via a 100% pass-through grant to VMRC. The funding has allowed the LSC to continue its core programmatic functions (Monitoring, Training, Implementation & Outreach, and Planning) while assessing organizational strengths/weaknesses, and identifying candidate areas and partners for geographic expansion beyond the lower James River watershed. Virginia CZM staff serve on

the Steering Committee and have been effective at organizing stakeholders and sharing information to leverage partnerships and other sources of funding to achieve LSC goals. The project will conclude in June of 2025, but the LSC has already formulated a sustainable funding strategy and strengthened its organizational structure, demonstrating yet another wise investment of Virginia CZM funds in an effective implementation partner.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High	__X__
Medium	_____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Virginia's wetlands provide resilience to coastal hazards, functioning as natural buffers, absorbing wave energy and reducing the impacts of storm surges. As a result, wetlands protect coastal communities from erosion and flooding exacerbated by SLR. They also provide critical habitat for diverse species, including commercially and ecologically valuable fish and shellfish, directly supporting Virginia's natural resource economies. Moreover, wetlands improve water quality by filtering pollutants and sequestering carbon, making them indispensable for resilience.

While Virginia's "no net loss" policies have been successful in mitigating losses to wetlands, the projected losses of tidal wetlands due to SLR present an unprecedented challenge. In the coming decades, the rate of SLR is expected to increase, which will accelerate marsh loss. Compared to the rate of SLR in the past century (~2.45 mm/yr over 1953-1983), the more recent rate of SLR (~4.73 mm/yr over 1983-2013) has nearly doubled.[12] This trend is not linear and is expected to continue intensifying with the projected rate of SLR in 2050 (~11mm/yr) more than doubling the recent rates.[13] Some areas with existing large marsh acreage may gain wetlands over the next few decades, however it is projected that smaller fringe marshes and tidal freshwater marshes will experience greater losses than those gains due to physical limitations to their migration and accretion.[14] Furthermore, research suggests that newly migrated wetlands offer less ecosystem services (e.g., less carbon storage, low utility by migratory birds[15]), and existing fringe marshes and large marsh complexes offer different ecosystem services, indicating that wetland acreage should not be the sole metric for restoration or resiliency success.

To address these needs, the available research and funding landscape is improving. Numerous models exist estimating wetland migration corridors and their potential conflicts with existing land uses. As mentioned above, TLP pilot projects are underway, and the work funded by Virginia CZM to develop a manual guiding BUDM in Virginia can play a pivotal role in preparing tidal marshes to adapt to SLR. Federal

[12] Ezer, T. and Atkinson, L.P., 2015. Sea level rise in Virginia–causes, effects and response. Virginia Journal of Science, 66(3), p.8.
[13] Sweet, W.V., B.D. Hamlington, R.E. Kopp, C.P. Weaver, P.L. Barnard, D. Bekaert, W. Brooks, M. Craghan, G. Dusek, T. Frederikse, G. Garner, A.S. Genz, J.P. Krasting, E. Larour, D. Marcy, J.J. Marra, J. Obeysekera, M. Osler, M. Pendleton, D. Roman, L. Schmied, W. Veatch, K.D. White, and C. Zuzak, 2022:Global and Regional Sea Level Rise Scenarios for the United States: Updated Mean Projections and Extreme Water Level Probabilities Along U.S. Coastlines. NOAA Technical Report NOS 01. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD, 111 pp.
[14] Mitchell, M., Herman, J. and Hershner, C., 2020. Evolution of tidal marsh distribution under accelerating sea level rise. Wetlands, 40(6), pp.1789-1800.
[15] Bird Use in Recently Created Marshes

funding through recent Bipartisan Infrastructure Law (BIL), IRA, and CPRG has supported recent efforts to restore wetlands and build resilience for communities, however these historic funding sources are limited and finite, leaving behind increased competition for remaining Federal funding (e.g., NFWF, Federal Emergency Management Agency (FEMA), etc.). Alternatively, state funding sources like the Community Flood Preparedness Fund (CFPF) and VCAP still present opportunities to increase wetland restoration and creation, albeit with limited resources and availability. In January 2025, EPA released a guide that describes how states can use revolving loan funds typically reserved for clean water and drinking water projects for wetland restoration. This could be an important source of funding but would likely require some communication, planning, and process development to increase use in Virginia, all of which Section 309 funding could support.

Without active management, coastal wetlands and their associated ecosystem services will decline due to SLR. There is not currently an organized strategy for preservation, or migration facilitation in Virginia's Coastal Zone. However, the Chesapeake Bay Program is shifting its strategy to prioritize wetland restoration in response to limited goal achievement in these topic areas, and due to a 2023 report from the Bay Program Scientific & Technical Advisory Committee (STAC) showing that nutrient reduction efforts alone are insufficient to meet Chesapeake Bay Program water quality goals. Similarly, recent legislative changes have prioritized living shoreline creation and wetland protection. Lastly state resources are currently being leveraged through a variety of forums including the Statewide Wetlands Technical Team led by DWR. The work done by this body and the Chesapeake Bay Program will undoubtedly identify gaps and needs that Section 309 funded projects can fill where other funding sources fall short. These factors present a significant opportunity for Virginia to employ more organized strategies to protect and restore wetlands in the Commonwealth, and Section 309 funding would provide additional resources to implement such strategies.

Given the challenges, opportunities, and need for support of the ongoing efforts discussed above, to adequately address the scale of the issues, the focused participation of the Virginia CZM network and additional funding that a wetlands strategy can bring to bear is more necessary than ever. As such, Virginia CZM staff recommend the Wetlands Enhancement Area as a High priority.

Coastal Hazards

Section 309 Enhancement Objective: Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise and Great Lakes level change. §309(a)(2)

Note: For purposes of the Hazards Assessment, coastal hazards include the following traditional hazards and those identified in the CZMA: flooding; coastal storms (including associated storm surge); geological hazards (e.g., tsunamis, earthquakes); shoreline erosion (including bluff and dune erosion); sea level rise; Great Lake level change; land subsidence; and saltwater intrusion.

Phase 1 (High-level) Assessment: *(Must be completed by all states.)*

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, indicate the general level of risk in the coastal zone for each of the coastal hazards. The following resources may help assess the level of risk for each hazard. Your state may also have other state-specific resources and tools to consult. Additional information and links to these resources can be found in the "Resources" section at the end of the Coastal Hazards Phase I Assessment Template:

    - The state's multi-hazard mitigation plan
    - Coastal County Snapshots: Flood Exposure
    - Coastal Flood Exposure Mapper
    - Sea Level Rise Viewer/Great Lakes Lake Level Change Viewer

Table: General Level of Hazard Risk in the Coastal Zone

Type of Hazard	General Level of Risk[16] (H, M, L)
Flooding (riverine, stormwater)	H
Coastal storms (including storm surge)	H
Geological hazards (e.g., tsunamis, earthquakes)	L
Shoreline erosion	H
Sea level rise	H
Great Lakes level change	n/a
Land subsidence	M
Saltwater intrusion	H
Other (please specify)	n/a

2. If available, briefly list and summarize the results of any additional data or reports on the level of risk and vulnerability to coastal hazards within your state since the last assessment. The state's multi-hazard mitigation plan or risk assessment or plan may be a good resource to help respond to this question.

[16] Risk is defined as "the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage." *Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001*

The March 2023 Commonwealth of Virginia Hazard Mitigation Plan (HMP) includes a Hazard Identification and Risk Assessment (HIRA) section, which characterizes flooding as a high-hazard risk. The HMP's section on flooding includes discussions of riverine and stormwater flooding, coastal storms, shoreline erosion, recurrent or "nuisance" high-tide flooding, sea level rise (SLR), and subsidence. When considered on its own, subsidence is ranked as a negligible hazard risk but is one of the contributing factors to relative SLR, which in turn compounds the serious flooding impacts affecting coastal Virginia. Therefore, land subsidence was characterized as a medium level of risk in this assessment. The HMP also characterizes geologic hazards as medium-low. Given the low magnitude of earthquakes in Virginia, this is characterized as a low-risk hazard in this Needs Assessment.

Further supporting the conclusions of the HMP is the Virginia Coastal Resilience Master Plan (VCRMP) (Phase I, Phase II). Phase II plan includes a comprehensive flood hazard analysis for the major sources of flooding (coastal, riverine, and rainfall-driven/stormwater) under baseline and forward-looking conditions that include increases in relative SLR and precipitation intensity, duration, and frequency. According to Phase I, the following impacts are projected between 2020 and 2080 across the Coastal Zone:

1. The number of residents living in homes exposed to major coastal flooding is projected to grow from approximately 360,000 to 943,000, an increase of 160%.
2. The number of residential, public, and commercial buildings exposed to an extreme coastal flood is projected to increase by almost 150%, from 140,000 to 340,000, while annualized flood damages increase by 1,300% from $0.4 to $5.1 billion.
3. The number of miles of roadways exposed to chronic coastal flooding is projected to increase from approximately 500 to nearly 2,800 miles, an increase of 460%.
4. An estimated 170,000 acres, or 89%, of existing tidal wetlands and 3,800 acres, or 38%, of existing dunes and beaches may be permanently inundated, effectively lost to open water.
5.

A major advancement in the Phase II effort is the incorporation of rainfall-driven flooding and its potential impacts which are widespread across coastal Virginia. The plan finds that both coastal and rainfall-driven flooding are significant hazards in coastal Virginia, with varying degrees of dominance depending on local geography. Regionwide, while rainfall-driven flooding is more widespread, in general, where it occurs, the models predict it will be shallow compared to coastal flooding. In contrast, coastal flooding affects less of the region's land area but has the potential to be deeper where it occurs. The Coastal Resilience Web Explorer, an online map viewer, will be updated later in 2025 and will provide the Phase II hazard and impact summary data in a variety of political and watershed-based scales as well as an inventory of resilience actions planned, underway, and completed and potential funding sources to support continued action.

Saltwater intrusion was identified as a high-risk hazard. The risk is greater for rural areas due to impacts on groundwater well system infrastructure and the lack of expensive programs like Hampton Roads' Sustainable Water Initiative for Tomorrow (SWIFT). They also highlight that the Eastern Shore is more susceptible to saltwater intrusion than other areas due to the low recharge rate of the aquifer there. This concern is supported by the work of the Eastern Shore Groundwater Committee. Saltwater intrusion was identified as a major concern under the "water quality" category in the Virginia Natural Resources Conservation Service (NRCS) FY24 Local Work Group Statewide Report, with Soil and Water Conservation Districts (SWCDs) in the Middle Peninsula, Northern Neck, and Eastern Shores highlighting it as a significant issue.

Management Characterization

1. In the tables below, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred that could impact the CMP's ability to prevent or significantly reduce coastal hazards risk since the last assessment.

Table: Significant Changes in Hazards Statutes, Regulations, Policies, or Case Law

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Elimination of development/redevelopment in high-hazard areas[17]	N	N	N
Management of development/redevelopment in other hazard areas	Y	Y	Y
Sea level rise or Great Lakes level change	Y	Y	Y

Table: Significant Changes in Hazards Planning Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Hazard mitigation	Y	Y	Y
Sea level rise or Great Lakes level change	Y	Y	Y

Table: Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Sea level rise or Great Lakes level change	Y	Y	Y
Other hazards	Y	Y	Y

2. Briefly state how "high-hazard areas" are defined in your coastal zone.

While the Code of Virginia does not specifically identify "high-hazard areas" generally, the Virginia Administrative Code at 13VAC5-63-200.B. does define the "coastal high-hazard area" as the area "within the special flood hazard area extending from offshore to the inland limit of a coastal primary sand dune, as defined in § 28.2-1400 of the Code of Virginia, along an open coast and any other area that is subject to high-velocity wave action from storms or seismic sources and shown either in the Flood Insurance Study or on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) or other flood hazard map as velocity Zone V, VO, VE, or V1-30 (areas subject to wave heights of three (3) feet (914.4 mm) or more)." In addition, the Commonwealth does highlight areas that are at greatest risk for flooding, especially coastal flooding. Virginia has several laws that manage development on high-risk coastal lands such as dunes, beaches, tidal waters, and wetlands. Virginia also recognizes the risks associated with development in floodplains in state and local floodplain management programs. Executive Orders 24 (2018) and 45 (2019) require state agencies to evaluate vulnerability of state-owned assets in flood hazard

[17] Use the state's definition of high-hazard areas.

areas and design projects in those areas accordingly and in compliance with the FEMA's National Flood Insurance Program (NFIP) and state and local floodplain regulations. Virginia also adopted the use of NOAA's intermediate high SLR projection as the state standard to be used in planning (e.g., VCRMP, Resource Protection Area (RPA) development, shoreline erosion practice design, etc.). State-level floodplain management efforts are coordinated by the Virginia Department of Conservation & Recreation (DCR). At the local level, some localities (e.g. Virginia Beach) have adopted local floodplain districts beyond the Special Flood Hazard Areas included in FIRMs.

3. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

The Community Flood Preparedness Fund (CFPF) was established by the Virginia General Assembly (GA) in 2020 and is administered by DCR to provide funding to reduce the impacts of flooding. Awarded funds can be used by communities to develop resilience plans and to implement projects that mitigate future flood damage. Over the past four years, CFPF grants have significantly changed the flood resilience funding landscape in Virginia. Statewide, greater than $150 million in funding has been distributed to more than 70 localities and PDCs over four grant rounds. Coastal Virginia has received about 80% of the awarded funds to date. In the coming years, the CFPF will continue to provide an important resource to lower-resourced localities seeking to increase their capacity, as well as to localities farther along in their flood resilience journey that are expanding flood resilience investments.

The Resilient Virginia Revolving Loan Fund (RVRF) was established in 2022 by the General Assembly of Virginia (§§ 62.1-199 and 62.1-203 of the Code of Virginia were amended and reenacted and Chapter 6 of Title 10.1 10.1-603.28 through 10.1-603.40) as a self-sustaining program to aid communities and property owners impacted by flooding. DCR announced the continuance of funding opportunities to increase flood protection across the commonwealth through the RVRF. RVRF offers up to $12.5 million in loans ($5 million to meet local cost-share requirements for Federal flood mitigation grants and $7.5 million for hazard mitigation of buildings) for localities to advance projects that will improve flood resilience.

As mentioned in the Wetlands Phase I Needs Assessment, the Tidal Wetlands Act was updated in 2020 to identify living shorelines as the default shoreline erosion practice, also requiring the Virginia Marine Resources Commission (VMRC) to update its wetlands permitting standards to ensure that newly-installed living shorelines account for SLR and coastal hazards. Please see the Wetlands Phase I Needs Assessment for more information on the guidelines update. The Virginia CZM-funded technical resource mentioned above provides design strategies and case studies to help implement these changes to the Virginia Tidal Wetlands Act and Guidelines.

The Chesapeake Bay Preservation Act (CBPA) was amended in 2020 to include coastal resilience and adaptation to SLR as a requirement for performance criteria for evaluating development within Resource Protected Areas (RPAs). Specifically, these amendments required the 84 Tidewater localities under CBPA to conduct a resiliency assessment to understand the impacts of SLR on any proposed land development within RPAs. The State Water Control Board adopted these amendments in 2021 and the Virginia Department of Environmental Quality (DEQ) has subsequently released updated guidance for localities

who must adopt updated local ordinances in their CBPA programs by October 31, 2025. Prior to this, Virginia CZM-funded work to support the development of draft guidance to address resilience and adaptation on proposed development within RPAs. This draft guidance supported the development of the existing guidance.

As noted above, the VCRMP Phase I was completed in December 2021 and Phase II is currently being finalized. Virginia CZM provided staff support during the development of Phase I. Phase I documented impacts from coastal flooding (SLR and coastal storm flooding) to coastal assets (social, natural, and built assets). It also created a projects and funding database that documented the coastal localities' resilience projects from the time of development and funding opportunities for resilience projects. The funding database also matches project types with possible funding sources. This database was built from a previously funded Virginia CZM database to inventory resilience project needs. In 2022, the GA codified the Virginia Coastal Resilience Technical Advisory Committee (TAC) under § 10.1-659 to assist with developing, updating, and implementing the VCRMP. Phase II development relied on the TAC and its four (4) subcommittees to provide 20 recommendations to either advance coastal resilience or improve the five-year VCRMP planning process. Virginia CZM provided funding via grants under consecutive (FY2020-2024) Resilience Focal Areas (RFAs) for all eight (8) coastal planning district commissions (PDCs) to participate in the TAC. Additionally, Phase II development involved the integration of riverine and pluvial flooding so that all flooding impacts can be assessed.

During Phase II of CRMP development, CZM provided funding to Coastal Planning District Commissions (PDCs) to work with their member localities to come up with resilience priorities over a 4-year period. A database bulk upload template was designed for the VCRMP Database and was used to populate the database during the VCRMP Phase II development.

In December 2024, DCR released the Flood Resilience Funding Opportunity Geographic Focal Area Viewer. This web map helps political subdivisions find and apply for flood resilience funding where they may have a competitive advantage by highlighting areas that are designated as priority or preferred for funding awards by various Federal and state programs. The viewer leverages 27 definitions linked to 136 different funding opportunities to generate the presented focal areas.

The Virginia Coastal Resilience TAC sunset on February 1, 2025 and will be replaced and superseded by the Flood Resilience Advisory Committee (FRAC). The GA codified the FRAC in 2024 pursuant to §10.1-659. The FRAC is responsible for advising DCR on topics related to flood resilience coordination, and assisting DCR with developing, updating, and implementing the Virginia Flood Protection Master Plan (VFPMP). VFPMP will provide an actionable plan for state government to use in crafting policies and programs to mitigate the impacts of flooding on people, the economy, and the environment. The VFPMP was originally established following a Joint Subcommittee Study and Report (House Document No. 64, 1989) that assigned coordinating responsibility for all floodplain management activities statutorily within the DCR. The Code of Virginia (§10.1–602, Powers and duties of the Department) sets forth the requirements of the Plan. In 2022, legislation (HB516/SB551) required that the Director of DCR shall prepare the VFPMP using a watershed-based approach no later than December 31, 2026.

In 2021, updates to Virginia's legislation in Chapter 51 focused on the development of a statewide prioritization process for transportation projects. This led to the Virginia Department of Transportation (VDOT)'s SMART SCALE program, which prioritizes transportation projects based on objective, outcome-based metrics. VDOT is exploring the integration of resilience criteria into the SMART SCALE scoring system ensuring that funding emphasis is provided to projects that enhance the transportation network's

ability to withstand and recover from environmental challenges. This approach ensures a more effective allocation of resources towards projects that not only meet immediate transportation needs but also contribute to long-term sustainability and resilience of Virginia's transportation infrastructure. VDOT also finalized their Virginia Transportation Resilience Improvement Plan in 2024.

Legislation in 2023 built upon Executive Order 45 (2019) requiring that all state agencies and departments comply with local floodplain management regulations or comply with established state standards for development in a floodplain that mirror the Federal Flood Risk Management Standards. Draft state standards were published in 2023 and include additional requirements for state-owned buildings in the floodplain that take into account SLR.

In July of 2023, the Virginia Coastal Policy Center (VCPC) at the College of William & Mary (W&M)'s Law School was closed. In its place, the university established the Virginia Coastal Resilience Collaborative (VCRC) to implement a comprehensive, university-wide approach to coastal resilience research, scholarship, education and advisory services. The VCRC is guided by two (2) advisory committees. The Core Advisory Team is comprised of W & M and VIMS faculty and staff. Its purpose is to provide internal strategic guidance, advocate for the VCRC's initiatives, and facilitate interdisciplinary collaboration across the university. The External Advisory Committee includes representatives from state agencies, the legislative branch, regional planning commissions, the private sector, military, non-governmental organizations, and academic advisors. This Committee offers external perspectives to ensure the VCRC's work remains relevant and aligned with the needs of communities and the Commonwealth of Virginia.

In 2024, Virginia adopted the 2021 Building Codes which include new standards to combat the impacts of storm surge. This includes limiting storage areas in enclosures to 200 square feet or less (R322.1.5), prohibiting enclosed areas below the design flood elevation and underground tanks in Coastal A Zones and Coastal High Hazard Areas (R322.3.6 & R322.3.10). It also includes requiring manufactured homes to be elevated no less than three (3) feet above grade in lieu of being elevated at or above the base flood elevation provided no manufactured home at the same site has sustained flood damage exceeding 50% of the market value of the home before the damage occurred. (C1612.1.1)

Congress authorized the U.S. Army Corps of Engineers (USACE) to conduct Coastal Storm Risk Management (CSRM) projects to study coastal storm surge and propose and build infrastructure to mitigate storm surge in the City of Norfolk, City of Virginia Beach, and Hampton Roads Peninsula. The CSRM in Norfolk is transitioning into the project phase, while the others are undergoing feasibility studies at the time of writing this report.

In 2024, Congress passed the Federal Bolstering Ecosystems Against Coastal Harm Act (BEACH Act), which among other things, made significant revisions to regions designated by the Coastal Barrier Resources Act (CBRA). CBRA restricts Federal funding for development in designated Coastal Barrier Resource System (CBRS) areas. This includes restrictions on financial assistance like flood insurance and other development funds. In Virginia, all 64 of the former CBRS units have changed, with the majority of the changes being minor adjustments to the CBRS unit boundaries since updated imagery was used. Additionally, 14 new CBRS units were added, with 3 of those units being partially or entirely comprised of historic CBRS units, and the other 11 being entirely new CBRS units. One of the former CBRS units was also removed, totaling 77 CBRS units for Virginia as of the passage of the BEACH act. For an updated map of these units visit the U.S. Fish and Wildlife Service (USFWS)'s Beach Act viewer.

Legislation in 2024 established the Office of Commonwealth Resilience as an Office of the Governor, relocating the Commonwealth's Chief Resilience Officer (CRO) from the SNHR and creating a structure and funding for additional permanent full-time staff. The legislation also established the Interagency Resilience Management Team (IRMT) in Virginia Code (§ 2.2-220.5), which is to be staffed by the Office of Commonwealth Resilience. In May 2025, the CRO position was filled.

The Growth & Opportunity Virginia (GO Virginia) funded an economic initiative, "Coastal Resilience and Adaptation Ecosystem", in Virginia's Middle Peninsula region, which was launched on August 12, 2024 as a living laboratory and support system for developing innovative technologies designed to protect coastal communities. The project focuses on establishing public-private partnerships between businesses and state universities to design and test resilience solutions under real-world conditions on a network of donated, publicly owned coastal properties managed by the Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPAA).

In January 2025, The Hampton Roads Planning District Commission (HRPDC) board adopted a resolution encouraging locality consideration of Regional Resilient Design Guidelines for Hampton Roads (resolution on page 26, guidelines on page 28). HRPDC worked with its member local governments for more than two (2) years on the development of these guidelines, which are intended to inform stormwater management and other planning and engineering applications. The guidelines, built on regional SLR scenarios that were adopted in 2018, include updated regional SLR projections, future rainfall projections, watershed-specific tailwater elevations, and joint tidal/rainfall design storms.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High	__X__
Medium	_____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Coastal Hazards encompass a host of distinct and compounding issues, with flooding being one of the main concerns. Significant investments have been made towards developing resilience to coastal hazards, including through Virginia CZM Resilience Focal Area investments and state level planning. However, there is much more work to be done, which can be evidenced by the recommendations established in 2024 by the Coastal Resilience TAC, the continued identification of flooding as a top priority hazard, and the continued selection of a RFA (FY2020-2022 and FY2023-2025) by the Virginia Coastal Policy Team (CPT). While state level efforts have geared up since the last Section 309 Needs Assessment, the magnitude and frequency of coastal hazards are projected to increase, and that will put unprecedented pressure on existing protections. For example, insurance providers are pulling out of some state markets, including areas of Virginia, that have increasing risks due to coastal hazards. Novel approaches to property insurance including parametric insurance may provide alternative options for property owners but the availability of data required to underpin such policies remains an issue.

Flood risk decisions often fall to local governments, where capacity constraints and growing issues related to coastal hazards present a myriad of challenges. Discussions at regional meetings of coastal PDCs have also highlighted the importance of this topic area and these issues at the local government level. Specific local government concerns include flooding and hazard mitigation generally, stormwater

management, heat islands and tree canopy cover, challenges accessing resilience funding, septic response to SLR, beneficial use of dredged material (BUDM), and working waterfront (WWF) flooding mitigation.

Virginia CZM does not currently have an enforceable policy related to coastal hazards, and recent updates to state statute and regulations such as the Tidal Wetlands Act and the CBPA are not currently captured. Updating Virginia CZM's enforceable policies to address this is not a trivial task as the regulatory and policy framework for addressing coastal hazards is split between several state agencies (DCR, DEQ, Virginia Department of Emergency Management (VDEM), etc.) and different levels of government.

Much regulation of coastal hazards currently occurs at the local government level through floodplain management programs. There remains confusion over and inconsistent application of floodplain development permits across a variety of project types, which has contributed to recent challenges for localities during FEMA inspections. Additional work occurs at the local and regional level through the development of HMPs, resilience plans, and comprehensive plans, which do not have regulatory authority. A significant limitation for these efforts is that they focus primarily on current flood risks. Thus, there is a need for policies and regulations that account for both current and future flood risks from coastal hazards. Similarly, there is a need for policies and regulations that address other coastal hazards impacts (e.g., septic, saltwater intrusion, heat, etc.).

For all of these reasons, Virginia CZM staff recommend that the Coastal Hazards Enhancement Area receive a **High** priority as part of this Phase I Needs Assessment.

Public Access

Section 309 Enhancement Objective: Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value. §309(a)(3)

Phase 1 (High-level) Assessment: *(Must be completed by all states.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. Use the table below to provide data on public access availability within the coastal zone.

Data and methods used to calculate the figures in this table were different from previous Needs Assessments, so while it is hard to directly compare changes, it can be said that public access in Virginia's Coastal Zone has increased since the last Public Access Phase I Needs Assessment.

Table: Public Access Status and Trends

Type of Access	Current number[18]	Changes or Trends Since Last Assessment[19] (↑, ↓, –, unknown)	Cite data source
Beach access sites	27	Virginia has 365.2 miles of beach shoreline according to VIMS Virginia Coastal Resources Tool. Decrease from last Needs Assessment but likely data/scope issue rather than actual decrease in beach access. Investigate other data sources for next Needs Assessment.	https://www.vims.edu/research/units/programs/ssp/beaches/public_beaches/
Shoreline (other than beach) access sites	364	Increase compared to 355 on last Needs Assessment.	https://www.dcr.virginia.gov/recreational-planning/vopmapper
Recreational boat (power or non-motorized) access sites	175	Decrease but likely due to method used to select data rather than substantial decrease in access sites.	https://www.dcr.virginia.gov/recreational-planning/vopmapper
Designated scenic vistas or overlook points		Virginia has designated scenic byways and designated scenic rivers but not seem to have designated vistas or overlooks.	

[18] Be as specific as possible. For example, if you have data on many access sites but know it is not an exhaustive list, note "more than" before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

[19] If you know specific numbers, please provide. However, if specific numbers are unknown but you know that the general trend was increasing or decreasing or relatively stable or unchanged since the last assessment, note that with a ↑ (increased), ↓ (decreased), – (unchanged). If the trend is completely unknown, simply put "unknown."

Type of Access	Current number[18]	Changes or Trends Since Last Assessment[19] (↑, ↓, –, unknown)	Cite data source
Fishing access points (i.e. piers, jetties)	162	Significant increase, likely due to data improvement since last assessment.	https://www.dcr.virginia.gov/recreational-planning/vopmapper
Coastal trails/ boardwalks *(Please indicate number of trails/boardwalks and mileage)*	~700 trails & ~2500 miles	Updated Managed Trails layer and Existing Statewide Trails acquired from the Virginia Department of Conservation & Recreation (DCR). Clipped by Coastal Zone and calculated mileage.	https://www.dcr.virginia.gov/recreational-planning/vopmapper
Acres of parkland/open space	1,051,240, 661,495	1,051,240 acres of land in the Virginia Conservation Lands Database within Virginia's Coastal Zone. 661,495 acres of these lands are open to some kind of public access. According to The Nature Conservancy (TNC), "roughly 3.7 million acres of land across Virginia is managed for public benefit"	
Access sites that are Americans with Disabilities Act (ADA) compliant[20]	31	Increase but likely due to new data source.	https://www.chesapeakebay.net/discover/public-access
Other (please specify)			

2. Briefly characterize the demand for coastal public access and the process for periodically assessing demand. Include a statement on the projected population increase for your coastal counties. There are several additional sources of statewide information that may help inform this response, such as the Statewide Comprehensive Outdoor Recreation Plan,[21] the National Survey on Fishing, Hunting, and Wildlife Associated Recreation,[22] and your state's tourism office.

DCR released (updated on a five-year cycle) the 2024 Virginia Outdoors Plan (VOP) in early January 2025. In the implementation of the new VOP, DCR plans to be more efficient at collecting and tracking new recreation sites and amenities.

[20] For more information on ADA see *ada.gov.*

[21] Most states routinely develop "Statewide Comprehensive Outdoor Recreation Plans", or SCROPs, that include an assessment of demand for public recreational opportunities. Although not focused on coastal public access, SCORPs could be useful to get some sense of public outdoor recreation preferences and demand. Download state SCROPs at*.recpro.org/resources--reports/scorp-resources.*

[22] The National Survey on Fishing, Hunting, and Wildlife Associated Recreation produces state-specific reports on fishing, hunting, and wildlife associated recreational use for each state. While not focused on coastal areas, the reports do include information on saltwater and Great Lakes fishing, and some coastal wildlife viewing that may be informative and compares 2016 data to 2011, 2006, and 2001 information to understand how usage has changed. The most recent survey was conducted for 2022 but due to a change in methodology, results cannot be compared to previous reports. See *fws.gov/program/national-survey-fishing-hunting-and-wildlife-associated-recreation-fhwar.*

According to DCR's 2021 Regional Public Recreation Survey, 92% of respondents stated that access to outdoor recreation opportunities was very important to them and other persons living in their household. Respondents also indicated that natural areas, long distance trails, parks, campgrounds, and water access are the most needed recreation facilities in Virginia.

DCR's 2022 Virginia Outdoors Survey revealed that 9 in 10 Virginians believe public funds should be allocated to acquire land and prevent the loss of natural areas.

DCR's Virginia Outdoors analysis found that in 2022, value added to Virginia's economy from outdoor recreation was $11.3 Billion. Outdoor recreation is an increasing source of economic value, and according to the US Bureau of Economic Analysis's 2024 Q1-Q2 GDP percent change, Virginia's percent of outdoor recreation market compared to the rest of the state's GDP has risen from 2.8-3.2%.

UVA's Weldon Cooper Center population estimates show that while most localities within Virginia's Coastal Zone are experiencing slight population increases, many rural localities in Virginia's Coastal Zone are experiencing population loss.

3. If available, briefly list and summarize the results of any additional data or reports on the status or trends for coastal public access since the last assessment.

The State Trails Office is an interdepartmental office housed at the Virginia Department of Transportation (VDOT) and is working on a statewide multi-use trails plan. This plan will inventory existing and proposed trails across the Commonwealth, identify key gaps in Virginia's network of trails, and outline the next steps and best practices in trail development. The State Trails Office conducted an online survey in Fall 2023 for Virginia residents on multi-use trails. Results from the survey are available here and some key findings are below.

48% of respondents described themselves as frequent multi-use trail users. The Virginia Capital Trail was mentioned most frequently as respondents' favorite or most used multi-use trail. A lack of multi-use trail access near respondents' homes is the largest barrier for respondents who rarely or never use multi-use trails. There is a desire among users to be able to walk, bike, or run to access multi-use trails. Survey respondents indicated that feeling safe from vehicles is an important factor when deciding whether they will use multi-use trails. Connecting multi-use trails, closing gaps in the network of multi-use trails, and increasing access to multiuse trails near respondents' homes are top priorities for the development of multi-use trails.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Table: Significant Changes in Public Access Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	N	N	N
Operation/maintenance of existing facilities	Y	Y	Y
Acquisition/enhancement programs	Y	Y	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Since the previous Public Access Phase I Needs Assessment (fall 2019/winter 2020), Virginia CZM has directly contributed to the enhancement of public access in Coastal Virginia via the following projects:

- FY2017, Task 73.01 - *Atlantic Coast Interpretive Signage: Seaside Eastern Shore*: A total of eleven (11) separate panel designs were produced and installed by TNC at seven (7) different locations (see **Figure 1** below).
- FY2017, Task 73.02 - *New Eastern Shore Kiosks: Atlantic Coast & Bayside Interpretive Signage*: The Accomack-Northampton Planning District Commission (ANPDC): ANPDC worked with an array of partners to ensure the proper content, locations, and installation of new and replacement signage on both the Seaside (8 signs) and the Bayside (2 signs) of the Eastern Shore (see **Figure 2** below.

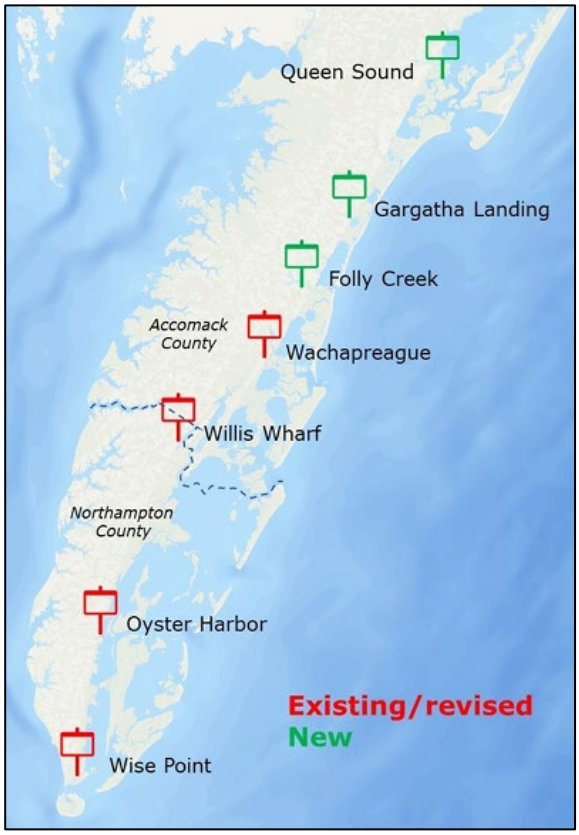


Figure 1. Map of signage locations associated with FY2017, Task 73.01 grant.

- **FY2017, Task 76** - *Northampton County Seaside Walkway Repairs*: In the early 2000's Northampton County planned to convert its landfill site just north of the Village of Oyster to a Seaside Park as the landfill was slated to be closed. In 2004 Northampton County completed construction of a Seaside Walkway using Virginia CZM funding (FY2001, Task 13). Following the walkway's construction, plans changed and the Seaside Park was never built. Access to the walkway became difficult and the walkway fell into disuse and disrepair. In 2020, the County requested additional Virginia CZM funds to repair and enhance the walkway using recycled plastic lumber and adding interpretive signage. A new Nature Preserve was planned for the area encompassing the walkway and a group of Master Naturalists agreed to take on responsibility for maintenance of the walkway. The grant was awarded in fall of 2019 and construction was completed in summer/fall of 2020. The walkway is now used by residents and tourists alike who are interested in viewing a wide variety of birds and natural vistas. It provides a rare opportunity to view an unspoiled vista of forest, marshes and in the distance, barrier islands. The project not only restored the walkway but also provided significantly better access and parking.

Figure 2. Map of signage locations associated with FY2017, Task 73.02 grant.

- **FY2019, Task 73.01 -** *Promoting Ecotourism: Replacement of Virginia CZM-Funded Public Access Signage at Coastal PDC Sites*: In 2022 Virginia CZM provided funding for the replacement of 19 signs at 13 sites across the ANPDC, Hampton Roads Planning District Commission (HRPDC), Northern Neck Planning District Commission (NNPDC), and Richmond Regional Planning District Commission (PlanRVA) regions where NOAA/Virginia CZM acknowledgement signs had previously been installed.
- **FY2019, Task 73.02 -** *Update of Interpretive Signage at The Nature Conservancy's New Point Comfort Preserve Boardwalk*: in 2022 Virginia CZM provided funding for the replacement of four (4) interpretive and acknowledgement signs at the New Point Comfort Preserve Boardwalk in Mathews County, Virginia.
- **FY2023-2024 Bipartisan Infrastructure Law (BIL) funded land acquisitions for public access**:
    - *Upper Mattaponi Indian Tribe's Return to the River*: In 2023, the Upper Mattaponi Indian Tribe (UMIT) received just over $3 million to support the reacquisition of 853 acres of ancestral lands. The UMIT will preserve this culturally significant territory within the Chesapeake Bay watershed, honoring the Tribe's heritage and rekindling its role as environmental steward in the region.
    - *Conservation and Restoration of Biodiverse Chowan Watershed to Provide Resilience, Tribal Collaboration, & Public Access*: In 2024, DCR received $5.6 million to acquire 1,900 acres of contiguous forest in Suffolk for conservation and future public access. The acquired area constitutes one of the largest unprotected blocks of contiguous forest in the Albemarle-Pamlico watershed region, which includes nearly 250 acres of freshwater

wetlands and 10 miles of stream reaches. In addition, the grant supports seeking dialogue with Tribal nations who have ancestral ties to the region about the conservation and management of the land. Research will be done on the history of Tribes with ancestral and present-day connections to the region and watershed.

-

Collectively, these projects represent only a fraction of acquisition projects completed by the state and local governments since the last Needs Assessment.

The Virginia General Assembly (GA) through the June 2022 State Budget process instructed VDOT to establish a State Trails Office (referenced above) and directed the office to develop a State Trails Plan and State Trails Information Clearinghouse and to coordinate with the State Trails Advisory Committee (STAC) and DCR.

The State Parks Master Plan process changed from five-year to 10-year update cycle and revamped to include larger team and involve more public engagement especially regarding water access. Natural Area Preserves (NAPs), owned and managed by DCR, will also receive more natural resource reviews by DCR's Division of Natural Heritage (DCR-DNH) and more archaeological assessments.

3. Indicate if your state or territory has a publicly available public access guide. How current is the publication and how frequently it is updated?[23]

Table: Publicly Available Access Guide

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	Unknown	n/a	n/a
Web address (if applicable)	https://dwr.virginia.gov/explore/ https://www.dcr.virginia.gov/recreational-planning/vop	n/a	n/a
Date of last update	Explore the Wild: 2024 2024 Virginia Outdoors Plan: January 2025	Y	Unknown
Frequency of update	Explore the Wild: continual Virginia Outdoors Plan: ~5 years	n/a	n/a

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium __X__
Low _____

[23] Note some states may have regional or local guides in addition to state public access guides. Unless you want to list all local guides as well, there is no need to list additional guides beyond the state access guide. You may choose to note that the local guides do exist and may provide additional information that expands upon the state guides.

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

In addition to reviewing existing data, tools, and reports online, Virginia CZM staff met with DCR Division of Planning & Recreation Resources staff to review a draft of the Public Access Phase I Needs Assessment, provide additional information, and to solicit feedback on policy and management needs that could be addressed via Section 309 funding from Virginia CZM. DCR staff agreed with Virginia CZM staff's recommendation to rank the Public Access Enhancement Area as a Medium priority for this Needs Assessment due to the current work being done by state agencies (DCR and Virginia Department of Wildlife Resources) to engage the public in outdoor recreation and access planning as well as targeting of lands for conservation and public access. Also, as noted in the Public Access Phase I Needs Assessment for the previous Section 309 Needs Assessment & Strategy Development (FY2021-2025), funding for land acquisition by public entities and physical construction of new public access sites is needed instead of funding for policy development. Virginia CZM remains well-positioned to continue to pursue competitive funding for the former as available, as well as to leverage non-competitive Section 306A funding. In addition, needs such as resilience planning for natural lands, public access infrastructure, and population shifts can be addressed under other Section 309 Enhancement Areas such as Coastal Hazards and Cumulative & Secondary Impacts of Growth & Development (CSI) or via Section 306 planning grants to state and local partners. Furthermore, public access authorities such as the Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPAA) and the Northern Neck Public Access Authority continue to build upon the initial Virginia CZM investments in their creation by expanding their own site inventories, amenities, and recreational opportunities offered to visitors. In conclusion, Virginia CZM staff recommend that the Public Access Enhancement Area receive a **Medium** priority ranking as part of this Phase I Needs Assessment.

Marine Debris

Section 309 Enhancement Objective: Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris. §309(a)(4)

Phase 1 (High-level) Assessment: *(Must be completed by all states.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. In the table below, characterize the existing status and trends of marine debris in the state's coastal zone based on the best-available data.

Table: Existing Status and Trends of Marine Debris in Coastal Zone

Source of Marine Debris	Significance of Source (H, M, L, unknown)	Type of Impact[24] (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, –, unknown)
Beach/shore litter	H	Resource damage to wildlife (through ingestion and entanglement and habitat impacts; economic loss due to aesthetic degradation and clean-up costs; human health and safety	No Change
Land-based dumping	M	Resource damage to wildlife (through ingestion and entanglement and habitat impacts; economic loss due to aesthetic degradation and clean-up costs; human health and safety	No Change
Storm drains and runoff	H	Resource damage to wildlife (through ingestion and entanglement and habitat impacts; economic loss due to aesthetic degradation and clean-up costs; human health and safety	No Change
Land-based fishing (e.g., fishing line, gear)	M	Damage to habitat and wildlife (fish, birds, marine mammals, sea turtles, diamondback terrapins) from ingestion and entanglement; economic; human health and safety; and aesthetic.	No Change
Ocean/Great Lakes-based fishing (e.g., derelict fishing gear)	H	Damage to habitat and wildlife (fish, birds, marine mammals, sea turtles, diamondback terrapins) from ingestion and entanglement; economic; human health and safety; and aesthetic.	No Change
Derelict vessels	M	Boating safety; aesthetics; resource damage (leaking, toxics, smothering substrates, items from boats become debris	87 vessels have been removed by localities or Virginia Tribes via state funding from the Virginia

[24] You can select more than one, if applicable.

			Marine Resources Commission (VMRC) and 82 vessels have been removed by the nonprofit Vessel Disposal & Reuse Foundation (VDRF). All vessels were located in Virginia's coastal waters.
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	Unknown	Wildlife, habitat, and aesthetics.	Anecdotal information on sunken containers lost by cargo ships in port areas and shipping lanes has been provided by various partners, but more information is needed.
Hurricane/Storm	M	Economic; wildlife/habitat damage; human health and safety; and aesthetics	Increasing frequency of storms and precipitation amounts are increasing spread of marine debris
Tsunami	Unknown	Economic; wildlife/habitat damage; human health and safety; and aesthetics	No change
Other (microplastics and microfibers)	H	Environmental, human, and economic health. Fisheries and bioaccumulation.	Unknown. Although there is an increasing body of research on microplastics and their impacts on humans and wildlife, specific data on trends in microplastics were not identified.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from marine debris in the coastal zone since the last assessment.

The Virginia Waterways Cleanup is part of the Ocean Conservancy's International Coastal Cleanup (ICC). Clean Virginia Waterways (CVW) organizes this annual statewide cleanup event of streams, rivers, bays, and coastal waters throughout Virginia. More than 130,000 volunteers removed more than 5.1 million pounds of litter and debris from Virginia's waterways between 1995 and 2023. Volunteers act as citizen scientists by using data forms to tally the number of cigarette butts, beverage containers, food-related wrappers, balloons, plastic bags, and other common marine debris items – information that CVW has used to build a comprehensive database of litter and marine debris found in Virginia's waterways. Many of the "Top 20" items found during the ICC are mentioned as items of concern in Virginia in the Virginia Marine Debris Reduction Plan (VMDRP). Data can be downloaded here.

In 2021-2022, CVW and the Virginia CZM led a large collaborative research project and developed recommendations to address abandoned and derelict vessels (ADVs) in Virginia's waterways. The 2022 ADVWG Report summarizes the discussions of the Virginia ADV Work Group (ADVWG), which was comprised of Federal, state, and local governments, nonprofits, and industry representatives and was reviewed and approved by state natural resource agency leadership, including the Office of the Secretary of Natural & Historic Resources (OSNHR). An ADV inventory was created through this work group and

continues to be updated by Virginia CZM with input from various ADV partners and reports from the general public on a near-weekly basis in order to identify new ADVs, verify the status of previously reported vessels, and to prioritize vessels for removal based on available resources. While Virginia CZM lacks the authority to remove or fund removal of ADVs, staff play a critical role in providing clarity to the public on the complex ADV prevention, removal, and disposal process as well as alerting partners with the authority and resources to do so in a timely manner to eliminate redundant efforts where possible.

Latex balloons, foil balloons and plastic ribbons are deadly forms of litter with the potential to fatally harm wildlife through ingestion or entanglement and they are a top source of debris found on Virginia's remote beaches according to a 2021 report by CVW. Litter was surveyed on Virginia's barrier islands, Fisherman Island National Wildlife Refuge (NWR), Back Bay NWR, and other beaches between 2013 and 2020 revealing that balloon-related litter items are often the #1 most frequently found type of debris. Research cited in the report was done in conjunction with behavior research and a social marketing campaign in Virginia to understand and reduce the intentional releases of balloons during memorial and celebratory events. The campaign was created by the Virginia CZM, CVW, NOAA's Office for Coastal Management (NOAA-OCM), and the NOAA Marine Debris Program. This campaign has inspired an expanded campaign effort in the Mid-Atlantic also referenced in the report.

This CVW 2022 report explains how data can help researchers, individuals, and government entities understand what the most abundant sources of litter are in their local community, in Virginia, in the United States, and in the entire world. With data, prevention strategies can be prioritized and shape future actions. This report helps the public understand why and how to collect data during cleanups and how they can personally contribute.

Virginia Institute of Marine Science (VIMS) Marine Debris Projects:

1. Analytical Chemistry of Plastic Debris: Sampling, Methods, and Instrumentation: In 2021, VIMS researchers published a report that provides a comprehensive overview of current approaches for studying plastic debris in the environment along with the challenges and limitations associated with these approaches. The report underscores the challenges of distinguishing plastics from other materials, detecting additives, and identifying degradation products. This report acknowledges that plastics have not been designed for their environmental safety and that plastic producers typically keep the chemical composition of their products confidential. The authors state that this approach must change to solve plastic pollution and plastic researchers should be leveraging the knowledge and expertise from other disciplines such as academic and commercial chemists and the individuals who are designing plastics because of their deep knowledge of polymers.
2. Microplastics affect sedimentary microbial communities and nitrogen cycling: In 2020, VIMS researchers published a report that looks at how the presence of microplastics impacts the structure and functioning of sedimentary microbial ecosystems. Researchers learned that microplastics alter the composition and variety of microbial communities in sediments and act as physical barriers, influencing sediment structure, and can introduce toxic substances that disrupt microbial activity. This disruption could cause broader ecosystem impacts affecting water quality, ecology, and carbon cycling.

The Plastic Waste Prevention Advisory Council (PWPAC) was established as an advisory council, under § 2.2-2100, in the executive branch of state government. The purpose of the PWPAC is to advise the Governor on policy and funding priorities to eliminate plastic waste impacting native species and polluting the Commonwealth's environment and to contribute to achieving plastics packaging circular

economy industry standards. In 2023, the PWPAC released their report that identified shortcomings of Virginia's system to reduce plastic pollution, consensus ideas related to a circular economy for plastics, and consensus ideas relating to eliminating plastic pollution.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) for how marine debris is managed in the coastal zone.

Table: Significant Changes in Marine Debris Management

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Marine debris statutes, regulations, policies, or case law interpreting these	Y	Y	Y
Marine debris removal programs	Y	Y	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes and likely future outcomes of the changes.

Since Virginia CZM began working on the issue of marine debris in 2013, the topic has been an increasing concern for Virginians. Concerns among local and state government officials have continued to increase. Marine debris coverage in the media has become more prevalent, and public awareness has been elevated far beyond previous Section 309 cycles.

Much of the attention can be attributed to the efforts of Virginia CZM's Section 309 program and its primary grantee, CVW. Virginia CZM has played a leading role in addressing marine debris, spearheading the development of the first state marine debris reduction plan along the Atlantic Coast and implementing one of the most comprehensive social marketing campaigns to date to curb balloon releases—one of the most harmful forms of marine debris for wildlife.

Virginia CZM's expertise is recognized by colleagues throughout the Mid-Atlantic, as evidenced by Virginia co-leading the Mid-Atlantic Marine Debris Work Group since its inception in 2016. This regional collaborative effort is essential because marine debris issues cross state lines and these regional partnerships are critical to implement lasting solutions. Virginia CZM's leadership in this workgroup expanded the Virginia balloon social marketing campaign to the entire Mid-Atlantic. Virginia CZM continues to lead this work group with ongoing social marketing projects focused on water bottles, derelict recreational fishing gear, and tobacco products.

Marine debris statutes, regulations, policies, or case law interpreting these:

Public concern about plastic pollution is reflected by a 2022 Virginia CZM, CVW and OpinionWorks public perception survey that highlighted Virginians' concern about marine debris and plastic pollution. In this statistically significant survey, 87% of survey respondents said plastic floating in the ocean was a very serious or a somewhat serious concern to them. This survey measured voters' support for policies that have been adopted in other states: 76% support requiring less plastic in packaging, 71% support extended producer responsibility, 65% support container deposit legislation, 63% support a cigarette litter fee, 63% support banning single-use plastic bags, and 61% support banning expanded polystyrene food and beverage containers. Documented public support for policies that will reduce plastic pollution adopted by other states provides realistic expectations for similar policies to be implemented in Virginia. The information obtained in this survey has proven valuable to agencies and organizations across Virginia.

Following the 2021 Virginia General Assembly (GA), House Bill 2159 was passed and signed into law banning the intentional release of balloons (Virginia Code § 29.1-556.1). The consistent multi-year beach monitoring effort by Virginia CZM and CVW, documented in the previously mentioned report *Balloons & Plastic Ribbons: Deadly Liter on Virginia's Beaches*, provided data highlighting the concentration of balloon and balloon related debris on Virginia's barrier islands. The data was critical for this legislation to pass because it provided clear documentation of the scope of the problem. Virginia CZM's leadership on this issue enabled the necessary sustained balloon debris monitoring to collect the pertinent data.

In 2021, the GA passed House Bill 1902 banning expanded polystyrene (EPS) food and beverage containers for large chains in 2023 and 2025 for smaller establishments. In 2022, the ban was delayed five years through a budget amendment. In 2024, the GA reduced the delay to begin the ban in 2025 for large chains and 2026 for smaller establishments. Virginia Department of Environmental Quality (DEQ) has compiled resources for this phase out here. CVW and askHRGreen are developing a pilot program and resource hub to assist restaurants in their switch away from EPS to more sustainable choices. This program is targeted at smaller establishments (fewer than 20 locations) because they do not have the same level of resources as large regional and national chains. Based on survey results from Virginia businesses, the program will work with product distributors to help get their non-EPS products to Virginia restaurants. This project will include a resource hub website for restaurants to help business owners understand why the change is important, case studies to support the economic sustainability of not using EPS food and beverage containers, and strategies to adjust to the new regulations. Additionally, they are investigating the feasibility of implementing a group purchasing program for smaller establishments to help offset the potential increased cost of EPS food and beverage service container alternatives.

CVW wrote an in-depth examination of the funding sources (including the Virginia Litter Tax) for the Virginia Litter Control & Recycling Fund, as well as a comparative analysis of similar initiatives in other states and localities across the nation. This comprehensive analysis aims to provide policymakers, government officials, nonprofits, and citizens with valuable insights, best practices, and lessons learned from different approaches to tackling litter issues. The report includes key findings (including that Virginia generates the lowest revenue per capita of any state using a litter tax system) and recommendations. This report was not funded by Section 309. This report was quoted in Delegate Krizek's House Joint Resolution 35 at the 2024 GA. This resolution would have directed the department of taxation study solutions to improve funding for the Virginia Litter Control & Recycling Fund. This piece of legislation did not pass but is more evidence that decision makers in Virginia are focused on implementing long-term solutions to plastic pollution and marine debris.

LitterFreeVA.org was established in 2019 to facilitate tracking of legislation and policy in Virginia related to litter prevention and source reduction of single-use plastics. It provides a summary of bills, fact sheets and talking points. It is supported by CVW through its Virginia CZM Section 309 grant. CVW maintains this publicly available spreadsheet of all historic plastic and litter-based legislation in Virginia to increase access and awareness.

Marine Debris Removal Programs

From January 2021 to July 2022, Virginia CZM led the creation of the ADV Work Group (ADVWG), which was comprised of Federal, state, and local government staff as well as nonprofit and industry representatives. This large collaborative research project developed recommendations to address ADVs in Virginia's waterways. The ADVWG's 2022 report was reviewed and approved by state natural resource agency leadership. The work group's efforts resulted in the allocation of $3 million in state funding to the Virginia Marine Resources Commission (VMRC) for the creation and administration of an Abandoned or Derelict Vessel Program. This funding enabled the removal of 87 ADVs from Virginia's waters using approximately one half of the state funding via grants to localities or Virginia Tribes before the remaining half was reallocated in spring 2024. The Vessel Disposal & Reuse Foundation (VDRF), a nonprofit based in Virginia Beach, has also be very active in ADV removal (82 vessels to date) as well as public education and outreach. Virginia CZM staff continue to work with VDRF to ground-truth ADV locations and update a statewide ADV inventory created by Virginia CZM during the ADVWG process. Additionally, in 2024 a law was passed that updated § 29.1-733.25 of the Code of Virginia to allows subdivisions of the government to clear a title for an ADV once they accomplish a specific list of public notice tasks. This law provides legal protection from liabilities that previously only existed if a local government had an ordinance in place to provide those protections.

Virginia CZM has been leading a multi-year effort with the clam industry to quantify the scope of lost clam nets in Virginia's waters and develop sustainable solutions for clam nets that have reached their end of usefulness. This consistent effort has identified barriers to clam net disposal and created a cooperative dialogue that is leading to progress. In addition, Virginia CZM is working with partner organizations and the clam industry to develop a program to remove clam nets that have been lost in the environment.

The VIMS Clean Marina Program is developing a pilot program to collect and recycle plastic shrinkwrap from boats at marinas. This program is using the Maryland Department of Natural Resources shrinkwrap program as a guide for development.

Abandoned & Derelict Vessels & Derelict Fishing Gear Grant Awards – Federal funding outside Virginia CZM

The effort from the ADVWG resulted in two (2) ADV-related grants being awarded to two (2) Virginia organizations. Lynnhaven River NOW (LRN) received a $2.9 million grant, *Removing Abandoned & Derelict Vessels in Virginia & Building Capacity for a Statewide Removal & Disposal Program* from NOAA to remove ADVs in Virginia's Coastal Zone. Old Dominion University (ODU) also received $299,000 in NOAA funding via a grant to Virginia Sea Grant (VASG), *From Learning to Willing to Doing: A Collaborative Approach to Implementing the Virginia Marine Debris Reduction Plan* to help implement the VMDRP with an emphasis on prevention and educating citizens on proper disposal of ADVs and derelict fishing gear (DFG) in southside Hampton Roads. Virginia CZM is an active partner in helping to implement both of these ADV grants.

BoatUS Foundation (BoatUS) is leading a nationally competitive $10 million grant program for the removal of ADVs throughout coastal and marine areas of the United States, including the Great Lakes, U.S. territories, and Freely Associated States. In addition to the grant program, BoatUS is also developing a first-of-its-kind national online ADV database. As noted above, Virginia CZM maintains an inventory of known ADVs in Virginia and is assisting BoatUS in the creation of a nationwide ADV inventory for NOAA as a grant deliverable using elements of the Virginia inventory as well as listed ADVs in the Commonwealth.

With $8 million in funding from the FY2022-2023 NOAA Marine Debris Removal competition, VIMS is working to reduce the impacts of DFG the Chesapeake Bay and across the United States. They are removing and recycling abandoned blue crab traps from Chesapeake Bay, as well as leading a competitive grant program for the removal of derelict fishing traps across the country as part of a Trap Removal, Assessment, and Prevention (TRAP) program. Removal projects will be eligible depending on the fishery and policies in a given location, and can include the removal of crab, lobster, and other trap types. A communications strategy and associated tools are being developed to support the project's outreach efforts, including informational webinars for potential grant applicants and a metrics dashboard website to track progress. VIMS is also partnering with the University of Georgia to establish a Derelict Trap Policy Innovation Lab, bringing together researchers and students. Through the work of the Innovation Lab, the project will use the collected data to assess potential solutions to the ecological and socioeconomic impacts of lost gear nationwide.

Virginia CZM is assisting in the implementation of these grants through supporting and coordinative roles that ensure proper overlap and reduce redundant efforts.

Marine Debris Removal Work in Coastal Zone Localities

Operation Stream Shield is a collaborative effort between the Fairfax County Department of Public Works & Environmental Services and the Fairfax County Office to Prevent & End Homelessness. Individuals experiencing homelessness are provided low barrier employment with a living wage to cleanup and remove litter in the county. This initiative serves a dual purpose: enhancing the environment and providing support to individuals experiencing homelessness.

Virginia CZM provided funding to the Northern Virginia Regional Commission (NVRC) via a FY2017 grant to map and assess the sources, flow, and type of trash that contributed to a large buildup of debris within Little Hunting Creek (a Potomac River tributary). The recommendations of the final report, published in February of 2020, included installation of a Bandalong trash trap in the Creek and therefore directly informed efforts by Fairfax County to address the issue. In the Spring of 2021, Fairfax County installed such a device to catch litter in Little Hunting Creek. Since 2021, the Bandalong has collected more than 3,000 pounds of litter, averaging 60 to 90 pounds per month. Operation Stream Shield has proven to remove more litter than the Bandalong and has lower cost per weight of litter removed, in addition to the social benefits. As a result, Fairfax County has decided to expand Operation Stream Shield rather than install additional Bandalongs.

In 2022, Prince William County installed a Bandalong litter trap on Neabsco Creek (a Potomac River Tributary). In the first year the Bandalong was installed, more than 5,000 pieces of degraded expanded polystyrene less than 2.5 centimeters and more than 4,000 pieces of degraded expanded polystyrene were collected. Additionally, more than 3,500 single-use plastic bottles were collected. Micron Technologies donated $300,000 to purchase, install, and maintain the Bandalong for one (1) year.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

   High __X__
   Medium _____
   Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Plastic pollution in the ocean continues to increase and production of plastic is predicted to triple by 2050. This topic remains a high priority, highlighted by Virginians' documented concern about plastic pollution and strong bipartisan support for legislative policies to reduce plastic pollution and marine debris detailed in the previously mentioned 2022 Virginia CZM, CVW, and OpinionWorks Public Perception Survey. These data suggest there is a timely opportunity to leverage this public sentiment to make progress on these issues.

The Virginia Marine Debris Summit (VMDS), which the Virginia CZM Program held in 2016, 2019, 2022, and 2025 with Section 309 funding, attracted several hundred stakeholders (non-profit groups, local and state government officials, academics, businesses, and private citizens) who presented work they are doing and identified needs to combat this problem. Planning is underway for the 2025 VMDS, which will be used to begin the process for the next VMDRP update, while also informing, training, and networking partners working in this space. As noted already, these kinds of events have also been instrumental in raising public awareness of the issue of marine debris.

With funding support from Section 309, Virginia CZM and their grantee CVW also host an annual Stormwater & Plastic Pollution Workshop for stormwater, public works, solid waste, plastic pollution, and litter prevention professionals. These workshops provide valuable feedback from engaged partner organizations, agencies, and departments across Virginia. This feedback is critical to provide valuable resources to assist localities in implementing impactful programs and policies.

The need for regional approaches on these issues remains critical because many marine debris problems cannot be solved by individual state approaches. A continued Section 309 Marine Debris Strategy would allow Virginia to continue its regional leadership role to solve the growing marine debris problem.

Finally, since the development of the first VMDRP (2014-2020) Virginia CZM and CVW have worked to ensure the VMDRP is implemented and revised to remain relevant. As Virginia CZM and CVW embark on the update for the third iteration of the VMDRP, a continued Section 309 Marine Debris Strategy will provide support for the critical coordination and planning that should go into this update to ensure it is reflective of the current state of the issue, of the priorities of our partners, and a shared understanding of the feasibility of the strategies within. Following publication of the third iteration, Section 309 funding will be instrumental in continuing implementation.

For all of the above reasons, Virginia CZM staff recommend the Marine Debris Enhancement Area as a **High** priority.

Cumulative and Secondary Impacts

Section 309 Enhancement Objective: Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources. §309(a)(5)

Phase 1 (High-level) Assessment: *(Must be completed by all states.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. Using National Ocean Economics Program Data on population and housing,[25] please indicate the change in population and housing units in the state's coastal counties between 2017 and 2021. You may wish to add additional trend comparisons to look at longer time horizons as well (data available back to 1970), but at a minimum, please show change over the most recent five-year period data is available (2017-2021) to approximate current assessment period.

Table: Trends in Coastal Population and Housing Units

	2017	2021	Percent Change (2017-2021)
Number of people	5,382,163	5,517,620	2.5% increase
Number of housing units	2,152,952	2,269,432	5.4% increase

The data presented here seem to indicate that increased housing supply meets population's growing demand across localities in Virginia's Coastal Zone and while this may be true on average for certain counties and cities, other areas continue to experience severe housing shortages such as the Eastern Shore and sections of Northern Virginia. This concern in both rural and urban areas demonstrates a need for attention and action from Virginia CZM and the state at large. See a summary of Governor Youngkin's 'Make Virginia Home' Plan later in this Needs Assessment for more details on proposed mechanisms of increasing housing availability in the Commonwealth.

2. Using the tables below as a guide, provide information on land cover changes and development trends. Be as quantitative as possible using state or national land cover data.[26] The tables are a suggestion of how you could present the information. Feel free to adjust column and row headings to align with data and time frames available in your state or territory. If quantitative data on land cover changes and development trends are not available, provide a brief qualitative narrative describing changes in land cover, especially development trends, including significant changes since the last assessment.

[25] *www.oceaneconomics.org/*. Enter "Population and Housing" section and select "Data Search" (near the top of the left sidebar). From the drop-down boxes, select your state. Select the year (2021) then select "coastal zone counties." The default comparison year will be 2017 so no need to select a comparison year.

[26] National data on wetlands status and trends include NOAA's Land Cover Atlas (*coast.noaa.gov/digitalcoast/tools/lca.html*) and the U.S. Geological Survey's National Land Cover Database (*usgs.gov/centers/eros/science/national-land-cover-database)*.

The data in the following three tables was sourced from NOAA's C-CAP database and analyzed by Nate Herold and Supriya Khadke at NOAA's Office for Coastal Management (NOAA-OCM). Comprehensive land cover data for Virginia's Coastal Zone is most recently available from 2021.

Table: Distribution of Land Cover Types in Coastal Counties

Land Cover Type	Land Area Coverage in 2024 (Acres)	Gain/Loss Since 1996 (Acres)
High Intensity Developed	53,722	15,335
Medium Intensity Developed	164,400	45,062
Low Intensity Developed	491,073	106,667
Developed Open Space	219,169	-11,840
Cultivated	856,695	31,606
Pasture/Hay	127,552	-40,160
Grassland	146,688	75,398
Deciduous Forest	988,804	-143,529
Evergreen Forest	820,994	-73,692
Mixed Forest	393,270	-41,030
Scrub/Shrub	263,369	54,763
Woody Wetland	831,226	-41,175
Emergent Wetland	239,445	11,228
Unconsolidated Shore	188,459	6,749
Barren Land	11,271	1,214
Open Water	1,900,635	3,405

Table: Development Status and Trends for Coastal Counties

	1996	2024	Percent Net Change
Percent land area developed	10.26%	12.32%	2.06%
Percent impervious surface area	3.01%	3.93%	0.92%

Table: How Land Use Is Changing in Coastal Counties

Land Cover Type	Areas Lost to Development Between 1996-2024 (Acres)
Agriculture	73.07
Grass	4.27
Scrub	15.39
Forest	126.27
Wetland	18.28
Barren	4.43

3. Briefly characterize how the coastal shoreline has changed in the past five years due to development, including potential changes to shoreline structures such as groins, bulkheads and other shoreline stabilization structures, and docks and piers. If available, include quantitative data that may be available from permitting databases or other resources about changes in shoreline structures.

Table: Miles of Living Shoreline Permitted Across Coastal Planning District Commissions (2019-2023)

Planning District Commission	Total Miles of Shoreline Permitted	Total Miles of Living Shorelines Permitted	Percent Miles of Living Shorelines Permitted
Accomack-Northampton	8.99	5.74	63.8%
Crater	0.38	0.14	36.8%
George Washington	3.36	2.45	72.9%
Hampton Roads	33.74	20.69	61.3%
Middle Peninsula	20.27	13.01	64.2%
Northern Neck	23.48	10.82	46.1%
Northern Virginia	1.48	0.78	52.7%
PlanRVA	1.26	0.56	44.4%
Total	92.96	54.19	Average = 58%

Miles of Livine Shoreline Permitted Across Coastal Planning District Commissions (PDCs) (2019-2023). Data analyzed by the Virginia Institute of Marine Science (VIMS)'s Center for Coastal Resources Management (CCRM), sourced from the Virginia Marine Resources Commission (VMRC) shoreline permits inventory. Note that this data represents total shoreline miles from approved shoreline permits, but the data is not reviewed to verify in situ permit implementation.

4. Briefly summarize the results of any additional state- or territory-specific data or reports on the cumulative and secondary impacts of coastal growth and development, such as water quality, shoreline hardening, and habitat fragmentation, since the last assessment.

VMRC oversees permitted changes to shoreline structures in Virginia's Coastal Zone and maintains data on requested and approved permits. The table above displays data reflecting the total miles of approved permitted shoreline changes and total miles of approved permitted living shorelines from 2019-2023 in Virginia's eight (8) coastal PDCs. Of the 92 total miles of shoreline permits approved by VMRC in this time, over 50 of those miles or 58% of the total were permitted specifically for living shorelines. Hampton Roads, Middle Peninsula, and Northern Neck PDCs saw the greatest increases in miles of permitted living shorelines during this time. From 2011 – 2018 in the coastal PDCs, VMRC permitted 147 total miles of shoreline with only 32 miles (22%) of permitted living shorelines. Over the past five (5) years, miles of permitted living shorelines have increased in quantity and proportion to the total permitted shoreline changes in Virginia's Coastal Zone. This indicates increased implementation of nature-based shoreline stabilization techniques in response to the cumulative impacts of accelerated growth and development.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any significant state-level changes (positive or negative) in the development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources, since the last assessment.

Table: Significant Changes in Management of Cumulative and Secondary Impacts of Development

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	Y
Guidance documents	Y	Y	Y
Management plans (including SAMPs)	Y	Y	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

In 2022, Governor Youngkin's Administration announced the "Make Virginia Home" plan to increase the supply of "attainable, affordable, and accessible housing" in the Commonwealth. The plan aims to increase the supply of land for housing by expediting local zoning and land use reviews and investigating reforms of zoning and land use laws, particularly by removing regulatory barriers to housing development. In practice, this involves finding more efficient ways to meet wetlands and stream mitigation requirements on development projects, with the suggestion to "operationalize Virginia's existing Wetland and Stream Replacement Fund." In total, the plan focuses on increasing efficiency in proposed development and land use changes to expedite housing availability. No explicit legislative changes have yet resulted from this plan.

In 2021, the Virginia Department of Conservation & Recreation (DCR) released Version 3.0 of ConserveVirginia: Virginia's Land Conservation Strategy, a data driven approach to land conservation that builds on work already underway in the Commonwealth to achieve targeted conservation outcomes, prioritize high-value lands, efficiently use limited resources to support these areas, and measure progress towards achieving multiple conservation goals. The plan features a living "smart map" identifying 7.8 million acres of priority lands for conservation across the Commonwealth with categories specifically relating to the Coastal Zone including Floodplains & Flooding Resilience and Water Quality Improvement. The plan also prioritizes outdoor recreation and public access citing the annual revenue generated by outdoor recreation and related consumer spending in Virginia. ConserveVirginia is designed to be updated regularly as new data and resources become available. The most recent updated occurred in 2022. In late 2024, DCR began the process for a significant update to Version 4.0 by requesting stakeholder input. Version 4.0 is expected to be released in 2025.

In 2016, the Virginia General Assembly (GA) passed the Virginia Erosion & Stormwater Management Act (VESMA) which directed the Virginia Department of Environmental Quality (DEQ) to consolidate erosion and sediment control (ESC) and stormwater management regulations under the State Water Control Board who permits, regulates, and controls soil erosion and stormwater runoff in the Commonwealth. An enactment clause of VESMA delayed its effective start date until after the State Water Control Board adopted regulations to implement sections of VESMA's requirements. The Board approved

resulting regulations in 2023 and VESMA took full effect in July 2024, superseding and replacing the previously separate Virginia Stormwater Management Act and the Virginia Erosion & Sediment Control Law.

As a result, DEQ has created the Virginia Stormwater Management Handbook to replace previous guidance in the Virginia ESC Handbook and the Virginia Stormwater Management Handbook. The new handbook covers regulatory changes in water quality and quantity criteria, addresses new technologies relating to ESC and stormwater management, and presents new practices available to support compliance with updated regulations. The first version of the new handbook was approved in January 2024 and DEQ has subsequently released an updated Version 1.1 and continues to work on Version 1.2.

DEQ finalized Phase III of the Chesapeake Bay Watershed Implementation Plan (WIP) in 2019 to achieve nutrient and sediment reductions outlined in the Bay's Total Maximum Daily Load. The WIP III details best management practices (BMPs) and programmatic actions necessary to achieve state basin planning targets for nitrogen and phosphorus. In response to Initiative #3 of the WIP III, the State Lands Watershed Implementation Plan (SWIP) was created to achieve significant reductions in nonpoint source nutrient and sediment pollution originating from the lands and activities of all state agencies, public institutions of higher learning, and other state governmental entities that own or manage land in Virginia. GA funds and Federal funds from the Chesapeake Bay Implementation Grant support the new SWIP.

In 2020, the GA amended the Chesapeake Bay Preservation Act (CBPA) requiring the State Water Control Board to develop criteria enabling local governments to encourage and promote coastal resilience and adaptation to SLR. For more information, see the Coastal Hazards Phase I Needs Assessment.

In 2020, Virginia's State Water Control Board amended regulations through HB 542 to require local governments in the same river basin to coordinate in creating plans for water supply and use. Previously, localities had the choice of whether to submit water supply plans independently or work together with other local governments in their river basin. Plans affected by these amendments include those for existing water sources of both groundwater and surface water, water use and environmental conditions, and any plans to manage water supply and drought response. Virginia identified 14 main river basins in the Commonwealth, and a stakeholder group tasked with creating the new regulations separated these into 26 manageable planning areas within which localities must collaborate on water supply and use planning. SB 581 (2024) allows DEQ to incorporate comprehensive surface and groundwater data in decision-making processes regarding withdrawal permits.

More frequent and extreme coastal flooding in recent years has caused damages to homeowners' septic systems raising concerns for water quality and public health and resulting in more proposed legislation in Virginia to manage septic systems. In 2021, the GA passed SB 1396 to 1) provide financial assistance to low-income property owners to repair or install septic systems, 2) establish an advisory group to assess wastewater needs, and 3) require state septic regulations to incorporate resilience. In 2022, the GA passed House Bill 769 which transferred the regulatory authority over septic pump outs to the Virginia Department of Health (VDH) with recommendations to develop policies for issues that arise from increased flooding and septic system damages. In 2024, VDH released draft regulations to manage septic systems in rural areas including proposals for VIMS to create a map of "critical impact areas" most susceptible to sea level rise and groundwater flooding.

In 2022 the GA appropriated funds to DEQ for surface and groundwater sampling of PFAS throughout the Commonwealth, and the sampling results are posted on DEQ's webpages. In 2023, the GA passed HB

2189 which established requirements for industrial users that discharge to Publicly Owned Treatment Works (POTW) to test for PFAS and report results to the affected POTW. In 2024, the GA passed HB 1085 and SB 243 which require 1) VDH to notify DEQ of detections of per- and polyfluoroalkyl substances (PFAS) in public water systems above established maximum contaminant levels, and 2) DEQ to then identify sources of PFAS in public water system sources.

In 2023, the State Water Control Board authorized a rulemaking to incorporate selenium criteria within Virginia's Water Quality Standards (WQS) regulation (9VAC25-260). These criteria are intended to protect designated and beneficial uses of state waters relating to aquatic life and will be implemented in water quality programs that maintain WQS (e.g., CWA 305b and 303d).

Data Centers in Virginia

Data centers are facilities that manage and process large amounts of data, enabling digital services including websites, electronic applications, and cloud-based platforms such as email and media streaming. Northern Virginia is the largest data center market in the world, constituting 13% of global data center operational capacity and 25% of this capacity in the Americas, due to the regional availability of a strong fiber network, supply of reliable cheap energy, undeveloped land, proximity to major national customers, and the creation of a state data center tax incentive. The data center industry continues to grow rapidly in Virginia with expected new market growth in counties outside of Northern Virginia along the I-95 S corridor. Areas of Northern Virginia and surrounding southern counties adjacent to Interstate 95 (I-95) fall under Virginia's Coastal Zone.

In late 2024, Virginia's Joint Legislative Audit and Review Commission (JLARC) finalized a report to the Governor and the GA titled Data Centers in Virginia, highlighting the positive benefits that data centers will continue to provide for Virginia's economy. These benefits largely come from construction costs that remain in-state, and the total contribution of the data center industry is estimated at 74,000 jobs, $5.5 billion in labor income, and $9.1 billion in GDP for Virginia annually. However, the report also notes that data centers will significantly increase energy demand in Virginia with projections estimating that the unconstrained demand for power may double in the next 10 years. This projected growth in power demand threatens to interfere with the progress made by energy efficiency improvements in recent years. This would also necessitate a significant increase in the new construction of energy-generating infrastructure and may increase the consumer's energy costs.

Data centers require industrial-scale cooling which often depends on water from local utilities, and while DEQ regulates water withdrawals to protect future water availability and sustainability, there may be environmental implications to an increased need for water withdrawals to compensate for the demand of data centers. For more information on energy-related effects to the Coastal Zone, see Phase I: Energy and Government Facility Siting Assessment.

Lower Chickahominy River Watershed Regional Planning

The majority of the FY2016-2020 CSI Strategy funds were dedicated to planning for land conservation and low-impact economic development in the Lower Chickahominy River Watershed, which is comprised of a mix of rural, rapidly developing, and developed communities associated with Charles City County, James City County, and New Kent County. The region is also home to many Tribal citizens belonging to the Chickahominy Indian Tribe, Chickahominy Indian Tribe – Eastern Division, and the Pamunkey Indian Tribe. The Chickahominy Indian Tribe and Chickahominy Indian Tribe – Eastern Division also have Tribal headquarters within the region. Virginia CZM initially identified the need for increased land conservation planning and community engagement leading up to the FY2016-2020 CSI Strategy development and

completed a series of projects during that cycle to gather natural resource data, solicit stakeholder input, convene local and Tribal government representatives to discuss collaboration on land use planning, and identify opportunities for economic development that would not significantly impact the watershed's natural and cultural resources.

As noted in the FY2016-2020 Section 309 Needs Assessment & Strategy Development document, Year 1 of the project (FY2016) involved establishing an updated inventory of natural resources in order to both locate sensitive habitats for conservation planning and to replace outdated spatial data that would soon become ineligible for regulatory review of projects by DCR. Year 2 (FY2017) of the project involved efforts by both PlanRVA staff and research done by George Mason University (GMU) economists. PlanRVA staff updated GIS data and maps for the study area of various themes including land conservation, water quality, recreation, etc. as well as creating a conserved land and point of interest database for the study area while the GMU research team evaluated the economic and fiscal impacts associated with conserved lands located in the region. Years 3 (FY2018) and 4 (FY2019) included initial stakeholder engagement via interviews and survey responses followed by more focused meetings in with the three localities and three Tribes to discuss opportunities to collaborate. A Locality-Tribal Summit and overall stakeholder Summit were held in 2020, resulting in the formation of the Lower Chickahominy Watershed Collaborative (LCWC). In Year 5 (FY2020), a memorandum of understanding (MOU), the first of its kind in Virginia and the Mid-Atlantic region, pledging ongoing coordination and collaboration was signed in the fall of 2021 by the three (3) Tribes, three (3) localities, Hampton Roads PDC (HRPDC), and Richmond Regional PDC (PlanRVA). The Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERR-VA), and the Capital Region Land Conservancy signed the MOU as Supporting Members shortly thereafter and in April of 2025 the Historic Virginia Land Conservancy joined as a third Supporting Member.

Virginia CZM continues to provide funding via annual Technical Assistance grants (Section 306) for PlanRVA staff capacity to continue to convene and facilitate meetings of three work groups to advance specific action items and discuss land use planning issues that may arise. Virginia CZM staff also regularly attend these meetings and direct participants to additional state-level resources or contacts where appropriate. In summary, the LCWC is an example of effective leveraging of Section 309 funding to create and sustain a collaborative planning body that is both inclusive of emerging needs and focused on implementing specific actions to address issues identified previously. The establishment of the LCWC was also the topic of Virginia CZM's October 2020 Section C Success Story. Given Virginia CZM's funding and staff support through Section 306, no additional Section 309 funding is anticipated to be needed to support the LCWC, nor is there a need for a Special Area Management Plan (SAMP) to be designated for the region.

Working Waterfront Planning & Implementation Updates

In the spring of 2020, Virginia CZM completed FY2018, Task 93.05 - Rural Chesapeake Bay/Seaside of Virginia Working Waterfront Master Plan Implementation - the last project associated with the FY2016-2020 Section 309 CSI Strategy's three-year (FY2016-2018) sub-focus on implementing elements of the 2016 Working Waterfront Master Plan. The Plan, associated policies, and a working waterfront (WWF) inventory, among other grant products, were developed as a subcomponent of the FY2011-2015 CSI Strategy. Specifically, Task 93.05 sought to educate community leaders and the public on the importance of WWFs to rural coastal Virginia's economy and culture, as recommended in the WWF Master Plan. Education and outreach to market the benefits of WWFs was achieved through the dissemination of digital messaging (social media posts and webpage content) to localities, the public, and the business community. An outreach video showcases examples of WWF industries on the Eastern Shore, Middle Peninsula, and Northern Neck regions.

During the evaluation period for the current (FY2021-2025) Section 309 Enhancement Areas, CSI again ranked high, but most of the issues identified by stakeholders were able to be incorporated into the current FY2021-2025) Coastal Hazards Strategy, though not officially provided with a sub-focus as WWFs previously had been under the CSI Strategies dating back to FY2011. Instead, Virginia CZM staff coordinated with stakeholders associated with each of the specific issues to develop scopes of work for and allocate funding to address the needs on a one to two-year project basis.

FY2023, Task 91.01 - Working Waterfront Resilience Assessment – was one such project that provided funding support to Accomack-Northampton PDC (ANPDC), HRPDC, Middle Peninsula PDC (MPPDC) (grant lead), and Northern Neck PDC (NNPDC) to verify the existence of approximately five (5) WWF sites in each region listed in the WWF inventory and assess their status and needs through a resilience assessment developed by Virginia CZM and MPPDC staff. If identified, new WWF locations were also encouraged to be added to the inventory and to receive a resilience assessment. This project was completed in April of 2025.

Given the need to balance other funding needs under the FY2021-2025 Coastal Hazards Strategy, it is unlikely that Virginia CZM will be able to directly support additional WWF resilience assessment efforts in FY2025, but the sampling of sites may inform whether additional WWF resilience planning should be prioritized during the FY2026-2030 Section 309 cycle under either a Coastal Hazards or CSI Strategy.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	__X__
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The cumulative and secondary impacts of growth and development in the Coastal Zone encompass a variety of topics addressed in this assessment, including housing availability, land conservation, erosion and stormwater management, water quality and supply, economic development, and the effects of growing energy and data demands. Stakeholder input from members of the eight (8) PDCs, partners in DEQ's Chesapeake Bay Program Office, and legal experts at the University of Virginia's Institute for Engagement & Negotiation (UVA-IEN) has revealed a variety of concerns and priorities throughout the Coastal Zone that fall under this Enhancement Area including: water supply and water quality of the Chesapeake Bay and beyond, environmental demands of expanding energy sites and data centers, impacts of solar development, urban heat islands, and ecological concerns with increased development. Additionally, as seen in the land use data referenced in this Needs Assessment, development continues to replace open space acreage, farmland, forests, and wetlands.

However, this Needs Assessment includes summaries of state legislative and regulatory actions taken to address issues like solar development, data centers, water quality/quantity and more. These issues are also the focus of several proposed bills in the 2025 GA Session. Additionally, the breadth of this Needs Assessment topic lends itself to overlap with other program Enhancement Areas (e.g., Wetlands and Coastal Hazards) which may present more targeted opportunities to address similar issues raised in this Needs Assessment while allowing flexibility to address other Virginia CZM priorities through other Strategies. Virginia's Coastal Zone faces increasing threats from sea level rise, coastal erosion, and the loss

of tidal wetlands which in turn endanger existing and future coastal growth and development. Assigning the CSI Enhancement Area a Medium priority is not a reflection of the severity of the impacts or issues identified under CSI, but instead recognition that significant action is in progress on many of these issues. Virginia CZM may accomplish more by focusing on other Enhancement Areas and creating Strategies to address impacts from coastal development that are not being adequately addressed through other mechanisms. For these reasons, Virginia CZM staff recommend that the CSI Enhancement Area receives a **Medium** priority ranking as part of this Phase I Needs Assessment.

Special Area Management Planning

Section 309 Enhancement Objective: Preparing and implementing special area management plans for important coastal areas. §309(a)(6)

The Coastal Zone Management Act defines a special area management plan (SAMP) as "a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone. In addition, SAMPs provide for increased specificity in protecting natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making."

Phase 1 (High-level) Assessment: *(Must be completed by all states and territories.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. In the table below, identify geographic areas in the coastal zone subject to use conflicts that may be able to be addressed through a SAMP. This can include areas that are already covered by a SAMP but where new issues or conflicts have emerged that are not addressed through the current SAMP.

Geographic Area	Opportunities for New or Updated Special Area Management Plans Major conflicts/issues
Southern Watershed – Longleaf Pine Landscape	The Lynnhaven River, though not designated as high value in the Virginia Ecological Value Assessment (VEVA), still contains many restoration interests and projects. A SAMP could help increase that restoration work and collaboration and increase ecological health of the watershed. The Virginia Department of Wildlife Resources (DWR) has current plans to 1) acquire a large land area in the corridor between the Dismal Swamp and the Cavalier Wildlife Management Area (WMA), and 2) increase collaboration among conservation holders in Back Bay. Longleaf pine restoration efforts in Southern Virginia conducted by The Nature Conservancy (TNC) and the Virginia Department of Conservation & Recreation (DCR) could also benefit from increased conservation planning, along with an Action Site designated by DCR in this area that needs additional protection.

Geographic Area	Opportunities for New or Updated Special Area Management Plans Major conflicts/issues
Accomack County	Saxis, Virginia and Crisfield, Maryland both have resilience work occurring which could be expanded with additional resources. Accomack County was not originally included in the existing Southern Tip SAMP, but the Virginia Eastern Shore Conservation Alliance (VESCA) has expanded its focus to the entire Eastern shore. DWR also works to advance conservation & restoration in Accomack County and could use assistance highlighting the economic value of conservation & ecotourism to the County and its residents. DCR has designated Action Sites (see Resource Characterization - 2: DCR for definition) in Accomack County and across the broader Eastern Shore which would benefit from increased focus in the Accomack/VESCA SAMP to enhance conservation efforts.
Caroline County – Fort Walker	Large natural areas located around Fort Walker are currently not being managed jointly by the adjacent locality and the military. A SAMP could increase collaboration between the local and state governments and the Federal base on adjacent lands. This work could align with Virginia's newly designated Security Corridor Sentinel Landscapes. For more information on Sentinel Landscapes in Coastal Virginia, please see the Energy & Government Facility Siting Phase I Needs Assessment.
King George County - Dahlgren	As King George County becomes more populated, there are higher occurrences of conflicts between development and conserved areas as well as military activities and interests. In addition, the U.S. Department of Defense (DoD) has increased spending near the Dahlgren military base. A SAMP could increase collaboration between the local and state governments and the Federal base on adjacent lands. This work could align with Virginia's newly designated Security Corridor Sentinel Landscapes. For more information on Sentinel Landscapes in coastal Virginia, please see the Energy & Government Facility Siting Phase I Needs Assessment.
Eastern Stafford County	The eastern edge of Stafford County has a large area of natural land that is currently lacking a coordinated management effort. A SAMP could help coordinate organizations in the area and allow for more focused work.
Marsh Migration Corridors	Though not constrained to a specific watershed boundary, focusing conservation and planning efforts on these extremely important transitional areas throughout the Coastal Zone could advance resilience.
Pamunkey Lower Marsh Systems	Important marsh systems along the lower range of the Pamunkey River are currently lacking protection and could benefit from focused efforts on conservation and enhancement.
Dragon Run	Though previous conservation efforts through the SAMP established in Dragon Run were successful in conserving property in the area, the DCR-designated Action Sites are largely unprotected. Expanding the SAMP boundary to include the Mattaponi river would capture three (3) additional Action Sites.
Virginia Sentinel Landscapes – Security Corridor (Potomac and Tidewater Landscapes)	Newly established sentinel landscapes in Virginia will result in an increased availability of funds from the Readiness & Environmental Protection Integration (REPI) program from DoD, in addition to increased DoD collaboration with military and civilian institutions for greater protection and resiliency of military installations and the surrounding natural areas. Joint Expeditionary Base Little Creek-Fort Story was mentioned as area that could benefit from SAMP to help preserve natural resources that Sentinel Landscapes could help focus coordination.
Lower Chickahominy River Watershed	Section 309 funding through the Cumulative & Secondary Impacts of Growth & Development (CSI) Enhancement Area has supported conservation efforts in this

Geographic Area	Opportunities for New or Updated Special Area Management Plans Major conflicts/issues
	watershed – please see the CSI Phase I Needs Assessment for more information. However, a SAMP designation would help continue to conserve resources in this watershed, in particular three DCR- designated Action Sites. This boundary could also be combined with a Dragon Run SAMP.
Middle Potomac – Occoquan Watershed	This watershed is unique in the Coastal Zone for its high level of development and low levels of predicted sea level rise (SLR). The relatively low number of remaining forest patches in this watershed have multiple DCR-designated Action Sites but are increasingly fragmented and have a high risk of conversion to development.
Virginia Peninsula	This area at the convergence of the York, Lower James, and Lynnhaven watersheds has a large number of forests of high conservation value. Development and SLR threaten this area, and the associated DCR-designated Action Sites are not well protected.
Big Woods WMA	The Big Woods WMA includes Red Cockaded Woodpecker habitat with the threat of encroachment and presents the opportunity to advance habitat enhancement goals.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of SAMPs since the last assessment.

Currently, no SAMPs are active in Virginia's Coastal Zone. The Lower Chickahominy Watershed Collaborative (LCWC) developed a successful MOU in late 2021 (with an additional Supporting Member added in 2025) between the three (3) watershed localities, three (3) Virginia Tribes in the region, Richmond Regional PDC (PlanRVA), Hampton Roads PDC (HRPDC), Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERR-VA), the Capital Region Land Conservancy, and the Historic Virginia Land Conservancy and has continued convening semi-annual meetings of three (3) workgroups and the overall LCWC Steering Committee with Section 306 funding to PlanRVA (via annual Virginia CZM Technical Assistance grants for FY2021-2024) and Virginia CZM staff support since its implementation through the FY2016-2020 Section 309 CSI Strategy ended. As such, these efforts are reported on in more detail under the current CSI Phase I Needs Assessment.

According to the partners consulted for this assessment (Virginia Institute of Marine Science (VIMS), DWR, Virginia Department of Forestry (DOF), DCR, TNC), some conservation planning efforts are currently under establishment or renewal that could lead to future interest in the establishment of SAMPs in either specific geographies or across the Coastal Zone at-large.

Stakeholder Input:

- **VIMS:** As less land is available for conservation and land prices increase, the goal for a SAMP must shift as well. Instead of focusing on a specific geographical location, ecosystem/landscape types could be prioritized, and SAMPS could advance the effective management of conserved areas in addition to the protection of new areas. With SLR, increased storm events, and saltwater inundation, SAMPs could be used to increase resilience to these challenges. The focused funding for collaboration and planning activities to relevant organizations could allow for better resilience planning and more effective ways to mange areas (both natural and urban). Some starting points could include placing SAMPs on marsh migration corridors and using Section 309 funding to increase ecological resiliency planning in existing conserved areas. SAMPs could also be placed on areas not designated as high value in VEVA to help restore lower value areas back to high value.

- **DWR:** DWR is undertaking an update of the Virginia Wildlife Action Plan and oversees the Virginia Wildlife Corridor Plan. These plans effect conservation planning efforts in some of the areas designated as SAMPs previously, but do not necessarily establish the need for a SAMP.
- **DOF:** Sentinel Landscapes established in Virginia have the potential to enhance collaboration among localities, state agencies, and the DoD to increase conserved lands and resilience adjacent to military installations in Virginia's Coastal Zone. However, the infancy of the program does not allow for any robust Section 309 planning during this assessment cycle. Similarly, the Office of Working Lands was placed within DOF in 2024 but is not established enough to begin Section 309 planning. DOF will explore Section 309 enhancements during the next cycle.
- **DCR:** DCR's Natural Heritage Program has worked to identify Action Sites in Virginia which are locations that have some of the most exemplary and significant biota remaining in the local area and need varying levels of conservation attention. 61 of these sites exist in the Coastal Zone. Using SAMPs for these Action Sites could help DCR coordinate stakeholders across all Action Sites. Given the wide range of conservation needs and ongoing conflicts across the Coastal Zone, a SAMP across the entirety of Virginia's Coastal Zone may help DCR 1) systematically & critically evaluate needs across the region and 2) convene prospective partners (state natural and historic resource agencies, local governments, Tribes, land trusts).
- **TNC:** Land conservation efforts at TNC are focused mainly on acquisition, with a priority on Virginia on the Southern Longleaf Pine landscape. TNC also advances resiliency work on Virginia's Eastern Shore and focuses on planning for marsh migration. Due to other Section 309 Enhancement Areas better encompassing these efforts, a SAMP is not considered for these priorities.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone.

Table: Significant Changes in Special Area Management Planning

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
SAMP policies, or case law interpreting these	Y	Y	Y
SAMP plans	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Since the previous SAMP Phase I Needs Assessment, various funding sources and designations have been established that could justify the establishment of a SAMP in one of the areas mentioned above (see Resource Characterization Section). The Virginia Land Conservation Foundation, ConserveVirginia, Forest Legacy Program, Virginia Battlefield Preservation Fund, the newly designated Virginia Security Corridor Sentinel Landscapes (Potomac & Tidewater), and other temporary Federal funding opportunities through

the Bipartisan Infrastructure Law (BIL) & Inflation Reduction Act (IRA) have bolstered and focused land conservation, conservation easement planning, and stewardship in coastal Virginia. These resources allow for direct conservation funding and planning, helping alleviate the need for Section 309 funding for SAMPs. Specifically, BIL & IRA funding has brought hundreds of millions of dollars to Virginia in the form of investments in habitat restoration and coastal resiliency between 2022-2025.

Alternatively, once the Sentinel Landscapes program has become fully established, Section 309 funding in the SAMP enhancement area may be useful to increase coordination between military installations and localities. DCR's emerging efforts to conserve identified Action Sites may also benefit from SAMP designation once this program fully integrates with DCR's other conservation work.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

   High _____
   Medium __X__
   Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Multiple subject matter experts and relevant stakeholders were consulted for input in this Phase I Needs Assessment including: VIMS, DWR, TNC, DOF, and DCR. These organizations provided areas of need that could be assisted by a SAMP designation, both geographical (i.e. specific watershed) and ecosystem type (i.e. predicted wetland migration corridor). While many areas were identified as needing increased focus to protect or better restore their resources, the most valuable resources in these areas could be better protected by prioritizing a different Enhancement Area, mainly Wetlands (please see the Wetlands Phase I Needs Assessment for more information). Additionally, some areas have recently received designations that require time for stakeholders to collaborate before focusing efforts through funding like a SAMP, such as the Tidewater and Potomac Virginia Security Corridor Sentinel Landscapes.

Stakeholder input also questioned the historic use of SAMPs in Virginia which has focused on specific ecosystems versus other less geographically focused resources (e.g., marsh migration corridors). Stakeholder feedback suggested the need for protection of these resources or multiple areas which could be an alternative use of SAMPs. The Virginia Coastal Policy Team (CPT) reiterated that the long-term coordinated focus that a SAMP brings can be impactful.

The prioritization of other enhancement areas like Wetlands may still advance the conservation of resources that SAMPs would aim to protect in high-priority areas of Virginia's Coastal Zone. Therefore, as part of this Phase I Needs Assessment, Virginia CZM staff recommend that the SAMP Enhancement Area receive a **Medium** priority ranking.

Ocean and Great Lakes Resources

Section 309 Enhancement Objective: Planning for the use of ocean [and Great Lakes] resources. §309(a)(7)

Phase 1 (High-level) Assessment: *(Must be completed by all states and territories.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. Understanding the ocean and Great Lakes economy can help improve management of the resources it depends on. Using Economics: National Ocean Watch (ENOW),[27] indicate the status of the ocean and Great Lakes economy as of 2021 (the most recent data) in the tables below. Include graphs and figures, as appropriate, to help illustrate the information. Note ENOW data are not available for the territories. The territories can provide alternative data, if available, or a general narrative, to capture the value of their ocean economy.

Table: Status of Ocean and Great Lakes Economy for Coastal Counties (2021)

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	133,837	3,757	2,503	41,306	25,167	335	60,766
Establishments (# of Establishments)	4,560	273	148	99	369	61	3,610
Wages	$6.6 Billion	$121.4 Million	$195.4 Million	$3.2 Billion	$1.7 Billion	$23.7 Million	$1.3 Billion
GDP	$11.6 Billion	$683.8 Million	$367.9 Million	$4.8 Billion	$2.6 Billion	$50.2 Million	$3.0 Billion

[27] *coast.noaa.gov/digitalcoast/tools/enow.html*. If you select any coastal county for your state, you are directed to various data displays for that county. In the upper left of the screen, click the "State" box, to the left of the county box so that the state name will be highlighted. Now the data will reflect statewide data for all of the state's coastal counties. Make sure "2021" is selected for the year (top right corner). You can then click through the sector types by selecting the icons along the top and the type of economic data (employment, wages, GDP, etc.), by clicking through the icons on the left.

Table: Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2021)[28]

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	133,837	3,757	2,503	41,306	25,167	335	60,766
Establishments (# of Establishments)	4,560	273	148	99	369	61	3,610
Wages	$6.6 Billion	$121.4 Million	$195.4 Million	$3.2 Billion	$1.7 Billion	$23.7 Million	$1.3 Billion
GDP	$11.6 Billion	$683.8 Million	$367.9 Million	$4.8 Billion	$2.6 Billion	$50.2 Million	$3.0 Billion

2. Understanding existing uses within ocean and Great Lakes waters can help reduce use conflicts and minimize threats when planning for ocean and Great Lakes resources. Using Ocean Reports,[29] indicate the number of uses within the ocean or Great Lakes waters off of your state. To avoid duplication, energy uses (including pipelines and cables) are reported under "Energy and Government Facility Siting" in the following template. However, feel free to include energy uses in this table as well if listing all uses within ocean and Great Lakes waters in one place is preferred. Add additional lines, as needed, to include additional uses that are important to your state. Note: The Ocean Reports tool does not include data for the Great Lakes states. Great Lakes states should fill in the table as best they can using other data sources.

Table: Uses within Ocean or Great Lakes Waters

Type of Use	Number of Sites
Federal sand and gravel leases (Completed)	9
Federal sand and gravel leases (Active)	0
Federal sand and gravel leases (Expired)	0
Federal sand and gravel leases (Proposed)	0
Beach Nourishment Projects	7
Ocean Disposal Sites	61 in state waters and 3 within 10 nm
Principle Ports (Number and Total Tonnage)	1 (Port of Virginia: 65,600,000 tons in FY22)
Coastal Maintained Channels	98
Designated Anchorage Areas	22
Danger Zones and Restricted Areas	13
Artificial Fishing Reefs	22
Other (Cetacean Biologically Important Areas)	4
Other (Audubon Important Bird Areas	3

[28] Trend data is available at the bottom of the page for each sector and type of economic data. Mouse over the data points for 2005 and 2021 to obtain the actual values and determine the change by subtracting 2005 data from 2021.

[29] *coast.noaa.gov/digitalcoast/tools/ort.html*. Select the "view quick reports" button and enter the name of your state or territory in the search bar. Some larger states may have the "quick reports" for their state waters broken into several different reports. Click on the "state waters" reports to view. Note the Ocean Reports tool also generates "quick reports" for national estuarine research reserve boundaries in your state. These reports are just a subset of the "state waters" report(s) so you can ignore the reserve "quick reports." Use the icons on the left hand side to select different categories: general information, energy and minerals, natural resources and conservation, oceanographic and biophysical, transportation and infrastructure, and economics and commerce. Scroll through each category to find the data needed to complete the table. The top six categories in the table above are in the "energy and minerals" section while the other information to complete the table can be found under the "transportation and infrastructure" section.

3. In the table below, characterize how the threats to and use conflicts over ocean and Great Lakes resources in the state's or territory's coastal zone have changed since the last assessment.

Table: Significant Changes to Ocean and Great Lakes Resources and Uses

Resource/Use **Change in the Threat to the Resource or Use Conflict**	**Since Last Assessment** (↑, ↓, –, unknown)
Benthic habitat (including coral reefs)	↑
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	↑
Sand/gravel	↑
Cultural/historic	↑
Transportation/navigation	↑
Offshore development[17]	↑
Energy production	↑
Fishing (commercial and recreational)	↑
Recreation/tourism	Unknown
Sand/gravel extraction	↑
Dredge disposal	-
Aquaculture	-
Other (please specify)	
Benthic habitat (including coral reefs)	↑

4. For those ocean and Great Lakes resources and uses in the table above that had an increase in threat to the resource or increased use conflict in the state's or territory's coastal zone since the last assessment, characterize the major contributors to that increase. Place an "X" in the column if the use or phenomenon is a major contributor to the increase.

Major Contributors to an Increase in Threat or Use Conflict to Ocean and Great Lakes Resources

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Commercial and Recreational)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Other (Specify)
Benthic Habitat	X	X	X		X				X	X	X	
Living marine resources		X	X		X			X	X	X	X	
Sand/Gravel	X	X							X			
Cultural/historic		X			X				X	X		
Transportation & Navigation		X						X				
Offshore development[17]					X			X				
Energy Production		X			X			X				
Fishing		X			X			X	X	X	X	
Sand/Gravel Extraction		X			X			X		X		

5. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of ocean and Great Lakes resources or threats to those resources since the last assessment to augment the national data sets.

A FY2019 Virginia CZM Section 309-funded project (Task 94.02) completed in 2022 resulted in the development of The Nature Conservancy (TNC)'s Marine Mapping Tool. Development of this tool included development or updates to several datasets including: 1) updating marine mammal data in coordination with Marine Geospatial Ecology Lab at Duke University, 2) updated datasets on bathymetry, seabed forms, and sediments. The tool also allows users to quickly see potential impacts associated with marine development siting areas while providing links for additional information or direction to the underlying data.

As part of monitoring requirements for the Coastal Virginia Offshore Wind (CVOW) project, the Virginia Marine Resources Commission (VMRC) and the Virginia Institute of Marine Science (VIMS) are coordinating in monitoring for Black Sea Bass, Channeled Whelk, and Atlantic Surfclam to help inform understanding of these fisheries in the project site. The Atlantic Surfclam monitoring effort has been completed and results have been published here. Reports on Black Sea Bass and Channeled Whelk are expected in 2025.

Virginia Department of Energy (Virginia Energy) geology staff published two papers in 2023 on heavy mineral contents in offshore deposits. These studies identified heavy minerals of economic value that have been deposited with offshore marine sediments including ilmenite, leucoxene, rutile, zircon, and monazite, among others. Depending upon the concentration, extent, and mineral composition of these resources, economically viable deposits could be co-extracted with marine sand for beach nourishment

or during other stand-alone dredging operations. Additionally, these efforts looked into the feasibility/capacity for recovering critical and economic minerals from sand used for coastal resilience projects. More information on these studies can be found here.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if any significant state- or territory-level changes (positive or negative) in the management of ocean and Great Lakes resources have occurred since the last assessment?

Table: Significant Changes to Management of Ocean and Great Lakes Resources

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	Y
Regional comprehensive ocean/Great Lakes management plans	N	N	N
State comprehensive ocean/Great Lakes management plans	N, in progress	N	N
Single-sector management plans	Y, under executive review (marine mammal/sea turtle plans), MAMFC updates	Y, (plan funded by CZM Section 309)	Y, (upon publication)

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

The Virginia Department of Wildlife Resources (DWR) is nearing completion of a Marine Mammal Conservation Plan and Sea Turtle Conservation Plan. These two (2) plans were developed with Section 309 funding and are currently under review by the Virginia Governor, after which they will be adopted by the agency. The plans not only describe species extent, frequency, life stages, and vulnerabilities, but also provide recommendations to conserve these species as they migrate off the coast of Virginia. Recommendations range from increased monitoring and data development, sustainable funding, and support for stranding programs, and development of social marketing and other educational materials for specific audiences that regularly interact with these species. These plans will be incorporated into the Virginia Ocean Plan (Plan) as appendices, and the recommendation within will provide next steps for DWR and other Virginia CZM network partners.

Under Governor Northam's Administration in 2020, the Virginia General Assembly (GA) passed the Virginia Clean Economies Act (VCEA) mandating that Virginia utilize 100% renewable energy sources by

2045. VCEA established an Energy Efficiency Resource Standard and a mandatory Renewable Portfolio Standard (RPS) program directing Dominion Energy to deliver electivity from 100% renewable sources by 2045. Specifically, the VCEA requires Dominion to construct or purchase offshore wind (OSW) facilities capable of producing up to 5.2 gigawatts of electricity by the end of 2035. For more information on VCEA, see the Energy & Government Facility Siting Phase I Needs Assessment.

In 2023, Dominion Energy began construction on the CVOW project, a 2.6-gigawatt OSW energy project that will consist of 176 turbines located 27 miles off the coast of Virginia Beach to power up to 660,000 homes. Formal planning for CVOW began in 2013 when Dominion executed a lease agreement with the Bureau of Ocean Energy Management (BOEM) who approved the final Site Assessment Plan in 2017. Dominion then received subsequent approvals for CVOW from the GA via supportive legislation passed in 2020, and Virginia's State Corporation Commission who approved the CVOW project in 2022. In late 2023 the first construction materials were delivered to their staging location at the Portsmouth Marine Terminal at the Port of Virginia (Port), and construction of the onshore energy transmission cable began thereafter.

Subsequently Dominion Energy pursued and has been provisionally awarded lease OCS-A 0558 which consists of an additional 176,505 acres 35nm from the entrance of the Chesapeake Bay, which will be considered CVOW East. In addition, in July of 2024 Dominion Energy announced an agreement to acquire a 40,000-acre lease from Avangrid. Previously known as Kitty Hawk North, the lease site will now be called CVOW South and can support up to 800 MW of OSW capacity. Considering CVOW, and the two newly acquired leases, Dominion Energy anticipates that they have secured sufficient capacity to develop the required 5.2 gigawatts by 2035.

In 2022 Governor Youngkin announced his energy plan for the Commonwealth which supports innovative explorations and expansions in clean and renewable energy generation but raises concerns regarding the consequences of 100% renewable energy standards under VCEA citing rising electricity costs and storage capacity limits. The Plan supports the CVOW project and recommends that the Commonwealth invest in other emerging energy technologies including hydrogen, carbon capture, battery storage, and small modular nuclear reactors (SMRs). Given that Dominion Energy has secured sufficient lease acreage, it is anticipated that Virginia focus will be on development of OSW workforce and supply chain development, and other sources of alternative energy such as those covered in the 2022 Virginia Energy Plan. For more information on the Plan, see the Energy & Government Facility Siting Phase I Needs Assessment.

A bill passed in 2020, during the last Needs Assessment period but not previously referenced in the FY2021-2025 Needs Assessment & Strategies document, prohibits the granting of a lease, easement, or permit on the beds of the coastal waters of the Commonwealth that would allow any infrastructure for conveying to shore oil or gas produced from offshore drilling in the Outer Continental Shelf Planning Area. This effectively prevents any offshore oil and gas from landing in Virginia without further action by the general assembly. While at this time no leases for offshore oil and gas have been approved Federally off the coast of Virginia, it has not been permanently banned and could still occur.

Since 2021, the Mid-Atlantic Fishery Management Council (MAFMC) has completed actions on several Fishery Management Plans (FMP) and taken other actions including the:

- Black Sea Bass Commercial State Allocation Amendment (01/01/22)
- Joint Framework Action to Reduce Sturgeon Bycatch in Dogfish and Monkfish Fisheries (12/18/24)

- Summer Flounder Scup and Black Sea Bass Commercial/Recreational Allocation Amendment (11/17/22)
- Recreational Harvest Control Rule Framework updates (03/09/23)
- Atlantic Mackerel Rebuilding Amendment (02/01/23)
- Bluefish Allocation Amendment (11/24/21)
- Golden Multiyear Specifications Framework Update (11/14/22)

Several other significant actions are in progress including an Omnibus Essential Fish Habitat Amendment, Recreational Sector Separation and Data Collection Amendment, and Atlantic Surfclam and Ocean Quahog Species Separation Requirements Amendment. More information on MAFMC updates can be found here.

In December of 2022, a MOU was developed between VMRC and the menhaden fishing industry in Virginia stating that the Bay's lone reduction fishery, Omega Protein, and two (2) bait fisheries, agree to not fish in state waters of the Chesapeake Bay around Memorial Day, July 4, and Labor Day, as well as on Saturdays and Sundays between Memorial Day and Labor Day and within a half-mile of the Chesapeake Bay Bridge-Tunnel (CBBT). The agreement also calls for the whole fishery to work collaboratively with the Governor's office and the GA to maintain a buffer where fishing will not occur in waters along the densely populated areas of the Eastern Shore, Chesapeake Bay and Virginia Beach region.

However, the agreement carries no enforcement penalties. This MOU was developed following extensive negotiations around a proposed regulation proposing a half-mile nautical wide buffer around the CBBT and limited fishing on certain days around holidays. This proposed regulation was not ultimately adopted. While the Atlantic States Marine Fisheries Commission (ASMFC) has recently increased menhaden quota coastwide, many stakeholders including those representing sport fishermen and conservationists argue that the health of the menhaden fisheries within the Atlantic Ocean is not reflective of the health of the bay fishery, and that over fishing of this crucial prey fish may be impacting other species like striped bass, as well as birds of prey that feed on Menhaden such as osprey. A bill requiring a study of the menhaden fishery in the bay and potential impacts introduced in the 2024 session was pushed to the 2025 session. It is anticipated that this issue will continue to be a focus for both legislation and regulation in Virginia.

The U.S. Coast Guard (USCG) published the Consolidated Port Approaches Port Access Route Studies (CPAPARS) on March 10, 2023 for public comment. This report provides recommendations for a system of shipping safety fairways and routing measures along the Atlantic Coast as the basis for subsequent rulemaking proposals.

The Port reached a milestone in long planned deepening of navigation channel to 55 feet, which once done, will offer the deepest, widest channels on the U.S. East Coast and commercial channels will allow safe, two-way traffic for larger ships. This $450 million dredging project is anticipated to be completed in Fall 2025.

3. Indicate if your state or territory has a comprehensive ocean or Great Lakes management plan.

Comprehensive Ocean/Great Lakes Management Plan	State Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	N	Yes, 2016 (deprioritized by 2018 EO)
Under development (Y/N)	Y	N
Web address (if available)	https://www.deq.virginia.gov/our-programs/coastal-zone-management/ocean-planning/virginia-ocean-planning	https://www.boem.gov/sites/default/files/environmental-stewardship/Mid-Atlantic-Regional-Planning-Body/Mid-Atlantic-Regional-Ocean-Action-Plan.pdf
Area covered by plan	Not constrained but generally from the CBBT east to 200 nautical miles inclusive of the Exclusive Economic Zone (EEZ), north and south currently undefined given fisheries extents.	The shoreline seaward to 200 nautical miles, the boundary of the EEZ, which includes Federal, State, and Tribal waters. The northern limit is the New York/Connecticut and New York/Rhode Island border. The southern limit is the Virginia/North Carolina border.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High __X__
Medium _____
Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The Commonwealth of Virginia has a deep historic and present-day relationship with the ocean. According to NOAA's Economics: National Ocean Watch report, Virginia ranks 6 out of the 30 coastal states for marine employment with over 131,000 employees, and Virginia has a total marine related GDP of $11.6 billion. Between 2011 and 2021, the number of employees in marine jobs increased by 11% and the GDP increased by 20%. This trend is increasing investment in the "blue economy" is expected to continue over the next decade. In 2022, the Port of Virginia moved more cargo than ever, and the port is planning to deepen channels to 55 feet and expand rail capacity, all leading to further increases in cargo capacity. Dominion Energy has begun construction on CVOW and secured leases for two more proposed farms tentatively known as CVOW South and CVOW East. Virginia also continues to support the largest shipyard for shipbuilding in the country, as well as the largest Naval Base. As Virginia has become the epicenter for datacenter development, the plans for as many as four new submarine communication cables that will land in state are already in the works. These economic engines rely on the ocean that is all critical habitat and migration grounds for marine mammals, sea turtles, birds, including many listed or endangered species such as the North Atlantic Right Whale. This all speaks to a seascape that is becoming increasingly busy and complex with each passing year, and with that comes an increasing potential for use conflicts.

Building on Virginia CZM's history of work focused on ocean resources, in October of 2023 Virginia CZM kicked off an extensive stakeholder driven process to inform the development of the first Virginia

Ocean Plan. This process has involved engagement with over 130 different individuals representing Federal, state, local, and tribal governments, as well as representatives from industry, environmental non-profits, and recreation advocates. Although the draft is still in process, it is anticipated that the final product will contain several recommendations related to ocean resource management. Among these potential recommendations is the suggestion that a Virginia Ocean Planning Group (VOPG) be established to serve as a cross jurisdictional and diverse coordinative body to enable proactive coordination on ocean resource management topics, support implementation of the Plan recommendations, and propose revisions to the plan in the future. While Virginia CZM is committed to the implementation of this and other potential recommendations stemming from the Plan, expanded efforts to ensure ocean use conflicts are addressed may require additional capacity and expertise. Other potential Virginia CZM program changes identified during the Virginia Ocean Planning process include the development of a Geographic Location Description (GLD) and updating existing or developing new enforceable policies to protect natural and economic resources.

Additionally, it is anticipated that deepening Virginia's existing deep water navigation channels in state waters associated with existing port facilities in Hampton Roads will occur during the next five years in order to accommodate larger and deeper draft commercial vessels. This will result in both increased volumes of sediment to be disposed of or beneficially reused and a need for additional planning for expanded shipping lanes. For the former, Virginia CZM will continue to expand upon the work started by a FY2023 Section 306 grant (Task 10) to VMRC to develop a technical document for the beneficial use of dredged material (BUDM) and coordinate with all applicable stakeholders. Coordination among dredging partners and those identifying beneficial uses will continue with support from Virginia CZM staff, but comprehensive updates to the guidance including offshore disposal and management of sediments may require Section 309 funding if policy outcomes are desired.

As the Plan moves from a planning and development stage to an implementation stage that may ultimately lead to several program changes, capacity and expertise beyond the Virginia CZM office will be required. Section 309 funding can provide this critical capacity over the next five-year cycle. In light of a growing blue economy that is already leading to increasing complexity in ocean planning, as well as the consistent input from stakeholders identifying the need for a cross-jurisdictional and diverse forum for coordination to build off the work of the Plan, Virginia CZM staff recommends that the Ocean Resources Enhancement Area receive a **High** priority ranking as part of this Phase I Needs Assessment.

Energy & Government Facility Siting

Section 309 Enhancement Objective: Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance. §309(a)(8)[30]

Phase 1 (High-level) Assessment: *(Must be completed by all states and territories.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. In the table below, characterize the status and trends of different types of energy facilities and activities in the state's or territory's coastal zone based on best-available data. If available, identify the approximate number of facilities by type. For ocean-facing states and territories (not Great Lakes states), Ocean Reports[31] includes existing data for many energy facilities and activities.

Table: Status and Trends in Energy Facilities and Activities in the Coastal Zone

Type of Energy Facility/Activity	Exists in Coastal Zone (# or Y/N)	Change in Existing Facilities/Activities Since Last Assessment (↑, ↓, –, unknown)	Proposed in Coastal Zone (# or Y/N)	Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, –, unknown)
Pipelines	1	-	N	-1
Electrical grid (transmission cables)	Y	-	1	+1
Ports	5	-	N	-
Liquid natural gas (LNG)	N	-	N	-
Electric Power Facilities (Oil)	4	+4	N	-
Electric Power Facilities (Gas)	6	+6	N	-
Electric Power Facilities (Coal)	N	-5	N	-
Electric Power Facilities (Nuclear)	1	-3	N	-

[30] CZMA § 309(a)(8) is derived from program approval requirements in CZMA § 306(d)(8), which states:
"The management program provides for adequate consideration of the national interest involved in planning for, and managing the coastal zone, including the siting of facilities such as energy facilities which are of greater than local significance. In the case of energy facilities, the Secretary shall find that the State has given consideration to any applicable national or interstate energy plan or program."
NOAA regulations at 15 C.F.R. § 923.52 further describes what states need to do regarding national interest and consideration of interests that are greater than local interests.

[31] *coast.noaa.gov/digitalcoast/tools/ort.html.* Select the "view quick reports" button and enter the name of your state or territory in the search bar. Some larger states may have the "quick reports" for their state waters broken into several different reports. Click on the "state waters" reports to view. Note the Ocean Reports tool also generates "quick reports" for national estuarine research reserve boundaries in your state but this is just a subset of the "state waters" report(s) so you can ignore the reserve "quick reports." Click on the turbine icon on the left ("energy and minerals") for information on energy production. While outside your coastal zone, you may also want to consider facilities/activities in "federal waters" that may have effects on your coastal zone.

Electric Power Facilities (Wave)	N	-	N	-
Electric Power Facilities (Tidal)	N	-	N	-
Electric Power Facilities (Current, ocean, lake, river)	N	-	N	-
Electric Power Facilities (Hydropower)	N	-	N	-
Electric Power Facilities (Ocean thermal energy conversion)	N	-	N	-
Electric Power Facilities (Solar)	78	+35	29	+24
Electric Power Facilities (Biomass)	1	-	N	-
Fusion Power Facility	N	-	1	+1
Other (please specify)				

2. If available, briefly list and summarize the results of any additional state- or territory-specific information, data, or reports on the status and trends for energy facilities and activities of greater than local significance in the coastal zone since the last assessment.

In 2021, the Port of Virginia (Port) announced their goal to achieve zero carbon emissions by 2040 in their "Net-Zero by 2040" commitment. By 2023, the Port had reached a 70% reduction in total carbon emissions from their 2017 baseline, and in January 2024 the Port announced their official transition to 100% clean energy. Eight years ahead of schedule, the Port of VA has met their goal of zero carbon emissions becoming the first US East Coast port to power all terminals with 100% clean energy. To reduce emissions, the Port replaced diesel- and gas-powered equipment with electric and hybrid technology and entered a Power Purchase Agreement with Dominion Energy corporation to use 100% clean energy. The Port also supports progress of Dominion Energy's Coastal Virginia Offshore Wind (CVOW) project by using the Portsmouth Marine Terminal for the staging and transport of construction materials.

In late 2024, Governor Youngkin's office announced that Commonwealth Fusion Systems (CFS) plans to make a multi-billion-dollar investment towards building the world's first grid-scale commercial fusion power plant at the James River Industrial Center in Chesterfield County, part of Virginia's Coastal Zone. This source of clean, renewable energy generation will support the goals of the Virginia Clean Economies Act (VCEA) (see below) for the Commonwealth to use 100% renewable energy sources by 2045. CFS conducted a global search to determine the location of its first commercial fusion plant, known as ARC, before selecting the James River Industrial Center owned by Dominion Energy. ARC should generate 400 megawatts (MW) of electricity to power either large industrial sites or up to 150,000 homes and will likely begin delivering power to the grid in the early 2030s.

3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance[32] in the state's coastal zone since the last assessment.

[32] The CMP should make its own assessment of what government facilities may be considered "greater than local significance" in its coastal zone, but these facilities could include military installations or a significant federal government complex. An individual federal building may not rise to a level worthy of discussion here beyond a very cursory (if any at all) mention).

The Sentinel Landscapes Partnership is a coalition of Federal agencies, state and local governments, and non-governmental organizations that work with willing landowners and land managers to advance sustainable land use practices around military installations. The partnership was founded in 2013 between the U.S. Department of Agriculture (USDA), Department of Defense (DoD), Department of the Interior (DOI), and the Federal Emergency Management Agency (FEMA) to strengthen military readiness, conserve natural resources, bolster agricultural and forestry economies, increase public access to outdoor areas, and enhance resilience. Sentinel landscapes are designated locations at the intersection of conservation interests, working lands, and national defense areas, relying on strong partnerships with state and local governments to advance conservation goals.

The Virginia Security Corridor (VSC) was established in 2023 uniting two (2) distinct sentinel landscapes: Potomac and Tidewater. This region encompasses over 2.9 million acres of land and water and overlaps significantly with Virginia's Coastal Zone. The VSC supports 10 military installations and has established three (3) lines of effort: 1) prevent encroachment on military activities while supporting adjacent working lands, 2) build resilience against coastal hazards, and 3) conserve and restore key habitats to improve water quality and protected species. The VSC also connects the Middle Chesapeake (MD) and Eastern North Carolina Sentinel Landscapes, enabling interstate coordination.

The VSC partnership was announced by Governor Youngkin in 2023 to "advance mutually beneficial land-use initiatives that complement Virginia's military, forestry, agriculture, and recreation economies by connecting landowners with voluntary conservation easement assistance programs." The Virginia Department of Forestry (DOF) oversees the Sentinel Landscapes program in Virginia and has recently begun efforts to advance conservation goals and coordinate funding availability to interested landowners and land initiatives. Land conservation activities associated with the VSC Sentinel Landscapes are anticipated to increase greatly in the upcoming assessment cycle, encouraging natural resource conservation and enhanced resilience in Virginia's Coastal Zone.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) that could facilitate or impede energy and government facility siting and activities have occurred since the last assessment.

Table: Significant Changes in Energy and Government Facility Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpretations	Y	Y	Y
State comprehensive siting plans or procedures	Y	Y	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Under Virginia Governor Ralph Northam's Administration in 2020, the Virginia General Assembly (GA) passed the VCEA mandating that Virginia utilize 100% renewable energy sources by 2045. VCEA established an Energy Efficiency Resource Standard and a mandatory Renewable Portfolio Standard (RPS) program directing Dominion Energy to deliver electivity from 100% renewable sources by 2045. VCEA declared specific quantifies of solar, onshore, and OSW MWs to be in the public interest and favors renewable generation over baseload power generation, requiring that most coal- and oil-fired power plants cease operation by the end of 2024. The outcomes of VCEA will lead to significantly increased use of renewable energy in the Commonwealth but may also increase electricity costs as energy demands and costs for energy storage continue to rise. Solar energy sites are increasing in number in the Coastal Zone and new OSW developments have begun in the Coastal Zone. Please see the Ocean Resources Phase I Needs Assessment for more details on CVOW and OSW impacts to Virginia's Coastal Zone.

In 2022 Governor Youngkin announced his energy plan for the Commonwealth which supports innovative explorations and expansions in clean and renewable energy generation but raises concerns regarding the consequences of 100% renewable energy standards under VCEA citing rising electricity costs and storage capacity limits. The Plan supports the CVOW project for its potential to make Virginia a leading state in OSW supply and technology and also recommends that the Commonwealth invest in other emerging energy technologies including hydrogen, carbon capture, battery storage, and small modular nuclear reactors (SMRs). SMRs are a particular focus of energy expansion in the Plan, but suggested areas of development are limited to Southwest Virginia, outside the Coastal Zone.

In 2023, the Virginia Department of Environmental Quality (DEQ) received a CPRG for planning from the U.S. Environmental Protection Agency (EPA) to reduce GHGs and other air pollutants in two (2) phases: 1) Develop a PCAP to identify near-term and high impact projects to reduce GHG and other air pollutant emissions, and 2) Develop a Comprehensive CAP to implement longer-term, statewide plans to reduce GHG and other air pollutant emissions. DEQ submitted the final PCAP to the EPA in March 2024 and is currently soliciting feedback from stakeholders and the public to write the CCAP which is due to the EPA by late 2025.

DEQ has also received two (2) CPRGs for project implementation to fund the following projects: 1) Coalition between DEQ and the Virginia Department of Energy (Virginia Energy) to reduce methane emissions by targeting coal mine and landfill methane and reducing food waste, and 2) Four-state coalition (Maryland, North Carolina, South Carolina, Virginia) allocating funding among these states and The Nature Conservancy (TNC) to protect and restore wetlands and forests on natural and working lands. DEQ has received $50 million to carry out this land conservation work with projects implemented by the Virginia Department of Wildlife Resources (DWR) and the Virginia Port Authority (VPA). Additional funding received by TNC will also support the implementation of carbon sequestration projects in Virginia.

In 2021, Virginia was the first southern state to join the Regional Greenhouse Gas Initiative (RGGI) after the GA passed the Clean Energy & Community Flood Preparedness Act in 2020. RGGI is a multi-state cap-and-trade program in which electricity producers are required to buy allowances for their emissions. Under the 2020 legislation, 50% of resulting funds were directed towards energy efficiency programs and 45% contributed to Virginia's Community Flood Preparedness Fund (CFPF) which supports community-scale flood protection projects. Since Dominion Energy in Virginia could recover the costs of these allowances from ratepayers, Dominion customers saw increases in their monthly fees in the amount of $4.34 on average.

In 2022, Governor Youngkin proposed to revoke the RGGI Regulation, and the State Air Pollution Control Board approved this action in 2023, withdrawing Virginia from RGGI and removing additional fees incurred by Dominion Energy. Concurrently, Governor Youngkin also proposed budget amendments including a $200 million deposit of GA funds into the Resilient Virginia Revolving Loan Fund (a FEMA-based program) to support flood protection projects. This is meant to replace supplemental funds from RGGI which would have contributed to the CFPF. A late 2024 ruling in the Circuit Court of Floyd County ruled that the RGGI withdrawal was unlawful and must be approved by the General Assembly, but the court has suspended this judgement during appeals and thus Virginia currently remains withdrawn from RGGI.

House Bill 774 was enacted into law in 2022 and required the Virginia State Corporation Commission (SCC) to convene a task force to 'analyze the life cycle of renewable energy facilities' and submit a report to the Governor in May 2023. The report covers: 1) the decommissioning of solar facilities, including the potential for recycling or salvaging materials, waste management, and liability for the decommissioning process; 2) the "potential impacts of underground infrastructure" once the facility is decommissioned; and 3) the facilities' impacts on both land and the economy. The report is intended to enable legislators to understand the impacts of solar facilities during operation and any potential issues at the end of their life cycles, such as disposal of materials and site restoration.

House Bill 894 was also enacted into law in 2022 and requires: 1) the Virginia Cooperative Extension to compile a database of prime farmland in the Commonwealth and 2) the Virginia Department of Energy (Virginia Energy) to "consider minimizing the impact on prime farmland, as defined in § 3.2-205 of the Code of Virginia, a key priority in completing its update to the Virginia Energy Plan." This bill may be relevant to Virginia localities that wish to protect high-quality agricultural land from conversion to energy sites.

In 2022, the General Assembly also passed House Bill 206 (HB 206), which only applies to small solar projects qualifying for the solar Permit by Rule (PBR) process. HB 206 requires DEQ to analyze the potential environmental impacts of small solar sites on air quality, natural and historic resources, and wildlife if a proposed project disturbs more than 10 acres of prime agricultural land or 50 acres of contiguous forested lands. The bill also requires applicants to submit a mitigation plan if DEQ determines significant adverse environmental impacts based on their analysis. The bill directed DEQ to promulgate mitigation regulations under the PBR program with the guidance of a Regulatory Advisory Panel (RAP).

Additionally, DEQ is currently considering new rules requiring mitigation for solar siting projects based on discussions from the HB 206 RAP. The proposed rules involve a 1:1 mitigation ratio for the land disturbed by solar installations, meaning that for every acre disturbed in solar site construction, developers must mitigate for that acre on- or off-site, for example by paying for conservation easements to protect the same type of disturbed land (e.g., agricultural) in adjacent areas. Under the draft rules, developers could decrease mitigation requirements by taking steps to avoid land disturbances during development (e.g., leaving slope of the land unchanged or limiting soil compaction). Public comments to the rules have yielded varied responses with some groups concerned for the cost associated with conservation easements and potential increases to the length of solar site approval.

In 2022, DEQ submitted a report to the Youngkin Administration to summarize the progress made by the HB 206 RAP in proposing amended regulations to 9VAC15-60 (PBR regulations). The RAP: 1) proposed mechanisms that could be used in a mitigation plan for solar projects that have significant adverse environmental impacts, and 2) determined under what circumstances projects may fall below the thresholds outlined in HB 206. Out of 41 proposals created by the RAP's five (5) workgroups, only four (4)

proposals received full consensus, 14 were near consensus, and 23 were not close to consensus. DEQ reconvened the stakeholder group in 2023 and recently finalized draft amendments to 9VAC15-60 which are currently available for public comment. The proposed amendments specifically reference Virginia's Coastal Zone and coastal areas of high ecological value, including 1) Coastal Avian Protection Zones and the required use of Coastal Geospatial & Educational Mapping System (GEMS) to assess the environmental impacts of proposed solar energy project sites, and 2) sea turtle nesting areas and the required mitigation of adverse effects of construction near nesting sites and nighttime construction.

The impacts of solar installations on groundcover both during and after construction have presented localities with management challenges which may be addressed with new Virginia Erosion & Stormwater Management Act (VESMA) legislation. In 2018, a 200-acre solar installation in Essex County (part of Virginia's Coastal Zone) contributed severe sediment runoff into a nearby tributary to the Rappahannock River resulting in a $245,000 fine to developers who failed to fully implement erosion & sediment control (ESC) measures by eliminating a retention pond and working in conditions that exacerbated runoff events. Previously, Virginia managed ESC and stormwater concerns with separate legislation through the Virginia Stormwater Management Act (VSMA) and the Virginia Erosion & Sediment Control Law. In 2024, VESMA took effect which consolidated ESC and stormwater regulations and resulted in new DEQ guidance. Please see the Cumulative & Secondary Impacts of Growth & Development (CSI) Phase I Needs Assessment for more information about VESMA.

Consistent with the previous VSMA legislation, VESMA and resulting VESM Programs (operated by localities) will apply to any land-disturbing activity that affects either >10,000 square feet (SF) or >2,500 SF in an area that falls under the Chesapeake Bay Preservation Act (CBPA). This may include solar energy sites. Additionally, in 2022 DEQ issued a memo memo with updated definitions to classify solar panels as unconnected impervious surfaces, affecting calculations of predicted stormwater runoff and potentially increasing ESC and stormwater management of solar sites.

PlanRVA, the planning district commission (PDC) for the Richmond region that receives funding support from Virginia CZM, has released a Solar Suitability Analysis and mapping tool. Work on the tool began in the FY2022 grant term and Version 1 was released in late 2023. The regional solar suitability analysis considers geographic features that make the development of large-scale solar installations more or less likely in that location, and more or less suitable across the landscape. This analysis helps planners determine potential locations of large-scale solar installations in suitable areas in their region. This data can assist local and regional planners in protecting valuable environmental resources and avoiding or mitigating land use conflicts. Geographic features in the analysis include: conserved lands, easements, agricultural-forested districts, transmission lines, slope, land cover, land use, floodplains, endangered species, and community areas.

Regarding the impact of data centers in Virginia's Coastal Zone, please see the CSI Phase I Needs Assessment for more information on the energy demands and related environmental outcomes.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

   High _____
   Medium __X__
   Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Continued economic growth and development throughout coastal Virginia has led to increased energy demands which are forecasted to escalate further in the coming years due to new infrastructure like data centers concentrated in Northern Virginia (with the majority of new data centers proposed outside of the Coastal Zone). Please see the CSI Phase I Needs Assessment for more discussion on data centers. Amidst these increased demands, Virginia's regulatory landscape has experienced significant changes over the last five (5) years to prioritize the generation of clean, renewable energy through landmark legislation like the VCEA. This juxtaposition raises important considerations of how to plan for and mitigate the environmental impacts of increased energy demands while meeting the new mandates for renewable energy generation.

Stakeholder input from the eight (8) coastal PDCs, Virginia Energy, DEQ's CCAP meetings, and the Virginia Institute of Marine Science (VIMS) echoes similar concerns regarding the potential environmental consequences of increased energy generation, even in the context of renewable sources. For example, VIMS has submitted a preliminary project proposal to Virginia CZM to explore potential alternative locations of solar energy installations with limited environmental consequences compared to traditional solar site land use. Additionally, progress is well underway for the CVOW project by Dominion Energy, which has required developing fluency in a new suite of environmental considerations for the Coastal Zone.

At this point in time, the most pressing energy-related concerns are the subject of a number of recent and proposed state laws and regulatory actions and are receiving warranted attention from other state programs and funding sources. While Virginia CZM may have a role in supporting the development of tools such as the aforementioned solar siting tool, no specific policy issues suited to Section 309 projects were identified by stakeholders at this time. Similarly, no other issues related to Federal facility siting were identified. OSW development remains a likely focus for the program but is addressed through the Ocean Resources Phase I and Phase II Needs Assessment sections. For these reasons, Virginia CZM staff recommend that Energy & Government Facility Siting receives a **Medium** priority ranking as part of this Phase I Needs Assessment.

Aquaculture

Section 309 Enhancement Objective: Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable states to formulate, administer, and implement strategic plans for marine aquaculture. §309(a)(9)

Phase 1 (High-level) Assessment: *(Must be completed by all states and territories.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. In the table below, characterize the existing status and trends of aquaculture facilities in the state's coastal zone based on the best-available data. Your state Sea Grant Program may have information to help with this assessment.[33]

Table: Status and Trends of Aquaculture Facilities and Activities

[33] While focused on statewide aquaculture data rather than just within the coastal zone, the *Census of Aquaculture* (*agcensus.usda.gov/Publications/Census_of_Aquaculture/)* may help in developing your aquaculture assessment. The census is conducted every 10 years and the last report was released in 2018. The report provides a variety of state-specific aquaculture data to understand current status and recent trends.

Type of Facility/Activity	Number of Facilities	Approximate Economic Value	Change Since Last Assessment (↑, ↓, –, unknown)
Private Hatcheries	9	Unavailable	No change – there is 1 small-scale hatchery that was overlooked last time. This commercial hatchery was bought out by a Canadian company but will operate as normal.
Public Hatcheries	2	n/a	The Virginia Institute of Marine Science (VIMS)' The Virginia Institute of Marine Science (VIMS)' Acuff Center for Aquaculture is the new shellfish hatchery facility in Gloucester Point which not only houses the oyster breeding program but also conducts experimental spawns on multiple species for research and development and supplies oysters to a new demonstration farm. Overall emphasis is on oyster broodstock development & research on other low salinity species. The Castagna Shellfish Research Hatchery at the Eastern Shore Laboratory in Wachapreague (VIMS ESL) is working on high salinity species such as bay scallops, hard clams, and seaside oysters. Both are newly built (2023) facilities providing state of the art research support for Virginia's aquaculture industry and shellfish for ecological restoration. These hatcheries do not produce seed or shellfish to sell. Production for sale is relegated to the private sector in Virginia.
Finfish Aquaculture	6 Private Hatcheries, 9 Public Hatcheries owned and operated by the Virginia Department of Wildlife Resources. Only 1 public hatchery (King & Queen County) is located within the Coastal Zone.	$14.6M and supports approximately 7,500 jobs in Virginia (not limited to the Coastal Zone).	N/A. Data was not provided in FY2021-2025 Needs Assessment & Strategies.
Crayfish Aquaculture	0	N/A	This industry and research efforts are virtually non-existent in Virginia with approximately 1 acre in production associated with an existing facility focused primarily other species.

Spat-on-shell Oyster Growing	8	Unknown	According to Virginia Sea Grant (VASG), there are approximately 8 spat-on-shell facilities actively setting quantities of spat-on-shell each year. Spat –on-shell production remains limited by availability of large quantities of larvae from commercial hatcheries. The Virginia Marine Resources Commission (VMRC) suggests that there may be double that number of facilities but does not have data since they do not regulate spat-on-shell activities.
Oyster Aquaculture	376	2024 survey numbers and VASG's 2025 Shellfish Aquaculture Situation & Outlook Report	Virgina CZM contacted VASG staff on 5/20/25 for an update on the status of the report.
Hard Clam Aquaculture	127	2024 survey numbers and VASG's 2025 Shellfish Aquaculture Situation & Outlook Report	Fill in based on VASG's 2025 Shellfish Aquaculture Situation & Outlook Report.
Shellfish Aquaculture Overall	503	460	Total shellfish aquaculture facilities increased by 43, from the 460 reported in 2019 during the FY2021-2025 Needs Assessment to the current 503.
Bay Scallop Cultivation	The original VIMS ESL Castagna Shellfish Research Hatchery has been working with aquaculture of bay scallops since the 1960s & this work continues in the newly built facility.	N/A	Current work involves encouraging growers, market connections, genetic development of broodstock, especially for unique color phenotypes. VIMS ESL assisted a bay scallop farm startup, now in their 4th year of production. Multiple growers are interested, but a major roadblock is the lack of a private hatchery for seed supply.

Algae Production	All hatcheries (commercial and research) produce monocultures of microalgae to feed shellfish at varying stages of production. VIMS ESL has begun research on macroalgae aquaculture.	N/A	VIMS ESL tested growth of sugar kelp as a winter crop for two years with some success, further work is required. VIMS ESL has a new faculty member (Stacy Krueger-Hadfield) who is a macroalgae expert and will be exploring local algae for aquaculture potential.
Oyster Gardening	468	N/A	Oyster gardening continues in popularity and is supported by programs from Chesapeake Bay Foundation (CBF) and Tidewater Oyster Gardeners Association (TOGA). CBF program provides gear and seed and oysters are returned for restoration plantings. TOGA builds and sells gear (a change from the previous assessment where gear was purchased from commercial sellers), and hosts events for private seed sellers. Oysters are grown for private consumption and/or water quality/restoration goals. Please note that the apparent decrease in total permits from the number reported in the 2019 Needs Assessment (1,411) is misleading. VMRC hired a new staff person to remove inactive permits from their database, reflecting a much more accurate number of active gardeners.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from aquaculture activities in the coastal zone since the last assessment.

Since the last Aquaculture Phase I Needs Assessment in fall 2019/winter 2020, oyster and hard clam aquaculture has withstood challenges posed by the COVID-19 pandemic and bay scallop stocks have been replenished via rearing larvae and juveniles in laboratory settings, led by VIMS. [Insert summary language from VASG Shellfish Situation & Outlook Report (still awaiting publication)]. Since 2012, juvenile bay scallops have been stocked in areas where submerged aquatic vegetation (SAV) restoration efforts by VIMS was often also ongoing (beginning in 2010 with efforts by VIMS, The Nature Conservancy (TNC), and Virginia CZM) resulting in densities of approximately 0.07 individuals per square

meter, which is just shy than the minimum density the state of Florida uses for a benchmark for its recreational fishery. Since the last Aquaculture Phase I Needs Assessment in fall 2019/winter 2020, this density has grown rapidly from approximately 0.015 individuals per square meter. However, given scallops' short lifespan (approximately 1.5 years), a bad reproductive year in the wild by planted cultured individuals once reaching sexual maturity could easily lead to dramatic declines. In order to bolster the volume of individuals grown in labs to supplement existing efforts, VIMS has began working with local aquaculture farmers, including Baywater Seafood, to grow scallops as part of their existing shellfish production operations. The shift to cultured production of scallops for both restoration and commercial markets, if continued, may grow to resemble the successful transition from wild harvesting to aquaculture as has been seen with oysters and hard clams.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any state- or territory-level changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone.

Table: Significant Changes in Aquaculture Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Aquaculture comprehensive siting plans or procedures	Y	N	Y
Other aquaculture statutes, regulations, policies, or case law interpreting these	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

In 2019, VMRC created a new Division of Shellfish Management, which streamlines both shellfish aquaculture and wild harvest and restoration activities. In 2021, VMRC released a new VMRC Lease renewal guidance document in an attempt to get unused leases into production. To increase agency efficiency and reduce regulatory burden to the public, VMRC also launched an online system for oyster ground leases. This system encompasses applications, renewals, payments, and public comments. Traditionally the agency has not had the digital capacity to accept payments online and has relied on traditional hard copy application methods and payments by checks and cash. The digital option is available for individuals to choose to opt into without removing the hard copy traditional methods.

None of the above listed policy or programmatic changes were driven by the Virginia CZM program, staff, or funding. Derelict clam aquaculture netting prevention, removal, and disposal continues to be addressed under the FY2021-2025 Marine Debris Strategy as an element of the Virginia Marine Debris Reduction Plan (VMDRP).

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	__X__
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Per feedback from experts in academic, extension, industry, and the regulatory community, the shellfish aquaculture industry in Virginia has for the most part experienced success and growth since the last Aquaculture Phase I Needs Assessment in fall 2019/winter 2020. Through creative marketing and private or public supplemental funding, the industry, especially shellfish producers, were able to rebound from the negative impacts of the COVID-19 pandemic (2020-2022) to both production logistics and sales to consumers. Virginia continues to rank high among U.S. East Coast producers for both oyster and hard clam production (resulting in interest to expanding sales to international markets) and the wild bay scallop population has seen preliminary signs of recovery due to focused efforts and funding (including a FY2023 grant from Virginia CZM to VIMS via the Bipartisan Infrastructure Law (BIL)) to restock SAV beds with scallops raised in research (non-commercial) hatcheries. VIMS researchers predict that VMRC will ultimately need to develop a management plan for bay scallops as wild populations are anticipated to continue to recover. Additionally, increased cultivation of both marine and freshwater mussel species for stream and shoreline restoration projects, respectively, is a need that comes with added water quality benefits similar to other bivalve species. Furthermore, cultivation of SAV and tidal wetland plant species has emerged as a pressing need for tidal marsh and nearshore habitat restoration projects. Scaling up research-level facilities to meet commercial or publicly managed production needs could require policy changes or funding support to ensure that large-scale restoration projects can achieve shellfish and wetland restoration goals, as part of the Chesapeake Bay Agreement or other state initiatives. Partnership with non-governmental and industry partners will also be key to leverage seed and broodstock supply for both animal and plant production.

Regarding finfish aquaculture, interest in growing the industry in Virginia has increased, but the current uncertain regulatory framework for both on-land and in-water (including offshore) has limited industry investment in facility construction and the growth of operations to the extent that there are no commercial scale finfish facilities – cultivation is limited to research institutions such as Virginia Tech and for stocking purposes by DWR. Experimental permitting is needed for both inland, coastal, and offshore finfish aquaculture in order for regulators to feel comfortable and to convince industry to move to Virginia. The current lack of a comprehensive regulatory framework is something Virginia CZM funding could address by convening a working group of various agencies and industry members to discuss proposed projects and assess issues and to develop a decision framework or general guidance document. Currently both the Virginia Department of Agriculture & Consumer Services (VDACS) and VMRC have regulatory authority over potential commercial finfish operations and more coordination for permitting may be needed. In addition, offshore finfish aquaculture should be considered in ocean planning uses as future seafood market conditions will likely push development in that direction. Planning how to permit operations and mitigate use conflicts should begin now, similar to how offshore wind (OSW) planning started 10 years ago. Virginia CZM is in the process of developing Virginia's first Ocean Plan as part of the FY2021-2025 Section 309 Ocean Resources Strategy and has worked with VMRC to identify challenges and constraints associated with offshore aquaculture. Further stakeholder coordination and consultation with

both VDACS and VMRC should continue and may be assisted by Virginia CZM via Section 306 funding or staff participation.

Invasive wild species, primarily blue catfish, in addition to their negative impacts to wild fisheries (finfish, shellfish, and blue crabs) and possibly shellfish aquaculture grow-out operations have also emerged as a viable and profitable commercial and recreational fishery for which a management plan is needed (versus all-out efforts to remove the population). VDACS' Blue Catfish Work Group is the likely state-level entity to shape this management approach. While not technically managed as an aquaculture resource, invasive species' impacts should be considered when assessing the aquaculture industry's health. More data is also needed to fully assess the impact of invasive finfish on shellfish production and wild stocks. Working waterfront (WWF) infrastructure to process invasive finfish such as the blue catfish pilot processing facility in Melfa, Virginia (Eastern Shore), may also require public-private partnerships and financial investment to scale up to meet current and future demands.

Regarding algal aquaculture and aquaponics operations, growth capacity has largely kept pace with demand as many shellfish aquaculture facilities produce their own microalgal cultures in-house. Recent regulatory changes have also allowed shellfish leaseholders to grow seagrass for harvest and sale for use in wetland restoration projects, including living shorelines. Large-scale wetland plant harvesting has not yet developed despite the growing demand and overall native plant shortages in Virginia, but additional regulatory discussions should be held to ensure that operations are sustainable and environmental impacts are minimized. Macroalgal cultivation in nearshore or offshore waters (including co-location at offshore infrastructure) is in the very early stages of discussion and additional stakeholder engagement is needed.

Despite the future planning and management needs listed above that could very well result in policy outcomes, particularly related to finfish aquaculture, Virginia CZM has a successful track record of addressing aquaculture use conflicts and promoting the shellfish aquaculture industry via Section 306 funds (FY2017-2019 Focal Area and the early 2000's Oyster Heritage Program), Section 306A oyster restoration projects, and more recently BIL funds for bay scallop restoration. Many of these investments indirectly led to policy outcomes that were driven by Virginia CZM's state agency and industry partners and did not require the designation of a Section 309 Aquaculture Strategy. Planning for offshore aquaculture has been an item for discussion during the Virginia Ocean Plan development process under the current FY2021-2025 Section 309 Ocean Resources Strategy. However, it is unclear whether offshore aquaculture is practical and/or of interest in the waters off Virginia, and therefore there is not at this time a need for policy outcomes related to it. Finally, Virginia continues to lead the nation in hard clam production and to be among the industry leaders for oyster aquaculture, often sharing best practices with other coastal states to aid their development, despite potential market rivalry.

As such, while the topic of aquaculture continues to be of importance to the Virginia CZM program, agency partners, and our coastal industries, there is currently not a pressing need to allocate Section 309 funding to an Aquaculture Strategy for FY2026-2030. For these reasons, Virginia CZM staff recommend that the Aquaculture Enhancement Area receive a **Medium** priority ranking as part of this Phase I Needs Assessment.

Phase II Assessment

Wetlands

In-Depth Resource Characterization

Purpose: To determine key problems and opportunities to improve the CMP's ability to protect, restore, and enhance wetlands.

1. What are the three most significant existing or emerging physical stressors or threats to wetlands within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout your coastal zone, or are there specific areas that are most threatened? Stressors can be development/fill; hydrological alteration/channelization; erosion; pollution; invasive species; freshwater input; sea level rise/Great Lakes level change; or other (please specify).

	Stressor/Threat	Geographic Scope (throughout coastal zone or specific areas most threatened)
Stressor 1	Sea level rise (including the effects of saltwater intrusion and erosion)	Throughout tidal and nontidal wetlands in coastal zone localities; most extreme in Hampton Roads
Stressor 2	Development (including land conversion)	Throughout tidal and nontidal wetlands in coastal zone localities
Stressor 3	Hydrological alteration (specifically floodplain disruption, disconnection)	Throughout coastal zone localities, particularly for nontidal wetlands

2. Briefly explain why these are currently the most significant stressors or threats to wetlands within your coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

Stressor 1, Sea Level Rise: The Wetlands Phase I Needs Assessment summarized the projected losses of tidal wetlands in coastal Virginia due to sea level rise (SLR). Under certain SLR scenarios, Coastal Zone localities on average may lose over 89% of their tidal wetlands by 2080, with the most severe losses predicted for Hampton Roads, Middle Peninsula, and the greater Richmond region.[5] Rising sea levels have the potential to inundate existing wetlands, and also present the threat of saltwater intrusion to more inland marshes with potential implications for the disruption of habitats and ecosystem services that depend on fresh or brackish water.[34,35,36] Additionally, rising sea levels and wave action threaten to accelerate shoreline erosion and disrupt sediment balances in tidal wetlands, making shorelines less resilient to coastal hazards such as extreme weather events.[37,38]

Stressor 2, Development: The Cumulative & Secondary Impacts of Growth & Development (CSI) Phase I Needs Assessment includes land cover data indicating that the Coastal Zone has lost or converted over 30,000 acres of wetlands since 1996. Data from the Wetlands Phase I Needs Assessment shows that since 2002, state-mandated mitigation or compensation has accounted for any wetland acreage lost through Virginia's 'no net loss' permitting process for both tidal and nontidal wetlands. Despite this mitigation,

[34] https://www.sciencedirect.com/science/article/pii/S2213305424000043#:~:text=The%20rates%20of%20relative%20sea,et%20al.%2C%202022
[35] https://news.vcu.edu/article/troubled_waters
[36] https://par.nsf.gov/servlets/purl/10109781
[37] https://www.science.org/doi/10.1126/science.adj0513
[38] https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2023JG007785

increased coastal development continues to threaten wetlands and their associated ecosystem services,[39] since newly constructed or restored wetlands for mitigation purposes often do not provide the same ecological benefits as established wetlands that were destroyed or converted for development.[40,41]

Stressor 3, Hydrological Alteration: Increased urban development near coastal wetlands may additionally contribute to floodplain disruption by altering natural drainage patterns and restricting the movement of water between wetlands and floodplains. This disconnection of wetlands from their natural floodplain is also caused by flood control structures (e.g., dams, embankments), agricultural practices (e.g., drainage ditches, irrigation systems), river and stream channelization, and groundwater withdrawal. These factors all actively contribute to floodplain disruption in Virginia's Coastal Zone, threatening both tidal and nontidal wetlands by isolating them from vital water, nutrient, and sediment inputs. This disrupts habitat function and support for biota, and hinders the ability of wetlands to act as natural buffers against coastal hazards in which they typically absorb excess floodwater and promote drainage to reduce runoff and improve water quality.[42,43]

Stakeholders from state agencies, coastal planning district commissions, relevant academic institutions and nonprofit organizations were consulted and provided feedback in developing this list of stressors.

3. Are there emerging issues of concern but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Hydrological alteration (specifically groundwater withdrawals)	Improved data to characterize significant hydrologic changes in Virginia's Coastal Zone due to increased groundwater withdrawals and the associated effects on wetlands
Marsh and wetland migration	Improved data, forecasting, and mapping to identify high priority marsh migration corridors, determine the magnitude and scale of erosion vs accretion, and determine impacts to ecosystem services
Land use and restoration conflicts	Improved identification and mapping of potential wetland migration pathways that present conflicts with other existing land uses (e.g., development, forests) Increased research and pilot studies to assess impacts of wetland restoration methods on adjacent resources (e.g., impacts of beneficial use of dredged material (BUDM) on submerged aquatic vegetation (SAV) and/or as part of SAV restoration methods).

In-Depth Management Characterization

Purpose: To determine the effectiveness of management efforts to address identified problems related to the wetlands enhancement objective.

[39] https://www.chesapeakebaymagazine.com/forest-to-be-cleared-in-controversial-virginia-beach-wetlands-project/
[40] https://www.sciencedirect.com/science/article/abs/pii/S0006320715300136
[41] https://besjournals.onlinelibrary.wiley.com/doi/pdf/10.1111/1365-2664.14391
[42] https://www.dcr.virginia.gov/conservevirginia/conservevirginia-floodplain
[43] https://www.dcr.virginia.gov/dam-safety-and-floodplains/fprsourc

1. For each additional wetland management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Table: Significant Changes in Wetland Management

Management Category	Employed By State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Wetland assessment methodologies	Y	Y	Y
Wetland mapping and GIS	Y	Y	Y
Watershed or special area management plans addressing wetlands	Y	Y	Y
Wetland technical assistance, education, and outreach	Y	Y	Y
Other (please specify)			

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
    a. Describe significant changes since the last assessment;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Wetland Assessment Methodologies

In 2021, the Virginia Department of Environmental Quality (DEQ) released its current Wetland Program Plan (Plan) in partnership with the Virginia Institute of Marine Science (VIMS) and in accordance with the U.S. Environmental Protection Agency (EPA) Enhancing State & Tribal Wetland Programs Initiative. The 2021-2025 Plan is the third iteration of this planning process to advance Virginia's wetlands programs and includes Monitoring and Assessment as a core element. There are several high-priority objectives associated with Monitoring and Assessment, including the recalibration of wetlands models, the enhancement of tidal wetlands monitoring, and the assessment of nature-based shoreline practices. The Voluntary Restoration and Protection section includes an additional objective to develop protocols, methods and tools to assess and promote wetland restoration and protection practices to maximize co-benefits.

DEQ updated its Wetland Monitoring and Assessment Strategy in 2016 in alignment with guidance from EPA to develop a robust, science-based strategy for evaluating the condition of wetlands in the commonwealth and to develop a long-term implementation plan for a monitoring and assessment program. The assessment method is a multi-service model that involves three (3) levels of data collection including sampling and model development. Collected data is compiled into the Wetland Condition Assessment Tool (WetCAT), an online GIS-based viewer that allows users to overlay data such as permitted areas and impaired waters. Data collection and WetCAT updates are completed in partnership with VIMS.

Wetland Mapping & GIS

In addition to WetCAT, VIMS maintains the Virginia Shoreline and Tidal Marsh Inventory which is a series of reports describing the condition of tidal shorelines for individual localities in Virginia. This inventory includes historic reports produced in the 1970s and contemporary digital updates dating from 1988 to present. As described in Wetlands Phase I Needs Assessment, the Virginia Coastal Resources Tool provides a user-friendly and interactive visualization of tidal marsh inventory and statistics including data sorted by type of shoreline and dashboards to summarize information by locality or river system. The Virginia Coastal Viewer within this Tool also shows SLR scenarios through 2100, imagery from the Virginia Base Mapping Program, and reference layers that include bathymetry, conservation lands and easements, SAV and more. The Center for Coastal Resources Management (CCRM) at VIMS maintains the Virginia Coastal Resources Tool with funding support from Virginia CZM. CCRM is also mapping marsh migration corridors based on the combined outputs from four (4) existing marsh migration corridor estimates.

Watershed or Special Area Management Plans (SAMPs) Addressing Wetlands

While not specifically a SAMP as defined by NOAA, Phase I of the Virginia Coastal Resilience Master Plan (VCRMP) released by the Virginia Department of Conservation & Recreation (DCR) in 2021 meets the criteria of a resource management and implementation plan to better manage specific geographic areas in Virginia's Coastal Zone. The VCRMP's Phase I is cited frequently in this assessment in reference to specific wetlands data, and additional data and recommendations are anticipated in the upcoming release of the VCRMP Phase II.

As mentioned earlier in the Wetlands Phase I Needs Assessment, NOAA has selected the Middle Peninsula of Virginia as a Habitat Focus Area (HFA) to restore habitats for important species in adjacent watersheds and to improve coastal community resiliency. This HFA will specifically work to support wetland restoration in the York and Piankatank Rivers and Mobjack Bay watersheds through local, state, and Tribal partnerships.

Wetland Technical Assistance, Education, & Outreach

VIMS CCRM serves as an advisor for the management of coastal resources in Virginia with a specific focus on both nontidal and tidal wetlands and shorelines across the coastal zone. CCRM provides technical assistance and advisory services to shoreline decision-makers and stakeholders in Virginia and hosts opportunities for education and outreach including workshops, trainings, office hours, and newsletter publications. CCRM is currently exploring the use of artificial intelligence (AI) to enhance their updates to the Virginia Tidal Shoreline Permit Database which is derived from public permit records from the Virginia Marine Resources Commission (VMRC). CZM provides support to CCRM to administer this technical assistance and advisory services to various stakeholders across the coastal zone.

As stated in the Wetlands Phase I Needs Assessment, in 2025 Wetlands Watch released the guidance document: *Designing Living Shorelines for Sea Level Rise in Virginia: A Resource for Practitioners* in response to the amended 2021 Tidal Wetlands Act mentioned previously in this assessment which mandates the use of living shorelines as the default erosion control practice in Virginia. This document addresses the challenges faced by shoreline professionals by offering detailed adaptive design examples and solutions, technical guidance and case studies targeted for ecologists, engineers, landscape architects, and other living shoreline practitioners. Virginia CZM provided grant funding as well as staff support to Wetlands Watch for the creation of this resource document.

As mentioned in the Wetlands Phase I Needs Assessment, Virginia CZM provided support for the Living Shoreline Collaborative (LSC) to conduct monitoring, training, implementation, and outreach for living

shoreline professionals and practitioners in the Coastal Zone. Virginia CZM has also provided grant funding (FY2023, Task 10) to VMRC and staff to develop a comprehensive technical resource document and draft decision framework *Beneficial Use Options & Considerations for Dredged Material in Coastal Virginia* to guide potential applications of BUDM in Virginia. As projects are successfully permitted, Virginia CZM will work with scientific, planning, regulatory, and implementation partners to compile lessons learned and refine the technical document and ground-truth the decision framework to reflect the latest best practices. Virginia CZM is also slated to provide grant funding to the Middle Peninsula Planning District Commission (MPPDC) for the FY2025, Task 13 project Advancing Beneficial Use of Dredged Material in Coastal Virginia: Implementation Strategies & Policy Development, which will provide recommendations for standardizing dredged material testing protocols, apply the decision framework from the FY2023 final product to MPPDC's municipal dredging program, and create an updated Version 2.0 of the overall technical resource document. The continuation of the BUDM effort has the potential to significantly boost the toolkit of available habitat restoration and green infrastructure resilience projects in Virginia due to the myriad applications for dredged material beyond the current focus on beach nourishment. For example, thin layer placement (TLP) of clean and appropriately sized sediment on tidal marshes to increase elevation (also referred to as "marsh elevation enhancement") may be utilized as an approach to increasing the resiliency of marshes unable to migrate landward. However, as noted in the Emerging Issues table above, more information on the impact of BUDM on existing protected resources such as SAV, the potential tradeoff in habitat types, and the temporal nature of ecosystem services gained (e.g. how much time has been bought by proactively enhancing marsh habitat) is needed to ensure that such projects are a) strategic, b) cost-effective, and c) do not adversely affect protected resources.

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in protecting, restoring, and enhancing coastal wetlands since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

DEQ's 2021 – 2025 Virginia Wetland Program Plan (Plan) includes a comprehensive overview of the four (4) core program elements (monitoring and assessment, regulatory, voluntary restoration and protection, water quality standards), two (2) state-specific elements (planning and sustainability, outreach and education), and updated associated objectives for the Wetland Program to track progress and outcomes. The Plan also reviewed all 28 objectives from 2015-2020, 20 of which were completed or underway at the time of review. Notable progress includes improvements to wetlands modeling and monitoring, increased published research to assess nature-based shoreline practices, updated living shoreline permitting and guidance, and expanded outreach efforts. These five-year reviews effectively document Virginia's management efforts in protecting, restoring, and enhancing coastal wetlands.

Additional documents and databases mentioned in this Assessment (e.g., VCRMP Phase I, WetCAT) provide supplemental information demonstrating the management of wetlands in Virginia's Coastal Zone. Forthcoming updates to the Virginia Wetland Program Plan and the VCRMP will provide more recent information documenting the effectiveness of management efforts, and illuminating existing gaps or areas needing improvement to advance wetlands protection and enhancement across the coastal zone.

Identification of Priorities

1. Considering changes in wetlands and wetland management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively respond to significant wetlands stressors. *(Approximately 1-3 sentences per management priority.)*

Management Priority 1: Understanding and Communicating Forecasted Wetland Impacts and Outcomes

Description: Despite active research and mapping efforts to characterize the current status and anticipated changes to wetlands in Virginia's Coastal Zone, further information is needed to 1) more fully understand and forecast the effects of existing and emerging threats to wetlands, and 2) identify high-priority locations of wetlands loss or migration and associated impacts to ecosystem services. Since this information will directly impact statewide and local planning and regulatory decisions, better communication will be necessary to inform decision makers and practitioners about these outcomes and the need for appropriate planning and management strategies. Specifically, this data development may inform potential land use conflicts in locations of probable marsh migration or shed light on the effects of emerging restoration techniques such as different BUDM techniques for marsh enhancement, as noted above. Through this management priority, Virginia CZM may support stronger understanding and communication around the anticipated changes to coastal wetlands and may facilitate the development and adoption of policies and planning strategies to manage impacts to wetlands in both public and private lands throughout the Coastal Zone.

Management Priority 2: Support for Statewide Wetland Planning Efforts

Description: Multiple statewide efforts to enhance wetlands planning have recently begun in Virginia, including: 1) creation of the Statewide Wetlands Technical Team led by the Virginia Department of Wildlife Resources (DWR) to enhance collaboration among wetland technical experts and support further Chesapeake Bay wetland-related restoration efforts, and 2) passing of House Bill 2034 in the 2025 Virginia General Assembly (GA) establishing an interagency policy task force to develop strategies and plans for wetlands protection, restoration, creation, and migration. Virginia CZM may play a vital role in supporting these groups and providing necessary information and resources to support the outcomes of these efforts which may include statewide guidance, program, or policy changes.

Management Priority 3: Explore Alternative Funding Strategies for Wetland Management Efforts

Description: As wetland planning and management efforts accelerate in Virginia, the need for additional funding to support new projects and policies will simultaneously increase. Virginia CZM may provide supplemental resources to enhance statewide wetlands planning and may facilitate the pursuit of additional and/or novel funding sources to support wetlands work. Supplemental funding sources may include expansion of the Virginia Agricultural Cost-Share (VACS) Program and the Virginia Clean Water Revolving Loan Fund Program to include wetlands related activities, or the use of funds from the CPRG grant received by DEQ and DWR.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Need for further research to forecast 1) anticipated effects to wetlands in response to existing and emerging threats, 2) anticipated magnitude of wetlands loss/gain and/or marsh migration in response to sea level rise and coastal topographic changes, and 3) associated impacts (ecologic and economic) on wetland ecosystem services.
Mapping/GIS	Y	Need continued routine mapping on status and trends of wetlands in Virginia. This may support proposed updates to the National Wetland Inventory (NWI). Non-tidal wetlands particularly need mapping support via methods like LIDAR. Additional need for mapping/GIS resources detailing potential high-priority marsh migration locations.
Data and information management	N	No specific need for increased data information management beyond current efforts and capacity.
Training/capacity building	Y	Need general training on wetland restoration and delineation for wetland professionals in the Coastal Zone. Specific need for technical training for local wetlands boards.
Decision-support tools	Y	Need tools for local governments to evaluate the effect of development and conservation decisions on wetlands, specifically considering potential marsh and wetland migration pathways. Could potentially expand existing tools (e.g., WetCAT, VA Coastal Resources Tool, ShoreBET) to include these parameters.
Communication and outreach	Y	Need increased strategies to effectively communicate the role and benefits provided by wetlands to decision makers and citizens.
Other (specify)		

Enhancement Area Strategy Development

1. Will the CMP develop one or more strategies for this enhancement area?

   Yes __X___
   No _____

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

Increased information and planning are necessary to understand and manage anticipated changes to Virginia's coastal wetlands so that state and local governments may effectively respond and prepare for potential wetlands loss, marsh migration, and the associated consequences for ecosystem services in response to existing and emerging stressors. New statewide wetland planning efforts will present opportunities for increased coordination yet also demonstrate the need for better data and increased funding availability to advance statewide wetland planning goals. Stakeholders consulted in the development of this Phase II Needs Assessment emphasized a need for enhanced coordination and increased support for statewide and local level wetland management efforts. Virginia CZM may play a pivotal role in supporting these expanded efforts by facilitating better understanding and communication about forecasted wetland outcomes and impacts, providing resources to support state-level planning and management efforts, and attempting to generate broader funding availability for wetlands work.

Coastal Hazards

In-Depth Resource Characterization

Purpose: To determine key problems and opportunities to improve the CMP's ability to prevent or significantly reduce coastal hazard risks by eliminating development and redevelopment in high-hazard areas and managing the effects of potential sea level rise and Great Lakes level change.

1. Based on the characterization of coastal hazard risk, what are the three most significant coastal hazards[44] within your coastal zone? Also indicate the geographic scope of the hazard, i.e., is it prevalent throughout the coastal zone, or are there specific areas most at risk?

	Type of Hazard	**Geographic Scope** (throughout coastal zone or specific areas most threatened)
Hazard 1	Flooding (tidal/recurring, pluvial, compound)	General flooding concern for all regions, however the type and severity vary by region.
Hazard 2	Sea level rise (SLR) (including shoreline changes/erosion and saltwater intrusion)	Shoreline changes from erosion are prevalent along most of the shorelines, with areas along the Chesapeake Bay, mouths of rivers, and Atlantic shoreline being the areas with greatest rates due to large fetches. Saltwater intrusion is most critical in Middle Peninsula, Northern Neck, and Eastern Shore regions.
Hazard 3	Extreme weather events (including coastal storms and increasing heat)	High wind from coastal storms is a high hazard anywhere in the Coastal Zone, but especially prevalent along the Chesapeake Bay and Atlantic shorelines. Increasing heat has been recognized as a widespread threat on land and in water.

2. Briefly explain why these are currently the most significant coastal hazards within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

For more information on flooding, see the Phase I Coastal Hazards Needs Assessment's description of the Virginia Coastal Resilience Master Plan (VCRMP) findings.

Over the next three decades, SLR along the U.S. East Coast is expected to be 10-12 inches, which is equivalent to the same rate of increase over the past 100 years (1920-2020) according to the NOAA Global and Regional Sea Level Rise Scenarios for the United States 2022 report.[45] According to the 2019 Recommendations for Sea Level Rise report from the Virginia Institute of Marine Science (VIMS),[46] Virginia has the highest rate of change of any station on the U.S. East Coast. Virginia adopted the use of NOAA's intermediate high SLR projection as the state standard for planning, which predicts that sea levels will be 20 inches higher in 2050 than they were in 2020. With increased sea levels, there will be increases in shoreline erosion and saltwater intrusion into the groundwater. For more information on these hazards see Coastal Hazards Phase I Needs Assessment.

[44] See list of coastal hazards on pg. 27 of this assessment template.
[45] https://oceanservice.noaa.gov/hazards/sealevelrise/noaa-nostechrpt01-global-regional-SLR-scenarios-US.pdf
[46] https://www.naturalresources.virginia.gov/media/governorvirginiagov/secretary-of-natural-resources/images/1c.-Sea-level-rise-projections-for-Virginia-planning-purposes-(2)-FINAL-10_31.pdf

The 2023 Commonwealth of Virginia Hazard Mitigation Plan (HMP) identified the risk from hurricanes as a high risk and the risk from non-tornadic wind as a medium-high risk. While there have been no direct landfalls from hurricanes in Virginia since 1851[47], the HMP details the numerous hurricanes and Nor'easters that have impacted the area since 1749. The 2023 Commonwealth of Virginia HMP evaluated extreme heat across the Commonwealth over the period of January 1895-April 2022. In this analysis, the maximum monthly average high temperatures were highest among Crater Planning District Commission (CPDC), Richmond Regional Planning District Commission (PlanRVA), George Washington Regional Commission (GWRC), Northern Virginia Regional Commission (NVRC), and Northern Neck Planning District Commission (NNPDC) jurisdictions (≤96°F), whereas most the jurisdictions in Hampton Roads Planning District Commission (HRPDC), Accomack-Northampton Planning District Commission (ANPDC), and Middle Peninsula Planning District Commission (MPPDC) were slightly cooler (≤93°F). In the forthcoming 2026 update to the HMP, the Virginia Department of Emergency Management (VDEM) intends to evaluate extreme heat risk using NOAA Physical Sciences Laboratory data. Using these data to evaluate daily maximum temperature average anomalies for 2019-2024 compared to 1981-2010 shows the entire coastal zone has an average daily maximum temperature anomaly of over 3°F (**Figure 1**). Moreover, compared to the rest of the state, the Coastal Zone has the highest temperature anomalies, suggesting that maximum temperatures are increasing and/or occurring more frequently along the eastern portion of the State.

A recent study from the College of William & Mary (W&M)'s Batten School and VIMS[48] forecasts that estuaries along the east coast may experience marine heatwaves for roughly a third of the year if trends continue. Currently the Chesapeake Bay experiences marine heat wave conditions for ~22 days per year, with the predicted change in 2100 to be more than 100 days per year. Marine heatwaves are particularly harmful for marine habitats and species, including economically important species, and can lead to species die off and habitat compression.

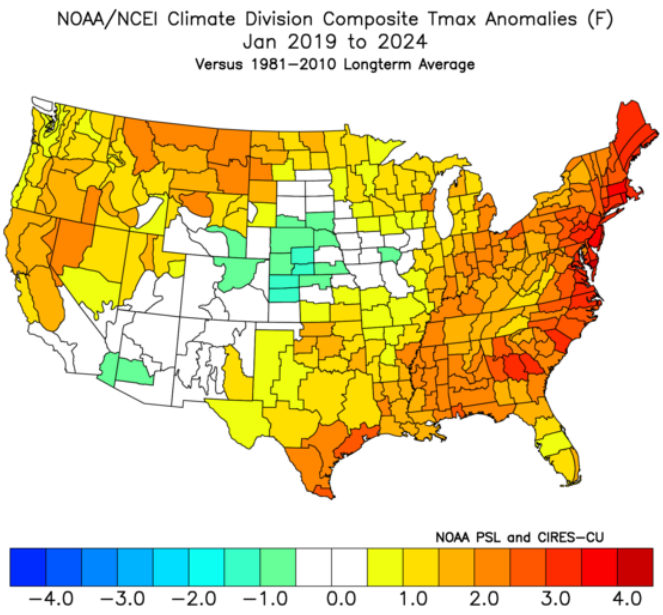


Figure 1 - Average daily maximum temperature anomalies for 2019-2024 compared to 1981-2010.

In meetings with PDC localities, these hazards were identified by stakeholders. In particular, concerns over flooding were raised by ANPDC, CPDC, HRPDC, NVRC, and PlanRVA, while erosion was recognized as an issue by ANPDC and heat was identified as an issue in CPDC and PlanRVA.

[47] https://www.washingtonpost.com/news/capital-weather-gang/wp/2017/07/13/why-a-single-hurricane-has-not-directly-hit-virginia-maryland-or-delaware-since-1851/

[48] https://www.nature.com/articles/s41598-025-91864-6?utm_source=rct_congratemailt&utm_medium=email&utm_campaign=oa_20250306&utm_content=10.1038/s41598-025-91864-6

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Financial hazard	Examples of successful funding models (financing, incentives, private funding, etc.) used by other local/regional governments, states, countries. Insurance opportunities and issues.
Increasing heat on land and in the water	Coastal Zone wide analysis of daytime and nighttime remotely sensed surface temperatures. Effects on fisheries and species migration.
Compound flooding	End user input on use cases to inform methodology development and data resources identification (i.e., What is needed to understand and manage compound flooding?). Joint annual exceedance probabilities for different pair-wise flood hazard combinations across the region. Landscape sensitivity to compound flooding.
Economic disruptions	The impact of changing coastal conditions and extreme events on economic disruptions to fisheries, tourism, recreational boating, etc.
Landslide Risk	Soil and geologic properties coupled with LIDAR.
How to manage retreat from the shoreline	Financial incentives for homeowners. Analysis of how to scale a regional program like the Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPAA) to the state level. High flood risk areas overlap with Sentinel Landscapes.
Hazard risk to critical infrastructure	Accurate and comprehensive data on critical infrastructure (VDEM).
Stormwater management (water quality/quantity)	Information on intersections and impacts related to flooding and water quality and opportunities to regulate water quality and water quantity in concert.

In-Depth Management Characterization

Purpose: To determine the effectiveness of management efforts to address identified problems related to the coastal hazards enhancement objective.

1. For each coastal hazard management category below, indicate if the approach is employed by the state or territory and if there has been a significant change since the last assessment.

Table: Significant Changes in Coastal Hazards Statutes, Regulations, and Policies

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Shorefront setbacks/no build areas	Y	N	Y
Rolling easements	N	N	Y[49]
Repair/rebuilding restrictions	Y	N	N
Hard shoreline protection structure restrictions	Y	N	Y
Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)	Y	Y	Y
Repair/replacement of shore protection structure restrictions	Y	N	Y
Inlet management	N	N	N
Protection of important natural resources for hazard mitigation benefits (e.g., dunes, wetlands, barrier islands, coral reefs) (other than setbacks/no build areas)	Y	Y	N
Repetitive flood loss policies (e.g., relocation, buyouts)	Y	N	N
Freeboard requirements	Y	N	Y
Real estate sales disclosure requirements	Y	N	Y[50]
Restrictions on publicly funded infrastructure	Y	N	Y
Infrastructure protection (e.g., considering hazards in siting and design)	Y	N	Y
Other (please specify)			

[49] There is one example of a rolling easement in Virginia at the Elizabeth River Project's Ryan Resilience Lab. However, this voluntary example where the landowner commits to demolishing the structure at a given threshold of sea level rise is not expected to be a model that can be applied coastal zone wide.

[50] A new flood disclosure regulation effective as of January 1, 2022 requires the owner of a residential property who knows the dwelling unit is a repetitive risk loss structure must disclose this to the purchaser. Recent proposed legislation (e.g., 2025 HB2348) aimed to require dwellings in flood hazard areas disclose this to the purchaser, however these bills were unsuccessful. Virginia therefore remains a "buyer beware" state.

Table: Significant Changes to Coastal Hazard Management Planning Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Hazard mitigation plans	Y	Y	Y
Sea level rise/Great Lake level change or adaptation plans	Y	Y	Y
Statewide requirement for local post-disaster recovery planning	Y	N	N
Sediment management plans	Y	Y	Y
Beach nourishment plans	N	N	N
Special Area Management Plans (that address hazards issues)	N	N	N
Managed retreat plans	N	N	N
Other (please specify)			

Table: Significant Changes to Coastal Hazard Research, Mapping, and Education Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
General hazards mapping or modeling	Y	Y	Y
Sea level rise mapping or modeling	Y	Y	Y
Hazards monitoring (e.g., erosion rate, shoreline change, high-water marks)	Y	Y	Y
Hazards education and outreach	Y	Y	Y
Other (please specify)			

2. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's management efforts in addressing coastal hazards since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's management efforts?

The actions the state is taking to address flood resilience are summarized in the Status of Flood Resilience Report issued by the Virginia Department of Conservation & Recreation (DCR) in December 2023. Of particular importance for the coastal zone is the Appendix D Coastal Resilience Master Plan Implementation Status. In this section, the status of action outcomes for the four (4) Coastal Resilience Master Planning Goals[7] are reported, with statuses ranging from complete (seven (7) action outcomes) to in progress (22 action outcomes). Therefore, it can be stated that progress is being made on those identified actions, however work remains to be completed.

The Virginia Flood Protection Master Plan (VFPMP) is currently under development. The VFPMP is a statewide plan that aims to deliver an actionable plan for the state to use to craft policies and programs. It will include a flood impacts summary, a resilience gaps analysis, a strategy for policy and programs, and flood resilience tools. It is scheduled to be completed by December 2025.

In 2024, a New Resilience Planning Tool was released by the University of Virginia's Environmental Institute. This guide provides best practices for proactive resilience planning at the local level, including discussions of how to approach adaptation and moving residents out of harm's way. It was assembled with input from stakeholders across the resilience landscape in Virginia's Coastal Zone, including PDCs, state agency staff, local government staff, and academics.

Identification of Priorities

1. Considering changes in coastal hazard risk and coastal hazard management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively address the most significant hazard risks. *(Approximately 1-3 sentences per management priority.)*

   Management Priority 1: Promote Resiliency in Local Communities

   Description: Local community resilience varies significantly, leaving many communities vulnerable to the growing risks posed by coastal hazards. Factors like capacity limitations, political will, and others influence a community's ability to plan for and enhance its resilience. However, opportunities to improve resilience do exist. These include implementing the recommendations from the Coastal Resilience Technical Advisory Committee (TAC), implementing and continually improving the Resilience Adaptation Feasibility Tool (RAFT) program, and engaging in the National Flood Insurance Program (NFIP)'s Community Rating System (CRS).

   Management Priority 2: Financial Availability for Resilience

   Description: Resilience projects and programs are often costly and typically not included in local governments' budgets. Currently, there is a reliance on grant programs, which, though valuable, do not provide long-term, sustainable funding. Private property accounts for the majority of Virginia's shorelines, and property owners face substantial costs as they work to enhance their property's resilience. However, many state and federal grants are not accessible to individual property owners, and funding for shoreline projects is limited because property boundaries extend to mean low water. To address this, there is a need to explore, evaluate, and implement more complex resilience funding mechanisms, such as taxes, loans, bonds, and other financing options. Additionally, existing policies related to funding programs and pass-through organizations should be assessed to recommend adjustments that reduce financial burdens while achieving desired outcomes. By implementing recommendations from the TAC, exploring models for local government resilience funding policies, and identifying opportunities to enhance current funding programs, we can increase financial support for resilience efforts at the local and private property level.

   Management Priority 3: Address Gaps in Coastal Hazards Policy

   Description: Flood plain management is not a state requirement, select jurisdictions do not participate in the NFIP, and DCR does not have authority to require localities to enact flood plain management programs. "No Adverse Impact" floodplain management is an approach that ensures one property owner's actions are not allowed to adversely affect the rights of other property owners.[51] This proactive approach is well established for fluvial flooding, but less so for coastal and pluvial flooding and could have merit. Proactive planning is not embedded in current national standards for floodplain

[51] https://asfpm-library.s3-us-west-2.amazonaws.com/ASFPM_Pubs/ASFPM_NAI_White_Paper_2008.pdf

management. However, to anticipate the impacts of rising sea levels and more intense precipitation that is expected over the next few decades, there is a need for state and local policy that considers projected flood risk. There is a need to evaluate and make recommendations for new or revised policy that will address these and other issues related to coastal hazards. These may include policies related to stormwater quantity and quality regulations, statutory provisions for rolling easements, limits on development, requirements for floodplain management, and requirements for proactive planning, among others as advised by the Virginia Coastal Policy Team (CPT).

2. Identify and briefly explain priority needs and information gaps the CMP has for addressing the management priorities identified above. The needs and gaps identified here should not be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	**Need?** (Y or N)	**Brief Explanation of Need/Gap**
Research	Y	Funding and financing mechanisms. Legal rules and model policy for rolling easements. Adverse impacts flood policy applicability in tidally flooded areas. Opportunities to regulate water quality and water quantity in concert.
Mapping/GIS/modeling	Y	Cost of doing nothing estimates
Data and information management	Y	Statewide repository and data standards for locality resilience data
Training/Capacity building	Y	For local governments on funding and financing programs. CRS training and capacity building.
Decision-support tools	Y	For the outputs of the proposed mapping and modeling work
Communication and outreach	Y	Local government outreach on hazard risk, management options, liability, and cost of doing nothing.
Statewide consistency in GIS/hazard mapping	Y	Coastal zone wide heat mapping and projections.

Enhancement Area Strategy Development

1. Will the CMP develop one or more strategies for this enhancement area?

Yes __X___
No _____

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

Coastal hazards are widely acknowledged by stakeholders as a critical issue for Virginia's Coastal Zone, making the development of Section 309 Strategies to address these challenges a top priority. Key focus areas for a Coastal Hazards Strategy should include ongoing local resilience support, the promotion of diverse funding and financing practices for resilience, and the establishment of policies that encourage more proactive planning for coastal hazards.

Marine Debris

In-Depth Resource Characterization

Purpose: To determine key problems and opportunities to improve the CMP's ability to effectively manage marine debris in the coastal zone.

1. What are the three most significant existing or emerging challenges related to marine debris within your coastal zone? Indicate the geographic scope of the challenge, i.e., is it prevalent throughout the coastal zone, or are specific areas most threatened? Challenges can be land- or ocean-based marine debris reduction (e.g., behavior change to reduce waste, increase recycling, or litter less); catastrophic event-related debris; marine debris identification and removal; research and monitoring; education and outreach; or other (please specify).

	Challenges	**Geographic Scope** (throughout coastal zone or specific areas most threatened)
Challenge 1	Continued disconnect in public understanding, including the impacts of plastics and derelict fishing gear (DFG).	Throughout the Coastal Zone and all of Virginia.
Challenge 2	Policy framework improvements.	Throughout the Coastal Zone and all of Virginia.
Challenge 3	Long-term sustainable funding.	Throughout the Coastal Zone and all of Virginia.

2. Briefly explain why these are currently the most significant challenges related to marine debris in the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

Continued Disconnect in Public Understanding: There is a need to create a more robust framework for creating a broader coalition of bipartisan legislators and translate voter support indicated by the 2022 plastic pollution survey into political backing for new policy changes. Identifying barriers, helping to guide consumer choices, broadening the audience receiving the message, addressing the disconnect between litter in communities and concern about marine debris are all elements of this framework. Pushing back against greenwashing by creating messaging about the actual life cycle of plastics is another challenge in assembling the needed political coalition. Furthermore, there is a communication gap between advocates for policy changes and the businesses impacted by the given policy. Finding a "win-win" solution that decreases use of plastics and other single-use materials while helping businesses and localities save costs is a critical step towards building trust and efficiently using limited capacity, funding, and overburdened recycling and disposal infrastructure. Continuing existing outreach campaigns, while tailoring messaging to specific entities and assessing the effectiveness of each campaign are essential elements of effectively engaging opponents of new policies in a collaborative instead of adversarial manner.

- **Sub-Challenge: DFG:** Despite the overall decrease in the fishing workforce, associated gear, and the significant progress that has been made on reducing bycatch from DFG since the last Section 309 Needs Assessment, the issue remains a priority for VMDRP implementation. Virginia Institute of Marine Science (VIMS) researchers continue to see similar numbers of derelict traps following removal, showing the pervasive nature of the issue. Creation of disposal locations at the end of

season could incentivize bringing gear back in. The Hawaii Center for Marine Debris has a fishing gear disposal service that they pay for. Current regulations do not prevent DFG in all places and there is the risk that changed regulations cause unintended economic impacts. Looking at regulation changes that do not have a major economic impact on the fishing industry (reporting gear loss, etc.) would be a "win-win". Finding ways to message how this is beneficial to the industry (e.g. ghost crab pots' impact on harvest) could increase participation in gear turn-in programs. One specific option would be to standardize the marking requirements - e.g., adding identification tags to gill nets themselves in addition to stakes marking net locations and adding tags to crab pots in addition to their buoys as well as tightening up existing programs/infrastructure security (emptying, transport security) "leakage". Recreational crabbers are already required to use bycatch reduction devices, but including a $5 reduction of the license fee to offset the cost of purchasing the device would be helpful. VIMS can do feasibility studies to look at what interventions are most likely to be adopted. Since commercial/recreational fishing permits do not have any information about requirements to prevent marine debris and litter, VMDRP partners should engage the Virginia Marine Resources Commission (VMRC) to see if such information could be incorporated into permits. VMRC's Commercial Waterman's Apprenticeship Program could also be leveraged for outreach to the watermen community. Furthermore, since boaters may accidentally damage fishing gear regardless of proper marking (leading to its displacement and/or loss), VMDRP partners should engage Virginia Department of Wildlife Resources (DWR). As the state's boating administration agency, DWR is well-positioned to incorporate navigation best practices and regulations as necessary into boater education programming and/or license requirements. Switching to monofilament line (which is able to be recycled unlike polyfilament line) for recreational and commercial fishermen may also require a culture change – a targeted social marketing campaign might help.

Policy Framework Improvements: There is a need for significant changes in policies on source reduction given the limits of solid waste infrastructure including: state level subsidies towards plastic production, prohibiting tax dollars from going toward supporting the advanced recycling industry, and creating extended producer responsibility programs and/or regulations. It will be necessary to increase the public's awareness of end of life uses for debris and opportunities to create a more circular economy, create adequate waste management plans (consumer debris, fishing gear), communicate available and affordable ways of disposing/recycling debris, and use tools to influence behavior change. Understanding the challenges related to implementing policies at the local level that have been authorized by the state legislature (e.g., plastic bag fee) is also a challenge given that actual adoption of ordinances to curb waste are limited despite strong public support.

Sustainable Funding: Self-sustaining funding for marine debris programs is limited and may come from sources such as bag fees or litter taxes. However, plastic bag fees only exist in 10 Virginia localities, and the state litter tax has the lowest per capita revenue of any state with such a policy. Therefore, while these "user fees" may generate funding for marine debris programs, they are not sufficient to pay for all the work needed. Furthermore, funding for implementation of policies is not eligible under Section 309 – as more policies are successfully enacted, more implementation funding from other sources beyond Virginia CZM will be needed. Capturing the estimated dollar value of volunteers in order to include as a match funding amount for grant applications is a challenge but is possible if partner organizations are properly engaged and provide the data needed.

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Microplastics	Human pathology studies
Per- & polyfluoroalkyl substances (PFAS)	Standardized testing and reporting for local public water supplies and privately-owned wells.
Macro-debris beyond abandoned and derelict vessels (ADVs) e.g. construction debris, or other debris that may obstruct shipping traffic.	Geospatial reporting on occurrences along with volume of material generated from each event.
Pollution from ships (offshore & at port) e.g. unregulated gray water discharges from cruise ships and debris from unloading container ships.	Geospatial reporting on occurrences along with volume of material generated from each event. Areas where debris tends to accumulate and/or areas for monitoring could include in-water sampling, wildlife ingestion/tissue analysis, cruise ship waste management systems, and port facilities.

In-Depth Management Characterization

Purpose: To determine the effectiveness of management efforts to address identified problems related to the marine debris enhancement objective.

1. For each additional marine debris management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory, and indicate if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Table: Significant Changes to Management of Marine Debris

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Marine debris research, assessment, monitoring	Y	Y	Y
Marine debris GIS mapping/database	Y	Y	Y
Marine debris technical assistance, education, and outreach	Y	Y	Y
Marine debris reduction programs (litter control, recycling, etc.)	Y	Y	Y
Other (please specify)			

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
    a) Describe significant changes since the last assessment;
    b) Specify if they were 309 or other CZM-driven changes; and
    c) Characterize the outcomes or likely future outcomes of the changes.

Marine debris research, assessment, monitoring: During the current Marine Debris Strategy, monitoring of the Fisherman Island National Wildlife Refuge (NWR) on the Eastern Shore of Virginia has continued to be supported by Virginia CZM Section 309 funds as part of the Mid-Atlantic collaborative project to reduce intentional balloon releases (partly funded by a NOAA Marine Debris Program Grant). The results of the monitoring efforts have served as a data baseline, helping to evaluate the effectiveness of campaigns to reduce littering behaviors and assist communities as they design policies and behavior-change reduce the amount of litter and trash that ends up becoming marine debris in rivers, coastal waters, and on beaches. Reports can be found on the Virginia CZM website and preventballoonlitter.org**.** These research projects continue to result in raising awareness through significant coverage on both traditional media and social media outlets.

Marine debris GIS mapping/database: Beginning in 2021 as part of the Virginia ADV Work Group (ADVWG) effort, Virginia CZM began collecting data from several partners to create the first inventory of ADVs for Virginia. Virginia CZM staff distributed a Google Forms survey to ADVWG members and marinas throughout Virginia to report ADVs and combined existing lists of vessels received from the U.S. Coast Guard (USCG) Sector Virginia, VMRC, coastal planning district commissions (PDCs), and localities into a Google Sheets table. Virginia CZM staff then plotted the locations and associated attribute information for each vessel on an unpublished ADV inventory map, which has been selectively distributed to partners including NOAA's Office of Response & Restoration. As of the completion of this Phase II Needs Assessment, Virginia CZM staff were working with others at the Virginia Department of Environmental Quality (DEQ) and members of the USCG-convened Virginia Area Committee to refine the ADV survey to make it more user-friendly and resemble more standardized pollution response reporting forms. Once the survey has been revised, the spreadsheet columns will be reorganized to reflect the survey fields. Finally, the form will be recreated in Survey123 and synched to a GIS database and GIS mapper housed at DEQ. Ultimately, Virginia Sea Grant (VASG) has agreed to house a public-facing ADV database on their website as part of the comprehensive marine debris webpage created by Old Dominion University as part of their NOAA grant *From Learning to Willing to Doing: A Collaborative Approach to Implementing the Virginia Marine Debris Reduction Plan*. The final outcome of this effort is for the public to have the opportunity to submit an ADV report via the Survey123 on their smartphones then check back a day later to see the new location plotted on the ADV inventory map.

Marine debris technical assistance, education, & outreach: Please see the Phase I Marine Debris Needs Assessment for a detailed list of efforts, project deliverables, and other outcomes from the current (FY2021-2025) Marine Debris Strategy and since the last Section 309 Needs Assessment.

Marine debris reduction programs: please see the Phase I Marine Debris Needs Assessment for a detailed list of efforts, project deliverables, and other outcomes from the current (FY2021-2025) Marine Debris Strategy and since the last Section 309 Needs Assessment.

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts to reduce marine debris since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

Please see the Marine Debris Phase I Needs Assessment, Item 2 under Management Characterization for more information.

Identification of Priorities

1. Considering changes in marine debris and marine debris management since the last assessment, as well as stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve the effectiveness of its management effort to better respond to the most significant marine debris challenges. *(Approximately 1-3 sentences per management priority.)*

   Management Priority 1: Education, Outreach, & Behavior Change

   Description: Increasing knowledge to understand better sources, fates, impacts, and solutions to marine debris to develop appropriate policies. This includes increasing knowledge of the costs of implementing actions to reduce debris to help businesses and consumers bridge the gap between concern over debris and taking meaningful actions that are economically sustainable. This Management Priority includes efforts to reduce both plastic production and waste as well as DFG as noted in Challenge 1.

   Management Priority 2: Policy Framework

   Description: Developing and improving policies and regulations, including incentives and disincentives, to prevent pollution. As noted above, the focus will be on creating incentives and disincentives to either support new policy development rather than to simply increase public awareness of existing policies. This Management Priority will apply materials and other resources developed under Management Priority #1 toward building public support (including by legislators) for policy changes at the state and local level.

   Management Priority 3: Sustainable Funding & Program Plan

   Description: Securing adequate funding to support research, coordination, behavior change campaign development, infrastructure improvements, and local government policy development and implementation. This effort will consider different sources of funding and their limitations in order to strategically outline a sustainable path forward beyond Virginia CZM funding. As policies shift to the implementation phase, availability of non-Section 309 funding will be critical to achieving the goals of the VMDRP. This Management Priority will include specific needs for elements of Management Priorities #1 and #2.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Quantification/evaluation of management effectiveness; microplastics risk assessments; behavior preferences for bottled water versus tap water.
Mapping/GIS	Y	Mapping debris flow (VIMS working on maps that could provide basis to build upon).

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Data and information management	Y	Connecting litter monitoring apps and synthesizing data.
Training/Capacity building	Y	Need more capacity for community-based social marketing.
Decision-support tools	Y	Identifying and prioritizing hot spots which then allow managers and decision-makers to target where litter controls are needed.
Communication and outreach	Y	More research (including focus groups) to develop effective messaging for behavior change.
Other (specify)		

Enhancement Area Strategy Development

1. Will the CMP develop one or more strategies for this enhancement area?

   Yes __X___
   No _____

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

Due to its status as a Dillon Rule state, effective implementation of state policies in Virginia actively requires similar policy changes to be made by localities. Therefore, there is no shortage of policy outcomes that can result from a Marine Debris Strategy as the locality policies serve as a multiplier for the state policies. In addition, while local policies should mirror state policies in terms of desired outcomes, locality-specific outreach is critical to framing each issue for the target audience. Specific actionable steps must also be identified in order to build the necessary political support, creating a need for research, data, communication, and partnership building. Additionally, work to reduce marine debris is costly and takes time. This work will best be sustained if non-Virginia CZM funding can support perennial efforts around marine debris reduction. It is for these reasons and the management priorities identified above that a Marine Debris Strategy will be developed.

Ocean and Great Lakes Resources

In-Depth Resource Characterization

Purpose: To determine key problems and opportunities to enhance the ability of state CMP to better address ocean and Great Lakes resources.

1. What are the three most significant existing or emerging stressors or threats to ocean and Great Lakes resources within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout the coastal zone, or are specific areas most threatened? Stressors can be land-based development; offshore development (including pipelines, cables); offshore energy production; polluted runoff; invasive species; fishing (commercial and/or recreational); aquaculture; recreation; marine transportation; dredging; sand or mineral extraction; ocean acidification; or other (please specify).

	Stressor/Threat	**Geographic Scope** (throughout coastal zone or specific areas most threatened)
Stressor 1	Marine development (including pipelines, cables, and offshore energy development)	Locations leased for development and near/onshore landing areas
Stressor 2	Changing ocean uses (e.g. maritime transportation, commercial fishing,	Throughout Coastal Zone
Stressor 3	Changes in physical conditions (temperature, acidification)	Throughout coastal Zone

2. Briefly explain why these are currently the most significant stressors or threats to ocean and Great Lakes resources within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

Note: As part of the FY2021-2025 Section 309 Strategy, Virginia is developing an Ocean Plan (Plan). During this process, Virginia CZM engaged with well over 100 different stakeholders from state, Federal, and local organizations as well as tribes. Six (6) workgroups were formed made up of subject matter experts. The workgroups ultimately developed a list of 40 draft recommendations for consideration in the Plan, and Virginia CZM staff are working with a Steering Committee to finalize those recommendations. Input reflected in the Phase I and II Needs Assessments is drawn largely from the more than dozen workgroup meetings and a follow-up meeting held during the FY2026-2030 309 Needs Assessment development process.

Marine Development: Virginia has become an international leader for datacenter development which may have a considerable impact on the ocean as up to four new submarine communication cables are now planned to land in Virginia. Virginia continues to experience increased offshore development largely associated with offshore energy production through Dominion Energy's Coastal Virginia Offshore Wind (CVOW) project, which is expected to continue through the 2030's as Dominion Energy has acquired two (2) additional leases. The offshore infrastructure and transportation required to support these activities increases the threats of general use conflict, siting conflicts, marine debris, polluted discharge, and effects on marine life and habitat.

Changing Ocean Uses: According to NOAA's 2022 Fisheries Economics of the United States Report, Virginia is the nation's largest producer of marine products and the largest seafood producer on the U.S. East Coast. The commercial seafood industry in Virginia contributes over $1 billion annually to the state's

economy. However, Virginia's commercial fishing industry faces many challenges including "graying of the fleet" and the need for training/apprenticeship, changes in fisheries and regulations, conflicts with other ocean uses such as marine development, and competition from other states in promoting Virginia-landed seafood. Despite federal fishing regulations in offshore waters, Virginia's commercial fishing industry impacts marine life and habitat, and changes in fishing must be evaluated in the context of potential impacts on marine life as well. Virginia is also home to the largest Naval Base in the world, which regularly uses the coastal and offshore waters for training and logistics. The Port of Virginia (Port) is in progress of dredging the main navigational challenge to 55 feet, making it the deepest port on the U.S. East Coast. Maritime and national security ship traffic is in constant flux but in coming years because of CVOW, Coast Guard Port Access Route Studies, and an expected increase in traffic to the Port, the risk of conflicts with other uses and impacts on marine life such as vessel strikes must be considered.

Changes in Physical Conditions: Warming air and sea temperatures are changing the physical conditions of the ocean and leading to additional stressors including marine heatwaves, ocean acidification, and more frequent extreme weather events. These changing conditions have cascading effects on temperature and salinity which lead to habitat and species range shifts, threatening Virginia's economically valuable fin and shellfish species. Increasing coastal storm frequency or severity will also impact the demands for sand/sediment for beach nourishment, which increases rate of use for finite shoals, and increases dredging and other support traffic associated with such projects.

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Mineral Extraction	Virginia Energy has partnered with BOEM to assess potentially valuable heavy minerals in offshore sediment. More information is needed to determine viable extraction depending on the concentration and composition of these resources and the feasibility of harvesting and extracting methods, which will influence use conflicts and potential effects to marine ecosystems.
Dredging	In addition to routine dredging required to maintain Virginia's navigable waterways, dredging in offshore waters may expand to support mineral extraction or emerging beneficial use methods for restoration or beach renourishment. More information is needed on these new methodologies to determine how dredging will change or increase in the coming years, and its associated effects for use conflicts and marine ecosystems.
Oil and Gas Leasing	BOEM has published a Request for Information and Comments on the preparation of the 11th National OCS Oil and Gas Leasing Program. This minimally suggests oil and gas leasing in the Mid-Atlantic region will be considered and thus must be identified as a potential emerging use.

In-Depth Management Characterization

Purpose: To determine the effectiveness of management efforts to address identified problems related to the ocean and Great Lakes resources enhancement objective.

1. For each of the additional ocean and Great Lakes resources management categories below that were not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Table: Significant Changes in Management of Ocean and Great Lakes Resources

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Ocean and Great Lakes research, assessment, monitoring	Y	Y	Y
Ocean and Great Lakes GIS mapping/database	Y	Y	Y
Ocean and Great Lakes technical assistance, education, and outreach	Y	Y	
Other (please specify)	Y	Y (pending)	Y (pending)

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
    a. Describe significant changes since the last assessment;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Ocean Research, Assessment, Monitoring

As reviewed in the Ocean Resources Phase I Needs Assessment, Virginia CZM has supported multiple projects contributing to the research, assessment, and monitoring of ocean resources through the FY2021-2025 Section 309 Ocean Resources Strategy. These include the Marine Mapping Tool developed by The Nature Conservancy (TNC), an analysis of optimal design for acoustic monitoring in the Virginia OSW Area, and development of Marine Mammal and Sea Turtle Conservation Plans through the Virginia Department of Wildlife Resources (DWR).

Ongoing work supported by the current Ocean Resources Strategy also includes work by Virginia Commonwealth University (VCU) to support the Virginia Marine Resources Commission (VMRC) in developing a Habitat Conservation Plan (HCP) for Atlantic Sturgeon in the permitting process for bycatch reduction strategies. In addition to HCP development, the project will result in robust modeling data and statistical forecasting based on current and past state fisheries observer data, NOAA Northeast Fisheries Observer Program Data (NEFOP), sturgeon telemetry and observer data from the Navy, the VMRC telemetry data, and pertinent fisheries data. With further support from the current Ocean Resources Strategy, VCU has also employed an Ocean Fisheries Coordinator to oversee the development of ocean

fisheries data and obtain more detailed information on fishing activity to inform the development of mitigation policies. The goal of this effort is to ensure that Virginia's important fisheries are sustainably and economically managed.

Additional monitoring efforts occurring separate from Virginia CZM include the following projects:

- Dominion Energy has partnered with VMRC and the Virginia Institute of Marine Science (VIMS) to conduct fisheries monitoring reviewed in the Phase I Needs Assessment.
- As part of the U.S. Integrated Ocean Observing System, The Mid-Atlantic Regional Association Coastal Ocean Observing System collects data and observations on waves, currents, wind, air pressure, temperature, water quality, and animal tracking from offshore waters of Massachusetts to North Carolina and provides data in readily accessible tools.
- Part of the Mid-Atlantic Regional Council on the Ocean (MARCO), the Mid-Atlantic Coastal Acidification Network (MACAN) helps identify monitoring needs and plans to answer basic questions about the intensity, frequency, and location of ocean or coastal acidification events.

GIS Mapping and Databases

As part of the FY2021-2025 Section 309 Ocean Resources Strategy, in addition to TNC's Marine Mapping Tool, Virginia CZM has supported MARCO in mapping and data collection efforts through their Mid-Atlantic Ocean Data Portal which includes extensive maps and resources on the following categories: administrative boundaries, conservation areas, fishing locations, marine life ranges, maritime activities, oceanographic features, recreational industries, energy development, water quality, and more.

As part of their Marine Minerals Program, U.S. Bureau of Energy Management (BOEM) maintains the Marine Minerals Information System Viewer, a web-based mapping tool with data layers including environmental samples and geologic/geophysical features.

Technical Assistance, Education, & Outreach

Through the FY2021-2025 Ocean Resources Strategy, Virginia CZM supported work through VMRC, DWR, and the Virginia Aquarium to evaluate the resources required for large whale stranding response in Virginia and develop a draft Memorandum of Understanding (MOU) among these agencies to coordinate stranding response and provide state resources for the Virginia Aquarium. After a Section 309 funded project (FY2023, Task 92.01) with VMRC to develop the MOU, Virginia CZM provided non-Section 309 funding to DWR to carry out the implementation of this work and codify the use of state resources to support stranding response.

As part of the development of the Plan, Virginia CZM hosted two (2) publicly available Community Open Forums, one in person and one virtual, to generate awareness and solicit community feedback regarding the forthcoming Plan. Virginia CZM staff provided an overview of the proposed outline and topic areas covered by the Plan, supplemental resources for additional information, and collected responses from community members and stakeholders to shape the Plan and its contents.

To engage the diverse interests in the region and enhance the vitality of the region's ocean ecosystem and economy, the MARCO states and a partnership of Federal agencies, Tribal entities and the Mid-Atlantic Fishery Management Council (MAFMC) formed the Mid-Atlantic Ocean Planning Committee. This committee convenes the Mid-Atlantic Ocean Forum annually as a venue for regional information sharing, coordination and collaboration, and to enhance the region's ability to leverage existing efforts and information across multiple state and federal government agencies, federally recognized tribes, non-governmental entities and ocean stakeholders.

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in planning for the use of ocean and Great Lakes resources since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

As previously mentioned, Virginia CZM is actively developing the Plan with support from the current (FY2021-2025) Section 309 Ocean Resources Strategy. Based on extensive stakeholder feedback and engagement, the Plan will include a comprehensive review of current ocean resource uses, conflicts, and opportunities for improved management through proposed recommendations on a variety of subject matters (e.g., fishing, seafloor resources, etc.). While current studies are limited that assess Virginia's effectiveness in planning and management of ocean resources, the forthcoming Plan is designed to close this gap and result in organized management efforts moving forward.

Identification of Priorities

1. Considering changes in threats to ocean and Great Lakes resources and management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to effectively plan for the use of ocean and Great Lakes resources. *(Approximately 1-3 sentences per management priority.)*

   Management Priority 1: Develop and formalize a mechanism for ongoing cross-jurisdictional and multi-interest coordination on ocean planning and management (in alignment with Virginia Ocean Plan Recommendation #1) via a Virginia Ocean Planning Group (VOPG) and develop a sustainable model for ongoing implementation of the VOPG with respect to capacity and funding.

   Description: A Virginia Ocean Planning Group (VOPG) should be formed. The VOPG will allow agencies and organizations with roles in ocean planning to: coordinate changes in ocean uses & develop a mechanism for proactive identification and mitigation of use conflicts (conflict resolution); communicate changes in policy (state/Federal); provide opportunities for broad input to ocean management decisions; identify and support short-term and long-range ocean planning needs; address Plan implementation and updates and track progress towards goals; regularly review and revise needs including data, tools/products, and policies.

   Management Priority 2: Support improved conservation of critical marine habitat and species and a more robust stranding and entanglement network.

   Description: Support the implementation of relevant recommendations within DWR's pending Sea Turtle and Marine Mammal Conservation Plans; develop a more sustainable funding and support framework for Virginia Aquarium's Stranding Response Program to improve stranding, entanglement, and harassment outcomes; proactive identification of priority habitat for marine life and fisheries.

   Management Priority 3: Develop data, products, and/or policies to address anticipated changes to ocean resources and/or ocean management landscape.

   Description: Through input from coordinative body identified in Management Priority #1, actively develop materials that are necessary to support program changes that will help Virginia respond to changing ocean conditions, changing species ranges, evolving/emerging uses like marine mineral mining and aquaculture, as well as implement recommendations in upcoming plans including the Plan

(pending) and DWR's Sea Turtle and Marine Mammal Conservation Plans. Other examples may include developing programs to promote Virginia seafood and supporting the commercial fishing sector through apprenticeships and training materials; developing materials to promote ecotourism particularly as it relates to tours and charter fishing opportunities that come from marine development (e.g. CVOW).

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	- Research and monitoring on the effects of offshore development on fisheries, marine mammals, and birds compared to other OSW sites (based on assembled research from the Regional Wildlife Science Collaborative (RWSC) and Responsible Offshore Science Alliance (ROSA) - Research fleet/vessels - Improved data for fisheries
Mapping/GIS	Y	- Updated recreational use surveys - Monitoring and mapping of impacts to maritime traffic due to CVOW and shipping
Data and information management	Y	- Standards and storage for data related to seafloor resources (cores, sediment characterization) - Participation of Virginia research institutions in RWSC/ROSA data governance
Training/Capacity building	Y	- Capacity among state agencies for ocean planning/management - Stranding network capacity - Apprenticeship program support for VMRC - Training materials for commercial fishing
Decision-support tools	Y	- Decision support for beneficial use of dredged material (BUDM) on beaches vs. nearshore environments. Additional scientific studies on benthic impacts needed before nearshore placement options are deemed to have minimal adverse impact compared to traditional beach nourishment practices.
Communication and outreach	Y	- Multistakeholder coordination around ocean planning (as proposed in Virginia Ocean Plan) - Connecting Virginia seafood industry with local markets; promoting Virginia seafood - Engagement with commercial fishermen and other groups that are not readily accessible otherwise - Outreach around appropriate behavior with marine wildlife; tools for reporting strandings, marine debris, etc.
Other (specify)	Y	- Funding

Enhancement Area Strategy Development

1. Will the CMP develop one or more strategies for this enhancement area?

Yes __X___
No _____

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

An Ocean Resources Strategy is being developed to continue progress and momentum made through the process of developing a Virginia Ocean Plan. A key component of that pending Plan is the focus on providing a mechanism for ongoing coordination between agencies and organizations that have a role in ocean planning. Once published, the Plan and DWR's Marine Mammal Conservation Plan and Sea Turtle Conservation Plan will provide numerous recommendations to improve aspects of how Virginia manages ocean resources. An Ocean Resources Strategy will provide an important mechanism for supporting implementation of these plans and ongoing coordination around ocean planning.

Strategies

Wetlands Strategy

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) *(check no more than two):*

☐ Aquaculture
☐ Energy and Government Facility Siting
☐ Coastal Hazards
☐ Ocean/Great Lakes Resources
☐ Special Area Management Planning
☐ Cumulative and Secondary Impacts
X Wetlands
☐ Marine Debris
☐ Public Access

B. The proposed strategy or implementation activities will also support the following enhancement areas *(check all that apply)*:

☐ Aquaculture
☐ Energy and Government Facility Siting
X Coastal Hazards
☐ Ocean/Great Lakes Resources
☐ Special Area Management Planning
X Cumulative and Secondary Impacts
☐ Wetlands
☐ Marine Debris
☐ Public Access

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

☐ A change to coastal zone boundaries;
X New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
X New or revised local coastal programs and implementing ordinances;
X New or revised coastal land acquisition, management, and restoration programs;
☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
X New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. Strategy Goal: Support statewide wetlands planning efforts in Virginia by developing policies and addressing other identified needs to support restoration, creation, and preservation of tidal and non-tidal wetlands. These may include developing new funding opportunities, addressing data gaps to improve understanding of anticipated changes in wetlands distribution and function, and developing tools and resources to support planning and implementation by state and local decision makers.

C. Description

This Strategy seeks to leverage the significant statewide emphasis on wetlands planning in the ongoing effort to update Chesapeake Bay Program wetland restoration goals, and the recent focus on

cross-jurisdictional planning and coordination through creation of the Statewide Wetlands Technical Team and the forthcoming Wetlands Policy Task Force. The Technical Team is led by the Virginia Department of Wildlife Resources (DWR), part of Virginia CZM's networked program, with objectives focused on wetlands data development and project implementation. The Wetlands Policy Task Force, created through legislation in the 2025 Virginia General Assembly (GA) session, will develop strategies to restore, create, and plan for the persistence of wetlands through an exploration of emerging science and policy evaluation and recommendations. This Strategy seeks to support these efforts by developing the data, tools, resources, and ultimately policy recommendations that these efforts need to meet their shared goals. Several specific needs and focuses are identified below, but as these statewide bodies are still in their infancy, this Strategy is intended to be flexible to allow Virginia CZM to support a rapidly evolving policy and project implementation landscape.

To support statewide wetland planning efforts, this Strategy will produce improved data and mapping resources to more effectively forecast anticipated changes to both the distribution and function of Virginia's wetlands, and particularly the associated impacts on ecosystem services. Previous investments in marsh migration modeling in Virginia have created a foundational understanding of how and where marshes may migrate in response to prominent stressors like sea level rise (SLR). This strategy will build on that foundation to help inform and communicate about the trade-offs that must be considered when choosing locations of wetlands migration or preservation. Among other needs to be determined, resulting products may address: prioritization of locations for supporting marsh migration, anticipated land use conflicts (particularly with respect to private lands), the potential for beneficial use of dredged material (BUDM) to support tidal wetlands, applications for rolling easements in marsh migration scenarios, and ranked analysis of wetland ecosystem services and their economic value. This information will contribute to existing or newly developed tools meant to support land use planning and wetland management.

This Strategy also proposes an analysis of current mechanisms for funding wetland projects in Virginia with the goal of identifying additional funding opportunities that have not been traditionally used to support wetlands work. This expansion may require implementation of guidance or program changes to enable the accessibility of these funds for wetlands work. Potential expanded funding sources may include the Virginia Agricultural Cost-Share (VACS) Program and the Virginia Clean Water Revolving Loan Fund, respectively housed in the Virginia Department of Conservation & Recreation (DCR) and the Virginia Department of Environmental Quality (DEQ), both of which are part of Virginia CZM's networked program. Other considerations include leveraging existing grant funding like U.S. Environmental Protection Agency (EPA) CPRG grants that Virginia has already secured to focus on wetland restoration projects. Expanded funding programs for wetlands work may support projects and strategies that result from the Technical Team or Policy Task Force, in addition to the anticipated funds dedicated in this strategy to support the work of these groups.

III. Needs and Gaps Addressed

Data included in the Wetlands Phase I Needs Assessment from the Virginia Coastal Resilience Master Plan (VCRMP) Phase I demonstrates that up to 90% of the tidal wetlands in coastal Virginia are currently under threat of inundation by 2080 from predicted sea level rise (SLR), not including any wetlands gained due to migration or accretion. This stressor, in addition to other prominent threats of coastal development and hydrological alteration, will lead to significant changes in both the spatial distribution and ecologic function of wetlands in Virginia's Coastal Zone. Virginia's 'no net loss' wetlands policies have been successful in ensuring that permitted wetlands losses are mitigated by the restoration or creation of wetlands, but these policies and mitigation strategies do not account for future predicted losses or

anticipated changes in wetland location and function that are unrelated to permitted projects. Phase I and II Needs Assessments have demonstrated the need for more robust scientific understanding, planning, and policy to successfully manage Virginia's dynamic wetlands landscape, particularly in response to impacts from rising sea levels.

Understanding & Communicating Forecasted Wetland Impacts & Outcomes

This Strategy supports data development regarding the effects of active and emerging stressors on wetland distribution and function in the Coastal Zone. While prior efforts have forecasted the spatial extent and timeline of anticipated changes to both tidal and nontidal wetlands, questions remain regarding the associated changes to ecosystem services of existing, migrated, or restored wetlands. In this case ecosystem services applies to both ecological community as habitat but also the value the wetlands provide to shoreline resilience. Understanding the value of wetlands is critical to informing the tradeoffs that state, local, and private landowners must consider when developing policy and plans to support marsh migration and preservation. Improved data and mapping resources are also needed to identify high-priority locations of marsh migration on private lands; for example, areas that conflict with existing development or areas that would benefit from conservation strategies such as rolling easements to connect existing wetlands and maintain ecosystem services. There is also insufficient information on the effects of marsh migration on surrounding natural resources like upland forests or submerged aquatic vegetation (SAV), or the effects of emerging restoration and resilience-building methods like BUDM on SAV and wetlands.

Virginia currently lacks readily accessible information on these topics to guide effective management strategies or policy changes. To address this, the Wetlands Strategy also supports the creation or improvement of accessible tools that may include ranked analysis of wetland ecosystem services and high-priority locations of marsh migration to aid in land use decisions and policy development. Tools and resources with this information were specifically mentioned as a need by stakeholders consulted in the Wetlands Phase I and II Needs Assessments.

Support for Statewide Wetland Planning Efforts & Increased Funding

The Statewide Wetlands Technical Team and the Wetlands Policy Task Force present significant opportunities to advance wetlands planning in Virginia. However, as currently structured, these groups lack additional funding and/or capacity to address the scale of the challenges facing Virginia's wetlands. Through a Section 309 Strategy, Virginia CZM can contribute resources and capacity to support policy and planning through investing in the types of resources described above.

However, the need for funding will only increase as statewide efforts lead to proposed projects and program changes. Landscape scale restoration projects can be extremely costly but may be required to preserve critical wetlands. Virginia will need dedicated and diverse resources to ensure sustained progress. As described previously, one important element of this Strategy will be identifying and developing support for implementation of new funding streams for wetlands projects.

IV. Benefits to Coastal Management

Virginia CZM has never developed a Wetlands Strategy and in doing so may leverage existing wetland planning efforts across the Coastal Zone at this critical juncture when significant changes to wetlands are predicted in the coming years. With over 1 million acres of wetlands in Virginia and over 70% of those in the coastal plain, significant portions of Virginia's coastal infrastructure will be affected by changes to wetlands caused by stressors like SLR. Investing additional resources into planning and management now

will help safeguard the valuable ecosystem services that wetlands provide to Virginia's Coastal Zone, such as healthy habitats, improved water quality, and greater resilience to coastal hazards.

This Strategy will advance the work of the Statewide Wetlands Technical Team and the Wetlands Policy Task Force by generating data and tools to inform their planning, producing implementation resources to support policy changes, and expanding potential work through increased funding availability. Additionally, Coastal Zone localities will benefit from the data, tools, and resources developed through this Strategy to enhance local land use planning and wetland management decisions. This Strategy also aims to create new funding programs for wetlands work to sufficiently support the large-scale restoration and conservation expected as a result of statewide planning.

By preparing now for anticipated changes to the wetlands landscape with appropriate data and resources, Virginia may successfully enable its Coastal Zone localities and state agencies to make better land use decisions and implement appropriate management strategies for wetlands preservation. The results of this Strategy may contribute to a more resilient coastal Virginia with shorelines and wetlands more adaptable to SLR, coastal hazards, and hydrologic changes, allowing coastal development and economies to continue thriving while supporting wetland ecosystem services.

V. Likelihood of Success

Recent actions by Virginia's administration to advance wetland planning indicate the prioritization of this topic at the state level and the willingness of state government to engage with the scientific community and technical experts to create effective management strategies. By coordinating with and providing support for the Statewide Wetlands Technical Team and Wetlands Policy Task Force, this strategy is poised to have significant success in implementing program change(s) that align with statewide priorities. Additionally, the extensive stakeholder feedback gathered in this Strategy development indicates that Virginia CZM partners at localities, academic institutions, and non-government organizations are ready and willing to engage in the development and implementation of program changes that enhance wetland planning. Efforts described in this Strategy to increase the accessibility of planning resources to decision makers increase the likelihood that program changes will result from the data developed as a product of this Strategy.

VI. Strategy Work Plan

Strategy Goal: Support statewide wetlands planning efforts in Virginia by developing policies and addressing other identified needs to support restoration, creation, and preservation of tidal and non-tidal wetlands. These may include developing new funding opportunities, addressing data gaps to improve understanding of anticipated changes in wetlands distribution and function, and developing tools and resources to support planning and implementation by state and local decision makers.
Total Years: 5 (FY2026 – 2030)
Total Budget: 835,000

Year(s): 1-2
Description of activities:
Provide support for at least one (1) project to further address the spatial extent and/or timescale of wetland and marsh erosion and migration in response to stressors, and associated impacts on ecosystem services. This work will build on existing efforts to forecast and map marsh migration corridors in significant portions of Virginia's Coastal Zone with a

specific focus on private lands since prior work has previously addressed these questions for public lands. This project should explore how a shifting wetland landscape will affect associated ecosystem services and resulting economic impacts by providing ranked analysis of these services based on location and status (e.g., existing, migrated, or restored wetland). This information may allow the identification of specific high-priority wetland locations that should be targeted for protection, conservation, restoration, or avoidance of land use conflicts. Resulting data and/or mapping resources should be incorporated in an existing publicly accessible tool (or creation of a new tool if necessary) that may be used to inform and prioritize land use planning and management decisions. This work will include stakeholder consultations to create a useful product for state and local planners. Identified data gaps will be documented throughout the strategy to identify next steps whether that pertains to data development, tool development, or policy analysis.

As new statewide wetland planning efforts begin in earnest, Virginia CZM will participate and coordinate across efforts, provide general support, and inform relevant groups within our network about products that may inform local and state planning and policy. Virginia CZM will provide input on proposed projects, recommendations, and/or policy changes. Virginia CZM will use staff time to engage with, and where necessary coordinate between, these planning groups in Years 1-2 of this Strategy.

The Coastal Hazards Strategy proposes to evaluate various resilience funding and financing options in Virginia and make recommendations for potential funding program policy changes. In conjunction with this work, an evaluation will address similar questions for wetlands funding and financing options, beginning with an evaluation of existing state and regional wetlands funding programs and policies and an assessment of existing financial needs. Virginia CZM may work with state funding programs in Virginia that do not traditionally support wetlands work and could be expanded to enhance new state wetland planning efforts. In addition to exploring the expansion of novel funding sources for wetland management, this work may also address barriers to existing funding for wetlands projects and lead to draft recommendations and implementation support materials for program changes at the associated funding agencies. Virginia CZM will consult with relevant stakeholders to inform this effort and any resulting recommendations.

Major Milestone(s):

- Completion of data and/or mapping resources and their addition to either an existing or new tool addressing anticipated wetlands loss and migration throughout Virginia's Coastal Zone, associated impacts for ecosystem services, and high-priority locations for wetland protection and restoration. This work should also include stakeholder feedback and identification of data needed to improve the resulting tool. This work may extend into year 3 of the Strategy.
- Documentation of Virginia CZM participation in statewide wetlands management meetings.
- Report on wetland funding and financing options, recommended policy/program changes to support increased funding for wetlands projects, and implementation support materials for associated agencies, programs, and organizations.

Budget: $334,000

Year(s): 3-5

Description of activities:

Several years into their work, the new statewide wetland planning groups will likely have created recommendations, policy changes, or other proposed wetlands work for coastal Virginia. In Years 3-5 of this Strategy, Virginia CZM will dedicate funding to support the work proposed by these groups, including addressing any data needs or impediments to the intended policy/planning outcomes, and/or to support or lead the implementation of proposed program changes.

In conjunction with Years 3-5 of the Coastal Hazards Strategy, Years 3-5 of this Strategy will include outreach and facilitated stakeholder meetings with agencies, programs, and organizations associated with wetlands funding sources that were reviewed in the report previously described. This outreach will assist relevant partners in implementing recommendations and/or program changes to increase funding availability to wetlands work, and may assist interested parties in accessing these funds.

Major Milestone(s):

- Documentation for support and implementation of program change(s) associated with statewide wetland planning groups.
- Stakeholder meetings with relevant wetland funding source programs/participants and documentation of recommendations and/or program changes resulting from funding analysis and implementation support materials.

Budget: $501,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: This proposed budget should be sufficient to conduct this Strategy based on preliminary discussions with associated groups or agencies who may complete the described work. Some questions remain regarding the extent of financial support needed to support new statewide wetland planning efforts as these groups are in their infancy, but Section 309 funds will be an important complement to state resources that will additionally support the work of these groups and their efforts. Virginia CZM anticipates success in creating program change(s) with the planned budget detailed in this strategy. Virginia CZM is also aware that Section 309 funding may be reduced in coming years and therefore some elements of this strategy may need to be deprioritized. The Wetlands Strategy is among the highest priorities for Virginia CZM and the Virginia Coastal Policy Team (CPT), so reductions in overall Section 309 funding would generally be addressed in either the Ocean Resources or Marine Debris Strategies. However, this Strategy can be successful even with a reduction in funding by focusing on only the highest priorities identified through the two (2) concurrent statewide wetland planning efforts.

C. Technical Needs: As a networked program, Virginia CZM has access to technical knowledge and expertise in all of Virginia's natural resource agencies and may leverage these resources as needed in the implementation of this Strategy. Virginia CZM conducted extensive stakeholder feedback in this Strategy development to determine relevant project ideas and reasonable goals for this Strategy based on the accessible knowledge, skills, and capacity of program partners.

Coastal Hazards Strategy

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) *(check no more than two):*

☐ Aquaculture
☐ Energy and Government Facility Siting
X Coastal Hazards
☐ Ocean/Great Lakes Resources
☐ Special Area Management Planning
☐ Cumulative and Secondary Impacts
☐ Wetlands
☐ Marine Debris
☐ Public Access

B. The proposed strategy or implementation activities will also support the following enhancement areas *(check all that apply)*:

☐ Aquaculture
☐ Energy and Government Facility Siting
☐ Coastal Hazards
☐ Ocean/Great Lakes Resources
☐ Special Area Management Planning
X Cumulative and Secondary Impacts
X Wetlands
☐ Marine Debris
☐ Public Access

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

☐ A change to coastal zone boundaries;
X New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
X New or revised local coastal programs and implementing ordinances;
☐ New or revised coastal land acquisition, management, and restoration programs;
X New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
X New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. Strategy Goal: Enhance the capacity of state and local governments to adapt to coastal hazards and support resilience efforts by evaluating, strengthening, and developing relevant policies and programs.

C. Description

The Virginia Coastal Zone Management Program (Virginia CZM) is a networked program with policies and programs across state, regional, and local levels, many of which are directly focused on managing the risks and impacts of coastal hazards. However, there are gaps remaining in the geographic coverage of resilience policies and actions and there are no requirements for proactive planning for evolving coastal hazard risks. Where jurisdictions have taken steps to plan proactively, support is needed to help transition

planning into action. Network partners and stakeholders have identified key opportunities to address these limitations, which include:

1. Developing resilience programs and improved evaluations of resilience actions for local governments.
2. Exploring, evaluating, and implementing existing and new resilience funding and financing tools and programs.
3. Evaluating and recommending existing and new policies to proactively address the risks from coastal hazards.

In all cases, recommendations will be made for new or revised policies or programs to better address the risks associated with coastal hazards.

III. Needs and Gaps Addressed

Localities need to build and maintain community resilience through RAFT evaluations, CRS program implementation, and addressing factors limiting actions on building resilience as identified in specific recommendations in the Virginia Coastal Resilience Master Plan (VCRMP).

Local governments play a key role in building resilience to coastal hazards. Through planning policies, ordinances, and programs, they have the opportunity to tackle a wide range of issues related to coastal hazards. The previous two (2) Coastal Hazards Strategies (FY2016-2020 and FY2021-2025) successfully employed two (2) initiatives to assess and enhance resilience at the local level. However, there are still gaps and emerging needs that a FY2026-2030 Coastal Hazards Strategy could address. This includes building on past successes, adapting to the evolving state and Federal landscape, and linking local efforts to broader state-level developments.

The Resilience and Adaptation Feasibility Tool (RAFT) was developed and initially implemented by a project team from the University of Virginia's Institute for Engagement & Negotiation (UVA-IEN), the College of William & Mary 9W&M), and Old Dominion University (ODU). After the closure of the Virginia Coastal Policy Center (VCPC) at W&M's Law School in 2023, Virginia Tech (VT) joined the three-university collaborative to continue to implement and adaptively improve the RAFT. The RAFT process includes participation by local government staff and community leaders in the evaluation of community resilience through five different topic areas: 1) policy, leadership, and collaboration, 2) risk assessment and emergency management, 3) infrastructure resilience, 4) planning for resilience, and 5) community engagement, health, and wellbeing. This evaluation is presented to the community at a workshop and a short list of recommended resilience-building actions are identified that each participating locality should undertake. These actions can include program changes like updating ordinances, incorporating resilience into the locality's comprehensive plan, or establishing locality resilience programs. In the year after the initial evaluations, the RAFT team provides technical assistance to help localities implement these actions. Participant feedback has been positive, and the RAFT process has been adaptively improved based on feedback from each cycle of implementation in a region. While the RAFT has been implemented roughly six (6) times - typically corresponding to a regional geography like a planning district commission PDC) - several localities in the Coastal Zone that have not gone through the RAFT process are interested in doing so. Similarly, Tribal governments face comparable resilience challenges to local governments, and some have expressed interest in the RAFT process. Continuing support for the RAFT process will allow these needs and articulated interest in the process to be met.

RAFT has also highlighted several chronic local government needs, including the lack of local government staff capacity and/or political will to maintain resilience programs and invest in resilience activities once the 1.5-year RAFT process is completed. Despite governments leaving the RAFT process

with several actionable steps that can be taken to increase resilience, the follow-through and implementation by localities has not kept pace with the intentions developed during the planning exercise. While the capacity and political will concerns are not something RAFT itself can solve unilaterally, it is important to understand if the RAFT process itself can be adapted to improve outcomes after localities complete the program. Therefore, for this FY2026-2030 Coastal Hazards Strategy, roughly a decade after the RAFT process was first piloted, the three-university team will conduct a robust evaluation of the program through interviews and other means. The results of this evaluation will be used to continue to improve the RAFT process and the services it provides to alumni communities. Therefore, for this 2026-2030 Coastal Hazards Strategy, roughly a decade after the RAFT process was first piloted, the three-university team will conduct a robust evaluation of the program through interviews and other means. The results of this evaluation will be used to continue to improve the RAFT process and the services it provides to alumni communities.

Local participation in the Community Rating System (CRS) of the National Flood Insurance Program (NFIP) provides an excellent framework for resilience-building and is incentivized by discounts on flood insurance for property-owners. This incentive helps build community support for participation. However, the CRS program is a complicated and evolving program that is hard for communities to keep up with. Communities that fall out of compliance can lose the benefits provided by the program. In the previous two (2) Coastal Hazards Strategies, three (3) Coastal Zone communities joined the CRS program. Currently there are 25 CRS communities in the Coastal Zone, which is roughly 30% of the 85 communities with flood insurance policies. Virginia CZM-supported CRS evaluations and training opportunities were well received by localities in previous cycles. However, during the last few grant years, interest in evaluations and training has been limited.

At the same time there is an increasing need to support existing CRS communities. During the most recent Coastal Hazards Strategy, the NFIP changed the way in which flood insurance premiums are calculated, and for the upcoming five-year period there is a planned redesign of the program. Complicating matters further, the Federal Emergency Management Agency (FEMA) has one (1) Federal contractor implementing the CRS program, and under the current administration this contractor is not authorized to attend public meetings. Given the possibility of changes to the CRS program and the need for communities to understand those changes in order to maintain their CRS community discounts, the Virginia CRS Workgroup has never been more important. The workgroup provides a critical community of practice, dedicated monitoring of CRS program changes, and a forum for discussing changes. Moreover, the Commonwealth of Virginia continues to make progress in the resilience realm developing data through the VCRMP Phase II, developing the Virginia Flood Protection Master Plan (VFPMP), and through the development and implementation of other resilience policies (e.g., Chesapeake Bay Preservation Act (CBPA) amendments). These state efforts each offer opportunities for incorporation into the CRS framework, but not without complexity. In this way, the Virginia CRS Workgroup plays a critical role in helping communities get credit for the many state and local resilience successes to date.

As stated previously, Tribal governments face resilience challenges similar to local governments. Similarly, Federally recognized Tribes in Virginia are eligible for participation in the CRS program and the RAFT program has developed a Tribal RAFT scorecard and process. Where there is interest, the above efforts may also occur in partnership with Tribal governments in Virginia's Coastal Zone.

During the VCRMP Phase II development process, the Coastal Resilience Technical Advisory Committee (TAC) identified 20 recommendations that address coastal resilience needs. The TAC, which met to develop these recommendations between 2023-2024, was comprised of representatives from

more than 40 organizations, including many organizational members of the Virginia Coastal Policy Team (CPT). Following the conclusion of this effort and in accordance with the Code of Virginia, the TAC wrapped up in February 2025 and was replaced with a statewide Flood Resilience Advisory Committee. During the development of this Strategy, stakeholders agreed that select TAC recommendations were high priorities that could lead to program changes that build and maintain local level resilience. Specifically, recommendations like P-d, P-e, and R-b have applicability to these needs: to these needs.

- Recommendation P-d is intended to understand and address factors that prevent flood resilience action by local governments by establishing state agency programs to engage with and support local governments and PDCs, particularly in areas with high flood risk and no resilience projects or initiatives. This strategy can support the implementation of this recommendation by providing resources and a network for developing these support programs. Virginia CZM is particularly well suited for liaising between state, regional, and local governments – as well as academic institutions – and has a history of effective stakeholder engagement. Furthermore, the program can additionally support this work through Section 306 implementation funding, where appropriate (e.g., support for hazard mitigation plan coordination at PDCs). This strategy can help to identify effective state agency programmatic pathways that would support the implementation of local flood resilience actions including through data analysis and stakeholder engagement.
- Recommendation P-e is intended to connect the state's coastal flood resilience findings with local actions so that they are better informed and coordinated. Specifically, it proposes to work with key stakeholders to establish a coordinated framework to operationalize the VCRMP at local, regional, and state scales. The framework should integrate data and needs assessments to develop success metrics for short-, mid-, and long-term goals. To date such a framework has not been created and this strategy offers an opportunity to consider opportunities to do so.
- Recommendation R-b is related to P-e in that it aims to maintain the best available resilience data by pulling together stakeholders to identify priority data needs for planning and decision making and recommend a strategy for fulfilling those needs. Initial steps to develop statewide flood resilience success metrics and identify priority data needs for monitoring progress and making decisions are underway through the development of the VFPMP, which is scheduled for release in December 2025. However, given the unique nature of changing hazards in the Coastal Zone, it will be important to continue convening Coastal Zone stakeholders to ensure that efforts to provide consistent and integrated flood resilience planning at multiple levels of government across Virginia sufficiently and appropriately address the specific challenges of SLR, coastal erosion and related topics.

As appropriate, other needs and gaps identified in the Coastal Resilience TAC recommendations or other topics identified in the RAFT or CRS work that facilitate improved resilience to coastal hazards at the local level may be explored through this Strategy.

The high and long-term costs of resilience projects and programs require diverse and sustainable funding and financing options for public and private projects with limited restrictions and lowered burdens for pass-through organizations and recipients

Stakeholders across the region have contributed information to inventory more than 800 flood resilience projects and initiatives in coastal Virginia. The living inventory is housed in the Coastal Resilience Web Explorer and while expansive, still represents just a snapshot of regional resilience priorities in the coastal zone. Many records do not contain cost data, and limited staff capacity and resources prevented some organizations from submitting information entirely. Still, the inventory documents that addressing flood resilience at local levels is both important and costly. There are approximately 290 projects in

progress with estimated costs of $3.6 billion, and about 320 proposed projects estimated to cost another $5.1 billion. Through April 2025, the Commonwealth has invested in funding to support these priorities by issuing more than $121 million through 82 grant awards to address flood risk in Virginia's Coastal Zone through the Community Flood Preparedness Fund (CFPF). Additionally, the Commonwealth has established a Resilient Virginia Revolving Fund (RVRF) for additional grant and loan flood resilience support. Originally, these funds were financed with proceeds from Virginia's participation in the Regional Greenhouse Gas Initiative (RGGI). Since the Commonwealth's departure from RGGI, funding has been provided through state general fund allocations. It is unclear whether the Commonwealth can sustain and increase these general fund allocations to meet growing costs of projects and programs while filling gaps created by the loss of federal grant programs that have been terminated or reduced (e.g., Building Resilient Infrastructure & Communities (BRIC), Inflation Reduction Act (IRA), and Bipartisan Infrastructure Law(BIL). As such, there is a need to explore more diverse and sustainable funding and financing options for resilience projects and programs.

As a part of this Strategy, more complex resilience funding mechanisms like taxes, loans, bonds, disaster savings accounts, and other financing options will be explored and evaluated, and efforts will be made to support their implementation (e.g., model ordinances). Stakeholders noted that this Strategy should both evaluate these options for funding resilience work, in addition to identifying sustainable state revenue sources to fund resilience efforts. Stakeholders also identified a need for funding policy changes. Conversations with stakeholders in the process of developing this strategy revealed that initial areas of focus could include: (a) exploring funding options for private property since the majority of Virginia shorelines are privately owned; (b) evaluating the burdens placed on pass-through organizations and the barriers presented for rural and smaller governments by resilience plan requirements for CFPF project grants; and (c) standardizing data types for prioritizing funding decisions in line with Coastal Resilience TAC recommendation R-b.

The identified needs within this Strategy align closely with two (2) recommendations of the Coastal Resilience TAC: F-e and F-d.

- Recommendation F-e asks the Chief Resilience Officer (CRO) to request a report from the Interagency Resilience Management Team (IRMT) on the effectiveness of state funding and financing programs to address short-term and long-term flood-related challenges for local governments, PDCs, and the Commonwealth, and to consider additional financial mechanisms as appropriate.
- Recommendation F-d aims to understand the financial needs, limitations, and challenges to implementing resilience on public and private property. It recommends the CRO request that the IRMT identify challenges in the flood-related grant and loan processes specific to private and public projects, then recommend improvements.

The CRO structure in Virginia was recently revised, and the IRMT is a new coordinating body which at the time of drafting this Strategy has not yet convened. Therefore, while coordination with the CRO and IRMT around sustainable funding and financing options for coastal hazards will be critical, the specific approaches for how the Strategy can align with the work of these entities to further this and other TAC recommendations will likely continue to evolve as the priorities and resources of the CRO and IRMT become clear. Work on this Strategy will remain adaptive to the priorities of the CRO and will coordinate closely to ensure alignment with CRO priorities. Initial potential opportunities for the strategy to support implementation of recommendation F-e include supporting data development and stakeholder engagement. For example, the Strategy could support an evaluation of existing and prospective funding (including revenue streams) and financing options, and engagement with local and regional government

stakeholders to gather input on the feasibility of identified funding and financing options. Potential opportunities for the Strategy to support recommendation F-d include supporting analyses of flood-related grant and loan programs and their requirements. It could also include gathering feedback from key stakeholders that seek or manage funds, such as PDCs, local governments, NGOs, and private citizens, to better understand the funding programs and the barriers to accessing and implementing them.

As appropriate, other funding and financing topics may be explored in an effort to support sustainable and practical long-term resilience funding.

Policies that address coastal hazards are inconsistent across the Coastal Zone, do not proactively plan for changes in hazards, and do not address existing infrastructure and construction

Stakeholders identified gaps in policies that directly manage the risks related to coastal hazards. While the state does not have a coastal hazards policy per se, there are some related policies that manage different aspects of these risks. Because of the paramount potential for impacts to people and property from coastal hazards, stakeholders focused on two main areas for policy improvements: floodplain management policies related to new construction and policies related to abandoning existing development.

Locally adopted floodplain management regulations apply to any new development in regulated flood risk areas. As stated previously in the Coastal Hazards Phase II Needs Assessment, there is no statewide requirement for floodplain management. That said, of the 90 counties, cities, and towns in Virginia's Coastal Zone, only five (5) towns are not participating in the NFIP. While 100% participation is a goal, stakeholders identified the lack of proactive planning for future changes in coastal hazards as a principal gap in the floodplain management program. Flood hazards are based on historical flooding data and do not consider projected flood risk. As a result, stakeholders recommended this strategy evaluate the applicability of the "No Adverse Impact" (NAI) approach to floodplain management for impacts from coastal flooding in Virginia. The NAI approach works to ensure that activity in the floodplain is not permitted if it can reasonably be expected to cause negative effects on other people, property, and the coastal environment. In doing so, it aims to account for future conditions (e.g., sea level rise, increasing storm surge and flood events, etc.) and address all related hazards (e.g., erosion). This approach has been implemented primarily in fluvial flooding situations and has not been widely applied to coastal flooding scenarios. Accordingly, a detailed analysis of its applicability in the Virginia policy landscape was proposed. Because of the constituency involved in potential implementation of the NAI approach, stakeholders recommended this evaluation be informed by a broad swath of local, regional, and state government representatives. Stakeholders recommended this strategy work to:

1. Conduct an analysis of NAI-related policies in other states (e.g., building codes)
2. Evaluate ways in which the NAI approach could work for coastal flood risk in Virginia
3. Propose a NAI approach that requires proactive planning for future flood risk for all properties, similar to the Virginia Flood Risk Management Standards for state-owned properties.
4. Develop a model ordinance and other materials that would support successful implementation of the NAI approach by NFIP communities.
5. Promote NAI adoption through stakeholder engagement and development of support materials. Activities can include
6. Conduct economic analyses to compare the cost of implementation with the cost of no action for NAI-related policies to encourage its implementation (e.g., building code lifetime costs vs upfront costs vs the cost of doing nothing).

7. Evaluate and document legal implications/liabilities for NFIP communities for not adopting the NAI approach.
8. Hold stakeholder meetings with state, regional, and local governments to identify shared goals around resilience and possible motivations for adopting the NAI approach in their activities (e.g., DHCD with affordable housing).
9. Apply NAI to stormwater management design standards (e.g., increasing the minimum tailwater elevation for stormwater systems).
10. Explore opportunities for regional NAI planning.

As appropriate, other tools and approaches to facilitate proactive floodplain management will be explored through this Strategy.

While floodplain management and other regulations like the CBPA apply to new development, there are no policies that provide planning for or certainty around decisions to abandon, relinquish, and/or raze infrastructure and other development as sea levels rise. Currently, infrastructure abandonment policies are in place for the Virginia Department of Transportation (VDOT) to relinquish control of roads to local governments, but there is no policy or procedure for local governments to abandon infrastructure and utilities. The absence of a policy or procedure facilitates a future patchwork of approaches with uncertainties that can lead to possible liability risks and takings claims. Similarly, as sea levels rise, tidal waters will ultimately intersect with structures on private property, and there are no policies around how to plan for that inevitability. Left unabated, water that will ultimately interact with those structures will cause property damage that can negatively impact public trust resources and nearby property values. In such cases, it is likely that the clean-up and restoration work will fall to governmental entities, representing a public subsidy for the flooded property.

Stakeholders identified these gaps in policy and the associated need for policy tools to plan for and provide certainty in process around these inevitable futures. One such policy tool that stakeholders expressed interest in developing to address these gaps is that of a rolling easement. Rolling easements can come in a variety of different forms, all of which may have utility in relation to these policy gaps. In basic terms, rolling easements are legally enforceable expectations that the shoreline will be able to move naturally. In other words, they are constructed in such a fashion that as water levels change and encroach upon the property, designated thresholds are used to trigger management actions. Stakeholders expressed interest in evaluating the different types of rolling easements, which can include but are not limited to 1) legislatively created rolling easements, 2) locally enforced ordnance transactions, and 3) rolling easements on privately owned land (e.g., Ryan Resilience Lab, no mow conservation easements, etc.). This evaluation would look at the various types of rolling easements, their options, benefits, and limitations, and make recommendations for rolling easements that could provide planning certainty around public and private development abandonment. For example, rolling easements for private property that are established through ordinance can be used to require property owners to contribute to a fund at various levels, based on various sea level encroachment thresholds. That fund can be used to pay for property buy outs, demolition, and clean-up.

Depending on the results of this evaluation, other policy tools that can facilitate abandonment planning certainty may also be explored. As the Commonwealth of Virginia's lead land conservation organization, the Virginia Outdoors Foundation (VOF) is tasked with the creation and updating of Virginia's Model Deed of Open Space Easement. This Model Deed is used by private land conservation organizations in Virginia to ensure their practices are compatible with the best open space preservation practices. As such, novel and proper conservation practices for preservation of land can be distributed through the

Model Deed throughout Virginia. Collaboration with VOF should be considered to explore the feasibility of including abandonment planning in conserved private properties.

IV. Benefits to Coastal Management

This Strategy is intended to comprehensively address the challenges associated with coastal hazards, while providing capacity and a process by which key stakeholders can continue to be involved in advancing the Coastal Resilience TAC recommendations through implementation. It will explore program and policy changes aimed at 1) supporting local resilience actions, 2) diversifying and improving funding and financing for public and private resilience actions, and 3) promoting policies that proactively plan for increasing risks related to coastal hazards. Recommendations will be made for new or revised enforceable policies to better manage the risks related to coastal hazards, and implementation support materials will be developed to facilitate the adoption of those recommendations. Outcomes of the Strategy will include:

- Local government actions to improve resilience through changes to ordinances, policies and programs.
- Development of state programs, plans, and policies that support local government resilience efforts.
- Evaluations of and recommendations for revenue sources to meet the resilience funding needs and for more complex resilience funding mechanisms like taxes, loans, bonds, disaster savings accounts, and other financing options.
- Recommendations for funding policy changes that can reduce unintended barriers and increase the availability of funding for resilience actions on private and public property.
- Recommendations for policies that proactively plan for the increasing severity of coastal hazards for new construction and existing development.

V. Likelihood of Success

This Strategy is based on broad stakeholder input, including from the agencies and local governments of the Virginia CZM network involved in resilience and coastal hazards issues. Agencies with relevant policies that this strategy interacts with were involved throughout the process, and local governments provided input into the process and were represented further by planning district commissions who provide extensive resilience support and funding for local governments. This input and participation should ensure that these entities remain engaged in the Strategy process and participate in the full range of outcomes.

This Coastal Hazards Strategy comes at the end of an extensive, stakeholder-led effort to develop the Phase II VCRMP. In this second iteration of the plan, the Coastal Resilience TAC spent numerous hours in meetings identifying and developing recommendations that advance resilience in Virginia's coastal zone. Providing support for the implementation of those recommendations builds on that informed work and continues the momentum of that initiative. In recent years, the Commonwealth of Virginia has also codified the role of the CRo, IRMT, and other resilience efforts at the state level. These new capacities will help with TAC recommendation implementation and overall resilience coordination. While these capacities now exist and master plan implementation plans are in place, Virginia CZM provides a unique network of partners that play an important role in implementing much of the resilience work in the coastal zone, particularly since the TAC ended in February 2025. In fact, stakeholders identified the intergovernmental nature of Virginia CZM as an important element that will enrich state level resilience planning.

The Strategy also builds on previous successful efforts to improve community resilience, identify unique financing options, and develop proactive floodplain management policies. Partnerships are already in place, and a strong framework for further advancements in programs and policies is already developed. Therefore, given the unique nature of Virginia CZM, its broad network of partners, and history of work in this arena, the 2026-2030 Coastal Hazards Strategy is well suited for success.

VI. Strategy Work Plan

Strategy Goal: Enhance the capacity of state and local governments to adapt to coastal hazards and support resilience efforts by evaluating, strengthening, and developing relevant policies and programs.
Total Years: 5 (FY2026 – 2030)
Total Budget: $835,000 ($167,000 per year)

Year(s): 1-2
Description of activities:

A robust evaluation of the RAFT program will take place through interviews with alumni communities. Recommendations for how to improve the RAFT process and the services it provides to alumni communities will be prepared.

Localities will be evaluated for their resilience to coastal hazards through the RAFT program and actions that improve resilience to coastal hazards will be identified. Technical assistance will be provided to help implement those recommendations. Technical assistance will also be offered to alumni RAFT communities.

The Virginia CRS Workgroup will be continued as a community of practice. Changes to the CRS program will be monitored and shared with the workgroup. State level policy and data that can be used in the CRS program will be evaluated, negotiated for credit, and shared with the workgroup through training.

Depending on the evolution of the CRO and IRMT, work will be conducted to support TAC recommendations F-e and F-d. This may take the form of a study to research various resilience funding and financing options, possible revenue streams for sustainable state resilience funding, and make draft recommendations. Based on these recommendations, model ordinances and other implementation support materials may be developed. A study may also evaluate existing state and regional resilience funding programs and policies, assessing financial needs, limitations, and challenges to implementing resilience projects on public and private properties. It can review individual grant and loan programs, identify barriers to accessing funding. As appropriate, agencies that implement the funding programs under review may be partnered with to review the barriers and offer feedback on feasible changes. Recommendations for funding program policy changes can be made and shared with the implementing agencies.

Different types of rolling easements will be evaluated to assess their options, benefits, and limitations. These may include legislatively created rolling easements, rolling easements on privately held land, locally enforced ordinance transactions, and smaller-scale rolling easements (e.g., no-mow conservation easements). Recommendations will be made on the appropriate use of each type. Additionally, suggestions will be provided for rolling easements

that could offer planning certainty regarding the abandonment of public and private development. A series of stakeholder meetings will discuss rolling easement options and their relevance to planning for development abandonment. Based on stakeholder feedback and the evaluation's results, other policy tools may also be considered. Implementation support materials will be developed to assist with the execution of the recommended strategy.

Major Milestone(s):

- RAFT program evaluation report with recommendations for improvements
- Local RAFT evaluations
- Local RAFT and CRS training and technical assistance
- Work to support the development of funding and financing options, recommended funding policy changes, and relevant implementation support materials.
- Evaluation of various rolling easement types, with recommendations and implementation support materials.
- Stakeholder meetings to discuss rolling easement report recommendations

Budget: $334,000

Year(s): 3-5

Description of activities:

Localities will be evaluated for their resilience to coastal hazards through the RAFT program and actions that improve resilience to coastal hazards will be identified. Technical assistance will be provided to help implement those recommendations. Technical assistance will also be offered to alumni RAFT communities.

The Virginia CRS Workgroup will be continued as a community of practice. Changes to the CRS program will be monitored and shared with the workgroup. State level policy and data that can be used in the CRS program will be evaluated, negotiated, and shared with the workgroup through training.

A series of facilitated stakeholder meetings may be held to discuss the findings of the Year 2 report on funding and financing options, possible funding revenue streams, and state funding programs. These meetings could be used to discuss any study recommendations and implementation support materials that have been prepared in order to identify necessary modifications or new recommendations.

The applicability of the NAI approach to floodplain management will be evaluated for coastal flooding in Virginia. Recommendations will be made for how NAI can be implemented in Virginia in a way that includes requirements for proactive planning for future flood risk. A model ordinance and other implementation support materials will be developed.

A series of stakeholder meetings will be held with state, regional, and local governments to identify shared goals around resilience and possible motivations for adopting the NAI approach in their activities. Based on these meetings, research will be conducted into identified barriers to implementation and/or opportunities for implementation. These may include regional NAI planning, stormwater management design standards, economic analyses of benefit cost, or a legal analysis of local government liabilities in and out of a NAI context.

Work will be conducted to support TAC recommendations P-d, P-e, and possibly R-b. This could take the form of a study of the barriers preventing local governments from taking flood

resilience actions including recommending solutions. This study could first identify communities at high risk for coastal hazards that have limited or no resilience projects or programs in place. These communities could then be engaged to understand the challenges they face, including data needs, capacity limitations, and funding needs. The study could also propose remedies to overcome these obstacles and suggest or create state-level programs that can offer the necessary resilience support. A series of facilitated stakeholder meetings could then be organized to discuss the barriers local governments face in implementing flood resilience actions and identify priority data needs for resilience planning and decision-making. As appropriate, these discussions could also advise the development of metrics for assessing resilience success.

Major Milestone(s):

- Local RAFT evaluations
- Local RAFT and CRS training and technical assistance
- Stakeholder meetings to discuss recommendations from the Year 2 report on resilience funding, financing strategies, and proposed funding policy changes.
- Evaluation with recommendations to implement the NAI approach to floodplain management in coastal Virginia.
- Stakeholder meetings to discuss NAI implementation in coastal Virginia and associated studies conducted to support stakeholder needs.
- Work to support the development of state programs that engage with and support PDCs and local governments facing barriers to local flood resilience actions.
- Work to support the development of a coordinated framework to operationalize the VCRMP at local, regional, and state scales.

Budget: $501,000

VII. Fiscal and Technical Needs

A. Fiscal Needs:

Each component of this Strategy will likely identify additional information needs. Completely addressing all those needs is likely beyond the scope of the resources available for the Strategy. However, documenting the needs through the stakeholder-informed processes described above and proposed for this strategy will position the commonwealth to apply for other available resources.

Evaluations and recommendations for strengthening local resilience efforts should be completed for all interested localities during the strategy period. Ongoing technical assistance to localities to help implement recommendations beyond this period will substantially increase the value of the work because of the limited capacity of localities.

Much of this Strategy proposes to support the implementation of select Coastal Resilience TAC recommendations. This Strategy provides added capacity for actions and programs that will be reflected to the governor's administration and the General Assembly. Thus, it is likely that the work needed to fully carry out recommendations will be supported through future funding streams.

In the event of a decrease in Section 309 funding, Virginia CZM will identify and pursue the highest priorities among the gaps and needs identified and addressed by this Strategy. This would still allow Virginia to make substantial progress on addressing the overall Strategy and achieving desired program changes.

B. Technical Needs:

Although it is possible that the need for technical assistance from outside the Commonwealth will arise as we undertake the Coastal Hazards Strategy, specific needs have not yet been identified. As a networked program, Virginia CZM is fortunate to have a wide range of technical expertise available to undertake the projects identified in the strategy. If technical assistance need arises, the Virginia CZM Program will consult NOAA about available resources.

VIII. Projects of Special Merit (Optional):

It is feasible that any component of this Coastal Hazards Strategy may identify needs that would be appropriately addressed through a Project of Special Merit (PSM). Much of the work involves evaluation of nationally relevant topics such as funding and financing policy, NAI floodplain management for coastal flooding, rolling easements, and plans for abandoning development. Additionally, much of the proposed work involves high level reviews that may spur the need to take in-depth reviews of components that are well suited for a PSM. Thus, while there are no specific plans to augment this Strategy with a PSM, it is likely that this Coastal Hazards Strategy could benefit from a future PSM.

Marine Debris Strategy

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) *(check no more than two):*

- ☐ Aquaculture
- ☐ Energy and Government Facility Siting
- ☐ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- X Marine Debris
- ☐ Public Access

B. The proposed strategy or implementation activities will also support the following enhancement areas *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy and Government Facility Siting
- ☐ Coastal Hazards
- X Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

☐ A change to coastal zone boundaries;

X New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;

☐ New or revised local coastal programs and implementing ordinances;

☐ New or revised coastal land acquisition, management, and restoration programs;

☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,

X New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. Strategy Goal: Implement specific actions in support of the goals of the updated 2026-2030 Virginia Marine Debris Reduction Plan (VMDRP) and develop and adopt a plan for long-term sustainability of marine debris work in Virginia.

C. Description:

Through this Strategy, stakeholders at the local, state and Federal level, including government and non-government organizations, will work together to implement specific actions in the updated VMDRP and to continue implementation of actions from the previous VMDRP. Virginia CZM and Clean Virginia Waterways (CVW) developed the VMDRP in 2012-14, updated it in 2021, and are in the process of doing so again in 2025. The VMDRP charts a course to measurably reduce marine debris in Virginia and Mid-Atlantic coastal waters by focusing on specific actions (e.g., policies,

procedures, outreach campaigns) to address overarching goals. These actions need to be politically, socially, and economically feasible in Virginia, and progress will require increased collaboration with Virginia localities and other the states in the Mid-Atlantic region (including D.C.) through data-sharing, policy coordination, and stakeholder engagement. While an estimated 60% to 80% of marine debris items enter coastal waters from land-based sources, abandoned and derelict vessels (ADVs) and derelict fishing gear (DFG) also comprise a significant volume of water-based debris. As such, and consistent with the VMDRP, this Strategy considers prevention of land-based sources and prevention and removal of water-based debris.

As noted above, the VMDRP is currently in the process of being updated and the new version is expected by late 2025 or early 2026 (in the final year of the current FY2021-2025 Marine Debris Strategy). The 2025 Virginia Marine Debris Summit (VMDS), which occurred in Norfolk on March 18-20, 2025 served as a call to action for over a hundred stakeholders and input from key practitioners has already been included as part of this Section 309 Needs Assessment & Strategy Development process. A follow-up workshop for organizations to review their existing roles in the VMDRP and to take on new roles is being planned for summer 2025. Virginia CZM has also included participation in the VMDRP update by several coastal planning district commissions (PDCs) in their FY2025 Technical Assistance (TA) scopes of work (Section 306 funding). Collectively, this stakeholder feedback will inform the priorities of the VMDRP and provide projects for implementation. Just as the VMDRP acknowledges and addresses multiple types and sources of marine debris, this Strategy will have multiple approaches and reach multiple targeted audiences. The overarching goals of the updated VMDRP and this Strategy will be aligned to reduce the amount of marine debris from land-based and water-based sources in Virginia through prevention, interception, innovation, and removal for ecological, social, and economic benefits.

An initial focus in this Strategy will be identifying priority actions within the 2026-2030 VMDRP on which to focus Section 309 funds, and alternatively which actions may be readily addressed through Virginia CZM staff capacity, by CVW, or by one or more partners. This effort will be critical to ensure Section 309 funding is directed towards the highest needs with the greatest likelihood of program change outcomes.

As with previous Marine Debris Strategies, implementation of this Strategy will rely on a combination of Section 309 funds allocated to partners such as CVW, as well as on staff capacity from Virginia CZM staff funded through Section 306. Recognizing that Section 309 funding is not intended to sustain programs indefinitely, this Strategy will also focus on identifying additional funding to sustain the important coordinative work CVW does on behalf of the VMDRP, developing a "Sustainable Funding & Program Plan", and taking steps to implement it. This Sustainable Funding & Program Plan will also consider how Virginia CZM staff funded through Section 306 will be leveraged, and identify needs related to sustaining engagement and capacity among critical partners including state agencies and local governments, as engaged partners lighten CVW and Virginia CZM's workload.

III. Needs and Gaps Addressed

Increasingly, people and governments are recognizing the urgent need to decrease the sources of plastic pollution and marine debris through policies and behavior change. The public's concern is reflected by the Public Perception Survey on Plastic Pollution (2023). The survey indicated that 87% of Virginians surveyed ranked plastic in the ocean as a "very serious problem" and the vast majority support policy to

address it. For instance, 61% supported outright bans on single-use plastic bags, 65% support a "Bottle Deposit, and 76% support laws to require manufactures to use less plastic packaging. Although there is generally strong public support for action, there is an ongoing need for more state/local capacity to implement programs that could prevent marine debris. There is also a need to address data gaps and produce materials that accurately portray the costs and benefits of various policy outcomes that seek to address marine debris. Development of policy must be viewed through the understanding that marine debris issues begin with market economics like production demands (i.e., single use plastics), and are only exacerbated by inadequate disposal and capture options. As has become more apparent over the course of the FY2021-2025 Marine Debris Strategy, decreasing marine debris and increasing reuse or recycling of materials is not only an environmental health issue, but a critical need for not overburdening already stressed public/private waste management systems. Efforts to reduce generation of single-use products paired with an increase of alternative uses for materials otherwise destined for a landfill may also have a positive impact on local economies due to waste management cost savings and job creation in innovative reuse industries.

In developing this Strategy, stakeholders identified three (3) significant needs surfaced during the Marine Debris Phase II Needs Assessment:

- **Improved data, and outreach and education materials to help businesses and consumers to bridge the disconnect between marine debris concerns and actionable steps to address waste and increasing production/use of plastics**. Information needs include the cost of disposal of single-use products (mitigating "out of sight, out of mind"), cost/benefits of extended producer responsibility policies, clearer guidelines for recycling, and the correct steps to "do the right thing" (e.g. reporting wildlife entanglements with fishing gear without fear of penalty). There is also a need to better frame the marine debris issue to all citizens, including the out-of-state visitor audience to ensure compliance with existing state and local laws.
- **Additional state and locality-driven policy changes and capacity for implementation.** Localities in particular will need assistance in garnering public support for local laws and ordinances to reduce waste despite recent state-wide policy changes due to Virginia's status as a Dillon Rule state. Public support for these local-level policy changes may exist, but local governments need to understand the financial and logistical implications of policies that regulate single-use plastics. Technical assistance, training, and support materials for local governments staff, businesses, or other partners remain necessary to advance new policies and even implement existing policies. There is likely room for more engagement with manufacturing industry representatives and businesses as willing policy change advocates and implementation partners.
- **Sustainable Funding for marine debris work.** There is a need for more diverse and sustainable funding for marine debris work, particularly for the work that CVW and Virginia CZM do in coordinating and planning. Section 309 funds are not intended to sustain program work indefinitely, and it will be increasingly important to identify additional sources of funds, including state funds, that can be used to sustain this work indefinitely. Another area of need is quantifying the value of volunteers (for the purpose of match funding documentation and demonstration of public support) and creating a more efficient framework for prioritizing marine debris removal with limited resources.

IV. Benefits to Coastal Management

As stated in Virginia's FY2021-2025 Marine Debris Strategy, coordinated reduction of marine debris will have positive impacts on coastal resources, including protected species such as marine mammals and sea birds and economically important species such as blue crabs. Virginia's coastal communities continue to spend taxpayer dollars on beach cleanups, litter removal, street sweeping,

vessel removal, and other methods to prevent or remove marine debris in order to protect these resources. Plastic tarps, abandoned nets and fishing gear, tires, and other debris can smother and crush sensitive ecosystems as far away from land as the deep-sea corals found in the submarine canyons 50 miles off Virginia's coast. ADVs can also disrupt nearshore habitats such as tidal marsh fringes, tidal non-vegetated wetlands (mudflats), oyster reefs, and submerged aquatic vegetation (SAV) beds, while leaking fuel or other hazardous materials that can negatively impact water quality, wildlife, and human recreation. Boater safety can also be compromised when debris items – fishing line, nets, plastic bags, and rope pieces – wrap around boat propellers or clog seawater intakes. ADVs pose an acute navigational safety issue as they are often unmarked, and a high-speed collision could prove fatal. Even ADVs that are secured may leak fuel, cause damage to waterfront infrastructure, and pose a significant loss of revenue to marina owners by occupying space.

This FY2026-2030 Strategy aims to reduce marine debris, particularly plastics. Coordinated efforts such as those outlined in this Strategy to reduce marine debris will make significant contributions to Virginia's coastal economy as well as protect coastal and ocean resources. The scope of this Strategy is from the western edge of Virginia's Coastal Zone to far out into the Mid-Atlantic Ocean. Virginia's work on marine debris issues has led to a leadership role among the Mid-Atlantic States through the Mid-Atlantic Regional Council on the Ocean (MARCO)'s Marine Debris Work Group. The balloon release reduction social marketing campaign, *Joyful Send-off and Prevent Balloon Litter,* developed for Virginia has expanded to the entire Mid-Atlantic region through a grant from the NOAA Marine Debris Program. Additional efforts under this Strategy will also be shared with the region.

V. Likelihood of Success

The likelihood of success for this Strategy is high given both the current prominence of the marine debris/plastics in the ocean and the track record of success of the Virginia team that has been in place since dedicated Virginia CZM funding to address the issue began in 2013. Virginia continues to lead on marine debris issues regionally and actively supports neighboring states and regional planning efforts through MARCO and NOAA's Marine Debris Program. Virginia had an early start on a coordinated approach to decreasing marine debris under the FY2011-2016 Section 309 Strategy that led to the first of five (5) VMDS's (2013, 2016, 2019, 2022, and 2025), and creation of the VMDRP (the first of its kind on the East Coast). At Virginia CZM's 2023 Coastal Partners Workshop (CPW) and 2025 Virginia Coastal Policy Team (CPT) meeting, reducing marine debris was determined to be a high priority as coastal partners agreed that there is an urgent need to continue implementation of actions outlined in the VMDRP.

As noted above and in the Marine Debris Phase I Needs Assessment, the 2022 public perception survey showed that 87% of respondents felt plastic floating in the ocean was a very serious or a somewhat serious concern to them and the majority supported policies adopted by other states to reduce plastic. In addition, the March 2025 VMDS attendance reflected a broad array of numerous and enthusiastic stakeholders willing to work to achieve new policy changes and see to the successful implementation of existing policies to address plastic and other pollution. Furthermore, there was also broad bipartisan support in the Virginia General Assembly (GA) for the passage of HJ448 in March of 2025, which directed the Virginia Department of Environmental Quality (DEQ) to study tax policy options for reforming the litter tax. This in summary shows increasing momentum for policy outcomes that impact marine debris and that would constitute one or potentially many program changes.

Virginia's continued leadership of MARCO's Marine Debris Work Group has established a strong track record of accomplishment including that the VMDRP was the basis for developing NOAA's 2021-2026 Mid-Atlantic Marine Debris Action Plan (M-AMDAP). Presumably the revised VMDRP will continue to align with the major goals of the M-AMDAP, suggesting opportunities for leveraging state/federal partnerships to achieve common goals.

VI. Strategy Work Plan

Strategy Goal: Implement specific actions in support of the goals of the updated 2026-2030 Virginia Marine Debris Reduction Plan and develop a plan for long-term sustainability of marine debris work in Virginia.
Total Years: 5 (FY2026 – 2030)
Total Budget: $481,000

Year(s): 1
Description of activities:

As with previous Marine Debris Strategies, implementation of this Strategy will rely on a combination of Section 309 funds allocated to partners such as CVW, as well as on staff capacity from Virginia CZM staff funded through Section 306. Recognizing that Section 309 funding is not intended to sustain programs indefinitely, an important focus of Year 1 of this Strategy will be identifying additional funding to sustain the important coordinative work CVW does on behalf of the VMDRP, developing a Sustainable Funding & Program Plan, and taking steps to implement it. This Sustainable Funding & Program Plan will also consider how Virginia CZM staff funded through Section 306 will be leveraged, and identify needs related to sustaining engagement and capacity among critical partners including state agencies and local governments, as engaged partners lighten CVW and Virginia CZM's workload.

In addition to the Sustainable Funding & Program Plan, another major focus in Year 1 will be identifying priority actions within the 2026-2030 VMDRP to focus Section 309 funds on during the Strategy timeline, and alternatively which actions may be readily addressed through Virginia CZM staff capacity, or by one or more partners. This effort, to be completed early in the 2026-2030 VMDRP's lifecycle, will be critical to ensure Section 309 funding is directed towards the highest needs with the greatest likelihood of program change outcomes.

CVW and Virginia CZM will regularly convene key stakeholders with a role in implementing the VMDRP to review progress, identify priorities, and share and leverage successes. Through Section 306 funding, Virginia CZM staff will continue to coordinate with MARCO including chairing the Marine Debris Work Group and collaborating with the NOAA Marine Debris Program and neighboring states.

At least one to two actions within the plan will be selected and supported through funding under this Strategy for Year 1. Projects will be generally focused on developing data, analysis, or other resources to inform policy recommendations or to increase capacity or support for implementation of policies at state and local levels (e.g. recent expanded polystyrene ban or bag fee ordinance), or efforts to influence consumer behavior and/or support for policy through education and communication. Those actions which are expected to result in a program change such as a new or revised policy or ordinance at the state or local level will be

prioritized. Although specific projects will be informed by the pending 2026-2030 VMDRP, stakeholder engagement during the development of this Strategy suggested that they may include:

- Build on the successes of Virginia Institute of Marine Science (VIMS)'s implementation of the National Fishing Trap Removal, Assessment, & Prevention (TRAP) program to identify and report other types of DFG and other marine debris.
- Develop materials to support implementation of additional recommendations from the 2022 Abandoned & Derelict Vessel Work Group (ADVWG) Report including the creation of a vessel turn-in program (VTIP) or other ADV removal funding sources.
- Continue or develop outreach campaigns to support local governments, businesses, and other entities in implementing policies.
- Support local government adoption of plastic bag fee ordinances with informational resources.
- Evaluate state/national regulatory/policy landscape for pre-production plastic pellet manufacturing discharges.
- Continue or develop new community based social marketing (CBSM) campaigns.

Major Milestone(s):

Development and implementation of Sustainable Funding & Program Plan, including submitting applications to grants or otherwise taking steps to develop additional funding. Progress and outcomes will be reported in semi-annual progress reports. Identification of specific 2026-2030 VMDRP actions that will be supported through Section 309 funding. Annual scopes of work will be developed to further detail projects. Develop and implement projects to support at least one to two actions within the VMDRP. Regularly convene with key partners in implementing the VMDRP to review progress, identify priorities, and share and leverage successes. Continued coordination with MARCO, neighboring states, and NOAA Marine Debris Program (Virginia CZM staff, via Section 306 funding).

Budget: $181,000 plus leveraging additional Section 306-funded staff capacity from Virginia CZM Task 1.01 and Task 1.02.

Year(s): 2-3

Description of activities:

CVW and Virginia CZM will regularly convene key stakeholders with a role in implementing the VMDRP to review progress, identify priorities, and share and leverage successes. Continue implementation of the Sustainable Funding & Program Plan. Annually review actions identified in the VMDRP for Section 309 support and revise as needed. At least one or two actions will be selected and supported through funding under this Strategy each year based on funding availability. In Year 3, CVW and Virgina CZM will organize and promote the next VMDS (2028), which serves as one of the most important events in the mid-Atlantic for engaging with stakeholders working in the marine debris space. This event is held every three (3) years.

Major Milestone(s):

Develop and implement projects to support at least one to two actions within the VMDRP. Regularly convene with key partners in implementing the VMDRP to review progress, identify priorities, and share and leverage successes. Organize and hold the 2028 VMDS. Continued coordination with MARCO, neighboring states, and NOAA Marine Debris Program (Virginia CZM staff, via Section 306 funding).

Budget: $120,000 in each year plus leveraging additional Section 306-funded staff capacity from Virginia CZM Task 1.01 and Task 1.02.

Year(s): 4-5

Description of activities:

In Years 4 and 5, Section 309 funding for this Strategy is proposed to decrease and thus much of the work completed in these years will be funded through other sources secured in the preceding years, or through the capacity of partners and Virginia CZM staff. Years 4 and 5 will offer important opportunities to evaluate the success of the Sustainable Funding & Program Plan. In Year 5, the Sustainable Funding & Program Plan will be reviewed and revised to reflect the lessons learned and to ensure the program will be able to continue without additional Section 309 funds. Additionally in Year 5 the process will begin to update the VMDRP once more for the 2031-2035 cycle. This effort will involve similar stakeholder engagement activities as those completed during the FY2026-2030 cycle and will rely largely on Virginia CZM and CVW staff. The Strategy proposes a small amount of Section 309 funding in both Years 4 and 5 which will be used for contractual services like conducting surveys, legal analysis, etc. These contractual services will be in support of the remaining actions in the 2026-2030 VMDRP or to support beginning the process for developing the 2031-2035 VMDRP.

Major Milestone(s):

Review and revise Sustainable Funding & Program Plan. Develop contracts for one to two Section 309-funded products to support VMDRP implementation or update cycle. Regularly convene with key partners in implementing the VMDRP to review progress, identify priorities, and share and leverage successes. In Year 5, convene partners to begin plan update cycle. Continued coordination with MARCO, neighboring states, and NOAA Marine Debris Program (Virginia CZM staff, via Section 306 funding).

Budget: $30,000 in each year plus leveraging additional Section 306-funded staff capacity from Virginia CZM Task 1.01 and Task 1.02.

VII. Fiscal and Technical Needs

A. Fiscal Needs:

This Strategy proposes to provide overall funding ($481,000 over five (5) years) below the $160,000/year allocated for the FY2021-2025 Marine Debris Strategy ($800,000 over five (5) years). Considerable funding will be needed for many aspects of the updated VMDRP, including support for local and regional policy development and the continuation of social marketing approaches to changing behavior surrounding litter and debris that end up in our marine environments. NOAA's Marine Debris Program grants are a possible source of additional funding. Virginia CZM's academic and non-profit partners are also likely to seek funding for projects that align with the goals of the updated VMDRP. Foundations that have supported litter and marine debris-related work include Keep America Beautiful (Cigarette Litter Prevention Program Grants), Boat U.S. Foundation, National Marine Sanctuary Foundation, and the Chesapeake Bay Restoration Fund. If less Section 309 funding is made available to Virginia CZM at any point within the FY2026-2030 cycle, the proposed work should still be able to be accomplished via alternate funding sources as well as Virginia CZM staff time.

B. Technical Needs:

Virginia CZM has access to many technical experts in Virginia, other MARCO states, and the NOAA Marine Debris Program. Faculty and staff at VIMS (including those working to create a TRAP Policy Innovation Hub), the Virginia Aquarium & Marine Science Center, and CVW are engaged in innovative research, program development, marine debris monitoring, trend analysis, and

education and outreach activities related to DFG consumer debris issues. In addition, Virginia CZM staff and its partners (notably CVW) have strengthened their knowledge and skills in developing and piloting behavior change campaigns based on CBSM principles and have become regional experts in the field on whom others have begun to rely. Finally, Virginia CZM staff have embraced a role in coordinating ADV removal and prevention efforts by other partners as a result of co-facilitating the ADVWG with CVW in 2021-2022, achieving policy changes to provide funding to the Virginia Marine Resources Commission (VMRC) for ADV removal, and providing an advisory role in NOAA FY2023 grants to Lynnhaven River NOW (LRN) and Virginia Sea Grant (VASG).

Ocean Resources Strategy

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) *(check no more than two):*

☐ Aquaculture
☐ Energy and Government Facility Siting
☐ Coastal Hazards
X Ocean/Great Lakes Resources
☐ Special Area Management Planning
☐ Cumulative and Secondary Impacts
☐ Wetlands
☐ Marine Debris
☐ Public Access

B. The proposed strategy or implementation activities will also support the following enhancement areas *(check all that apply)*:

X Aquaculture
X Energy and Government Facility Siting
☐ Coastal Hazards
☐ Ocean/Great Lakes Resources
☐ Special Area Management Planning
X Cumulative and Secondary Impacts
☐ Wetlands
X Marine Debris
☐ Public Access

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

☐ A change to coastal zone boundaries;
X New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
☐ New or revised local coastal programs and implementing ordinances;
☐ New or revised coastal land acquisition, management, and restoration programs;
☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
X New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. ***Strategy Goal:*** Develop and adopt a programmatic approach for ongoing cross-jurisdictional and holistic ocean planning in Virginia with initial focus on implementation of recommendations from the Virginia Ocean Plan (Plan), Marine Mammal Conservation Plan, and Sea Turtle Conservation Plan.

C. Description

The FY2021-2025 Ocean Resources Strategy proposed the development of the Plan. Although components of the Plan are still being drafted, 40 recommendations were produced through an extensive stakeholder engagement process with six (6) workgroups. A Steering Committee made up of relevant state agencies has been charged with reviewing these recommendations and suggesting proposed changes where applicable. The Steering Committee and workgroup members have broadly supported Recommendation 1, which recommends the establishment of a Virginia Ocean Planning

Group (VOPG) to serve as a cross jurisdictional and diverse coordinative body to enable proactive coordination on ocean resource management topics, address ocean use conflicts, support implementation of the Virginia Ocean Plan recommendations, and propose revisions to the Plan in the future. No existing forum for this kind of coordination currently exists in Virginia, and many agencies and organizations lack the capacity to engage on ocean management issues regularly even in cases where they have a statutorily defined role in ocean management.

In tandem with the development of the Plan, the Virginia Department of Wildlife Resources (DWR) is producing two (2) conservation plans focused on protected marine life which falls within their purview: the Marine Mammal Conservation Plan and the Sea Turtle Conservation Plan. These plans are still under review by state leadership but will ultimately be included as appendices to the Virginia Ocean Plan. Each of these conservation plans will include a suite of recommendations that seek to improve habitat, life outcomes, and stranding/entanglement program support for these critical marine species. The VOPG will provide an ongoing forum for collaboration across ocean users and interests will be critical for supporting implementation of these recommendations. The VOPG will also meaningfully reduce the capacity required of DWR staff by providing a means to engage with ocean uses implicated in the recommendations, and a conflict resolution mechanism to resolve conflicts that may arise.

Continued funding and implementation of a Section 309 Ocean Resources Strategy will allow Virginia CZM to evaluate options for, develop, and ultimately adopt a programmatic approach to sustaining this coordinative body. This will address mechanisms for sustaining capacity and funding and promoting participation from all relevant agencies and organizations.

In addition, although specific recommendations are still under review by the Steering Committee, implementation of a few of the proposed recommendations from the Virginia Ocean Plan would result in program changes, including new and revised enforceable policies (e.g. addressing marine fisheries and/or maritime transport), a new geographic location description (GLD) and corresponding updates to listed activities, the development of a state ocean and coastal acidification action plan, and new regulations and/or guidance around topics like heavy mineral mining during beach nourishment projects.

III. Needs and Gaps Addressed

As laid out in the Phase II Needs Assessment, Virginia currently lacks an organized and sustained mechanism for coordination across agencies and across interests relating to ocean planning. While regional ocean planning has received significant investment through regional action plans and presently through regional ocean partnerships such as the Mid-Atlantic Regional Council on the Ocean (MARCO) (of which Virginia is a member), these bodies inherently cannot frame their planning around the priorities of the Commonwealth. Nor can the diverse number of parties invested in ocean planning in Virginia easily individually participate in regional planning.

As noted in the Description section above, in developing an ocean plan Virginia has identified numerous gaps and needs and has proposed 40 recommendations which at the time of drafting this strategy remain under review. While the specific recommendations may change prior to beginning this strategy, the complex nature of ocean management requires communication across agencies and across uses and necessitates the creation of a coordinative body for ocean management in Virginia. Sustained communication is needed to build relationships and trust among Virginia's many ocean users. These

relationships become critical when use conflicts or other challenging circumstances arise. As Virginia seeks to implement recommendations from the Plan and DWR's Marine Mammal Conservation Plan and Sea Turtle Conservation Plan, it will be critical that a forum be in place. Otherwise, state agencies will exhaust significant resources in convening individual meetings that due to a lack of relationships, capacity, or trust, may still fail to engage major stakeholders.

Also noted in the Ocean Resources Phase II Needs Assessment is the need for developing a sustainable Stranding Response Program. Currently the Virginia Aquarium's Stranding Response Program responds to hundreds of marine mammal and sea turtle entanglements and strandings per year with a shrinking and increasingly uncertain budget. Although state agencies like DWR and the Virginia Marine Resources Commission (VMRC) are interested in supporting the program, they lack the organizational guidance to do so. Previous Virginia CZM-funded Section 309 and Section 306 projects have worked towards developing Memorandums of Understanding (MOUs) between state agencies and identifying other gaps that must be addressed to sustain the program. However, this program is situated at the Virginia Aquarium, a public/private partnership that has been evaluated for sale to a private company, and there is a risk that the program may be lost. A long-term solution for supporting a stranding program with increased state agency support in Virginia is increasingly necessary. While Section 309 funding could not be used to support the actual fieldwork of a stranding program (as implementation efforts are better suited for Section 306 funding or non-Virginia CZM funding), it can be pivotal in supporting the development of a program, identifying challenges, and developing solutions. Many other similar needs are identified in DWR's Marine Mammal and Sea Turtle Conservation Plans, and this Ocean Resources Strategy provides a mechanism for implementing recommendations in conjunction with existing state resources and funding.

IV. Benefits to Coastal Management

A renewed Section 309 Ocean Resources Strategy will build on the previous five (5) years of work to produce a Plan and lay infrastructure for implementation of the Plan and support broader coordination around ocean planning. Additional more targeted benefits could include: improved conservation of marine habitat and species, a more resilient and economically productive commercial fishing sector, fewer use-conflicts and/or mitigation for use-conflicts, a growing blue economy generally, increased public awareness and opportunities for engagement on ocean issues and their critical contributions to the Commonwealth, improved regulatory certainty around emerging ocean uses like heavy mineral mining and offshore aquaculture, among many others.

As discussed in the Ocean Resources Phase I and II Needs Assessments, Virginia's offshore waters continue to experience increased activity due to offshore energy development, increased shipping and transportation, national security installations, and an evolving commercial fishing industry. At the same time changes in the ocean's physical conditions are beginning to cause changes in species ranges and tolerances. Given this, the release and implementation of a Plan has only become more necessary since the last Ocean Resource Strategy was developed. Finally, the relationships that Virginia CZM has built with new partners such as Virginia Maritime Association (VMA) and Virginia Port Authority (VPA), among many others during the initial ocean planning process, have strengthened the already broad network of public and private entities that the program directly and indirectly engages in all elements of coastal planning. Virginia CZM is in a unique position to leverage these partnerships in a manner that may create "win-win" solutions to ocean use conflicts and stay out in front of emerging issues by convening the VOPG as needed.

V. Likelihood of Success

Development of the Plan over the past five (5) years has indicated broad statewide support for the implementation of recommendations and program changes to guide the management of Virginia's ocean resources. Steering Committee members from a variety of state agencies have actively participated in the development of draft recommendations with the intention to continue their support and help facilitate implementation at their respective organizations. Beyond representatives of state government, Virginia CZM has intentionally conducted outreach to relevant stakeholders and community members to ensure their awareness and support for the Plan, which has generated positive feedback indicating the Plan's reception in public audiences.

Additionally, Virginia CZM has a proven record of accomplishment in ocean planning through its experience with MARCO and providing years of support in developing regional action items and participating in regional management coordination. Through these activities, Virginia CZM has developed strong partnerships in the ocean planning space and will continue to benefit from these connections in the release and implementation of the Ocean and additional actions in this Strategy.

VI. Strategy Work Plan

Strategy Goal: Develop and adopt a programmatic approach for ongoing cross-jurisdictional and holistic ocean planning in Virginia with initial focus on implementation of recommendations from the Virginia Ocean Plan, Marine Mammal Conservation Plan, and Sea Turtle Conservation Plan.
Total Years: 5 (FY2026 – 2030)
Total Budget: $424,000

Year(s): 1
Description of activities:

In Year 1**,** no Section 309 funding is specifically proposed as Virginia CZM anticipates that much of the initial effort to develop and convene a VOPG can be managed with Virginia CZM staff funded through Section 306, in collaboration with support from network partners that are already engage in ocean planning such as DWR, VMA, VMRC, and coastal planning district commissions (PDCs). Additionally, given an executive branch transition will follow Virginia's gubernatorial election in November of 2025, the timeline for final approval of the Virgina Ocean Plan (and Marine Conservation Plans) is unclear.

Initial efforts related to convening a VOPG will require continuing conversations and ultimately making decisions around how such a group should be set up, who should be included, how often it should be convened, and what kinds of conflict resolution mechanisms and other coordinative constructs will be employed to support productive conversation and progress. Virginia CZM staff can facilitate the development of ground rules or by-laws in the first year. It is anticipated that the VOPG would meet semi-annually to start.

An additional element that Virginia CZM will manage through existing operational staff will be updating communication materials including relevant webpages and developing a page on which to post meeting summaries and other products related to state ocean planning.

During the initial period Virginia CZM staff will also assess the capacity required to convene the VOPG, as well as the amount of engagement from partners. This will help inform future planning to develop a sustainable (funding and capacity) approach to the VOPG.

Major Milestone(s):

- Report on progress (through progress reports submitted via Virginia CZM Task 1.01) on developing and convening a VOPG, developing by-laws, and progress towards implementing the Virginia Ocean Plan and Marine Conservation Plans. Initial assessments of the capacity needed to convene and retain engagement of the VOPG.
- Updates to all webpages and meeting summaries available to the public.

Budget: $0 Section 309 funding, although staff capacity funded through Section 306 funding via Task 1.01 is leveraged.

Year(s): 2-3

Description of activities:

Virginia CZM will continue convening the VOPG primarily relying on Section 306 funds. Section 309 funding will be used to support specific recommendations of the Plan or associated Marine Conservation Plans. Subawards will be developed with partners to develop data, policy, or other resources leading to program changes. Priorities for Section 309 funding will be considered by the VOPG, as well as by the Virginia Coastal Policy Team (CPT), and will also be dependent on the specific language of the recommendations in the plans as approved by state leadership.

Major Milestone(s):

- Development of data or policy analysis to support implementation of recommendations from thePlan and Marine Conservation Plans.
- Report on progress (through semi-annual grant progress reports submitted via Virginia CZM Task 1.01) on convening a VOPG and progress towards implementing the Plan and Marine Conservation Plans.
- Updates to all webpages and meeting summaries available to the public.

Budget: $61,000 per year, plus leveraged Section 306 funds.

Year(s): 4-5

Description of activities:

Virginia CZM will continue convening the VOPG primarily relying on Section 306 funds. Section 309 funding will be used to support specific recommendations of the Plan or associated Marine Conservation Plans. Subawards will be developed with partners to develop data, policy, or other resources leading to program changes. Priorities for Section 309 funding will be considered by the VOPG, as well as by the CPT, and will also be dependent on the specific language of the recommendations in the plans as approved by state leadership.

In Years 4 and 5, Section 309 funding will increase to allow additional contracts to support data/policy development, as well as to allow for facilitation support in the event of substantial use or other conflicts that require professional facilitation support.

In Year 5, Virginia CZM staff with support of the VOPG will review progress towards implementation of the Plan and will develop a model for long-term sustainability of the VOPG including as assessment of the cost to convene annually, whether Virginia CZM can fund that cost via Section 306 funds indefinitely, and how other partners may contribute via capacity or funding.

Major Milestone(s):

- Development of data or policy analysis to support implementation of recommendations from the Plan and Marine Conservation Plans.
- Report on progress (through progress reports submitted via Virginia CZM Task 1.01) on convening a VOPG and progress towards implementing the Plan and Marine Conservation Plans.
- Updates to all webpages and meeting summaries available to the public.
- In Year 5, report on progress towards implementation of the Plan, and associated Marine Conservation Plans will be reviewed. Depending on when the Plan is officially published, an effort to revise elements of the plan may be undertaken (intended for five-year updates).
- Assessment of long-term sustainability for VOPG.

Budget: $151,000 per year, plus leveraged Section 306 funds.

VII. Fiscal and Technical Needs

C. Fiscal Needs:

It is not possible for Section 309 funds to meet all the needs identified in Virginia CZM's ocean planning efforts to date, including future implementation of the Virginia Ocean Plan's recommendations. However, Section 309 funds can provide a critical injection of funds and capacity to address projects or challenges that cannot be managed through existing staff capacity. Virginia CZM intends to leverage Section 306-funded staff (via annual Task 1.01) to support the VOPG, as was done during the development of the Plan.

Additionally, given the number of partners working on ocean planning in Virginia, there are opportunities for leveraging other state funds, as well as funding provided to non-profits to work towards shared goals.

There are also opportunities to leverage resources available at the regional scale via groups like MARCO, Northeast Regional Ocean Council (NROC), Regional Wildlife Science Collaborative (RWSC), Responsible Offshore Science Alliance (ROSA), and others. These opportunities will be explored by Virginia CZM staff and current Plan partners during the remainder of FY2024 and into FY2025 to create a funding framework to supplement Section 309 Ocean Resources Strategy funding from NOAA-OCM.

Given indications that overall NOAA-OCM funding for Section 309 may see reductions in light of overall reductions in Virginia CZM funding, Virginia CZM is confident that the convening of the VOPG and other aspects of this strategy could continue without supplemental Section 309 funding.

D. Technical Needs:

The Virginia CZM program is well suited to convene a group focused on Virginia Ocean Planning and has demonstrated the capability to do as much during the development of the Plan. State agency partners including the Virginia Institute of Marine Science (VIMS), DWR, the Virginia Department of Energy (Virginia Energy), and VMRC bring significant subject matter expertise to the table, and each is a member of the CPT which advises Virginia CZM policy and funding priorities.

Five-Year Budget Summary Overall

The following table provide a five-year budget summary for all strategies.

Strategy	Year 1 (FY2026)	Year 2 (FY2027)	Year 3 (FY2028)	Year 4 (FY2029)	Year 5 (FY2030)	Total 309 Funding
Wetlands	$167,000	$167,000	$167,000	$167,000	$167,000	**$835,000**
Coastal Hazards	$167,000	$167,000	$167,000	$167,000	$167,000	**$835,000**
Marine Debris	$181,000	$120,000	$120,000	$30,000	$30,000	**$481,000**
Ocean Resources	$0	$61,000	$61,000	$151,000	$151,000	**$424,000**
Total Funding	**$515,000**	**$515,000**	**$515,000**	**$515,000**	**$515,000**	**$2,575,000**

Five-Year Budget Summary by Strategy

The following tables provide a five-year budget summary for each strategy and components within the strategies where relevant.

Table: Five-Year Budget Summary by Wetlands Strategy Component

Component Title	Anticipated Funding Source (309 or Other)	Year 1 (FY2026)	Year 2 (FY2027)	Year 3 (FY2028)	Year 4 (FY2029)	Year 5 (FY2030)	Total Funding
Marsh Migration Data Development	309	$167,000	$125,000	$0	$0	$0	**$292,000**
Implement. Support for statewide efforts	309	$0	$0	$117,000	$167,000	$167,000	**$451,000**
Wetlands funding analysis and impl.	309	$0	$42,000	$50,000	$0	$0	**$92,000**
Total Funding		**$167,000**	**$167,000**	**$167,000**	**$167,000**	**$167,000**	**$835,000**

Table: Five-Year Budget Summary by Coastal Hazards Strategy Component

Component Title	Anticipated Funding Source (309 or Other)	Year 1 (FY2026)	Year 2 (FY2027)	Year 3 (FY2028)	Year 4 (FY2029)	Year 5 (FY2030)	Total 309 Funding
Local Community Resilience	309	$115,000	$70,000	$70,000	$120,000	$117,000	**$492,000**
Funding and Financing Resilience	309	$0	$65,000	$35,000	$0	$0	**$100,000**
Proactive Coastal Hazards Policy	309	$52,000	$32,000	$62,000	$47,000	$50,000	**$243,000**
Total 309 Funding		**$167,000**	**$167,000**	**$167,000**	**$167,000**	**$167,000**	**$835,000**

Table: Five-Year Budget Summary by Marine Debris Strategy Component

Component Title	Anticipated Funding Source (309 or Other)	Year 1 (FY2026)	Year 2 (FY2027)	Year 3 (FY2028)	Year 4 (FY2029)	Year 5 (FY2030)	Total 309 Funding
Planning (funding, priorities, plan updates)	309	$61,000	$0	$0	$0	$30,000	**$91,000**
Implement VMDRP Actions	309	$120,000	$120,000	$120,000	$30,000	$0	**$390,000**
Total 309 Funding		**$181,000**	**$120,000**	**$120,000**	**$30,000**	**$30,000**	**$481,000**

Table: Five-Year Budget Summary by Ocean Resources Strategy Component

Component Title	Anticipated Funding Source (309 or Other)	Year 1 (FY2026)	Year 2 (FY2027)	Year 3 (FY2028)	Year 4 (FY2029)	Year 5 (FY2030)	Total 309 Funding
Virginia Ocean Planning Group Facilitation	306	CZM staff via 306	CZM staff via 306	CZM staff via 306	CZM staff via 306	CZM staff via 306	**$0**
Policy/Data Development or Facilitation of Use Conflicts	309	$0	$61,000	$61,000	$151,000	$151,000	**$424,000**
Total 309 Funding		**$0**	**$61,000**	**$61,000**	**$151,000**	**$151,000**	**$424,000**

Summary of Stakeholder & Public Comment

This section provides a list of the stakeholder groups or individuals engaged during the Needs Assessment and Strategy Development process and a brief summary of their feedback. It also provides a summary of the comments received during the public comment period and how Virginia CZM addressed them.

Methodology: Virginia CZM utilized four (4) core approaches to soliciting, obtaining, and incorporating stakeholder feedback:

- Utilizing data and tools provided by NOAA in the FY2026-2030 Section 309 Guidance and referenced in the current (FY2021-2025) Needs Assessment & Strategy document, Virginia CZM staff were able to complete many sections of the Phase I and Phase II Needs Assessments. However, *technical knowledge from Virginia experts in the field of coastal science, policy, and management* played a significant role in documenting the progress made since the last Needs Assessments, current data gaps, and emerging policy needs for each of the nine (9) Enhancement Areas. Through email correspondence, phone calls, and in-person and virtual meetings, such expert feedback was compiled as the Needs Assessments were completed. Citations for data, documents, and other materials are included where applicable throughout the Phase I Needs Assessments, Phase II Needs Assessments, and Strategies. Summaries of meeting outcomes are provided in the Timeline section below.
- Using the semi-annual meetings of the ***Virginia Coastal Policy Team*** (CPT) as platforms for introducing the Section 309 Needs Assessment & Strategy Development goals, processes, and outcomes as well as reviewing the draft Phase I Needs Assessments as compiled by Virginia CZM staff with the help of experts in the field of coastal science, policy, and management. As the CPT's voting members and alternates represent the Virginia CZM Program's key state agency partners and the eight (8) coastal planning district commissions (PDCs), these meetings provided a forum for discussion and resolution of cross-cutting coastal resource management issues that were key elements of the Section 309 process.
- Leveraging regular *meetings of regional stakeholders convened by several of the coastal PDCs* to provide an overview of the Section 309 process, document past Section 309 projects applicable to those regions or regional needs, solicit feedback on current policy-related needs, and brainstorm specific projects that could be funded by a Section 309 Strategy. Virginia CZM Coastal Planners coordinated with their corresponding Technical Assistance/Resilience Focal Area PDC grantees to host either virtual or in-person meetings of regional stakeholder groups such as Crater Planning District Commission (CPDC)'s Crater Regional Environmental Stewardship Team, George Washington Regional Commission (GWRC)'s Regional Environmental Managers Technical Committee, Hampton Roads Planning District Commission (HRPDC)'s Regional Environmental Committee, Middle Peninsula Planning District Commission (MPPDC)'s Local Government Administrators, Northern Neck Planning District Commission (NNPDC)'s Local Land Use Administrators, and Northern Virginia Regional Commission (NVRC)'s Flood Mitigation & Resiliency Workgroup. Please see Appendix A for a copy of the PPT presentation Virginia CZM staff gave at the December 9, 2024 NNPDC Local Land Use Administrators meeting and **Appendix B** for a summary of that meeting.
- In the absence of a PDC or state agency hosting a dedicated Section 309 meeting, Virginia CZM staff sought input on the Needs Assessments and Strategy ideas by directly reaching out to partners in those regions.

I. Introduction/Phase I Needs Assessments

- **August 6, 2024** – *Quarterly Coastal PDC Meeting hosted by CPDC* (Petersburg, Virginia): Virginia CZM Coastal Planner Jeff Flood gave a PPT overview of the Section 309 process, including the current FY2021-2025 Strategies, funding for the nine (9) Enhancement Areas since FY1991, and used draft slides intended to convey projects relevant to the Middle Peninsula region as an example for how the PPT would be adapted to suit each regional stakeholder group hosted by other PDCs during the Needs Assessment period.
- **September 25, 2024 –** Virginia CZM Coastal Planner Will Isenberg contacted Accomack-Northampton Planning District Commission (ANPDC) staff to schedule a time to present on the Section 309 process and gather input from ANPDC and its local governments. Unfortunately, an opportunity had just been missed, and a future scheduled opportunity had to be canceled. As a result, ANPDC provided input on issues they hear regularly from local governments, which primarily informed the Coastal Hazards Phase I Needs Assessment. ANPDC staff prepared a flyer that requested input from local governments and ANPDC distributed this flyer. However, no additional input was received.
- **September 30, 2024** – *Semi-Annual CPT Meeting* (Richmond, Virginia/Hybrid): Virginia CZM Program Manager Ryan Green and Coastal Planner Jeff Flood gave a PPT presentation to the CPT outlining the requirements, goals, funding, and policy change outcomes associated with the Section 309 Needs Assessment & Strategy Development, noting that Virginia CZM staff would be reaching out to several CPT members and their colleagues for input during the next few months as well as confirming that draft Phase I Needs Assessments would be reviewed at the next CPT meeting, followed by a CPT vote on which Enhancement Areas should be assigned a High Priority status. A full summary of the CPT meeting can be viewed here [insert hyperlink to DEQ webpage].
- **November 6, 2024** – *Crater Regional Environmental Stewardship Team Meeting* (Petersburg, Virginia): Virginia CZM Coastal Planner Will Isenberg gave a PPT presentation to CPDC staff and regional stakeholders, including an overview of the Virginia CZM Program, the role of local governments in the Program, and the Section 309 process. Input was then requested on program and policy needs as it relates to the nine (9) Enhancement Areas. Input received focused on flooding concerns that include limited state transportation funding for road elevation and road maintenance, challenges accessing resilience funding and challenges managing funds if received, as well as needs related to increasing the state allowed native tree canopy cover requirements local governments are able to enforce through ordinance. Key attendees included regional environmental planners, local government planners, and NGO partner organization staff.
- **November 7, 2024** – *HRPDC Regional Environmental Committee Meeting* (Virtual): Virginia CZM Coastal Planner Jeff Flood gave a PPT presentation to HRPDC staff and regional stakeholders. HRPDC's Whitney Katchmark indicated that HRPDC staff would accept feedback from regional stakeholders offline and provide to Virginia CZM. Ms. Katchmark also stated that flooding will always be an issue for the region and that Coastal Hazards should continue to be selected as a Sect. 309 Strategy due to the positive impact Virginia CZM funding has had.
- **December 4, 2024** – *Meeting with Virginia Institute of Marine Science (VIMS) for SAMP Input* (virtual): Virginia CZM Conservation Coordinator Lucas Manweiler met with VIMS staff to get input on current state of previously designated SAMPs, need for re-investment, and/or new areas needing SAMP designation.
- **December 9, 2024** – *NNPDC Local Land Use Administrators Meeting* (Virtual): Virginia CZM Coastal Planner Will Isenberg gave a PPT overview (see **Appendix A**) of the Virginia CZM Program, the role of local governments in the coastal program, and the Section 309 process. Input was then requested on program and policy needs as it relates to the nine (9) Enhancement Areas. Input

received identified septic pump-out disposal facilities as a need on the Northern Neck, noting that nearby facilities are beginning to refuse septic material from outside of their locality boundaries. Additional input identified support needs for implementing the new Chesapeake Bay Preservation Act (CBPA) resilience amendments. Participants also discussed data centers and the need to prepare for their arrival in their region, including the need for more transparency in impacts. Attendees included local land use administrators, regional environmental planners, state agency staff, and local partner NGO staff. Please see **Appendix B** for a summary of the meeting.

- **December 9, 2024** – *NVRC Flood Mitigation & Resiliency Workgroup Meeting* (Fairfax County, Virginia/Hybrid): Virginia CZM Coastal Planner Jeff Flood gave a PPT presentation to NVRC staff and regional stakeholders. Virginia CZM Conservation Coordinator Lucas Manweiler was also in attendance. Comments from audience (Chase Suddith, Fairfax County) included how to address flooding on the George Washington National Parkway (National Park Service Property) in Fairfax County – Jeff/Lucas suggested an MOU between NPS and Fairfax County to coordinate funding application efforts across jurisdictions. Jeff referenced the collaborative effort between Cheatham Annex (Navy), Yorktown National Battlefield & Colonial Parkway (NPS), and VIMS for the Penniman Spit restoration project and shoreline stabilization project. Matt Dalon from the Department of Conservation & Recreation (DCR) noted that stepping back to see where planning gaps are, identifying who is working on what, and sharing lessons learned are all elements state-level resilience planning and that reporting on local partnerships would be welcome. NVRC's Nora Jackson noted that several military installations are conducting a review of their resilience policies and operations. Goals drawn from these documents as well as listed best management practices (BMPs) could be used to inform an MOU between a locality and a military installation. Jeff added that Virginia CZM could provide capacity funding for locality or PDC staff time to coordinate with partners, write planning documents, and/or apply for other sources of funding, citing MPPDC TA grant funding success.
- **December 11, 2024** – *PlanRVA Environmental Technical Advisory Committee Meeting* (Virtual): Virginia CZM Coastal Planner Will Isenberg gave a PPT overview of Coastal Program, the role of local governments in the coastal program, and the Section 309 process. Input was then requested on program and policy needs as it relates to the nine (9) Enhancement Areas. Input received identified heat island and flooding impacts as primary coastal hazards of concern. Additionally, participants noted that support for hazard mitigation planning and implementation is only available for 2 years of the 5-year cycle, creating a break in continuity for planning staff. Key attendees included regional planners, local government resilience and environmental planners, NGO partner organization staff, and state agency staff with purview over the central Virginia region.
- **December 16, 2024** – *GWRC Regional Environmental Managers Technical Committee Meeting* (Fredericksburg, Virginia/Hybrid): Virginia CZM Coastal Planner Elise Frazier gave a PPT presentation to GWRC staff and regional stakeholders. The presentation provided an overview of the Virginia CZM Program, the role of local governments in the program, and the Section 309 process. Input was then requested on program and policy needs as it relates to the nine (9) Enhancement Areas. The group raised concerns regarding continued access to funding from the Community Flood Preparedness Fund (CFPF) in light of Virginia's withdrawal from the Regional Greenhouse Gas Initiative (RGGI). Other feedback included the prioritization of public access across GWRC localities, the need for inventories of these locations and high ecological value areas like wetlands, changes to stormwater/pump out programs and permitting systems in response to the Chesapeake Bay Preservation Act (CBPA), and interest in funding for septic replacement programs.

- **February 3, 2025** – Virginia CZM Program Manager Ryan Green emailed the draft Phase I Needs Assessments for all nine (9) Enhancement Areas to the CPT and requested that they review prior to the February 6, 2025 CPT meeting.
- **February 6, 2025** – *Semi-Annual CPT Meeting* (Richmond, Virginia/Hybrid): Virginia CZM staff (Program Manager Ryan Green, Coastal Planners Jeff Flood, Will Isenberg, and Elise Frazier, and Conservation Coordinator Lucas Manweiler) reviewed the draft Phase I Needs Assessments for all nine (9) Enhancement Areas, received feedback directly from the CPT and other invited guests, suggested priorities, and convened a vote by the CPT. The Enhancement Areas were ranked as follows (also shown in **Figure 1** below): 1) Wetlands, Coastal Hazards, Ocean Resources, Marine Debris, CSI, Public Access, Energy & Government Facility Siting, Aquaculture, and SAMPs. A full summary of the CPT meeting, including feedback provided by attendees on the draft Enhancement Areas can be viewed here [insert hyperlink to DEQ webpage].

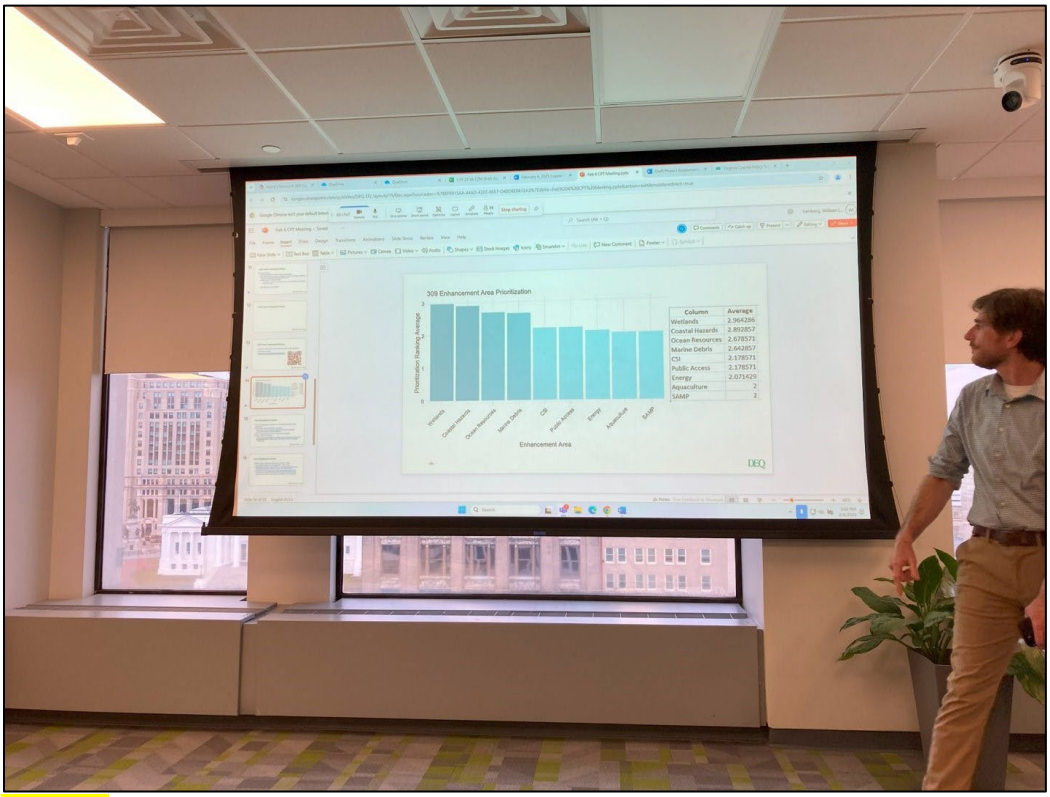


Figure 1. Virginia CZM Program Manager Ryan Green discusses CPT member voting results for ranking Enhancement Areas at February 6, 2025 CPT meeting.

- **February 14, 2025:** *MPPDC Local Government Administrators Meeting* (Shacklefords, Virginia/Hybrid): Virginia CZM Coastal Planner Jeff Flood gave a PPT presentation to MPPDC staff and regional stakeholders. Topics of discussion included addressing gaps in regional resilience planning, removal of abandoned & derelict vessels (ADVs), dredging and mitigating impacts to submerged aquatic vegetation (SAV) the beneficial use of dredged material (BUDM), and how to adjust local zoning ordinances to meet new definitions of working waterfronts (e.g. allowing easy waterfront access for manufacturers of resilient shoreline management structures such as oyster castles).

II. Phase II Needs Assessments & Strategy Development

- **February 21, 2025 –** *Meeting with DCR Office of Resilience Planning on Coastal Hazards Phase II Needs Assessment* (Hybrid): Virginia CZM Coastal Planner Will Isenberg met with DCR's Carolyn Heaps-Pecaro to discuss overlap between the Virginia Coastal Resilience Master Plan (VCRMP)'s Technical Advisory Committee (TAC) recommendations and the Coastal Hazards Phase II Needs Assessment and possible strategy development. Areas for overlap were identified and draft language was prepared for the Phase II Needs Assessment, which was shared with stakeholders prior to meeting (see March 4, 2025 entry below).
- **March 4, 2025** – *Coastal Hazards Phase II Needs Assessment Work Group Meeting* (Virtual): Virginia CZM Coastal Planner Will Isenberg led stakeholders through the Coastal Hazards Phase II Needs Assessment. Draft information was filled in for the tables and first management priority as a means of focusing the discussion. Stakeholders supported the draft information with minor edits. For all other sections, stakeholder input was used to complete the Phase II Needs Assessment. Following the meeting on March 17, 2025, the draft Phase II Needs Assessment was shared with meeting participants to ensure the final content appropriately reflected their feedback. Only minor clarifying comments were received and incorporated into the document. Please see the Coastal Hazards Phase II Needs Assessment for more information.
    - Attendees: Elizabeth Andrews (UVA), Ian Blair (Wetlands Watch), Cam Bruce (W&M), Brandy Buford (DCR), Tanya Denckla Cobb (UVA), Sherry Dudas (ANPDC), Elise Frazier (Virginia CZM), Carolyn Heaps-Pecaro (DCR), Lisa Hull (NNPDC), Will Isenberg (Virginia CZM), Daniel Johnson (VDEM), Sigrid Lampe (OSNHR), Lewie Lawrence (MPPDC), Lucas Manweiler (Virginia CZM), Ben McFarlane (HRPDC), Donna Milligan (VIMS), Molly Mitchell (VIMS), Rebecca Murphy (NVRC), Karinna Nunez (VIMS), Taylor Ovide (MPPDC), Jeryl Phillips (VIMS), Eli Podyma (PlanRVA), Karyn Reid (DCR), Erin Reilly (CBNERR), Thomas Ruppert (W&M), and Justin Williams (DEQ).
- **March 10, 2025** – *Marine Debris Phase II Needs Assessment Work Group Meeting* (Virtual): Virginia CZM Coastal Planner Jeff Flood led stakeholders through the Marine Debris Phase II Needs Assessment. Draft information was filled in for the tables and first management priority as a means of focusing the discussion. Stakeholders supported the draft information with minor edits. For all other sections, stakeholder input was used to complete the Phase II Needs Assessment. Please see the Marine Debris Phase II Needs Assessment for more information.
    - Attendees: Joseph Grist (VMRC), Zach Huntington (CVW), Abigail Clark and Dr. Donna Bilkovic (VIMS), Joe Barnes and Dr. Wie Yusef (ODU), Vince Bowhers (LRN), Michael Moore (BoatUS), Meghann Quinn (DEQ), and Jeff Flood, Will Isenberg, and Virginia Witmer (Virginia CZM).

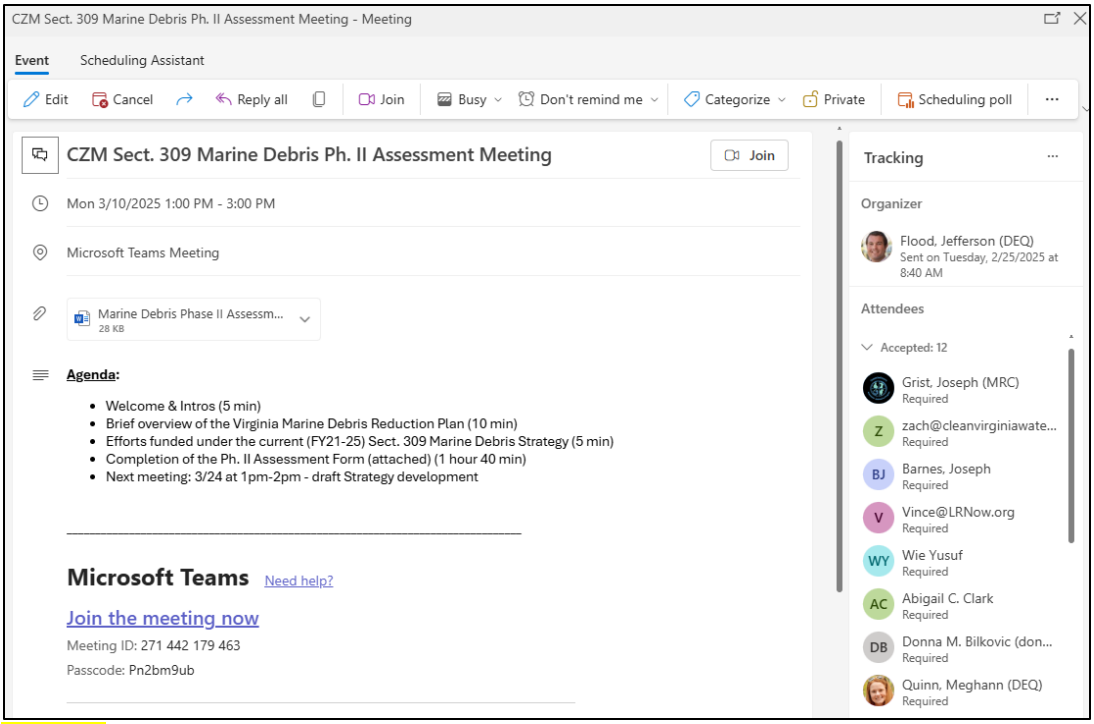


Figure 2. Invitation for Marine Debris Phase II Assessment Work Group meeting, held virtually on March 10, 2025.

- **March 13, 2025** – *Wetlands Phase II Needs Assessment Work Group Meeting* (Virtual): Virginia CZM Coastal Planner Elise Frazier led stakeholders through the Wetlands Phase II Needs Assessment. Draft information was filled in for the tables and first management priority as a means of focusing the discussion. Stakeholders supported the draft information with minor edits. For all other sections, stakeholder input was used to complete the Phase II Needs Assessment. Please see the Wetlands Phase II Needs Assessment for more information.
    - Attendees: Dave Norris (DWR), Pam Mason, Dr. Karinna Nunez, Jeryl Phillips, Dr. Donna Bilkovic, and Dr. Molly Mitchell (VIMS), Elizabeth Andrews (UVA), Mary-Carson Stiff and Ian Blair (Wetlands Watch), Marissa Roland, Michelle Henicheck (DEQ), Kit Friedman (CPDC), Joe Weber (DCR), Erin Reilly (CBNERR-VA), Rachael Peabody (MPPDC), Randy Owen (VMRC), Ryan Green, Jeff Flood, Elise Frazier, Will Isenberg, and Lucas Manweiler (Virginia CZM).
- **March 24, 2025** – *Ocean Resources Phase II Needs Assessment & Strategy Development Work Group Meeting* (Virtual): Virginia CZM Program Manager Ryan Green led stakeholders through the Ocean Resources Phase II Needs Assessment. Draft information was filled in for the tables and first management priority as a means of focusing the discussion. Stakeholders supported the draft information with minor edits. For all other sections, stakeholder input was used to complete the Phase II Needs Assessment. Following the Phase II discussion, it was determined that policy needs were sufficient to begin development of a draft Ocean Resources Strategy so discussions about the scope of that Strategy continued for the remainder of the meeting. Using the ocean planning needs from the Phase II meeting as a guide, R. Green then wrote the Ocean Resources Strategy with the assistance of other Virginia CZM staff. *As such, no standalone Ocean Resources Strategy Work Group meeting was held*. Please see the Ocean Resources Phase II Needs Assessment and Strategy for more information.

- Attendees: Jes Watts (MARCO), David Hawkins (Virginia Energy), Kate Wilke (TNC), Bettina Rayfield (DEQ), Todd Janeski (VCU), Becky Gwynn (DWR), Ben McFarlane (HRPDC), Ryan Green, Jeff Flood, Will Isenberg, and Elise Frazier (Virginia CZM).

- **March 24, 2025** – *Marine Debris Strategy Work Group Meeting* (Virtual): Virginia CZM Coastal Planner Jeff Flood reviewed elements of the Phase II Needs Assessment that had been discussed at the March 10, 2025 Work Group meeting, confirmed that policy needs were sufficient to begin development of a draft Marine Debris Strategy, and proceeded to solicit project ideas for the Strategy from the attendees.
  - Attendees: Joe Barnes (ODU), Christina Trapani and Zach Huntington (CVW), Michael Moore (BoatUS), Dr. Donna Bilkovic (VIMS), Robin Dunbar (ERP), Meghann Quinn (DEQ) and Jeff Flood, Will Isenberg, and Virginia Witmer (Virginia CZM).
- **March 25, 2025** – *Coastal Hazards Strategy Work Group Meeting* (Virtual): Virginia CZM Coastal Planner Will Isenberg led stakeholders through the draft Coastal Hazards Strategy template. The three (3) Management Priorities identified in the Phase II Needs Assessment were discussed and notes were taken on possible Strategy elements, program changes, and opportunities to support VCRMP's TAC recommendations. Please see the Coastal Hazards Strategy for more information.
  - Attendees: Cameron Bruce and Thomas Ruppert (W&M), Rita Chandler and Anne Doyle (ANPDC), Leigh Chapman and Rachel Slotter (VDEM), Tanya Denkla-Cobb (UVA), Will Isenberg and Jeff Flood (Virginia CZM), Andrew Franzyshen and Kit Friedman (CPDC), Cirse Gonzalez and Erin Reilly (CBNERR-VA), Carolyn Heaps-Pecaro and Karyn Reid (DCR), Michelle Henicheck and Justin Williams (DEQ), Daniel Johnson (VDEM), Sigrid Lampe (OSNHR), Lewie Lawrence (MPPDC), Donna Milligan, Dr. Molly Mitchell, Dr. Karinna Nunez, Jeryl Phillips (VIMS), Rachael Peabody (MPPDC), Eli Podyma and Sarah Stewart (PlanRVA), and Mary-Carson Stiff (Wetlands Watch).
- **April 3, 2025** – *Wetlands Strategy Work Group Meeting* (Virtual): Virginia CZM Coastal Planner Elise Frazier led stakeholders through the draft Wetlands Strategy template. The three (3) Management Priorities identified in the Phase II Needs Assessment were discussed and notes were taken on possible Strategy elements, program changes, and opportunities to support the statewide Wetlands Plan. Please see the Wetlands Strategy for more information.
  - Attendees: Joe Weber (DCR), Dave Norris (DWR), Donna Bilkovic, Jeryl Phillips, Dr. Karinna Nunez, and Dr. Molly Mitchell (VIMS), Phoebe Murrell (ERP), Kit Friedman (CPDC), Elizabeth Andrews (UVA), Ava Lovain (DEQ), Erin Reilly (CBNERR-VA), Ian Blair (Wetlands Watch), Elise Frazier, Jeff Flood, and Lucas Manweiler (Virginia CZM).
- **May 12, 2025** – *Wetlands Strategy Follow-Up Meeting with VIMS* (Virtual): Virginia CZM Coastal Planner Elise Frazier hosted a meeting with VIMS' Center for Coastal Resources Management staff, University of Virginia's Institute for Engagement & Negotiation (UVA-IEN) staff, and other Virginia CZM staff to discuss potential project ideas drafted in the Wetlands Strategy. CCRM provided feedback on relevant work that could be completed to address ecosystem service changes due to marsh migration, including potential project timeline and funding needs. The group discussed how this work could lead to a program change in support of the drafted Wetlands Strategy.
  - Attendees: Dr. Karinna Nunez, Dr. Andrew Scheld, Dr. Kirk Havens, Dr. Donna Bilkovic, and Dr. Molly Mitchell (VIMS), Elizabeth Andrews (UVA), Elise Frazier, Ryan Green, Will Isenberg, and Jeff Flood (Virginia CZM).
- **May 13, 2025** – *Marine Debris Strategy Follow-Up Meeting with CVW* (virtual): Virginia CZM Coastal Planner shared a draft of the Marine Debris Strategy and requested specific policy outcomes and confirmation of the Strategy timeline. CVW offered several policy needs and agreed

that funding could be front-loaded to the first three (3) years of the Strategy to keep the current momentum for state and local-level policy changes going while creating a sustainable funding plan to ensure that implementation of policies through outreach and education can continue after Virginia CZM funds are no longer dedicated to the Strategy.

- Attendees: Christina Trapani and Zach Huntington (CVW), Jeff Flood, Ryan Green, Will Isenberg, Elise Frazier, Virginia Witmer (Virginia CZM).

III. Enhancement Area Research & Experts' Comments

Aquaculture:

- **November 15-22, 2024** – Virginia CZM Coastal Planner Jeff Flood reached out via email to VIMS Shellfish Aquaculture Program Coordinator Dr. Bill Walton and VASG Shellfish Aquaculture Specialist Karen Hudson to request updates on the data used for the previous (2019) Aquaculture Phase I Needs Assessment as well as shellfish aquaculture industry trends and possible policy needs that could be addressed via Section 309 funding. Karen completed the request by completing the applicable sections of the Aquaculture Phase I Needs Assessment.
- **November 18 & 25, 2024** – Virginia CZM Coastal Planner Jeff Flood reached out via email to Virginia Tech's Virginia Seafood Agricultural Research & Extension Center (AREC) Director Dr. Michael Schwarz and Associate Director Dr. Jonathan van Senten to request updates on finfish aquaculture facilities and industry growth since the previous (2019) Aquaculture Phase I Needs Assessment. Dr. Schwarz completed the applicable sections of the Aquaculture Phase I Needs Assessment then had a virtual meeting with Jeff and Dr. Van Senten on November 25, 2024 to discuss industry trends and potential policy needs that could be supported via Section 309 funding.
- **January 10-13, 2025** – Virginia CZM Coastal Planner Jeff Flood reached out via email to VMRC's Shellfish Management Division Chief Adam Kenyon and Deputy Chief Andrew Button to request updates on oyster spat-on-shell operations, oyster gardening permits, any new regulatory changes pertaining to shellfish aquaculture since the previous (2019) Aquaculture Phase I Needs Assessment, and possible policy needs that could be addressed via Section 309 funding. Adam provided the requested information via email.

Cumulative & Secondary Impacts of Growth & Development (CSI):

- **November 19, 2024** – Virginia CZM Coastal Planners Elise Frazier and Jeff Flood met with UVA-IEN's Elizabeth Andrews to discuss relevant management updates pertaining to the CSI issues in the Coastal Zone. She provided numerous statutory and regulatory updates throughout Virginia since 2021 (and prior) that were relevant to include in the Phase I Needs Assessment.
- **November 20, 2024** – Virginia CZM Coastal Planner Elise Frazier corresponded with DEQ's Office of Watersheds & Local Government Assistance (which houses the Chesapeake Bay Program)'s Maura Christian for any significant updates from the Bay Program Office that were relevant for the CSI Phase I Assessment. Maura provided management updates regarding the Phase III Watershed Implementation Plan (WIP) for the Chesapeake Bay, amendments to the CBPA, and updates to the Chesapeake Bay Program's *Beyond 2025* planning and goal setting.
- **January 2025** – Virginia CZM Coastal Planner Elise Frazier and staff Nick Meade corresponded with NOAA Office for Coastal Management (NOAA-OCM) staff Nate Herold and Supriya Khadke for assistance in locating the most recent data available regarding land cover in Virginia's coastal zone in order to thoroughly complete the Phase I Needs Assessment. Nate was able to provide newly available NOAA land cover data and analysis required by the Phase I Needs Assessment.

Energy & Government Facility Siting:

- **November 25, 2024 –** Virginia CZM Program Manager Ryan Green and Coastal Planner Elise Frazier met with Virginia Department of Energy (Virginia Energy) staff Rabita Banee and Ken Jurman to review the Energy & Government Facility Siting Phase I Needs Assessment. Virginia Energy staff provided feedback on Phase I Needs Assessment data addressing the number of solar energy sites in Virginia's Coastal Zone and provided relevant information on forthcoming projects and solar-related management updates that were included in the Phase I Needs Assessment.
- **January 17, 2025** – Virginia CZM Program Manager Ryan Green and Coastal Planner Elise Frazier met with DEQ Air Program staff Ava Lovain, Allyson Frantz, and Matthew Snow to review Energy & Government Facility Siting Phase I Needs Assessment. Air Program staff provided information on forthcoming mapping resources used to locate solar energy sites in Virginia, in addition to project updates on the CPRG which were included in the Phase I Needs Assessment.
- **VIMS Solar Project Proposal –** In November 2024 and January 2025, staff from VIMS Center for Resources Management contacted Virginia CZM staff with a potential project proposal to receive Section 309 funds if a Strategy were developed for Energy & Government Facility Siting. This proposal addressed alternative locations for solar energy siting in light of recent solar regulatory updates which were addressed in the Phase I Needs Assessment. Virginia CZM did not create a strategy for Energy & Gov Facility Siting but has discussed further potential funding options for this project proposal with CCRM staff.

Wetlands:

- **October 30, 2024** – Virginia CZM Coastal Planner Will Isenberg contacted Dr. Karinna Nunez (VIMS) for information related to the Wetlands Phase I Needs Assessment. Specifically, he requested information that would show percent changes in wetlands over the past few decades. While that information was not available coastal zone wide, Dr. Nunez shared a study of percent change for the Middle Peninsula.
- **November 15, 2024** – Virginia CZM Coastal Planner Will Isenberg contacted a number of experts for information and input used to develop the Wetlands Phase I Needs Assessment. This included Randy Owen (VMRC); Dave Davis, Michelle Henicheck, and Brenda Winn (DEQ); Pam Mason and Dr. Molly Mitchell (VIMS); Ben Sagra (DWR); and Ian Blair (Wetlands Watch). VMRC and DEQ staff provided input and information, which included permitted wetland loss and mitigations totals. Others provided more specific input and information on existing planning efforts, policy changes, and research gaps.
- **November 21, 2024** – *Meeting with VIMS' Pam Mason to discuss Wetlands Phase I Needs Assessment* (virtual): Following an October 30, 2024 invitation to provide information and input on the Wetlands Phase I Needs Assessment, this meeting was scheduled to discuss feedback. Virginia CZM Coastal Planner Will Isenberg met with Pam, who provided information on new planning initiatives, policy changes, and research gaps.
- **December 5, 2024** – Virginia CZM Coastal Planner Will Isenberg contacted Dr. Matt Kirwan of VIMS to discuss research related to marsh accretion and differing projections on marsh loss. Dr. Kirwan shared research that suggests marsh expansion may occur through 2060 followed by ne marsh loss through 2100. This information was used to highlight research needs in the Wetlands Phase I Needs Assessment.
- **December 5, 2024** – Virginia CZM Coastal Planner Will Isenberg contacted Dr. Molly Mitchell, Dr. Karinna Nunez, and Pam Mason (VIMS) to better understand variations in marsh loss estimates. A variety of research was shared that showed how marsh loss and gain rates are going to vary by marsh type, among other things. This information was used to highlight research needs in the Wetlands Phase I Needs Assessment.

Coastal Hazards:

- **October 30, 2024 –** Virginia CZM Coastal Planner Will Isenberg contacted several experts for information and input used to develop the Coastal Hazards Phase I Needs Assessment. This included Matt Dalon and Carolyn Heaps-Pecaro (DCR); Rachel Slotter (VDEM); Justin Williams and Heather Mackey (DEQ); Ben McFarlane (HRPDC); Tanya Denckla-Cobb and Elizabeth Andrews (UVA); and Mary-Carson Stiff and Savannah Newbern (Wetlands Watch). Daniel Johnson (VDEM) and Ian Blair (Wetlands Watch) were later included in email chains to support the input and information provided by their respective organizations. Input and information from all participants touched on existing planning efforts, funding opportunities, policy changes, and in some cases policy gaps.
- **November 26, 2024 –** Virginia CZM Coastal Planner Will Isenberg contacted Angela Davis (DCR) to provide information and input on the Coastal Hazards Phase I Needs Assessment. With support from Karyn Reid (DCR), information on policy changes such as building code updates were included into the Coastal Hazards Phase I Needs Assessment.
- **April 16, 2025 –** Draft Coastal Hazards Strategy shared with DCR Office of Resilience Planning. The intention of this review was to ensure that draft strategy language related to the VCRMP's TAC recommendations were reviewed and consistent with expectations around the implementation of those recommendations. DCR provided edits and comments on April 29, 2025, which were accepted. These primarily focused on providing flexibility in implementation and ensuring the leads identified in the recommendations will be coordinated with prior to strategy action.

Special Area Management Plans (SAMPs):

- **VIMS**: As less land is available for conservation and land prices increase, the goal for a SAMP must shift as well. Instead of focusing on a specific geographical location, ecosystem/landscape types could be prioritized, and SAMPS could advance the effective management of conserved areas in addition to the protection of new areas. As the rate of relative sea level rise (RSLR) in Virginia increases, as well as the intensity of storm events and degree of saltwater inundation, SAMPs could be used to increase resilience to these challenges. The focused funding for collaboration and planning activities to relevant organizations could allow for better resilience planning and more effective ways to manage areas (both natural and urban). Some starting points could include placing SAMPs on marsh migration corridors and using Section 309 funding to increase ecological resiliency planning in existing conserved areas. SAMPs could also be placed on areas not designated as high value in VEVA to help restore lower value areas back to high value.
- **DWR**: Per email correspondence and a virtual meeting with Virginia CZM Conservation Coordinator Lucas Manweiler on December 11, 2024, DWR is undertaking an update of the Virginia Wildlife Action Plan and oversees the Virginia Wildlife Corridor Plan. These plans effect conservation planning efforts in some of the areas designated as SAMPs previously, but do not necessarily establish the need for a SAMP.
- **Virginia Department of Forestry (DOF)**: Per email correspondence and a virtual meeting with Virginia CZM Conservation Coordinator Lucas Manweiler on December 11, 2024, DOF staff provided input on priorities for forest preservation and overall land conservation. Sentinel Landscapes established in Virginia have the potential to enhance collaboration among localities, state agencies, and the US Department of Defense (DoD) to increase conserved lands and resilience adjacent to military installations in Virginia's Coastal Zone. However, the infancy of the program does not allow for any robust Section 309 planning during this Needs Assessment cycle. Similarly, the Office of Working Lands was placed within DOF in 2024 but is not established enough to begin Section 309 planning. DOF will explore Section 309 enhancements during the next cycle.

- **DCR**: Per email correspondence and a virtual meeting on December 20, 2024 with Virginia CZM Conservation Coordinator Lucas Manweiler, DCR's Natural Heritage Program has worked to identify Action Sites in Virginia which are locations that have some of the most exemplary and significant biota remaining in the local area and need varying levels of conservation attention. 61 of these sites exist in the Coastal Zone. Using SAMPs for these Action Sites could help DCR coordinate stakeholders across all Action Sites. Given the wide range of conservation needs and ongoing conflicts across the Coastal Zone, a SAMP across the entirety of Virginia's Coastal Zone may help DCR 1) systematically & critically evaluate needs across the region and 2) convene prospective partners (state natural and historic resource agencies, local governments, Tribes, land trusts).
- **TNC**: Per email correspondence and a virtual meeting on December 19, 2024 with Virginia CZM Conservation Coordinator Lucas Manweiler, land conservation efforts at The Nature Conservancy (TNC) are focused mainly on acquisition, with a priority on Virginia on the Southern Longleaf Pine landscape. TNC also advances resiliency work on Virginia's Eastern Shore and focuses on planning for marsh migration. Due to other Section 309 Enhancement Areas better encompassing these efforts, a SAMP is not considered for these priorities.

Ocean Resources:

- In addition to the Ocean Resources Phase II Needs Assessment meeting described in the above section, the Virginia CZM team relied primarily on the substantial stakeholder engagement completed during the ongoing Virginia Ocean Plan development process, as well as the engagement DWR coordinated during development of their Marine Mammal Conservation Plan and Sea Turtle Conservation Plan. During the development of the Virginia Ocean Plan, the team worked with over 120 subject matter experts to identify needs & gaps, among other topics. Stakeholders included state agencies (VMRC, DWR, DCR, DHR, VDEM, DEQ), local governments, industry groups, NGO's, and Tribes. This effort was primarily organized around 16 meetings in total of the six (6) Virginia Ocean Plan workgroups Virginia CZM staff convened over the course of 2024. The six (6) workgroups were organized around major ocean uses: Sustainability & Conservation; Fishing & Aquaculture; Cultural & Historic Resources & Non-Consumptive Recreation; Transportation, Navigation, & Security; Seafloor Resources; and Energy & Infrastructure. The public was also engaged during an August 15, 2024 "Virginia Ocean Plan Community Open Forum", which was held at the Virginia Aquarium in Virginia Beach. This event was held to educate the public on the Virginia Ocean Plan and gather input on the public's interests, concerns, and priorities as it relates to the ocean. Over 50 people were in attendance in addition to numerous stakeholders and partners.
- It is beyond the scope of this document to outline in any significant detail the substantial amount of input received during this process. The Virginia Ocean Plan, and Marine Mammal/Sea Turtle Conservation Plans, are the vehicle for distilling this information and given they remain in development specific information is not available to share at this time. Currently, Virginia CZM is working with a steering committee made up of state agencies and other stakeholders to reach consensus on 40 draft recommendations. These recommendations address many of the gaps and needs identified by workgroups, and the specific management priorities that the FY2026-2030 Ocean Resources Strategy seeks to address will come from those recommendations. However, until the consensus process is complete, sharing details on those recommendations is not possible.

Marine Debris:

- **October 16, 2024 –** Virginia CZM Coastal Planner Will Isenberg contacted Christina Trapani and Zach Huntington of CVW to provide information for the Marine Debris Phase I Needs Assessment.

CVW provided information for all sections of the Phase I Needs Assessment, and Virginia CZM worked to supplement the information and make other edits as necessary.

Public Access:

- **December 18, 2024** – *Meeting with DCR staff for Public Access input* (virtual): Virginia CZM GIS Coordinator Nick Meade and Coastal Planner Jeff Flood met with DCR staff working to finalize Virginia Outdoors Plan update to get input on the draft Public Access Phase I Needs Assessment. DCR staff provided feedback on the draft Public Access Phase I Needs Assessment and provided additional data and information to include.

IV. General Public Comment Period

On July 1, 2025, Virginia CZM posted the draft Section 309 Needs Assessments & Strategies document on the program's webpage on DEQ's website.

[insert screen capture of webpage posting]

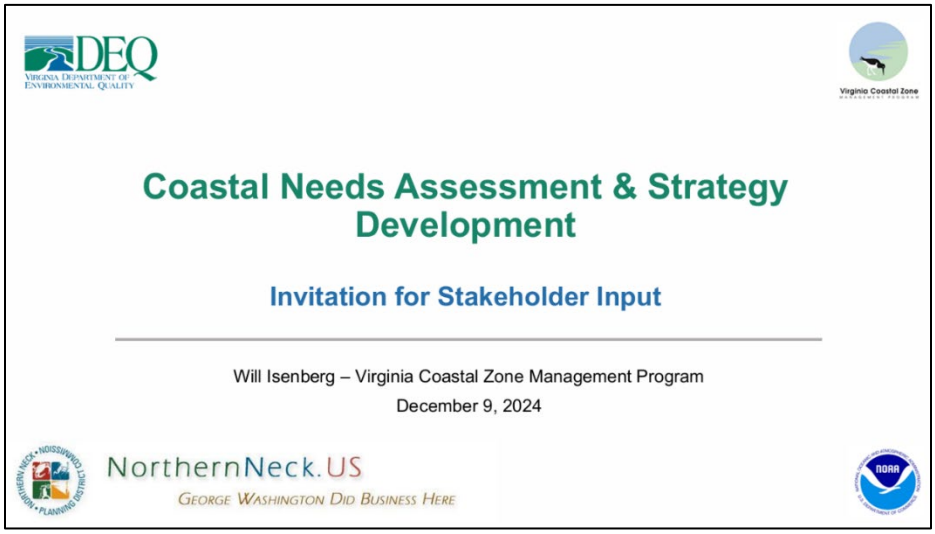
Acronyms

ANPDC - Accomack-Northampton Planning District Commission
ADV – Abandoned & Derelict Vessel
ADVWG – Abandoned & Derelict Vessel Work Group
ASMFC – Atlantic States Marine Fisheries Commission
BMP – Best Management Practice
CBF – Chesapeake Bay Foundation
BUDM – Beneficial Use of Dredged Material
CFPF – Community Flood Preparedness Fund
CPT – Virginia Coastal Policy Team
CPDC – Crater Planning District Commission
CVW – Clean Virginia Waterways
CZMA – Coastal Zone Management Act
DCR – Virginia Department of Conservation & Recreation
DEQ – Virginia Department of Environmental Quality
DFG – Derelict Fishing Gear
DOF – Virginia Department of Forestry
DOI – U.S. Department of the Interior
DWR – Virginia Department of Wildlife Resources
EPA – U.S. Environmental Protection Agency
FEMA – Federal Emergency Management Agency
FIRM – Flood Insurance Rate Maps
GEMS – Geospatial & Educational Mapping System
GIS – Geographic Information Systems
GWRC – George Washington Regional Commission
HIRA – Hazard Identification & Risk Assessment
HRPDC – Hampton Roads Planning District Commission
ICC – International Coastal Cleanup
JLARC – Joint Legislative Audit & Review Commission
JPA – Joint Permit Application
LIDAR – Light Detection And Ranging
LNG – Liquefied Natural Gas
LWB – Local Wetland Board
LCWC – Lower Chickahominy Watershed Collaborative
MACO – Mid-Atlantic Committee on the Ocean
MAFMC - Mid-Atlantic Fishery Management Council
MARAD – Federal Maritime Administration
MARCO – Mid-Atlantic Regional Council for the Ocean
MPCBPAA – Middle Peninsula Chesapeake Bay Public Access Authority
MPPDC – Middle Peninsula Planning District Commission
NFWF – National Fish & Wildlife Foundation
NIMBY – “Not In My Backyard”
NNCBPAA – Northern Neck Chesapeake Bay Public Access Authority
NOAA – National Oceanic & Atmospheric Administration
NRC – Nuclear Regulatory Commission
NVRC – Northern Virginia Regional Commission
NWI – National Wetlands Inventory

OCS – Outer Continental Shelf
OCSLA – Outer Continental Shelf Land Act
ODU – Old Dominion University
OSNHR – Office of the Secretary of Natural & Historic Resources (Virginia)
OSW – Offshore Wind
OTEC – Ocean Thermal Energy Conversion
PAA – Public Access Authority
PDC – Planning District Commission
PlanRVA – Richmond Regional Planning District Commission
PWDCA – Priority Wildlife Div Conservation Areas
RGGI – Regional Greenhouse Gas Initiative
RPA – Resource Protection Area
RPB – Regional Planning Body
SAMP – Special Area Management Plan
SAV – Submerged Aquatic Vegetation
SCC – State Corporate Commission
SLR – Sea Level Rise
SWCD – Soil and Water Conservation District
TMDL – Total Maximum Daily Load
TMI – Tidal Marsh Inventory
TNC – The Nature Conservancy
TOGA – Tidewater Oyster Gardeners Association
UMIT – Upper Mattaponi Indian Tribe
USACE – U.S. Army Corps of Engineers
USFWS – U.S. Fish and Wildlife Service
UVA-IEN – University of Virginia Insitute for Engagement & Negotiation
VASG – Virginia Sea Grant
VCRMP – Virginia Coastal Resilience Master Plan
VDACS – Virginia Department of Agriculture & Consumer Services
VDEM – Virginia Department of Energy Management
VDH – Virginia Department of Health
VDOT – Virginia Department of Transportation
VIMS – Virginia Institute of Marine Science
Virginia CZM – Virginia Coastal Zone Management Program
Virginia Energy – Virginia Department of Energy
VMRC – Virginia Marine Resources Commission
VOP – Virginia Outdoor Plan
WWF – Working Waterfront

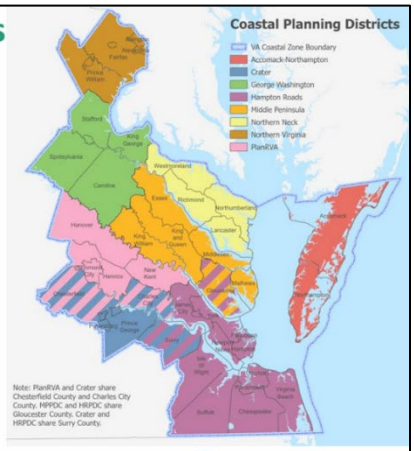
Appendices

Appendix A: Section 309 PPT for 12/9/24 NNPDC Local Land Use Administrators Meeting



Importance of Local Partners

- 8 coastal planning district commissions (PDCs)
- Local government participation
- Action happens at the local level
  - Federal, State, and Local policies
- Annual PDC Technical Assistance Grants
- Other CZM funds support local implementation



Virginia Coastal Zone MANAGEMENT PROGRAM DEQ

What is the Coastal Needs Assessment & Strategy?

- NOAA's Section 309 (Program Enhancement)
- Strategic planning process:
  - Inventory needs (***this meeting***)
  - Identify strategies to meet those needs
- Strategies implemented through projects
- States receive ~$500k/yr of matchless funding
- Strategies should result in a "program change…"

Virginia Coastal Zone MANAGEMENT PROGRAM DEQ

A Program Change can mean…

Section 309 projects are intended to:

- Lead to the development of policy
- Support the development process for policy, or
- Support the implementation of policy

Virginia Coastal Zone MANAGEMENT PROGRAM DEQ

The Process

- Section 309 of the CZMA requires a Coastal Needs Assessment every 5 years
  - This assessment will be implemented 2026-2030
- The needs assessment is focused on 9 “enhancement areas”
- 3 Phases:
  - **Phase I Assessments (high-level)**
  - Phase II Assessments (in-depth)
  - Strategy Development
- Each strategy should result in a program change or the further implementation of a policy at the end of the 5 years.

Virginia Coastal Zone MANAGEMENT PROGRAM DEQ

Enhancement Areas

Coastal Hazards

Ocean Resources

Marine Debris

CSI

Wetlands

SAMPs

Aquaculture

Public Access

Energy & Govt Facility Siting

DEQ

Coastal Hazards Strategy Example Projects

Goal: Enhance state & local capacity to adapt to the coastal hazards anticipated from climate change by evaluating & strengthening laws & policies.

Projects:

A. Community Resiliency Plans
  - Resilience Adaptation Feasibility Tool
  - Community Rating System
  - Report, Assess & Document (RAD)

B. Shoreline Plan & Policy Development
  - Working Waterfronts Resilience Assessment
  - Living Shorelines

Virginia Coastal Zone MANAGEMENT PROGRAM DEQ

Marine Debris Strategy Example Projects

Goal: Development & adoption of specific actions in support of the updated 2021-2025 Virginia Marine Debris Reduction Plan (VMDRP).

Projects:

A. 2021-2022 Abandoned & Derelict Vessel Work Group (ADVWG) meetings, report, & policy outcomes
B. Public opinion surveys
C. Policy support documents
D. Annual beach monitoring

Virginia Coastal Zone MANAGEMENT PROGRAM DEQ

Next Steps

1. CZM staff draft Phase I (high-level) assessment for 9 Enhancement Areas
   - Concurrently present to and get **input** from PDCs
2. CZM staff propose rankings for consideration by the CPT
3. CPT votes on high priority Areas at Jan 2025 meeting
4. Detailed Phase II assessments completed by CZM staff for high priority Areas.
5. Workgroups develop strategies for high priority Areas

Virginia Coastal Zone MANAGEMENT PROGRAM DEQ

Timeline: Stakeholder Input Opportunities

High Level Assessments of All Nine Areas	In-depth Assessments of High Priority Areas	Draft Strategy Development	Final Strategy Development
Oct 1, 2024 – Dec 15, 2024	Jan 15, 2025 – Feb 15, 2025	Feb 15, 2025 – Apr 15, 2025	Jul 1, 2025 – Aug 15, 2025

What We Need from YOU

- **What issues are you hearing about that can be fixed with policy or policy implementation support resources?**
  - Flooding
  - Lack of capacity to access State & Federal funding
  - Need for planning tools
  - Regulatory ambiguity
  - Data gaps
- **What policies that you implement create issues or need work?**
- **What is an outcome that could solve some of these issues?**

Virginia Coastal Zone MANAGEMENT PROGRAM DEQ

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Virginia Coastal Zone MANAGEMENT PROGRAM

Thank You!

Questions?

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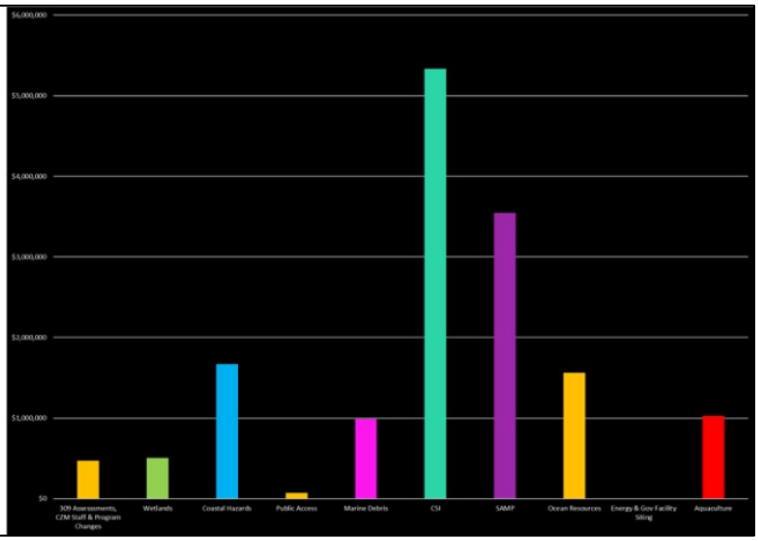
NorthernNeck.US
GEORGE WASHINGTON DID BUSINESS HERE

NOAA

Strategy Funding FY1991-2023



Appendix B: 12/9/24 NNPDC Local Land Use Administrators Meeting Summary

Meeting Summary

Section 309 Needs Assessment & Strategy Development Presentation

NNPDC Local Land Use Administrators Meeting (Virtual)

December 9, 2024 • 10:00am-11:00am

Attendees (9): Will Isenberg (Virginia CZM), Lisa Hull (NNPDC), Alex Eguiguren (NNPDC), Olivia Hall (Lancaster County), Maura Christian (DEQ – Office of Watersheds & Local Government Assistance), Brent Hunsinger (Friends of the Rappahannock), Lance Gregory (VDH – Shellfish Sanitation Division), Matt Dalon (Virginia Department of Conservation & Recreation – Office of Resilience Planning), Hope Mothershead (Richmond County)

- Virginia CZM Coastal Planner Will Isenberg, who manages NNPDC's annual Section 306 Technical Assistance & Resilience Focal Area (TA/RFA) grant, gave a PPT presentation on the Section 309 Needs Assessment & Strategy Development process at NNPDC's December meeting of local land use administrators. The audience included NNPDC staff, locality staff, state agency representatives, and a representative from a regional environmental nonprofit, Friends of the Rappahannock (FOR).
- Notes from the discussion after the presentation are as follows:
    - *Lance Gregory (VDH)*: We get a lot of feedback on the septic pump out program in the Three Rivers District. Took that over from localities. One of the issues that's become apparent is the lack of disposal facilities. Do these for BMP credits. The work around is to haul it out of those locations. The Northern Neck said they were going to Stafford County, but they will stop taking waste from out of the County. Recurring theme of wastewater facilities restricting where they'll take the waste from. We've heard that if a wastewater treatment plant (WWTP) receives Federal funding, they are required to take sewage, but they can opt out if there are capacity limits that an engineer shows. Perhaps there's an opportunity here.
        - *Lisa Hull (NNPDC)*: Yes, yes, yes, this is a huge issue. The septic pump out program are popular. If the trend is for counties to limit it, maybe the Northern Neck could preempt that and do it on a regional basis.
    - *Olivia Hall (Lancaster County)*: DEQ has given training on what's required for resilience changes related to the Chesapeake Bay Preservation Act (CBPA), but we need more in order to satisfy them. What does DEQ want to satisfy those requirements? It won't just take a local ordinance, we will need to change things out there.

- We have a project with FOR, but we were denied Community Flood Preparedness Fund (CFPF) funding. We needed to score higher on the questionnaire, which is the opposite of what the Federal Emergency Management Agency (FEMA)'s Building Resilient Infrastructure & Communities (BRIC) funding requirements asks us for.

- *Lisa Hull (NNPDC)*: What about data center siting? Not really an issue in the Northern Neck region yet, but possible data center creep.

  Brent Hunsinger (FOR): Water supply planning is a resilience issue. The bigger picture is the need for regional water supply plans (WSPs). But when looking at data centers and how that can play into how much water is in a river, how much is removed from all the beneficial uses? I bring this up because of the agricultural needs. At certain times of the year we're seeing issues for the ability of farmers to withdraw water. Also looking at salinity issues and changes for planning of that.

- *Olivia Hall (Lancaster County)*: There are two (2) sides of the data center coin. We need to look at the water usage. Developers say there are ways to reduce that consumption and not all data centers are that way – something to educate ourselves on. Department of Conservation & Recreation (DCR) has pollinator certification for solar farms that we can require, but I wonder if there's an opportunity for water certified data centers to take some heart ache out of permitting that.
  - *Lisa Hull (NNPDC)*: Who knows if a data center could be permitted given the groundwater management area?
  - *Brent Hunsinger (FOR)*: Very important, after Rappahannock River Commission meeting last week – there was a presentation from the Hampton Roads Sanitation District (HRSD)'s Sustainable Water Initiative for Tomorrow (SWIFT) program. Interesting ideas. Huge population volume and concentrations. One of the ideas was to pump water back into the aquifer so that data centers could have enough to withdraw from the aquifer.

Appendix C: Public Comments Received

[insert screen capture or copy of documents received]