

Final Evaluation Findings

Virginia Coastal Management Program

June 2015 to August 2022

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Summary of Findings

The Coastal Zone Management Act requires the National Oceanic and Atmospheric Administration (NOAA) to conduct periodic evaluations of the performance of states and territories with federally approved coastal management programs. This evaluation examined the operation and management of the Virginia Coastal Management Program administered by the Virginia Department of Environmental Quality, the designated lead agency, for the period from June 2015 to August 2022. The evaluation focused on three target areas: ocean planning, marine debris, and community and ecosystem resilience.

The findings in this evaluation document will be considered by NOAA in making future financial award decisions concerning the Virginia Coastal Management Program. The evaluation came to these conclusions:

Findings for Program Administration

Accomplishment: Through the leadership and support of the Virginia Coastal Program, the Coastal Policy Team has been effective in bringing together the coastal program network partners, including state agencies, universities, and planning district commissions, to move priority issues forward, particularly resilience, at the state, regional, and local level.

Accomplishment: The Virginia Coastal Program developed a set of concise narrative enforceable policies to improve federal consistency implementation. NOAA approved the policies through the Coastal Zone Management Act program change procedures, and the policies are now incorporated into Virginia's federally approved coastal zone management program.

Recommendation: The NOAA Office for Coastal Management encourages the Virginia Coastal Program to work with the NOAA Office for Coastal Management to educate federal license and permit applicants and agencies regarding the Coastal Zone Management Act federal consistency requirements and the application of the state's narrative enforceable policies to proposed federal actions.

Findings for Ocean Planning

Accomplishment: The Virginia Coastal Program's skilled leadership and support has been invaluable to moving regional ocean management forward in the Mid-Atlantic, including the continuing development of the Mid-Atlantic Ocean Data Portal and support of the fishing industry, to ensure they are represented and heard in ocean planning.

Recommendation: The NOAA Office for Coastal Management encourages the Virginia Coastal Program in its efforts to develop a state ocean plan, or otherwise continue to address ocean policy and planning issues for Virginia in ways that integrate the interests of different ocean users in a sustainable fashion and contain enforceable policies consistent with the state's interests.

Findings for Marine Debris

Accomplishment: The Virginia Coastal Program is a leader in bringing together partners at the regional and state level to work together to address marine debris. For example, the coastal program supported research to better understand the scope of balloon litter in coastal waters and the development of the Joyful Send-off Campaign to reduce balloon releases. These efforts led to legislation in the state banning balloon releases and reduction of other forms of marine debris. The Joyful Send-Off Campaign has been so successful it is currently being expanded across the Mid-Atlantic region.

Findings for Community and Ecosystem Resilience

Accomplishment: The Virginia Coastal Program has worked with partners to improve public access and grow the Eastern Shore's ecotourism economy.

Accomplishment: The Virginia Coastal Program's long-term investment in supporting eelgrass, bay scallops, and oyster restoration through research and on-the-ground projects has been very successful and resulted in an increase of over 10,000 acres of eelgrass on the Atlantic Ocean seaside, an increasing bay scallop population, and construction of new oyster reefs in the Chesapeake Bay and Seaside Eastern Shore.

Accomplishment: The Virginia Coastal Program helped bring together three county governments, two planning district commissions, and three federally recognized tribes to sign the first memorandum of understanding in Virginia between tribal nations and local governments committing the parties to identify, establish, and implement an overarching vision for land use, land conservation, and economic priorities that support natural resource conservation.

Accomplishment: The Virginia Coastal Program continues to successfully grow its native plant campaign throughout the state, and the increased use of native plants in landscaping is providing additional habitat for native species and migrating neotropical birds.

Recommendation: The NOAA Office for Coastal Management encourages the Virginia Coastal Program to (a) continue to support coastal planning district commissions and communities in their efforts to build resilience and take advantage of new federal funding; and (b) look for opportunities to support expanding successful regional initiatives statewide such as Fight the Flood and First Floor Elevations.

Recommendation: The NOAA Office for Coastal Management encourages the Virginia Coastal Program to develop a social marketing campaign to support living shorelines.

This evaluation concludes that the Virginia Coastal Management Program is successfully implementing and enforcing its federally approved coastal management program, adhering to the terms of the federal financial assistance awards, and addressing coastal management needs identified in section 303(2)(A) through (K) of the Coastal Zone Management Act.

Program Review Procedures

The Coastal Zone Management Act of 1972, as amended,¹ requires that state coastal zone management programs (coastal programs) and national estuarine research reserves (research reserves) that are developed under the act and approved by the secretary of the Department of Commerce be evaluated periodically. Section 312 of the Coastal Zone Management Act and implementing regulations at 15 CFR Part 923, Subpart L, requires that a state coastal program be periodically evaluated concerning the extent to which the state has 1) implemented and enforced the program approved by the secretary; 2) addressed the coastal management needs identified in section 303(2)(A)-(K) of the act; and 3) adhered to the terms of any grant, loan, or cooperative agreement funded under the act.

The National Oceanic and Atmospheric Administration (NOAA) evaluated the Virginia Coastal Management Program in fiscal year 2022. The evaluation team consisted of Carrie Hall, evaluation team lead; John Kuriawa, coastal program liaison, Chesapeake region; and Ashley Norton, manager, Delaware Coastal Management Program. The support of Virginia Coastal Management Program staff members was crucial in conducting the evaluation, and this support is most gratefully acknowledged.

NOAA published a notice of “Intent to Evaluate” in the *Federal Register* on July 13, 2022, and notified members of Virginia’s congressional delegation. The coastal management program posted a notice of the public meeting and opportunity to comment in the *Richmond Times-Dispatch*, in print from June 17-July 3, 2022 and online daily between June 17-26, 2022 and July 3-12, 2022. In addition, the meeting was posted on the coastal program website from June–August 2022 and the Virginia Regulatory Town Hall website from June 14 through the date of the public meeting.

The evaluation process included a review of annual federal financial assistance award reports, CZMA Section 309 Assessments, and information provided by the programs documenting how they are implementing their programs and addressing the programmatic requirements of the Coastal Zone Management Act. The review also included a survey of interested parties, which helped identify target areas for the evaluation: program administration, marine debris, ocean planning, and resilience. A virtual site visit was conducted August 1-4, 2022, and the evaluation team held meetings with staff members and group discussions with program partners, interested parties, and staff members about the target areas. In addition, a virtual public meeting was held on August 1, 2022, to provide an opportunity for members of the public to express their opinions about the implementation of the coastal program.

Interested parties and members of the public were given the opportunity to provide written comments via email or U.S. mail through August 12, 2022. No comments were received. The NOAA Office for Coastal Management then developed draft evaluation findings, which were

¹ [16 U.S.C. 1451 et. seq.](#)

provided to the Virginia Department of Environmental Quality for review. The state's comments were considered in drafting the final evaluation findings.

Final evaluation findings for all coastal management programs highlight the program's accomplishments in the target areas and include recommendations, which are of two types.

Necessary Actions address programmatic requirements of the Coastal Zone Management Act or its implementing regulations at 15 C.F.R., Part 923, and of the state coastal management program approved by NOAA, and the terms of any grant or cooperative agreement funded under the Coastal Zone Management Act. Necessary actions must be carried out by the date specified. Failure to address necessary actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in the Coastal Zone Management Act.

Recommendations are actions that the office believes would improve the program but which are not mandatory. The state is expected to have considered the recommendations by the time of the next evaluation or dates specified.

Evaluation Findings

Program Administration

Administration

The coastal program has a staff of six and is situated in the Department of Environmental Quality. Coastal program staff are highly regarded by their partners and stakeholders and were described as “excellent,” “exceptional professionals,” “well respected,” and appreciated for their “collaborative leadership.” The coastal program manager was particularly commended for leadership and also support and mentoring of new staff in the coastal region.

The department and coastal program are undergoing a generational change as many long-time staff members retire. They are planning for this change and have implemented processes to pass on both explicit and tacit knowledge. The coastal program manager, department leadership, and staff are commended for their preparation.

The coastal program manager is planning to retire in July 2023. Stakeholders and partners expressed their hope that the department prioritizes finding a new manager with the skills to facilitate and grow personal relationships and a network of coastal professionals, and who exhibits a willingness to dig into all aspects of the work. In addition, they emphasized the importance of providing staff overlap during the transition to a new manager.

The coastal program was commended by partners for doing network management exceptionally well. The coastal program leverages its small staff to achieve larger goals through productive and sustained partnerships and collaboration, including multi-decade initiatives. The coastal program is also very effective in using Section 309 funding to address emerging issues. Staff use 309 strategies to bring organizations together to conduct research, explore solutions, and develop policy recommendations. The results have informed state legislation.

Coastal Policy Team

The interagency Coastal Policy Team serves as the advisory committee for the coastal program. The team includes the program’s state agency partners, the Virginia Institute of Marine Science including the Chesapeake Bay-Virginia National Estuarine Research Reserve and Virginia Sea Grant, and eight coastal planning district commissions that represent 88 cities, counties, and towns and other partners. The team’s role is to identify coastal management issues of concern and to develop strategies to address these issues. Team members set a focal area(s) for a three-year period using Section 306 funds and work together to implement the strategies. The coastal program provides funding to support members’ work, and team members also direct their own resources towards tackling the focal area(s).

The team was praised by evaluation participants as:

- Providing a collaborative venue for multiple and sometimes divergent or diverse agencies and persons to interact, make connections, and work together

- Bringing together state agencies and local implementers
- Focusing effort, funding, and conversation around a consensus three-year priority (focal area) and being a “force multiplier.”
- Providing “flexible” funding to support local government projects
- Providing local governments with clear and transparent expectations for grant funds.

Team members and stakeholders also discussed opportunities to improve and strengthen the team, including:

- Exploring new technologies and facilitation tools for meetings
- Considering opportunities to engage other partners. For example, occasionally inviting external stakeholders to participate in team meetings or engaging with additional partners through working groups.
- Exploring expansion of relationships with other universities to better utilize their services

The Virginia Coastal Program’s Coastal Policy Team is one of the most effective advisory groups within the national coastal zone management system. Team members highly value the advisory group and its associated technical and financial support and also provide their own resources towards furthering priority focal areas.

Accomplishment: Through the leadership and support of the Virginia Coastal Program, the Coastal Policy Team has been effective in bringing together the coastal program network partners, including state agencies, universities, and planning district commissions, to move priority issues forward, particularly resilience, at the state, regional, and local level.

Federal Consistency

The coastal program implemented a Section 309 strategy to update its 1986 program document and develop a more concise and easier-to-understand set of enforceable policies for the Virginia Coastal Program. The coastal program provided funding to the Virginia Coastal Policy Center to help evaluate and gather input from state reviewing agencies, NOAA, the Virginia Office of the Attorney General, and other interested parties, such as federal project proponents and environmental advocacy groups. A more concise set of narrative-based enforceable policies was developed that included additional policies for state-listed threatened and endangered species, state parks and natural area preserves, invasive plants and animals, and noxious weeds. The new narrative-based enforceable policies were approved by NOAA in September 2020, and additional enforceable policies were approved in April 2021.

Accomplishment: The Virginia Coastal Program developed a set of concise narrative enforceable policies to improve federal consistency implementation. NOAA approved the policies through the Coastal Zone Management Act program change procedures, and the policies are now incorporated into Virginia’s federally approved coastal zone management program.

The coastal program is seeing slower-than-expected adoption of its new narrative policies by federal agencies and applicants. The coastal program continues to inform and educate federal agencies and applicants for federal licenses and permits. The NOAA Office for Coastal Management last held a federal consistency training in Virginia over six years ago, and there has been significant turnover in both state and federal staff since. There is an opportunity for the Office for Coastal Management to assist the state by holding a federal consistency training that emphasizes the new narrative policies.

Recommendation: The NOAA Office for Coastal Management encourages the Virginia Coastal Program to work with the NOAA Office for Coastal Management to educate federal license and permit applicants and agencies regarding the Coastal Zone Management Act federal consistency requirements and the application of the state’s narrative enforceable policies to proposed federal actions.

The coastal program has also undertaken a multi-year process to develop a Geographic Location Description and list of associated activities. The focus of activities is renewable resources, oil and gas, and mineral mining. The NOAA Office for Coastal Management has provided comments on a draft and encourages the coastal program in this effort.

GEMS and VEVA

The coastal program, across its 30-year history, has been committed to creating and compiling coastal resource data and making it available in usable formats. Coastal GEMS (Geospatial and Educational Mapping System) (www.coastalgems.org) is the coastal program’s online data portal. The coastal program worked with partners to complete the fourth major update to Coastal GEMS in 2021. The site has a new front page featuring new story maps, such as Economics of Conserved Lands on Virginia’s Eastern Shore and Eight Ecologically Outstanding Places to Visit. Users now have the ability to share data, add outside data, use new ways to access attribute data, and filter data by location, including “What’s Near Me.” A comprehensive inventory of public access infrastructure, interpretive signage, and land acquisition was done and incorporated into the system.

Coastal VEVA (Virginia Ecological Value Assessment) is a single data-layer synthesizing and ranking the state’s conservation priorities. The data is being used by the program’s partners to prioritize areas for preservation, develop strategies for special area management actions, and build awareness about Virginia’s coastal ecological integrity. Coastal VEVA has been used by the coastal program to identify and protect over 2,000 acres. This data layer is a valuable resource, enabling the state to make informed management decisions, and has positioned the state well to take advantage of new federal funding sources that support conservation and restoration.

To maintain the value of these tools, data will need to be updated in the future. Evaluation participants noted the opportunity and need to update data layers, including the Department of Wildlife Resources’ Priority Wildlife Diversity Conservation Areas.

Ocean Planning

Coastal program staff are active leaders in regional ocean planning and the Mid-Atlantic Regional Council on the Ocean (MARCO). The coastal program manager has served as chair of MARCO and led the creation of a regional Marine Debris Work Group and the Ocean Mapping and Data Team. The coastal program played a leading role in the development of the Mid-Atlantic Regional Planning Body, a venue for states and federal agencies, federally recognized tribes, and the Mid-Atlantic Fishery Management Council to collaborate. When the Mid-Atlantic Regional Planning Body was dissolved by federal executive order in 2018, Virginia led the effort to create a new voluntary regional body. In 2019, MARCO's Mid-Atlantic Committee on the Ocean was formed.

The coastal program works at the state and regional level to engage a broad array of stakeholders in ocean planning. The coastal program manager sits on the Virginia Offshore Wind Development Authority, which helps facilitate, coordinate, and support offshore wind. The coastal program funds a fisheries coordinator position at Virginia Commonwealth University that works with the commercial fishing industry to ensure their voices are heard in ocean planning. The coastal program partnered with the U.S. Bureau of Ocean Energy Management and the Virginia Department of Energy in a project that engaged the recreational and commercial fishing industry in planning for wind energy development. Fishermen from England with experience with wind energy were brought in to share their experiences, and maps of important fishing areas were created through participatory GIS mapping. Best management practices were identified. A report was published in 2016, "Collaborative Fisheries Planning for Virginia's Offshore Wind Energy Area" (tinyurl.com/fusntxfw).

The coastal program funded research to document the extent and economic value of Virginia's commercial fishing industry efforts along the Atlantic coast to support the development of a geographic location description. The results were published in a 2021 report, "Virginia's Commercial Fishing: Beyond the Bay" (tinyurl.com/2r9dts9b).

Evaluation participants praised the coastal program for their leadership and support of regional ocean planning and also noted that there are opportunities to strengthen Virginia's role:

- Increasing staff capacity
- Conducting a socioeconomic analysis of the value of existing ocean uses
- Developing additional enforceable policies to incorporate into the federally approved program

The Mid-Atlantic Ocean Data Portal, a "hub" of ocean planning, is an integral part of the overall ocean planning efforts in the Mid-Atlantic. The coastal program provided seed funding for the development of the data portal, which launched in 2010, and along with many other funders has continued to support the portal. There are now over 6,000 data layers and 13 themes. The coastal program has supported a variety of data collection efforts from recreational uses to whale distribution. The coastal program also funded the development of animated maps that visualize the core abundance of 17 fish species from the 1970s and project future shifts through

the year 2100. The animated maps were developed to inform the siting of wind energy. The coastal program is currently working with tribes to incorporate their knowledge into the data portal.

The data portal has a wide variety of uses and users. The U.S. Coast Guard's marine traffic data is used to help passenger ships, tanker operators, and others spot and communicate potential hazards. The trawl fishing industry, anchored or moored vessels, and companies that manage Atlantic undersea cables can better spot and minimize potential ocean conflicts. Agencies in collaboration with fishermen have used the portal to find most suitable locations for offshore wind and teachers are using the story maps in their classrooms.

Accomplishment: The Virginia Coastal Management Program's skilled leadership and support has been invaluable to moving regional ocean management forward in the Mid-Atlantic, including the continuing development of the Mid-Atlantic Ocean Data Portal and support of the fishing industry, to ensure they are represented and heard in ocean planning.

The coastal program developed a 309 Strategy for 2021-25 to develop an ocean plan for the State of Virginia. The development of an ocean plan is an opportunity to bring together stakeholders to look at opportunities to develop policies to integrate ocean uses in a sustainable way. The coastal program has funded research into processes used in other states and identified lessons learned. An Ocean Planning Committee has been established that includes Virginia state agencies, tribes, federal agencies, and academic contractors.

Recommendation: The NOAA Office for Coastal Management encourages the Virginia Coastal Program in its efforts to develop a state ocean plan, or otherwise continue to address ocean policy and planning issues for Virginia in ways that integrate the interests of different ocean users in a sustainable fashion and contain enforceable policies consistent with the state's interests.

Marine Debris

The coastal program is leading efforts in the state and region to reduce marine debris. The coastal program brought stakeholders together to develop the Virginia Marine Debris Reduction Plan in 2014. Virginia was the second state to develop a marine debris reduction plan and first on the Atlantic Coast. The coastal program and partners successfully implemented this plan during the evaluation period. The coastal program was a strong supporter of including marine debris as a key action in the 2016 Mid-Atlantic Regional Ocean Action Plan, and leads the Marine Debris Work Group.

Building on this success, the coastal program led a collaborative process to develop the 2021-2025 Virginia Marine Debris Reduction Plan (tinyurl.com/3cr9zn6f). The coastal program also supported regional efforts, working closely with 96 organizations to develop the Mid-Atlantic Marine Debris Action Plan (2021). The plans are aligned and address consumer debris, derelict fishing gear, microplastics and microfibers, and abandoned and derelict vessels.

The Marine Debris Work Group hosted successful regional summits in 2019 and 2021, building on a Virginia summit in 2016. The coastal program provided staff and funding support.

Through the leadership of the coastal program and its partners, an increasing number of organizations are interested in addressing marine debris. To support increased collaboration, the coastal program and Clean Virginia Waterways co-founded the Virginia Plastic Pollution Prevention Network in 2019. The network focuses on reducing consumer sources of marine debris through sharing of information on cleanup events, survey data, removal of derelict fishing gear, implementing behavior change campaigns, and other actions. Members are from 75 organizations throughout Virginia and include nonprofits, state and local government agencies, businesses, and universities.

The Joyful Send-off Campaign (www.joyfulsendoff.org) is an excellent example of the coastal program's successful approach to addressing emerging coastal issues. Balloons can have a deadly impact on wildlife and after looking at various marine debris issues and the feasibility of focusing on one where an impact could be made, balloon releases were chosen as a focal issue. The coastal program provided funding to develop a monitoring protocol and support volunteer monitoring to better understand the problem. This led to the inclusion of an action, in the first Virginia Marine Debris Reduction Plan, to design and implement a community-based social marketing campaign to reduce balloon litter in the marine environment. The coastal program and its partners researched balloon release behavior to inform the design of the campaign. The Joyful Send-off campaign launched in 2017 with a focus on reducing balloon releases at weddings and other events by highlighting alternative ways to celebrate. This multi-partner effort has received significant attention in traditional and social media.

The state legislature, responding to public interest, first passed a law limiting the size of balloon releases, and then in 2021 balloon releases were banned. The partners conducted a focus group with schools and learned that having a law in place modified behavior; for example, one school went from 50 to 0 balloon releases in a year.

The Joyful Send-off campaign and the pre-campaign research results were so compelling that the former Mid-Atlantic Regional Planning Body's Marine Debris Work Group decided to pursue expansion of the Virginia campaign to the entire Mid-Atlantic. The Mid-Atlantic Regional Council on the Ocean submitted a successful proposal to the NOAA Marine Debris Program to fund this expansion. Coastal program staff have been instrumental in development of a regional Prevent Balloon Litter campaign (www.preventballoonlitter.org), which launched in October 2021. Coastal program staff contributed significant work to pre-campaign research, design of the campaign strategy, and development of multimedia materials. The work group received master coaching in social marketing funded by the coastal program.

The coastal program's efforts also helped lay the groundwork for recent legislative changes in 2020 to address some of the most common forms of litter, including plastic shopping bags and phasing out single-use expanded polystyrene (Styrofoam) as food service containers. Also, in 2021 the coastal program manager worked with the Virginia Marine Resources Commission,

the Shellfish Growers of Virginia, and Clean Virginia Waterways to develop a signed agreement for collecting loose derelict clam netting.

Several opportunities were highlighted by stakeholders focused on encouraging the program to continue to support marine debris reduction efforts and to share their expertise.

- Continue to provide science-based data and outreach to local governments and partners.
- Train others in the Mid-Atlantic region on how to implement community-based social marketing campaigns.
- Work with partners to develop guidance, “tips and tricks,” for working successfully with large work groups. The coastal program and its partners are perceived as very effective at this challenging task.
- Providing resources and information to others on development of effective statewide litter campaigns.

The Virginia Marine Debris Reduction Plan’s (2021-2025) fourth and last goal is to “prevent and Mitigate the Contributions of Abandoned and Derelict Vessels.” Abandoned and derelict vessels often create environmental, economic, and human safety (navigation) impacts. A work group was formed in December 2020 to further understand the scope of the issue, identify best practices and lessons learned, and discuss regional partnerships. The workgroup brought together almost 70 federal, state, regional, local, and tribal government representatives, private sector boating interests, and environmental nonprofit organizations. The coastal program supported this effort with Section 309 funding, and the coastal planner serves as co-lead with Clean Virginia Waterways. Partners noted that the coastal program’s support was essential in moving this initiative forward. The state has over 200 abandoned and derelict vessels in varying jurisdictions with different agencies having different responsibilities. In July 2022, the workgroup released its report, “Virginia Marine Debris Reduction Plan” (tinyurl.com/2s3er9vr), which identifies best practices and lessons learned and recommendations for lawmakers to consider.

Accomplishment: The Virginia Coastal Program is a leader in bringing together partners at the regional and state level to work together to address marine debris. For example, the coastal program supported research to better understand the scope of balloon litter in coastal waters and the development of the Joyful Send-off Campaign to reduce balloon releases. These efforts led to legislation in the state banning balloon releases and reduction of other forms of marine debris. The Joyful Send-Off Campaign has been so successful it is currently being expanded across the Mid-Atlantic region.

Community and Ecosystem Resilience

The coastal program is leading and supporting community and ecosystem resilience efforts in coastal Virginia. Evaluation participants noted that the coastal program’s support was important to moving resilience efforts forward in both large and small coastal communities. One participant stated, “[they] have moved the needle for our community, I can’t emphasize how much.”

In 2020, the governor of Virginia released a master planning framework which laid the groundwork for a future Coastal Resilience Master Plan. The coastal program assisted with coordination of the Technical Advisory Committee, which was tasked with developing the framework. Coastal program staff played major roles in three subcommittees as well: project identification, finance, and federal installation partnership. Partners noted that the advisory committee was very well run. The coastal program funded Wetlands Watch and the planning districts to create a database of potential resilience projects. The database was expanded by Dewberry and has made it easy for the committee and partners to find projects that fit specific funding requirements. The database will continue to be a valuable tool as the coastal zone management funded planning district commissions continue to add projects and as more funding is becoming available for resilience projects.

From 2014-2018, resilience was one of several focal areas for the Coastal Policy Team. The team then decided to prioritize and focus solely on resilience for the 2018-2021 focal area. The coastal program provided core funding for planning district commissions to build their resilience capacity. The planning district commissions serve 88 urban and rural localities, most of which have limited resources and many other responsibilities. The capacity-building funds have enabled the commissions and communities they serve to develop baseline capacity to address resilience. As described by one participant, it was a “booster shot” for resilience. Funds have supported efforts to build awareness and staff workgroups; plan, collect, and manage data; integrate data into planning efforts; and identify and implement resilience projects. The coastal program has also provided funding and technical assistance to other state and university partners and nonprofit organizations to support resilience efforts.

The previous evaluation findings included a recommendation for the coastal program to find its “niche” as the needs around resilience far exceeded its staff capacity and funding. The coastal program defines its niche as funding projects primarily focused on building the capacity of coastal planning districts and state agencies and local projects to address sea level rise and other climate impacts. The coastal program continues to build on long-standing initiatives and is successfully pursuing new initiatives as well to support community and ecosystem resilience. Examples are highlighted below.

Community Rating System: Many coastal Virginia localities, especially in rural areas, do not currently participate in the National Flood Insurance Program’s Community Rating System. The coastal program developed a 2015-2020 hazards strategy to encourage participation. As part of this strategy, the coastal program provided funding to Wetlands Watch, a nongovernmental organization, to gain a better understanding of, and address barriers to, participation in the Community Rating System. To help address the identified barriers such as local staff capacity, a community of practice was created. Wetlands Watch conducted 16 one-day trainings for interested localities on flood risk, the National Flood Insurance Program, and the Community Rating System. Since then, Wetlands Watch has helped several communities join or obtain a higher-class rating, and awareness of the program has grown. One success is James City County, which advanced three full classes through ecosystem protection, giving homeowners an additional 15 percent discount on their flood insurance.

Resilience Adaptation Feasibility Tool: Local governments and stakeholders identified the need for a standardized method for assessing local resilience. In 2015, a multi-university, interdisciplinary partnership piloted the Resilience Adaptation Feasibility Tool (*raft.ien.virginia.edu*), a scorecard to evaluate risks to coastal flooding. An independent assessment team piloted the scorecard with three communities. Based on the pilot project, improvements were made, including working with social equity experts to integrate social equity throughout the scorecard and the addition of local implementation teams to help co-create one-year resilience action checklists and support implementation. The coastal program provided the funding to follow up with the pilot localities, refine the scorecard, develop a website, and expand use of the tool for a regional assessment of localities on the Northern Neck and Middle Peninsula. Communities are using this process for a variety of projects such as informing their hazard mitigation planning and working on their Community Rating System classification. One community identified emergency communication with elderly residents as a priority and worked with the Red Cross to provide elderly residents with hand-crank weather radios.

Fight the Flood: The Middle Peninsula Planning District Commission created the Fight the Flood program, a first of its kind program that connects property owners facing rising flood waters with tools and funding to contract with specialized businesses who can help evaluate, design, and build solutions for more resilient shorelines. The authority has funded over \$18 million in direct loans and grants over the last five years and is able to fund projects on both public and private property to address flooding issues. The program manages a \$3 million line of credit to fund loans for clean water and living shoreline projects. The Middle Peninsula Planning District Commission used coastal program and other funds to help build awareness of coastal issues and to design the Fight the Flood program. To obtain assistance, landowners fill out a form that is designed to align with information collected by different grant programs. The Fight the Flood program works closely with applicants to match them with funding sources and provide tailor-made solutions.

The planning district has also partnered with Virginia Sea Grant to support businesses in advancing their innovative next-generation products to address coastal flooding and sea level rise. The district's Middle Peninsula Public Access Authority manages over 1,000 acres of public lands, and some of the acreage is being used as a living laboratory for these projects. Six million dollars in funding from the U.S. Department of Agriculture and the Virginia Growth and Opportunity Fund are supporting this effort. The planning district has also used coastal program funds to create Virginia's Coastal Wilds (*vacoastalwilds.com/*). The initiative encourages ecotourism as a way to generate tourism revenues for their rural counties and ensure coastal lands are preserved and kept natural as buffers against sea level rise.

Determining First-Floor Elevations for Coastal Hazards Planning: The coastal program provided funding to the Hampton Roads Planning District Commission for a pilot project to better understand and mitigate structural vulnerabilities to flood hazards and associated damage costs. The first finished floor elevation of a building is critical to determining vulnerabilities and costs, but data for most buildings was not available. The project collected available digital

elevation certificates from local governments for inclusion in a geospatial database. Then a predictive modeling approach was piloted to estimate first floor elevations for structures without elevation certificates. This allowed for modeling of flooding scenarios to better understand local and regional vulnerability under different scenarios. The lessons learned through the regional first-floor elevation effort served as a resource for the Hampton Roads Hazard Mitigation Plan update. The database is designed to be adaptive, and continued research and coordination to improve elevation data will support regional coastal resiliency planning efforts. The model could also be expanded to the remainder of Virginia’s coastal zone.

Public Access: Virginia has over 5,000 miles of shoreline, and the coast is home to more than 60 percent of the state’s population. Acquiring, building, and maintaining public access to address increasing demand continues to be a challenge. Public access was a focal area of the Coastal Policy Team from 2014-2016. Projects completed include:

- Port Royal water trail pier and interpretive signage
- Nike Park ADA-accessible canoe and kayak launch, and repair of a damaged fishing pier
- Lavalette canoe and kayak launch and fishing pier
- Brown’s Island dam walk habitat restoration and native plant demonstration project
- Development of the Middle Peninsula Public Access Master Plan and the Regional Strategic Plan for Public Access to Waterways in Hampton Roads.

When updating GEMS, the coastal program identified interpretive and acknowledgment signage that needed to be replaced and opportunities for new signage. The coastal program is working with partners to create new signage at priority sites that will educate visitors about local history and the environment and support local ecotourism efforts. For example, at Chippokes Plantation State Park, Virginia Indian tribes helped design signs featuring the pre-colonial history of various tribes in the region and instructions for visitors on how to preserve artifacts by reporting them to park staff. Signage at the Virginia Beach Boardwalk includes information on marine debris, ocean planning, and climate change.

The coastal program and partners have also identified opportunities to better address public access going forward, including:

- Conducting geospatial analysis to identify underserved communities that lack public access to waterways or natural areas.
- Providing funding to planning district commissions to develop lists of shovel-ready public access projects.

The coastal program began supporting ecotourism in the 1990s, and in 2017 kicked off a new three-year project with the three rural coastal planning districts—Accomack-Northampton, Middle Peninsula, and Northern Neck—and the Coastal Virginia Ecotourism Alliance. The projects include linking existing trails, building new trails, online marketing, and signage. The Coastal Virginia Ecotourism Alliance—Virginia Water Trail (viriniawatertrails.org/about-us/) earned a gold medal in 2022 for the Governor’s Environmental Excellence Award. Building off of previous efforts, since 2014, the coastal program and partners have grown an ecotourism

training program, which is now required for tour guides accessing the Nature Conservancy's barrier islands.

Accomplishment: The Virginia Coastal Management Program has worked with partners to improve public access and grow the Eastern Shore's ecotourism economy.

Eastern Shore Habitat Conservation and Enhancement: The Eastern Shore is an important refueling stopover site for neotropical birds. In the early 1990s, the coastal program partnered with the New Jersey, Delaware, and Maryland Natural Heritage programs on an interstate Section 309 project to document the fall coastal migration of neotropical birds. The study results were seminal in guiding preservation and restoration efforts ever since.

The study led to the coastal program becoming one of five founding members of the Virginia Southern Tip Partnership in the 1990s. The partnership focused on acquiring stopover habitat for neotropical birds on the southern tip of Northampton County. In 2020, the Southern Tip Partnership reorganized as the Virginia Eastern Shore Conservation Alliance to expand conservation efforts to all of Northampton and Accomack Counties. The Conservation Alliance is focused on five primary objectives: land protection, habitat improvement, conservation research and monitoring, ecotourism, and outreach and education.

The coastal program provided funding or assistance in the acquisition of 184 acres and restoration of 140 acres of coastal habitat from October 2015 to September 2022. Examples include funding the planting of 1,000 native shrubs that provide food and cover for neotropical birds on the GATR Tract and the acquisition of 27 acres to expand the Cape Charles Natural Area Preserve. The coastal program also funded the Division of Natural Heritage to conduct climate resilience planning for natural heritage resources, including surveys to verify rare plant and animal species sightings in the data.

The coastal program is well positioned to take advantage of new federal funding that supports land conservation and restoration through the development of a database of potential resilience projects, funding for economic studies that have demonstrated the value of conserved lands, and its strong partnerships in the coastal region. The NOAA Office for Coastal Management encourages the coastal program in these efforts.

Although the coastal program and its partners have been successful in preserving and restoring important conservation lands, partners identified opportunities to strengthen these efforts, including:

- The development of a three- to five-year plan for addressing invasive species in the coastal zone to support developing more financial support for invasive species management.
- Better alignment of property appraisals with grant timelines.
- A funding source for appraisals.

Eelgrass, Bay Scallops, and Oyster Restoration: In the 1930s hurricanes and disease wiped out all of the eelgrass on the seaside of Virginia’s Eastern Shore. Bay scallops, which rely on eelgrass beds as habitat, disappeared, and other finfish and crabs that also relied on the grass beds became scarce. This once abundant and diverse system was decimated and remained so for almost 80 years.

In the late 1990s, the coastal program funded exploratory research through the Virginia Institute of Marine Science on the potential for restoration of eelgrass beds. Researchers were uncertain if eelgrass restoration might be limited by water quality, but instead, thanks to research funded by the coastal program, the limiting factor was found to be lack of seed source in isolated bays. In 2002, the coastal program initiated a six-year, \$2.6 million restoration effort—the Seaside Heritage Program. The goal of the program was to bring back a sufficient acreage of eelgrass to allow for the reintroduction of the bay scallop. The project also incorporated work on ecotourism promotion and infrastructure construction, invasive reed removal, shorebird habitat research, shorebird predator removal, aquaculture best management practices, oyster inventory and reef construction, and public outreach.

The coastal program also invested \$1.2 million in eelgrass and bay scallop restoration between 2009 and 2018. The Virginia Institute of Marine Science continued to be a major partner. The Virginia Marine Resources Commission provided funding, and the Nature Conservancy’s Virginia Coast Reserve organized volunteers to help collect seeds from reproductive shoots and assisted with tending seeds until they could be distributed in the fall. The coastal program and partners are continuing to work to expand eelgrass habitat. In 2022, plantings were conducted in Spider Crab Bay, Hog Island Bay, and Wachapreague.

Today, the planted eelgrass beds have spread to over 10,000 acres and the bay scallop has been reintroduced. After the introduction of new genetic stock into the system from along the coast, there has been a consistent increase in population. Bay scallops are now on their way to being a stable population, and there’s hope that there may eventually be a harvestable population that could add to the economy of the region.

Eelgrass and scallop restoration in Virginia is a nationally recognized success. This success is highlighted in a story map on the Coastal GEMS website (tinyurl.com/mwav4yb5) and a short video by the College of William and Mary (www.youtube.com/watch?v=MColdNXGPfE). Partners are excited to continue with restoration efforts and, particularly, an opportunity to gather baseline data before and after restoration to quantifiably identify the impacts of the restoration on the local environment and economy.

The coastal program has also made significant long-term investments in supporting oysters in the Chesapeake Bay. A coastal program-funded position at Virginia Commonwealth University also serves as director of the Virginia Oyster Shell Recycling Program. The university’s Rice Rivers Center is a receiving and curing center for oyster shells, which come from restaurants across the commonwealth. The university also runs a commercial-grade oyster grow-out tank. The overall program is also supported with private donations and other grants. Coastal program

funds have supported education and outreach efforts and shell recycling since 2013. Coastal program-funded signage is now part of the Deltaville Maritime Museum and pier that explains restoration, shell recycling, and the overall Chesapeake Bay goal of restoring 10 tributaries by 2025.

The coastal program has funded the Virginia Marine Resources Commission to do oyster reef restoration, for example a large-scale oyster reef covering 16 acres in the Lynnhaven River in 2018-19. Three years later this area is considered a highly successful restored site. More recently, a 17-acre oyster reef construction project is ongoing in the York River.

Accomplishment: The Virginia Coastal Program's long-term investment in supporting eelgrass, bay scallops, and oyster restoration through research and on-the-ground projects has been very successful and resulted in an increase of over 10,000 acres of eelgrass on the Atlantic Ocean seaside, an increasing bay scallop population, and construction of new oyster reefs in the Chesapeake Bay.

Value of Land Conservation: A major obstacle to protecting areas of high ecological value while managing rapid development is the perceived conflict between the conservation of lands and loss of local property tax revenue. The coastal program contracted with George Mason University and Urban Analytics to conduct an economic analysis of land conservation in Accomack and Northampton Counties. The study, *Socio-Economic Impacts of Conserved Land on Virginia's Eastern Shore (2017)* (tinyurl.com/2wxs8urs), found that land conservation, aquaculture, and ecotourism contributed \$150 million to the gross regional product and that the economic activity associated with conservation properties was greater than the cost of the public services provided.

In 2018, as part of a Chickahominy Watershed Collaborative effort, the coastal program contracted with George Mason University to conduct an economic study of the Lower Chickahominy River watershed. The coastal program sought to evaluate how conserving land in the watershed would affect expenditures by the local governments (Charles City County, James City County, and New Kent County) in the region and to find ways to leverage the natural resources of the watershed to promote sustainable economic growth. The study found that economic activity associated with businesses that directly benefit from the environmental gains of land conservation totaled more than \$8 million in 2018, which boosted gross regional product in the three-county area by about \$4.4 million and supported over 100 jobs. The revenues from the economic activity associated with conservation properties exceeded the cost of the public services provided. At a 2020 Tribal-Local Government Workshop, all three counties and the three tribes, having reviewed the report, expressed interest in working together to promote land conservation and ecotourism in the region.

The coastal program's support of economic studies has informed communities and led to increased support for habitat conservation. The NOAA Office for Coastal Management encourages the coastal program to consider opportunities for funding future economic studies on key coastal management issues.

Chickahominy Watershed Collaborative: When the Lower Chickahominy watershed was identified as an ecologically significant watershed through Coastal VEVA, the coastal program initiated a five-year planning effort (2016-2021) to further protect habitat and support economic opportunity in the region. The coastal program brought together local and state agencies and other stakeholders. An ecological inventory was conducted and two economic studies were done, one looking at the contribution of preserved lands to the economy and another looking at opportunities for economic growth and business development that aligned with the area's pristine habitat.

Partners then conducted extensive community engagement. Year four focused on engaging with the three county governments and three federally recognized tribes active in the watershed. In year five, the collaboration among the three county governments, two planning district commissions, and three federal tribes was formalized through a memorandum of understanding (MOU), the first MOU in Virginia, perhaps the east coast, between tribal nations and local governments. The collaborative represents a long-term commitment to identify, establish, and implement an overarching vision for land use, land conservation, and economic priorities that support natural resource conservation. A five-year plan with recommendations for next steps was also developed (tinyurl.com/bdd59ybz), and the planning district continues to use coastal program funding to support the collaborative. The planning districts are able to support this effort through their annual technical assistance grants from the coastal program.

Accomplishment: The Virginia Coastal Program helped bring together three county governments, two planning district commissions, and three federally recognized tribes to sign the first memorandum of understanding in Virginia between tribal nations and local governments committing the parties to identify, establish, and implement an overarching vision for land use, land conservation, and economic priorities that support natural resource conservation.

Plant Virginia Natives Initiative: The coastal program has continued to build on its effort to encourage the use of native plants to protect water quality and quantity, increase carbon dioxide absorption, enhance wildlife habitat including for neotropical birds, and improve aesthetics and quality of life. In spring 2009, the coastal program and partners launched the first regional native plant marketing campaign on the Eastern Shore based on a community-based social marketing approach.

The coastal program continues to collaborate with many partners to implement six regional native plant campaigns in the coastal zone. The campaigns address the identified barriers: a lack of public and provider knowledge of what plants are native to Virginia; a lack of readily available native plants in the trade; and inconsistencies or a lack of point-of-sale information at local garden centers that stock natives. The coastal program continues to distribute regional native plant guides, and they are available online. The coastal program's efforts have generated interest in other areas of the state, and four campaigns outside Virginia's coastal zone have been developed.

The coastal program's investment has led to the engagement of 150 partner organizations. All the campaigns are linked through the use of shared campaign techniques and materials. The website Plant Virginia Natives (www.PlantVirginiaNatives.org), which is designed and administered by the coastal program, is continuing to grow in popularity with 56 percent site growth year-to-year since 2017.

Accomplishment: The Virginia Coastal Program continues to successfully grow its Plant Virginia Natives Initiative throughout the state, and the increased use of native plants in landscaping is providing additional habitat for native species and migrating neotropical birds.

Living Shorelines and Shoreline Management: The coastal program's support of living shorelines, particularly through the support of research demonstrating their effectiveness, has led to new legislative and state-wide changes. The coastal program funded a feasibility study that looked at the impacts of providing property tax breaks for living shorelines. In 2016, to encourage the use of living shorelines, the general assembly authorized local governments to tax living shorelines separately for local tax purposes. The state also made it easier to obtain funding by adding living shorelines to the list of activities eligible for Virginia Revolving Loan Funds, and the Virginia Conservation Assistance Program was established, which can provide up to a 75 percent cost-share for eligible living shoreline projects in Chesapeake Bay.

The coastal program provided funding to the Middle Peninsula Planning District to conduct a study looking at barriers and opportunities for the beneficial reuse of dredged material. The report led to the passage of bills, in 2018, that assist localities in using dredged material to advance resilience-building initiatives such as the construction of living shorelines or the enhancement of wetlands and beaches. In 2020, the state passed legislation which elevated living shorelines from the preferred alternative to the default option for shoreline management unless applicants could show that a living shoreline would not work.

The legislature also passed a statutory change to the Chesapeake Bay Preservation Act, adding "coastal resilience and adaptation to sea-level rise and climate change" to the performance criteria applied in the program. The legislation also included language to provide for an expedited regulatory process to incorporate changes into the regulations. The coastal program helped facilitate the required revision of regulations and development of guidance on how to implement the regulations.

The coastal program also supports the development of local shoreline management plans that describe best management practices that can be applied to shorelines and shoreline protection plans, and that look at a specific shoreline, its erosion risks, and the preferred recommendations for shore protection. The coastal program is currently funding the Middle Peninsula Planning District Commission in the development of a new methodology for the next generation of integrated shoreline plans. A pilot project is focused on high energy regimes.

The coastal program also funded the Virginia Institute of Marine Science to make the Shoreline Management Handbook on laws, regulations, enforcement, and hearings

(tinyurl.com/mtw29hwz) digitally available. Staff at the center stated they often receive positive feedback on the handbook.

The coastal program provides support to the Virginia Marine Resources Commission and local governments to implement the state's Coastal Primary Sand Dunes and Beaches Act. The coastal program funded a research project to locate, classify, and count dunes and dune fields within the state. The study developed dune inventories for localities and detailed morphologic and shoreline change at sites. The results of the study led to a change in the Code of Virginia that significantly expands protection of these valuable resources to all coastal localities.

Recommendation: The NOAA Office for Coastal Management encourages the Virginia Coastal Program to (a) continue to support coastal planning district commissions and communities in their efforts to build resilience and take advantage of new federal funding; and (b) look for opportunities to support expanding successful regional initiatives statewide such as Fight the Flood and First Floor Elevations.

Recommendation: The NOAA Office for Coastal Management encourages the Virginia Coastal Program to develop a social marketing campaign to support living shorelines.

The coastal program's partners also identified additional opportunities for building resilience, including:

- Support research aimed at identifying techniques to protect high salt marsh habitats
- Support beach and dune restoration and protection
 - Through the establishment of a comprehensive dune and beach monitoring program
 - Research to determine what actions are needed to protect beaches and dunes
 - Development and adoption of mitigation guidelines for dune and beach impacts

Evaluation Metrics

Beginning in 2012, state coastal management programs began tracking their success in addressing three evaluation metrics specific to their programs. The evaluation metrics include a five-year target and provide a quantitative reference for each program about how well it is meeting the goals and objectives it has identified as important to the program. In 2018, coastal programs began a new five-year period and set targets specific to their programs for two performance measures from the existing Coastal Zone Management Performance Measurement System and the coastal hazards performance measure.

Evaluation Metrics: 2012-2017

Metric 1

Goal: Sustain and enhance healthy habitats (on the seaside of Virginia's Eastern Shore) that are resilient and support thriving coastal resources.

Objective: By October 2017, seed scallops that are hatchery reared and released on the seaside of Virginia’s Eastern Shore will increase.

Strategy: Historically, the bay scallop was a commercially harvested species on the seaside of Virginia’s Eastern Shore. Following dramatic declines in eelgrass on the seaside during the 1930s, bay scallops, which depend upon the grass beds as habitat for juveniles, went locally extinct. The Virginia Coastal Zone Management program has provided funding to increase eelgrass habitat on the seaside of Virginia’s Eastern Shore since 1999. Seagrass acreage is now at a level that could support a viable bay scallop population.

Therefore, to re-establish a self-sustaining bay scallop population, the Virginia Coastal Zone Management program provides funding for a restoration program that involves the hatchery production of bay scallops that will be deployed in cages within the eelgrass beds, where they will serve as spawning stock to re-populate the grass beds. The Seaside Habitat Restoration grants are designed to meet Executive Order 18 goals and ultimately establish not only a viable population of bay scallops but also a recreational fishery that will help support a vibrant ecotourism industry on Virginia’s Eastern Shore.

At level funding based on the 2012 budget, on average 40,000 adult scallops per year can be produced, deployed and maintained in the eelgrass beds, and an annual population census of the developing wild scallop population in the grass bed can be conducted. Reaching this target number is dependent upon environmental conditions (especially water temperature), primarily as they relate to rearing early juvenile scallops through the nursery phase.

Performance Measure: By October 2017, the number of seed scallops that are hatchery reared and released on the seaside of Virginia’s Eastern Shore using Coastal Zone Management Act federal and match funds.

Target: By October 2017, 200,000 seed scallops will be hatchery reared and released on the seaside of Virginia’s Eastern Shore using Coastal Zone Management Act federal and match funds.

Results:

Year 1 =	0 scallops released
Year 2 =	538,000 scallops released
Year 3 =	452,000 scallops released
Year 4 =	69,000 scallops released
Year 5 =	128,367 scallops released
Total:	1,187,367 released

Discussion: The coastal program’s success in increasing eelgrass and providing habitat for bay scallops, along with seeding and releasing bay scallops, has strengthened the scallop population in the Chesapeake Bay.

Metric 2

Goal: Sustain and enhance healthy habitats (on the seaside of Virginia’s Eastern Shore) that are resilient and support thriving coastal resources.

Objective: By October 2017, the acreage of eelgrass on the seaside of Virginia’s Eastern Shore will increase.

Strategy: Eelgrass is one of the most productive habitats in the Chesapeake Bay and seaside bays of Virginia’s Eastern Shore. During the early 1930s, eelgrass declined in the seaside bays due to a wasting disease and was completely eliminated by 1933. In 1997, several small natural patches were observed in South Bay on the seaside of Virginia’s Eastern Shore. Since 1999, through Virginia Coastal Zone Management grants to the Virginia Institute of Marine Science, eelgrass seeds have been broadcast into 350 acres in four seaside bays which have now spread naturally to over 4,370 acres in these same bays.

The Virginia Coastal Zone Management Program continues to provide funds to increase eelgrass acreage on the seaside of Virginia’s Eastern Shore through seeding areas in these bays. This ensures that this important habitat is restored and continues to thrive to support the many species that depend on it. With an increase in healthy eelgrass beds, habitat and resources for bay scallops, finfish, sea turtles, and avian species can be supported. Reaching the proposed target in this metric is dependent upon favorable environmental conditions. If certain unfavorable conditions occur, especially storm events, the amount of seeds recovered from the eelgrass beds and thus broadcast out into the seaside bays could be negatively impacted.

Performance Measure: By October 2017, the total number of acres seeded/planted with eelgrass on the seaside of Virginia’s Eastern Shore using Coastal Zone Management Act federal and match funds.

Target: By October 2017, 150 acres of eelgrass seeded/planted on the seaside of Virginia’s Eastern Shore using Coastal Zone Management Act federal and match funds.

Results:

- Year 1 = 45 acres
- Year 2 = 40 acres
- Year 3 = 15 acres
- Year 4 = 42 acres
- Year 5 = 11 acres

Total: 153 acres

Discussion: With the coastal zone management program’s support, researchers have – planted 153 acres with eelgrass seed in order to increase the habitat and resources for bay scallops, finfish, sea turtles, and avian species. The coastal program exceeded its target of 150 acres being seeded/planted.

Metric 3

Goal: Living shoreline practices are adopted where feasible in all shoreline erosion-control and related development projects, expanding and enhancing viable natural shoreline habitats for coastal species, and affording protection to shorefront landowners and businesses.

Objective: Virginia’s coastal counties and cities will develop new local shoreline management plans as a result of assistance from the Virginia Coastal Zone Management Program.

Strategy: Some shoreline erosion control practices currently used can negatively affect the habitat and water quality protection functions of natural shorelines. “Living shoreline” techniques are appropriate in many of these cases, and can maintain or increase these natural shoreline functions. Recent state legislation requires coastal localities to adopt shoreline management plans as a component of their comprehensive plan. The shoreline plan must recognize living shorelines as the preferred erosion control alternative and map areas suitable for their use. The Virginia Coastal Program provides funding to the Virginia Institute of Marine Science to help develop draft local plans to help meet this requirement. The plans are designed to protect shoreline habitats, minimize nutrient runoff from uplands, protect properties from coastal erosion, and help encourage appropriate shoreline management techniques. Once the draft plans are developed by the Virginia Institute of Marine Science, they are submitted to the local planning commission for consideration under the locality’s required 5-year comprehensive plan update. If approved by the planning commission (a process which the Virginia Coastal Program cannot control), the comprehensive plan is then submitted to the local county board of supervisors (or city council) for final consideration and eventual adoption (again, a political action that the coastal program cannot undertake or control).

Performance Measure: By 2017, the number of local shoreline management plans developed and submitted to local planning commissions for consideration.

Target: By 2017, 7 local shoreline management plans developed and submitted to local planning commissions for consideration.

Results:

- Year 1 = 2 shoreline management plans
- Year 2 = 2 shoreline management plans
- Year 3 = 2 shoreline management plans
- Year 4 = 2 shoreline management plans
- Year 5 = 2 shoreline management plans

Total: 10 shoreline management plans

Discussion: The coastal program exceeded its target and helped 10 communities develop shoreline management plans to protect habitat and water quality and protect against erosion.

Evaluation Metrics: 2018-2023

Metric 1: Government Coordination and Decision-Making

Goal: Support information sharing on coastal management issues among regional and local governments.

Objective: By October 2023, increase information sharing through training events on current coastal management issues.

Strategy: Sharing information on coastal management issues is a key component of the technical assistance efforts of coastal planning district commissions. This may include sharing information among local governments within a planning district commission, among commissions, and/or between local governments and state or federal agencies. The eight coastal planning district commissions will, at a minimum, host quarterly meetings of local

government representatives directly involved in the management of coastal resources during a grant year. These quarterly meetings often provide an excellent opportunity for local government representatives to receive training on all training topics included in the Coastal Zone Management Act Performance Measurement System. Specifically, these topics are: government coordination, public access, coastal habitat, coastal hazards, and coastal-dependent uses. There are 8 planning district commissions with 4 events per year. We plan to offer training at each of these events over the course of five years. Training events may also be conducted as workshops separate from quarterly meetings. State agency staff, planning district commission staff, and academic or other experts involved in the selected training topic are requested to present pertinent information.

Performance Measure: Between 2018 and 2023, the number of training events offered by the coastal zone management program related to all training topics included in the Coastal Zone Management Act Performance Measurement System (Metric 4a, 7a, 10a, 12a, 15a)

Target: Between 2018 and 2023, 300 training events on all training topics included in the Coastal Zone Management Act Performance Measurement System will be offered by the coastal program.

Results:

- Year 1 = 79 training events
- Year 2 = 67 training events
- Year 3 = 67 training events
- Year 4 = 58 training events

Total to date: 271 training events

Discussion: The coastal program is on track to meet its five-year target. The coastal program provides training across the gamut of coastal management issues and is particularly strong in providing training centered on coastal habitats and coastal hazards.

Metric 2: Public Access

Goal: Protect coastal lands (wetlands beach and upland) of outstanding or very high ecological value.

Objective: By 2023, increase protected coastal lands through recordation of fee simple or other interests in land of outstanding or very high ecological value. This objective is drawn from the Southern Tip Partnership’s memorandum of understanding on land acquisition for the Eastern Shore and the new Lower Chickahominy Partnership. Acquisition efforts are targeted on lands of “Outstanding” (mapped in purple) or “Very High” (mapped in dark blue) ecological value according to the Coastal Virginia Ecological Value Assessment available at www.coastalgems.org.

Strategy: *Eastern Shore:* In the mid-1990s, the Virginia Coastal Zone Management Program, the Nature Conservancy, the US Fish & Wildlife Service, Virginia’s Departments of Conservation and Recreation and Game and Inland Fisheries (now Department of Wildlife Resources), Ducks Unlimited, and the Eastern Shore Land Trust formed the “Southern Tip Partnership” to protect and restore migratory bird habitat on Virginia’s Eastern Shore. Through a memorandum of

understanding the parties agreed to pool resources to acquire high ecological value lands. Parcels were prioritized and targeted for acquisition. Together the partners have protected several thousand acres. The coastal program sets aside about \$200,000/year for land acquisition, most of which has been targeted to the Eastern Shore given its overwhelming ecological value as illustrated in the coastal-zone wide map above.

Lower Chickahominy: In 2016 the Virginia Coastal Zone Management Program sought to replicate some aspects of the Southern Tip Partnership in the lower Chickahominy bringing together the Richmond Regional and Hampton Roads Planning District Commissions, the Departments of Game and Inland Fisheries (now Department of Wildlife Resources) and Conservation and Recreation, the Nature Conservancy, the Chickahominy Tribe, the Counties of Charles City, New Kent and James City, the Capital Region Land Conservancy, and the Heritage Land Trust. A 3-year project was developed to promote sustainable economic development based on land conservation in this rural, high ecological value area. There is also very little public access to this unique environment, a short distance from the City of Richmond, making it an excellent target for land acquisition.

This performance measure includes Coastal Zone Management Act Performance Measurement System #8a tidal wetlands + #8c beach and dune + #8e nearshore habitat + 8g other types of habitat acres protected by acquisition or easement with assistance from Virginia Coastal Zone funding and staff.

Performance Measure: From 2018 to 2023, the number of acres of coastal habitat protected by acquisition or easement with assistance from coastal program funding and staff.

Target: From 2018 to 2023, 400 acres of coastal habitat protected by acquisition or easement with assistance from Virginia Coastal Program funding and staff.

Results:

- Year 1 = 105.58 acres protected by acquisition or easement
- Year 2 = 20.9 acres protected by acquisition or easement
- Year 3 = 0 acres protected by acquisition or easement
- Year 4 = 0 acres protected by acquisition or easement

Total to date: 126.48 acres protected by acquisition or easement

Discussion: Although the coastal program will not meet this target, the program has provided extensive mapping and technical assistance to support public access and protection of habitat and has positioned the state well to take advantage of upcoming federal funding. The program attempted to acquire lands for the Chickahominy Tribe but other funding sources became available and Section 306A funds were diverted to other purposes. The coastal program also contributes to restoration efforts in the coastal zone.

Metric 3: Coastal Hazards

Goal: Improve the resilience of Virginia’s Coastal Zone in the face of increased coastal flooding and other impacts of climate change

Objective: By 2023, increase coastal resiliency through state and local plans, policies, and projects for improved community resiliency and through the promotion of natural/nature-based features that help protect communities.

Strategy: The Virginia Coastal Zone Management Program will support initiatives to build both natural and community resilience to the impacts of climate change. Community resilience initiatives will include promoting local government participation in the Community Rating System of the National Flood Insurance Program, providing a new tool to determine first floor elevations of structures in floodplains, evaluating local resilience efforts, and supporting regional resilience-building planning efforts. Natural resilience initiatives will include promoting the use of living shorelines and other natural and nature-based features, promoting the beneficial use of dredged materials, and identifying and prioritizing habitat restoration projects to build natural resilience.

It is estimated that approximately 70 Virginia Coastal Zone Management Program-funded initiatives will be completed, including 2 state-level policies and plans, 18 local-level policies and plans, 20 state-level projects, and 30 local-level projects. This estimate is based on the number of initiatives funded through the coastal program during the first two years of the reporting period and extrapolated for the remaining three years. It is assumed that more than one initiative can be counted from a single grant. The total number of initiatives and their allotment by category could change based on the projects selected for funding in the last three years.

Performance Measure: Between 2018 and 2023, the number of a) state-level policies and plans; b) local-level policies and plans; c) projects completed at the state level; and d) projects completed at the local level to reduce future damage from coastal hazards with assistance from coastal program funding or staff.

Target: Between 2018 and 2023, a total of 70 a) state-level policies and plans; b) local-level policies and plans; c) projects completed at the state level; and d) projects completed at the local level to reduce future damage from coastal hazards will be completed with assistance from coastal program funding or staff.

Results:

- Year 1 = 37 state or local policies and plans or projects
- Year 2 = 34 state or local policies and plans or projects
- Year 3 = 33 state or local policies and plans or projects
- Year 4 = 23 state or local policies and plans or projects

Total to date: 127 state or local policies and plans or projects

Discussion: The coastal program met its target at the end of year two and continues to make great progress in building community and ecosystem resilience in the state. The coastal program’s efforts have also made a significant contribution to the national Coastal Zone Management Program target for this measure.

Conclusion

This evaluation concludes that the Virginia Coastal Zone Management Program is successfully implementing and enforcing its federally approved coastal management program, adhering to the terms of the federal financial assistance awards, and addressing coastal management needs identified in section 303(2)(A) through (K) of the Coastal Zone Management Act.

These evaluation findings contain four recommendations that must be considered before the next regularly scheduled program evaluation but that are not mandatory at this time. Recommendations that must be repeated in subsequent evaluations may be elevated to necessary actions.

This is a programmatic evaluation of the Virginia Coastal Zone Management Program, which may have implications regarding the state's financial assistance awards. However, it does not make any judgment about or replace any financial audits.

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