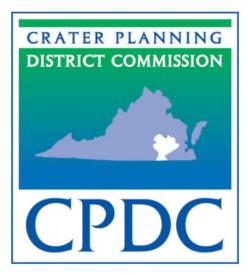
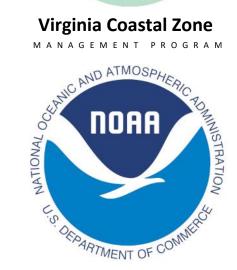
Crater Planning District Commission Technical Assistance Program FY23 Final Report





Virginia Coastal Zone MANAGEMENT PROGRAM





Virginia Coastal Zone Management Program

NOAA Grant: NA23NOS4190255

Grant Year 2023

Task 42

November 2024

Fiscal Year 2023 CZM Technical Assistance Annual Report

November 2024

NOAA Grant No. NA23NOS4190255

Grant Year 2023

Task 42

Prepared For:

Virginia Coastal Zone Management Program

Virginia Department of Environmental Quality

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Staff and Elected Officials from Crater PDC's 11 Member Localities – Charles City County, Chesterfield County, the City of Colonial Heights, Dinwiddie County, the City of Emporia, the City of Hopewell, Greensville County, the City of Petersburg, Prince George County, Surry County, and Sussex County

Regional Collaboration Partners & Consultants – Friends of the Lower Appomattox River, Wetlands Watch, the Resilience and Adaptation Feasibility Tool team, the Rappahannock River Basin Commission, other Coastal Planning District Commissions, speakers and experts from a variety of institutions, and with assistance from The Berkley Group

Cover: Photograph taken by John A. Rooney Jr. Used as part of the Department of Conservation and Recreation Scenic Rivers Program "Scenic Rivers 50th anniversary Gallery".

19.2 miles of the Appomattox River received Scenic River Designation by the General assembly originally in 1977 with the newest extension added in 2011. Paddlers are traveling downriver through a section that separates Petersburg Virginia on the right and Virginia State University, Chesterfield Virginia, on the left. The cement towers in the background are what remains of an old rail trestle. These pillars are in plans to use and construct a bike/pedestrian bridge to cross the Appomattox River as the southernmost portion of the Fall Line Trail connecting it to the Appomattox Regional Trail in Petersburg. The river provides spectacular views of the many water features, historic sites, and beautiful treelined riverside, highlighting the very things FOLAR seeks to preserve.





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Crater Planning District Commission Virginia Coastal Zone Management Program Technical Assistance Grant FY 23, Task 42 Final Report

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Introduction

For Crater Planning District Commission, the CZM Technical Assistance program has continued to be a source of opportunities to enhance communication regarding resiliency issues across the region and to implement planning and projects to address the Crater member localities' needs. One of the most important benefits of the CZM TA Grant has been the generation of discussion on the topic of resilience in rural communities in South Central Virginia. Whereas communities closer to the coast — especially those with more funding and resources — have challenges that involve wave energy, direct hurricane hits, coastal erosion, and sea level rise, the Crater region has concerns around hazard mitigation, energy, communications, flooding that impacts transportation, funding mechanisms, and even determining what "resilience" means to diverse rural, low-income communities. These issues often coincide with special concerns of environmental justice communities near tidally influenced waterways.

Although addressing coastal resilience in the region has always been a challenge due to several constraints, Crater PDC has sought to bolster its member communities against current and future climate threats through six (6) CZM products:

Product #1: Environmental Impact Review Comments

Product #2: Report on Coastal Meetings

Product #3: Coastal Trainings

Product #4: Friends of the Lower Appomattox River (FOLAR)

Product #5: Benefits Accrued from Prior CZM Grants

Product #6: Resilience Planning

- Regional Resiliency Coordination
- Regional Resiliency Priorities
- CZM Resilience Mapping & Data Tools
- State Resilience Planning Support

This report aims to detail the accomplishments that the CZM TA Grant has helped with since October 2023.

Product #1: Environmental Impact Review Comments

Crater Planning District Commission staff provided continuing support to the eleven local governments (7 counties and 4 cities) located in the south-central region of Virginia. Crater PDC staff provided assistance to its coastal communities with environmental impact reviews (EIRs) of local, state, and federal projects.

The objective of these reviews is to ensure that the goals of the Virginia Coastal Zone Management Program are adequately and fully considered and that the Crater Region provides a coordinated response.

During the 2023 CZM Program grant year Crater PDC reviewed several EIRs and comments for 4 projects were formally submitted. The projects were varied and included infrastructure improvements, military installation enhancements, and industrial development projects. In addition, environmental CZM and Chesapeake Bay funding programs were reviewed per the request of the Virginia Department of Environmental Quality.

A listing of coastal and coastal-related environmental impact reviews that assisted localities and partner entities of local, state and federal projects follows:

- The Middle Mile Expansion Project (Petersburg, Dinwiddie, Prince George) December 2023 (#23-182F)
- AdvanSix SUSTAIN Project (City of Hopewell) April 2024 (#24-054F)
- Fort Gregg-Adams Bailey Creek Enhancement Project (Prince George County) May 2024 (#24-069F)
- Fort Gregg-Adams Sustainment Gate Project (Prince George County) June 2024 (#24-076F)

Several additional EIR requests were thoroughly reviewed throughout the year but did not require formal comment letters, including:

- The Wrexham Townes Residential Development project
- The FERC TCO Wireline project
- Multiple Virginia State University campus projects with minor potential impacts
- Several Chesterfield County projects that had already undergone county staff review and approval

For a sample environmental impact review memo, see **Appendix 1**.

Product #2: Report on Coastal Meetings

Crater PDC staff coordinated ten (10) meetings of the Environmental Resources Management Task Force during FY23. Meetings were held on:

- October 25, 2023
- November 29, 2023
- January 24, 2024
- February 28, 2024
- April 24, 2024
- May 22, 2024
- July 2, 2024
- July 31, 2024
- August 28, 2024
- September 25, 2024

In addition to local government and Crater PDC staff, representatives from the following entities regularly attended meetings:

- Richmond Planning District Commission (PlanRVA)
- James River Soil & Water Conservation District (JRSWCD)
- Appomattox River Water Authority (ARWA)
- Virginia Department of Health (VDH)
- Virginia Department of Conservation and Recreation (DCR)
- Virginia Department of Environmental Quality (DEQ)
- Virginia Department of Forestry (DOF)
- Friends of the Lower Appomattox River (FOLAR)
- Duke University RESILE Center
- Wetlands Watch
- M.C. Dean
- Tri-Cities MPO
- Virginia Institute of Marine Science (VIMS)

Each meeting featured training sessions and stakeholder roundtables on environmental planning issues. Notable presentations included native plant requirements, EV infrastructure planning, the Coastal Resilience Master Plan Phase II, enhanced aquatic organism passage projects, and soil & water conservation district programs, among other discussions pertinent to resilience, water quality, coastal zone land uses, and other CZM topics.

Crater PDC staff are working with the City of Hopewell on incorporating environmental and resilience language into their Comprehensive Plan update. Additional comprehensive plan coordination has occurred through the RAFT implementation process with Petersburg and Hopewell, with discussions focusing particularly on green infrastructure language and other resilience measures.

Environmental Resource Management Task Force agendas and meeting minutes can be found on Crater PDC's website at https://craterpdc.org/our-works/environment/environment-meeting-resources.

Product #3: CZM Trainings

Crater PDC hosted five significant CZM trainings through ERMTF meetings:

1. **October 25th, 2023** (49 participants): Planning for Native Plants -- Luke Peters, Kate Jones (Berkley Group) & Elise Neuschler (FOLAR)

The presenters provided comprehensive training on native plant planning and implementation, exploring both ecological and regulatory aspects. Using examples like Nags Head's town tree ordinance, they demonstrated how political support can translate into enforceable code. The ecological importance was emphasized through comparisons of native versus non-native species support for local wildlife - for instance, native oak species supporting 500 caterpillar species compared to just 5 for non-natives. FOLAR shared practical experience with their native plant garden installations at trail heads and ongoing invasive species cataloguing efforts. The discussion explored specific implementation challenges, including the need for fines to ensure enforcement and strategies for working with developers on buffer plantings. The training concluded with examination of successful case studies, including James City County's specific landscape ordinance requiring native street trees and replacement trees for timbering.

2. **January 24th, 2024** (49 participants): Climate Resilience and Financial Risk -- Will Ferris (Duke University RESILE) & Lucas Manweiler (DEQ)

Dr. Ferris presented research on climate resilience challenges and emerging financial solutions, focusing on the intersection of economic and environmental resilience. The presentation explored how current insurance and regulatory frameworks often create barriers to effective climate adaptation - citing North Carolina's law preventing insurance companies from factoring sea level rise into home insurance estimates as an example of problematic policy. The training detailed innovative financial products being developed with input from over 30 major banks and insurance companies. A key focus was community-based catastrophe insurance and methods to address the "free-rider problem" in resilience investments. Lucas Manweiler supplemented this with detailed information on BIL funding opportunities, highlighting how localities can access \$2-4 million competitive grants for shovel-ready projects. The session concluded with extensive discussion of strategies for developing mutual benefit between financial institutions and localities through resilience investments.

3. **April 24th, 2024** (18 participants): EV Infrastructure Planning -- Luke Peters, Kate Jones (Berkley Group) & Kris Torisky (M.C. Dean)

This comprehensive training covered both technical and planning aspects of EV charging infrastructure. The session examined three main charging types - Level 1 (residential), Level 2 (workplace/longer-term parking), and DC Fast Charging (corridor/quick charge) - and their appropriate applications. Kris Torisky detailed M.C. Dean's innovative modular installation approach that minimizes disruption to existing infrastructure, particularly valuable for retrofitting parking lots. The presenters explored utility coordination challenges, including the process of working with Dominion Energy on electrical capacity upgrades and rate structures. The training emphasized the importance of future-proofing installations and ensuring ADA compliance. Local government considerations were extensively covered, including zoning requirements, design standards, and

strategies for incentivizing charging infrastructure in new development. The discussion concluded with exploration of ownership models and public funding opportunities to fill implementation gaps.

4. May 22nd, 2024 (25 participants): Coastal Resilience Master Plan Phase II -- DCR Staff & Consultants

DCR staff and consultants from Launch! Consulting and Stantec provided detailed training on the CRMP Phase II update. The presentation demonstrated new state-of-the-art models projecting flood depths across five scenarios (current, 2 near-term, 2 far-future). The training included hands-on demonstration of new web-based tools including the project inventory, flood risk explorer, and public-facing Flood Risk Awareness Map. Local representatives shared specific challenges, with Petersburg describing their aged stormwater infrastructure struggles with extreme rainfall events and recent successful CFPF grant application for citywide drainage study. Hopewell detailed issues with open ditches and culverts in older residential areas, while FOLAR contributed perspective on flooding impacts to the Appomattox River Trail. The session concluded with discussion of implementation tools including the Resilience Project Inventory, Flood Story crowdsourcing app, and future rainfall modeling capabilities.

5. **July 31st, 2024** (19 participants): Enhanced Aquatic Organism Passage Project Case Study -- Erin Reilly (VIMS)

Erin Reilly presented a detailed case study of a successful fish passage project in Prince George County, walking participants through every stage from conception to completion. The training detailed the complex partnership development between James River Association, USFWS, VDOT, Dominion, Prince George County, and VIMS. Particular attention was paid to navigating jurisdictional challenges between local VDOT maintenance division and the bridge division, ultimately leading to innovative solutions. The presentation covered technical aspects including environmental DNA sampling for river herring and shad, and the discovery and subsequent protection of freshwater mussels during construction. Tools and resources were extensively covered, including detailed explanation of the North Atlantic Aquatic Connectivity Collaborative (NAACC) assessment process. The session concluded with discussion of specific opportunities in the region, including a problematic culvert on Baxter Road in Prince George that has caused flooding issues. The training demonstrated how environmental enhancement projects can lead to broader positive outcomes, as this project helped inform Prince George County's approach to managing environmental impacts from solar facility development.

Training meeting agendas are reproduced in **Appendix 2**, and can also be found on the Crater PDC website at https://craterpdc.org/our-works/environment/environment-meeting-resources.

Product #4: Friends of the Lower Appomattox River

Crater PDC continued evolving its partnership with Friends of the Lower Appomattox River (FOLAR) throughout the 2023 grant year. FOLAR maintains its mission to "work in partnership with communities to conserve and protect the Appomattox River for all to enjoy" through several key strategies:

- Developing the Appomattox River Regional Greenway/Blueway Corridor, including the ongoing build-out of the 20+ mile Appomattox River Trail (ART)
- **Protecting water quality and promoting land conservation** through organized cleanup campaigns and habitat management
- Promoting economic development and public health through recreation and tourism programs
- Expanding environmental education and stewardship through community programs and partnerships

A significant transition occurred in FY23 as FOLAR prepared to move from their long-time location in Crater PDC's basement to a new office space on Market Street in Petersburg. This physical transition reflects FOLAR's growth and increasing organizational capacity, while also necessitating evolution in how Crater PDC provides support.

Throughout FY23, FOLAR maintained active participation in Environmental Resource Management Task Force meetings, contributing expertise across multiple initiatives:

- Co-presenting at the October 2023 ERMTF training session on native plant implementation;
- Participating in discussions on solar development impacts and environmental protection;
- Contributing to regional resilience planning through their perspective on trail flooding and habitat management;
- Developing a comprehensive Invasive Species Management Plan for the Appomattox River Trail;
 and
- Advancing discussions about regional greenway connectivity and ecological corridor preservation.

To support enhancement of the Appomattox Blueway Trail, Crater PDC staff helped develop the format and content of Blueway signage undertook direct field research by conducting river reconnaissance via canoe. Potential signage locations were mapped, with considerations for:

- Necessity of signage at critical river junctures;
- Visibility and accessibility from water;
- Environmental impact of installation;
- Integration with existing trail infrastructure;
- Regulatory compliance requirements; and

 Long-term maintenance considerations.

The project is ongoing but has advanced to finalizing signage specifications, including design, installation methods, materials selection, documentation, and impending implementation.

The partnership between Crater PDC and FOLAR will continue to evolve through FY24 from basic organizational support to strategic partnership on specific initiatives, including collaborating with localities on developing the Blueway, the Appomattox River Trail, and connections to other underconstruction and proposed trails such as the Fall Line Trail, technical well as as collaboration and partnerships on native tree plantings and invasive species removal.

Photos of the Appomattox River Blueway and critical

locations for Blueway signage can be found in Appendix 3.

Product #5: Benefits Accrued from Prior CZM Grants

The Crater PDC Region has benefitted substantially from Coastal Zone Management TA Grant funds in both tangible and intangible ways. The Environmental Resources Management Task Force (ERMTF) has evolved from occasional meetings into a robust monthly forum that consistently draws 15-30 participants from local governments, state agencies, and regional organizations. This growth has enabled cross-jurisdictional problem-solving on issues like utility-scale solar development impacts, planning for EV charging stations, flood mitigation, native plant ordinances, and resilience issues impacting the region. The ERMTF's success and growth of the environmental wing of the PDC's planning and coordination efforts through CZM led directly to Crater PDC creating a dedicated environmental planning position in 2024, strengthening the region's capacity to address coastal and environmental challenges.

The ERMTF's training programs have equipped localities to tackle emerging challenges, with notable outcomes including Petersburg's successful acquisition of \$5.4 million in Community Flood Preparedness Fund grants for stormwater improvements in vulnerable neighborhoods. Colonial Heights initiated development of a Community Rating System program following ERMTF flood management training, while Hopewell secured funding for a comprehensive tree canopy study after participating in urban forestry sessions. The Task Force's focus on detailed technical topics - from Chesapeake Bay Preservation Act updates to RAFT implementation strategies - has helped traditionally resource-constrained rural communities develop more sophisticated environmental planning approaches.

A signature historical achievement of Crater's CZM program has been its role in helping transform the Friends of the Lower Appomattox River (FOLAR) from a fledgling group into a professional organization with dedicated office space and full-time staff. FOLAR now conducts regular water quality monitoring, coordinates extensive volunteer cleanups, and has completed multiple segments of the Appomattox River Trail guided by their CZM-supported Master Plan. The organization's growth enabled them to secure independent grant funding, including a recent award to develop an Invasive Species Management Plan for riverside public lands. Crater PDC provided GIS and technical support for FOLAR's trail mapping initiatives, including the widely-used Appomattox River Trail Guide as well as new efforts to bolster public access to the Appomattox River Blueway.

The PDC's CZM program has also catalyzed expansion of the Albemarle-Chowan Basin Watershed Roundtable, securing DEQ funding to relaunch this important forum as the Southern Rivers Roundtable. This initiative extends coastal management principles beyond the Chesapeake Bay watershed to other coastal areas in Virginia and beyond, promoting holistic watershed management across the entire region. The partnership with the Albemarle-Pamlico National Estuary Partnership particularly strengthens cross-state collaboration on water quality and coastal habitat protection.

Through CZM funding, Crater PDC has also developed mapping capabilities that serve multiple coastal management purposes, assessed grant opportunities for localities, analyzed regional patterns in flood vulnerability, and supported CZM goals in localities' long-range planning efforts. Capacity and resilience knowledge has also fomented Crater PDC's own CFPF application to create a region-wide Resilience Plan that will set the groundwork for coastal and flood resilience for the future. Crater has helped localities to understand their data gaps and needs, and to collaborate on standards for environmental practices in areas from septic tank pumpout program management to stormwater management.

Localities increasingly incorporate resilience considerations into their comprehensive plans, coordinate on watershed protection, and pursue innovative projects like Petersburg's Washington Street green infrastructure initiative. However, the most profound benefit has been the development of a collaborative regional framework for addressing complex environmental challenges that span jurisdictional boundaries, resulting in greater environmental institutional knowledge and human capital that will impact coastal resilience in the region for the next generation.

Product #6: Resilience Planning

Regional Resiliency Coordination

Crater PDC sustained and expanded the Environmental Resources Management Task Force (ERMTF) as the primary venue for regional resilience coordination. The group maintained 15-30 attendees per meeting, bringing together environmental, transportation, public works, emergency management, and planning staff from member localities. External participation grew to include Duke University's RESILE center, James River Soil & Water Conservation District, Virginia Institute of Marine Science (VIMS), and expanded representation from DEQ, DCR, and regional nonprofits, thanks to ongoing efforts to reach out to localities and other partners to encourage multidisciplinary and interdepartmental cooperation.

Monthly meetings featured substantive trainings and discussions addressing emerging resilience challenges: in April 2024, experts from M.C. Dean and Berkley Group detailed the technical and planning considerations for electric vehicle infrastructure deployment, including load management, site selection criteria, and local policy frameworks to support charging networks. The Duke RESILE center presented research on novel financial products and risk assessment approaches for climate resilience, particularly focused on helping smaller communities access novel forms of funding and disaster insurance. VIMS and partners shared lessons from an aquatic organism passage enhancement project in Prince George County that demonstrated effective multi-stakeholder collaboration and illustrated the cradle-to-grave challenges of implementing enhanced AOPs. DCR's Coastal Resilience Master Plan Phase II team engaged with localities to document flooding vulnerabilities and potential adaptation strategies and ensure voices from the Crater region are incorporated into state planning efforts.

Throughout the region, localities advanced various resilience initiatives while facing shared challenges around aging infrastructure and increasing precipitation intensity. Petersburg's comprehensive drainage study, supported by CFPF funding spurred by ERMTF conversations, began documenting stormwater system conditions and modeling priority watersheds - work that could inform similar assessments regionwide. Hopewell is currently integrating resilience considerations into their Comprehensive Plan update process and explored Environmental Justice grant opportunities through EPA. Colonial Heights evaluated participation in FEMA's Community Rating System program to enhance flood management. Prince George County identified opportunities to expand living shoreline projects and improve public waterfront access.

The ERMTF provided a forum for localities to discuss critical data gaps impacting resilience planning, revisiting the comprehensive effort to assess what data gaps localities face and what data they are interested in. Through facilitated discussions, participants identified needs around stormwater infrastructure mapping, culvert assessments, tree canopy coverage, Resource Protection Area boundaries, and monitoring locations. This helped shape conversations about Crater PDC's potential role as a regional data hub and coordinator of shared technical resources.

Grant coordination remained a major focus given unprecedented federal and state funding availability; Crater PDC regularly briefed localities on opportunities through Infrastructure Investment and Jobs Act (IIJA), Inflation Reduction Act (IRA), Virginia Community Flood Preparedness Fund (CFPF), EPA Environmental Justice programs, Virginia Department of Forestry initiatives, and various FEMA/BRIC

funding streams, among others. While capacity constraints continue to limit some localities' ability to pursue complex, resource-intensive applications (and afterwards grant administration), Crater PDC supported regional approaches where possible. Crater PDC itself successfully applied for funding for a Regional Resilience Plan through CFPF that will enable member localities to access project funding, and successfully pursued re-establishment of the Southern Rivers Roundtable (formerly Albemarle-Chowan Watershed Roundtable) with DEQ and Albemarle-Pamlico National Estuary Program support.

Based on stakeholder feedback, the ERMTF will evolve in FY24 to become the "Crater Region Environmental Stewardship Team (CREST)," meeting quarterly with enhanced in-person networking opportunities while maintaining its core mission of coordinating holistic approaches to regional resilience challenges.

Regional Resiliency Priorities

CPDC continues to work with stakeholders to identify regional resiliency needs, such as data gaps, local capacity, critical environmental issues and opportunities, etc. and to establish regional resilience priorities. The needs and priorities were discussed at monthly ERMTF meetings.

In FY20, Crater PDC staff with locality and stakeholder input derived a unique definition of resilience for the region based off of the Commonwealth's definition:

"In Crater PDC, resilience is the capability to *rebound* from *multi-hazard threats* with minimum negative impact on the *community*.

Rebounding includes: anticipating, preparing, responding, adjusting, and/or recovering from change.

<u>Multi-hazard threats</u> include: chronic or acute, natural or man-made hazards, including more frequent and intense storms and droughts and increased water levels in our tidal areas.

<u>Community</u> includes: the social well-being and health of people and the economy within the built and natural environment."

This definition was presented in order to workshop novel or underrepresented resilience issues in the region and generate new foci for future planning efforts. Since FY20, a number of concerns have been catalogued and explored, including: ignored elements of rural stormwater systems such as drainage ditches, the impact of road construction on flooding, problems with existing roads, bridges, and culverts, severe storms, sedimentation and debris buildup behind dams, the potential impact of climate refugees moving northward and inland, and ALICE populations. In FY21, new resiliency topics included how to address environmental justice concerns, urban heat islands, air quality (especially connected with roadway intersections and how to abate this with strategic tree planting), endangered species protection, and climate concerns. FY22 attempted to address data gaps and create mapping analysis to help identify problem areas.

In FY23, Crater PDC continued refining its approach to regional resilience through targeted discussions and initiatives. A key development was securing CFPF funding for the Regional Resilience Plan, which will shift Crater's environmental programs from theoretical frameworks to actionable projects.

As with previous years, the ERMTF meetings highlighted several ongoing and emerging priorities. Aging infrastructure, particularly stormwater systems, presents urgent challenges in the Tri-Cities area. Petersburg's drainage study highlighted how annexed areas often brought substandard infrastructure that now requires significant investment. Similarly, Hopewell faces issues with open ditches and culverts that were never properly documented or maintained.

Water quality and flooding concerns manifested differently across the region. Prince George County identified problems with sediment accumulation behind dams and flooding along Woods Creek and Chippokes Creek - once-productive herring runs now impacted by beaver activity and failing septic systems. The situation is complicated by continued development pressure in these areas, especially as FEMA map revisions shift flood zone boundaries. Through discussions on AOPs through VIMS, it was also revealed that Prince George was experiencing some sediment control issues with an upstream solar facility, which ultimately led to strengthened ordinance requirements for erosion control and construction

phasing. Solar in particular, as statewide, is an emerging issue in the Crater region, unique resilience challenges (and opportunities).

Data management needs and how to collate data in a more sophisticated and useful way is an ongoing resilience discussion. Beyond basic asset inventories, localities identified a desire for tracking green infrastructure, monitoring water quality impacts, and documenting critical infrastructure vulnerabilities.

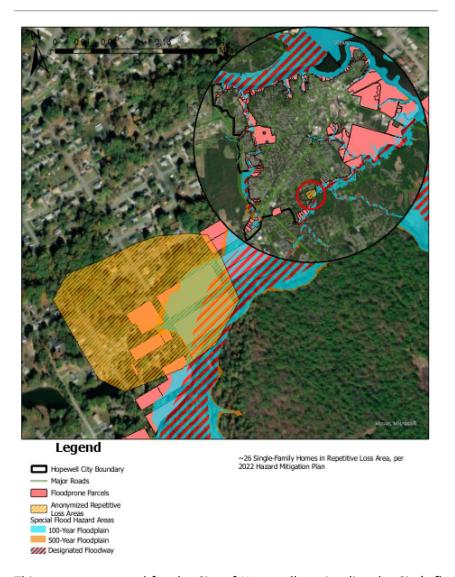
The implementation of RAFT recommendations in Petersburg and Hopewell provided practical insights into local resilience needs. These ranged from incorporating green infrastructure language into comprehensive plans to identifying opportunities for Chesapeake Bay Landscape Professional certification among staff.

The resilience priorities for localities are an ongoing and evolving discussion, with some immediate and obvious "reactionary" needs, such as stormwater management, while others are more nebulous and will require further regional coordination to identify the totality and causes of problems, such as climate change impacts, employment opportunities and economic development in a changing world, and utility-scale solar facilities and other large land uses such as nuclear, hydrogen, and data centers. Information and tools are being continuously developed to address these issues.

CZM Resilience Mapping & Data Tools

Mapping

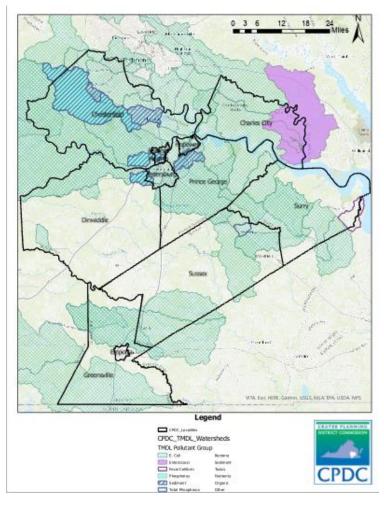
Crater PDC Staff completed a number of mapping products for both locality technical assistance purposes as well as regional planning. Geospatial data visualization informs Crater and local staff of potential projects in the region, as well as any challenges those projects may face throughout their development and implementation. Samples of these mapping products can be viewed below:



This map was created for the City of Hopewell to visualize the City's flood-prone parcels in the Special Flood Hazard Area, overlaid with an anonymized Repetitive Loss layer.



The above maps were created for the City of Petersburg to visualize urban heat effects (top) and the Special Flood Hazard Area along the East Washington Street Corridor. These maps were used to inform an application to the Infrastructure, Investment, and Jobs Act funds available through VA DEQ for BMP implementation and beautification along the 1.5mi corridor to improve stormwater management, reduce impervious surface area flooding, and mitigate the impacts of urban heat.



This map shows regional TMDL watersheds and their respective pollutant types to inform water quality improvements that can intersect with resilience initiatives.

Data Tools

The Coastal Resilience Master Plan Phase II update, launched in 2024, expanded coverage to include all 8 coastal PDCs and, in combination with the Virginia Flood Protection Master Plan, to address both rainfall-driven and tidal/storm surge flooding. During the May 22nd ERMTF meeting, DCR staff and consultants from Launch! Consulting and Stantec presented new decision support tools and flood models, gathering specific input from Petersburg, Hopewell, and Colonial Heights on stormwater infrastructure challenges.

Key locality projects discussed for potential database inclusion:

- Petersburg's citywide drainage study of Lieutenant Run and Brick House Run watersheds, funded through CFPF
- Hopewell's stormwater infrastructure assessment needs, particularly in older residential areas served by open ditches and culverts
- Colonial Heights' Swift Creek property acquisition for flood mitigation and Fall Line Trail development

 Prince George County's Woods Creek and Chippokes Creek flooding issues, complicated by beaver dams and septic system impacts

The September 25th ERMTF meeting focused on identifying data gaps that could strengthen future project submissions, including:

- Stormwater infrastructure mapping and condition assessments
- Critical infrastructure in floodplains
- Buildings within flood zones and Resource Protection Areas
- Water quality monitoring locations
- River cleanup data tracking
- Green infrastructure assets

The CRMP Phase II process will continue through December 2024, with opportunities for localities to test and provide feedback on draft tools and products. Crater PDC maintains ongoing coordination with DCR to ensure the region's resilience priorities are accurately represented in the evolving database structure. Projects in the current, revamped database have been edited to reflect project statuses in the Crater region, aided by Crater PDC staff's participation in the TAC committee and subcommittee meetings. In addition, Crater PDC staff worked with DCR to ensure completed and ongoing projects were included in the CRMP's resilience project database.

The current Coastal Resilience Master Plan has been published at: https://www.dcr.virginia.gov/crmp/plan, and the Web Explorer with dropdowns to access the projects PDC has submitted that Crater can be accessed at: https://experience.arcgis.com/experience/9d8af3aa5e18492a92b91131a26da58e/page/Projects-and-Initiatives/.

State Resilience Planning Support

Crater PDC participated in Coastal Resilience Technical Advisory Committee (TAC) meetings to discuss the ongoing Virginia Coastal Resilience Master Plan as well as other state- and region-wide CZM-related meetings. Outside of meetings hosted by state agencies and executive departments for the purposes of regional and state-wide resiliency efforts, Crater staff have also participated in the final Resilience and Adaptation Feasibility Tool (RAFT) meetings for the cities of Hopewell and Petersburg, as well as meetings of the Rappahannock River Basin Commission, which, while not encompassing Crater localities, have provided invaluable insight into land use issues affecting coastal communities, especially in regards to utility scale solar developments. Key state-level coordination activities included:

- Coastal Policy Team full meetings (January 30, July 11, September 30)
- CRMP TAC/ Project Prioritization Subcommittee meetings (December 15, February 15, March 13, June 18, August 7, September 18, October 8)
- Quarterly CZM meetings hosted by ANPDC (May 23) and hosted by Crater PDC (August 6)—See Appendix 5 for August 6 Agenda and Photos
- CRMP Phase II presentation and workshop (May 22)

The PDC continued close coordination with the RAFT Implementation Team in Petersburg and Hopewell to advance CZM and WIP goals in those localities. Monthly RAFT meetings were held throughout the reporting period, including:

- Petersburg: January 10 (in-person), February 29, March 21, May 30, June 20, July 25, August 15, September 23
- Hopewell: March 4, April 12

A notable achievement was securing Community Flood Preparedness Fund (CFPF) grant funding for:

- Multiple projects in Petersburg
- A regional resilience plan for Crater PDC that all member localities can adopt
- Future applications for planning efforts in Emporia and Hopewell

Staff also participated in Land Use Working Group and Rappahannock River Basin Commission meetings focused on resilience matters affecting Crater localities, particularly regarding utility-scale solar development impacts.

Crater PDC staff have also attended numerous webinars and other presentations with opportunities to participate, such as Wetlands Watch CRS workshops and the Lower Chickahominy Watershed Collaborative in order to stay abreast of grant opportunities and information regarding environmental policy and regulation updates. All information from these meetings is shared with locality environmental managers through email updates and monthly ERMTF meetings.

Appendix 1: Sample Environmental Impact Review Memo



MEMORANDUM

FROM: Luke Peters, Environmental Planner, The Berkley Group, on behalf of the Crater Planning District Commission

TO: Janine Howard, DEQ

RE: Environmental Impact Review Comments for the AdvanSix SUSTAIN Project (#24-054F)

DATE: April 30, 2024

Dear Ms. Howard,

On behalf of the Crater Planning District Commission (Crater PDC), I am writing to offer an Environmental Impact Review of the AdvanSix Sustainable United States Sulfate to Accelerate Increased Nutrition (SUSTAIN) Project. Specifically, Crater PDC would like to comment on the project's impact on the 10 goals of the Virginia Coastal Zone Management Program. In particular, the elements of the CZM goals relevant to this project are:

- To protect wetlands, riparian forested buffers, and endangered or threatened species;
- To protect coastal resources and habitats from excess nutrients, toxins, and sedimentation;
- To restore and maintain the quality of coastal waters for human and ecosystem health;
- To ensure sustainable development on coastal lands;
- To protect air quality; and
- To promote renewable energy production.

This project is sited on already heavily developed industrial land, and the project site improvements do not directly abut waterways or wetlands. According to the applicant, the improvements will have the net effect of reducing sediment and nutrients into the James River. Less is said about expected air pollutant increases – except to mention that the company has permits for different categories - but the project site is located away and downwind from most residences. While the project does not lie in the RPA or RMA, project sites are very close to waterways feeding into the James River, and due diligence should be taken to ensure sediment and stormwater BMPs are properly constructed and monitored. Beyond these standard regulatory procedures, Crater PDC has no additional comments.

Thank you for allowing Crater PDC to comment on this proposed action.

Luke Peters
The Berkley Group
luke.peters@bgllc.net

Monument Professional Building ● 1964 Wakefield Street ● Post Office Box 1808 ● Petersburg, VA 23805 Phone: (804) 861-1666 ● Fax: (804) 732-8972 ● info@craterpdc.org ● craterpdc.org

CPDC Environmental Resource Management Task Force Agenda

Wednesday, October 25, 2023, 1pm-3pm

Virtual Meeting:

https://us02web.zoom.us/j/81770694605?pwd=QnVORGRKd3dYc2swMnNXWWg3YkVIUT09

ID: 8177069 4605 Passcode: 650443 Dial in: (929) 205-6099 (New York); (301) 715-8592 (Washington DC)

- 1:00 Welcome & Introductions
- 1:05 Regional News and Updates Luke Peters, Berkley Group
 - · Grants, Data, Tools, and Information
- 1:15 Native Plants: Benefits, Barriers, and Implementation Panel TBA
 - Overview of ecosystem services
 - · Real-world financial costs of invasives and potential bottom line benefits of natives
 - Policy:
 - Options from least to most strict Comp Plans, ordinances, etc.
 - O Case studies and model ordinances Nags Head, NC and others
 - Barriers to implementation
- 2:00 CZM Survey and Thoughts for Next Year
- 2:15 Locality and Stakeholder Roundtable

Next Meeting: November 29th, 2023 1-3pm

Monument Professional Building ● 1964 Wakefield Street ● Post Office Box 1808 ● Petersburg, VA 23805 Phone: (804) 861-1666 ● Fax: (804) 732-8972 ● info@craterpdc.org ● craterpdc.org

CPDC Environmental Resource Management Task Force Agenda

Wednesday, January 24, 2024, 1pm-3pm

Virtual Meeting:

https://us02web.zoom.us/j/85210732955?pwd=cGt2WWJMRzhQbzI5aTh2STU0WHVRdz09 ID: 852 1073 2955 Passcode: 283415 Dial in: (929) 205-6099 (New York); (301) 715-8592 (Washington DC)

1:00 - Welcome & Introductions

1:05 - CZM Funding and Partnerships - Lucas Manweiler, DEQ

1:35 - RESILE Center for Climate Risk - Dr. Will Ferris PhD, Duke University

- Developing resilience for catastrophic yet uncertain risks
- Novel financing ideas and partnerships for addressing climate risk

2:20 - Regional News and Updates - Luke Peters, Berkley Group

- Grants, Data, Tools, and Information
- Native plant ordinances update
- Programming ahead for 2024: WIP and CZM topics

2:30 - Locality and Stakeholder Roundtable

Next Meeting February 28th, 2024, 1-3pm

Monument Professional Building ● 1964 Wakefield Street ● Post Office Box 1808 ● Petersburg, VA 23805 Phone: (804) 861-1666 ● Fax: (804) 732-8972 ● info@craterpdc.org ● craterpdc.org

CPDC Environmental Resource Management Task Force

Agenda

Wednesday, April 24th, 2024, 1pm-3pm

Virtual Meeting:

https://us02web.zoom.us/j/83639777197?pwd=T1lkNFo0TUhVbWlKRlljZmEzdXltQT09

ID: 836 3977 7197 Passcode: 455007 Dial in: (929) 205-6099 (New York); (301) 715-8592 (Washington DC)

1:00 - Welcome & Introductions

1:05 - Regional News and Updates - Luke Peters, Berkley Group

- Grants, Data, Tools, and Information
- CFPF Awards

1:20 - VDOF Grants and Programs (TBD)

1:35 - EV Infrastructure - Kates Jones, Luke Peters (Berkley Group), Special Guest (TBD)

- New funding opportunities
- Resilience impacts
- Zoning ordinance & policy considerations
- EV technology overview, installation methods, & unique land use concerns

2:30 - Locality and Stakeholder Roundtable

Next Meeting May 22nd, 2024, 1-3pm

Monument Professional Building ● 1964 Wakefield Street ● Post Office Box 1808 ● Petersburg, VA 23805 Phone: (804) 861-1666 ● Fax: (804) 732-8972 ● info@craterpdc.org ● craterpdc.org

CPDC Environmental Resource Management Task Force

Agenda

Wednesday, May 22nd, 2024, 1pm-3pm

Virtual Meeting:

https://us02web.zoom.us/j/83110710406?pwd=OEVubzVScG9ZRk8rR3FjTVBQWFptUT09

ID: 831 1071 0406 Passcode: 740262 Dial in: (929) 205-6099 (New York); (301) 715-8592 (Washington DC)

1:00 - Welcome & Introductions

1:05 - Regional News and Updates - Luke Peters, Berkley Group

- Grants, Data, Tools, and Information
- · Recap from last meeting
- WIP Beyond 2025 updates

1:20 - Virginia Coastal Resilience Master Plan Phase II - Carolyn Heaps-Pecaro, DCR

- CRMP Phase II current progress and findings
- Locality feedback and recommendations on format & content

2:10 - Locality and Stakeholder Roundtable

Next Meeting June 26th, 2024, 1-3pm

Monument Professional Building ● 1964 Wakefield Street ● Post Office Box 1808 ● Petersburg, VA 23805 Phone: (804) 861-1666 ● Fax: (804) 732-8972 ● info@craterpdc.org ● craterpdc.org

CPDC Environmental Resource Management Task Force

Agenda

Wednesday, July 31st, 2024, 1pm-3pm

Virtual Meeting:

https://us02web.zoom.us/j/85397872477?pwd=OubGySjRVbhX51lakej2AELyB92SQt.1

ID: 853 9787 2477 Passcode: 669733 Dial in: (929) 205-6099 (New York); (301) 715-8592 (Washington DC)

1:00 - Welcome & Introductions

1:05 - Regional News and Updates - Luke Peters, Berkley Group

Grants, Data, Tools, and Information

1:15 – Aquatic Organism Passages & Water Quality Improvement Initiatives – Erin Reilly, Virginia Institute of Marine Science; Others (TBA)

- Reflecting on project implementation steps and challenges from a successful project in Prince George County
- Current data, maps, and tools for fish passage and water quality improvements
- Upcoming grant opportunities and potential project partners
- Water quality improvement data and initiatives from VIMS

2:10 - Locality and Stakeholder Roundtable

• Other environmental topics for discussion

Next Meeting August 28th, 2024, 1-3pm

Appendix 3: Photos From Appomattox River Trail Blueway Outing

Additional Notes	
Lateral System	
US Aids to Navigation System	
On-Water Navigational Signage	On-Water Launch Identifier





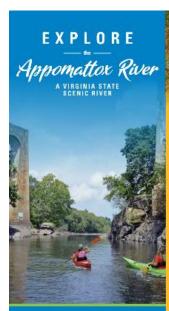
Additional Notes	
Lateral System	
US Aids to Navigation System	
On-Water Navigational Signage	Bridge Signage for Navigation



Additional Notes	
Lateral System	
US Aids to Navigation System	
On-Water Navigational Signage	Bridge Signage for Navigation



Appendix 4: Appomattox River Trail Guide Pamphlet



Over 20 miles of river from the dam at Lake Chesdin to the confluence with the James River in Hopewell

Appomattox River Trail • Points of Interest Boat Access • Parks

John J. Radcliffe Conservation Area & Appointment River Concell Knysk Launch
25/59 Chestin Read Chesteriesi County
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Appamatuck Park
157 Archiv Avenus, Coloniel Heights
This 14-acce park offers open space, over back fishing and a natural kayak/bance faunch.

Boating & Fishing River Information

River Level at Mateaca Gauge	Whitewater Paddler Skill Lev	
25 ft. to 3 9 ft. (= 400-1200 cfs)	Fasy to Moderate	
3 ft. to 9.5 ft. (~ 1200-2800 cfs)	Moderate to Difficult	
is ft. to 7 ft. (~ 2800-4800 cfs)	Bifficult to Extremely Difficu	
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Class IV Long rapids; waves powerful, irregular, dangerous maks, bailing addies; powerful and process menouvaring required.

Class V Long and violent rapids, following each other almost without interruption; riverhed extremely obstructed; big draps; sident Extremely contract, way steep gradient. Paddiars should have prior Class IV or before with awards experience with experienced guides Difficult.

White Bank Park
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two pions park loans which accommodates 20-305 copils such is
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Hopewell/Prince George Visitor Center 4100 Cavisson Boulevard, Hopewell The Hopewell Prince George Visitor Center offers one-stop shapping admids and set the attention, Indiging courses, maps, local attractions and relocation information.

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 Call 311

Whitewater Paddler Skill Level Classification

Class II | Bapids of low difficulty with passages clear Occasional maneuvering may be required.

Class III Waves numerous and high, irregular, can swamp open cance; Rapids with passages clear though narrow and fast, requiring Moderate experience in moneuvaring. Scouting is advisable for inexperienced parties.

This 30-error park with 34 mile of Approximation Beer stored in its open by appriment only. Conservation and historical interpretive focus on 1840s Structum home, Dol War footplat activities and niver inparise environments. History programs and events scheduled throughout the year.

Anchor Peint Marina

19 307 Review Religh Roud, Repland
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Do's & Don'ts OF BOATING AND HIKING

Boating Etiquette:

Trail and Park Etiquette:

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Other Services dining, shopping & lodgii

Petersburg Area
Regional Tourism
www.petersburgarea.org

Appoint Plantation & General Grant's Cabin

Appendix 5: Quarterly Coastal PDC Meeting & Appomattox River Trail Tour (8/2024)

Meeting Agenda:



Quarterly Coastal PDC Meeting Agenda

Location: 1964 Wakefield Street, Petersburg VA, 23805

Date: August 6th, 2024

Time: 10am-4pm

10am-10:15am: Arrival and Refreshments (coffee, tea, fruit, and donuts provided)

10:15am-10:30am: Welcome & Introductions

10:30am-11:30am: Proactive Planning for Resilience: Protocols for Community-Led Climate Adaptation in Virginia - Presentation & Discussion, Elizabeth Andrews, Skylar Brement, & Matt Docalovich

11:30pm-12:30pm: CZM Updates & Discussions

- Update on Sect. 309 overview and stakeholder engagement (Jeff)
 - CZM ask of the PDCs: to confirm that they can each host CZM at a local stakeholder meeting during the fall (e.g., grant funded quarterly meetings with local gov.)
- . BIL updates on both competitive and capacity projects (Lucas)
- Request for Virginia Coastal Resilience Master Plan Pluvial Model Student-led Case Studies (Will)

12:30pm-1:30pm: Lunch & PDC Roundtable Updates

1:30-2:30pm: Friends of the Lower Appomattox River Presentation & Discussion, Wendy Austin, Heather Barrar, & Elise Neuscheler

2:30-2:45pm: Travel to University Blvd Trailhead (parking at the Patton Park parking lot, 527 University Blvd)

2:45-4pm: Appomattox River Trail tour and demonstration

4pm: Adjourn







