

# THE RAFT

Resilience Adaptation Feasibility Tool

## Northumberland County

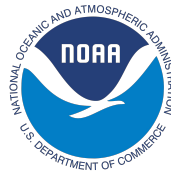
### Scorecard Opportunity List

#### The RAFT Goal

To help Virginia's coastal localities improve resilience to flooding and other coastal storm hazards while remaining economically and socially viable.



[raft.ien.virginia.edu](http://raft.ien.virginia.edu)



**INSTITUTE for  
ENGAGEMENT & NEGOTIATION**  
Shaping Our World Together



**WILLIAM & MARY  
LAW SCHOOL**  
VIRGINIA COASTAL  
POLICY CENTER



**OLD DOMINION  
UNIVERSITY**



**INSTITUTE FOR COASTAL  
ADAPTATION & RESILIENCE.**

# Acknowledgment of Funders

This RAFT product was created with funding from:

Jessie Ball duPont Fund

We are grateful to these funders for supporting various phases of The RAFT from 2015-Present.

Anonymous

Environmental Resilience Institute at the University of Virginia

National Fish and Wildlife Foundation

National Oceanic and Atmospheric Administration\*

School of Architecture at the University of Virginia

Virginia Coastal Zone Management Program\*

Virginia Environmental Endowment

Virginia Sea Grant Climate Adaptation and Resilience Program

For more information visit The RAFT website: [raft.ienvirginia.edu](http://raft.ienvirginia.edu)

This project, Task # 92.02, was funded in part by the Virginia Coastal Zone Management Program led by the Virginia Department of Environmental Quality through Grant # NA20NOS4190207 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

\* This RAFT product, Task # 92.03 was funded, in part, by the Virginia Coastal Zone Management Program led by the Virginia Department of Environmental Quality through Grant FY19 # NA19NOS4190163 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

The views expressed in The RAFT's various products are those of the authors and do not necessarily reflect the views of any of the funders mentioned above.

## Introduction

The RAFT is a “full-service tool” and collaborative, community-driven process designed to assist coastal localities in increasing their resilience. It has three key components:

- **The RAFT Scorecard** provides a comprehensive assessment of the locality’s resilience.
- **A Resilience Action Workshop** where participants review the assessment findings, identify achievable action items and create a one-year Resilience Action Checklist.
- **Implementation** in which the RAFT Core Team works with a Locality Implementation Team to achieve items identified on the Resilience Action Checklist.

The RAFT Scorecard Opportunity List is designed to be used alongside the RAFT Scorecard to identify opportunities for strengthening resilience. These opportunities can then be more easily identified for inclusion in the Colonial Beach Resilience Action Checklist. This Opportunity List compiles potential action items identified from three sources:

- **HMP** actions are from the Hazard Mitigation Project List from the Northern Neck Regional Hazard Mitigation Plan
- **Sector Calls** actions are from input collected during calls held between the RAFT Core Team and sector leaders from across the Northern Neck
- **RAFT** actions are from the Colonial Beach RAFT Scorecard

In this way, the Opportunity List incorporates actions for resilience which have previously been locally identified as priorities, in addition to outcomes from the RAFT Scorecard results. However, the Opportunity List is not an exhaustive inventory of all possible actions for resilience. Localities may choose to include items on their Resilience Action Checklist that do not appear in this document.

**This document is intended to serve as a personal resource. It will not be collected, nor shared by the RAFT Core Team.** The columns “Ease” and “Impact” are left blank for your use in ranking and prioritizing opportunities, which can occur during or prior to the Resilience Action Workshop. When conducting these rankings, we encourage you to consider these questions: “How difficult will it be to accomplish this action?” and “What level of impact will completing this action create for reducing my community’s vulnerability?” Actions ranked highly for “Ease” and/or “Impact” may indicate their suitability for inclusion on your locality’s Resilience Action Checklist.

*If you have questions regarding the content of this document, please contact Angela King, Assistant Director of the Virginia Coastal Policy Center at William & Mary at [amking02@wm.edu](mailto:amking02@wm.edu).*

## CROSS-CUTTING OPPORTUNITIES

SOURCE	ACTION ITEMS	TIME PERIOD	EASE Rank 0-10	IMPACT Rank 0-10
HMP	<b>Low priority.</b> Support mitigation projects that will result in the protection of public or private property from natural hazards. Eligible projects include but are not limited to 1. Acquisition of Flood prone property 2. Elevation of Flood prone structure 3. Minor structural flood control projects 4. Relocation of structures from hazard-prone areas 5. Retrofitting of the existing buildings, facilities, and infrastructure 6. Retrofitting of existing buildings and facilities for shelters 7. Critical infrastructure protection measures 8. Stormwater management improvements 9. Advanced warning systems and gauging systems (weather radios, reverse-911, stream gauges, I-flows) 10. Targeted hazard education 11. Wastewater and water supply system hardening and mitigation	5 years		
Sector Calls	Improve communication and information distribution systems regarding social service provision to the general public, especially vulnerable communities: (1) coordinate between department of social services (DSS) and community organizations, including churches, (2) actively update DSS websites and improve their connectivity with county websites, (3) explore a revamp of Northern Neck Connect or another centralized online portal model (4) use radio, newspapers, Facebook page, sheriff's website to share info, (5) establish an information line (i.e. 211/511) line to connect individuals calling to the appropriate agency or service provider.			
Sector Calls	Learn and disseminate useful lessons from communities that are identified as having higher resilience to flooding and storm events (for example, Little Florida in Richmond County).			
Sector Calls	Improve government service provision to vulnerable populations (senior citizens, children) during and after emergencies. Improvements should be based on a discussion around community needs. Build on some successful/ongoing models like septic pump-out program; Lancaster Co. PD check-ins with seniors; Meals on Wheels; Richmond Resource Council – Bay Aging; The Orchard; Schools; Lancaster Co. LINK.			
Sector Calls	Address chronic flooding in Lewisetta.			

## 1) LOCALITY LEADERSHIP, POLICY, AND COLLABORATION

#	SOURCE	ACTION ITEMS	TIME PERIOD	EASE Rank 0-10	IMPACT Rank 0-10
1.1	Sector Calls	Consider increasing funds for police department staff and resources in order to meet increased work demands during summer population increases, and to allow for capacity to conduct more proactive/mitigation efforts.			

1.1	Sector Calls	Test new outreach methods to recruit public safety volunteers, and create a plan for retaining existing volunteers: (1) convey the variety of roles available to support public safety efforts, and (2) increase partnership with public schools (creating a Firefighter 1 class).			
1.1	Sector Calls	Improve communication and planning between county staff, school staff, emergency managers, service providers and local DSS representatives for responding to and planning for emergencies. Work with the NNPDC to formalize tools, including (1) an emergency plan that outlines tasks and communication steps for the various organizations; (2) a roles and responsibilities map for emergencies that covers the county, DSS, community organizations, and households; and (3) a communication structure to facilitate coordination amongst the various entities.			
1.2	HMP	<b>High priority.</b> Maintain an Emergency Notification System for citizens (Code Red) which upon voluntary subscription, will notify if an NWS severe weather alert is activated within the County.	5 years		
1.3	Sector calls	Build on existing partnership between All Points Broadband, Dominion Energy, Northern Neck Electric Cooperative and the Counties of King George, Northumberland, Richmond, and Westmoreland to advance a regional broadband partnership to deliver fiber-optic broadband service to unserved households and businesses in the region.			
1.4	HMP	<b>Medium priority.</b> Share with FEMA any new technical or scientific data that may result in map revisions within six months of creation or identification of new data.	5 years		
1.4	RAFT	Use data collected from Virginia university system in local floodplain, zoning, ordinance planning as well as in the comprehensive plan.	1-3 to > 3 years		
1.5	HMP	<b>High priority.</b> Maintain a voluntary agreement with FEMA to participate in the NFIP.	5 years		
1.5	HMP	<b>High priority.</b> Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, the prohibition of production or storage of chemicals in SFHA, prohibition or certain types of structures such as hospitals, nursing homes, jails, the prohibition of certain types of structures such as hospitals, nursing homes, jails, the prohibition of certain types of residential housing such as manufactured homes, and finally Floodplain ordinances, that prohibit any new residential or non-residential structures in the SFHA.	5 years		
1.5	RAFT	Research and participate in CRS Program.	1-3 years		
All	Sector Calls	Conduct a regional analysis of emergency management capacity, including geographic distribution of stations, EMS staff availability, travel routes and response times. Building on the shared resources model used between Lancaster County and lower Northumberland County, identify opportunities to improve response through mutual aid.			

All	Sector Calls	Invest in additional staff and trucks and establish additional EMS Stations for emergency management.			
-----	--------------	---	--	--	--

## 2) RISK ASSESSMENT AND EMERGENCY MANAGEMENT

#	SOURCE	ACTION ITEMS	TIME PERIOD	EASE Rank 0-10	IMPACT Rank 0-10
2.1	HMP	<b>High priority.</b> Adopt the most current FIRM maps and FIS as they become available.	5 years		
2.1	HMP	<b>High priority.</b> Assist with local floodplain determinations and maintain a record of approved changes to the local Floodplain.	5 years		
2.1	HMP	<b>Low priority.</b> Identify existing flood-prone structures that may benefit from mitigation measures such as elevation.	5 years		
2.3	RAFT	Invite chamber of commerce to send representatives to mitigation and planning meetings.	1-3 years		
2.3	RAFT	Provide programs for small businesses for emergency preparation and business continuity post-event.	1-3 to >3 years		
2.5	HMP	<b>High priority.</b> Educate community members about the availability and value of Flood Insurance.	5 years		
2.5	HMP	<b>High priority.</b> Provide general assistance to community members relating to insurance issues.	5 years		
2.5	HMP	<b>Medium priority.</b> Educate residents about Flood Insurance Cost and ICC (Increased Cost of Compliance) Coverage.	5 years		
2.5	HMP	<b>Low priority.</b> Increase enforcement and education regarding the tie-down of propane and other fuel tanks.	5 years		
2.5	HMP	<b>Low priority.</b> Encourage the purchase of flood and/or sewer back-up insurance.	5 years		
2.5	HMP	<b>Low priority.</b> Prepare an advisory pamphlet and distribute to occupants of housing units or businesses known to be in the floodplain advising them of the potential hazards in the area of the evacuation plans in the event of an emergency.	5 years		

2.5	Sector Calls	Upgrade public radio system and extend regional public radio coverage, perhaps via coordinated expansion/improvement effort.			
2.5	Sector Calls	Improve public outreach and education around evacuation, with the goal of influencing more residents to evacuate in hazardous situations. Circulate more broadly maps such as the FEMA Flood Zone and Hurricane Evacuation Maps which allow residents to search their address and identify their flood risk and evacuation zones.			
2.5	RAFT	Develop resident emergency plan that identifies risks and needs.	<1 year		
2.5	RAFT	Task staff with contacting community leaders and community organizations about emergency preparedness, ensuring residents know emergency numbers and shelters (i.e. emergency magnets or flyers).	1-3 to >3 years		
2.5	RAFT	Engage residents through community outreach and trainings/drills.	<1 year		

### 3) INFRASTRUCTURE RESILIENCE

#	SOURCE	ACTION ITEMS	TIME PERIOD	EASE Rank 0-10	IMPACT Rank 0-10
3.1	RAFT	Provide incentives for private property activities that manage stormwater such as tax deductions or flag program (i.e. River Star Homes).	<1 year to 1-3 years		
3.1	RAFT	Identify funding sources for stormwater management projects.	1-3 years		
3.1	RAFT	Provide demonstrational BMPs on public property for stormwater education.	1-3 years		
3.1	RAFT	Identify minimum state requirements and compare to local requirements.	1-3 to >3 years		
3.2	HMP, Sector Calls, RAFT	<b>High priority.</b> Work with VDOT to identify and evaluate vulnerable transportation infrastructure, conduct an analysis of road washouts and implement mitigation measures (e.g., elevation, redesign).	5 years		
3.2	RAFT	Identify backup infrastructure in case emergency infrastructure fails or is damaged in storm event.	<1 year		
3.3	Sector Calls	Understand and work to reduce the vulnerability of septic systems by creating an inventory and map, coordinating with the plans being developed by VDH and VIMS, which plan to launch a pilot project with ODU			

		staff.			
3.3	RAFT	Update water supply plan to address coastal hazards and dangers they pose to potable water.	1-3 years		
3.4	HMP	<b>High priority.</b> Incorporate hazard mitigation techniques into new community facilities to minimize damages.	5 years		
3.4	RAFT	Identify emergency services weaknesses and address how to fix them.	<1 year		
3.4	RAFT	Identify backup plan and identify the necessary parties.	<1 to 1-3 years		
3.5	HMP	<b>Low priority.</b> Encourage the use of vegetation and revetments to reduce shoreline erosion.	5 years		
3.5	HMP, RAFT	<b>Low priority.</b> Begin implementing green strategies such as living shorelines, wetland acquisition and restoration, and watershed management.	5 years		

## 4) PLANNING FOR RESILIENCE

#	SOURCE	ACTION ITEMS	TIME PERIOD	EASE Rank 0-10	IMPACT Rank 0-10
4.1 4.2	HMP	<b>Low priority.</b> Integrate mitigation plan requirements and actions into other appropriate planning mechanisms such as comprehensive and capital improvement plans.	5 years		
4.1 4.4	Sector Calls	Support homeowners to elevate their homes, building on the Northern Neck Hazard Mitigation Grant Home Elevation Program, in places with flood risk that are not projected to be uninhabitable based on sea-level rise projects.			
4.1	RAFT	Identify key economic impacts and monetary losses that significant storm events could cause.	1-3 years		
4.3	HMP	<b>High priority.</b> Adopt or maintain a floodplain management ordinance that at a minimum regulates the following: Issue permits for All proposed developments in the SFHA, Obtain review, and utilize any base flood elevation and Floodway data, and require BFE data for subdivisions proposals and other development proposals larger than 50 lots or 5 acres; Identify measures to keep all new and substantially improved construction reasonably safe from Flood to or above the Base Flood Elevation (BFE), including anchoring, using Flood resistant materials, designing or locating utilities, and service facilities to prevent water damage; Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures.	5 years		



4.3	HMP	<b>High priority.</b> Enforce the ordinance by monitoring compliance and taking remedial action to correct violations.	5 years		
4.3	HMP	<b>Low priority.</b> Consider using fee simple and/or permanent easements to prevent development in the highest priority undeveloped Floodplain (and/or wetlands) areas. Use these areas as open public spaces for passive recreational uses including water access.	5 years		
4.4	HMP	<b>Medium priority.</b> Encourage waterfront property owners in existing communities to consider multi-parcel shoreline protection strategies before they pursue individual approaches.	5 years		
4.4	RAFT	Work with local environmental groups to identify natural resources and ecoservices in need of protections.	1-3 to >3 years		
4.4	RAFT	Identify high risk areas and implement green infrastructure projects in those areas.	1-3 to >3 years		

## 5) COMMUNITY ENGAGEMENT, HEALTH, AND WELL-BEING

#	SOURCE	ACTION ITEMS	TIME PERIOD	EASE Rank 0-10	IMPACT Rank 0-10
5.1	RAFT	Adopt a written policy statement regarding the roles of residents, commercial enterprises, and other stakeholders in coastal resilience.	1-3 to >3 years		
5.1	RAFT	Create a coastal resilience committee and assign staff roles.	<1 to 1-3 years		
5.1	RAFT	Create informational coastal resilience materials to disseminate via social media, government websites, and traditional media and ask for public input.	<1 year		
5.2	Sector Calls	Develop additional outreach to community through police department including (1) short videos (5-10 minutes) using YouTube live on topics like: what's going on regarding scams, natural disaster preparedness; (2) flyers at the library.			
5.3	HMP	<b>High priority.</b> Maintain a publicly available copy of the effective Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS), Support local requests for map updates when available	5 years		
5.2	RAFT	Create audience-appropriate information guides, signs, brochures, social media posts informing the public about coastal resilience and economic risks associated with storm events.	<1 year		

5.4	Sector Calls	Explore alternatives to traditional health provision models, including community paramedicine and telemedicine. Telemedicine efforts must go hand-in-hand with connectivity infrastructure expansion. There is an opportunity to build on an existing pilot project out of VCU in Westmoreland, Essex, and Richmond Counties.			
5.5	RAFT	Gather data on community physical and mental wellbeing and challenges through specific metrics, such as "deaths of despair" (suicide, cirrhosis of the liver, overdoses).	>3 years		
5.5	RAFT	Identify trusted communication messengers for vulnerable populations.	<1 year		
5.5	RAFT	Partner with NGOs and community groups to identify needs of vulnerable populations.	<1 year		
5.5	RAFT	Make plans to best help vulnerable populations during emergencies in conjunction with community groups.	<1 year to 1-3 years		