

# THE RAFT

## Resilience Adaptation Feasibility Tool

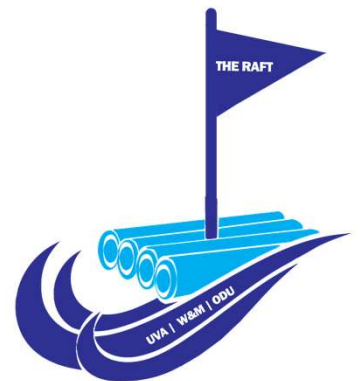
# Petersburg

## Scorecard Report

August 2022

### The RAFT Goal

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



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# Background

## What is The RAFT?

- “Full-service tool” and collaborative, community-driven process designed to assist coastal localities in increasing their resilience.
- Conceived and developed by an academic interdisciplinary collaborative called the “Core Team”
  - Institute for Engagement & Negotiation (IEN) at the University of Virginia
  - Virginia Coastal Policy Center (VCPC) at William & Mary Law School
  - Old Dominion University (ODU)/Virginia Sea Grant Climate Adaptation and Resilience Program.

## The RAFT has three key components:

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

## How does The RAFT help a locality?

1. Open a community conversation about community resilience, including gaps, and needs.
2. Support the community in identifying priority actions for the largest impact in increasing resilience.
3. Improve communication and coordination within the community and with regional and state agencies.
4. Help the community become better positioned to find and apply for relevant funding opportunities.
5. Earn a better Community Rating System (CRS) score, which saves residents money on their flood insurance premiums.

## What is resilience?

The RAFT focuses on coastal community resilience, improving the ability of a community to bounce back from hazardous events such as hurricanes and extreme weather and deal with chronic issues such as flooding.

The RAFT takes a comprehensive approach by including environmental, economic, and social resilience. All three are vital for a community to thrive.

To build resilience, localities need capacities in areas of emergency management, infrastructure, planning, policy, and community well-being.

## The Resilience Cycle



*Adapted from: NOAA Coastal Community Resilience Indicators and Rating Systems, 2015.*

## Locality Total Score

Category	Score Received	Possible Score
<b>1) POLICY, LEADERSHIP, AND COLLABORATION</b> <i>Measures policy and legislation in place for coastal resilience and includes coordination and collaboration between various levels of government, and how accessible and open government data is to the public.</i>	7	20
<b>2) RISK ASSESSMENT AND EMERGENCY MANAGEMENT</b> <i>Examines how well a locality has conducted risk assessments to prepare for coastal storm hazards, identified vulnerable populations and their needs during or after a coastal storm hazard, and developed plans for disaster preparedness, including a Hazard Mitigation Plan.</i>	16	20
<b>3) INFRASTRUCTURE RESILIENCE</b> <i>Assesses how well the locality has identified methods and plans for storm water and protecting critical infrastructure including using natural and nature-based features (NNBF).</i>	6	20
<b>4) PLANNING FOR RESILIENCE</b> <i>Assesses the comprehensive plan and zoning code for resilience, how a locality is using incentives to promote resilience in building and development, how policies protect ecosystems, how they use green infrastructure to improve resilience, and how much resilience has been incorporated into planning.</i>	9	20
<b>5) COMMUNITY ENGAGEMENT, HEALTH, AND WELL BEING</b> <i>Assesses how the community engages with residents in planning for coastal storm hazard including social equity considerations and examines the locality's attention to issues of health and wellness during and after coastal events.</i>	8	20
<b>Total Score:</b>	<b>46%</b>	

### Interpreting the Score


**Low Resilience: Less than 50-** There are plenty of opportunities for improvement. The locality should decide whether it will be more beneficial to achieve the least difficult improvements first, or to tackle more challenging problems. The key is to decide which of these approaches makes the most sense, as the locality develops their Resilience Action Checklist.

**Moderate Resilience: 50- 74** – The locality is actively involved in coastal resilience planning and has achieved some successes. There are still opportunities for strengthening resilience. The Resilience Action Checklist should focus on weak categories and anticipate moderate to difficult improvements.

**High Resilience: 75 or More-** Locality is well prepared! There may still be room for resilience and the Resilience Action Checklist may focus on ways to improve resilience and further engage residents. Examples of locality policies, plans, and activities may assist other localities in the region and beyond.

If you see **CRS** next to an item, action to improve that metric can result in CRS credit.

If you see \$\$\$ next to an item, action to improve that metric supports economic resilience.

If you see  next to an item, action to improve that metric supports environmental resilience.

If you see  next to an item, action to improve that metric supports engagement with vulnerable populations.

# LOCALITY LEADERSHIP, POLICY, AND COLLABORATION


## 1.1 LOCALITY LEADERSHIP AND PLANNING FOR RESILIENCE: 1/4 Points


Collaboration among local government decision makers, officials, departments, academia, and NGOs is important in planning for coastal resilience. Effective collaboration requires identifying local leaders and organizations, establishing the roles of such leaders and organizations, and providing leadership training and educational resources.

Points		Scoring Metric	Notes
0		a. Leadership roles are identified for staff and/or elected officials important for planning for resilience. If staff is limited or nonexistent, the locality has tasked someone with handling resilience efforts for the community.	No staff or elected officials have been tasked with handling resilience specifically. Per locality staff, at the annual strategic planning session, much of the discussion about how the city will move forward happens at that session.
0		b. Training and education events are held for elected officials specifically on resilience issues.	Per locality staff, no training and education events are held for elected officials specifically on resilience issues.
0		c. Training and education events are held for locality staff, or if staff is limited or nonexistent, training of whomever has been tasked with handling resilience efforts for the community.	Per locality staff, there are annual trainings with the Red Cross on how to handle events that would require sheltering.
1		d. Locality staff and/or elected officials, or whomever has been tasked with handling resilience efforts for the community, are meeting at least once per quarter to coordinate planning specifically on resilience issues.	Per locality staff, staff have been working with their Planning District Commission on a regional plan for resilience. The staff reported that this is a learning process but also a planning process.

## 1.2 LOCALITY LEADERSHIP AND RESPONDING TO EMERGENCY: 2/4 Points

Collaboration among local officials and relevant stakeholders is equally important in responding to a coastal hazard. An organized, coordinated response to a coastal hazard requires identifying stakeholders, establishing roles, creating plans, and publicizing information.


Points		Scoring Metric	Notes
1		a. Locality has identified stakeholders who will require emergency response including <b>socially vulnerable</b> populations.	Per locality staff, the locality has partially identified stakeholders who will require emergency response, including socially vulnerable populations. According to the staff, under the Department of Social Services, staff are required to go through the Disaster SNAP Alert Initiative each year. In that process, staff has to identify vulnerable populations and plan for how those people will continue to get services in the event of an emergency.
0		b. Locality has established internal emergency response roles (e.g., standing committees, staff titles), and these staff and partners participate in at least one training each year.	Per locality staff, staff identified roles after the last ice storm. Staff set up a central command center to serve the community. The team meets as needed as part of the Public Safety Group. Per

			<p>locality staff, the team participates in training at least once per year.</p> <p>Currently, locality does not have a Citizens Emergency Response Team (CERT) program. The previous program became inactive due to staffing and funding assistance. The locality is actively seeking to bring this program back in the near future.</p>
0		c. Locality collaborates on resilience planning with the stakeholders who will need emergency response and has provided the public with opportunity to give input from lower income vulnerable populations.	<p>Per locality staff, the locality plans to work with stakeholders. Through the Planning District Commission planning process, the public had the opportunity to call in, participate, and ask questions about draft language. A formal, consistent, collaborative effort with stakeholders, however, has not yet been established. The locality reports that their efforts were delayed due to COVID.</p>
1		d. Locality has a means of communicating these plans to the public during a coastal storm hazard event.	<p>Individuals can sign up for emergency alerts through Petersburg's <a href="#">Notify Me</a>. Per locality staff, public service announcements are circulated through local media, social media, and posted on the locality website.</p>

# LOCALITY LEADERSHIP, POLICY, AND COLLABORATION

## 1.3 LOCAL COLLABORATION WITH STATE AGENCIES AND PDCs: 3 / 4 Points

Coastal resilience issues go beyond political boundaries; therefore, localities benefit from regional collaboration. Regular communication between local, multi-jurisdictional, and state officials encourages sharing of information and ideas. Collaboration should include working with agencies that serve socially vulnerable communities. Localities are part of a Planning District Commission (PDC), which coordinates many activities.

Points		Scoring Metric	Notes
1		a. Locality staff and/or officials engage with regional and state agencies on resilience-oriented issues.	The locality engaged with PlanRVA, the regional convener, planning agency and provider of essential services to the localities of the Richmond Region, to develop the <a href="#">Richmond-Crater Hazard Mitigation Plan</a> .
0		b. Locality participation in local and regional resilience-oriented committees and initiatives to serve socially vulnerable populations.	Per locality staff, the locality works to serve socially vulnerable populations through the Planning District Commission planning process; the public had the opportunity to call in, participate, and ask questions about draft language. Per locality staff, staff is updating the Comprehensive Plan, including Chesapeake Bay Preservation Act updates related to resiliency; there are opportunities for stakeholders and citizens to participate in this process.
1		c. Locality elected officials participate on relevant local and regional resilience-oriented commissions.	Per locality staff, the mayor participates on the Planning District Commission Board.
1	\$\$\$	d. Locality staff work to identify funding opportunities and priorities to address resilience issues at the regional and state level.	Per locality staff, the locality has applied for and received funding from the state's Community Flood Preparedness Fund administered by the Department of Conservation & Recreation. Staff reported that they were in the process of applying for Round 3 funding. The funding is for a resilience plan, a city-wide drainage study, and hiring a CFM. The locality also reported that staff remain in contact with the DCR to remain informed about funding opportunities.



## 1.4 ADAPTIVE MANAGEMENT:

0 / 4 Points

Adaptive management involves updating ordinances and plans for coastal resilience based on new findings and emerging strategies. Use of data, scientific analyses, and new information is important to inform local policies to prepare. Adaptive management means incorporating lessons learned from research that informs best methods for addressing the needs of socially vulnerable populations.

Points		Scoring Metric	Notes
0		a. Locality incorporated new data, scientific analyses, and approaches to resilience, within the last five years into the Floodplain Management Ordinance.	The Petersburg <a href="#">Floodplain Management Ordinance</a> has not been updated in the last five years. Per locality staff, the locality is in the process of updating their flood maps, which will inform their floodplain ordinance. Once the locality hires a CFM, the CFM will spearhead that process. The locality estimated that the bulk of this process will occur throughout 2022 and into early 2023.
0		b. Locality incorporated new data, scientific analyses, and approaches to resilience, within the last five years into Zoning Ordinance.	The <a href="#">Petersburg Zoning Ordinance</a> is new as of 2021. Per locality staff, however, the revision to the zoning ordinance was not intended to address flooding/BFE; it was directed at the Chesapeake Bay Preservation Act requirements because of DEQ's review process. Once the locality updates its floodplain ordinance, the locality will update the zoning ordinance to account for the flooding. Per locality staff, the locality has not declared any floodplain areas beyond the FEMA designated ones. The locality has considered it, but it must be a council decision.
0		c. Locality incorporated new data, scientific analyses, and approaches to resilience, within the last five years into Site and Subdivision Ordinances.	<a href="#">The Subdivision Ordinance</a> is new as of 2021. Per locality staff, however, the revision to the subdivision ordinance was not intended to address flooding/BFE; it was directed at the Chesapeake Bay Preservation Act requirements because of DEQ's review process. Once the locality updates its floodplain ordinance, the locality will update the subdivision ordinance to account for the flooding. Per locality staff, the locality has not declared any floodplain areas beyond the FEMA designated ones. The locality has considered it, but it must be a council decision.
0		d. Locality incorporated new data, scientific analyses, and approaches to resilience, within the last five years into Comprehensive Plan.	The <a href="#">Comprehensive Plan</a> , p. 126 notes that stormwater can cause "localized flooding" and that "[s]tormwater ... needs to be managed to minimize damages that may occur when stormwater runoff exceeds the capacity of the pipes."

			<p>Stormwater management techniques are discussed on p. 131.</p> <p>Further, the Plan notes on p. 128 that “[s]ome remaining open space may have low-lying areas that sit near swamps and/or wetlands and are susceptible to flooding,” and therefore may not be suitable for development.</p> <p>Beyond this, however, the Plan does not include a clear discussion of coastal resilience/coastal storm hazards.</p> <p>Per locality staff, the 2021 revision does not incorporate new data, scientific analyses, and approaches to resilience. The locality believes this may occur after the locality updates its flood maps. The locality is also working with DEQ on the Comprehensive Plan update.</p>
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## LOCALITY LEADERSHIP, POLICY, AND COLLABORATION

### 1.5 The NFIP's COMMUNITY RATING SYSTEM:

0 / 4 Points

Communities wishing to go above and beyond the minimums of the National Flood Insurance Program can choose to participate in the Community Rating System (CRS). Participating communities implement higher standards of floodplain management, and, in return, residents are eligible for flood insurance premium reductions. Localities can do many things to improve their scores. For more information, see FEMA's CRS website or the Wetlands Watch website on the subject.

Points		Scoring Metric	Notes
0	CRS	a. Locality has achieved a CRS Score of 9 or higher.	Locality does not participate in the CRS.
0	CRS	b. Locality has achieved a CRS Score of 8.	Locality does not participate in the CRS.
0	CRS	c. Locality has achieved a CRS Score of 7	Locality does not participate in the CRS.
0	CRS	d. Locality has achieved a CRS Score of 6 or lower.	Locality does not participate in the CRS.

**TOTAL SCORE FOR SECTION 1:**

**7 / 20 POINTS**

## 2) RISK ASSESSMENT AND EMERGENCY MANAGEMENT

### 2.1 FLOOD EXPOSURE AND VULNERABILITY ASSESSMENT: 4/ 4 Points



Localities should conduct and use an assessment of their flood exposure and vulnerability in developing policies and programs. Localities should be knowledgeable of their flooding risks, raise awareness in the community about vulnerable areas, help target action to assist the most threatened areas and reduce possible damage, and save costs by being preemptive not reactive.


Points		Scoring Metric	Notes
1	CRS	a. An exposure and/or vulnerability assessment is completed, mapped and updated within the last 5-7 years, available at the locality level, and (as evidence of being used) referenced in locality policy making.	<p><a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a> at Section 5.4 (Hazard Identification, Risk Assessment (HIRA) and Vulnerability Analysis: Flooding). Figure 5.5e on p. 5-27 maps Repetitive Loss Areas and National Risk Index Ratings of High or Moderate Risk for Petersburg and Colonial Heights specifically.</p> <p>P. 16 of <a href="#">Petersburg Executive Summary</a> (from the Richmond-Crater Hazard Mitigation Plan) contains a map of Annualized Flood Damage by Census Block for the City of Petersburg specifically.</p>
1	CRS	b. Sources of flooding for both tidally-driven and precipitation-driven events are identified and updated within last 5 years.	<p><a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a> at Section 5.4 (Hazard Identification, Risk Assessment (HIRA) and Vulnerability Analysis: Flooding), p. 5-10, discusses winter flooding (from snowmelt and ice jam breakaway) and spring flooding (from seasonal rain patterns), and also distinguishes between flooding arising from hurricanes and tropical storms, and flooding arising from riverine floods or nor'easters.</p> <p>Section 5.6 (Hazard Identification, Risk Assessment (HIRA) and Vulnerability Analysis: Severe Wind Events) also discusses storm surge flooding and riverine flooding on p. 5-54 and 5-55.</p>
1	CRS	c. Flooding for different return period storm events is identified and mapped.	<p><a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a>, Figure 5.4 on p. 5-14 maps Richmond-Crater Storm Surge Zones; Table 5.3 on p. 5-15 to 5-16 lists History of Flood Events and Damages (from 2011-2020); Table 5.7 on p. 5-23 to 5-23 lists Repetitive Flood Losses and Severe Repetitive Flood Losses (by locality); Figure 5.5e on p. 5-27 maps Repetitive Loss Areas and National Risk Index Ratings of High or Moderate Risk for Petersburg and Colonial Heights specifically; Table 5.10 on p. 5-36 lists</p>


			<p>Annualized Flood Events and Losses (from 1993-2020).</p> <p>Pp. 3-4 of <a href="#">Petersburg Executive Summary</a> (from the Richmond-Crater Hazard Mitigation Plan) list significant flooding events in Petersburg specifically.</p>
1	\$\$\$ CRS	d. Additional vulnerabilities (see above), including cultural, historic and economic assets, are identified and updated within the last 5 years.	<p>See generally <a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a>, Section 4 (Community Profile).</p> <p>Neither the Hazard Mitigation Plan nor the Comprehensive Plan discuss how coastal storm hazards threaten Petersburg's cultural, historic, or economic assets. However, at the time of meeting with locality staff (April 4, 2022), locality staff were planning to apply for DCR Round 3 funding to remove two buildings – the Roper Building on Pocahontas Island and the Old Ramada Inn at Exit 52 – from the floodplain.</p>

## 2.2 RISK ASSESSMENT FOR VULNERABLE POPULATIONS: 3 / 4 Points

Localities should conduct risk assessments of their socially vulnerable populations. These populations include those in areas of high poverty, elderly, caregivers, veterans, homeless, transient or nomadic communities, children and youth, physically or mentally disabled people, medically fragile people and non-English speakers. Because these populations may not have resources to change their level of vulnerability, it is vital for localities to identify these populations, ways to reduce their risk, and create plans for assistance during and after coastal hazard events. Localities need to conduct outreach to vulnerable populations.

Points		Scoring Metric	Notes
1	CRS 	a. Locality has identified vulnerable populations that are subject to flooding and coastal storm hazards.	<p><a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a> at Section 4.6 discusses the population of the Richmond-Crater region and identifies vulnerable populations that may require special consideration when developing hazard reduction strategies and public outreach programs (see Sections 4.6.2 on Language, 4.6.3 on Age, 4.6.4 on Education, and 4.6.5 on Income). Further, Figure 5.6 on p. 5-37 maps Social Vulnerability to Flood Hazards in the Richmond-Crater region.</p> <p>Further, Section 7 of the <a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a> discusses jurisdictionally specific Mitigation Action Plans (MAPs), and there is a separate ranking for each MAP's impact on socially vulnerable populations.</p>
1		b. Locality has engaged vulnerable populations and provided them with meaningful information (e.g., in	<a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a> , p. 6-29 (Regional Mitigation Action 12) includes a public

		<p>their own language, relevant to their circumstances) relating to their vulnerability to coastal storm hazards.</p>	<p>education/awareness component: “Enhance other outreach efforts to educate the public about hazard risk and regional resilience.” Further, Goal 1 on p. 1-3 states the following sub-goal for the region as a whole and for each community: “Conduct outreach and educational opportunities for diverse groups of citizens” (as part of a larger effort to “[e]quitably prepare and protect the whole community against natural hazards.” Finally, Section 4.6.4 on p. 4-27 states that demographics on education, age, and English fluency “are important to keep in mind when developing public outreach programs.”</p> <p>Per page 10 of the <a href="#">Petersburg Executive Summary</a> (from the Richmond-Crater Hazard Mitigation Plan), locality Emergency Management staff are engaged in an ongoing, medium-priority effort to “[d]istribute brochures and use other means to educate the public regarding preparedness and mitigation.”</p> <p>Further, per locality staff, Petersburg has engaged with the Lakemont community specifically (a socially vulnerable and flood prone neighborhood in Ward 1) since 2012. Locality staff have partnered with the James River Association and others to locate grants/funding opportunities for flood control, stormwater mitigation, water quality, and drainage projects. They meet on a monthly basis to address the needs in this community specifically.</p>
0		<p>c. Locality has worked with vulnerable populations to increase their emergency preparedness and evacuation plans so they know their risk and know what steps should be taken during and after an event.</p>	<p>Per page 10 of the <a href="#">Petersburg Executive Summary</a> (from the Richmond-Crater Hazard Mitigation Plan), locality Emergency Management staff are engaged in an ongoing, medium-priority effort to “[d]istribute brochures and use other means to educate the public regarding preparedness and mitigation.”</p> <p>Per the locality’s Emergency Preparedness Plan, in the event of an evacuation, individuals with disabilities may require vehicles with special transportation capabilities. The EOP also defines Citizen Corp, a community-level program, as a network including tribal councils. The EOP does not specifically detail working or</p>

			partnering with these or other communities that may demonstrate a higher degree of vulnerability.
1		d. Locality partners with organizations that provide assistance to vulnerable populations before, during and after coastal storm hazards, including food banks or pantries with refrigeration units and backup generators.	<p>Per locality staff, Petersburg actively partners with the Red Cross in this respect. The City also partners with Downtown Churches United (a local, nonprofit union of faith communities), which operates a food pantry and provides meals to those in need (and this is partially funded by community development block grants).</p> <p>Further, City of Petersburg Mitigation Action 12 (listed on p. 6-193 of the <a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a>) states that the City is engaged in an “ongoing” effort to “install quick connects for generators at critical facilities, ensure existing generators are working at all times with regular maintenance and inspections, and replace generators, as necessary.”</p>

## 2) RISK ASSESSMENT AND EMERGENCY MANAGEMENT

### 2.3 BUSINESS AND ECONOMIC RISK ASSESSMENT:

1 / 4 Points

Localities need to identify local business and economic vulnerabilities to coastal storm hazards. Businesses are differentially affected by these hazards and attention should be paid to making sure that businesses that serve vulnerable populations are considered. Including business and economic vulnerability in a risk assessment and emergency management is important for resilience and recovery after a storm event.

Points		Scoring Metric	Notes
0	\$\$\$	a. Locality has included the business sector in its assessment and mapping of coastal hazard vulnerability	<p>Page 129 of <a href="#">Petersburg Comprehensive Plan</a> displays a map of the City's floodplains in detail.</p> <p>Further, <a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a>, p. 5-11 discusses the impact that flood damage can have on businesses, and page 5-12 notes that Petersburg's floodplain land use is "industrial or park."</p> <p>However, per locality staff, Petersburg has not otherwise included the business sector in its assessment/mapping of coastal hazard vulnerability.</p>
0	\$\$\$	b. Locality has engaged economic development department and/or independent chamber of commerce in locality hazards mitigation and/or resilience planning.	<p>Page 39 of the <a href="#">Petersburg Comprehensive Plan</a> lists the Petersburg Chamber of Commerce as an Economic Development Partner.</p> <p>However, per locality staff, they do not work together on hazard mitigation/resilience planning.</p>
0	\$\$\$ 	c. Locality and/or business associations have programs for small businesses, particularly businesses that serve socially vulnerable populations, to encourage each business to be prepared for an emergency and plan for business continuity.	<p>"<a href="#">Emergency Management</a>" page of Petersburg city website states that the Office of Emergency Management provides preparedness education and Citizen Emergency Response Team (CERT) Training to citizens and government employees," but doesn't discuss programs for small businesses specifically.</p> <p>Per locality staff, Hopewell does not offer any such programs for small business, but noted that the regional Small Business Development Center might.</p>
1	\$\$\$	d. Locality emergency management communicates with business sector in the event of severe weather emergency or evacuation.	<p>Communication is handled the same as with the general public - individuals can sign up for emergency alerts on the Petersburg website's "<a href="#">Notify Me</a>" page.</p>



## 2.4 HAZARD MITIGATION:

4 / 4 Points

The Hazard Mitigation Plan (HMP) is required by state code as a condition of emergency assistance. In the coastal region, it is important for the HMP to specifically address coastal storm hazards by identifying what locality resources and areas are at risk, to enable the locality to take actions to reduce future risks. Furthermore, having an HMP is essential to be eligible for certain grants and funding related to coastal storm hazards.


Points		Scoring Metric	Notes
1		a. The locality's HMP specifically addresses coastal resilience.	See generally <a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a> - specifically, see the discussion of resiliency on p. 6-23 and 6-24.
1		b. The locality is engaging in regional coordination for Hazard Mitigation through a regional plan.	See generally <a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a> .
1		c. The locality's HMP details how the locality collaborates with VDEM, DCR Floodplain Management or SHMO.	See generally <a href="#">2022 DRAFT Richmond-Crater Hazard Mitigation Plan</a> , which mentions VDEM and DCR throughout.
1		d. The locality's HMP is approved by FEMA, was developed with meaningful public engagement with socially vulnerable communities and is formally adopted by locality governing body.	<a href="#">FEMA Hazard Mitigation Plan Status</a> .  See also <a href="#">Richmond-Crater Hazard Mitigation Plan</a> Executive Summary on p. 1-1.

## 2) RISK ASSESSMENT AND EMERGENCY MANAGEMENT

### 2.5 RESIDENT EMERGENCY PREPAREDNESS:

4/ 4 Points

Well-organized emergency preparedness plans save lives and property and help ensure that localities can act in sufficient time. They contribute to faster and more efficient post-hazard recovery. Preparedness for vulnerable populations includes ensuring that residents have the opportunity to learn swimming and water safety skills. Communities should consider participating in regional, national, or state-wide outreach events such as Hurricane Preparedness Week.

Points		Scoring Metric	Notes
1	CRS	a. Locality has a current resident emergency preparedness plan, updated within the last five years, which identifies resident emergency preparedness risks and needs, including knowledge of water safety.	Yes.
1	CRS	b. Locality conducts community outreach at least once a year to inform residents about community emergency preparedness.	Per page 10 of the <a href="#">Petersburg Executive Summary</a> (from the Richmond-Crater Hazard Mitigation Plan), locality Emergency Management staff are engaged in an ongoing, medium-priority effort to “[d]istribute brochures and use other means to educate the public regarding preparedness and mitigation.”
1	CRS	c. Locality engages resident groups, including schools, hospitals, and other groups, in testing preparedness through emergency drills, disaster simulations, and planning workshops.	Drills, see EOP pg. 6-7.
1	CRS 	d. Locality has implemented early warning signals/systems/emergency warning tools for its residents, particularly those most vulnerable.	Petersburg provides emergency alerts to subscribers who sign up on the Petersburg website’s <a href="#">“Notify Me”</a> page.  Per locality staff, the communications director also posts information on the City website in the event of an emergency.

**TOTAL SCORE FOR SECTION 2:**




**16 / 20 POINTS**

### 3) INFRASTRUCTURE RESILIENCE

#### 3.1 STORMWATER INFRASTRUCTURE:

3 / 4 Points

Stormwater management is regulated by state law, which requires localities either **create and operate a stormwater management program** or **request the state to operate its stormwater management program**. Local ordinances must comply with the [Virginia Stormwater Management Act](#) and regulations, as well as the [Virginia Erosion and Sediment Control Law](#). Additional stormwater management and flood risks are typically handled at the local level through environmental regulation, site plan approval, and subdivision approval. Localities that go beyond the minimum state requirements are better able to manage stormwater and increase their resilience to coastal storm hazards. Stormwater infrastructure may include use of bioswales, dry ponds, retention basins, rainwater management systems, low impact development, rainwater collection and management systems, green infrastructure, rooftop gardens, and green and open spaces.

Points		Scoring Metric	Notes
1	\$\$\$ 	a. Locality offers at least one official incentive for private property activities that manage stormwater.	Petersburg has an enterprise fund which can fund improvement of stormwater controls on private property. <a href="#">Sec. 114-407(c)-(d)</a> . Also, Petersburg has developed a fee reduction/credit manual that provides opportunities for all customers to reduce their monthly fee by installing best management practices on site that reduce the runoff burden to the City's stormwater system. <a href="#">Stormwater FAQs</a> , pg. 4.
1		b. Locality funds stormwater management projects through stormwater utility fees, user fees, grants, or other creative funding mechanisms.	Petersburg has implemented a separate fee for stormwater management, which funds increased system maintenance and repair and a comprehensive stormwater management and water quality improvement plan. <a href="#">Stormwater FAQs</a> , pg. 2.
1		c. Locality implements one or more stormwater BMPs on public property for educational demonstration, as shown by signage, tours, or other information.	Petersburg has implemented the Bower Tension basin, paved sections near Lakemont Elementary School and signage on paved walkways comparing pavement types. Also see <a href="#">MS4 Plan (2013-2018)</a> , pg. 16-17.
0		d. Locality stormwater policy goes above and beyond the minimum state requirements.	Per locality staff, Petersburg stormwater management policy does not go beyond state requirements. City <a href="#">Stormwater FAQs</a> confirm that Petersburg strives to comply with all state and federal requirements for stormwater management, but has struggled to provide stormwater services on a limited budget. Further, the backlog of stormwater projects has grown and some maintenance activities have not been performed.

### 3.2 CRITICAL TRANSPORTATION INFRASTRUCTURE:

0 / 4 Points

An evaluation of critical transportation infrastructure allows a locality to understand its capacity and preparedness for coastal storm hazards. Although most localities do not manage their own roads, as this is handled at the state level, they nevertheless do have the ability to identify their transportation needs and priorities.

Points		Scoring Metric	Notes
0		a. Locality has identified critical transportation infrastructure and assessed its vulnerability within the last 5 years.	Per the Division's General Manager, "the Petersburg Street Operations Division currently has no files related to the information being sought as part of the RAFT scoring process." The Richmond Crater Draft Hazard Mitigation Plan for 2022 provides no other information for this section.
0		b. Locality has developed a plan to protect critical transportation infrastructure within the last 5 years.	
0		c. Locality has a plan available and has informed residents which critical transportation infrastructure to utilize in the case of coastal storm hazards.	
0		d. Locality has a contingency plan for critical transportation infrastructure. This plan has been created and/or updated in the past 5 years.	

### 3) INFRASTRUCTURE RESILIENCE

#### 3.3 WATER SUPPLY AND WASTEWATER MGMT SERVICES: 1 / 4 Points

Communication and coordination between a locality and its municipal water utility and wastewater utility enable a coordinated, cohesive, and synchronized response to a coastal storm hazard.

Points		Scoring Metric	Notes
0		a. Locality conducts an assessment of its drinking water supply and wastewater management, both public sources and private well owners, to identify vulnerabilities to coastal storm hazards.	Per city staff, the Department of Public Works and Utilities undertook a Risk & Resilience Assessment (RRA) during 2021 in accordance with the EPA's compliance requirements for the America's Water Infrastructure Act (AWIA). The RRA included individual assessments of hazards posed by both Hurricanes and Floods. The RRA did not assess risks posed to private wells or private water systems within the City. The Petersburg Health Department (a state agency) provides for the permitting of wells and septic systems. However, city code covering water conservation does not specifically move the director to inspect for vulnerabilities to coastal storm hazards. See generally, <a href="#">Sec. 114-156</a> .
0		b. Locality water supply plan addresses coastal flooding and hazard events to assure safe drinking water supply and water conservation.	Per city staff, Petersburg receives finished water from the Appomattox River Water Authority (ARWA), but it is unknown if ARWA has completed an Risk Resilience Assessment or similar document. See generally <a href="#">Ch. 114, Art. II</a> .
0		c. Locality conducts a resident education program on safe drinking water to assure post-event public health and safety.	Per city staff, Petersburg does not conduct a resident education program on safe drinking water. (But see, drinking water educational resources collected by the local water authority treatment facilities: <a href="#">SCWA</a> and <a href="#">ARWA</a> .)
1		d. Locality communications with municipal water and wastewater utility, to manage ongoing challenges to safe water, including during and after a storm, Alternatively or additionally, the locality has established methods of communication with private well and water system owners, to ensure all are informed about how they can increase their water system resiliency.	Per locality staff, some Petersburg elected officials serve on the boards of municipal utilities such as the SCWA and ARWA. Additionally, per city staff, Petersburg works closely with ARWA and its other member localities to better understand regional issues and best practices.

### 3) INFRASTRUCTURE RESILIENCE

#### 3.4 CRITICAL INFRASTRUCTURE, EMERGENCY SERVICES: 1 / 4 Points



An evaluation of critical infrastructure for emergency services including shelters, emergency facilities, medical, electrical, and other essential services that allows a locality to understand its capacity and preparedness for coastal storm hazards. Critical infrastructure ensures that socially vulnerable populations, not just those who can afford it, will have access to quality drinking water, electricity, food, and shelter.



Points		Scoring Metric	Notes
1		a. Locality identifies critical infrastructure for emergency services and assessed its vulnerability within last 5 years.	Per locality staff, an update is forthcoming in 2022.  See EOP, pg. 49.
0		b. Locality has a plan to protect critical infrastructure from storms within last 5 years, including outreach to private well and private water system owners about how they can protect and increase their water system resiliency.	Potable water is mentioned as a priority but no specifics included.
0		c. Locality informs residents which critical infrastructure they should use during coastal storm hazards.	Evacuation plans related to dam failure.
0		d. Locality has a contingency plan for continuing services. This plan has been developed or updated in last 5 years.	

### 3) INFRASTRUCTURE RESILIENCE

#### 3.5 NATURAL AND NATURE-BASED FEATURES: 1 / 4 Points

Natural and nature-based features (NNBF) are features that define natural coastal landscapes and are either naturally occurring or have been engineered to mimic natural conditions. Examples include beaches and dunes; vegetated forest buffers, salt marshes, freshwater wetlands, and submerged aquatic vegetation; oyster reefs; and barrier islands. Green infrastructure (GI) is similar and complementary, and uses vegetation, soils, and other elements and practices to restore some of the natural processes required to manage water and create healthier urban environments. At the city or county scale, green infrastructure is a patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the neighborhood or site scale, stormwater management systems that mimic nature soak up and store water. Both NNBF and GI may be undertaken by a community in a variety of ways.

Points		Scoring Metric	Notes
0		a. Locality has identified natural and nature-based features that are protective and can assist with coastal resilience.	Per locality staff, Petersburg's forthcoming Comprehensive Plan update will identify natural and nature-based features identified in collaboration with the Virginia Department of Environmental Quality that are protective and can assist with coastal resilience such as wetlands, buffers and coastal shorelines.
0		b. Locality has developed plans and policies that use natural and nature-based features to enhance coastal resilience.	Per locality staff, Petersburg's forthcoming Comprehensive Plan update will include plans and policies created in collaboration with the Virginia Department of Environmental Quality

			that use natural and nature-based features to enhance coastal resilience.
1		c. Locality is implementing projects that are in accordance with the plans and policies developed to utilize natural and nature-based features to increase coastal resilience.	Petersburg has started construction on a project in the Lakemont Community that incorporates swale natural grass, stormwater improvement and green infrastructure. Locality staff also mentioned the FOLAR Appomattox River Trail, which reintroduced native species, removed invasive species and prevented flooding and erosion. See also <a href="#">Petersburg Walkable Watershed Concept Plan</a>
0	\$\$\$ 	d. Locality offers incentives for the use of natural and nature-based features to increase coastal resilience.	Per locality staff, Petersburg does not offer incentives for the use of natural and nature-based features to increase coastal resilience.

**TOTAL SCORE FOR SECTION 3:**

**6 / 20 POINTS**

## 4) PLANNING FOR RESILIENCE

### 4.1 BUDGET, FUNDING AND STATE & FEDERAL ASSISTANCE: 2/ 4 Points

Coastal hazard mitigation efforts, when properly funded, can reduce or prevent damage and decrease costs from storm damage. To ensure proper funding a locality can budget for mitigation efforts, assess the potential economic impact from a coastal storm hazard, and identify sources of funding for mitigation projects.

Points		Scoring Metric	Notes
0		a. Locality has incorporated into its Capital Improvement Plan (CIP) funding for coastal resilience. Projects could include upgrading critical infrastructure, water and wastewater systems, and/or food and health systems, with priority for needs of vulnerable populations.	There is an Infrastructure Plan in the <a href="#">Capital Improvements Plan</a> . There is funding allocated for the CIP in the <a href="#">budget</a> . Per locality staff, the locality is conducting stream restoration as part of the CIP. According to the staff, there are no projects focusing on vulnerable populations. The locality staff has requested funding at the state level to develop and update the Poor Creek Water and Sewage Shed.
1	\$\$\$	b. Locality has conducted an economic impacts assessment of coastal storm hazards.	<a href="#">The Richmond-Crater Hazard Mitigation Plan</a> addresses the History of Flood Events and Damages from 2011-2020 (Table 5.3); Flood Damage to Property and Crops, 1993-2020 (Table 5.4); Repetitive Flood Losses and Severe Repetitive Flood Losses (Table 5.7); Repetitive Flood Loss Area Descriptions (Table 5.8); Hazus 100-Year Flood Damage Vulnerability Results (Table 5.9); Annualized Flood Events and Losses, 1993-2020 (Table 5.10).  The Plan comprehensively addresses the threat of storms, flooding, and winds.
1		c. Locality has identified specific actions for coastal resilience (pre/post-flooding mitigation) in Hazard Mitigation Plan.	In the <a href="#">Hazard Mitigation Plan's Executive Summary for</a> Petersburg, Petersburg identifies pre and post-flooding mitigation (p. 9-13). These mitigation actions are from 2017. The <a href="#">2022 DRAFT Hazard Mitigation Plan</a> also identifies pre and post-flooding mitigation (p. 458-472).
0	\$\$\$	d. Locality has identified funding for non-CIP coastal resilience projects, including priority needs of vulnerable populations impacted by coastal storm hazards.	Per locality staff, the locality has not identified funding for non-CIP coastal resilience projects.

### 4.2 COASTAL RESILIENCY IN COMPREHENSIVE PLAN: 2/ 4 Points

A comprehensive plan is a locality's vision for future land use, development, adaptation, and resilience. Coastal resilience can be addressed in comprehensive plans by incorporating elements such as green infrastructure, open space preservation, infill development, the National Flood Insurance Program (NFIP), the Community Rating System (CRS), and stormwater management.



The ideal comprehensive plan identifies equity and the need to identify and support socially vulnerable populations as a priority for resilience, as well as a priority preference for restoration, green infrastructure and connectivity.

Points		Scoring Metric	Notes
1		a. The comprehensive plan discusses how community engagement around coastal resilience informed the plan.	<p><a href="#">Comprehensive Plan</a>, p. 6 provides that a Community Conversation regarding the environment took place on Dec. 17, 2020. Per locality staff, this included a discussion of coastal resilience.</p> <p>Locality staff further noted that the Comprehensive Plan is in the process of being updated (with the assistance of a consultant), and that the updated Comprehensive Plan will include more community engagement, including specifically on the topic of coastal resilience and the environment.</p>
0		b. The comprehensive plan includes clear discussion of coastal resilience and coastal storm hazards and incorporates assessments to inform the development of policies to reduce vulnerability to coastal storm hazards.	<p><a href="#">Comprehensive Plan</a>, p. 126 notes that stormwater can cause “localized flooding” and that “[s]tormwater ... needs to be managed to minimize damages that may occur when stormwater runoff exceeds the capacity of the pipes.” Stormwater management techniques are discussed on p. 131.</p> <p>Further, the Plan notes on p. 128 that “[s]ome remaining open space may have low-lying areas that sit near swamps and/or wetlands and are susceptible to flooding,” and therefore may not be suitable for development.</p> <p>Beyond this, however, the Plan does not include a clear discussion of coastal resilience/coastal storm hazards. But, per locality staff, the updated Comprehensive Plan should include a more in-depth discussion on the topic of coastal resilience.</p>
1		c. The comprehensive plan includes goals and objectives for preserving and protecting natural resources that mitigate coastal storm hazards.	<p><a href="#">Comprehensive Plan</a>, p. 127 notes that “greenfields are undeveloped tracts of land used for agriculture or preserved as open space,” and that these greenfields “provide environmental benefits for the whole City by providing pervious land that will filter and absorb stormwater,” among other benefits.</p> <p>Further, p. 128 notes “preservation of open space” as an objective.</p>
0		d. The comprehensive plan addresses impacts on critical infrastructure and essential services from coastal storm	<a href="#">Comprehensive Plan</a> , p. 25 states “many of the water and sewer lines are in need



		<p>hazards, particularly for impacts affecting socially vulnerable populations.</p>	<p>of replacement and repair. The city’s infrastructure is about 100 years old and significant investment is required to avoid failure in the system.”</p> <p>P. 94 emphasizes the need for “storm-water sensitive parking areas” at park and recreation facilities.</p> <p>P. 100 acknowledges that “four of [Petersburg’s] seven wards are home to its most vulnerable populations,” and efforts to make transportation more equitable are particularly important in those areas.</p> <p>However, the above observations are not related to coastal storm hazards specifically (and locality staff agreed with this assessment).</p>
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## 4) PLANNING FOR RESILIENCE

### 4.3 LAND USE ORDINANCES:

3 / 4 Points

A locality's land use ordinances (such as zoning, subdivision, and floodplain) should enact the locality's vision and policies laid out in its comprehensive plan. Land use ordinances can be used to conserve and protect natural resources, ecosystems, agricultural lands, and areas vulnerable to flooding. Localities are required to enact Chesapeake Bay Preservation Act ordinances and going beyond these ordinances provides greater resilience.

Points		Scoring Metric	Notes
1	CRS 	a. Locality land use regulations protect areas vulnerable to flooding by limiting development inside the floodplain or encouraging development outside the floodplain.	<a href="#">Ordinance No. 11-09, Sec. 58-116</a> , states: "Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the areas of special flood hazard, designated as zones A1-30 and AE on the flood insurance rate map, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the City of Petersburg."
0	CRS 	b. Locality land use regulations protect areas vulnerable to flooding by setting higher standards in existing flood zones or by designating additional flood zones beyond those designated by FEMA.	Per <a href="#">Ordinance No. 11-09, Sec. 58-56</a> , the City has not designated any flood zones beyond those designated by FEMA.  Locality staff confirmed this.
1	CRS 	c. Locality land use regulations protect areas vulnerable to flooding by setting buffers, including open space.	<a href="#">Ordinance No. 04-51, Sec. 122-78</a> , states: "To minimize the adverse effects of human activities on the other components of resource protection areas, state waters, and aquatic life, a 100-foot buffer area of vegetation that is effective in retarding runoff, preventing erosion, and filtering nonpoint source pollution from runoff shall be retained if present and established where it does not exist if erosion problems are evident."  Additionally, <a href="#">Comprehensive Plan</a> , p. 25 states "new development along South Crater Road is often adjacent to sensitive wetlands. Riparian buffers are needed to protect the Chesapeake Bay and the Appomattox River in preparation for any development to occur along the river front. This can be achieved through our zoning regulations."

			<p>Further, p. 131 states that the City will take steps to improve stormwater management and erosion control, including “[r]estor[ing] degraded stream buffers by utilizing neighborhood organizations in planting programs, removal of pollution sources and invasive plants.”</p>
1	CRS 	d. Locality land use regulations protect areas vulnerable to flooding by using setbacks to protect flood-prone areas.	<p><a href="#">Code 1981, § 33-41(j)</a> provides that “[l]and subject to flooding and land deemed to be topographically unsuitable shall not be platted for residential occupancy, nor for such other uses as may increase danger to health, life or property or to aggravate erosion or flood hazard. Such land within the subdivision shall be set aside on the plat for such uses as shall not be endangered by periodic or occasional inundation or shall not produce conditions contrary to public welfare.”</p>

#### 4.4 INCENTIVES FOR COASTAL RESILIENCE:

2/ 4 Points

Incentive programs encourage infill development and protect open spaces, while protecting flood-prone areas and critical ecosystems. Incentives should be developed with community input, with particular attention to consulting agencies and organizations working with or providing services to lower income and vulnerable populations as well as agencies and organizations working to build community resilience.





Points		Scoring Metric	Notes
1	\$\$\$	a. Locality offers an incentive for achieving coastal resilience goals: (1) discourage development in areas prone to flooding; (2) protect critical ecosystems; (3) encourage sustainable development; (4) improve resilience in high-risk areas; and (5) preserve natural assets.	(5): Per locality staff, Petersburg has begun to identify city owned property that is vacant and is considering establishing conservation easements to prevent development of that property to promote environmental protection and stormwater management or prevent flooding.
1	\$\$\$	b. Locality offers a second incentive for achieving the goals listed above.	(1): Per locality staff, Petersburg discourages development in areas prone to flooding throughout its permitting review process. <a href="#">Ch. 58</a> & <a href="#">Sec. 58-116</a> .
0	\$\$\$	c. Locality offers three or more incentives for achieving the goals listed above.	No information found regarding incentives for coastal resilience goals 2, 3 or 4.
0	\$\$\$	d. Locality develops incentives in consultation with agencies and organizations working with socially vulnerable populations.	Per locality staff, incentives were not developed with input from socially vulnerable populations.

## 4) PLANNING FOR RESILIENCE

### 4.5 NATURAL RESOURCE PRESERVATION:

0 / 4 Points

Natural resources are important to the locality's economy, environment, and quality of life. Natural resources also can help protect against coastal storm hazards and minimize damage from coastal storm events. The preservation of these critical natural resources is paramount to providing resilience for a coastal locality during these events. These actions should go beyond the required Chesapeake Bay Preservation Act Ordinance.

Points		Scoring Metric	Notes
0	CRS 	a. Locality has identified and mapped natural resources that are important for broad ecosystem health and which are at risk of being lost due to flooding and coastal storm hazards.	Per locality staff, Petersburg's forthcoming Comprehensive Plan update will identify natural resources that are important for broad ecosystem health and which are at risk of being lost due to flooding and coastal storm hazards (e.g. riparian buffers and wetlands within the flood prone areas).
0	CRS 	b. Locality has developed plans and policies that preserve and restore natural resources to increase coastal resilience.	Per locality staff, Petersburg's forthcoming Comprehensive Plan update will contain a plan to preserve and restore natural resources to increase coastal resilience.
0		c. Locality has programs with residents, civic organizations, and nonprofit organizations to educate the community about the natural resource preservation plan and engage them in helping to implement the plan.	Per locality staff, Petersburg's forthcoming Comprehensive Plan update will contain programs to educate the community about the natural resource preservation plan.
0		d. Locality is funding actions that implement the natural resource preservation plan.	Per locality staff, Petersburg will fund the natural resource preservation plan extensively through grants.

TOTAL SCORE FOR SECTION 4:



9/ 20 POINTS

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

### 5.1 PUBLIC INVOLVEMENT IN RESILIENCE PLANNING:

1/ 4 Points

For community resilience, it is important to use meaningful engagement strategies where residents are able to provide feedback and suggestions through meetings, workshops, and surveys. To reach people of color and the elderly, media and social media that serves these populations is effective. Public engagement enables residents and other stakeholders to provide input to the locality. Better informed residents are better able to ensure their locality remains resilient to coastal storm hazards.

Points		Scoring Metric	Notes
0		a. Locality has a written policy regarding the role of residents and businesses, schools and educators, institutional, nonprofit, faith-based communities veterans, and other stakeholders in coastal resilience.	Per locality staff, the locality does not have a written policy.
1	CRS	b. Locality has staff dedicated to public engagement on coastal resilience, including a standing committee that addresses coastal resilience as part of its work.	Per locality staff, the Public Information Office shares information on coastal resilience as part of their usual communications. Per locality staff, there is a Development Review Team that reviews all developments; during that process, the team looks at development in coastal areas and floodplains. Further, per the locality staff, through the stormwater permit process, the staff reviews development impacts.
0	CRS 	c. Locality holds at least one public meeting per year, including one in vulnerable resident areas to address coastal resilience issues and posts the results of the public meetings. For 75-150,000, at least two such public meetings per year; for 150,000+ at least three per year.	Per locality staff, the locality does not hold at least one public meeting per year to address coastal resilience issues.
0	CRS 	d. Locality informs and engages vulnerable population about coastal resilience by using website, social media, media serving people of color and minorities, and faith-based organizations to enable them to provide suggestions about issues and strategies.	Per locality staff, the public is invited to comment on regional planning efforts; however, the locality has not conducted marketing targeting people of color, minorities, and faith-based organizations.

### 5.2 PROVIDING RESILIENCE INFORMATION TO THE PUBLIC:

0/ 4 Points

The public needs free and open access to information related to coastal resilience and planning. Information sharing allows residents to understand their risks and the importance of resilience. Information should be shared easily and presented in a manner which is clear and easy to understand, and easy to access in ways that reach different populations in the community.

Points		Scoring Metric	Notes
0	CRS	a. Locality provides to the public localized user-friendly information on coastal resilience, in digital and non-digital formats and <b>in multiple languages</b> where appropriate based on demographics.	Per locality staff, the makeup of Petersburg is such that the information should be provided in multiple languages; however, so far the information has only been provided in English.

0	CRS	b. Locality provides to the public localized user-friendly information on coastal resilience, <b>on a website</b> (e.g., interactive maps).	Per locality staff, the locality does not provide to the public localized user-friendly information on coastal resilience on a website. The locality does have a GIS system that is administered through the city assessor's office. The GIS system includes information on each property in the city, including a map. The locality has requested that additional information including flood information be included in those property records.
0	CRS	c. Locality provides localized user-friendly information on coastal resilience <b>in public spaces</b> (e.g., public offices or library).	<p>Per locality staff, the Comprehensive Plan is available online and in the library. The Comprehensive Plan, however, does not include information on coastal resilience.</p> <p>The <a href="#">Comprehensive Plan</a>, p. 126 notes that stormwater can cause “localized flooding” and that “[s]tormwater ... needs to be managed to minimize damages that may occur when stormwater runoff exceeds the capacity of the pipes.” Stormwater management techniques are discussed on p. 131.</p> <p>Further, the Plan notes on p. 128 that “[s]ome remaining open space may have low-lying areas that sit near swamps and/or wetlands and are susceptible to flooding,” and therefore may not be suitable for development.</p> <p>Beyond this, however, the Plan does not include a clear discussion of coastal resilience/coastal storm hazards.</p>
0	\$\$\$	d. Locality provides the public with localized, user-friendly information about economic costs and risks associated with <b>coastal storm hazards</b> .	Per locality staff, the locality does not provide the public with localized, user-friendly information about economic costs and risks associated with coastal storm hazards.



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


### 5.3 CITIZEN LEADERSHIP & NETWORKS FOR RESILIENCE: 3 / 4 Points



Developing resident leaders and strong volunteer networks are important aspects of building a locality's health and wellness resilience. Leaders can be responsible for informing residents, expressing resident concerns, and assisting with local preparedness. Leaders can be called on during emergencies to assist residents in need and to assist with post-hazard recovery. Communities can build this capacity by offering volunteer opportunities to cultivate experienced, local responders.

Points		Scoring Metric	Notes
1		a. Locality supports and invests in community-led initiatives on coastal resilience.	Per p. 194 of the <a href="#">Virginia Coastal Resilience Master Plan</a> , Petersburg is partnering with FOLAR (Friends of the Lower Appomattox River) to develop "a 25-mile blueway and greenway that will span through six localities bordering the lower Appomattox River."  Per locality staff, Petersburg has also worked with the James River Association and the Petersburg Healthy Options Partnership.
1		b. Locality offers training opportunities and education opportunities for resident leaders or volunteers to educate residents on what they can do to increase their resilience on individual properties or in neighborhoods.	Per locality staff, such education opportunities are available through the partnership with the Lakemont neighborhood.
1		c. Locality supports resident leaders or volunteers in community education and outreach efforts about coastal resilience by providing them with materials, speakers for gatherings, or support for resident action projects.	Per locality staff, Petersburg provides handouts for community leaders; has also partnered with the James River Association to provide outreach to residents.
0		d. Locality highlights the work of resident leaders or volunteers in supporting and advancing coastal resilience, on its website, through social media, Facebook, awards, or other means.	Per locality staff, Petersburg does not at this time.

### 5.4 RESILIENT SYSTEMS: FOOD, HEALTH, AND MEDICINE: 3/ 4 Points

If a community's food, health, and medicine systems are not resilient before a storm, then the community may face a substantially longer recovery. Food, health, and medicine systems must be sustained before, during and after storm events, and are dependent on critical systems, including transportation and utilities. Lower-income and minority populations often already struggle to access food, health, and medicine, and are among the vulnerable populations during a coastal storm hazard.





Points		Scoring Metric	Notes
1		a. Locality has emergency plans for provision of food, health, and medicines to residents, through its comprehensive, hazard mitigation, or other plans.	Emergency Operations Plan, Combined Plan 2019
1		b. Locality has plans for providing food to vulnerable populations, has areas for improvement, has developed partnerships to address these needs, and has provided	Emergency Preparedness Plan details that the Department of Social Services would lead identification of food assistance needs and obtain food

		information to residents on how to access food during emergencies and coastal storm events.	supplies unavailable from existing inventories. See EOP, pg. 42.
1		c. Locality has plans for providing healthcare to vulnerable populations, has areas for improvement, has developed partnerships to address these needs, and has provided information to residents on how to access healthcare during emergencies and coastal storm hazards.	Emergency Preparedness Plan details division of health and medical service responsibilities between the Department of Health, Southside Virginia Emergency Crew, District 19 Community Services Board, and the Fire Department. See EOP, page 45.
0		d. Locality has plans for providing medicine to vulnerable populations, areas for improvement, has developed partnerships to address these needs, and has provided information to the public on how to access medicine during emergencies and coastal storm hazards.	Emergency Preparedness Plan does not explicitly mention medicine other than informing residents to bring supplies of medicine with them if they are evacuated. EOP, p 61.

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

### 5.5 HEALTH RESOURCES IN COMMUNITY RESILIENCE: 1 / 4 Points

To ensure that socially vulnerable and underserved populations do not experience disproportionate impacts from flooding and coastal hazards, a locality needs to be able to predict how its residents may fare during a coastal storm hazard event, and then help those who are most vulnerable. One key measure that can be useful to localities in this effort is the metric for “deaths of despair”— or the prevalence of suicide, cirrhosis of the liver, and overdoses – which can serve as a proxy for the locality’s physical and mental health, as persons who are suffering from depression and addictions are less likely to be able to respond effectively during flooding events. A locality with good physical and mental health will be better able to respond effectively to new or changing conditions as well as to recover from stressful events.

Points		Scoring Metric	Notes
0		a. Locality maintains data on community physical and mental wellbeing and challenges through specific metrics, such as the metrics for “deaths of despair” (suicide, cirrhosis of the liver, overdoses).	Per locality staff, Petersburg does not maintain data on these specific metrics, despite reference to data sets (socioeconomic, census, housing and infant deaths) in the <a href="#">Petersburg Comprehensive Plan</a> , use of poverty studies which includes major trends and demographics, and partnership with the Robert Wood Johnson Foundation’s annual health rankings. pg. 18, 62, 72.
1		b. Locality has met at least once with community partners to identify “trusted messengers” for communicating with vulnerable populations.	Per locality staff, representatives meet with trusted messengers for the Eviction Stakeholders Meeting and from the public school system, the Legal Assistance Foundation, and critical access hospitals (CAHs).
0		c. Locality has identified, or maps its vulnerable neighborhoods, and has done this in partnership with NGOs, faith-based organizations, and its health and community services board.	Locality staff could not confirm that Petersburg has mapped its most vulnerable neighborhoods, although “Petersburg recognizes that four of its seven wards are home to its most vulnerable populations, such as seniors, children, the homeless, persons with disabilities and mental health challenges, veterans, and persons formerly incarcerated.” <a href="#">Petersburg Comprehensive Plan</a> , pg. 100.
0		d. Locality has a plan with these NGOs, faith-based organizations, and health and community services board that helps its physically and mentally challenged vulnerable populations prepare for coastal flooding events, and that provides assistance to them during and after these events.	Currently, locality does not have a Citizens Emergency Response Team (CERT) program. The previous program became inactive due to staffing and funding assistance. The locality is actively seeking to bring this program back in the near future.

**TOTAL SCORE FOR SECTION 5:**

**8/ 20 POINTS**

## Opportunities

Example of an Opportunity Action Item Checklist showing possible actions to improve scores in each scorecard category. Opportunity items for your locality will be determined by your implementation team and the RAFT core team.

Locality Action Category	Score	Opportunity Actions for Score Improvement	Potential Time Commitment Short-Term: < 1 year; Mid-Term: 1-3 years; Long-Term: > 3 years
<b>1.4 Adaptive Management</b>	≤ 2	Incorporate new (<5 years) data, analysis, and approaches to resilience into:	
		a. Floodplain Management Ordinance.	MT – LT
		b. Zoning Ordinance.	MT - LT
		c. Site and Subdivision Ordinances.	MT – LT
		d. Comprehensive Plan.	MT – LT
<b>3.2 Critical Transportation Infrastructure</b>	≤ 2	a. Identify critical transportation infrastructure and assess its vulnerability within the last 5 years	ST – MT
		b. Develop plan to protect critical transportation infrastructure within the last 5 years	ST – MT
		c. Inform residents which critical transportation infrastructure to utilize in the case of coastal storm hazards.	MT – LT
		d. Create contingency plan for critical transportation infrastructure that is updated every 5 years.	MT - LT
<b>4.5 Natural Resource Preservation</b>	≤ 2	a. Identify and map natural resources that are important for broad ecosystem health and which are at risk of being lost due to flooding and coastal storm hazards.	ST – MT
		b. Develop plans and policies that preserve and restore natural resources to increase coastal resilience.	MT - LT
		c. Create programs with residents, civic organizations, and nonprofit organizations to educate the community about the natural resource preservation plan and engage them in helping to implement the plan.	MT – LT
		d. Fund actions that implement the natural resource preservation plan.	MT -LT

## Next Steps

### Resilience Action Workshop

- Community leaders work together to create a one-year **Resilience Action Checklist**.
- The RAFT Core team helps to **identify achievable action items** for improving resilience.
- Localities break into focused discussion groups to **identify 3 to 5 top opportunities** for the next year to increase resilience.
- Large group discussion on **regional sharing**, followed by breakout into locality discussion groups to:
  - **Identify a Locality Implementation Team;**
  - **Create a timeline for actions;**
  - **Coordinate logistics;**
  - **Determine next steps for implementation team.**



### Implementation

- **Identify a Locality Implementation Team** made up of local officials and residents that will work with the Core Team to accomplish checklist actions and projects.
- **Work with one of the Core Team members** who will set up periodic check-in meetings or calls to track progress and provide support.
- Assistance from RAFT partners could take the form of:
  - **Communications product development;**
  - **Hazard and critical infrastructure mapping;**
  - **Policy and legal analysis;**
  - **Model ordinance and comprehensive plan language;**
  - **Green infrastructure projects;**
  - **Workshop or meeting facilitation;**
  - **Community engagement recommendations;**
  - **Specific research or data collection projects.**

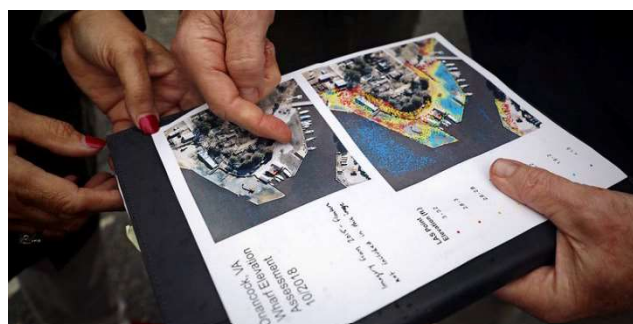


Photo by Aileen  
Devlin, Virginia Sea  
Grant

## Data Sources Used to Complete Scoring

Data Sources	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4	3.5	4.1	4.2	4.3	4.4	4.5	5.1	5.2	5.3	5.4	5.5
Business Association Website																									
Calls to the locality	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Calls to the PDC	X		X			X	X		X																
Capital Improvement Plan																X									
Community Services Board																									X
County Health Rankings and Roadmaps																									X
Dam Management Plan														X											
DCR Floodplain Management Program																									
Department of Conservation and Recreation			X			X			X																
Department of Emergency Management									X																
Department of Environmental Quality															X										
Department of Health							X																	X	
Department of Transportation Road and Bridge Standards																									
Emergency Management Plans				X				X		X														X	
Emergency Operations Plan		X					X			X	X			X										X	X
FEMA's CRS website					X	X	X			X								X		X	X	X			
Fire Department website		X																							
Flood exposure and vulnerability assessment publications (VIMS, FEMA, and DCR)						X																			
Hazard Mitigation Plan		X	X			X	X	X	X	X	X	X				X						X		X	
Local Assessments of Ecological Assets															X								X		
Local Boards to advise elected officials			X																				X		X
Local Budget																X									

Data Sources	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4	3.5	4.1	4.2	4.3	4.4	4.5	5.1	5.2	5.3	5.4	5.5
Local Chamber Website								X																	
Local Economic Impact Assessments																									
Local Ordinances and Comprehensive Plan			X	X				X			X		X		X		X	X	X	X		X		X	X
Local Public Works Design & Construction Standards												X	X												
Local Transportation Plan																									
Local Utility Website													X												
Local Water Supply Plan													X												
Locality Resilience Plan or Strategy											X				X						X				X
Locality Social Media		X																					X		
Locality Website	X	X	X	X			X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X
School Curriculum																									
Social Services							X																	X	
Planning District Commission (PDC) website		X	X			X	X		X																
Public Libraries																									
Wetlands Watch					X																				
Zoning Codes				X															X						