



GLOUCESTER RESILIENCE ACTION WORKSHOP JUNE 29, 2017 REPORT

SPONSORS & ACKNOWLEDGEMENTS

The first year of research for The Resilience Adaptation Feasibility Tool (The RAFT) was conducted in the 2015-16 academic year by the UVA Institute for Environmental Negotiation in collaboration with the William & Mary Virginia Coastal Policy Center. The RAFT was officially “launched” by a 2016 grant by the National Fish & Wildlife Foundation (NFWF), which enabled completion of the Scorecard and testing The RAFT process on three pilot communities in three different coastal planning district commissions.

CORE RAFT PLANNING TEAM

- Elizabeth Andrews, Director, Virginia Coastal Policy Center, William & Mary Law School
- Michelle Covi, Associate Professor of Practice, Virginia Sea Grant Climate Adaptation and Resilience Program, Old Dominion University
- Tanya Denckla Cobb, Director, Institute of Environmental Negotiation, University of Virginia
- Angela King, Assistant Director, Virginia Coastal Policy Center, William & Mary Law School
- Dylan Kolb, Project Assistant, Institute for Environmental Negotiation, University of Virginia
- Rachel Moon, Project Manager and Graphic Design, Institute for Environmental Negotiation, University of Virginia
- Emily Votroubek, Project Assistant and Report Editor, Institute for Environmental Negotiation, University of Virginia



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WHAT IS THE RAFT?

Local governments in Virginia's coastal region are facing the most daunting challenges related to climate change, as the southern Virginia coastal region faces the greatest risk from sea level rise on the East Coast. Historical and projected sea level rise are presenting all Virginia coastal localities with a challenge that affects residents, businesses, and key national security facilities, as well as plans for future development and infrastructure.

One important gap in the toolbox of Virginia's localities is an easy and accessible scorecard to define a locality's resilience. The RAFT attempts to fill this gap. The RAFT features three key components, creating a "full service" tool for localities:

- 1) The Resilience Scorecard provides a comprehensive assessment of community resilience to flooding while remaining economically and socially relevant.
- 2) A workshop for community thought leaders to use the assessment to develop a Resilience Action Checklist for increasing community resilience.
- 3) Ongoing assistance during implementation of the Resilience Action Checklist, both in the form of technical assistance and assistance in finding funding.

THE RAFT TEAM & RESILIENCE SCORECARD

The Resilience Adaptation Feasibility Tool (The RAFT) was conceived and developed by an academic interdisciplinary collaborative core team, led by the University of Virginia Institute for Environmental Negotiation (IEN), the William & Mary Law School Virginia Coastal Policy Center (VCPC), and Old Dominion University/Virginia Sea Grant (ODU), collectively "The RAFT Team." Funded by a Restoration and Community Stewardship grant from the National Fish & Wildlife Foundation (NFWF), the core team's goal was to develop a robust Resilience Scorecard and to test it with three coastal communities.

The Resilience Scorecard is designed to be completed independently by the academic collaborative, and provides a comprehensive assessment of the locality's resilience to flooding while remaining economically and socially relevant. The Scorecard is comprehensive in that it measures environmental, economic and social resilience factors. It covers local policy, infrastructure, budgeting and economics, land use, community engagement, community health and wellness, and ecosystems.

Development of the Scorecard was informed by an Advisory Committee consisting of academic advisors (from architecture, planning, environmental sciences, environmental psychology, engineering, and water quality), as well as representatives of local governments, nonprofits and state agencies. In addition, a special focus group (of coastal local governments, NGO's, and relevant state agencies) reviewed the draft Scorecard and provided valuable guidance on how to make it more relevant to Virginia's coastal localities.

2) FUTURE RISK AND CURRENT INFRASTRUCTURE ASSESSMENT

2.4 CRITICAL INFRASTRUCTURE: PROTECTIVE, PUBLIC SERVICES, SHELTER, EMERGENCY FACILITIES, AND TRANSPORTATION

DESCRIPTION

Reevaluation of forms of critical infrastructure—protective, public services, shelter, emergency facilities, and transportation—allows a locality to understand its capacity and preparedness for a coastal hazard.

LOCALITY ACTIONS

2.4.a: Forecast potential loss of public service from various coastal hazards, including percent of households affected.

2.4.b: Evaluate transportation infrastructure for safety, reliability and capacity in the case of a coastal hazard; transportation infrastructure must be dependent on for evacuation and emergency access. Forecast how many roads or systems would be closed for during various coastal hazards.

2.4.c: Evaluate protective and emergency infrastructure and ensure it is adequately equipped to handle various coastal hazards.

2.4.d: Use FEMA's higher standards for critical facilities as a guide to assessing critical infrastructure, and identify what changes should be made to improve existing infrastructure.

2.4.e: When possible, locate critical infrastructure outside of flood zones.

2.4.f: Use the Department of Homeland Security's Infrastructure Data Taxonomy to catalog and characterize infrastructure.

2.4.g: Use the Department of Transportation's Federal Highway Authority's sustainability tools, such as the Guide to Assessing Criticality in Transportation Adaptation Planning, to assess vulnerability in transportation infrastructure.

2.4.h: Use modeling and statistical analysis to project sea level rise impact in the next 10, 20, 30 years and beyond.

SCORING

Scoring - 1 point per program:

1 point - Locality has a plan available to inform residents which critical infrastructures to utilize in the case of an coastal emergency.

1 point - Locality has a contingency plan for continuing services and critical infrastructure, even if some are out of service.

1 point - Locality has a plan to regularly identify and update at-risk infrastructure, and has identified and recorded loss of critical infrastructure services during the last five years.

1 point - Locality has a map, which is free and publicly available, that allows residents to easily see and understand which areas are at risk.

0 points - Locality has done none of the above.

Bonus: +1 if critical infrastructure is regularly maintained and assessed to ensure it is prepared for at least a most probable flood.

DATA SOURCES

Locality website.

4 / 4 POINTS

LOCALITY SCORE

1 / 1 BONUS POINT

NOTES

The EOP has a contingency plan for continuing services and critical infrastructure. Gloucester does not have a lot of critical infrastructure in flood zones. The contingency plan also accounts for loss of water and Gloucester has recently updated shelters with generators. Gloucester provides flood maps to the public and identifies which critical infrastructure people should use in an emergency.

2.5 WATER SUPPLY AND SERVICES

DESCRIPTION

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

LOCALITY ACTIONS

2.5.a: Locality identifies opportunities where cooperative action could enhance a coordinated, multi-agency response effort to coastal hazard in a cohesive and synchronized manner. Consider local opportunities, as well those in neighboring localities or on the regional scale.

2.5.b: Locality develops risk scenarios for coastal hazards and prioritizes specific scenarios for evaluation and multi-agency response and recovery planning.

2.5.c: Locality has relationships and established lines of communication with municipal water utilities and wastewater utilities.

2.5.d: Locality has provided contact information for wastewater and drinking water utilities in the case of an emergency.

SCORING

Scoring - 1 point per program:

1 point - Locality has made information on drinking water sources, municipal water utilities, and wastewater utilities available to the public.

1 point - Locality has established a method of communication with municipal water utilities and wastewater utilities.

1 point - Locality coordinates with the municipal water and wastewater utility to complete periodic updates to the local water supply plan.

1 point - Locality consults with the municipal drinking water and wastewater utility to ensure that rates, fees, and rate structures are providing the revenue required to cover the costs of services.

0 points - Locality does not have well-established connection with water utility services and does not have a local water supply plan.

DATA SOURCES

Locality website.

Hazard Mitigation Plan.

Local utility Website.

Comprehensive Plan.

4 / 4 POINTS

LOCALITY SCORE

4 / 4 POINTS

NOTES

Information is publicly available, including on rates and fees. There is information on a utilities advisory committee, along with information on the business office, water treatment plant, and maintenance shop staff. Gloucester owns the utilities so there are internal connections and communications with utilities.

2) FUTURE RISK AND CURRENT INFRASTRUCTURE ASSESSMENT

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6) COMMUNITY HEALTH AND WELLNESS

6.5 CIVIC VULNERABILITY DURING COASTAL HAZARDS

DESCRIPTION

In the case of a coastal hazard, localities need to address civic vulnerabilities. These may include shelters, programs, and food banks. Localities should protect, plan for, and identify these civic vulnerabilities to minimize response times in the case of a coastal hazard.

LOCALITY ACTIONS

6.5.a: Locality has programs and shelters in place to protect local residents during a coastal event.

6.5.b: Locality has identified existing shelters available in the case of a coastal disaster.

6.5.c: Locality has allocated funding for programs and shelters.

6.5.d: Locality has ensured shelters are ADA compliant (when possible) and are outside of the floodplain.

SCORING

Scoring - 1 point per program:

1 point - Locality has a program to assist vulnerable populations.

1 point - Locality has a food bank or pantry with refrigeration units and backup generators for coastal emergency incidents.

1 point - Locality has a shelter or program for the homeless during coastal incidents.

1 point - Locality has a program to provide emergency shelter during emergency/coastal incidents.

0 points - Locality has none of these programs.

DATA SOURCES

Locality website.

Hazard Mitigation Plan.

Locality Budget.

2 / 4 POINTS

LOCALITY SCORE

2 / 4 POINTS

NOTES

Gloucester does have emergency shelters during coastal incidents, and provide homeless shelter. The shelter has emergency food bank with a generator. The food bank is run by a nonprofit.

6.6 RESILIENT SYSTEMS TO PROVIDE FOOD AND MEDICINE

DESCRIPTION

If a community's food, health, and medicine systems are not already resilient before a flood, then the community may face a substantially longer recovery period from a coastal hazard. Food, health, and medicine systems are interconnected with other critical systems, including transportation and utilities. Lower-income and minority populations already struggle to access food, health, and medicine.

LOCALITY ACTIONS

6.6.a: Locality includes food, health, and medicine systems planning in the locality's comprehensive plan.

6.6.b: Locality has obtained information about the current status of food, health, and medicine systems, and has identified gaps and areas for improvement.

6.6.c: Locality uses a holistic approach to assess food, health, and medicine systems, and also to analyze transportation, distribution, retail, agriculture, and local businesses and restaurants.

6.6.d: Locality has a plan for providing food, health, and medicine for vulnerable populations.

6.6.e: Locality forms public-private partnerships to address food, health, and medicine systems resiliency.

6.6.f: Locality has adapted to new technologies and practices.

SCORING

Scoring - 1 point per program:

1 point - Locality has community education and outreach on how to access food/health/medicine in emergency/coastal events.

1 point - Locality educates businesses and supply chains about their vulnerabilities.

1 point - Locality has created a plan to protect critical supply chains for food/health/medicine during emergencies/coastal events.

1 point - Locality has identified critical infrastructure for food/health/medicine delivery at risk during emergencies/coastal events.

0 points - Locality has no emergency supply chain plan.

DATA SOURCES

Locality website.

Comprehensive Plan.

Hazard Mitigation Plan.

3 / 4 POINTS

LOCALITY SCORE

3 / 4 POINTS

NOTES

Gloucester has identified critical infrastructure and food/health/medicine systems, but they did not include supply chains. They do strive to educate businesses and supply chains about vulnerabilities and do educate the community broadly about preparedness.

6) COMMUNITY HEALTH AND WELLNESS

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WORKSHOP PURPOSE & PROCESS

The Resilience Action Workshop was conceived as a way to help catalyze meaningful action at the local level to increase a locality's resilience to coastal hazards. While, on its own, The Resilience Scorecard might increase understanding, community leadership is needed to bring about meaningful change. The three pilot community workshops in June 2017 sought to bring together community thought leaders who represented a broad range of community interests - such as planning, stormwater, health, emergency services, schools, Navy, and neighborhood interests. In Gloucester, 50 community leaders were invited and 32 were able to participate.

During the workshop, participants were introduced to the Scorecard and reviewed its findings to identify the locality's greatest resilience strengths as well as opportunities for improving resilience in the next year. With this information, participants followed a typical strategic planning approach by brainstorming and prioritizing possible actions that could be taken to improve community resilience. Finally, working together, participants refined specific priority actions to create a one-year Resilience Action Checklist of specific next steps, including (where possible) a timeline, partners and resources needed to implement the actions. Additionally, when applicable, participants mapped locations where the action would be most impactful.

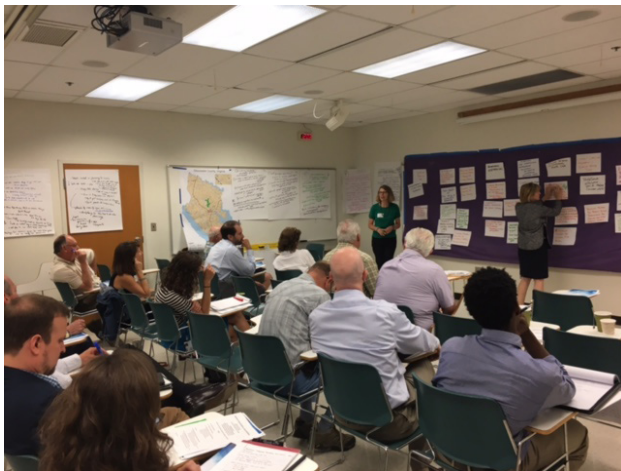


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RESILIENCE SCORECARD

STRENGTHS & OPPORTUNITIES

After completion of Gloucester's pilot assessment within The RAFT Scorecard, The RAFT Team identified the locality's strengths and opportunities for presentation at the workshop. Generally, strengths were sections that received scores of 3 and above, whereas opportunities were those sections that received scores of 2 and below. Information in the Scorecard findings elaborated on why the locality received a particular score. The RAFT Team used this information to provide a presentation on why one area might be a strength, and, for opportunities, identify specific actions the community might take to improve its score. Opportunities were divided into primary and secondary. Primary opportunities were considered "low-hanging fruit" in terms of potential ease of implementation. Secondary opportunities were those actions that would likely take more time or resources to effectively implement.

6) COMMUNITY HEALTH AND WELLNESS

STRENGTHS

6.1 Vulnerable Populations	4/4	Locality has identified and engaged at least one vulnerable population, has made information publicly available, and has community education and outreach goals for at least one vulnerable population included in the comprehensive plan
	+ 1	Bonus: +1 Has identified, engaged, and/or has community education and outreach for more than one vulnerable population
6.2. Resident Emergency Preparedness	4/4	Locality engages resident groups in emergency drills, planning workshops, and conducts community outreach about community hazard mitigation plan and resident emergency preparedness
	+2	Bonus: +2 Early warning system and youth emergency prep drills
6.3 Citizen Leadership for Coastal Resilience	3/4	Locality supports and invests in community-led initiatives on coastal resilience
	+2	Bonus: +2 Has a central location dedicated for the above and offers leadership opportunities in other community services not directly related to coastal resilience

PRIMARY OPPORTUNITIES

1.1 Locality Leadership and Planning for Resiliency	2/4	Identify more local leaders and organizations, and publish the information on locality website
2.2 Stormwater Management	3/4	Provide information to the public about stormwater management, and revise the stormwater ordinance to tie into floodplain management, monitoring, and maintenance
3.1 Budget, Funding, State and Federal Assistance	3/4	Include specific reference to "coastal resilience" within budget and other finance documents
4.3 Incentives for Coastal Resilience	1/4	Create incentives to encourage infill development and protect open space, flood-prone areas, and critical ecosystems
7.1 Natural Resource Preservation	2/4	Identify and map more natural resources that are vulnerable to coastal hazards

RESILIENCE SCORECARD

STRENGTHS

CATEGORY	SECTION	SCORE	DESCRIPTION
1) Policy, Leadership, and Legislation	<i>1.2 Leadership and Responding to an Emergency</i>	4/4	Local officials collaborate with more than one relevant stakeholder
	<i>1.3 Information Sharing</i>	4/4	Information is shared, in a central location, does not require a login, and is free
	<i>1.4 Local Collaboration with State Agencies and PDCs</i>	4/4	Local officials communicate with PDCs and state agencies to address coastal resilience at least once every three months
	<i>1.5 Adaptive Management</i>	4/4	Localities have updated long-term coastal resilience in local codes
2) Future Risk and Current Infrastructure Assessment	<i>2.1 Flood Exposure and Vulnerability Assessment</i>	4/4 +1	A flood exposure and vulnerability assessment has been created, is available on website, identifies areas and sectors at risk, and has been updated within the last 5 years Bonus: +1 Coastal Hazard Map is publicly available
	<i>2.2 Stormwater Management</i>	3/4	Includes development and land use, best practices, enforcement, floodplain management, monitoring, and maintenance, and is up to date
	<i>2.3 Coastal Hazard Mitigation Plan</i>	4/4	HMP covers coastal resilience, includes community engagement, participates in NFIP, and has regional collaboration

RESILIENCE SCORECARD

STRENGTHS

CATEGORY	SECTION	SCORE	DESCRIPTION
2) Future Risk and Current Infrastructure Assessment	<i>2.4 Critical Infrastructure: Protective, Public Services, Shelter, Emergency Facilities, and Transportation</i>	4/4 +1	Flood maps available to the public, identifies and updates critical infrastructure, has a contingency plan for continuing services and critical infrastructure, and identifies critical infrastructure people should use in an emergency Bonus: +1 Locality addresses structural improvement plans for critical facilities in their plan
3) Finance, Budgeting, Funding, and Economics	<i>3.1 Budget, Funding, State and Federal Assistance</i>	3/4	Has identified priorities for budget spending for coastal resilience projects
	<i>3.2 Economic Vulnerability and Vitality</i>	4/4	Comprehensive Plan includes analysis of industries and their economic value and impact and identifies historic, natural, and cultural assets. Identifies threats and opportunities for various industries, and has incentives and assistance for new businesses
4) Land Use	<i>4.1 Coastal Resiliency in Comprehensive Plan</i>	3/4	Plan says flood-prone areas can support limited low-density residential and some incentivized development that encourages ecological and cultural site preservation where site conditions permit
	<i>4.2 Zoning and Regulations</i>	3/4	Locality zoning code and regulations protect areas vulnerable to flooding by limiting development, setting buffers, and designating flood zones

RESILIENCE SCORECARD

STRENGTHS

CATEGORY	SECTION	SCORE	DESCRIPTION
5) Community Engagement	<i>5.1 Public Involvement in Resilience Planning</i>	4/4	Locality has a written policy statement regarding the role of citizens and commercial, institutional, nonprofit, and other stakeholders. Locality has someone who is fully or partially responsible for making sure that citizens and other stakeholders have a role in key decision making. Locality has published an effective webpage
	<i>5.2 Public Resources</i>	4/4	All points are covered in the county's emergency management/flood management website. Information is easy to understand
6) Community Health and Wellness	<i>6.1 Vulnerable Populations</i>	4/4 +1	Locality has identified and engaged at least one vulnerable population, has made information available on website, and has community education and outreach goals for at least one vulnerable population included in the comprehensive plan Bonus: +1 Locality has identified, engaged, and/or has community education and outreach for more than one vulnerable population
	<i>6.2. Resident Emergency Preparedness</i>	4/4 +2	Locality engages resident groups in emergency drills, planning workshops, and conducts community outreach about community hazard mitigation plan and resident emergency preparedness Bonus: +2 Early warning system and youth emergency prep drills

RESILIENCE SCORECARD

STRENGTHS

CATEGORY	SECTION	SCORE	DESCRIPTION
6) Community Health and Wellness	<i>6.3 Citizen Leadership for Coastal Resilience</i>	3/4 +2	Locality supports and invests in community-led initiatives on coastal resilience Bonus: +2 Has a central location dedicated for the above and offers leadership opportunities in other community services not directly related to coastal resilience
	<i>6.4 Volunteer Networks for Coastal Resilience</i>	4/4 +2	Locality educates public about importance of volunteer coastal disaster assistance and offers leadership training for volunteers to lead a coastal disaster resilience team Bonus: +2 Offers volunteer opportunities in other community services in a central location
	<i>6.6 Resilient Food and Medicines</i>	3/4	Locality has identified critical infrastructure for food/health/medicine delivery at risk during emergencies/coastal events, educates businesses and supply chains about their vulnerabilities, and provides community education and outreach
	<i>6.8 Distressed Community Score</i>	3/4	Distress score in 20-39 percentile rank
7) Ecosystems and Natural Resources	<i>7.2 Natural and Nature-based Features</i>	3/4	Locality has developed a green infrastructure plan

RESILIENCE SCORECARD

PRIMARY OPPORTUNITIES

CATEGORY	SECTION	SCORE	DESCRIPTION
1) Policy, Leadership, and Legislation	<i>1.1 Locality Leadership and Planning for Resiliency</i>	2/4	Identify more local leaders and organizations, and publish the information on locality website
2) Future Risk and Current Infrastructure Assessment	<i>2.2 Stormwater Management</i>	3/4	Provide information to the public about stormwater management, and revise the stormwater ordinance to tie into floodplain management, monitoring, and maintenance
3) Finance, Budgeting, Funding, and Economics	<i>3.1 Budget, Funding, State and Federal Assistance</i>	3/4	Include specific reference to “coastal resilience” within budget and other finance documents
4) Land Use	<i>4.3 Incentives for Coastal Resilience</i>	1/4	Create incentives to encourage infill development and protect open space, flood-prone areas, and critical ecosystems
7) Ecosystems and Natural Resources	<i>7.1 Natural Resource Preservation</i>	2/4	Identify and map more natural resources that are vulnerable to coastal hazards

RESILIENCE SCORECARD

SECONDARY OPPORTUNITIES

CATEGORY	SECTION	SCORE	DESCRIPTION
6) Community Health and Wellness	<i>6.5 Civic Vulnerability During Coastal Hazards</i>	2/4	Create a program for the homeless during coastal incidents
	<i>6.7 Community Health Rankings</i>	2/6	Improve Community Health Rankings (poor physical health days, uninsured numbers, and ratio of mental health providers): communicate with Virginia Department of Health and care providers about score and initiate discussions on how to improve

INITIAL QUESTIONS & DISCUSSION ON THE RAFT SCORECARD FINDINGS

Q: There seems to be a lot of focus on information sharing, provision of resources, programs, and community engagement; but what about physical issues in the community? These include erosion of shorelines and infrastructure transportation challenges that are not captured here.

A: This is captured in vulnerability assessment part of the Scorecard, specifically the substantial challenges due to physical environment. Resilience is how to respond, not necessarily the problems themselves. People's capacity to respond to different challenges can be hindered by the lack of information, so this is one reason why there is so much focus on transparency and community engagement. However, if there is something missing that should be in the Scorecard, please contact us directly.

Q: There are areas in Gloucester County that are sitting in high points of four feet. Future events, such as a major flooding, can cause communities to become obsolete. When do we stop building in areas that are vulnerable?

A: This can become very complicated in terms of revenue and definition. This is a question that nearly all coastal localities are grappling with and have yet to fully resolve it. One strategy could be to narrow down the question: What is the policy in this area that would be needed to address this issue? Do we need assessments, and what kind? Do we need to create a more fine-tuned approach? Gloucester's Legislative subcommittee has asked to bring forward concerns that constituents want to address. Additionally, our university partnerships through The RAFT could be useful in beginning to analyze this problem.

Q: Gloucester County earned a low score in managing transportation issues. There is no conceivable way to tackle issues with roads at a static elevation. Water is rising 4.5 mm every year. What is the sustainable funding source to sustain this? The big picture issue here is how do we chase the road issue? Is it worth it? What is a reasonable timeline for this? What does it mean when water rises to feet years later?

A: This is an issue that will need to be tailored to a particular locality. Long-term viability in areas prone to recurrent flooding is something we can add to the Scorecard to make sure that localities are at least thinking about these long-term issues.

Q: Is there present data on Gloucester County and potential real estate damage? This could involve a cross-section with government.

A: There are numerous resources on sea level rise forecasts and areas at risk at the end of the century. If requested, Gloucester County can find these sources and distribute them. However, an individual commented that these maps have not been cross-referenced well with existing revenue and structures. The most recent FEMA maps show census blocks (based on structure values) and risk of flooding and level of financial damages (flood insurance claim areas). However, these do not address sea level rise, only flooding risk.



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COMMUNITY IDENTIFIED

STRENGTHS & OPPORTUNITIES

Gloucester's workshop group discussions highlighted their perceived strengths and opportunities. All six groups identified that Gloucester had strong building codes. Half of the groups identified that Gloucester's volunteer networks to combat coastal flooding are a strength. Half of the groups also noted that their elected officials exhibited strong communication with the public.

While Gloucester generally scored well using the Resilience Scorecard, many participants were critical of specific practices. Five out of the six groups wanted road signage that warned of flooding levels, while four of them wanted education options for students at public schools. A majority of the groups also mentioned that they wanted to inform property owners about the risks associated with moving into a flood prone area. This could be in the form of the realtor or action groups informing potential home owners before they take up residence. On the topic of emergency preparedness, the groups agreed that they wanted more ways to reach out to vulnerable populations with better broadband coverage and improved evacuation routes.

Strengths
Building codes
Volunteer network
Communication from elected officials
Strong CRS program

Opportunities
Education options for Students to Learn about Resilience
Reach out to property owners about risks
Road signage warning of flooding levels
Reaching out to vulnerable population
Improving coverage
Debris removal program
Evacuation routes

CRITERIA

PRIORITIZED ACTIONS & IMPLEMENTATION STEPS

A group of people are sitting on a wooden bench outdoors. A man in a patterned shirt and a white cap stands to the left, talking to them. They are in a paved area with large trees and a brick building in the background. A body of water is visible in the distance.

A woman with brown hair, wearing glasses, a striped t-shirt, and a blue skirt, is pointing at a purple wall covered with numerous sticky notes. She is holding a red object in her left hand. The sticky notes contain various text, including "EXPANSION", "MECHANISMS", "Development", and "Expansion". The wall is part of a workshop setup.

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PRIORITIZED ACTIONS

ONE-YEAR CHECKLIST

CATEGORY	PRIORITY RESILIENCE ACTION CHECKLIST	VOTES
EDUCATION & ENGAGEMENT	Flood/emergency signage along roadways	12
	Leverage oral histories of lessons learned from past flooding events	9
	Develop two training and education seminars annually (spring/fall)	4
	Work with realtors to provide information on preparedness & flooding, etc. to new residents	4
	Formulate citizen groups to educate and report community elected officials, county employees, and community leaders (finding uncommon solutions to common problems)	4
MAINTAIN ECONOMIC VITALITY	Incentives for stormwater management (voluntary/residential/commercial) on existing properties	7
	Develop method for market-based transactions for selling non-viable waterfront property	7
	Study/consider alternative uses for floodplains (economic vitality)	6
	Incentivize local businesses to "go green" at the local level (funding, credits, grants, etc.)	5
	Broadband expansion	3
LAND USE & POLICY	Elevation requirements for septic system control panels and for well heads	10
	Discourage development in low-lying areas (possibly in the comprehensive plan)	4
	Request Board of Supervisors to reconsider policy against acquisition under FEMA grants to reduce impacts from flooding on property & first responders (Hazard Mitigation Plan)	4
TRANSPORTATION	Petition General Assembly to develop a reduced standard of develop to "fix" flood prone roads, similar to Rural Rustic Roads policy	9
	Evaluate transportation infrastructure - risk evaluation - transportation needs assessment (primary and secondary), cost/benefit analyses	8

ONE-YEAR IMPLEMENTATION STEPS

EDUCATION & ENGAGEMENT

Install New Roadway Signage <i>Use Floodplain Management Committee to work with state agencies to raise awareness in flood prone areas</i> Ron Herzick Carole Steele Rupert Thomas	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	1. Floodplain Committee	VA Department of Transportation (VDOT)	Install 12 "flood ruler" warning signs at flood prone locations	For flood prone areas
	2. Floodplain Committee	VA Department of Emergency Management (VDEM)	TBD, potentially: · Robins Neck · Glass · Jenkins Neck · Ware Neck	Coordinate with state and federal agencies for consistent messaging
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	Underway 6/1/2018 · Installation & public media 9/1/2017 - 6/1/2019 · Determine best signage type · "Know Your Zone," hurricanes, category 1, 100-year floodplain, etc. · Coordinate effort with Department of Conservation and Recreation (DCR), VDEM & FEMA to see if signs already exist · Determine locations · Produce/purchase · Install & media		Signs from VDOT Milestones: · Flag location · VDOT install · Media release · Inventory condition -- VDOT? · State/federal signage? · County sign shop · Funds for signage	

<div>Leverage Oral Histories of Lessons Learned From Past Flooding Events</div> <div>Gloucester County StoryCorp</div> <div>Carl Hershner Christi Lewis Gloria Williams</div>	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	Christi Lewis	<ul style="list-style-type: none">· VIMS GRC· Community engagement	<ul style="list-style-type: none">· Guinea FEMA participants	To assist Watermen & families impacted by Hurricane Isabel
	Gloria Williams	<ul style="list-style-type: none">· Academia· RAFT (Michelle Covi, Old Dominion University)· Resources· Fire Department· Police Department	<ul style="list-style-type: none">· Watermen· Videos on location of areas affected	
	TIMELINE/MILESTONES		RESOURCES AVAILABLE /NEEDED	
	6th month <ul style="list-style-type: none">· Grant funding· VA Environmental Endowment/Sea Grant Coastal Center Program		<ul style="list-style-type: none">· Carl/VIMS or funding sources and platforms for community· ODU & Michelle Covi for interview process/techniques & student involvement· Possible county videographer & Gloria can interview<ul style="list-style-type: none">· Or students· Or Hive videographer· Possible event @ Guinea Heritage	
9th month <ul style="list-style-type: none">· Identify residents (VA Institute of Marine Science (VIMS), county staff, fire department, Guinea Heritage Group, Gloucestershire Resource Centre (GCR), churches)		Museum to get support		
12th month <ul style="list-style-type: none">· Begin interviews		<ul style="list-style-type: none">· Newspapers· Historical foundations		

ONE-YEAR IMPLEMENTATION STEPS

EDUCATION & ENGAGEMENT

Develop Training and Education, Spring/Fall <i>Develop webinar training (interactive) with Q&A for citizens & work with Chamber of Commerce for business</i> John Hutchinson John Meyer Jane Wenner	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	John Hutchinson	<ul style="list-style-type: none"> · Jane Wenner · John Meyer 	Universal	Citizens including "non-wired" network
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	Planning meeting every 3 months		<ul style="list-style-type: none"> · Company <--> (COOP) · Beehive · TV station · Town halls · Community organizations 	

Work with Realtors: Flooding Information & Preparedness to New Residents <i>Working with identified partners, determine materials/information for welcome packet to include disaster preparedness and flooding information & offer new residents resources for distribution through realtors</i> Carl Hershner Christi Lewis Gloria Williams	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	Christi Lewis Gloria Williams	<ul style="list-style-type: none"> · Realtors · Floodplain Committee · Community engagement · Emergency management · Middle Peninsula Planning District Commission (MPPDC) 	All of Gloucester	<ul style="list-style-type: none"> · Possible conversion into Spanish · 5th-7th grade writing level · Materials to be tied in with Welcome Guide, idea of refrigerator magnets with information about property Challenges: <ul style="list-style-type: none"> · Agent commitment · Local association buy-in · State UAR Disclosure -- Legislation disclosure issue
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	9/1/2017 Identifying materials <ul style="list-style-type: none"> · Are You Prepared? · Know Your Zone · Frequently Flooded Areas/Roads · Sheriff Department (resource) Meet/consult with partners on materials to be included with flood & disaster preparation and get by-in especially with realtors 10/1/2017 Prepare materials 11/1/2017 Deliver materials to realtors 5/1/2018 Refresh materials		<ul style="list-style-type: none"> · County provided materials · Realtors provided materials · Consultation with partners of other materials · Foreign language conversion -- resources & identification needed 	

ONE-YEAR IMPLEMENTATION STEPS

EDUCATION & ENGAGEMENT

<div> <div>Formulate Citizen Group</div> <div>Existing CERT team in place and a resource council to implement</div> <div>John Hutchinson John Meyer Jane Wenner</div> </div>	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	John Meyer	<ul style="list-style-type: none"> Jane Wenner John Hutchinson 	County-wide	N/A
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	Immediately 1 year		<ul style="list-style-type: none"> CERT develop, connect, presentations 	

ONE-YEAR IMPLEMENTATION STEPS

MAINTAIN ECONOMIC VITALITY

<p>Stormwater Management Incentives</p> <p><i>Reduce surface run-off, flood prevention, incentives/measures to reduce development costs (up front)</i></p> <ul style="list-style-type: none"> – short-term & tax reduction – fixed amount of time/long-term <p>Ashley Gordon Scott Rae Norman Sibley Henry Thompson</p>	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	Scott Rae -- Environmental Programs	<ul style="list-style-type: none"> · Economic development · Planning · Finance · Design consultants · Commissioner of Revenue 	<p>SE Gloucester Properties east of Route 17 & south of Route 14</p> <p>Outside the 100-year floodplain (ability to penalize/disincentivize development in 100-year floodplain)</p>	<ul style="list-style-type: none"> · Special geography (as in previous category) · Consider impacts to Chesapeake Bay modeling efforts · Voluntary
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	<p>July 2017-June 2018</p> <ul style="list-style-type: none"> · Identify incentives · Deliverable (BMP, paver system, cistern/rain barrel/rain garden) · Department/administrative approval rain garden · Marketing/education · Form development (applications, as-builts) approval · Track changes to stormwater management codes and regulations 		<ul style="list-style-type: none"> · Commissioner of revenue tax records (based on income) · Hampton Roads Planning District Commission (HRPDC) institutional experience 	
<p>Develop Method for Market-based Transaction for Selling Non-viable Waterfront Property</p> <p><i>Figure out a way to get development out of flood prone areas through incentives for development elsewhere (upland) without co-ownership of properties</i></p> <p>Anne Ducey-Ortiz Charles Lewicki Ben McFarlane</p>	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	VA Coastal Zone Management Program	<ul style="list-style-type: none"> · MPPDC · HRPDC · DEQ · VA Community Development Corporation (VDC) · ODU · Local counties · VA Association of Counties (VACO) · VA Housing Development Authority (VHDA) · VML Insurance Programs 	<ul style="list-style-type: none"> · Tidewater, VA · Coastal VA 	Residents of flooding properties
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	<p>Tentative start in August</p> <ul style="list-style-type: none"> · Put in C214 Work Plan · Study options · Transfer of Development Rights (TDR) · Mitigation Bank · Total Maximum Daily Load (TMDL) credits · Value of tidal properties incentives 		<ul style="list-style-type: none"> · Funding for technical committee/stakeholder group to generate options · Proposal for General Assembly/locality if not enabled 	

ONE-YEAR IMPLEMENTATION STEPS

MAINTAIN ECONOMIC VITALITY

Study/Consider Alternative Uses of Floodplains <i>Environmental-nutrient banks, wetland banks, research & study areas, tourism & outdoor recreation (boats/piers/hunting/fishing/camping platforms/etc.), energy (wind/solar)</i> Ron Herzick Carole Steele Rupert Thomas	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	State/regional group	<ul style="list-style-type: none"> Chesapeake Bay Economic Group (Del Hodges) Both PDCs, VIMS, U.S. Economic Development Administration (EDA), tourism 	<ul style="list-style-type: none"> FEMA sites Middle Peninsula Public Access Authority sites VDOT sites Privately owned locations in the floodplain 	Big project, summit recently held; tie in all partners for county and beyond impact. Too big for Gloucester to handle on its own
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	1/1/2018 (~2 years) Request assistance from G.A./Del Hodges to study best uses, economic return, and how to market the concepts, etc.		<ul style="list-style-type: none"> Current committees Funding needed for development, acquisition, and marketing 	

ONE-YEAR IMPLEMENTATION STEPS

MAINTAIN ECONOMIC VITALITY

Businesses Going Green <i>Encouraging businesses to implement environmentally-friendly practices that promote resilience</i> Ashley Gordon Scott Rae Norman Sibley Henry Thompson	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	Environmental Programs	<ul style="list-style-type: none"> · Planning · Zoning 	100-year floodplain to the waterline (area that may be penalized under the stormwater incentives proposed plan)	<ul style="list-style-type: none"> · Incorporate stormwater BMP business incentives plan · Think of resilience in broader terms --> lower carbon footprint
		TIMELINE/MILESTONES	RESOURCES AVAILABLE/NEEDED	
		July 2017 - June 2018 <ul style="list-style-type: none"> · Research existing green business models · Consider qualifying achievers (solar, wind, achievers (solar, wind, BMPs, etc.) · Marketing to promote business participation · Documenting of business "greening" projects 	<ul style="list-style-type: none"> · Energy consultants to evaluate plans · Engineering and planning expertise · Willing business participants · Review of existing "going green" business plans · Carbon footprint calculators (possible student project) 	

Broadband Expansion <i>Enhanced communication ability (PSAs) and building economic resiliency as land uses change, evaluate and present Board of Supervisors with options and estimate costs to expand reliable and affordable broadband availability without data caps to 90-95% of the county</i> Brent Fedors Jamie Gray JJ Orth	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	R. Erwin Gloucester IT	<ul style="list-style-type: none"> · W. Wright · C. Lewis · CTY Staff · CIT Staff · Board of Supervisors (BOS) 	<ul style="list-style-type: none"> · Gloucester County IT Department · Gloucester County DIT/CIT · Done county-wide · During CIP/budget evaluations with BOS 	<ul style="list-style-type: none"> · CIT Survey (possibly) · MPPDC/General Assembly efforts re: mid-pen broadband authority (Pamunkey initiative) · CIP considerations/public engagement
		TIMELINE/MILESTONES	RESOURCES AVAILABLE/NEEDED	
		May 2017-May 2018 (1 year window) May 2017 · Kick off meeting August 2017 · ID gaps October 2017 · ID vertical assets November 2017 · Strategies for partnering with incumbents February 2018 · Evaluate funding options April 2018 · ID paths forward	<ul style="list-style-type: none"> · \$50k BOS appropriation · Center for Innovative Technology Virginia Telecommunication Initiative Grant (CIT VATI) · Third-party consultant to assist in cost/benefit analysis and set target areas of focus 	

ONE-YEAR IMPLEMENTATION STEPS

LAND USE POLICY

Elevation of Sewage System Control Panels & Well Casings <i>Elevating control panel well casing to 2 feet above base flood elevation</i> Paul Koll Denise Mosca M.B. Sheppard	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	VA Department of Health/ Gloucester Building Official	<ul style="list-style-type: none"> · M.B. Sheppard · Paul Koll · DCR 	Floodplain properties	<ul style="list-style-type: none"> · Engineers · Construction companies
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	Now 90 days		<ul style="list-style-type: none"> · Database to determine base flood elevation (BFE) · DCR possibly has such a database 	

Further Discourage Development in Low-lying Areas <i>Determining possible ways to further discourage development in low-lying areas. Consider/evaluate increasing building construction standards in the flood-plain ordinance to make development more onerous, downzoning in flood prone areas, and incentivizing development upland through increased density, TDRs, etc., among other options. Propose policy changes based on findings.</i> Garrey Curry Gina DiCicco Doug Dwoyer Tim Knight	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	Gloucester's Planning & Zoning Department	<ul style="list-style-type: none"> · Building inspection/ permitting · VA universities · Planning Commission 	N/A	1-1.5 years How to use students? Paid work study project? Class project for credit?
	TIMELINE/ MILESTONES		RESOURCES AVAILABLE/NEEDED	
	90 days <ul style="list-style-type: none"> · Share basic idea with Planning Commission 1-1.5 years <ul style="list-style-type: none"> · Establish partnership with universities to have students conduct research 6 months <ul style="list-style-type: none"> · Analyze student research results & present proposal to Planning Commission 		90 days <ul style="list-style-type: none"> · Staff time 1-1.5 years <ul style="list-style-type: none"> · Staff time · Possibly \$ if students are paid 6 months <ul style="list-style-type: none"> · Staff time 	

ONE-YEAR IMPLEMENTATION STEPS

LAND USE POLICY

<p>Re-evaluate Hazard Mitigation Grant Program (HMGP) Acquisition Hatus</p> <p><i>Engage FPMC, Go Green Advisory Committee and any other interested citizens, requesting assembly of community support to present a unified petition to the BOS for consideration</i></p> <p>Brent Fedors Jamie Gray JJ Orth</p>	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	Ron Herzick	<ul style="list-style-type: none"> · FPMC members · Go Green members · Citizens 	<ul style="list-style-type: none"> · IT Conference Room/ Old Library · In community · Colonial Courthouse 	<ul style="list-style-type: none"> · HMGP participating citizens · HMGP Committee · Citizenry at large
	Floodplain Management Committee (FPMC) chair			
	Hurricane activist activist			
	BOS			
	TIMELINE/MILESTONES		RESOURCES AVAILABLE/NEEDED	
	<p>August 2017</p> <ul style="list-style-type: none"> · Meeting: determine support <p>September 2017</p> <ul style="list-style-type: none"> · Resolve 		<ul style="list-style-type: none"> · FPMC membership · Go Green membership · HMGP Committee · FPMC representative · Go Green representative · Citizens with interest 	
	<ul style="list-style-type: none"> · Beginning August --> rally support · Attend FPMC @ Go Green meetings · Attend BOS/make request/discuss/ deliberate (after petition) 			

ONE-YEAR IMPLEMENTATION STEPS

TRANSPORTATION

<p>Develop a Policy on a State Level of Reduced Standards to Correct Roads that Flood Using the Rural Rustic Road Policy Model</p> <p><i>Have VDOT have the option to use lower standards & less regulatory requirements for short-term solutions to road flooding</i></p> <p>Anne Ducey-Ortiz Charles Lewicki Ben McFarland</p>	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	<p>County administration</p> <p>BOS petition</p> <p>Del Hodges</p>	<ul style="list-style-type: none"> · VDOT · Commonwealth Transportation Board (CTB) · MPPDC · HRPDC · American Planning Association (APA) VA · VACO · VML 	<p>Coastal VA localities/ counties</p>	<p>Need to evaluate options/ impacts by technical committees</p> <ul style="list-style-type: none"> · Options · Process · Reduced administrative process · Negative impacts -- consequences
		TIMELINE/ MILESTONES	RESOURCES AVAILABLE/NEEDED	
		<p>August 2017</p> <ul style="list-style-type: none"> · Draft legislation to sponsor General Assembly · Lobby General Assembly · APA VA · VACO · VML 	<ul style="list-style-type: none"> · Engineers · Legal council (regulatory requirement) · Lobbyists 	

ONE-YEAR IMPLEMENTATION STEPS

TRANSPORTATION

<p>Risk Assessment/ Needs – re: Transportation</p> <p><i>Cost/benefit analyses related to flood impacts to transportation network (primary and secondary)</i></p> <p>Garrey Curry Gina DiCicco Doug Dwoyer Tim Knight</p>	LEAD	WITH WHOM	WHERE	SPECIAL CONSIDERATIONS
	G. Curry Engineering	<ul style="list-style-type: none"> · HRPDC · Abingdon Volunteer Fire & Rescue (AVFR) · Gloucester County Sheriff's Office (GCSO) · Gloucester Volunteer Fire & Rescue Squad (GVFRS) · VDOT · Gloucester County Public School Transportation 	TBD: coastal & non-coastal	N/A
	TIMELINE/ MILESTONES		RESOURCES AVAILABLE/NEEDED	
	<p>11/1/2017 (3 months): completed 8/2017</p> <ul style="list-style-type: none"> · Data - Acquire LiDAR based DTM (digital model) <p>5/1/2018 (9 months)</p> <ul style="list-style-type: none"> · Data, traffic counts · Data, first response locations <p>7/1/2018 (12 months)</p> <ul style="list-style-type: none"> · Analyze single routes, number of homes/traffic <p>1/1/2019 (18 months)</p> <ul style="list-style-type: none"> · Analyze impact areas/points along roads · Develop cost estimates for impact areas · Focus on "pinch points" where one point impacts a large area <p>7/1/2019 (24 months)</p> <ul style="list-style-type: none"> · Identify best cost/benefit demonstration projects <p>Cross reference long-term aspect Sea level rise --> avoid short-term costs w/ midterm loss</p>		<p>11/1/2017</p> <ul style="list-style-type: none"> · University partners · Data integration, GIS -- elevation/transportation <p>5/1/2018</p> <ul style="list-style-type: none"> · Hampton Roads Transportation Planning Organization (HRTPO)/VDOT <p>7/1/2018</p> <ul style="list-style-type: none"> · Integrated GIS system 	

ADDITIONAL CONSIDERATIONS

CATEGORY	SECONDARY RESILIENCE ACTION CHECKLIST	VOTES
EDUCATION & ENGAGEMENT	Develop local community evacuation networks (citizens responsible for neighbors)	2
	Creating awareness and information to encourage self-resilient residents/businesses	2
	Start education at elementary school level	1
	Public education on the value of conservation easements	1
	Continue to participate in HRPDC stormwater education	0
	Education of long-term residents on the need to evacuate during bad storms	0
	Install more flood "ruler" signs	0
	Mechanisms to get information out that's not electronic - Beehive (local publication) and town halls	0
MAINTAIN ECONOMIC VITALITY	Develop proposal for economic risk model	1
	Develop strategies for resilient working waterfronts	1
	Establish mechanisms to enable monetization of our natural resources (wetlands bank/credit market)	0
LAND USE & POLICY	Conduct shoreline assessment & develop management plan	3
TRANSPORTATION	VDOT funding, set a meeting with Board of Supervisors and state legislator to discuss sponsoring legislation to fund construction on flood prone secondary roads in the next 90 days	2
	Evaluate certain roads/sections for height increase	0

NEXT STEPS

The workshop participants identified the following tasks to ensure their Action Checklist could be implemented. They requested that The RAFT Team provide copies of their completed worksheets and also investigate funding options - one category of options for self-funding and a second category of options for outside support. The RAFT Team was further asked if it would prioritize the funding opportunities and present these to the Board of Supervisors. Once approved, the administration committee would make the final decisions and meet with The RAFT Team through implementation. Finally, the Action Checklist would be reexamined 1.5 months after the administration meets to decide deadlines and a timeline for check-ins.

SEQUENCE

A tentative sequence was established by participants in the Gloucester workshop for how they envision implementing their Resilience Action Checklist.

1. The RAFT Team provides the Resilience Action Checklist to participants, along with copies of the completed worksheets.
2. The Deputy County Administrator will discuss with the Middle Peninsula Planning District Commission whether these actions can be incorporated into and/or supported by the PDC.
3. The RAFT Team will present the Resilience Action Checklist to the Board of Supervisors for Board consent.
4. The RAFT Team will investigate two types of funding options, described above. It will work with County staff to prioritize these funding options.
5. Administrative committee will identify highest priority implementation actions, begin implementing the Action Checklist, and meet/check-in with The RAFT Team during implementation for assistance.
6. The RAFT Team will check in with County staff 1.5 months after the Administrative committee meets to review deadlines and establish periodic check-ins.

APPENDIX

WORKSHOP ATTENDEES

Gene Batcha, *Chair, Local Emergency Planning Committee*

Garrey Curry, *Gloucester County Deputy County Administrator*

Gina DiCicco, *Floodplain Planner, Virginia Department of Conservation and Recreation*

Anne Ducey-Ortiz, *Planning and Zoning Director, Gloucester Council*

Doug Dwoyer, *Go Green Gloucester Advisory Committee, Vice Chair*

Ken Evans, *Floodplain Management Committee, Business Owner*

Brent J. Fedors, *Gloucester County Administrator*

Ashley Gordon, *Coastal Analyst, Hampton Roads Planning District Commission*

Jamie Gray, *Gloucester County Planning Committee*

Carl Heshner, *Virginia Institute of Marine Science*

Ron Herzick, *Gloucester County Floodplain Committee Chair*

John Hutchinson, *Assistant Superintendent, Gloucester County Public Schools*

Tim Knight, *Abingdon Volunteer Fire & Rescue and Gloucester Sherriff's Office*

Paul Koll, *Building Official, Community Rating System Coordinator*

Charles Lewicki, *Floodplain Management Committee, Citizen*

Christi Lewis, *Director of Community Engagement*

APPENDIX

WORKSHOP ATTENDEES

Matt Lott, *Planner, Virginia Department of Transportation*

Ben McFarlane, *Senior Planner, Hampton Roads Planning District Commission*

Joyce McGowan, *Saluda Residency Administrator, Virginia Department of Transportation*

John Meyer, *Gloucester Board of Supervisors*

Denise Mosca, *Gloucester Go Green Advisory Committee Member*

JJ Orth, *Gloucester Board of Supervisors, Virginia Institute of Marine Science*

Scott Rae, *Gloucester County Environmental Programs, Director*

Kevin Sears, *TOM II, Virginia Department of Transportation*

M.B. Sheppard, *Environmental Health Manager, Virginia Department of Health*

Norman Sibley, *Chesapeake Bay Erosion Commission Member, Real Estate Agent*

Carole Steele, *Director, Gloucester County, Parks, Recreation, and Tourism (PR&T)*

Rupert Thomas, *Floodplain Management Committee Member*

Henry Thompson, *Gloucester County Master Gardeners Tree Stewards, Go Green Gloucester Advisory Committee, Chair*

Robert Trachy, *Virginia Department of Transportation*

Jane Wenner, *Gloucester County Emergency Management Outreach Coordinator*

Gloria Williams, *Executive Director, Chamber of Commerce*

APPENDIX

BIG PICTURE IDEAS FROM THE RAFT WORKSHOP

TOPIC	DESCRIPTION
Communicate, right term	Not controllable
	"Road situation" no direct resources
Signage on road	i.e. → public awareness and communication
	watermark levels
	safety signs → cf. Australia signage
	flooded evac routes and mapping
	handouts, web, mailings
Shoreline Investment	Study that analyses exposure risk for economic loss → decision tool? How to decide whether an investment in shore is worth it (opp.)
Develop method for allowing market-based transactions for selling property that is no longer homes (opp.)	Viable
	E.g. land bank that takes and manages property
	Some recreation opportunity
Oral History	Build on Gloucester experience in living with water → oral, personal, histories

TOPIC	DESCRIPTION
Tips and lessons to share with other committees less experienced	How to shelter in place, etc.
	Videos
	Interviews
	Different
Incentives (Opp.)	Explore possibilities of density bonuses for higher lands (uplands)
	Linked to PDR and TDRs in flood-prone areas
	Developer would get higher density in upland if buy low land and put into conservation easement
	Tie this into "Access Authority's" acquisition of land?
Become more proactive to reach out to new residents and property owners (opp.)	List of "new to community" info including flooding, responses etc.
Include language in budget doc's relating to coastal resilience (opp.)	Identify those projects
	Call them out
	Educational
	Creating awareness and expectations for resilient residents and businesses
Bring businesses into the fold	Bus preparedness continuity plan
	Especially food-based businesses
Working waterfront businesses	Develop new ways to build these w.w. facilities so more flexible and adaptable
	Floating systems
	Engineering students

GROUP 1

APPENDIX

BIG PICTURE IDEAS FROM THE RAFT WORKSHOP

Strengths
CRS Score
Zoning/Building Codes
Strong volunteer base (needs network Gloucester County resource county)
Regional collaboration with Middle Peninsula
Planning District Commissions
Responsive elected officials
Good partnership with VDOT
Well-informed county expertise
VIMS as resource

Opportunities	
Fund aging infrastructure	Mitigate loss
Additional staff resources	Improvement management of stormwater runoff
Minimize cost/alter road requirements (request variance)	Reduce and change unsafe "business-friendly" policy (unsustainable development)
VDOT low funds for non-primary roads Political Act	Educate elected officials and local community on coastal resilience
Middle standard (from VDOT) for flood prone roads	Incentivize safe developments
Act on severe-repetitive loss properties	Citizen group: advocate/educate local community officials (board meetings)
State and local county reconnect	Find way to improve emergency service access to flood prone zone

GROUP 2

APPENDIX

BIG PICTURE IDEAS FROM THE RAFT WORKSHOP

TOPIC	DESCRIPTION
Floodplain-roads are the issue	At what point are houses going to be build out of the floodplain?
	At what point are new roads diminishing returns
Category 6, opportunities-How does poor mental health days connect with retirees?	Aging population, retirees could impact this
	Only have one hospital in the community, a lot of clinics, the hospital is expanding though
	Closest other one is in Newport News
	Out of their control to build another
	Some things are out of their hands
	People come from out of town to use their hospital
Community health stats not reported to the community	How many people know about this?
	Better communication is important
	New Orleans knew about volunteer populations and built networks and transportation to get them where they needed to go
	Use clubs and volunteer fire teams, teach family about resiliency practices
Mechanisms to get this out to people	Beehive (local paper)
	Town halls (low attendance), pass out info
	Great fire and rescue service, but not sure about community groups, what group to go to about flooding
	Church connections are low
Vulnerable populations	Want to create a community
	Have hypothermia shelters in the winter through faith based organizations
Increase costs of "Hybrid Systems"-new systems, above ground septic, very expensive	These let you build in areas where below ground septic is not able to be done
	See this with 4-5 story houses right on the ocean

TOPIC	DESCRIPTION
Section 6.8: what occupations may not be there?	Stand up and say to people to say to build in risky areas
	Are frameworks, but no locality will pass ordinances to stop people to use their property
	Should inform the county of costs to maintain infrastructure
	People can choose their risk level given info
	Path on right now
	General Assembly should stop letting people do "stupid" things
Insurance companies could inform with premiums	Propose to require realtors to provide info on flood risk and insurance cost
Tried through real estate to say "you are in a floodplain" went though 6A and says "May be in a floodplain, check"	Individuals publish this info, but people will complain
Floodplain management groups reach out to groups	Put out signage, of "this will flood to this level"
	Maybe put on public buildings
	But on private or VDOT is hard, push for them to convey flood risk
	Locate areas to put signage up on roads
Section 1.1: what are other communities doing to get info out?	Signage on houses-lower property value-less tax money
	Discuss churches
	Could use VIMS and county library
	Use elementary schools
	Not scare but interest
	Kind of like informing about recycling and smoking
	Use state council on education to implement
	Make it routine, issue with SOL standards

TOPIC	DESCRIPTION
Emergency Preparedness	For hurricanes they use schools, use social services emergency operations plan
	Schools involved in planning for events
	140 mph event with loft surge
	learned that FEMA wants to do things uniformly and document strategies
	best use of resources
	South side shelter in place
	Suggest that gas stations use generators, these cost a lot of money though and are only used during storms, can be offset by money should power go out and gas still needs to be pumped
Use FEMA guidance	For funding need to be able to bring pets
	Could use similar plan to include homeless population
	Not plan to use school buses here
	Strategy for community groups for coordinated evac group response for looking for someone else
Evacuation	Study that UVA started to look at evacs in coastal zone
	Found that even in 3 day notice, no physical way to get everyone out of the Hampton Roads area
	Can't provide for everyone
	Could alleviate by evac by zone, not county
	Currently in development
	Need planning for this, hard to do when storm is coming

GROUP 3

APPENDIX

BIG PICTURE IDEAS FROM THE RAFT WORKSHOP

Strengths
Strong CRS program
Abundance of higher elevation areas
Floodplain Management Committee
Very publicly engaged
Very good outreach
Doing well overall on resiliency vs. other localities
Waterfront community
Good place to live, so it is a draw for residents
Nearby military presence
Employment, federal money to the region
Swing bridge-resilient
Green infrastructure encouraged for commercial sites with site plans

Opportunities	
Raise vs. raze – priority	Development of low-lying properties –deflect (in comp plan?)
Limited contractors, higher costs	Find way to improve emergency service access to flood prone zone
Median income on low end?	No height requirements for control panel for onsite septic systems---goes out in a flood: located at the system, not on the house
Bedroom community	Education of long-term residents on need to evacuate during bad storms
Long commutes on roads subject to flooding and residents spend money elsewhere	Big picture: diminishing returns (state involvement in regulating bidding process economy of scale)
Recurrent flooding (tidal and storm-related) on certain roads (sometimes running through wetlands)	Citizen group, advocate/educate local community officials (board meeting)

GROUP 4

APPENDIX

BIG PICTURE IDEAS FROM THE RAFT WORKSHOP

TOPIC	DESCRIPTION
Volunteerism	Floodplain management go green
	Volunteer fire and rescue
Hurricane experience and tornado experience	Board of supervisors engaged key people –staff
	Success breeds success
	Smart decisions in FEMA elevation program
	Aggressive management
Keeps out of risk-keep people engaged	Risk is still there
	Need redundancy for emergency management communications transportation
Flood gauges electronic?	Signs on roads-water depth
	Daily and storm
	Visual reminder that places flood
	Signage on public land bought out because of flood

TOPIC	DESCRIPTION
Educate people about conservation easements-needs to be explored	Getting people to think through where you are buying, risk what they are risking
	Educating the residents /new people program, multi-faceted
Works with partners, ODC, MPPAA, to manage acquisitions for resilience	Do more open space ideas that is also an economic driver
	State park?
	Seafood?
	Do more with green infrastructure?
Monetizing conservation-storm water bank? Offsets?	Also blue infrastructure with conservation
	Tourism? Water access? More focus and attention
Broadband important to resilience	Explore solar and wind energy as economic engines
	Enhance economic viability of less flood-prone areas

APPENDIX

BIG PICTURE IDEAS FROM THE RAFT WORKSHOP

TOPIC	DESCRIPTION
Public info re: SW management	Tax incentives, regulatory negotiation
	HB1774-potential public and private competition
Reward voluntary action (aggregate impact)	Residential and commercial
	Ex. Juan's
Management and monitoring	Regional BMPs
	Nutrient credits
Public education	Co-benefits→ education and voluntary action
	Flood elevation
Communication infrastructure	Access
	Short-term and long-term
Emergency management	Need full-scale exercise
	Formal feedback (post event)
	6.2-even with 4 need improvement

TOPIC	DESCRIPTION
Need an assessment	Comp plan-address reality-retreat
	Limited funding
	Prioritize
Flood signage (implementation)	Funding
	Community push-back
	Re: impact on property values
Evacuation routes	Ties into need for assessment
Plan (part of emergency op.)	Look to see what other localities have done
	Have something formal in place
Budget process	Have departments indicate project's relation to resilience
	Impact on resilience
	Investment rather than expenditure
Transportation	Invest in areas people are leaving?