VIRGINIA COASTAL RESILIENCE PLAN

CENTRALIZED STAKEHOLDER SURVEY SUMMARY

1.0 INTRODUCTION

98

Respondents as of August 25, 2021

In November 2018, Governor Northam issued Executive Order 24, directing the Commonwealth's Chief Resilience Officer (Secretary of Natural and Historic Resources), with the assistance of the Special Assistant to the Governor for Coastal Adaptation and Protection, to develop a comprehensive Coastal Resilience Master Plan (CRMP), in cooperation with residents, stakeholders, and localities in the coastal regions of Virginia. This effort, as outlined in the Virginia Coastal Resilience Master Planning Framework, released October 2020, will identify and address unique and shared flooding challenges that residents within the 8 coastal PDCs experience along Virginia's diverse coastline.

The first Virginia Coastal Resilience Master Plan will be completed in November 2021. Additional iterations will evolve as research progresses, community planning continues, and projects are implemented. The Commonwealth is committed to an enduring planning process that ensures continuity in long-term coastal adaptation and protection.

The goals of the CRMP project are to:

1. Identify priority projects to increase the resilience of coastal communities, including both built and natural assets at risk due to sea level rise and flooding.
2. Establish a financing strategy, informed by regional differences and equity considerations, to support execution of the plan.
3. Effectively incorporate climate change projections into all of the Commonwealth's programs addressing coastal region built and natural infrastructure at risk due to sea level rise and flooding.
4. Coordinate all state, federal, regional, and local coastal region adaptation and protection efforts in accordance with the guiding principles of this Framework and Master Plan.

1.1 Purpose and Scope

The Centralized Stakeholder Survey was designed to capture input to inform the Commonwealth's efforts and ensure the plan addresses the needs of coastal stakeholders. Questions with respect to local stakeholders' current coastal resiliency efforts, their contribution to multi-jurisdictional or regional planning efforts, and their pursuit of funding sources for resiliency efforts were developed, to assess the level of engagement of local jurisdictions, agencies, and organizations in addressing coastal resiliency issues in Virginia. Additionally, questions were posed, that asked stakeholders to self-assess their risk of coastal hazards, their understanding of mitigation and adaptation options to increase resilience, their capacity to engage in planning efforts, and their biggest challenges to improving resiliency and addressing equity.

Responses to this centralized survey are intended to be representative of the views/positions of staff or representatives on behalf of PDCs, localities, tribes, and other organizations, not as an individual from the general public. A separate public, or decentralized, survey targeted toward residents, business owners, and/or visitors was developed separately and captured more individual level information. Please see the VA Virginia Coastal Resilience Plan - Public Stakeholder Survey Summary for further details.

1.2 Survey Design and Methodology

The Centralized Stakeholder Survey was developed in close coordination with, and input from, the Secretary of Natural Resources (SNR), the Project Impact Assessment Team, the Project Identification and Evaluation Team, and the Coastal Resilience Technical Advisory Committee (TAC) Community Outreach Subcommittee. A comprehensive set of questions was developed to capture the information needs for each Team's unique goals.

The Secretariat provided valuable guidance on the nature of feedback the Secretary, and the Commonwealth in general, were seeking from local stakeholders. Questions included the coastal resiliency and multi-jurisdictional efforts in which local jurisdictions and agencies are currently engaged; funding sources sought by stakeholders to finance coastal resilience projects; and major challenges currently experienced by coastal stakeholders in addressing flooding, coastal resiliency, and equity issues in their jurisdictions.

Questions developed to support the Impact Assessment Team's tasks included: prioritizing the types of flood hazards experienced in the stakeholder's jurisdiction (tidal, riverine, stormwater, etc.); identifying specific communities and neighborhoods that are particularly vulnerable to coastal hazards; identifying economic sectors that are particularly vulnerable to coastal hazards; and ranking what types of projects (beach/dune restoration, property elevation/acquisitions, stormwater drainage, etc.) local stakeholders feel would be most effective in their communities.

Questions developed to support the Project Identification and Evaluation Team's tasks included: the identification of a point of contact in the jurisdiction, agency, or organization who could provide information regarding data availability, sharing, and validation going forward; and priorities regarding the project types needed by the area.

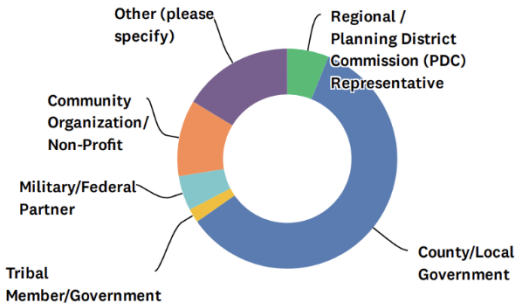
The Community Outreach Subcommittee provided input on questions such as: anticipated benefits to the local communities as a result of the CRMP; perceived challenges or negative impacts to the community as a result of the CRMP; and the preferred outreach avenues for contact going forward. Additionally, the Outreach Subcommittee provided guidance on phrasing all questions in a concise, user-friendly manner for local stakeholders.

The Survey contained 32 questions, with the first twelve (12) collecting participant information intended to support tracking and documentation efforts regarding stakeholder type and jurisdictions, organizations, and populations being represented. The Survey was designed to take approximately 10-15 minutes to complete and is compatible with laptop, tablet, and cellular devices.

2.0 PARTICIPANT DEMOGRAPHICS

2.1 Department/Agencies Represented

For analysis purposes, respondents were asked to identify the stakeholder type that they represent in a professional capacity. Of the 98 respondents, six percent (6%) identified as Regional/Planning District Commission (PDC) Representatives, fifty-eight (58%) identified as County/Local Government, two percent (2%) identified as Tribal Members/Government, five percent (5%) identified as Military/Federal Partners, twelve percent (12%) identified as Community Organization/Non-Profit, and seventeen percent (17%) identified as Other. Of the 17 respondents that identified their stakeholder type as Other, 7 identified themselves as representing State agencies, 1 identified themselves as representing a federal agency, and the other 8 represented various interests as natural resource professionals, financial or engineering consultants, NGO and community interest group representatives, and private industry professionals.



2.1.1 PDCs

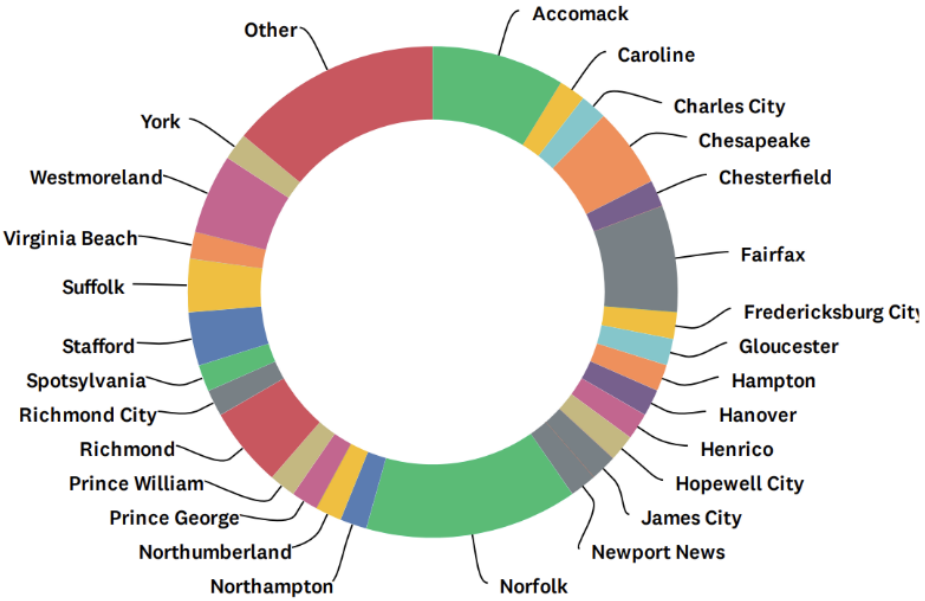
Of the 6 respondents who identified themselves as Regional/Planning District Commission (PDC) Representatives, 2 respondents identified themselves as representing Accomack-Northampton PDC. Northern Virginia Regional Commission, George Washington Regional Commission, Middle Peninsula PDC and PlanRVA each had one representative respond to the survey. Lastly, Northern Neck PDC, Crater PDC, and Hampton Roads PDC did not have any representatives respond to this survey.

2.1.2 Localities

Of the 58 respondents who identified themselves as representing a County/Local Government, 57 identified the county or locality that they represent. This survey question identified 48 counties/localities in the Study Area and included an Other option that the respondent could choose if their jurisdiction was not identified. Of the 48 identified counties and localities included in this question, 27, or fifty-six percent (56%), had at least one representative who responded to the survey. Counties/Localities with the highest number of respondents included: Norfolk with 8 respondents; Accomack with 5 respondents; Fairfax with 4 respondents; Richmond, Westmoreland, and Chesapeake each with 3 respondents; and Stafford and Suffolk each with 2 respondents. Fourteen percent (14%) or 8 of the respondents to this question identified as representing a county or locality other than those listed in the question.

2.1.3 Tribes

Two respondents identified themselves as representing Tribal Members/Governments. Of these respondents, one represents the Chickahominy Tribe, and the other represents the Rappahannock Tribe.



2.1.4 Federal/Military

Of the 5 respondents that identified themselves as representing a Military/Federal Partner, 4 answered the survey question that allowed them to identify the military installations they represent. Each respondent represented a different installation, including USPS Dyke Marsh, Navy Region Mid-Atlantic (Region includes 6 Virginia installations, all located in Hampton Roads), USACE District, and USACE Norfolk.

2.1.5 Community or Non-Profit Organizations

Of the 11 respondents that identified themselves as representing community or non-profit organizations, 3 represent the Friends of the Rappahannock and 1 represents Friends of the Lower Appomattox River (FOLAR). Additionally, two respondents represent the Environmental Defense Fund, and another two respondents represent the Chesapeake Natural Event Mitigation Advisory Committee. The final 4 respondents represent the Surfrider Foundation, the Cradock Civil League, the James River Association, and the Northern Virginia Conservation Trust.

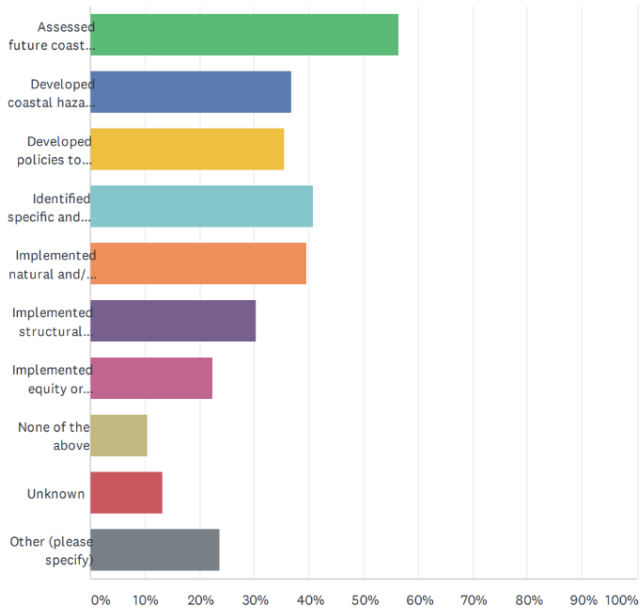
3.0 FINDINGS/KEY THEMES

3.1 Planning Efforts to Date

To assess what coastal resiliency efforts are currently being implemented by local jurisdictions, organizations, and agencies, respondents were asked to identify coastal resiliency efforts in which the jurisdiction or organization they represent are currently engaged from the following list of actions:

- Assessed future coastal hazards and flooding challenges, based on the best available climate change data
- Developed coastal hazard resilience plans to prepare for future coastal hazards
- Developed policies to increase resilience and adapt to future coastal hazards

- Identified specific and actionable projects to adapt to future coastal hazards
- Implemented natural and/or nature-based approaches to adapt to future coastal hazards
- Implemented structural solutions to adapt to future coastal hazards
- Implemented equity or environmental justice related plans or programs
- None of the above
- Unknown
- Other (please specify)



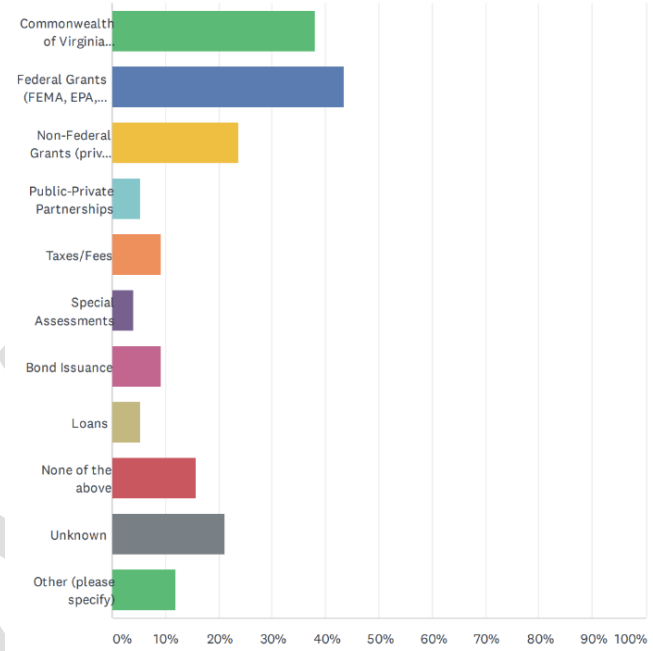
Of the 98 total respondents, 76 provided a response to this question. Fifty-seven percent (57%) of the respondents to this question identified that their organization had assessed future coastal hazards and flooding challenges, based on the best available climate change data. Thirty-seven percent (37%) had developed coastal hazard resilience plans to prepare for future coastal hazards. Thirty-five percent (35%) had developed policies to increase resilience and adapt to future coastal hazards. Forty-one percent (41%) had identified specific and actionable projects to adapt to future coastal hazards. Thirty-nine percent (39%) had implemented natural and/or nature-based approaches to adapt to future coastal hazards. Thirty percent (30%) had implemented structural solutions to adapt to future coastal hazards. Lastly, twenty-two percent (22%) had implemented equity or environmental justice related plans or programs. Of the 76 respondents to this question, 8 reported that they had not engaged in any of the identified efforts, and 10 reported that they do not know if their jurisdiction or organization has engaged in any of these coastal resiliency efforts.

Respondents were also given the opportunity to specify any coastal resiliency efforts in which their jurisdiction or organization had engaged, outside of those identified in the question. 18 respondents provided additional information for this line item. The key themes of these responses and the frequency with which they were mentioned are summarized below.

Key Themes	Frequency
Development of various adaptation, risk assessment, floodplain management, hazard mitigation, and resilience plans	8
Assessment and prioritization of flood mitigation solutions	2
Development and assessment of climate change and flood projection data	2
Development of financial plans and coordination of funds for resiliency efforts	2
Coordination with local governments and PDCs	2
Implemented community outreach campaigns	2
Identification of strategies to address riverine flooding and improve stormwater management systems	2

Key Themes	Frequency
Protection and conservation of natural resources	2

3.2 Funding Sources Sought



As is reflected in the graph, respondents were asked to identify if and what types of funding sources their jurisdictions, agencies, or organizations have sought to finance coastal resiliency projects. Of the 76 individuals who responded to this question, thirty-eight percent (38%) sought grants from the Commonwealth of Virginia, forty-three percent (43%) sought Federal grants (FEMA, EPA, HUD, USACE, etc.), and twenty-four percent (24%) sought Non-Federal grants (private foundations, non-profit organizations, etc.). Additionally, five percent (5%) sought funding from public-private partnerships, nine percent (9%) sought funding from taxes and/or fees, four percent (4%) sought funding from special assessments, nine percent (9%) sought funding from bond issuances, and five percent (5%) sought funding from loans. Of the 76 respondents to this question, 12 of them, or sixteen percent (16%), did not seek funding from any of the identified sources, and 16 of them, or twenty-one percent (21%) did not know if their jurisdiction, agency, or organization sought funding from the identified sources.

9 respondents reported that their jurisdiction, agency, or organization had sought funding from a funding source other than those identified in the question. Funding sources identified in these comments include private flood mitigation industry membership contributions, local grants, P4/public-public initiatives, hurricane relief funds, and Federal Highway funding to upgrade stormwater management systems.

3.3 Multi-Jurisdictional Coordination / Regional Scale Planning

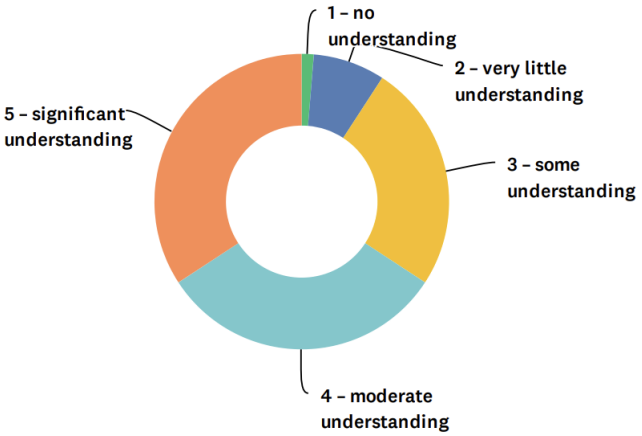
Respondents were asked to identify if the jurisdiction, agency, or organization that they represent has coordinated with other jurisdictions and/or participated in regional scale planning efforts to address coastal flooding challenges. Of the 76 individuals who responded to this question, sixty-one percent (61%) reported Yes, twenty-one percent (21%) reported No, seventeen percent (17%) reported that they do not know of any coordination efforts, and one percent (1%) reported that the question was not applicable to them. Individuals who responded Yes to this question were prompted to provide specific information regarding coordination efforts and organizations/jurisdictions with which they were working. All 46 respondents who responded Yes to the question provided further comments. The key themes of these comments, including the types of multi-jurisdictional studies and efforts performed, as well as key coordinating agencies/organizations, are summarized in the table below.

Key Themes	Frequency
Coordination with PDCs and Regional Commissions	19
Participating in a Regional Hazard Mitigation Plan	10
Conducting/Participating in a Compatible Use Study (Joint Land Use Study)	9
Coordination with local, state, or federal government agencies	9
Contributing to the Resilience Adaptation Feasibility Tool (RAFT)	6
Participating in the Virginia CRS Workgroup	2

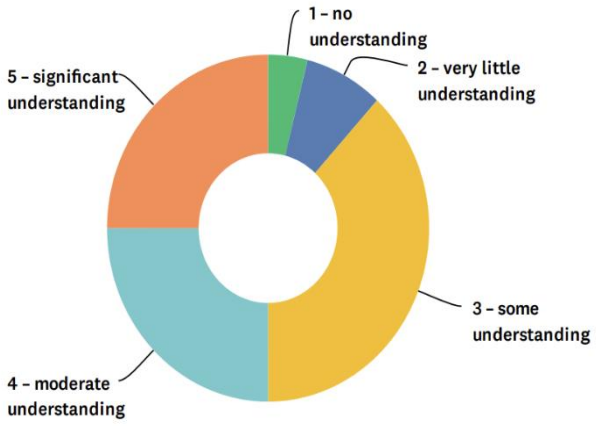
4.0 SELF-ASSESSMENT

4.1 Risk Awareness

Respondents were first asked to rate their jurisdiction, agency, or organization's understanding of current and future coastal hazards and risks. Of the 76 respondents who responded to this question, thirty-four percent (34%) reported having a significant understanding of coastal hazards and risks relevant to their community. Thirty-two percent (32%) reported having a moderate understanding, twenty-five percent (25%) reported having some understanding, eight percent (8%) reported having very little understanding, and one percent (1%) reported having no understanding of coastal hazards and risks relevant to their community.



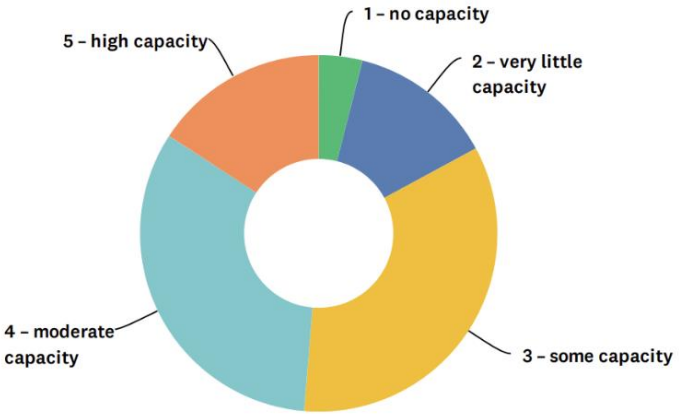
4.2 Awareness of Adaptation Options



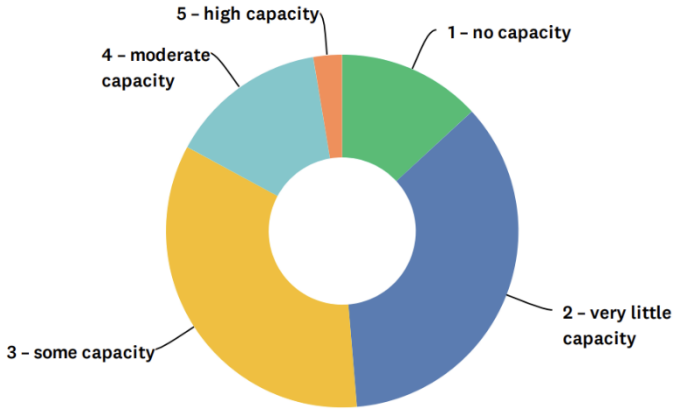
When asked to rate their jurisdiction, community, agency, or organization's knowledge of relevant options to increase resilience and adapt to future coastal hazards, twenty-five percent (25%) of the 76 respondents reported having significant understanding. Another twenty-five percent (25%) reported having a moderate understanding, and thirty-eight percent (38%) reported having some understanding. Lastly, eight percent (8%) reported having very little understanding, and four percent (4%) reported having no understanding of options that could be used increase resilience and adapt to coastal hazards.

4.3 Planning and Funding Capacity

In order to identify the need for capacity-building efforts across coastal Virginia, respondents were asked to rate their jurisdiction, agency, or organization's capacity to engage in coastal resiliency projects. Of the 76 respondents, seventeen percent (17%) reported having a high level of capacity, thirty-three percent (33%) reported having a moderate level of capacity, thirty-four (34%) reported having some capacity, thirteen percent (13%) reported having very little capacity, and four percent (4%) reported having no capacity to engage in coastal resiliency efforts.



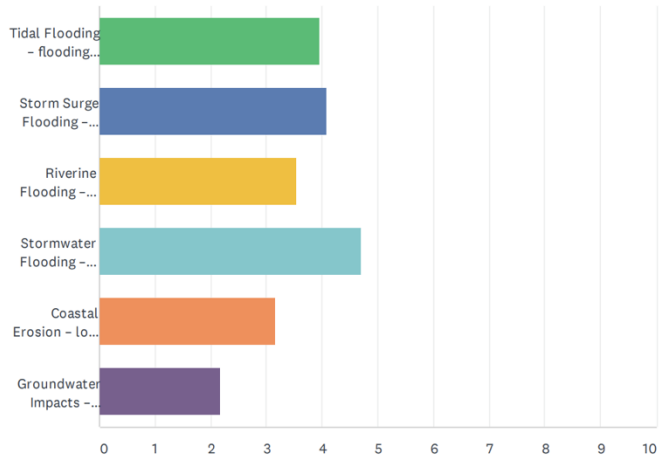
Respondents were also asked to rate their jurisdiction, agency, or organization's capacity to fund coastal adaptation and resilience projects. Of the 76 respondents, only three percent (3%) reported having a high level of capacity to fund coastal adaptation and resiliency projects. Fourteen percent (14%) reported having a moderate level of capacity, thirty-four percent (34%) reported having some capacity, thirty-six percent (36%) reported having very little capacity, and thirteen percent (13%) reported having no capacity to fund coastal adaptation and resilience projects.



4.4 Flood Hazard Rankings

To assess the types of hazards being experienced across coastal Virginia, respondents were asked to rank the following coastal hazards in order of priority to their jurisdiction, agency, or organization:

- Tidal Flooding – flooding caused by daily or extreme high tides
- Storm Surge Flooding – flooding caused by coastal storms including nor'easters and hurricanes
- Riverine Flooding – flooding caused by overflowing of rivers and streams
- Stormwater Flooding – flooding caused by lack of drainage or overflowing drainage systems due to intense rainfall
- Coastal Erosion – loss or displacement of land or sediment along the coastline
- Groundwater Impacts – changes in the boundary between freshwater and saltwater



Of the 98 total respondents, 73 individuals provided responses to this question. The graph to the left demonstrates the composite score received by each coastal hazard, based on the rankings of all respondents combined The Stormwater Flooding hazard received the highest composite score of 4.71, followed by Storm Surge Flooding at 4.08, Tidal Flooding at 3.95, Riverine Flooding at 3.53, Coastal Erosion at 3.16, and Groundwater Impacts at 2.17. Thirty-six percent (36%) of the respondents ranked the Stormwater Flooding hazard as their number one priority, and twenty-nine percent (29%) ranked it as their second priority. Below is a table demonstrating the percentage of respondents who attributed each hazard to each ranking, with 1 representing the highest priority and 6 representing the lowest priority.

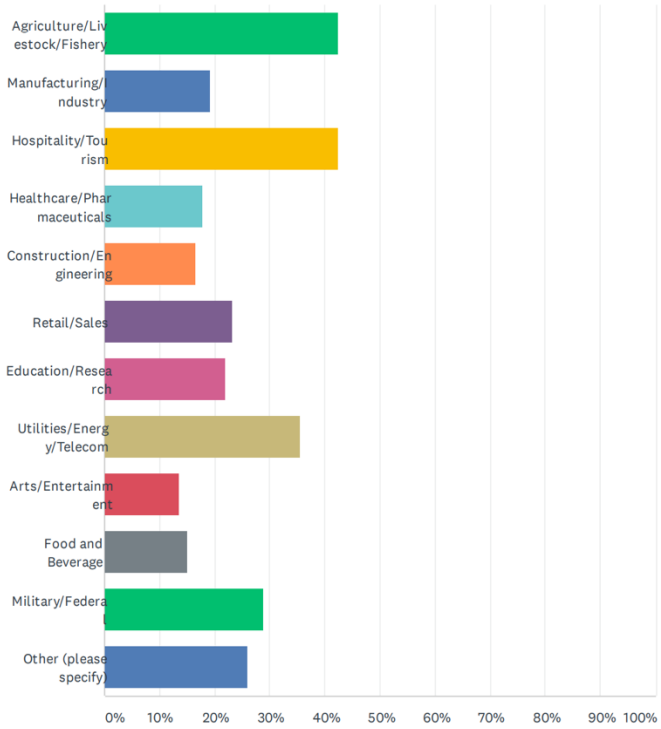
Coastal Hazard	1	2	3	4	5	6	N/A
Tidal Flooding	19.2%	16.4%	15.1%	15.1%	17.8%	2.7%	13.7%
Storm Surge Flooding	17.8%	19.2%	23.3%	16.4%	9.6%	4,1%	9.6%
Riverine Flooding	12.3%	21.9%	13.7%	12.3%	6.9%	20.6%	12.3%
Stormwater Flooding	35.6%	28.7%	12.3%	9.6%	6.8%	2.7%	4.1%
Coastal Erosion	9.6%	5.5%	16.4%	23.3%	23.3%	9.6%	12.3%
Groundwater Impacts	1.4%	4.1%	11.0%	12.3%	20.5%	37.0%	13.7%

4.5 At- Risk Sectors

Respondents were asked to identify if there are any economic sectors within their jurisdiction, community, agency, or organization that they would consider particularly vulnerable to the impacts of climate change and coastal hazards. Respondents were provided with the following list of economic sectors and prompted to select all that applied:

- Agriculture/Livestock/Fishery
- Manufacturing/Industry
- Hospitality/Tourism
- Healthcare/Pharmaceuticals
- Construction/Engineering
- Retail/Sales
- Education/Research
- Utilities/Energy/Telecommunications
- Arts/Entertainment
- Food and Beverage
- Military/Federal
- Other (Please Specify)

As is illustrated in the graph to the right, the Agriculture/Livestock/Fishery sector and Hospitality/Tourism sectors were the most identified as being vulnerable to the impacts of climate change and coastal hazards, with both sectors receiving votes from forty-two percent (42%) of the respondents. The Utilities/Energy/ Telecommunications sector was also commonly identified as vulnerable, receiving votes from thirty-six percent (36%) of the respondents. The Military/Federal sector received votes from twenty-nine percent (29%) of the respondents, and twenty-three percent (23%) of the respondents identified the Retail/Sales sector as being vulnerable to the impacts of climate change and coastal hazards. Twenty-six percent (26%) of the respondents selected the Other response and were prompted to specify additional sectors they believe to be particularly vulnerable. Of the 19 comments provided, multiple respondents recognized the importance of natural habitat systems/resources, recreation, port activities, and transportation systems as key sectors vulnerable to the impacts of climate change and coastal hazards.



4.6 Needs and Challenges

In order to better understand how the Coastal Resilience Master Plan can be used to improve resiliency across the coastal region and assist local jurisdictions in conducting coastal resiliency efforts, respondents were asked to identify and explain the biggest challenges and/or the most pressing needs faced by their jurisdiction, community, agency, or organization regarding flooding, coastal adaptation, and resilience. Of the 98 total respondents, 66 individuals provided responses to this question. The key themes of these responses and the frequency with which they were mentioned are summarized in the table below.

Key Themes	Frequency
Lack of funding and knowledge of grants/financial resources	27
Lack of governmental/institutional buy-in	8
Not a coastal area- difficulty in comprehensively understanding our vulnerability and getting stakeholders involved	6
Inadequate stormwater drainage systems	6
Lack of cooperation and buy-in from private landowners	6
Education of community members and government officials- creating citizen awareness that promotes meaningful input	6

Key Themes	Frequency
Riverine flooding	5
Incentivizing development outside floodways and discouraging development within floodways and along shorelines	5
Inadequate staff capacity	4
Creating plans and implementing adaptation solutions that address vulnerable and underserved areas	3
Protecting shorelines and conserving natural resources	3
Lack of technical knowledge to address coastal resiliency issues	3

4.7 Social Equity

To support the Coastal Resilience Master Plan delivers in its effort to identify and address socioeconomic inequities, as well as work to enhance equity through coastal region adaptation and protection efforts, respondents were asked to describe the biggest challenges facing their jurisdiction, community, agency, or organization in addressing equity. Of the 98 total respondents, 60 provided responses to this question. The key themes of these responses and the frequency with which they were mentioned are summarized in the table below.

Key Themes	Frequency
Inadequate outreach efforts to underserved communities and the general public – only certain groups or populations are being represented or getting involved	15
Lack of funding (I.e., lack of capacity to compete for funding or identify and apply for sources of funding)	14
Social equity is not included in federal cost-benefit analyses, perpetuating institutional inequities and disinvestment from poorer communities. Leaves vulnerable residents more susceptible to flood hazards.	7
Inadequate staff capacity (I.e., few local staff working on resiliency issues, limited education and training of staff on coastal resiliency issues)	7
Lack of awareness in local government on coastal resiliency issues and how they relate to equity	5
Inadequate understanding or knowledge of why equity needs to be addressed and how it can be achieved.	4
Need to better identify and address communities with existing poverty and education inequities, as well as populations with residents who speak other languages	4
We do not anticipate any challenges at this time	4
Lack of regional or inter-jurisdictional partnerships	2
We are unsure of what challenges might arise regarding this issue	2

Key Themes	Frequency
Inability of vulnerable communities with few financial resources to access mitigation and adaptation solutions	1
Mistrust of public communication by underserved communities increases population vulnerability	1
Mitigation and adaptation plans written more than a year ago do not address equity concerns and need to be updated	1

4.7.1 At-Risk and Vulnerable Communities

To employ stakeholders' local and lived knowledge of their communities in support of the CRMP's effort to promote equity and identify at-risk and vulnerable communities that should be further engaged in outreach efforts throughout the CRMP process, respondents were asked to identify any neighborhoods, populations, or communities within their area of focus that they would consider to be particularly vulnerable to the impacts of climate change and coastal hazards. Respondents were also asked to describe the challenges of the identified communities. Of the 98 total respondents, 55 individuals provided responses to this question. The populations and communities identified by the respondents are catalogued alphabetically in the table below. The frequency with which the communities were mentioned by survey respondents can be found in parentheses. Those only mentioned once are simply represented by their name.

At-Risk or Vulnerable Community	Community Challenges, If Provided
Annandale	Socially vulnerable populations and high exposure to urban heat island effects, urban flooding, and poor air quality
Aquia Harbor	
Beechwood Manor	
Belle View	
Broad Creek	Susceptible to coastal flooding due to SLR
Carmines Island	Road floods daily - no way to fix it
City Dock	
Coles Point	
Colonial Place	
Cradock Historic District	Old homes & close to Paradise Creek
Critical infrastructure on the Potomac	Airport, GW parkway, rail lines are highly at risk
Crossman watersheds	Acutely vulnerable to extreme inland flooding during high-intensity storms
Culpepper Landing	Built in a swamp
Deep Creek	
Dominion Blvd	
Downtown Norfolk (3)	
Dumfries	Vulnerable to disruptions in transportation due to sea level rise and coastal flooding
East Ocean View (4)	Very low lying higher Hispanic population than the overall region, higher percentage of rentals and repetitive loss structures, high tides daily under some buildings and in streets, area cut-off during significant storm surge events. Low-lying dense area cut-off from

At-Risk or Vulnerable Community	Community Challenges, If Provided
	resources and emergency services on all sides during a storm surge event
Eastern Branch of the Elizabeth River	
Eastern Mathews	
Fernwood Farms	Homes in Chesapeake being demolished via FEMA funds via the City. Residents in this community have not been successful in getting any projects added to the Capital Improvement Budget to address drainage/flooding issues. Fernwood Farms' drainage system is based on the 5-year standard. A study done over 20 years ago stated the flooding could be addressed but it was too expensive.
Four Mile Run	The area of lower Four Mile Run is a target area of vulnerability to SLR and storm surge - with high volumes and energy of water depositing into upper Four Mile Run from high-risk/flood watersheds. Also, this area at lower Four Mile Run hosts a number of critical community essential facilities that are at extreme risk from future SLR and storm surge.
Ghent (3)	Susceptible to coastal flooding due to SLR
Gloucester Point	Susceptible to flooding - densely developed area
Guinea	Coastal flooding and subsidence; (any area east of Route 17 within the Crater impact area is subject to poor soils and flooding during storms)
Homeless population camps	Located in riverside wooded areas and has no new source for incoming floods or storms
Ingleside – Norfolk (2)	Low lying area, moderate-income, elderly population within low lying structures (primarily 1-story or 1.5-story), higher percentage of minorities and people of color than what's represented throughout the region as a whole.
Installations – Hampton Roads	Prone to tidal and storm surge flooding Further, the "Reports of Effects of a Changing Climate to the Department of Defense" (JAN 2019) identified Virginia installations vulnerable to current or future climate/weather impacts. Report cited among the most vulnerable installations to include Naval Station Norfolk, NAS Oceana, NSA Hampton Roads + Northwest Annex within CNRMA
Jenkins Neck	Coastal flooding and subsidence; (any area east of Route 17 within the Crater impact area is subject to poor soils and flooding during storms)
Jordan on the James	
Lafayette Winona (2)	
Lambert's Point	
Larchmont (4)	Susceptible to coastal flooding due to SLR; lowest lying community in Norfolk with historic character not suitable for acquisition and not able to be relocated.
Lewisetta (2)	Floodplain area
Little Florida (3)	Low-lying peninsula
Llewelyn Rd	
Lorton	Vulnerable to disruptions in transportation due to sea level rise and coastal flooding
Low-lying areas along the Rappahannock	
Lower Gloucester	
Lubber Run	Acutely vulnerable to extreme inland flooding during high-intensity storms

At-Risk or Vulnerable Community	Community Challenges, If Provided
Mains Creek	Homes in Chesapeake being demolished via FEMA funds via the City. Residents in these communities have not been successful in getting any projects added to the Capital Improvement Budget to address drainage/flooding issues.
Manassas Park	Socially vulnerable populations and high exposure to urban heat island effects, urban flooding, and poor air quality
Marlboro Point	
Mill Creek	
Morattico (2)	
New Alexandria (2)	High risk; numerous communities along margins of small estuaries at various points along the coastline
Norfolk (2)	
Normandy Village	
Ohio Creek	
Paradise Creek	
Park Place	
Pocahontas Island	Will feel impacts of sea level rise and the old changes in the river channel may impact this
Poplar Hall – Norfolk	
Residents located on the water (3)	Subject to extreme tides and heavy rain events.
Richmond Highway Corridor	Subject to many climate change hazards (extreme heat, flooding, for example); low-income neighborhoods
Riverview	
Sarah's Creek	Susceptible to flooding - densely developed area
Simonson (3)	Very low land area of Newland road - storm water flooding
South County – Fairfax	Socially vulnerable populations and high exposure to urban heat island effects, urban flooding, and poor air quality
Southern end of Virginia Beach	Tidal flooding from the Albemarle Sound when there is a strong southern wind
Spout Run	Acutely vulnerable to extreme inland flooding during high-intensity storms
Stingray's Point	
Talbot	
Torreyson	Acutely vulnerable to extreme inland flooding during high-intensity storms
Town of Chincoteague	Major vulnerability with the causeway to the island
Town of Newsoms	Impacted by poor drainage. The County has been awarded CDBG funds to start phase 1 of a project to repair the drainage and the homes in that area. This is stormwater, not coastal impacts, that may be impacted by climate change.
Town of Saxis (2)	Tidal flooding, easily isolated during tidal events and climate change will make living in these communities more difficult
Town of Tangier (2)	Easily isolated during tidal events and climate change will make living in these communities more difficult
Town of Wachapreague	
Triangle	Vulnerable to disruptions in transportation due to sea level rise and coastal flooding
USDA Seabreeze Apartments – Cape Charles	Under threat from coastal erosion and has been undermined during storm events.
Weems	

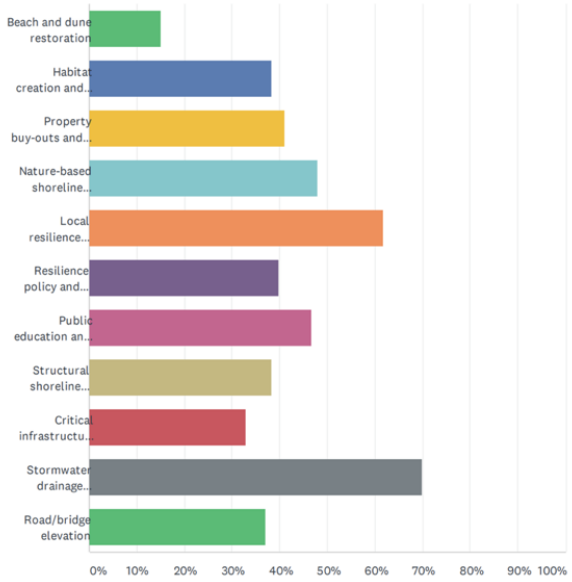
At-Risk or Vulnerable Community	Community Challenges, If Provided
West Freemason	
Westover	Acutely vulnerable to extreme inland flooding during high-intensity storms
Willis Wharf	Tidal flooding
Willoughby (2)	Low-lying sandy conditions subject to extreme wind/wave/surge exposure during a major hurricane
Windmill Point (2)	
Windsor Woods	Stormwater flooding
Woodbridge	Vulnerable to disruptions in transportation due to sea level rise and coastal flooding
Yorktown Riverfront	Vibrant tourist community that also includes park assets. Businesses are at high risk over the next 50 years from flooding and storm surge, since they are within the 50- 100-year floodplain and were last severely impacted by Hurricane Isabel.

5.0 RESILIENCE PROJECT PRIORITIES

5.1 Preferred Project Types

In order to better understand the types of coastal resilience projects needed throughout coastal Virginia, respondents were asked, based on their jurisdiction, community, agency, or organization's priorities, to select project types that would provide the greatest benefit to their jurisdiction. Respondents were asked to select five project types from the following list:

- Beach and dune restoration
- Habitat creation and restoration
- Property buy-outs and land preservation
- Nature-based shoreline stabilization
- Local resilience planning
- Resilience policy and development standards
- Public education and outreach
- Structural shoreline protection (floodwalls, levees, tide gates, revetments, etc.)
- Critical infrastructure upgrades (hospitals, police and fire stations, nursing homes, etc.)
- Stormwater drainage improvements
- Road/bridge elevation



The highest ranked project types included Stormwater drainage improvements, which received votes from seventy percent (70%) of the respondents; Local resilience planning, which received votes from sixty-one percent (61%) of the respondents; Nature-based shoreline stabilization, which received votes from forty-eight (48%) of the respondents; Public education and outreach, which received votes from

forty-seven (47%) of the respondents; and Property buy-outs and land preservation, which received votes from forty-one percent (41%) of the respondents.

5.2 CRMP Project Perceptions

5.2.1 Benefits – Perceived Positive Impacts

Respondents were asked to describe how they anticipate the Coastal Resilience Master Plan will benefit their community and organization. Of the 98 total respondents, 61 individuals answered this question. The key themes of these responses and the frequency with which they were mentioned are summarized in the table below.

Key Themes	Frequency
Provide a coordinated effort to address coastal resiliency issues	12
Create funding opportunities for resilience projects	11
Create awareness of coastal resiliency issues among the public and local stakeholders	8
Help identify and prioritize resiliency projects	8
Improve and encourage resiliency planning across the Commonwealth	6
Creating multi-jurisdictional partnerships to solve resiliency issues and implement projects	6
Benefits unknown	5
Provide guidance to local jurisdictions	4
Identify needs across the Commonwealth	2
Make relevant data more readily available	2
I believe the plan will benefit my community very little because we mostly suffer from riverine flooding	2
Update building standards and prohibit new development in flood-prone areas and wetlands	1
Provide guidance on protecting shorelines	1
Improvement of storm drainage systems	1
Address inequities	1
Improve transportation systems	1
Implementation of green infrastructure	1

5.2.2 Concerns – Perceived Negative Impacts

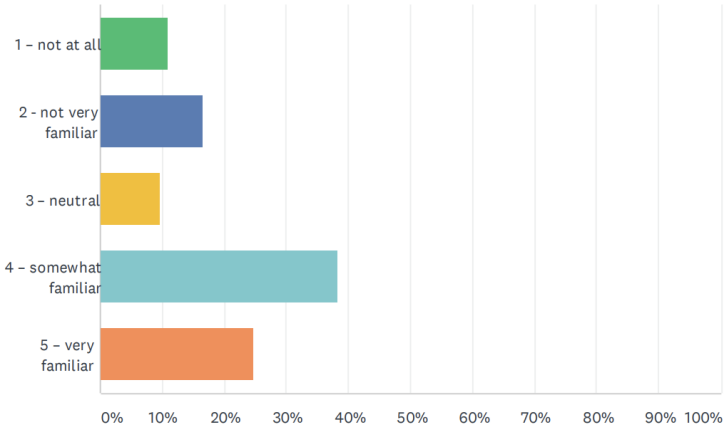
Respondents were asked to describe current concerns they have regarding impacts that the Coastal Resilience Master Planning might have on their community or jurisdiction. Of the 98 total respondents, only 42 individuals answered this question. The key themes of these responses and the frequency with which they were mentioned are summarized in the table below.

Key Themes	Frequency
No concerns at this time	17
Concern for how projects will be weighted during the prioritization process and how this will impact access to funding for projects	12

Key Themes	Frequency
Not sure	3
Underserved populations and equity concerns will not be appropriately or sufficiently addressed	2
Projects will be given lower priority and receive less funding due to smaller population sizes of the region than others in the state	2
Implementation of unfunded mandates that halt projects rather than promote solutions	2
Localities with limited staffing and capacity will be left behind, rather than supported	2
Emphasizing the need for this process to be iterative and adapt to changes in need, developments in data collection and analyses, and expansion to all PDCs and types of flooding risks	2
Flood mitigation efforts that preserve and protect historic structures will not be prioritized	1
The plan will not reflect risk from all types of flooding and, therefore, not address the concerns of the entire state	1
The plan will not address the need to retrofit older buildings	1
The plan might have negative impacts on business and economic development	1
The plan will be too difficult to implement changes	1
Structural projects will cause flooding in adjacent areas	1

6.0 PLANNING AWARENESS AND PARTICIPATION

In order to have a "pulse" on the Commonwealth and SNR's outreach efforts regarding the Coastal Resilience Master Plan, respondents were asked about their familiarity with the CRMP's efforts to improve resiliency in coastal areas. 73 of the 98 respondents answered this question. More than sixty percent (60%) of the respondents reported being either somewhat or very familiar with the CRMP and its efforts. On the other hand, twenty-seven percent (27%) of the respondents reported being either not very or not at all familiar with the CRMP and its efforts.



6.1 Potential Data Sources/Owners

As part of the outreach effort executed by the Centralized Stakeholder Survey, the Project Identification and Evaluation Team sought to collect data sources to support the risk assessment, project identification, project evaluation, and funding strategy alignment. In doing so, respondents were asked to provide a point of contact within their jurisdiction, community, agency, or organization with whom

the Team could follow up regarding data availability, sharing, validation, and coordination. The points of contact provided by the respondents are identified in the table below.

Point of Contact	Title	Jurisdiction/Agency/Organization	Email
Kyle Spencer	Deputy Resilience Officer	City of Norfolk	kyle.spencer@norfolk.gov
David Thompson	GIS Manager	City of Hopewell	dthompson@hopewellva.gov
John Hozey	Town Manager	Cape Charles	townmanager@capecharles.org
Dean Cumbria	Forest Management Chief	Department of Forestry	dean.cumbia@dof.virginia.gov
Jessica Steelman	Coastal Planner	Accomack-Northampton PDC	jsteelman@a-npdc.org
Rebecca Benz	Planning Administrator	City of Chesapeake	rbenz@cityofchesapeake.net
Heather Brown	Emergency Operations Planner	Newport News	brownhl@nnva.gov
Joseph Quesenberry	Town Manager	Town of Warsaw	jquesenberry@town.warsaw.va.us
Kathleen Easley	Planning Director	Town of Colonial Beach	keasley@colonialbeachva.net
Hope Mothershead			hmothershead@co.Richmond.va.us
Julie Walton	Director of Community Development	Prince George County	jwalton@princegeorgecountyva.gov
Heather Barrar	Regional Trails Program Director	Friends of the Lower Appomattox River	hbarrar@folar-va.org
Demetra J. McBride	Bureau Chief	OSEM, Arlington County	dmcbride@arlingtonva.us
Rich Dooley	Program Manager	OSEM, Arlington County	rdooley@arlingtonva.us
Kristin Owen	Floodplain Manager	Henrico County	owe042@henrico.us
Victoria Edwards		Town of Boykins	boykins@townofboykinsva.com
Roderick Scott	Board Chair	Flood Mitigation Industry Association	roderick.scott75@aol.com
Brent McChord	District Environmental Health Manager	Virginia Department of Health	Brent.Mcchord@vdh.virginia.gov
Adam Lynch	River Steward	Friends of the Rappahannock	adam.lynch@riverfriends.org
Emily Torrey	Deputy Environmental Programs	Stafford County	etorrey@staffordcountyva.gov
Anne Ducey-Ortiz	Director of Planning, Zoning, & Environmental Programs	Gloucester County	aducey@gloucesterva.info
Lindsey Johnson	Deputy Tribal Administrator	Chickahominy Indian Tribe	
Doug Beaver	Chief Resilience Officer	City of Norfolk	douglas.beaver@norfolk.gov
Bracey Parr	President	Cradock Civic League	cradockcivicleague@gmail.com
Jack McGovern		City of Fredericksburg	jmcgovern@fd.fredericksburgva.gov
Joseph Howell			joseph.howell1@navy.mil
Kevin Du Bois	DoD Chesapeake Bay Program Coordinator	NAVFACSYSCOM Mid-Atlantic	kevin.dubois@navy.mil
Emily C. Schad	GIS Analyst	Department of Information Technology	
Matthew Meyers	Division Manager	Office of Environmental and Energy Coordination, Fairfax County	matthew.meyers@fairfaxcounty.gov
Catie Torgersen	Stormwater Planning Division	Office of Public Works and Environmental Services, Fairfax County	catherine.torgersen@fairfaxcounty.gov

Point of Contact	Title	Jurisdiction/Agency/Organization	Email
Joseph Brogan	Chief of Stormwater Programs	York County Public Works	broganj@yorkcounty.gov
Beth Hart	Mayor		bharttkc@gmail.com
Laurie Thomas	Town Manager	Town of Tangier	tgitownoffice@yahoo.com
Normand Goulet	Director	Division of Environment and Resiliency Planning	ngoulet@novaregion.org
Rhonda Russell		Charles City	rrussell@co.charles-city.va.us
Richard Kline			
Robert G. Williams	Town Councilman	Town of Wachapreague	tango65a@gmail.com
George Homewood	Director of City Planning	City of Norfolk	george.homewood@norfolk.gov
Susan Wright	IT Manager	Southampton County	swright@southamptoncounty.org
Sarah Stewart	Planning Manager	Environmental Program, PlanRVA	sstewart@planrva.org
J. Michael Flagg	Director of Public Works	Hanover County	jmflagg@hanovercounty.gov
Matt Simons	Principal Planner & Floodplain Administrator	Department of City Planning, City of Norfolk	matthew.simons@norfolk.gov
Dorothy Geyer	Natural Resource Specialist	Colonial National Historical Park	Dorothy_Geyer@nps.gov

6.2 Potential Strategic Partners

To improve outreach efforts with the public and spread awareness about the CRMP's efforts and issues regarding coastal resiliency, respondents were asked to identify and local or community groups/organization with which the Commonwealth should coordinate to promote the project and similar efforts in the future. Respondents were also asked to provide a point of contact at the organization. The community groups/organizations and points of contact provided by the respondents are identified in the table below.

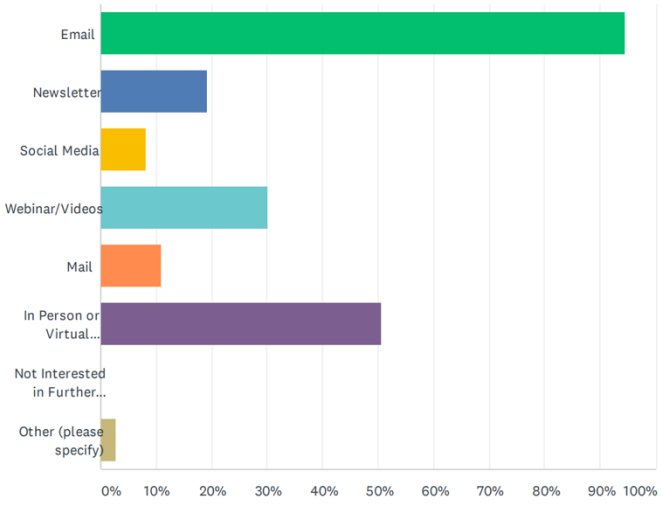
Community Group / Organization	
Norfolk Preservation Alliance	Elizabeth River Project
Soil and water conservation districts	Civic Leagues in Portsmouth
Trails and recreational groups	OLDCC/REPI
Friends of Four Mile Run	Northern Virginia Regional Commission
Friends of Accotink Creek	Metropolitan Washington Council of Governments
Friends of Little Hunting Creek	Fairfax County Wetlands Board
Friends of Dyke Marsh	Hampton Roads PDC
Friends of the Rappahannock – Bryan Hofmann	SERCAP
Northern Neck PDC	Chesapeake Bay Foundation
Wetlands Watch	Lafayette Wetlands Partnership
Accomack-Northampton PDC – Ashley Millis amillis@a-npdc.org	James River Association – Shawn Ralston sralston@jrava.org or Jamie Brunkow jbrunkow@jrava.org
VSU – Jane Harris	Hanover Chamber of Commerce
State agencies	Hanover Farm Bureau

Community Group / Organization	
Resilience Committee – Bryon Mack bryon.mack@gmail.com	Hanover Caroline Soil and Water Conservation District
Naval Station Norfolk	Friends of Indian River – Rogard Ross
USACE – Norfolk District	Preservation Virginia – Director Dave Givens dgivens@preservationvirginia.org AND Chief Executive Officer Elizabeth S. Kostelny ekostelny@preservationvirginia.org
Eastern Virginia Medical Complex (EVMS, Sentara Healthcare, Children's Hospital)	

6.3 Future Outreach Preferences

To better coordinate outreach efforts for the CRMP going forward and maintain contact with key stakeholders, respondents were asked how they would like the Commonwealth to communicate with their jurisdiction, community, agency, or organization regarding the CRMP and other coastal resiliency efforts in the future. Respondents were provided with the following list of communication methods and asked to select all that apply:

- Email
- Newsletter
- Social Media
- Webinar/Videos
- Mail
- In-Person or Virtual Meetings
- Not Interested in Further Contact
- Other (Please Specify)



Of the 98 total respondents, 73 individuals provided an answer to this question. Ninety-five percent (95%) of the respondents to this question reported that they would like receive communication via email. Fifty-one percent (51%) indicated that they would like to attend in-person or virtual meetings. Thirty percent (30%) reported that they would like to receive communication via webinars or videos, and nineteen percent (19%) indicated that they would like to receive communication via newsletters. Lastly, eleven percent (11%) indicated a desire to receive communication via mail, and eight percent (8%) reported that they would like to receive communication via social media. None of the respondents indicated that they were not interested in receiving further contact regarding the CRMP and other coastal resiliency efforts.

5.3 Closing Remarks

Respondents were provided a final opportunity to provide any open, candid comments on the CRMP project and its efforts that had not been previously addressed in the survey. Twenty-three (23) comments were provided in this section, 10 of which acknowledged that they had no more comments to provide at this time. Of the remaining responses, many demonstrated thanks to the Commonwealth

for their work on this effort and demonstrated a desire to remain engaged in the CRMP project as it adapts and evolves toward implementation, as well as with other regional coastal resiliency solutions.

One individual expressed that the sharing of data layers used in both the flooding and social vulnerability analysis of the CRMP will be useful going forward, and another emphasized that flood resiliency should preserve the property tax base and promote buildings that do not flood. Lastly, one individual stressed that there should be greater emphasis on promoting projects that address Repetitive Loss structures without qualifiers to the method of mitigation used, referencing FMEA's Sandy Recovery Advisory as a revised mitigation posture that is more appropriate for urban coastal communities like Norfolk than the posture currently within the CRMP framework.

The Centralized Stakeholder Survey has officially closed.

"Understanding the timeline and capacity for this plan, I look forward to future iterations of the plan being statewide (beyond coastal PDCs), reflecting risk from all types of flooding (including new IDF data, etc.), and being developed through an iterative and engaged process with residents, especially those in chronically underserved communities also vulnerable to flooding."