2021

Appendix A: Technical Advisory Committee, Subcommittee Recommendations

VIRGINIA COASTAL RESILIENCE MASTER PLAN

Contents

Project Identification

The types of projects coming in should be reflective of the needs of the whole Commonwealth.

- 95% of waterfront property in the rural localities is privately owned, so publicly-owned projects cannot be the only ones included in the Master Plan.

Develop ways to encourage local governments to care about flood mitigation and tax base protection.

- Rural jurisdictions are lagging behind urban jurisdictions in this effort, largely due to issues of staff capacity.

Project Evaluation

- Project scoring is largely dependent on applicant characterizations of project type, extent, and benefits. Without objective and critical evaluation this can lead to significant over-valuation of projects.

- The scoring of projects tends to place a premium on those that address current flooding issues. This is not necessarily a strategic use of funds in building long-term resilience.

- There is no basis for evaluating project benefits for precipitation driven flooding in the absence of spatially explicit risk exposure information.

Natural and nature-based features should be considered critical infrastructure and projects that preserve ecosystem service capacity through coming decades should be ranked highly, regardless of proximity to developed landscapes.

As currently implemented, the project evaluation protocol is incapable of leading to a strategic increase in coastal flood resilience that reflects the CRMP guiding principles. The population of projects under evaluation is not the product of a comprehensive needs assessment but rather a compilation of independently identified local interests.

Even if the protocol was capable of reliable identification of the most impactful proposed projects, it cannot ensure critical needs across the entire coastal zone will be addressed. Absent some well-considered guidance regarding the type and location of projects which will advance the CRMP goals, current evaluation practices will simply result in creative project characterizations to gain funding for a hodgepodge of public works projects.

Finance

Establish a Mechanism for Ensuring the State's Overarching Resilience Funding Priorities Are Taken into Account (Not Just Local)

- Incorporating a more regional perspective, and with a stated time frame
- Including a financial analysis of adapting vs. abandoning public infrastructure

Provide Funding for State Climate Adaptation Planning Staff

In order to effectively maintain, update and implement the Virginia Coastal Resilience Master Plan, the Commonwealth will need adequate staff. This staff could be placed under the supervision of the Special Assistant to the Governor for Coastal Adaptation and Protection and/or in one or more state agencies. They could coordinate with the Secretary of Natural and Historic Resources, the Secretary of Public Safety and Homeland Security, and other members of the Cabinet to ensure that both the natural and built environment are considered in climate adaptation planning. Functions of this staff would include:

- Maintaining of a state website about climate adaptation planning
- Continuing operational support of the Coastal Resilience Technical Advisory Committee and its Subcommittees, or a newly-created state resilience authority
- Coordinating the state's resilience project priorities with local or regional project priorities
- Reviewing all state capital expenditure programs to ensure they require an assessment of the resilience of the selected project before funding is provided
- Serving as funding advisors for the four regions laid out in the Virginia Coastal Resilience Master Planning Framework (Hampton Roads, Rural Coastal VA, Fall Line North, Fall Line South). These positions would be responsible for:
    - Maintaining the Financing tab of the Coastal Projects Database by keeping funding sources, requirements, deadlines, etc. up to date and keeping their assigned localities apprised of critical changes and deadlines.
    - Assisting localities in determining appropriate funding mechanisms and grant/loan sources, assisting with writing grant applications and finding proposal partners, developing finance mechanisms, assisting with securing acceptable match for grants as required, tracking progress on funded activities, and assisting with implementation of these activities.

    - Maintaining the Projects tab of the Coastal Projects Database through continuous contact with their assigned localities. This would include annual re-prioritization of projects in their region based on what was funded and what has not yet been funded, but is still needed.

- Funding for these positions could come from RGGI auctions or another source determined by the legislature.

<u>Establish a Resiliency Revolving Loan Fund</u>

- In order to create an additional perpetual funding source for resiliency projects in Virginia, the Commonwealth could consider establishing a resiliency revolving loan fund (RLF) to finance projects that fall outside of the scope of the Community Flood Preparedness Fund or, due to capacity constraints, cannot be funded from the Community Flood Preparedness Fund at a given time. The resiliency RLF could be modeled after the Virginia Airports Revolving Fund, which offers maximum application and loan flexibility to borrowers. The resiliency RLF could be established with a direct appropriation from the General Assembly or from another identified funding source; other funding mechanisms could include special purpose taxes administered and/or delivered through an entity similar to a Transportation Planning Organization (TPO). Loans made from the resiliency RLF could be used to meet matching requirements of other funding sources, to provide 'gap financing' needs for projects that have not identified 100% of the needed project costs from other sources, or to provide more flexibility in funding resilient elements of projects that are not otherwise resiliency projects. It also could establish an alternative fund in the event that proceeds derived from RGGI auctions significantly decline in the future. Additionally, interest earnings from loans made through the Resiliency Revolving Fund could potentially provide grant funds for regional planning completed by planning district commissions.

Community Outreach

The efforts to conduct local government and public input outreach through the PDCs was a sound strategy. We would offer the following alterations to that strategy moving forward.

- Further integrate the data collection efforts with the outreach meetings.
- Allow for more time and provide greater opportunity to complete the data collection/outreach campaign to local governments and stakeholders.
- Be specific in your requests for data and the stated goals of meetings.
- Conducting public outreach through the PDCs was not as effective because PDC are not typically public-facing organizations and have to walk a line with their member local governments. This outreach is better conducted by the Outreach Subcommittee through a more targeted approach. Find out where the gaps in input are and target those communities through community-based organizations. Utilize more press, media, and social media to get the word out about the campaign.

It is the role of the Outreach Subcommittee to help identify which stakeholders to engage, this begins by having a diverse and inclusive membership.

The NNPDC role and capacity, and PDCs in general, are as facilitators, conveners, local government liaisons, and planners.

The Outreach Subcommittee should be the origin for all insight into how to conduct outreach going forward. It felt at times like there were two outreach efforts.

Studies, Research, and Best Practices

- Establish a transition from the temporary TAC process for providing scientific, technical, and policy advice for Virginia's resilience efforts. The TAC authorization ends with this administration and a permanent effort, not tied to an administration, is needed, as recommended by the VASEM study, "The Impact of Climate Change on Virginia's Coast."

    - This permanent effort should establish a process for regularly re-evaluating climate change science and impacts and including any updated impacts into state policy. This should include not just scientific analysis of impacts, but the state of the science on impacts and adaptation practices, and monitoring the long term effectiveness of projects in reducing risk once they are put in place to guide future investments in the Commonwealth. This evaluation function will ensure that future project priorities and investments go toward implementing best practices, testing new practices, and disinvesting from practices that may prove to not effectively reduce risk or accommodate multiple hazards.

- A key next step to the CRMP is an assessment by relevant Commonwealth agencies how the recommendations of the Plan should be incorporated into not just asset management, but impact on agency mission and services. This will require sustained engagement with agency staff to ensure they understand the Plan enough to develop new or alter existing programs and services. While the DEQ Division of Environmental Enhancement has been created to support internal and external guidance on climate issues, true implementation across all agencies will be difficult to coordinate without sustained interagency collaboration.

- The Special Assistant to the Governor for Coastal Adaptation and Protection position should be maintained in the next administration, with funding for support staff as FTEs. Alternatively, the next administration could work with the General Assembly to consider permanent placement of a similar position with such functions (including budget and staff FTEs) within an agency to provide continuity for the localities across multiple gubernatorial administrations.

Related to Relocation

- Where is equity in this conversation?

- How is the selection of new projects (further inland) prioritizing the relocation of communities, economic development, resources and access?

- How are priorities developed for relocation?

- What engagement is being considered for relocation methods and strategies? Where is education built into the conversation?

- Is this a phased process?

- When using existing programs for buyout and acquisition, consider whether land left after structure removal can be restored to contribute to green infrastructure. Following North Carolina's example, use disaster risk reduction areas to minimize the effect of checkerboarding in voluntary buyout and acquisition and maximize ability to reuse land for green infrastructure or passive recreation instead of creating vacant lots that are a maintenance drain on locality funds.

- Create a governance structure among Commonwealth agencies who will have a role in both retreat from vulnerable areas and settlement in receiving communities. There are multiple agencies who currently administer grant programs that can be used for buyout and acquisition, and some responsibility lies with individual localities. Either centralizing this structure or developing governance that ensures regular collaboration will allow the Commonwealth to maximize efficiency and take advantage of the ability to beneficially reuse land where possible for green infrastructure or passive recreation.

- Pay attention to the creation of receiving communities in less at risk areas. Areas on high ground will need adequate stock of affordable and workforce housing (including rental options) in addition to higher end single family homes. These locations will also need social and health support services, educational resources (K-12 schools, libraries) and access to food (grocery stores and restaurants) with proximity to employers to be viable locations of choice, especially for those voluntarily relocating. Efforts should be made where possible to assist localities with equitably redeveloping receiving communities on higher ground within locality boundaries to mitigate concern for lost tax revenue and take advantage of existing supportive infrastructure without relocating low income populations to do so (electricity, water/sewer, roads, emergency services)

- Convene a more specific advisory committee with relevant expertise who can develop recommendations for how to structure and fund a Commonwealth anticipatory relocation program that complements existing federal programs that fund buyout and acquisition but are more reactive in nature. These recommendations should include staffing needs for such a program, as well as funding for deep sustained multi-year engagement in communities that may need to have significant partial or full relocation planned, designed, and built. It should also develop specific policies that incorporate other criteria for relocation that are not fiscal, like importance to cultural heritage, equity and justice (especially in vulnerable places that are populated by communities of color due to legacies of redlining and other discriminatory practices), and ability to reuse land left over for green infrastructure

- Future iterations of the Coastal Resilience Master Plan should include a recommendation to develop a process for determining when relocation is preferable to maintaining the status quo. The description of such a process should address the following issues:
    - When does public adaptation investment no longer make fiscal sense in an area facing inundation over that investment's useful life?
    - Where are the thresholds for cessation of maintenance of public infrastructure and even withdrawal of support for that infrastructure - i.e. state highway abandonment, etc.? What are the legal consequences of these decisions?
- Future iterations of the Coastal Resilience Master Plan should include recommendations for addressing the removal of structures along the shoreline. The statement included in the Coastal Resilience Master Plan should include recognition of:
    - Financial challenges of buying the number of structures that need to be bought out
    - Legal challenges of practicing eminent domain in Virginia, which could become necessary when facing managed retreat/relocation
- Financial challenges in rebuilding receiving communities.
    - Editorially, retreat will be a hard sell if we are not incentivizing or assisting with keeping people in locality or at least in Virginia (NCORR's strategic buyout program has an example of how this is done in CDBG-MIT context and was key in reducing local opposition to buyout and getting those localities to the table. People who own a 50+ year old flood prone home in disrepair need financial help to buy something that is less at risk, sanitary, safe, and secure because those things cost more.
    - Also, under a) in addition to financing structure removal also include maintenance and upkeep costs, or costs to beneficially re-use land, as with wetlands restoration on parcels or passive park use. Without providing these costs up front localities who receive the deed on property will be more likely to just mow a lot - right next to the water in some cases, which is not great for water quality)
    - And under b), practicing buyout or acquisition through both voluntary measures and eminent domain. It is also legally challenging to execute voluntary buyout/acquisition - heirs' property, HUD regulations, etc - so don't discount that there are legal issues with voluntary too).
    - Related to Natural and Nature-based Solutions (remember living shorelines and natural solutions as critical infrastructure)

  - Natural solutions are great - but what recommendations can be made to the built environment/infrastructure that is purposely addressing climate change impacts?

  - What are new building codes and building requirements that could be employed in this conversation that ensure that future development is ethical and responsible and we do not repeat the same building issues?

- Following Iowa, Louisiana, and North Carolina, increase Commonwealth investment in statewide flood modeling that can be used in partnership with localities and Universities to identify where green infrastructure may be layered with gray infrastructure to produce more cost effective and environmentally beneficial flood risk reduction. (Jess Whitehead)

- Expansion of efforts to explore the use of natural and nature based solutions should explicitly include the opportunity to identify locations where inland deployment of NNBF can provide a downstream benefit to coastal areas for reduction in volume of runoff due to changes in precipitation and temperature (freshwater wetland restoration, on-farm agricultural practices, reforestation) in addition to the current emphasis on solutions along the shoreline that focus on erosion due to sea level rise and surge.

Conversation about nature-based solutions is too broad. The framework directed the TAC to prioritize nature based solutions and we skipped analyzing what it could accomplish compared to the specific threats in coastal Virginia. The state could invest in natural infrastructure to 1) maintain water quality and ecological benefits and 2) protect built infrastructure. It would be helpful if all tasks and research on natural / nature-based infrastructure clearly indicated which goal was being pursued.

- The Coastal Resilience Master Plan should state that the Commonwealth regards natural infrastructure as critical infrastructure in its own right, not merely as protection for built infrastructure.

  If the Commonwealth does not, then we should recommend that the Commonwealth determines what it defines as critical infrastructure and how important natural infrastructure truly is to the state.

- The Coastal Resilience Master Plan should address, very clearly, where their analysis has data gaps, limitations, etc., so there is written record of how future iterations of the plan can work to fill these gaps.

  Example: The fact that the proposed impact assessment methodology does not include marsh migration not because the data has yet to be created, but because of a technicality of when the data is available for widespread use.

  The Coastal Resilience Master Plan should state that once the data is available, it should be incorporated into future iterations of plans and used to develop a marsh migration policy/plan for the Commonwealth.

- The Coastal Resilience Master Plan should develop a "Marsh Migration Policy/Plan" for the Commonwealth that includes:
    - Recommendations for how to address marsh migration and marsh losses in future iterations of the Coastal Resilience Master Plan
    - Recommendations for identifying large connected marsh lands and making a plan for their migration into the landscape with pace of sea level rise
    - Recommendations for identifying urban/suburban areas where smaller areas of marshes exist today and making a plan for their migration into the landscape with pace of sea level rise

Related to Socioeconomic Equity

How can we hold ourselves accountable to the process and accountable to these communities?

How can we ensure that we have reached our underserved populations?

- The Coastal Resilience Master Plan should include acknowledgment that the community engagement on the Plan, particularly to communities with limited resources, was limited due to the expedited timeline. This acknowledgment should include a statement that government programs and policies that address flood impacts are equitable, full involvement is needed of low income geographic areas and minority communities. This requires effective, ongoing outreach programs by state agencies.

Federal Installation Partnerships

Following study of relationships, resources, and coastal resilience challenges in the shared locality, state, and federal Installation space, the Subcommittee identified the following:

1. Mutual benefit exists for localities and federal installations when they combine efforts for resilience solutions.

2. The best solutions will be locally driven, state supported, and federally shared. In this context, federal installations are regarded as local partners.

3. Wide awareness and relationship gaps exist between localities, state, and federal entities.

4. The state's primary CRMP value proposition is Locality support through information sharing, technical assistance, federal advocacy, and funding.

5. Tools and resources exist that can convey awareness, align relationships, and galvanize a locally driven, state supported, and federally shared approach to current and future resilience threats.

6. Localities and the state can help champion federal authorities to better serve local and federal installation resilience needs by advocating for policy changes at the Congressional level.

The Subcommittee recommends the following:

1. Develop formalized and sustained local and regional resilience networks that include local, state, and federal representatives-- and provide:

    a. Sustained resilience planning teams with an Executive Steering Committee and widely representative stakeholder pool.

    b. Well defined geographical areas of study.

    c. Sustained vulnerability and risk assessments that result in prioritized projects and implementation plans.

    d. Funding solutions.

2. Implement existing Compatible Use Study (formerly Joint Land Use Study) vulnerability/risk assessments, and associated plans and proposed projects.

    a. Include capacity building recommendations in the Coastal Resilience Master Plan (CRMP) [enclosure 1]

b. Encourage sustained Compatible Use or Military Installation Resilience (locality/federal installation shared) studies to be updated at least every 5 years.

c. Apply similar studies for non-Department of Defense federal installations.

3. Initiate and sustain a state campaign to support localities.

    a. Educate and advocate for federal and state supporting resources (funding, capacity, etc.)

    b. Build and incorporate a resources "roadmap", tied to state agency representatives, that closes the existing awareness and resource gaps among locality, state, and federal stakeholders. Include a "checklist" of suggested prerequisites localities should complete to increase eligibility and competitiveness for federal funding. Examples include an approved All hazards Mitigation Plan, Compatible Use or Military Installation Resilience study, and U.S. Army Corps of Engineers Vulnerability Assessment.

    c. Designate state funding sources to help localities meet match requirements for federal grants.

    d. Ensure every Defense Community in the CRMP study area is aware of the Association of Defense Communities— Advancing Resilience for Defense Communities - A Planning Framework. Although intended for Defense Communities, this publication is relevant for all communities contending with coastal resilience challenges and should be included in their resource libraries.

    e. Partner with bordering states for locally driven, state supported, and federally shared resilience solutions.

4. Support federal authorities that will provide local and state advantages. Specifically, support legislative changes at the Congressional level to enable the U.S. Army Corps of Engineers (USACE) to conduct feasibility studies that include Coastal Storm Risk Management (CSRM) project features on federal properties, and to construct such features, utilizing shared federal civil works appropriations and/or non-federal sponsor funds.

5. Seek to adapt existing wide-area infrastructure models (e.g. VDOT Smart Scale) to Coastal Resilience solutions.

Enclosure 1: Existing Compatible Use Study (Joint Land Use Study) Plan Capacity Building Actions

A. 2017 Virginia Regional JLUS

1. Adopt Statewide Military Compatible Land Use Planning Guidelines for Local Governments to Integrate into Regional and Local Planning and Zoning Documents (2017 Virginia Regional JLUS)

2. Establish Permanent Funding Sources for Military Compatibility Planning and Assistance for Local Governments and Other Agencies, (2017 Virginia Regional JLUS)

3. Virginia Leadership should consider working with the military and Maryland Leadership to formally establish a Virginia -Maryland Military Compatibility Working Group. If established, this group should consider being responsible for communication, coordination, and monitoring the implementation of actions needed to address compatibility issues that occur within the identified public resources used for military training. The primary focus for this group is broad military capabilities that can affect state installations that have operational or influence areas that span both states (such as Military Training Routes). (2017 Virginia Regional JLUS)

4. Virginia Leadership should consider working with the military and North Carolina Leadership to formally establish a Virginia -North Carolina Military Compatibility Working Group. It would helpful if this group would consider being responsible for communication, coordination, and monitoring the implementation of actions needed to address compatibility issues that occur within the identified public resources used for military training. The primary focus for this group is broad military capabilities that can affect state installations that have operational or influence areas that span both states (such as Military Training Routes). (2017 Virginia Regional JLUS)

B. 2019 Norfolk and Virginia Beach Joint Land Use Study

1. To address both installation and DoD personnel readiness, implement the applicable, climate resilience "Recommended JLUS Actions" found in Table 3-2 of the report. The top four, highest scoring actions are capacity building projects including (in order):

   Action 1: Hampton Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy

   Action 2: Shore Drive Comprehensive Flood Mitigation and Stormwater Management Strategy

   Action 3: JEB Little Creek Gate 1 - Amphibious Drive - Shore Drive Flooding Study

Action 4: East Amphibious Drive, Chubb Lake, and Lake Bradford Flood Mitigation and Stormwater Management Strategy

2. Implement "Coordination and Outreach Strategies" identified in Table 4-1 of the report, including:

    - Develop a stormwater systems maintenance MOU for each installation and respective locality to define ongoing roles and responsibilities for routine maintenance of ditches, culverts, and other drainage components that span locality/ Navy jurisdiction.

    - Establish coordination protocols between city floodplain managers and Navy support personnel to share information about flood risk, flood insurance, existing city programs, and floodplain development regulations.

    - Update the Military Commuter Survey (HRTPO) to address issues related to flooding and sea level rise and how these issues affect overall access to work and other services.

3. While the document's "Advocacy Strategies" regarding federal funding (DCIP) are discussed, new resilience funding resources available from the Commonwealth should also be recognized (REGGI auction funds, etc) and used to advance the recommendations of the JLUS)

C. 2018 Hampton-Langley JLUS Resilience Addendum

1. To address both installation and DoD personnel readiness, implement the climate resilience recommendations of the Addendum, including:

    - Determine which roadways are designated as high priorities for JBLE-Langley

    - Establish a plan to maintain access of key corridors

    - Establish support for strategic relocation to higher ground

    - Develop a stormwater management plan

    - Manage stormwater off the base in City owned land

    - Coordinate ecological improvements with base development

D. Fort Pickett JLUS

1. COM-3A: Establish a JLUS Implementation Coordination Committee Formalize through a resolution that the Fort Pickett JLUS Policy and Technical Committees will transition to a JLUS Coordination Committee and be responsible for monitoring the achievement of the recommended JLUS strategies and act as a forum for continued communication and sharing of information and current events associated with military compatibility. Jurisdictions should appoint a military liaison to be the point of contact to be on the committee who would be present at jurisdiction meetings. The resolution should outline such assigned responsibilities. (Partners: Nottoway County Brunswick County Dinwiddie County Town of Blackstone)

2. COM-8A: Review Existing Military Operations that Use Facilities / Resources Located Off Fort Pickett Fort Pickett should identify and review all existing military training operations that make use of facilities, equipment or other resources that belong to other organizations. A determination should be made if the training activities could be conducted in the future and may still require use of facilities, equipment or resources that do not belong to Fort Pickett. Those operations without current agreements (MOU / MOA) should be flagged. See COM-8B

3. DSS-2A: Ensure Affected Jurisdictions and Public are Notified of Wildland Fires Fort Pickett and the VAARNG should work closely with Dinwiddie County and other jurisdictions in the Study Area to ensure timely notifications when wildland fires are burning on the installation, particularly when there are off installation impacts such as smoke. To the extent possible, Fort Pickett should also provide notification to the public via their website and social media sites

   DSS-2B: Jurisdictions Need to Keep Community Informed of Wildland Fires Government departments in the local communities need to ensure they provide adequate information to members of the public when the potential exists for wildland fire impacts. Actual wildfire information should be provided including whether natural occurring fire or prescribed burn event. Jurisdictions should establish telephone (consider use of CodeRED type notification) and text message notifications to residents along with websites and social media sites to provide updates and status of wildland fire impacts such as smoke moving into communities.

4. LU-1B: Add a Fort Pickett element to Comprehensive Plans JLUS Partner jurisdictions should incorporate a Fort Pickett element into their comprehensive plans that looks into compatibility and encroachment issues with the installation.

5. RE-1: Stormwater on the airfield runways and taxiways. During heavy rain events there are instances where stormwater drainage backs up onto the Allen C. Perkinson Airport Blackstone AAF runway and taxiways. This can affect aircraft movements on taxiways and aircraft sorties (landing, take-offs, touch and goes, etc.) impacting training operations. (This was identified as an internal issue only – are there any off-base contributing factors? Town of Blackstone?) The recent construction of the State Department FASTC complex has added additional impervious surfaces to the south and east of the airfield. While new construction projects on Fort Pickett are required to comply with federal and state requirements for management of stormwater runoff, the increased impervious surface in combination with the existing impervious surface has the potential to increase stormwater runoff on and around the airfield. Over long periods of time stormwater runoff has the potential to affect the integrity of the runways, taxiways and ramps on the airfield due to soil erosion. (http://www.pickettlanduse.com/images/docs/fpmtc_final_backgroundreport.pdf Page 5-119)

6. RE-1B: Conduct Periodic Stormwater Infrastructure Maintenance Fort Pickett should ensure maintenance teams conduct periodic stormwater infrastructure preventative maintenance that is regularly scheduled. Maintenance should include clearing obstructions in manmade (e.g. culverts) and natural (e.g. waterways) infrastructure and correcting any identified deficiencies. Maintenance teams should also ensure locations where flooding occurs s are visited in advance of major weather events when flooding is predicted and take any necessary actions. (This was identified as an internal issue only – are there any off-base contributing factors? Town of Blackstone?)

7. RC-2: Concern with impacts to roadways in the Town of Blackstone. The Town of Blackstone is the closest jurisdiction to Fort Pickett. Some of the economic development commercial activities located within the boundary of the installation but located on non-military land (e.g. Pickett Park) cause impacts to roadways within the town. In addition, trucks supporting FASTC during construction have also caused some deterioration to town roads. These roadway impacts can cause issues for the town where limited road maintenance funds are available. Flooding not considered?

E. 2014 Marine Corps Base Quantico JLUS

1. Update the JLUS with an addendum that provides a new and more detailed assessment of climate vulnerabilities with the goal of identifying recommendations to eliminate or mitigate those threats. See:

    a. Recommendations CO.6 - Develop a regional dialogue towards mitigation of environmental impacts and resource conservation (on and off base) .

b. Recommendation EC.1 - Pursue conservation partnering opportunities through the Readiness and Environmental Protection Integration (REPI) under DoD and through state, local and private conservation efforts (in collaboration with conservation partners) to pursue suitable properties for conservation in JLUS Military Influence Area Zones 1.2, 1.3, 2.1, 2.4 , 3.1 and 5.1. (EC.2)

c. Recommendation EC.3 - Using the QRESC/QRPT structure, cooperatively work together on stormwater management and other water quality initiatives for shared watersheds (see Recommendation CO.6)

d. Recommendation EC.4 - Through coordination between Prince William County and MCB Quantico, pursue restoration projects along Little Creek to address erosion and flooding issues in this water body and the adjacent properties from Route 1 to the Potomac River. SEE ONGOING, MID-TERM, and LONG-TERM strategies.

F. Naval Weapon Station Yorktown – 2013 Encroachment Action Plan

1. Use the CUP process to update the NWSY 2013 Encroachment Action Plan and provide greater specificity than the 2017 Virginia Regional JLUS to address current resilience issues/needs. See the Regional JLUS, Goal 8, page 43 where it states:

    - There are several public waterways including the Appomattox, Potomac, James, and York Rivers that provide invaluable training assets and realistic training environments for the military; however, these public waterways are also utilized by the general public and commercial business. These waterways should be protected to support ongoing multiple uses.

G. Fort AP Hill

1. Use the CUP process to provide greater specificity than the 2017 Virginia Regional JLUS to address current resilience issues/needs.

H. 2021 Portsmouth & Chesapeake JLUS

1. To address both installation and DoD personnel readiness, including flooding impacts to infrastructure, access, rail and port operations at the Craney Island Fuel Depot, implement the applicable, climate resilience "JLUS Actions" found in Table 5.2 of the report. The top four, highest scoring actions (Tier 1) are capacity building projects including (in order):

Action 1: Effingham Street Comprehensive Flood Mitigation and Stormwater Management Strategy.

Action 2: George Washington Highway Comprehensive Flood Mitigation and Stormwater Management Strategy.

Action 3: Victory Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy

Action 4: Portsmouth Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy.

Other notable JLUS actions include:

Action 16: Work with VDOT to pursue a flood risk/ vulnerability assessment of highway interchanges (access ramps) that considers future SLR and future rainfall along with traffic generation patterns.

Action 17: Complete a future flood risk/vulnerability assessment of all public facilities and their associated access corridors.

I. Fort Lee

1. Use the CUP process to provide greater specificity than the 2017 Virginia Regional JLUS to address current resilience issues/needs.

J. NSF Dahlgren

1. Use the CUP process to provide greater specificity than the 2017 Virginia Regional JLUS to address current resilience issues/needs.

K. Installations in VA not covered by an existing JLUS (are these considered to be in the "coastal" area identified in the VCRMPF?):

- Army Reserve National Guard sites in VA
- Arlington & US Soldiers and Airmen's Home National Cemeteries
- Defense Supply Center Richmond
- NSA Washington – NSF Arlington
- WHS Pentagon
- AFETA Camp Peary

Aligning Economic Development

The Master Plan should include a definition of economic development, and contain a clear message of the economic impacts of increased flooding in the coastal zone. The subcommittee recommends that the Master Plan provide acknowledgement and support for industries that develop a resilience and adaptation economy in Virginia. The scale of impacts in coastal Virginia and across the state provide an opportunity for the Commonwealth to be a global market leader in solutions that enhance resilience.

We recommend that the General Assembly provide incentives for businesses to develop innovative resilience-enhancing products, technologies, designs, and services, to partner with universities to capitalize on their expertise, and to foster workforce development in building and implementing resilience solutions. These incentives could include such nonfinancial measures as expedited permitting so that innovative solutions like green infrastructure can be rapidly implemented. However, funded incentives — including tax breaks for related R&D and capital investment as well as grants and low-interest financing — will also be important.

As part of this effort, we recommend that the Commonwealth continue to support economic development investments in Virginia's resilience and adaptation economy, such as the recent GO Virginia grant to foster coastal resilience and an adaptation economy (Virginia Sea Grant). We further recommend that the state explore making financial and nonfinancial incentives available to smaller local jurisdictions to increase their ability to support business activities that further resilience, and enable them to address impacts such as overburdened septic systems and ditch networks that affect water quality.

Stakeholders need a better understanding of scientific topics to better understand how coastal resiliency efforts would impact economic development, and there is a need to educate elected officials who are in the business of economic development. The subcommittee compiled a list of economic outreach contacts and sought their feedback to a series of questions in order to guide the focus and priorities of the subcommittee. By working with our contacts in coastal Virginia, the subcommittee will be able to provide the CRMP with valuable feedback that aids stakeholders.

For future iterations of the CRMP, the subcommittee is committed to the following:

- Continuing to survey the capacity of its members and how they can contribute to the CRMP planning process.
- Representing all of coastal Virginia and restructuring the subcommittee if needed.
- Developing a list of Virginia Economic Development Partnership approved recommendations that will benefit the CRMP.