November 2020

Coastal Resiliency Database: Strategies for Enhancement and Considerations of State Funding and Planning Initiatives

Ross Weaver, AICP, CFM
Program Assistant Director, Wetlands Watc

Sea Level Rise

WETLANDS WATCH

WWW.WETLANDSWATCH.ORG

ACKNOWLEDGMENTS

Wetlands Watch thanks the Virginia Coastal Zone Management Program for funding this work. This project, Task 15 was funded by the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant FY19 #NA19NOS4190163 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended. The views expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Department of Commerce, NOAA, or any of its subagencies.

Virginia Coastal Zone
MANAGEMENT PROGRAM

NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

Thank you to the CZM Coastal Policy Team, the Virginia Institute of Marine Sciences, and all of stakeholders who provided feedback and resources during the development of this project. Special thanks to Shep Moon, Laura McKay, and Wetlands Watch staff.

ABOUT WETLANDS WATCH

Wetlands Watch, an environmental non-profit located in Norfolk, Virginia, operates statewide to conserve and protect wetlands through education and advocacy. Sea level rise is the biggest threat to our tidal wetlands; we work with local governments to encourage nature based adaptation solutions to sea level rise adaptation.

Please cite this report as: “Coastal Resiliency Database: Enhancement Strategies” Weaver, Ross, Wetlands Watch, 2020.

www.wetlandswatch.org

For more information, please contact Ross Weaver at

ross.weaver@wetlandswatch.org or (804) 787-3533

WETLANDS
WATCH

WWW.WETLANDSWATCH.ORG

Sea Level Rise

In an effort to broaden public engagement in sea level rise adaptation, Wetlands Watch developed an app to track flooding. The logo above is from the “Sea Level Rise” app, downloadable on all app stores.

TABLE OF CONTENTS

INTRODUCTION

This document accompanies the Coastal Resilience Database Guidance document. It seeks to identify several initiatives that can benefit from using the Database, as well as strategies to further expand its utility in the short and long term.

STATE INITIATIVES

There are two major initiatives underway at the state level that will act as major drivers for advancing Virginia's resiliency agenda. For the Database to remain up to date and valuable to end-users, it is imperative that it aligns with the goals of both of these initiatives and acts as a resource for the stakeholders responsible for their development. A brief summary of those efforts is included below.

Virginia Coastal Master Planning Framework

On October 22, 2020, Governor Northam announced the Virginia Coastal Resilience Master Planning Framework. This document provides the guidance necessary for the implementation of the state's first Coastal Resilience Master Plan (expected by the end of 2021.) There are four primary goals of the Master Planning Framework;

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 zone built and natural infrastructure at risk due to sea level rise and flooding

4) Coordinate all state, federal, regional, and local coastal adaptation and protection efforts in accordance with the guiding principles of this Framework

To achieve these goals, the Framework establishes the Commonwealth's Chief Resilience Officer and the Special Assistant to the Governor for Coastal Adaptation and Protection to lead development of the first Coastal Resilience Master Plan. To assist in the Plan's development, a Technical Advisory Committee has been established, which includes representatives from state agencies, the coastal planning districts and regional commissions, academia, and other relevant organizations.

Benefits of the Database

The Database was designed to aid these key stakeholders as they move towards achieving the Framework's goals, specifically Goals 1 and 2. While far from comprehensive, the Database is a resource that can be used to identify projects that protect critical built and natural infrastructure. At present, the Database contains over 200 projects that are referenced in a variety of planning documents, management plans, and studies. It also acts as a repository for over 100 of those same plans and studies. Additionally, the Database includes over 50 federal, state, and private funding opportunities for resiliency projects. As an evolving and interactive resource, it can be revised, strengthened, and added upon to become a more comprehensive tool. As a self-

contained database, the documents, RFPs, narratives, and resources included within do not suffer from "link rot", which is the tendency of hyperlinks to break over time as online resources are moved or deleted. The software used to develop the Database enables the linking of thousands of records, meaning that a project proposal can be connected to both planning records and potential funding opportunities, without creating an unwieldy and unusable resource.

In addition to the development of the Technical Advisory Committee, the Framework elevates the Coastal Zone Management Program to provide administrative and technical support to the TAC, as well as to report directly to the Secretary of Natural Resources. CZM has been proactive in building capacity at the local and regional level, funding the development of the Database and, critically, providing capacity building grants to the coastal planning district commissions to improve regional capacity for resilience planning. One of the four major tasks of these three-year focal area grants is to support the development of the Database and provide a list of regional projects and priorities for inclusion. Maintaining a Database like this would be impossible without the support of the PDCs, making this funding essential to its future value.

Community Flood Preparedness Fund

The Framework is essential in developing a coherent strategy to deal with our coastal hazards, but it isn't the only impetus for future action. The Community Flood Preparedness Fund will provide significant state investment to address flooding statewide. The Fund, which replaces the never-utilized Shoreline Resiliency Fund, is the result of Virginia joining the Regional Greenhouse Gas Initiative, a carbon cap and trade auction. In Virginia, the legislation authorizing our participation in RGGI created two programs to use its revenue. Fifty percent of RGGI revenue will fund a low-income energy efficiency program, while forty-five percent will go to the Community Flood Preparedness Fund.

The Department of Conservation and Recreation will administer the Fund to provide money for projects, plans, and studies to address both coastal and riverine flooding. The first RGGI auctions are expected to occur in early 2021, creating a very short turnaround time to collect stakeholder input, develop the Fund's guidelines, and create the administrative apparatus necessary to run the program. To gain a better understanding of the issues surrounding the Fund, Wetlands Watch conducted a series of webinars with over 50 local and government staff to gain their insight. We developed a report detailing our findings, which is attached as Appendix A.

Benefits of the Database

The Database can help organize the myriad of local plans, projects, and priority areas that exist within the coastal zone, and also store regional and state priorities, which include a new precipitation study to replace NOAA Atlas 14, and developing a more comprehensive flood gauge network. One of the most common comments that was noted during the development outreach of the Database was that "Resilience means different things to different people". Virginia's coastal zone is large and diverse, and the priorities of urban localities in the Hampton Roads region differ drastically from a rural community on the Northern Neck. It is helpful to organize these priorities within one unified resource, but necessary to be able to easily filter out information that appeals to specific stakeholders. Planning capacity also varies significantly between regions. While some localities and regions have developed nuanced resilience plans, many areas have lacked the capacity to do this level of planning. Identifying what other regions

have done is a critical first step for these rural localities, and the Database can help provide that information clearly and concisely. As noted in the Enhancements section of this report, there has been interest in adding an additional table within the Database for localities and PDCs to input narratives of both successful and unsuccessful grant applications. The flexibility of the Database would allow for this information to be password-protected to provide a resource for staff, without sharing potentially sensitive information to the public. This enhancement would need to have buy-in from the PDCs and localities who are more active in grant submittals.

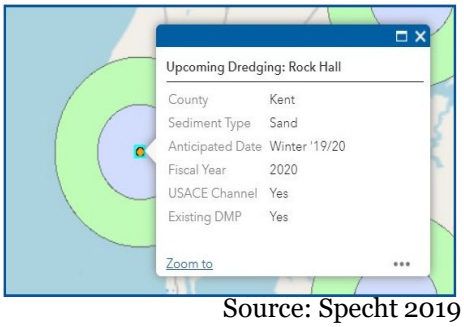
ENHANCING THE DATABASE

There are a number of initiatives and areas of future research that could expand the capacity and usefulness of the Database. A sampling of these opportunities is summarized below.

Beneficial Use of Dredged Material

Wetlands Watch explored opportunities to use this Database to identify potential opportunities for the use of dredged material. Maryland's BUILD (Beneficial Use: Identifying Locations for Dredge) tool was identified as a potential model for a program in Virginia. While the existing Database does not have the capabilities to identify potential alignments between dredging and restoration opportunities, natural infrastructure projects that have been identified as possible uses of dredged material have been classified as such and spatially identified. More work would be required to develop a tool similar to Maryland's, but the increased collaboration between members of the Coastal Master Plan Technical Advisory Committee may provide an opportunity to begin this effort.

The biggest challenge for a beneficial use project to occur is aligning dredging projects and restoration projects, both spatially and temporally. Timing a beneficial use is complicated by permitting and requires collaboration between multiple state agencies. Opportunities are also spatially limited, as restoration sites must typically be no greater than 2-4 miles away to make a project financially feasible.



Source: Specht 2019

Maryland's beneficial use program consists of several components.

1) <u>BUILD:</u> The BUILD tool itself is an ArcGIS layer, available in Maryland's Coastal Atlas. BUILD is composed of multiple data layers, briefly described below

Upcoming Dredging: Indicates the location of dredging projects funded through MDNR's Waterway Improvement Fund.

Data includes information on sediment type and an approximate dredging schedule. Sediment type is an important consideration, as not all sediment is suitable for restoration work. Note: This layer is updated annually in April, following WIF project funding.

Buffers: Two mile and four mile radii buffers are connected to each WIF dredging project, indicating the distance material can be reasonably hydraulically dredged.

Potential Restoration Projects: Contains potential restoration projects identified by the Center for Habitat Restoration & Conservation and the Chesapeake Bay Trust. Data includes project scope, sand needs, and estimated costs. This layer is updated when new restoration projects are identified, at least annually.

Lost Islands: Identified by Wildlife and Heritage Service as potential island restoration projects

Dredged Material Placement Sites: Navigational Channel Depth Surveys. Estimated channel conditions ranging from open to highly restricted (or unknown).

Previous Dredge Projects

USACE NAV channels

BUILD MDE Wetlands and Waterways Permits: Indicate all MDE Wetlands and Waterways permits relating to dredging or restoration issued within the last three years. This layer updates automatically as new permits are issues.

2) Policy and Guidance: DNR developed two policies, "Dredged Material Placement on Resources Managed by the Maryland Department of Natural Resources", and well as "Beneficial Use of Dredged Material Planning Process". This helps project planners better understand the requirements for implementing beneficial use projects.

3) Research: Thin-layer placement as a technique for marsh restoration has been used more frequently in other regions of the country, but is a relatively new technique in the Mid-Atlantic. The Maryland Chesapeake Bay National Estuarine Research Reserve is conducting a study on thin-layer placement across all National Estuarine Research Reserve sites.

4) Funding and Technical Support: Funding for beneficial use projects may be available through existing grant and loan programs through Chesapeake and Coastal Service. This includes the Waterway Improvement Fund and the Community Resilience Grant Program. Technical support is also available through Shoreline Conservation Service.

Maryland Takeaways

George Edmonds from MDNR provided additional context about the status of the beneficial use program. The biggest takeaways are that a successful program requires significant collaboration, as well as a dedicated funding source. BUILD has been up and running for over a year, but is still an evolving process. Currently, the availability of state funding sources is critical for aligning dredging and restoration projects, but the long-term goal would be to create an open market for dredged material, as is used in New Jersey. Maryland has used ESRI ArcGIS to develop these tools, while New Jersey uses a custom-built GIS system.

Maryland has undertaken a geological survey that helps to identify sediment type, down to the granular size. This is a critical planning component, as it allows planners to estimate what kind of bottom material may be available ahead of time. Maintenance of data is also an important consideration. DNR works with the Water Improvement Group to do depth surveys which are updated very quickly. Estimated channel conditions data is not as frequently updated, but dredging data is updated every six to twelve moths based on projects.

Opportunities in Virginia

VMRC has suggested several research needs and opportunities for restoration projects. These include…

Oyster Shell: Need to identify additional/new fossil shell deposits for oyster restoration projects for State and US Army Corps of Engineers for both rotation harvest areas and sanctuaries

Sediments for Shoreline Management: There is a need to identify projects for use of sediments from Corps dredge channels including beach nourishment with coarse sand, shoreline erosion control with coarse and medium sand and wetlands restoration with fine sediments. This effort could include creation of a shoreline atlas (which has been proposed for funding by the Coastal Program through NOAA) to identify opportunities for shoreline projects (see SANDS below for more information).

One opportunity lies in reevaluating the use of the Wolftrap and Rappahannock Alternate overboard placement sites for material from the Baltimore Channel in Virginia's portion of the Bay and identifying potential beneficial use options. Specific projects that have been proposed or received some evaluation by the Corps include; Tangier Uppards (see Database) and Saxis (see Database). Public beaches that have been nourished with sand and will likely need ongoing maintenance include…

Virginia Beach (including Bay beaches)
Sandbridge
Norfolk (Willoughby and Ocean View)
Hampton/Buckroe
Cape Charles

Shoreline Atlas of Need for Dredged Sediment (SANDS)

This proposal by Tony Watkinson of VMRC was proposed in 2015. The goal would be to develop an inventory of eroding or retreating shorelines throughout the Commonwealth for which beach nourishment or sediment placement could result in the preservation of communities and infrastructure or natural resources. The inventory would include identification of the following:

- Shoreline segments (reach) that could benefit from nourishment or sediment placement
- Necessary sand and sediment quantity including expected frequency of placement
- Resource or use conflicts that may result
- General placement plan and any necessary structures
- Likely or potential sources of sand or sediment including navigation channels and offshore sand resources
- Evaluation of community and landowner interest
- Project priority ranking

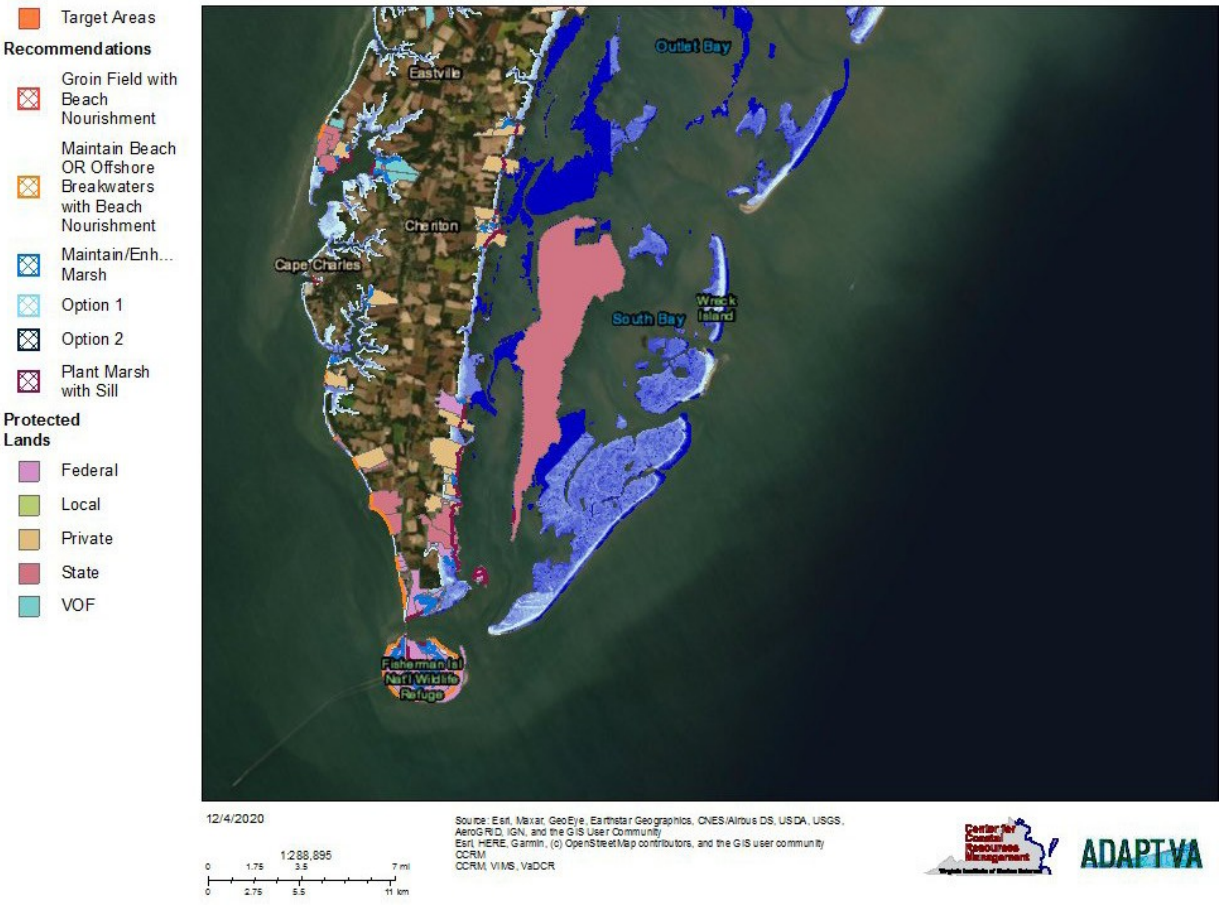
While the above evaluation has occurred for some specific shoreline segments in the Commonwealth, and sand from some dredge projects has been designated for certain shorelines there is no comprehensive inventory of potential projects that could be used as a resiliency planning tool in response to sea level rise. This project could result in an important resource for future shoreline management initiatives and decisions.

Virginia Takeaways

There is support for creating a beneficial use program in Virginia, but there are challenges that would require significant collaboration and financial support. More research is needed to identify the shoreline segments that could benefit from dredged material, and pilot restoration projects would likely need state funding to align with dredging projects. The Technical Advisory Committee may want to explore this issue further, as a beneficial use pilot project could provide tremendous value to the Commonwealth in helping establish a program similar to Maryland's. The Community Flood Preparedness Fund may be one avenue to pursue such an initiative.

AdaptVirginia Enhancements: Tools and Resources

While the Database can be linked and directly embedded in any number of resources or websites, stakeholders will primarily access it through AdaptVirginia (adaptva.org). In the short-term, Wetlands Watch is working with the Virginia Institute of Marine Sciences to populate a fourth table for the Database, incorporating resilience tools curated to focus within the Coastal Zone. This will add additional utility, as will the Natural & Nature-Based Features (NNBF) tool currently being added to the website. This work identifies existing NNBFs and seeks to quantify their protective value for nearby development, as well as prioritizes areas for new NNBF creation. Finally, as the majority of projects included in the Database have Lat/Long coordinates, potential restoration and NNBF projects can be incorporated into the AdaptVA comprehensive viewer. This allows a user to locate specific project proposals and overlay relevant information, including future sea level rise, existing natural resources and critical facilities, and both social vulnerability and physical risk. An example map from AdaptVA is included below.



CONCLUSION: THE CASE FOR MAINTAINING FLEXIBILITY

The scope and nature of the Resiliency Database will continue to evolve based on future initiatives and priorities. In the summer of 2018 when the proposal for the Database was first discussed, Governor Northam hadn't yet released Executive Order 24, and planning the Coastal Master Planning Framework had yet to begin. Virginia hadn't joined the Regional Greenhouse Gas Initiative and the Community Flood Preparedness Fund had yet to be enacted. These initiatives have significantly shifted the shape and scope of the Database, and future progress will continue to shape its form and function.

As the Coastal Master Plan is developed, this Database can be a resource for CZM, the TAC, and other stakeholders working on a very tight schedule. Once the first iteration of the Plan is completed, it may be redundant to have two databases of comprehensive coastal resilience projects. If so, it may be prudent to revert to the initial goals of the Database: a repository of nature-based coastal resiliency projects connected to potential funding sources. As the most recent update of the Database provides an easy linkage between projects, plans, and their prospective funding source- this may help leverage existing funds outside of the Community Flood Preparedness Fund. The Plans & Studies table already contains a multitude of shoreline studies, conservation plans, and restoration strategies for natural infrastructure, and future projects can be linked to these without the need for uploading or additional research. Natural infrastructure and restoration projects that are currently seeking funding are already incorporated, and the Database can continue to act as a repository for projects as they are developed through capacity-building grants and regional workshops. The Funding Sources table is comprehensive, and future sources can be added by stakeholders as they become available.

It is difficult to project the future need and value of the Database, just as it was difficult to project the enormous progress that has been made within the Commonwealth to advance our resiliency goals. Maintaining flexibility and evolving with shifting priorities will help ensure it can act as a resource to the many of the local, regional, and state stakeholders working to protect our natural resources.

WETLANDS WATCH
2601 GRANBY ST.
NORFOLK, VA 23517

Appendix A: Community Flood Preparedness Fund: Local Perspectives

Wetlands Watch has interviewed and held interactive webinars with over 40 local government staff, seeking their views on the newly-enacted Community Flood Preparedness Fund (Fund). These conversations were designed to familiarize localities with the Fund and explore issues needing to be addressed in its program Guidelines to make the Fund work for local and regional governments. The accompanying document outlines a detailed range of issues that were raised during these interviews and in conversations with other resilience experts.

What emerges from this work is a consensus need for initial investments in state level studies to assist the development of local and regional resilience plans. Local and regional governments said they needed state-approved standards for sea level rise and other studies. Examples of these studies include: new statewide rainfall estimates (both design storm [Atlas 14] and intensity, duration, and frequency [IDF] estimates), regionally accurate relative sea level rise estimates and impact studies, analysis on transportation and other critical infrastructure vulnerability in the face of sea level rise and riverine flooding, comprehensive riverine flood modeling (esp. using current/increased rainfall estimates), and a robust stream gauge network. Given the lack of state funding for these issues over the last decade there is a risk that this Fund could be used as a "cash cow" for unmet government needs, requiring a transparent process to be established for decisions on the State use of these funds.

To ensure that projects supported by the Fund advance resilience, regional/local governments seeking grants from the Fund should first develop and submit resilience plans, similar to the process in Texas. Nearly all local government staff agreed that this was necessary but most localities do not have these plans nor the capacity to develop them (especially in riverine watersheds). Since the Fund is authorized to support local and regional studies, early Fund outlays should be directed at contracting support for the development of these locality/regional plans.

Fund guidelines need to outline the content of these plans and should include consideration of future impacts (requiring a state established standard for sea level rise and rainfall intensity that is valid at a regional scale). They should be based on existing plans in local/regional floodplain management plans, emergency management plans, long-range land use plans, and the like to insure these future impacts are made part of those ongoing efforts. These flood resilience plans could become a priority-setting template for other projects in those plans (emergency management, floodplain management, CIP funding, etc.) and from these plans a list of high priority resilience projects eligible for the Fund would emerge. This two-stage process – approved flood resilience plan first and then project funding – was seen as necessary by most local and regional government staff.

A constant issue raised was regional competition for funding and the need for program guidelines to address this: how can Northumberland County (with fewer resources) compete with the City of Virginia Beach (which has spent $12 million to date for plans) for project funding? Many interviewees pointed to the VDOT Smart Scale process or the Go Virginia regional competition process as a solution, with a stronger preference for the Smart Scale approach. In this way, like-sized/resourced localities compete against each other for similar projects. The issue of a fair and predictable distribution of funds for coastal regions versus piedmont and mountain regions was another constantly raised issue and must be in the Guidelines.

Fund matching questions were constantly raised in two areas: Can the Fund be used to match other project proposals (provide a non-federal match for USACE, HUD, NOAA, etc. grant proposals); Will the Fund require a local government match?

Respondents were very clear about the need for adequate advance notice and regular, predictable timing of competition cycles (to allow for planning and approval by locality elected leadership) and the need for a transparent, neutral, and merit-based selection process. Under-resourced localities were supportive of having their regional Planning District Commission serve as the entity to apply for and administer project funds on their behalf.

Many respondents were concerned about the capacity of the Department of Conservation and Recreation to develop and administer this program.

The accompanying document outlines these and numerous other issues raised that must need to be addressed in the program Guidelines. Wetlands Watch is available to answer any questions, offer clarification, or provide guidance as requested.

Table of Contents

General Principles

- If the Fund is to distribute first revenues to localities by next year, there is probably no time for a full regulatory process with rulemaking, etc. for Guideline development. However, since the Fund is non-reverting (there is no time limit or "use it or lose it" deadline on expenditure of funds) there is time later for a thorough regulatory process, subsequent to the initial round of funding (this was the case with SLAF funding).
- Without a regulatory process there needs to be a robust separate stakeholder process on the Fund to receive input, ensure transparency, and gain support and buy-in.
- There is no capacity currently at DCR to develop and run this program. There is no capacity currently in most local governments to plan for, develop proposals for, or manage these funds.
- This Fund covers very diverse flooding issues, geographic regions, and capacity of locality: there is no "one size fits all" for this program. Guidelines must incorporate this reality into the program operations.
- The Fund cannot become the "cash cow" for unmet and neglected state agency or local government needs: this Fund must seek to advance flood resilience efforts. A transparent process with standards needs to be established for using funds for "*flood prevention or protection studies of statewide or regional significance*."
- The process for selection of projects needs to be transparent, merit based, and independent of political influence.

Goals of the Fund

- Strategically advance flood resilience efforts in Virginia, both statewide and at the community level.
- Ensure full, equitable participation in the Fund.
- Use the Fund to advance flood resilience planning and capacity building at the local and regional government level.
- Use the Fund to drive statewide acceptance of future condition projections (sea level rise, rainfall intensity, etc.).
- Use the Fund to leverage change in the culture and focus of state, regional, and local governments.

Issues Needing Resolution in Guidance Development

Basic Principles

- Statutory language on the Guidelines says: "The Department (DCR) in consultation with the Secretary of Natural Resources and the Special Assistant to the Governor for Coastal Adaptation and Protection, shall establish guidelines regarding the distribution and prioritization of loans and grants, including loans and grants that support flood prevention or protection." A number of basic questions need answering in establishing Guidelines.
    - Should project proposals require a local match?
    - Can the Fund be used to match other grants?
    - Is there a maximum size to a project proposal? Minimum size?
    - Must project proposals be part of a larger locality flood resilience strategy/floodplain management plan/comprehensive plan/emergency management plan/capital improvement plan, etc.?
    - How does the Fund propose to allocate resources for riverine versus coastal localities/PDC's?
- A robust stakeholder process in developing these Guidelines is critical.

Terms/Scope of Project

- Can the project proposal include permit costs and does the timeline allow for delays for getting permits? (All of the flood/resilience projects reviewed by Wetlands Watch are in the pre-permit stage. Localities do not devote time and expense to a project's permitting until funding is obtained, causing problems with past "shovel ready" programs from the federal government.)
- Are there time limits on expenditure of funds (e.g." all funds have to be expended within 36 months") or start of the project (e.g. "all projects have to be shovel ready within 6 months of award")?
- Can project funding be rolled over to another project if costs are under estimates, or must the money be returned to the Fund?

Project Eligibility

Who is eligible to apply?

- Statutory language provides basic outlines for an eligible project: "Localities shall use moneys from the Fund primarily for the purpose of implementing flood prevention and protection projects and studies in areas that are subject to recurrent flooding as confirmed by a locality-certified floodplain manager" (§10.1-603.25.E.). While this describes what localities can do with funding, there is no limitation in the statute granting sole Fund eligibility to localities.
- The statute also states that guidelines need to be established for, "the distribution and prioritization of loans and grants, including loans and grants that support flood prevention or protection studies of statewide or regional significance." (§10.1-603.25. D.) *This implies that state and regional entities may be eligible but that need clarification.*
- Statutory language states, "Moneys in the Fund shall be used solely for the purposes of enhancing flood prevention or protection and coastal resilience." (§10.1-603.25.B.).
- The statute limits eligibility for loans from the Fund to local governments. (§10.1-603.25.F.).
- Terms of Importance to Eligibility
    - "Flood prevention and protection projects"
        - Defined in statute as: "construction of hazard mitigation projects, acquisition of land, or implementation of land use controls that reduce or mitigate damage from coastal or riverine flooding." *This is comprehensive but not detailed enough to provide guidance to applicants, requiring amplification in Guidelines*.
        - What constitutes an eligible project needs to be determined and listed in the request for proposals (RFP) for the fund. Guidelines/guidance should delineate exactly what kind of projects the Fund is willing/interested in funding in order to avoid confusion. (See list of potential projects suggested by localities below.)
        - Some communities want the state to set out project types and standards, while others have made it very clear that they don't want to state setting approval standards for their community. Fiscal responsibility would favor state standards with regional discretion (similar to Smart Sense?).
    - "Areas subject to recurrent flooding"
        - There needs to be a standard set for this – days/year, flood events/year, etc. It must cover both coastal tidal flooding and riverine flooding.
        - As mentioned elsewhere, there needs to be consideration of whether to include future conditions in these areas.
    - The focus is on areas that *currently* flood on a recurrent basis. Should areas that *will* flood be included (see bullet below on future conditions). If so, some GIS/modeling/projections will be needed as well as guidance on how to determine future flooding areas (capacity does not exist in most rural/under-resourced localities to perform this work). Do future flooding areas need to be contiguous to current "areas subject to recurrent flooding" to be eligible?
    - "Locally designed floodplain manager" requirement

        - The only role of the floodplain manager seems to be confirming that the projects are in recurrent flooding areas, NOT reviewing or approving the projects.
        - Floodplain manager is not the only sign-off that should be required - emergency manager, planning director, etc. (our work to date shows the best plans come out of localities crossing departmental boundaries - multiple benefits) Also, a staffer cannot by him/herself encumber or commit a locality so this must go to the elected officials, which should be built into the process and timeline.
        - Should the individual not just be locality certified, but also certified through the national Association of State Floodplain Managers' certification program, "Certified Floodplain Manager (CFM)"? If yes, will the Fund be available for this training and certification?
    - "Coastal Resilience"
        - Not defined in this statute. Elsewhere in Virginia Administrative Code it is defined as: "the ability of natural and built coastal environments to withstand and recover from hazardous events such as extreme weather, storm surge, and recurrent flooding." (4 Va. Admin Code 20-1340-20).
- What constitutes an eligible project?
    - Will local government Boards have to approve projects before localities receive the money? They should since an individual staffer cannot commit the locality on his/her own.
    - Can Fund be used for matching on other projects?
        - Money should be able to be used as a match for other projects, such as non-federal match on USACE projects, match for NFWF and other foundation funding, etc. Matching expands leverage of Fund.
            - Timing of Fund and grant match will be an issue- Fund issuance may not match up with other grant proposal periods. Should the Fund match be returned if matching another grant is not successful?
            - Should there be limits on matching, % of total Fund awards each year, etc.?
- Should project proposals include protections against future conditions?
    - Statute states "moneys in the Fund ***may*** be used to mitigate future flood damage." (§10.1-603.25. E.).
    - To drive adoption of planning standards to anticipate future conditions across the state, the consideration of present *and* future conditions should be required in a project application submission. However, this raises a number of issues:
        - What standards do we use for future conditions and what methodologies do we use for analysis Do we include the full suite of impacts - SLR, Rainfall, Salinity, Temperature? Can the VDOT bridges engineering guidance provide a template (Chapter 33, "Considerations of Climate Change and Coastal Storms")?
        - Asking for inclusion of future flood conditions will disproportionately affect smaller, resource constrained, rural communities that do not have resources or capacity to develop those projections. Riverine communities will be farther

behind than coastal communities since riverine flood models do not include increased rain intensity (b/c there is not a state estimate/standard to be used).
        - If future conditions are to be included, the Fund needs to develop state standards and analytical methods and provide funding for localities/regions to develop their plans. (see below)
- Fund resources can be used for developing local/regional government studies ("Localities shall use moneys from the Fund primarily for the purpose of implementing flood prevention and protection projects **and studies** in areas that are subject to recurrent flooding as confirmed by a locality-certified floodplain manager" (§10.1-603.25.E.). Localities interviewed emphasized the need for funding to conduct studies prior to undertaking resilience projects. Outside of a few localities in Hampton Roads, resilience/flooding plans and strategies do not exist. Most rural counties do not have staff (no engineer on staff, no Certified Floodplain Manager (CFM), etc.) or technology capacity (no GIS, etc.) to conduct studies by themselves. Localities raised the issue of being provided contracting funds for the development of resilience strategies. Knowing that a project is part of a plan or strategic approach and not "one off" is very critical to the goal of advancing flood reduction/resilience at the local government level. Examples of needed work cited by local governments include:
    - Flood studies
        - Areas of recurrent flooding in coastal communities (need "recurrent flooding" definition)
        - Flood Studies are critical and more complicated in riverine communities (require watershed scale evaluation, new estimates of rainfall intensity, etc.)
        - Flood studies need to help identify future impact areas.
    - SLR Adaptation Strategy Development
    - Impact maps for septic and impact maps for roads (where are threatened septic systems, which roads will need elevation, etc.)
    - Support for obtaining stakeholder input
        - Grants need to be aligned with a community's policies and goals
        - What are the community's local assets?
        - Who are you/what kind of community do you want to be?
        - Why are you worth saving, and worth protecting and being invested in?
- Localities polled have a range of projects they would like considered.
    - Acquisition of property
        - May not fit with "community scale" emphasis in the statute unless a full street or neighborhood buyout or part of a larger strategy?
    - Living shorelines, berms, flood control structures
    - Stream gauges
        - Very important to riverine communities – state has a shortage of needed gauges
    - Stream restoration/stabilization
    - Raising Roads
        - Raising roads is a critical rural resilience need and there is little money for this type of activity.

        - Rural communities are captive to VDOT which is responsible for most rural roads
    - Stormwater/flooding projects on their Capital Improvement Plan (CIP)
    - Fixing failing/flooding septic systems and shallow wells experiencing salt water intrusion.
- Can Fund be used for general capacity building outreach to localities, I.e. funding state "circuit rider" to meet with localities and provide assistance, similar to the role of cooperative extension?

Application Requirements

- Sufficient advance notice needs to be given to localities before an RFP is issued. They are constantly "surprised" by RFP's from foundations and agencies, especially in rural localities, and cannot turn around proposals in time. Subsequent RFP's need to have the same, predictable application deadline so localities can plan ahead.
- Advance notice must include time allowance required for internal locality review (program, budget, and legal review) and local governing board approval. Many of these proposals have to go before and be approved by the city council or county board. (In the city of Norfolk this process can add months to project application timelines.)
- Repeat/Sequential Application eligibility must be decided. Can a locality apply every year/grant cycle? Must a locality wait to finish a prior project before applying again? Some funding programs have a waiting period between grants to ensure that the same recipient is not getting too large a percentage of the funding. For example, in the DCR Dam Safety, Flood Prevention and Protection Assistance Fund, there is a 5-year wait period between a successful grant and next application. (Localities have expressed strong opposition to this requirement at DCR but a mechanism needs to be in place for equity purposes.)
- Application process needs to be simple, certainly less complicated than the DCR or NFWF or NOAA programs for which many rural localities are not competitive.
    - Rural localities were hesitant about the application process being too stringent/difficult, raising concerns that some localities won't be able to even apply for these funds in the first place. Many localities do not have grant writers or staff able to complete reporting requirements for federal grants, so they do not apply for those grants. Grant program applications should be simplified to accommodate this limitation. However, there is a need to balance state fiscal responsibility and program accountability with local government individual situations without causing great administrative overhead.
    - Many rural localities/resource constrained localities liked the concept of having the PDC's act as the grant applicant and administrator for all of the local governments within the PDC. Rural PDC's currently administer and manage FEMA/VDEM grants for localities.
    - There is a need to identify capacity of localities/regions to apply for and manage this funding, such as having a grant administrator on staff, fiscal management systems sufficient for reports, etc. For coastal PDC's the CZM program is providing capacity

building grants ($30,000/yr for next three federal FY's, starting Oct 1, 2020.). Riverine PDC's have nothing for capacity building.

- Cost Share/Matching Funds
  - Should there be a local match for the Fund money?
    - Pro: The state money goes farther and locality has a larger stake in the process and project
    - Con: Some localities really don't have the money to put any skin in the game, esp. rural localities and those not highly impacted by flooding and many staff interviewed said a local match requirement would prohibit their application to the Fund entirely.
    - Option: Require a small match so the community is invested in mitigation/resilience. Provide planning money to get the process started. Match can be waived for projects in low-income geographic areas. Offer
    - Would want matching flexibility with programs and allowing in-kind match, local government staff time, contributed resources, etc. These will need to be delineated in the operational guidelines.
- Locality or Regional Resilience Strategy/Plan as a Requirement for Eligibility
  - To achieve increased local capacity, the Fund application process should require that localities meet specific resilience planning thresholds. Communities should create a "Funding Flood Resilience in Community X" plan before they can apply for implementable projects. Localities could use early Fund grant money to reach minimum required planning thresholds and be eligible for project funding in the future.
  - Flood Resilience Plans need to address future impacts (as mentioned elsewhere), requiring delineation of types of impacts to be included and providing technical capacity for localities to identify future impacts.
  - Flood Resilience Plans don't need to be Virginia Beach/Dewberry SLR plan caliber and can incorporate existing plans (floodplain management, emergency management, comprehensive plan, CIP, etc). The goal is to start the local resilience planning process.
  - This two-step process (plan and then program application) is used across government and submittal of plans prior to program eligibility is a standard practice: FEMA requires floodplain management plans via hazard mitigation plans prior to be eligible for hazard mitigation grant funding, DOT requires long range plans before you get federal transportation funds, HUD requires a Community Economic Development Strategy to be eligible for funding, etc.
    - It would be helpful to develop a working list of required elements in the Guidelines for resilience planning (like the Chesapeake Bay standards in Comprehensive Plans at 9VAC25-830-170, or provisions at Code of VA § 15.2-2223.2. requiring coastal management guidance in tidewater localities to include sea level rise). Minimum requirements might be things like:
      - Delineation of locality priorities. Is the goal to protect the built environment, natural resources, forests and farms, septic systems, roads, etc.?
      - Mapping high risk areas (via FEMA flood map)

        - Looking at future inundation (using VIMS's Adapt VA viewer for coastal localities - ?? for riverine)
        - The plan should require some level of stakeholder engagement in its development.
        - Projects should consider adjacent and upstream/downstream impacts of projects. We do not want a project to simply push the water to another location. Strong argument for PDC role in developing plans.
    - This process could be set up like a multi-year grant for localities that do not have an existing flood resilience plan, especially the riverine communities.
        - Grant Phase 1 - Funding the capacity building to develop the plan
        - Develop and submit the plan
        - Grant Phase 2 - Fund the implementation of one of the projects identified in the plan.
    - Plan can be developed by a PDC for a group of localities, like some regions do with Hazard Mitigation plans.

Project Prioritization/Selection

- Statute sets aside 25% of projects for "low income geographic areas," (§10.1-603.25. E.) defined as:" any locality, or community within a locality, that has a median household income that is not greater than 80 percent of the local median household income, or any area in the Commonwealth designated as a qualified opportunity zone by the U.S. Secretary of the Treasury via his delegation of authority to the Internal Revenue Service." (§ 10.1-03.24.)
    - Flexibility with use of "or" allows locality to choose the best locations. Many opportunity zones are in areas that are built out and have fewer/more expensive options, certainly not as many nature-based solution options.
- Statute gives priority to "community-scale hazard mitigation activities that use nature-based solutions to reduce flood risk." (§10.1-603.25. E.) Is this one priority or separable, i.e. does it have to be community based *and* use nature-based solutions or is there a priority for either function. In other words, do we favor community based over individual property and nature based over hardscaping?
- "Community Scale Hazard Mitigation Activities"
    - This is not defined in statute and needs definition if it is to be used in prioritization of project applications.
- "Nature Based Solutions
    - Statute defines these as: "an approach that reduces the impacts of flood and storm events through the use of environmental processes and natural systems. A nature-based solution may provide additional benefits beyond flood control, including recreational opportunities and improved water quality." (§ 10.1-603.24.) ***There needs to be a comprehensive listing or definition of these practices in the Guidelines.***

- Should a project adjacent to another resilience installation (funded outside of the Fund) get higher priority by being able to "leverage" that existing resilience investment into a larger scale project?
- Western v. Coastal Allocation
    - Again, there needs to be some process to allocate the Fund for riverine versus coastal localities/PDC's. How do we decide how much money the western part of the state gets v. the coastal part of the state? This allocation could shift with different cycles, emphasizing riverine projects one cycle and coastal projects the next.
- Competition Issues
    - Major issues exist with competition between rural and urban localities, between riverine and coastal projects, and with types of projects.
        - How do the Guidelines/award process address unequal capacity/urban-rural: How do we address Norfolk (city with advanced planning and resources) being in competition for funding with Northumberland Co (rural county with little planning and few resources)? Does a regional competition pool make more sense?
        - How do the Guidelines/award process address riverine versus coastal projects: a proposal for a stream buffer/erosion control project in Louisa Co. competing against a living shoreline proposal in Lancaster Co.? Can we separate riverine from coastal areas for competition?
        - How does the Guidelines/award process evaluate a living shoreline project against a request for rain gauges on the South Fork of the Shenandoah?
        - Would a rotating process address the like-projects competition issue?
            - One funding cycle could be dedicated to infrastructure
            - Next funding cycle could be smaller projects.
        - Could the award process rotate regions on a cycle to keep similar regions competing for the Fund – Northern Neck and Eastern Shore first cycle, Hampton Roads second, Thomas Jefferson third, etc.?
    - Regional approach
        - Selection criteria need to compare apples to apples – perhaps using a regional approach to avoid these competition conflicts and inequities. There are models for this in VDOT's Smart Scale process or the Go Virginia competition process as good models that allow fair competition and prioritization within regions. Many local governments we interviewed mentioned these approaches as examples.
        - Resource constrained localities could agree to have funding and administration run through PDCs on their behalf. The funding could be structured in a similar way as the technical assistance for the Chesapeake Bay Program that is run through PDC's?
        - Major concerns were expressed by rural and riverine communities on how to apportion the funding to reflect variability in applications (project types and community capacity) so that the funding was equitably distributed.

        - Regional groupings as used in the Coastal Master Planning Framework might be a good start for regional competitiveness issues.
- Selection Process
    - Project selection needs to be made by a Board/Committee that is appointed and independent. Selection needs to be made via a clear and transparent process for ranking and scoring proposals.
    - The selection process needs to involve other state agencies of concern. In rural areas roads are an issue and VDOT runs rural roads. Also, in rural areas, septic failure from flooding is an issue and VA Department of Health is responsible for septic issues since the General Assembly took septic siting approval away from localities. Just as flood preparedness and resilience planning crosses local government departments, it crosses state agency jurisdictions. As well, an agency with funding may see a synergy with its plans and be able to provide additional resources or funding, separate from the Fund.
- Evaluation Criteria
    - Guidelines should establish factors that weight selection criteria and outline what could elevate a proposal in the selection process. Some suggested factors:
        - Integrated resilience approaches for current and future impacts increases application scoring points
        - Watershed wide approach (upstream/downstream) increases application scoring points
        - Local stakeholder input
            - Higher scoring projects address the goals of multiple stakeholders
        - Multi-jurisdictional
        - Getting support/buy-in/making a joint application from adjacent localities increases application scoring points
        - Repetitive Loss protection quantified
            - May provide FEMA benefits
        - Consistency with state agency goals & plans
            - Eg. Higher scoring if aligned with the Coastal Master Plan
        - Percentage of total project covered by match? Higher match %, earns a higher ranking? Equity issues are a concern.

Loan Program

- Initial responses are that very few localities would be interested in loans. This hasn't been confirmed with every advanced community, but giving grants is far preferable to managing loans.
    - Localities with lower bond ratings that have to go through bonding referendums may be interested in the loan program but loans get counted against bond rating indebtedness (more outstanding loans/bonds means more concern by bond rating agencies).
- Barriers

    - Reporting Burden: “Hoop Jumping” to obtain loans/funding is often prohibitive to smaller localities
    - Loan servicing requires additional staff capacity that may not exist.
    - Bonding capacity is so strong and rates are so favorable currently that some localities might defer to using their own locality’s bonding capacity.
- Loan Forgiveness Element
    - This is a hard sell because of a City’s liability in carrying the principal. This isn’t a reasonable option for a locality where servicing and managing the loan is not an option.
    - Localities responded with a recurring theme that they don’t want to be on the hook for debt risk, especially as so many localities already have high levels of debt
    - Concern that loan forgiveness is at the local level, not the state level. Guidelines will need to define what constitutes grounds for forgiveness?
- Need to define how much money will be available for grants versus loans, the latter of which will be a non-starter for many localities

State Projects

- Statute authorizes: “loans and grants that support flood prevention or protection studies of statewide or regional significance.” (§10.1-603.25. D.) Guidelines need to set out the eligibility for and prioritization of statewide projects. Many local plans cannot proceed without statewide studies and updates of impacts. How do we consider the various state priorities and initiatives? Is the Master Planning Framework a robust enough list?
    - Create a checklist based on existing needs, establish priorities, and begin with those projects during the initial year, until localities are more prepared to create plans to use the money locally
        - Atlas 14 update and IDF information (rain intensity, duration, frequency estimates)
        - Regional relative sea level rise projections for use in determining impacts
        - Impact analysis on state transportation infrastructure
        - Riverine/rainfall modeling
        - Others
    - Establish process for state project selection that is transparent.
    - Establish a fair division of funds for state studies versus implementation grants to localities to avoid backlash of state using “too much” of the Fund. Again, the use of the Master Plan Framework to make the case for the need for these studies up front will help.