THE DRAFT SUMMARY OF THE MEETING OF THE HRPDC COASTAL RESILIENCY COMMITTEE March 22, 2018

1. Summary of the December 14, 2018 Meeting of the Hampton Roads Coastal Resiliency Committee

The summary and attendance record for the December 14, 2018 meeting of the Hampton Roads Coastal Resiliency Committee were approved as distributed.

2. Public Comments

There were no public comments.

3. Executive Order 24/Virginia Coastal Resilience Master Plan

Rear Admiral Ann C. Phillips (Ret.), Special Assistant to the Governor for Coastal Adaptation and Protection, presented on the current progress and next steps towards achieving the goals identified in Executive Order (EO) 24. The first section of EO 24 requires the designation of a regional or statewide sea level rise projection and freeboard standard for state-owned buildings. Ms. Phillips stated that she has been coordinating with the Virginia Institute of Marine Science on selecting a sea level rise planning curve based on the Sewell's Point gage, which will likely be the NOAA 2017 intermediate scenario. Ms. Phillips has also been coordinating with the Commonwealth Center for Recurrent Flooding Resiliency to develop a proposed freeboard standard for future state-owned buildings. The standard will likely advise 3ft of freeboard in addition to the calculated future base flood elevation (FBFE). The FBFE equals the current BFE plus the anticipated amount of sea level rise at a 50 year service life.

The second section of EO 24 calls for the creation of a Virginia Coastal Resilience Master Plan. Ms. Phillips has met with the 8 coastal planning district commissions and several state agencies. Local governments, the Navy, and Port of Virginia will also be included in the planning process. The plan will document what has been accomplished, what is underway, and what is planned regarding resiliency projects, as well as identify issues of concern and at-risk communities. The first version is anticipated to be completed in fall 2019 to inform the Governor's budget. Ms. Phillips recognized that the state has provided minimal financial support for resiliency efforts, and asked the Committee what they would prefer the State do or not do.

Mr. Keven Du Bois, Department of Defense Chesapeake Bay Program, asked if the Department of Defense has been approached with the same set of questions, and noted that the Chesapeake Bay Foundation would like to provide input. Ms. Phillips responded that she will be approaching all agencies separately with a unique set of questions. Ms. Judy Hinch asked if the Virginia Department of Transportation (VDOT) has been included in planning discussions. Ms. Phillips responded that VDOT has not participated in the discussions regarding sea level rise scenarios and freeboard standards; however, they are conducting research related to future rainfall and sea level rise impacts.

Mr. Ben McFarlane, HRPDC, asked through what process localities should share information to support the Master Plan. Ms. Phillips responded that it would be helpful for the information to be shared collectively by the HRPDC at the beginning of April. Ms. Phillips also stated interns through Virginia Sea Grant will be supporting the Master Plan development. Ms. Whitney Katchmark, HRPDC, asked if there are funding models of interest to the state. Ms. Phillips responded that given funding from the Regional Greenhouse Gas Initiative seems unlikely, there is not a clear answer regarding funding at this time but conversations are underway.

Mr. McFarlane asked if there will be an opportunity for public comment on the Master Plan, and Ms. Phillips responded there will be prior to the completion of the first version in fall 2019. Ms. Katchmark asked if there are any concerns of duplicating locality effort regarding resilience planning. Ms. Toni Alger, City of Virginia Beach, stated the City is planning to have their comprehensive sea level rise study completed in November 2019 and has been sharing information with Ms. Phillips. Mr. Scott Smith, City of Norfolk, recommended incorporating and building upon existing data for the plan. Ms. Phillips stated the first version of the plan will document existing efforts, with the goal of releasing a document the following year providing more specific guidance and recommended priorities. Mr. McFarlane stated he will share Ms. Phillips contact information and coordinate on providing the requested information.

4. Flood Insurance Outreach

Ms. Katie Cullipher, HRPDC, provided an update on the regional flood insurance outreach campaign. Ms. Cullipher stated there are three primary goals of the campaign: 1) educate about flood issues and the need for flood insurance, especially in Hampton Roads, 2) debunk flood insurance myths and misunderstandings, and 3) push people to contact their insurance agent to get a quote. The campaign website is now live at GetFloodFluent.org. Under "Where can I find campaign resources?" on the website, there is a Campaign Toolkit, including a rack card, fact sheet, and social media posts available for download. Informational videos, featuring interviews with residents of Virginia Beach and Poquoson, are currently under development by the campaign consultant Red Chalk Studios. Ms. Cullipher played the current version of the primary video for the Committee, and asked the Committee to share any resident contacts that may be interested in participating in future testimonial videos.

The paid media campaign is currently scheduled to run for four weeks from May 6 to June 2, 2019. This will include 30-second local television ads, 60-second radio ads, and digital and print ads. HRPDC staff will be meeting with the regional Public Information Officers subcommittee in April to review the plan for the public launch in May. The Hampton Roads Sanitation District (HRSD) has also offered to include the flood insurance campaign rack card co-branded with SWIFT information as a billing insert for all customers who receive a printed bill (342,000 people). Ms. Cullipher suggested the idea of hosting community conversations with a panel of experts regarding flood insurance and coordinating with Cathy Lewis about moderating or discussing the campaign on her segment HearSay.

Mr. Skip Stiles, Wetlands Watch, asked if there are metrics available, such as number of policies, to track the impact of the flood insurance campaign. Mr. McFarlane stated data on the number

of flood insurance policies in force is available through coordination with DCR and FEMA, and HRPDC has policy information current as of March 2018. Ms. Ashley Gordon, HRPDC, stated Old Dominion University's annual Life in Hampton Roads has previously included questions regarding flood insurance and the results are available online. Ms. Cullipher also mentioned the campaign is anticipated to achieve at least 2 million impressions across all media. Mr. Mark Bellamy, York County, asked how the number of impressions compares to other campaigns conducted by AskHRGreen. Ms. Cullipher responded that this campaign will try to cast as wide of a net as possible, including radio, television, digital, and print ads.

5. Regional Sea Level Rise Policy

Mr. McFarlane briefed the Committee on the regional sea level rise policy and next steps for developing implementation guidance. The policy adopted by the HRPDC recommends project screening values for relative sea level rise above mean higher high water of 1.5 feet for near-term planning (Present – 2050), 3 feet for medium-term planning (2050-2080), and 4.5 feet for long-term planning (2080-2100 and longer). These sea level rise thresholds are available for download from the regional open data portal, HRGEO.org. The policy advises selecting project-appropriate scenarios using a tool, such as the U.S. Army Corps of Engineers (USACE) Sea Level Change Curve Calculator, and conducting a benefit-cost analysis of adaptation strategies.

To begin implementing the policy, HRPDC staff are coordinating with a small group of local government staff volunteers to develop a comprehensive set of recommendations, such as recommended language for floodplain ordinances and public facilities manuals. Following the priorities identified in the initial working group planning call, HRPDC staff will develop how-to guidance for the USACE calculator with a specific project example. HRPDC staff will also be reviewing the American Society of Civil Engineers Climate-Resilient Infrastructure guidance, the New York City Climate Resiliency Design Guidelines, and Maryland's Climate Change and Coastal Smart Construction Infrastructure Siting and Design Guidelines.

Mr. Robert Martz, HRSD, asked if Ms. Phillips is recommending the intermediate scenario of the NOAA 2017 sea level rise curves for the proposed planning standard for future state-owned buildings. Ms. Phillips responded yes and noted the USACE sea level rise curves differ from the NOAA scenarios. Ms. Phillips suggested the USACE curves may better align with the NOAA scenarios once the vertical datum is updated in 2022. Mr. McFarlane highlighted that differences between the NOAA curves are driven by various projections for global processes influencing sea level rise, such as the location and rate at which ice sheets are melting. HRPDC staff will share the sea level rise policy working group's recommendations with the Committee when available.

6. Regional Flood Sensors

Ms. Whitney Katchmark, HRPDC, reviewed the proposed steps for developing a regional network of flooding sensors. The first step of the proposal was to identify frequently flooded roads and intersections. Ms. Katchmark displayed a map of 97 high priority and 122 low

priority roadway flooding sensor locations within Hampton Roads, as decided by local government staff. The second proposed step was to determine the necessary sensor features. A mid-level sensor, such as Valarm, seems to be a preferred option based on discussions with a technical working group of academic and local staff. The Valarm sensors range from around $3,000- $5,000. Sensors can range from only a couple hundred dollars to $30,000 depending on the functions and durability. Ideally the sensors could measure depth of water and also be paired with a rainfall sensor to inform future forecasting. Mr. Sam Sawan, City of Chesapeake, emphasized the importance of recording depth if the goal is notify the public of roads that are impassable due to flooding.

The third step of the proposal is to identify a host for the sensor data that could also conduct data quality assessments. Ideas for potential data hosts include HRSD, U.S. Geological Survey, VDOT, Virginia Department of Emergency Management (VDEM), or a company contracted by the HRPDC. Ms. Katchmark has initiated discussions with HRSD and USGS and is attempting to identify the best contact at VDOT. Mr. DuBois asked who Ms. Katchmark has spoken with at VDEM. Ms. Katchmark responded that she has spoken with Daniel Bradway. Ms. Phillips also stated she has initiated conversations with VDEM and VDOT and that a system could be of interest statewide given the issue of riverine flooding. Ms. Katchmark asked that the Committee share any relevant contacts with her. Ms. Camille Liebnitzky, AECOM, also suggested referencing Dr. John Goodall's (UVA) research in Norfolk and the flood sensors being evaluated through the non-profit organization RISE.

Ms. Katchmark reviewed steps 4-7 of the proposal, which included estimating the costs associated with sensor installation and maintenance, confirming a protocol for distributing data through public mobile applications, such as WAZE and Google Maps, and identifying potential funding sources. Ms. Katchmark mentioned that there is $100,000 in the Coastal Resiliency Committee budget designated to fund projects that could be considered for this initiative. Another potential funding source is the statewide FEMA Hazard Mitigation Grant Program. The application period for this grant closes May 30, 2019.

7. Tracking Resiliency Projects in Hampton Roads

Mr. McFarlane and Ms. Ashley Gordon, HRPDC, updated the Committee on the initiative to track resilience projects across Hampton Roads. Mr. McFarlane stated that the current draft of the resilience projects dashboard has been demonstrated to the Commissioners' Coastal Resiliency Subcommittee. The dashboard will likely be presented the Commission at their April or May meeting. The data received thus far by localities has been entered into GIS and distributed for review. A link to the dashboard will also be distributed to the Committee for review.

Ms. Gordon provided a demonstration of the draft ESRI ArcGIS Online Operations Dashboard that displays the resilience project inventory. Projects have been submitted by 11 localities. The Dashboard allows the user to filter the inventory by locality, project type, and project status. Currently the inventory contains 285 points and includes $86 million in completed projects, as well as $1.3 billion in both proposed projects and projects under design. Project types include

acquisitions, beach replenishment, drainage improvements, elevations/floodproofing/buyouts, green stormwater management, natural shoreline management, road improvements, shoreline armoring/protection, and stream and wetland restoration.

Mr. Du Bois asked if natural features, such as forest restoration, will be included in the inventory. Ms. Gordon responded that currently living shorelines, wetland restoration, and stream restoration are included, but the categories could potentially expand in the future. Mr. John Harbin, City of Chesapeake, asked if resilience programs and policies will be integrated with the dashboard. Mr. McFarlane responded that staff is discussing options for including this information. Mr. Lewis requested a list of project types be included when the data is distributed for review, and confirmed that completed projects from the last 5 years should be included.

Ms. Whitney McNamara, City of Virginia Beach, asked if information about privately funded mitigation efforts, such as home elevation or living shoreline projects, should be included in the inventory, or if the focus is primarily on what localities are spending. Mr. Smith stated by including the private data, the overall investment would be better reflected. Mr. McFarlane responded that the focus has been on publicly funded projects, but HRPDC staff will coordinate with Ms. McNamara regarding information available for private projects.

8. First Floor Elevation Data - CZM Grant

Ms. Gordon briefed the Committee on the regional first floor elevation (FFE) data initiative. The first Virginia Coastal Zone Management (CZM) grant was completed in February 2019 and focused on the development of a regional geospatial elevation certificate database and evaluation of predictive methodologies for estimating FFEs. The report is now available on the HRPDC website. Spatial layers containing information recorded from elevation certificates are also now accessible at HRGEO.org by searching "Hampton Roads Elevation Certificates."

The cities of Chesapeake and Hampton contained the largest elevation certificate sample sizes and were thus selected to test a statistical modeling approach for predicting FFEs. The individual models for Chesapeake and Hampton resulted in an absolute average error of around 0.5 feet and 0.8 feet respectively. Foundation type was the most important predictor in both locality models, and year built was of greater importance in Hampton than Chesapeake. Both models also show a reduction in error when compared to the FEMA Hazus first floor height assignment method. Ms. Gordon noted several challenges with the modeling approach, including difficulty predicting first floor height for structures with the living space elevated above a garage and inconsistent foundation type codes between localities. The report recommends retaining digital PDF copies of elevation certificates in a centralized folder and working with assessors to provide more detailed and standardized foundation type codes.

Another grant from the Virginia CZM program has been awarded to continue the regional FFE initiative. The second phase will involve expanding the existing database and conducting vulnerability assessments to coastal hazards with estimated elevations in pilot communities. The analysis is anticipated to be complete in late Fall 2019. Mr. McFarlane clarified the

elevation certificate GIS layers available on HRGEO do not include actual copies of the elevation certificates. He also stated the vulnerability assessments will hopefully support the analysis for the next Regional Hazard Mitigation plan update in 2022.

9. Update on Federal and State Efforts Related to Sea Level Rise and Recurrent Flooding

Mr. McFarlane announced that the grant application deadline for the Virginia Dam Safety, Flood Prevention and Protection Assistance Fund is Friday, March 29, 2019. Local governments may be awarded grant funds for multiple projects within a single year, but can only receive grant funding every 5 years. Mr. McFarlane also stated that localities should submit resiliency information to be shared with Ms. Phillips to HRPDC staff by the first week of April.

10. **Updates on PDC and Local Efforts Related to Sea Level Rise and Recurrent Flooding**

Mr. Martz stated that HRSD is considering adding a flooding vulnerability assessment to its capital improvement program. Mr. Martz will coordinate with the Committee as warranted.

Mr. Joe Brogan, York County, stated the County is currently applying FEMA grant funding to raise 4 houses. The County is also working on drainage improvements to address personal property and street flooding.

Mr. Brent Payne, Gloucester County, stated the county is currently elevating 3 houses. Mr. Payne also mentioned that he is a new Committee member and looks forward to participating.

Mr. Smith stated that the City of Norfolk is at 100% design on the Ohio Creek Project. USACE has also received funding to initiate design in June 2019 for the City's Downtown section identified in the USACE Coastal Storm Risk Management Study.

Mr. David Imburgia, City of Hampton, stated that Resilient Hampton Phase 2 is underway, and project ideas are being discussed as a result of the January workshop. Mr. Lewis stated that USACE is wrapping up the Newmarket Creek Section 205 Study.

Ms. Kim Tempesco, City of Virginia Beach, shared that four home elevations are currently under construction through the City's resident-selected contractor program, two additional elevations are planned, and several are under design. The City's Public Works Department is also in the process of applying for a Virginia DCR grant. Ms. Alger also stated that there will be four Thursdays of public meetings in May to discuss the draft policy guidance with residents.

Ms. Phillips emphasized the importance of collecting and communicating data in the resilience project inventory to assist in advocating for funding at the state and federal level.

11. Other Matters

The next meeting of the Coastal Resiliency Committee will be held June 28, 2019**.**