1. **Summary of the September 28, 2018 Meeting of the Hampton Roads Coastal Resiliency Committee**

   The summary and attendance record for the September 28, 2018 meeting of the Hampton Roads Coastal Resiliency Committee were approved as distributed.

2. **Public Comments**

   Ms. Jeryl Rose Phillips, Planning Associate with the Commonwealth Preservation Group, stated the Commonwealth Preservation Group has been selected as one of seven finalists in the RISE 2018 Coastal Community Resilience Challenge. The organization is focused on enhancing the viability of historical structures in flood-prone areas and exploring resilience retrofit methods. Ms. Phillips stated she is interested in engaging with the Committee on the topic of historic preservation as well as updates to the state building code.

3. **Governor Northam’s Executive Order 24**

   Mr. Ben McFarlane, HRPDC, provided an overview of Executive Order (EO) 24: Increasing Virginia’s Resilience to Sea Level Rise and Natural Hazards. Governor Northam signed EO 24 on November 2, 2018 at the Virginia Coastal Policy Center Conference.

   The first section of EO 24, Making Commonwealth Holdings More Resilient, designates the Secretary of Natural Resources, Matthew Strickler, as Chief Resilience Officer. This section emphasizes a vulnerability assessment of state-owned buildings, but does not explicitly reference roads or other infrastructure. Within 180 days from issuance of EO 24 (May 2, 2019), the Chief Resilience Officer will issue a regional or statewide sea level rise projection and freeboard standard for state-owned buildings.

   The second section of EO 24, Reviews, Reports, and Recommendations, calls for the creation and implementation of a Virginia Coastal Resilience Master Plan. To develop the plan, the State will be consulting with local governments and regional Planning District Commissions. Reviews of state pre-disaster mitigation programs and compliance with flood protection and dam safety laws will be completed by state agencies within 180 days of issuance of EO 24. The State also plans to provide sea level rise projection and freeboard guidance for local governments.

   The third section of EO 24, Coordination and Objectives, highlights the importance of collaborating with the military. Mr. McFarlane referenced the three Joint Land Use Studies (JLUS) occurring in our region as examples of collaborative efforts with the military. This section advises state agencies to coordinate on improving risk communication and empowering local governments, as well as individuals, to reduce their risk.
Mr. McFarlane summarized a key takeaway from EO 24 is the development of the Coastal Resilience Master Plan, citing the Louisiana Coastal Master Plan as the model for the state. Mr. McFarlane encouraged localities to participate in the planning process if contacted by the state. Rear Admiral Ann Phillips, Special Assistant to the Governor for Coastal Adaptation and Protection, will be primarily responsible for development of the Coastal Master Plan, and currently there are no other resources dedicated to this effort. Ms. Whitney Katchmark, HRPDC, also emphasized the importance of contributing to the plan if given the opportunity. Mr. McFarlane stated that Ann Phillips was unable to make the December meeting, but will be invited to attend the March Coastal Resiliency Committee Meeting.

Mr. Greg Johnson, City of Virginia Beach, stated that he recently met with Ann Phillips, and the City of Virginia Beach offered their support with the development of the Coastal Master Plan. Mr. Johnson emphasized the importance of accounting for flooding and sea level rise in the development of state-owned buildings, citing the new Veterans Care Center in Virginia Beach as an example. Mr. Johnson asked if others had a state-owned building proposed in their locality where higher standards for hydraulics were considered in addition to water quality.

Ms. Katchmark responded that although she is not aware of state-owned building examples, the Virginia Department of Transportation (VDOT) did consider sea level rise in the design of the Hampton Roads Bridge Tunnel (HRBT) expansion project. Although they have not yet shared supporting documentation, VDOT is planning to release a report next summer, and Ms. Katchmark is working to obtain an interim example. Mr. Johnson stated that VDOT is beginning to acknowledge sea level rise and precipitation changes and considering stricter standards. At the September Coastal Resiliency Committee Meeting, representatives from VDOT reported the University of Virginia is currently reviewing the Dewberry precipitation analysis for the City of Virginia Beach. Mr. McFarlane stated it is still unclear if it would be required or voluntary for VDOT to comply with a locality ordinance detailing stricter design standards. HRPDC staff will provide any available updates to the Committee in March.

4. Flood Insurance Outreach

Ms. Katchmark provided an update on the regional flood insurance outreach campaign. The Public Information Officers (PIOs) reviewed the draft version of the website, GetFloodFluent.org, and recommended that information for renters be more prominent. Red Chalk Studios, the campaign consultant, is currently integrating comments received. The revised website will be shared with the PIOs at their sub-committee meeting on January 4, 2019. Ms. Katchmark and Ms. Katie Cullipher, HRPDC, will also be collecting input on communication tools that would be most useful for the PIOs in promoting the campaign.

A soft launch of the website is scheduled for early January 2019. A press release, including interviews with Mr. McFarlane and Mr. Rob Braidwood, City of Chesapeake, will be developed. Red Chalk Studios is also producing a testimonial style video with residents of Virginia Beach and Poquoson.
Ms. Fran Geissler, James City County, asked if the campaign launch will be further delayed if the PIOs are not in agreement at the January 4th meeting. Ms. Katchmark responded that the soft launch will proceed as scheduled. Mr. Kyle Spencer, City of Norfolk, asked if the locality floodplain managers have provided feedback. Mr. McFarlane stated the advisory group for the campaign included local floodplain managers, as well as staff from public works and emergency management. Ms. Katchmark encouraged the Committee to share the draft website link internally with anyone else who may be interested in providing feedback.

Ms. Katchmark also updated the Committee on the development of a flood insurance premium calculator, funded by a grant from the Virginia Department of Conservation and Recreation Dam Safety, Flood Prevention, and Protection Assistance Fund. Mr. McFarlane and Ms. Katchmark met with Dr. Dan Richards, Old Dominion University, regarding the design of the calculator, which will involve integrating insurance manual tables with an online interactive tool. The calculator is anticipated to be integrated with GetFloodFluent.org in the fall of 2019. Ms. Whitney McNamara, City of Virginia Beach, recommended remaining cognizant of the regular insurance rate table updates in April and October. Ms. Katchmark asked if anyone is aware of the tables being available in a format other than PDFs. Ms. McNamara responded that she has only observed them as PDFs, but insurance agents may use a software package.

5. **Regional Sea Level Rise Policy**

Mr. McFarlane briefed the Committee on the progress to date and next steps regarding the regional sea level rise policy. The Hampton Roads Planning District Commission approved and adopted the policy at their meeting on October 18, 2018. Prior to the policy adoption, the Chief Administrative Officers (CAOs) were briefed on the policy. At the recommendation of Mr. Dave Hansen, City of Virginia Beach, a third planning horizon, 2080-2100, was added that accounts for 4.5 feet of relative sea level rise above current MHHW in Hampton Roads.

The adopted policy recommends selecting the appropriate sea level rise curve and design based on the specific risk tolerance of a project. To begin implementing the policy, Mr. McFarlane suggested developing guidance by project category, including local ordinances, guidance/policy documents, comprehensive plans, and public facilities manuals, as well as regional plans.

Mr. McFarlane recommended that a small working group of local government staff convene to begin building a policy implementation framework. Mr. McFarlane asked the Committee for working group volunteers. Ms. Meg Pittenger, City of Portsmouth, Ms. McNamara, Ms. Sue Kriebel, City of Virginia Beach, and Mr. Scott Smith, City of Norfolk, volunteered to participate in the working group. Mr. Brian Lewis, City of Hampton, stated either he or another City employee will participate, and Ms. Geissler expressed interest. Ms. Katchmark recommended including a representative from the City of Chesapeake. The Committee will be briefed on the working group's progress at the March meeting.
6. 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 the project concept was initiated by the CAOs with the goal of building a regional picture of the scale and financial resources needed for resilience projects.

Ms. Gordon provided a demonstration of a draft ArcGIS Online Operations Dashboard designed to display the resilience project inventory. Projects have been submitted by York County and the cities of Hampton, Newport News, Norfolk, Poquoson, Portsmouth, and Virginia Beach. James City County is currently finalizing their project inventory. Ms. Gordon demonstrated the Dashboard filtering functions, which allow the user to query by locality, project type, and project status. Based on the user selections, a map and graphical displays update to show the count and cost of projects by type and status. The inventory currently includes $58 million in completed projects, $715 million in proposed projects, and $918 million in projects under design. Project types include beach replenishment, drainage improvements, U.S. Army Corps of Engineers (USACE) nonstructural measures, road improvements, shoreline protection, water quality, and stream and wetland restoration. Ms. Gordon also briefly highlighted features of the Louisiana Coastal Master Plan Data Viewer for additional consideration in the Dashboard.

Ms. Geissler asked if Watershed Implementation Plans will be included in the inventory. Mr. McFarlane responded that those specific plans are not currently included, and HRPDC staff is working to identify options for integrating policies and programs information. Mr. Lewis emphasized the importance of having a consistent list of projects included in the inventory for each locality. Mr. Lewis also asked what is considered a recent project, and Mr. McFarlane stated projects completed within the last 5 years should be included.

Ms. Phillips suggested including nonstructural measures, such as open space preservation. Mr. Spencer noted that localities could consider aggregating phases or project areas when completing the inventory. Mr. McFarlane stated the GIS project inventory will be distributed to locality staff for review and revisions will be incorporated before the Dashboard is made public.

7. Portsmouth Comprehensive Plan

Mr. Brian Swets, City of Portsmouth Planning Administrator, briefed the Committee on elements of the Portsmouth Comprehensive Plan that address sea level rise and recurrent flooding. The Comprehensive Plan was adopted by City Council on November 27, 2018.

The plan is divided into three primary elements: (1) the Strategic Plan, (2) the Geographic Plan, and (3) the Implementation Plan. The Strategic Plan includes vision statements for four primary themes: Thriving, Evolving, Resilient, and Equitable. These themes are addressed with specific goals, strategies, tactics, and data-driven metrics to measure progress. The Geographic Plan provides a visual framework of topical maps and recommendations regarding character areas based on development patterns, future land use, vacant and underutilized land, and historic
resources. The Implementation Plan describes tools and initial action prioritizations based on input from the Planning Commission and citizens.

Mr. Swets provided an overview of the tactics presented in the Resilient theme, which cover sea level rise and flooding, as well as broader climate change issues and carbon emission reductions. Resilience tactics include assessing and retrofitting existing City buildings to improve energy efficiency, as well as promoting adaptive capacity in new construction and older residential structures. The plan proposes adopting official Flood Threat Zone Maps that account for sea level rise, severe storms, and land subsidence. To address the urban heat island effect, the plan suggests increasing canopy coverage and reducing impervious surfaces.

Ms. Katchmark asked if addressing the urban heat island effect was driven more by planners or the community. Mr. Swets responded that it was an issue raised by planners because the region has focused primarily on flooding and there has been little discussion of efforts to reduce carbon emissions. Ms. Phillips commended the City for addressing carbon emission reduction and suggested that this Plan be nominated for national recognition through the American Planning Association. Mr. Speaker Pollard, Williams Mullen, asked if there are options to incentive renewable energy in City buildings and private industry. Mr. Swets said that there are ideas presented in the report that may require reform of City laws and policies to implement.

Mr. McFarlane recommended that the Portsmouth Comprehensive Plan be included as an item on the HRPDC Consent Agenda at the next Commission meeting on January 17, 2019. Ms. Katchmark also suggested considering having a representative of Portsmouth present an overview of the Comprehensive Plan as a locality spotlight at a Commission meeting.

8. First Floor Elevation Data - CZM Grant

Mr. McFarlane provided an overview of the context and timeline for the multi-year first floor elevation (FFE) project, funded by Virginia Coastal Zone Management Program grants. The first grant phase focused on the development of a regional geospatial elevation certificate database and evaluation of predictive methodologies for estimating FFEs.

Ms. Gordon briefed the Committee on the status of the regional elevation certificate inventory and predictive methodologies. To date, information from over 2,000 elevation certificates from 10 localities have been entered into GIS and joined with their respective parcels. The Cities of Chesapeake and Hampton were selected as case study communities to test statistical methods for predicting FFEs because they have the largest elevation certificate sample sizes.

Ms. Gordon reviewed the statistical analysis approach used to estimate FFEs. Explanatory variables, including foundation type, year built, and the estimated land elevation, were used as inputs to build separate predictive Random Forest Models for Chesapeake and Hampton. To be consistent with FEMA’s Hazus software, the resulting model output is a predicted first finished floor height (FFH), defined as the difference between the FFE and the structure’s lowest adjacent grade. The preliminary results indicate that the models on average predict FFH within at least one foot, with the model for Chesapeake performing better than the model for Hampton.
Both models also show a reduction in absolute average error when compared to the FEMA Hazus FFH assignment method. Ms. Gordon noted several challenges with the Random Forest modeling approach, including difficulty predicting structures with the first floor living space elevated above a garage. The final report for the first grant will be completed in February 2019. The second grant phase began October 1, 2018, and will involve expanding the existing database and conducting vulnerability assessments with estimated elevations.

Mr. Smith asked if HRPDC staff have coordinated with USACE regarding the presented methodology. Mr. McFarlane confirmed that HRPDC staff is discussing the project with USACE, and that multiple predictive methods, including the USACE Google Street View estimation approach, are needed to support database development. Mr. Lewis stated the City of Hampton is working with USACE to assess flood mitigation measures in the Newmarket Creek watershed, where there may be an opportunity to collect FFE data through surveys of specific structures.

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

Mr. McFarlane reported that the Joint Subcommittee on Coastal Flooding meeting scheduled for December 11, 2018 in Richmond was canceled due to inclement weather. Mr. McFarlane stated that the Water Resources Development Act (WRDA) was signed into law by the President on October 23, 2018. Section 1201 provides authorization of multi-jurisdictional feasibility studies for flood risk management and navigation in Coastal Virginia. HRPDC staff will continue discussions with USACE regarding appropriations and next steps.

Mr. Lewis highlighted Governor Northam's announcement that his proposed budget will dedicate $50 million to the Stormwater Local Assistance Fund (SLAF) and increase funding for the agricultural best management practices cost share program.

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

Mr. Lewis stated that the City of Hampton, through a partnership with the James River Association and Wetlands Watch, received a grant from the NFWF-National Coastal Resilience Fund for the Pochin Place/Indian River Creek Stormwater Basin project and a Living Shoreline Collaborative to expand implementation of living shoreline and associated resiliency and green infrastructure projects in the region. Mr. Lewis also reported that Phase II of the City's Resilient Hampton initiative is underway, and to notify him if interested in participating.

Mr. Johnson announced that he is retiring from the City of Virginia Beach. Mr. Ben McFarlane congratulated both Mr. Johnson and Ms. Geissler on their retirement and thanked them for their contributions to the Committee and regional collaboration efforts.

11. **Other Matters**

The next meeting of the Coastal Resiliency Committee will be held March 22, 2019.