Coastal Adaptation and Protection In Virginia





April 23rd, 2019 Rear Admiral Ann Phillips, US Navy (Retired) Special Assistant for Coastal Adaptation and Protection ann.phillips@governor.virginia.gov

Destination 360



EXECUTIVE ORDER 24

Virginia's roadmap to make our built environment more resilient to floods, hurricanes, fires, and other extreme weather events. "

Governor Ralph Northam, November 2, 2018

- Section 1 Set Statewide Standards
- Section 2 Virginia Coastal Resilience Master Plan
- Section 3 Statewide Communication, Coordination, Collaboration

Proposed Planning Standard for <u>Future</u> State-Owned Buildings



HTTP://ADAPTVA.ORG/INFO/VIRGINIA_SEA_LEVEL.HTML). HTTPS://WWW.VIMS.EDU/RESEARCH/PRODUCTS/SLRC/INDEX.PHP Adaptive Design and Risk Management – <u>ASCE</u> <u>Manual of Practice No. 140 – 2018</u>

Calculated Freeboard = FBFE + Freeboard

Where:

FBFE = FEMA BFE + anticipated SLR at 50 year service life

Freeboard, use 3 feet for all projects.

<u>PROPOSED</u> FREEBOARD STANDARD FOR <u>FUTURE</u> STATE - OWNED BUILDINGS

<u>Virginia Coastal Resilience Master Plan</u>





Gloucester County Virginia Jonathon Gruenke / Daily Press / 2<u>3 Feb 2019</u>

Surry Crescent Norfolk VA (REIN)

Issue: Hydrographic Modeling with Statewide and Regional Focus and Integrated Forecast Capability

Example shows Winter Weather Forecast for 29 Jan

- > Integrated Water projections are also needed.
- Statewide/sub-regional rainfall data



Issue: Aligned Sea Level Rise Scenario data presentation, Facilitate planning process use by cities, regions.

- Planners challenged to understand NOAA's Six 2017 SLR scenario curves
- What do they mean by region, and what does NOAA recommend?
- Are they coordinated with SERDP recommendations regarding risk?
- > Why are USACE and NOAA curves different?



Figure 2. Sea level rise curves plotted illustrating relative sea level rise (RSL) in feet (NAVD88). The plot illustrates NOAA intermediate-high curve with confidence band. Such intermediate curves are modifications using IPCC projections modified by the National Research Council to include local vertical land movement.

Source: Transportation Research Record: http://journals.sagepub.com/doi/figure/10.1177/03611981774234

Issue: Continued improvement of the national water model - Integration with estuarine/local flood models

- Enhance forecasting of storm impacts in coastal communities
 Flooding precipitation/runoff driven and storm surge driven.
- Combine with constant update NWS rainfall frequency analysis
 - Enable improved risk analysis and risk communicationLocal, Regional, State managers.



Asheville Park Neighborhood, October 2016

Summary:

Issue: Hydrographic Modeling with Statewide and Regional Focus and Integrated real time Monitoring and Forecast Capability

Issue: Aligned Sea Level Rise Scenario data presentation to facilitate planning process use by cities, municipalities, regions.

Photo Courtesy of Dr. Larry Atkinson, ODU

Issue: Continued improvement of the national water model - Integration with estuarine and Coastal System Models



Courtesy of WAVY 10 News/ Still Photo, American Resilience Project

"TIME AND TIDE WAIT FOR NO MAN . . . "

PUNGO, VIRGINIA BEACH, 25 JULY 2018 KRISTEN ZEIS

THE VIRGINIAN PILOT