# Exploring Energy Efficiency's Role in Resiliency Efforts

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#### VAEEC FALL FORUM AND AWARDS LUNCHEON

November 14, 2019



Source: Safety4Sea.com



### VIRGINIA PACE AUTHORITY (VPA)

#### **Building the Future with Commercial PACE Financing**

November 14th, 2019

- VPA Non-profit C-PACE Program Administrator (PA) serving Virginia exclusively:
  - VPA is the PA for Loudoun County and the City of Petersburg; Loudoun hired
     VPA after competitive bid process
  - Loudoun has cooperative rider for interested localities wishing to speed implementation
  - Low administrative fees to encourage use of C-PACE (1.25% of total Project Costs; max \$50,000)
  - "Best-in-Class" partners Pace Financial Servicing & Slipstream
  - Partner in MidAtlantic PACE Alliance (MAPA)
  - Abigail Johnson, VPA Founder and Executive Director
    - Designed and implemented C-PACE legislation and programs around the country and in the Commonwealth
    - Instrumental in amending C-PACE statutes in 2015 and 2019 which added resiliency and stormwater management to the Virginia law
  - Deb Rosiello and Amy Williams provide marketing/admin support for VPA





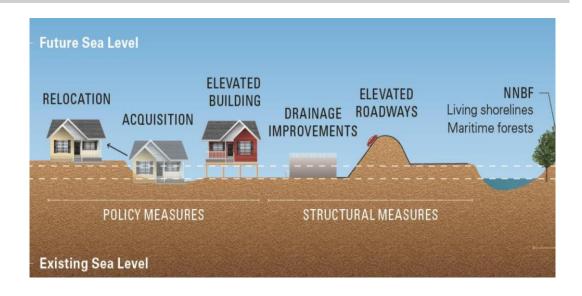
Resiliency

November 14, 2019

#### **Definition**

According to The U.S. Department of Energy Better Building Initiative, Resiliency is defined as:

"The ability to resist being affected by an event...or to return to an acceptable level of performance in an acceptable period of time after being affected by an event," such as a deliberate attack or naturally occurring threats like hurricanes, floods, droughts, earthquakes, fires, and other disasters."



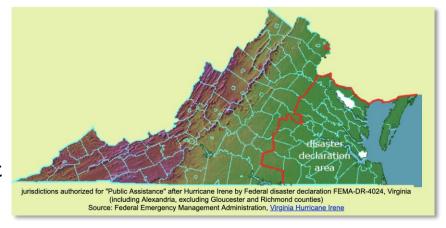
In the case of buildings, resiliency projects typically take the form of retrofits that improve the envelope, structure, or systems of a building.



Resiliency November 14, 2019

#### State initiatives

- September 2018 Governor appoints Ann Phillips as Special Assistant to the Governor for Coastal Adaptation and Protection
- November 2018 Governor signs executive order to increase Virginia's Resilience to Sea Level Rise and Natural Hazards
- July I 2019 C-PACE resiliency & stormwater measures become law
- Spring/Summer Department of Housing and Community Development holds resiliency workgroup meetings to discuss potential code changes
- August 2019 Virginia's Final Chesapeake Bay Restoration Plan is announced





#### Resiliency

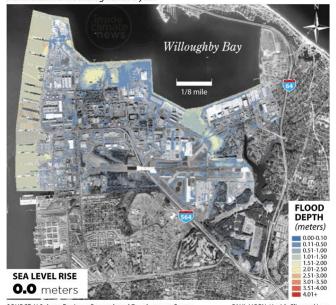
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#### Regional initiatives

- Norfolk's 2019 Mayor's Advisory Commission Climate Change Mitigation & Adaptation Climate Action Plan
- New Institute for Coastal Adaptation and Resilience at Old Dominion University announced in August 2019
- Hampton Roads Regional Planning Commission Hazard Mitigation Plan, Coastal Resiliency Program
- VPA and partners spearheading C-PACE resiliency initiative in Hampton Roads

#### **How Rising Seas Will Affect Norfolk Base**

storm that hits on average once a year





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#### Virginia C-PACE Resiliency language

The kinds of renewable energy production and distribution facilities, energy usage efficiency improvements, resiliency improvements, or water usage efficiency improvements for which loans may be offered. Resiliency improvements may include mitigation of flooding or the impacts of flooding or stormwater management improvements with a preference for natural or nature-based features and living shorelines"



Codified in §15.2-958.3



#### Resiliency

#### November 14, 2019

#### **Benefits**



Norfolk streetscape, September 2019

- More efficient operations (e.g. redundant power, off-grid power, business interruption avoidance)
- Protected buildings and critical equipment (e.g. against flood and fire damage, anti-terrorism)
- Insurance and risk reduction (e.g. lower premiums)
- Health, and Safety improvements (e.g. avoid mold and other environmental hazards)
- Lower stormwater charges
- Meet or exceed new code requirements



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#### **Examples**





Electricity and Lighting	$\rightarrow$	Relocate or protect critical electrical circuitry
Energy Storage & Generation	$\rightarrow$	Provide backup power for critical systems
Elevators	$\rightarrow$	Provide backup power source
Envelope and Structure	$\rightarrow$	Dry and wetproof building
Envelope and Structure	$\rightarrow$	Design with non combustible cladding & insulation
Envelope and Structure	$\rightarrow$	Install floating foundations
Envelope and Structure	$\rightarrow$	Shutters, impact resistant openings, roof braces
Plumbing	$\rightarrow$	Install sewage backflow prevention devices
HVAC	$\rightarrow$	Raise equipment, upgrade ventilation systems
Fire suppression	$\rightarrow$	Elevate pumps to protect from flooding
Stormwater management	$\rightarrow$	Install pervious pavement, blue roofs



Case Study November 14, 2019

#### New Construction: Audi Field

Description: 20,000 seat stadium for the D.C. United soccer team

Challenge: Unlock additional funds to green the stadium to LEED Gold standards and extend sustainability

Solution: DC PACE integrated \$25 million of PACE financing into the \$300 million stadium project.

Financing: \$25,000,000 (in a \$350,000,000 project)

#### Measures Financed:

- 884 kW Solar System
- High Efficiency HVAC Systems
- LED Field Lighting
- Insulation
- Site Stormwater Conservation and management measures
- Green Roof
- Low Flow Water Fixtures

Savings: Expected energy use reduction of 25%



## THANK YOU!

**Contact Information** 

November 14th, 2019



## **Exploring Energy Efficiency's Role in Resiliency Efforts**

November 14, 2019 Shelby O'Neill





### Who We Are

Our mission is to create opportunity for lowand moderate-income people through affordable housing in diverse, thriving communities.









### **Climate Risk in the District**

Climate Ready DC

DC's Climate Future

- Rising Temperatures & Heat
- Rainfall & Flooding
- Seal Level Rise & Flooding

DC's Climate Risks and Vulnerabilities

- Infrastructure
- Community Resources
- Vulnerable Populations
- Natural Resources



# Climate Risk for Low Income Communities

Low-income communities are on the front lines of damage influenced by climate change, and they continue to be the most vulnerable, and have the least access to resources needed to recover.







## **Multi-Family Housing**

"By focusing on the resilience of affordable housing, we are fulfilling Climate Ready DC's promise to address the risks that heatwaves, flooding, and severe storms poses for our most economically and physically vulnerable residents."

- Tommy Wells, Director DC DOEE



Resilience isn't just about being able to bounce back or rebuild after a disaster...











... it's about drawing from the inherent strength in communities and helping everyone prepare for and move forward in the face of our new climate future.







## The DC Multi-Family Resilience Assessment Tool





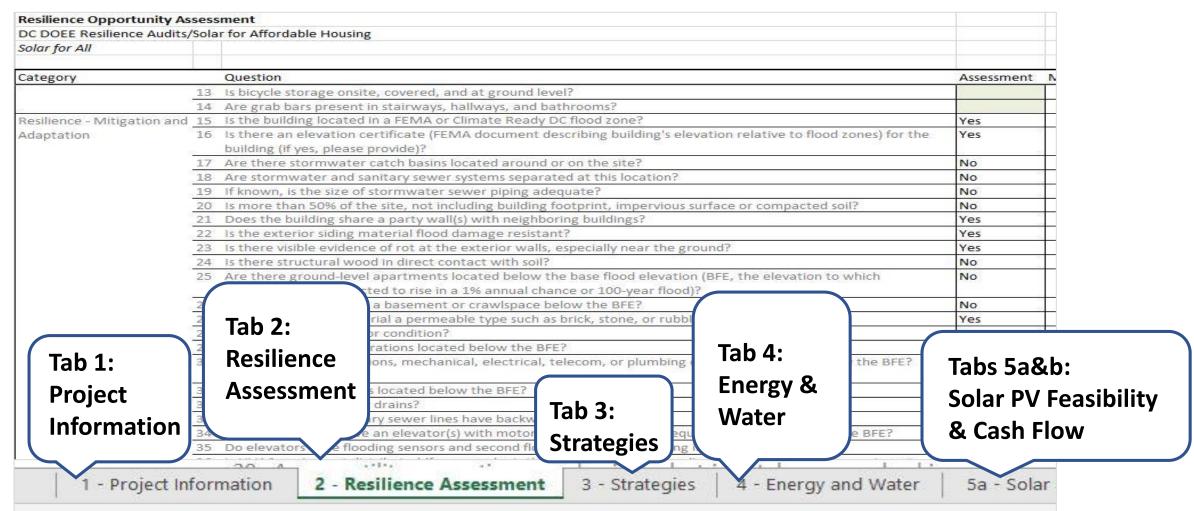








## The DC Multi-Family Resilience Assessment Tool



## The DC Multi-Family Resilience Assessment Tool











Develop Test Refine



When we build more resilient communities, we build a better future for everyone.



# Thank You

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# Fall 2019 Forum & Awards Luncheon

November 14, 2019
Richmond, VA



# **Thank You Event Sponsors!**

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Advocates































# **Congratulations Awards Winners!**



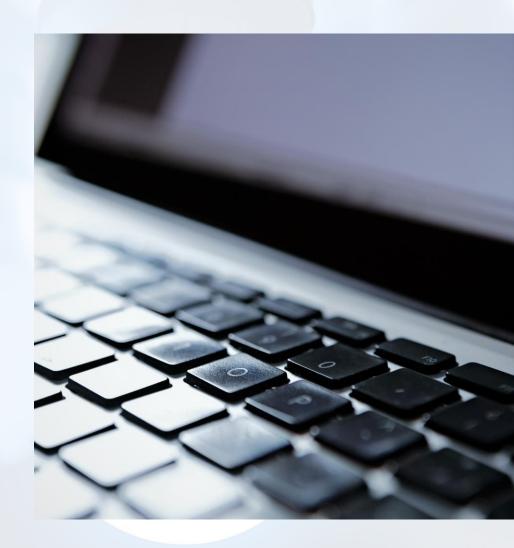


MARK YOUR CALENDARS

# Upcoming Events

# Webinars

- The Evolution of C-PACE in the Mid-Atlantic
  - December 17<sup>th</sup>
- 2020 Legislative Updates
  - January



# **Biannual Forum**

VIRGINIA ENERGY EFFICIENCY COUNCIL

Spring 2020 Forum

