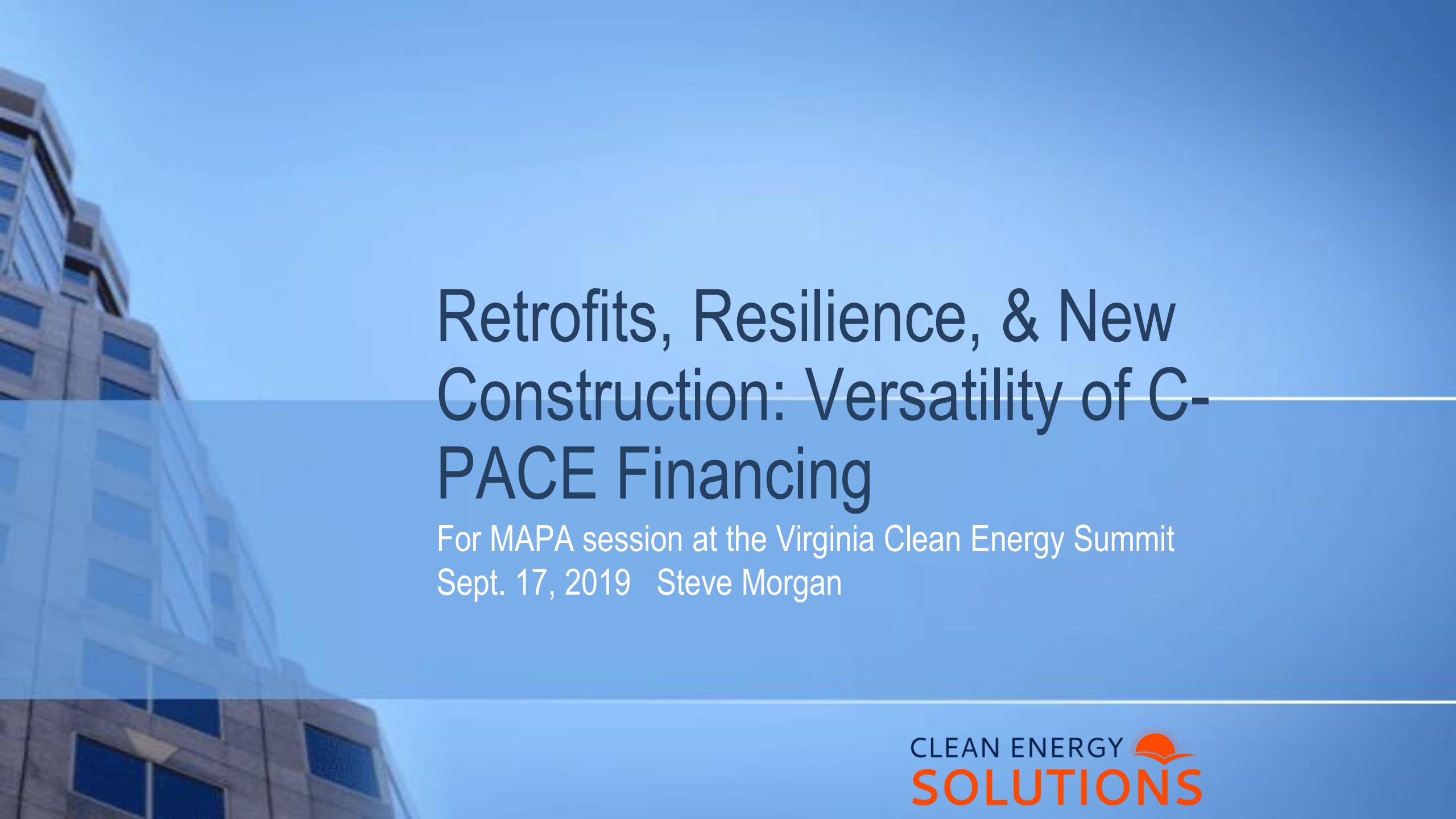




VIRGINIA CLEAN ENERGY SUMMIT

Co-Hosted by





Retrofits, Resilience, & New Construction: Versatility of C-PACE Financing

For MAPA session at the Virginia Clean Energy Summit
Sept. 17, 2019 Steve Morgan

Why C-PACE is such a Good Fit for Buildings and their Owners



Other Energy Efficiency Financing Programs Are Limited to a Discrete List of Retrofit Measures: HVAC, Insulation, Lighting, Controls



Most Energy Financing Programs are EE or Renewable and not water, not all three



Creditworthiness Thresholds enable Nonprofits, less bankable businesses to access the financing



20 Year Term enables longer term payback measures PLUS offsets debt with utility savings

How Resilience & New Construction Matter with C-PACE

- Resilience is driver for large subsets of CA (earthquakes) and FL (flooding, hurricane damage) demand
- New Construction adds capital stack without which solar and high efficiency measures can fit into building design in context of tight budgets and increasingly more demanding local building standards, such as DC

C-PACE Responds to What Buildings Need

- Comprehensive Equipment Replacement
- Gut Rehab
- Major systems Upgrades
- Tightening Local Codes
- Lower Operating Costs
- Owner & Tenant Changing Priorities



C-PACE Responds to What Owners Need

Accessible
Financing

Wide Variety
of Measures

Not
Considered
Conventional
Debt

Reasonable
Interest
Rate,

Term up to
20 Years

THE VERSATILITY OF C-PACE FINANCING

PACE FINANCIAL SERVICING

OVERVIEW OF PFS

NATIONALLY RECOGNIZED, LOCALLY DRIVEN

- PFS is a women-owned and operated business
- Senior team members were the primary architects of the award-winning Connecticut C-PACE Program
- PFS' team members have also acted as advisors to numerous state administrators in the crafting of C-PACE legislation and program design, including Pennsylvania, Colorado, Rhode Island, Texas, Delaware, New Jersey, South Carolina, Oklahoma, Alaska, etc.
- The Connecticut C-PACE program was the first program of its kind to achieve major scale: from its launch in 2013 to 2015, nearly half of the roughly \$200 million C-PACE transactions closed nationally during that time period were originated and administered in Connecticut under the direct leadership of the senior PFS team
- Recognized as thought leaders in the industry on how to craft C-PACE programs that attract private capital at scale while minimizing administrative burden on local governments and cost for property owners
- PFS team members are highly sought-after C-PACE experts that have been featured speakers at conferences hosted by PACENation, the Department of Energy, the Mid-Atlantic PACE Alliance, etc.
- PFS is a core contributors to the Mid-Atlantic PACE Alliance toolkit, a set of standard C-PACE program administration practices that were developed by a group of industry stakeholders in the Mid-Atlantic through the award of a U.S. Department of Energy grant in 2015

Our Mission

To support governments in the creation of open, standardized, low-cost C-PACE markets designed to drive private sector C-PACE investment and scale

Core Value

To structure each C-PACE program in a manner that scales energy efficiency and clean energy while fulfilling the unique needs of each jurisdiction

JURISDICTIONS CURRENTLY UNDER CONTRACT

Administration:



CLIMATE MOBILIZATION ACT: PACE FINANCING

Program Design:



& with Virginia PACE Authority
Clean Energy Financing

7/17/2019

IDENTIFYING C-PACE OPPORTUNITIES



Owners Who are Un-Financeable

- Owners with “**Zero Cash Down**” Focus
- Owners **without good access to Capital** (Non-Investment Grade Credit)



Owners in Need of Flexibility

- Buildings that **may sell before full payoff**
- Building where **tenants pay energy bill** but owner finances upgrades
- Project has longer payback period



Owners with Tax Appetite Love PACE

- Full realization of tax credits – including solar ITC
- Accelerated depreciation benefits (MACRS)



Owners Focused on Net Operating Income

- Prefer Operating vs. Capital Expenditures
- Don’t want balance sheet tied up with debt
- Want to own vs. lease

ILIZATION ACT: PACE FINANCIAL

- C-PACE is perfect for projects that contractors know are “locked” (the owner knows there is a need but couldn’t afford to fill that need)
- C-PACE is a way for a project to avoid being “value engineered” down to nothing (C-PACE helps you avoid cutting otherwise excess costs)
- C-PACE is a way to “go deep” on a job (can add HVAC, deferred maintenance, etc.)

PACE FOR DIFFERENT PROPERTY OWNERS



Offices

- Improves NOI (assessment is treated as an operational expense; off balance-sheet)
- Handles deferred maintenance without utilizing CapEx
- The assessment can be passed through to tenants where appropriate



Hospitality

- Improves NOI (assessment is treated as an operational expense; off balance-sheet)
- Many C-PACE financeable improvements can also be used to comply with Performance Improvement Plans (PIP)



Institutions

- Finance your renovations instead of undergoing a long capital budget process with donors
- Go green, go solar, achieve commercial economics on solar projects even as a NPO



Developers

- With C-PACE, achieve a lower blended cost of capital
- Replace expensive mezzanine debt with C-PACE
- Don't value engineer out green features



Manufacturing

- C-PACE is a way to preserve your credit lines and save cash for core business opportunities
- Invest in solar and earn tax credits and depreciation within one year

The Non-Profit



Non-Profit

Description: A Baltimore-based non-profit wanted to expand the capabilities of its residential re-entry center by building out 5,000 square feet of unused space in their facility. The goal of this project was to complete the planned build out while incorporating energy and water efficient equipment.

Challenge: Underwriting cash flows of a non-profit; many NPOs do not think they are eligible for PACE financing

Financing: \$785,000

Measures Financed:

- Insulation and Building Envelope Improvements
- New HVAC and Electrical Installation

Savings: \$3,100 in the first year and \$80,000 in lifetime savings

The Historic Renovation/ Adaptive Reuse



Brown's Arcade

Description: Brown's Arcade is a mixed-use commercial building encompassing both retail and business offices. It was constructed in the 18th century and is therefore listed on the National Registry of Historic Places. It is the only building of its kind left in the City of Baltimore, and the last known building of its kind in the state. Its historic roots shine through in embellished Colonial Revival details.

"We are very excited about this opportunity to re-position and transform this historic building with new retail concepts and multifamily apartments in downtown Baltimore alongside our recent acquisition of Brown's Loft which sits on the same 300 block of N Charles Street." – Kelvin Fu, GL Capital

Measures Financed:

- Water conservation measures
- Building enclosure improvements
- Lighting replacements
- New automated building & HVAC controls

The Energy Warrior



Summer Camp: Br-T

Description: An innovative property owner wanted to install renewable generation to serve his summer camp for youth. Project SIR greater than one.

Financing: \$250,000

Measures Financed:

- Solar system (70+kW)
- Battery backup systems
- Energy monitoring system
- Roof replacement

Projected Energy Savings (Cumulative)			EUL	Projected Energy Savings (Annual Average)		
kWh	BTU	\$	years	kWh	BTU	\$
1.9m	685m	315k	20	94k	34m	16k

The Large Portfolio



Multifamily Properties Across DC/MD Line

Description: A multi-family property management firm needed to replace obsolete boilers in 11 tenant-occupied buildings across state/district borders of Maryland and Washington, D.C., before the winter season.

Challenges: Multi-jurisdictional & multi-property

Financing: \$4,800,000

Savings: \$843,258 in the first year and \$3,767,263 in lifetime savings

Gut Rehab

Description: Four abandoned buildings in the heart of Baltimore City were given new life thanks to the availability of C-PACE financing.

Financing: \$400,000

Measures Financed:

- High efficiency envelope improvements (roof, windows, insulation)
- HVAC
- Electrical work





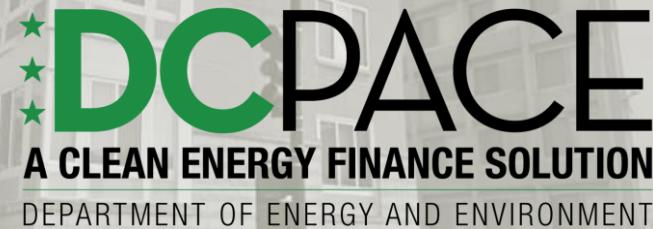
THANK YOU!

C-PACE for Resiliency, Retrofits & New Construction

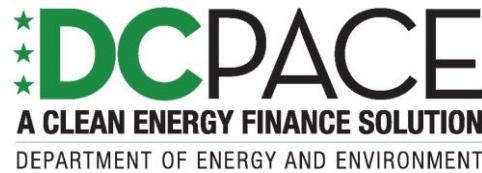


MAPA at Virginia Clean
Energy Summit

September 17, 2019



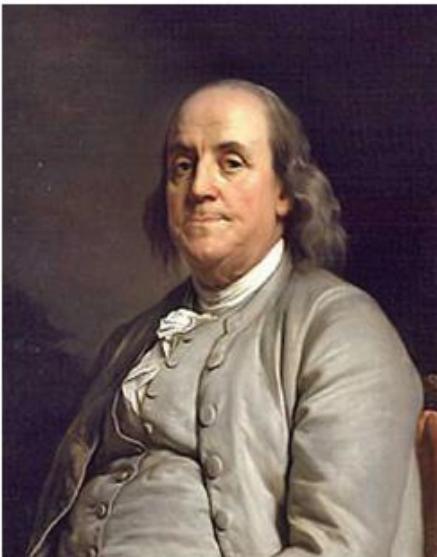
PACE: A New Use for an Old Concept



URBAN INGENUITY

DC PACE is the District's clean energy financing program for building upgrades.

Urban Ingenuity is the DC PACE program administrator, under contract to DOEE



Philadelphia first used this mechanism for an opt-In Fire District in 1736

About Property Assessed Clean Energy

- **Zero Dollars Out-of-Pocket:** PACE provides property owners with up to 100% financing for energy and water upgrades at long (15 - 20 year) terms
- **NOI Positive:** Owners realize savings immediately, and use those savings to pay back the cost of the measures through a special assessment that is placed on the property
- **Off-Balance Sheet:** Extend the capital budget and finance comprehensive projects with potentially off-balance sheet financing – PACE is not conventional debt

Audi Stadium - *Greening a Stadium*



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

Solution: \$25M in PACE (part of ~\$350M project)

Key measures:

- Storm water retention
- Solar PV
- LED field lighting
- Low-flow fixtures
- Insulation
- Green roof
- HVAC

1250 Taylor St - Solar + Green Roof

Challenge: Take advantage of solar PV economics while meeting District stormwater retention requirements without increasing out-of-pocket costs

Solution: PACE financing for 134 kW green roof ballasted solar PV allowed developer to add solar PV without increasing size of construction loan or owner's equity contribution

- *Est. \$540,00 in avoided costs of Electricity over 20 years*
- *Appx. \$816,000 in SREC income over 15 years*
- *Y1 Investment Tax Credit of \$131,000*



PACE Financing	
Solar PVC Cost	\$438,900
Green Roof Cost	\$311,100
Total PACE Financing	\$750,000

FSFSC - Gut Rehab & Tax-Exempt PACE



Challenge: Fill a financing gap in a gut rehab / expansion of a vacant building to be the new HQ of a local non-profit

Solution: \$2.2M in PACE prevented value engineering given limited capital budget, lower op ex over time

Sources & Uses	
IRB (tax-exempt)	\$6,000,000
IRB (taxable)	\$2,000,000
Local Govt. Grant	\$3,000,000
Financing Gap	\$3,000,000
Project Cost	\$14,000,000

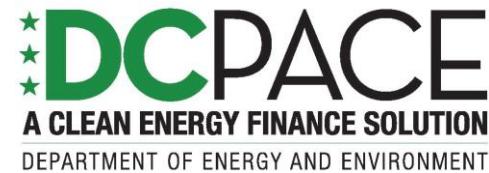
\$2.9 M savings above code over 20 years supported \$2 M+ in PACE

PACE Financing	
Tax-Exempt PACE	\$1,600,000
Taxable PACE	\$600,000
Total PACE	\$2,200,000

Thanks!

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C-PACE FOR RESILIENCY, RETROFITS & NEW CONSTRUCTION

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VIRGINIA PACE AUTHORITY (VPA)

Building the Future with Commercial PACE Financing

- Non-profit PACE program administrator serving Virginia localities
 - P.A. for Loudoun County and City of Petersburg
 - Best-in-Class partners, Pace Financial Servicing & Slipstream
 - Partner in MidAtlantic PACE Alliance (MAPA)
- Loudoun cooperative rider option for interested localities
- Abigail Johnson, 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 in 2019 which added resiliency and stormwater management to the law

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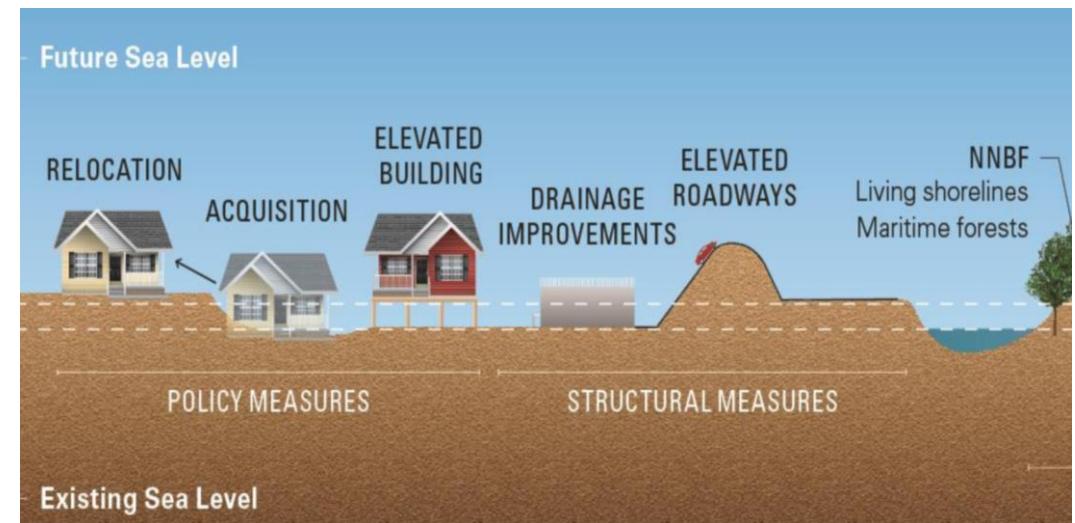
Resiliency

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.”

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

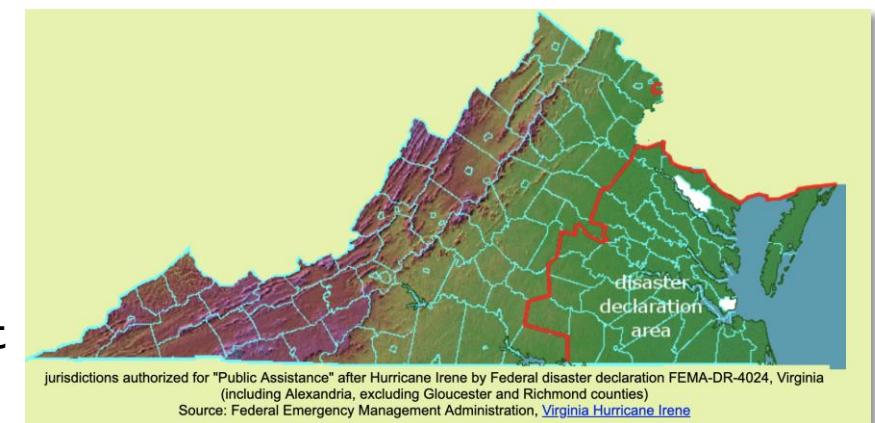
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Resiliency

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 1 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

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Resiliency

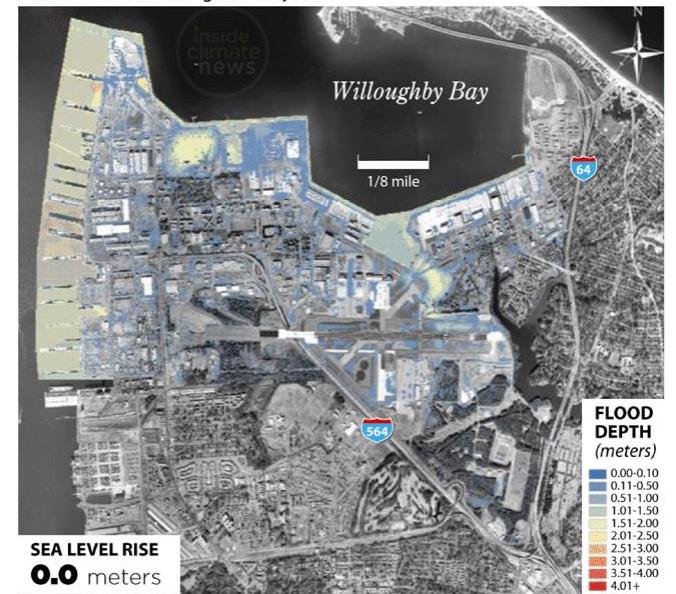
Regional initiatives

- 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 new C-PACE resiliency initiative in Hampton Roads

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How Rising Seas Will Affect Norfolk Base

This animation shows the flooding that's likely to occur at Naval Station Norfolk, at current and higher sea levels, during the type of storm that hits on average once a year.



SOURCE: U.S. Army Engineer Research and Development Center

PAUL HORN / InsideClimate News

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Resiliency

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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

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Resiliency

Benefits



Norfolk streetscape, September 2019

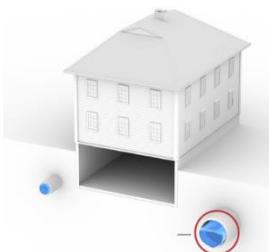
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- More efficient operations (e.g. redundant power, off-grid power, *business interruption avoidance*)
- Protected buildings and critical equipment (e.g. against *flood and fire damage, anti-terrorism*)
- Insurance and risk reduction (e.g. *lower premiums*)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

C-PACE FOR RESILIENCY, RETROFITS & NEW CONSTRUCTION

Resiliency

Examples



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

C-PACE FOR RESILIENCY, RETROFITS & NEW CONSTRUCTION

Resiliency

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Moving the Needle

- How can we use resiliency to incentivize jurisdictions to enable C-PACE?
- What additional technical tools should we consider in underwriting resiliency in C-PACE financing?
- How can we utilize the broad language in the statute to go beyond standard building improvements typically associated with C-PACE?
- How can you champion C-PACE in your community?





THANK YOU !

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