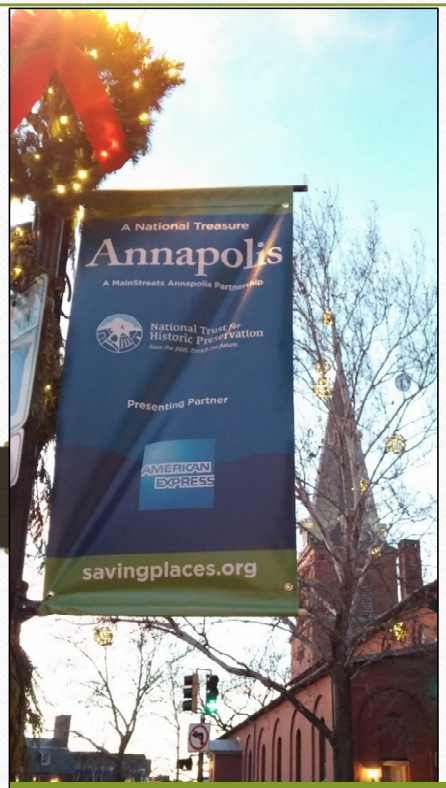
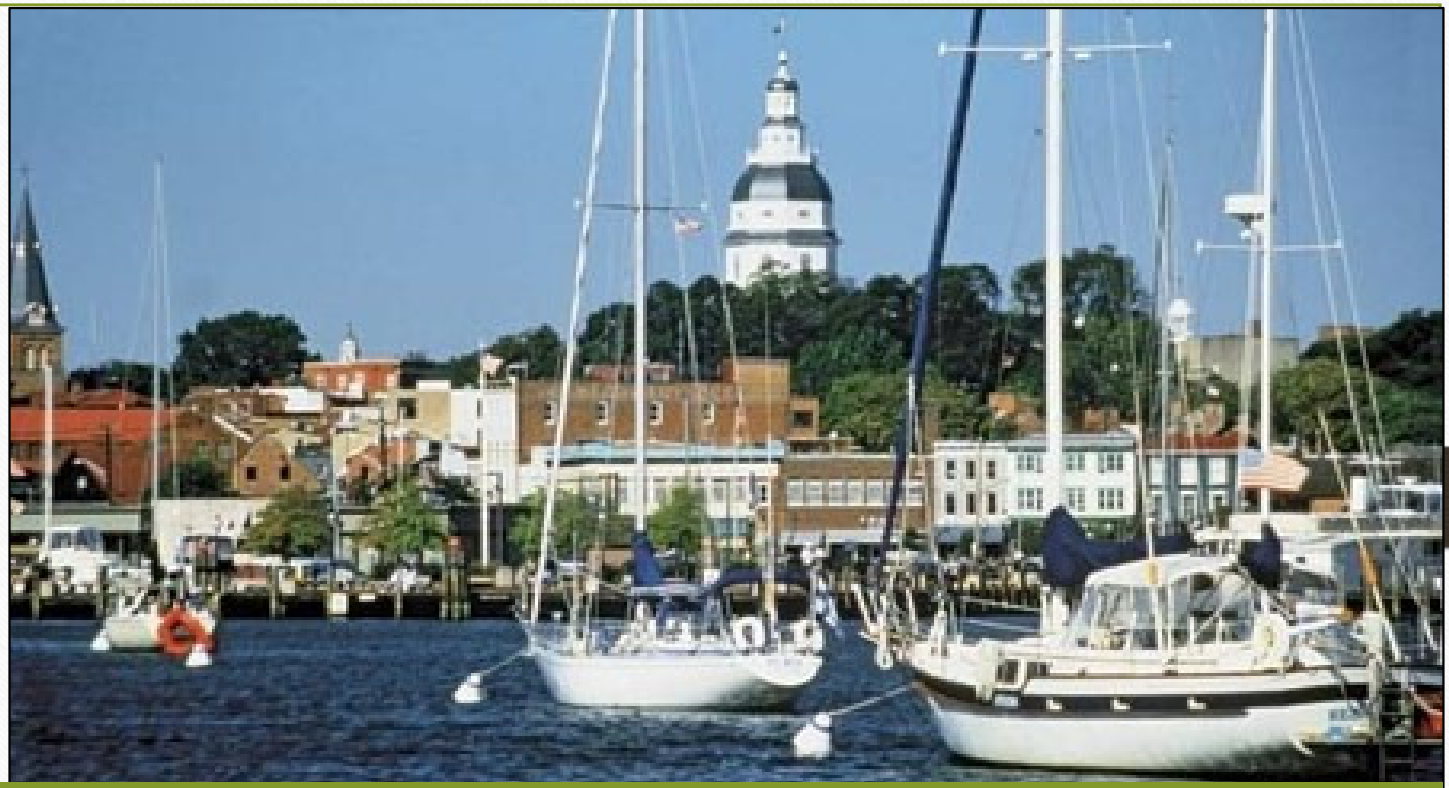




Building Resilience:

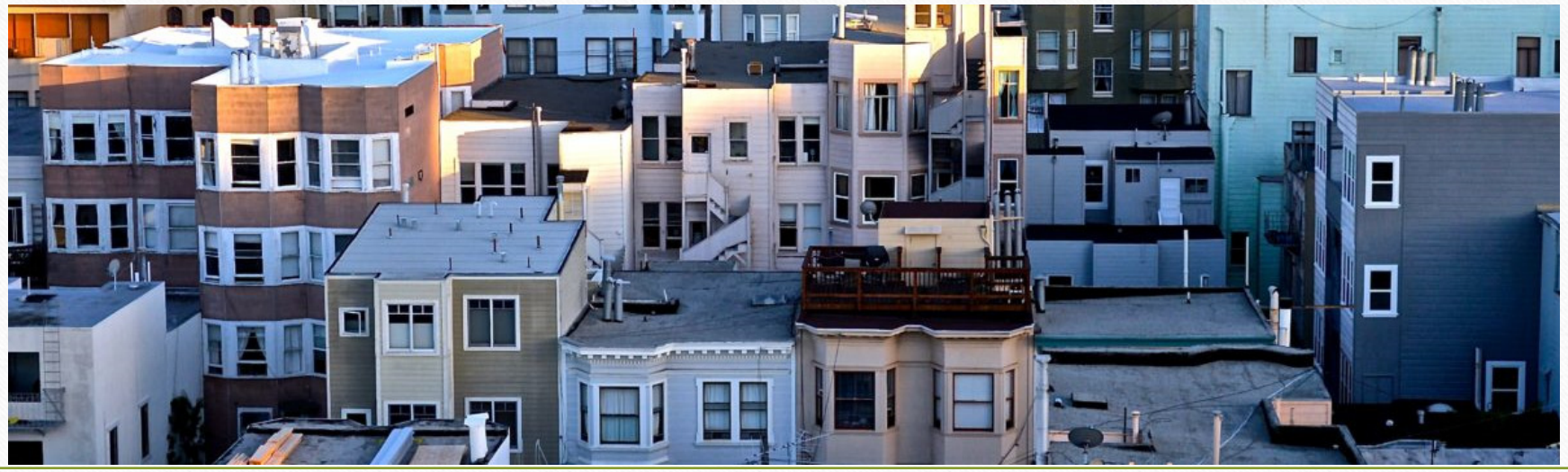
Economic and Environmental Benefits of Historic Preservation

Lisa Craig – Chief of Historic Preservation, Annapolis / lmcraig@Annapolis.gov

Building Resilience

Rockefeller Foundation: 100 Resilient Cities

Resilience is the capacity of individuals, communities and systems to survive, adapt, and grow in the face of stress and shocks, and even transform when conditions require it. Building resilience is about making people, communities and systems better prepared to withstand catastrophic events—both natural and manmade—and able to bounce back more quickly and emerge stronger from these shocks and stresses.



Building Resilience

New Buildings & Greenhouse Gas Emissions

- **In the United States we have only 5% of the world's population, but we're responsible for 22% - of the world's greenhouse gas emissions.**
- **Transportation–cars, trucks, trains, airplanes–accounts for just 27% of America's greenhouse gas emissions, while 48% is produced by the construction and operation of buildings.**
- **More than 10% of the entire world's greenhouse gas emissions is produced by America's buildings.**

Sustainability: Defined

National League of Cities

The basic definition of sustainability is "meeting the needs of the present without compromising the ability of future generations to meet their needs." The practice of sustainability reflects the intersection of three areas of concern for local governments: economy, environment, and equity - often referred to as the "triple bottom line" or "the three e's."

Building Resilience

Green Buildings are Not Sustainable Long Term

- 70% of the energy consumed over a building's lifetime is used in the operation of the building
- Even if 40% of the materials are recycled, it takes approximately 65 years for a green, energy-efficient new office building to recover the energy lost in demolishing an existing building.
- Most new buildings aren't designed to last anywhere near 65 years.

-

Building Resilience

Embodied Energy

- It takes energy to manufacture building materials, energy to transport them to a construction site, energy to assemble them into a building.

- All of that energy is embodied in the finished structure–and if the structure is demolished and landfilled, the energy locked up in it is totally wasted.

Building Resilience

Historic Preservation = Good Dollars & Cents

- By 2030 we will have demolished and replaced 82 billion square feet of our current building stock - nearly 1/3 of our buildings.
- If we didn't recycle any of the building materials, we'd be left with 5.5 billion tons of waste - enough debris to fill almost 2,500 NFL stadiums.

Preservation is having the good sense to hold on to things that are well designed, that link us with our past in a meaningful way, and that have plenty of good use left in them. Historic preservation has always been the greenest of the building arts… It's all about sustainability.

Richard Moe, President
National Trust for Historic Preservation

Building Recycling

Historic Preservation: The Ultimate Recycling

Reuse of existing buildings reduces the amount of demolition and construction waste deposited in landfills, lessens the unnecessary demand for new energy and other natural resources needed to construct a new building, and conserves the energy originally expended to create the structures.

Building Recycling

Historic Preservation: The Ultimate Recycling

Reinvestment in older and historic communities has numerous environmental benefits. Older and historic communities tend to be centrally located, dense, walkable, and are often mass-transit accessible, qualities of Smart Growth.

Building Recycling

Historic Preservation: The Ultimate Recycling

Reinvestment in these communities preserves the energy expended in creating the existing infrastructure, such as roads, water systems and sewer lines.

Building Recycling

Historic Preservation: The Ultimate Recycling

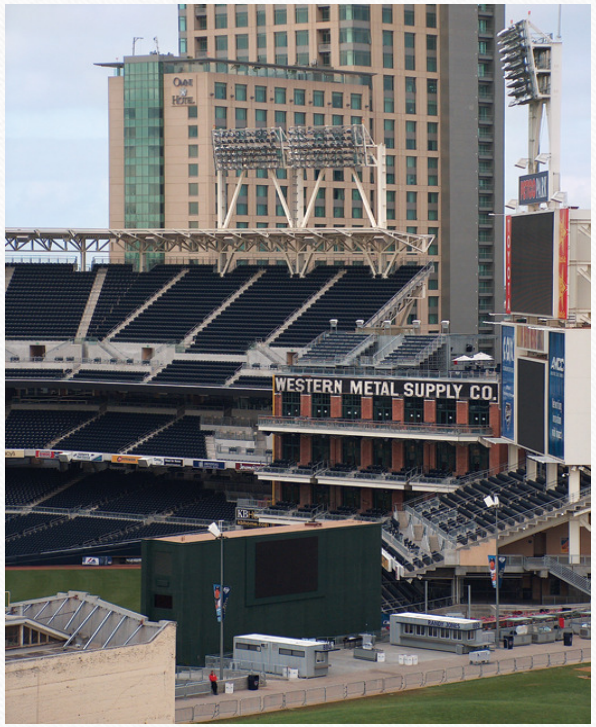
Energy Efficiency of Historic & Older Buildings

It is often assumed that older and historic buildings are "energy hogs" and that it is more environmentally friendly to demolish these buildings and construct new energy efficient buildings. However, recent work indicates otherwise.

Building Reuse

Energy Efficiency in Historic Buildings

Retrofit and Reuse of historic buildings can and should be undertaken to extend building life and better capture the energy savings available through newer technologies.



Building Reuse

Energy Efficiency in Historic Buildings: Home Energy Audits

- Energy audits were performed on 11 prototypical properties in the Annapolis Historic District.

- The goal was to demonstrate the ability for historic buildings to increase energy efficiency while retaining historic features.

Do-It-Yourself Energy Savers

The following are additional green home improvements recommended for your home. They can be done anytime, in any order, and are not dependent on the Prioritized Recommendation projects for timing.

Observations	Recommendations
Thermostats Energy can be saved by programming the temperature settings on your thermostat. Save up to 8% on your central conditioning costs for every degree of "set back".	Program your thermostat to meet your household's daily patterns. In winter, this is typically 8-10 degrees cooler at night and during the day, if no one is at home. Set morning and evening settings (68-72) to start 30 minutes before rising in the morning and returning home in the evening. For summer, set the regular temperature between 76-80 degrees and then reverse the setback pattern by setting the thermostat 4-6 degrees higher when no one is at home.
Water Heaters Energy can be saved by lowering the temperature of the water heater.	Set the temperature of water heaters to 120 degrees to ensure proper dishwashing temperature. At this setting, the water will feel comfortably hot for showers with only a small amount of cold water needed. Water heaters that are set too high are big energy wasters and can cause injuries from scalding.
Water tanks benefit from regular flushing.	Flush the water heater tank once a year by connecting a hose to the lower clean-out bib and emptying 1-2 gallons. This will remove any sediment that has collected in the tank and keep the water heater operating at its highest efficiency.
Lighting & Electronics Additional energy can be saved by automatically controlling lighting.	Install timers, motion sensors and solar sensors to control lighting so that it turns off automatically when not needed.
Many everyday electrical items, such as chargers, computers, entertainment systems and hobby equipment use energy even when they are turned-off. This is called "phantom" electrical loads.	Reduce phantom electrical loads by using "smart" power strips and other devices which stop appliances from drawing electricity when turned off. Refer to the Energy Fact Sheet on Continuous Energy Drains for more information.
Thermal Leaks Though the windows are performing adequately as thermal barriers, their insulating ability could be improved.	Install insulating shades, wood blinds, or heavy drapes on windows to improve comfort and reduce costs in winter and summer.

TERRALOGOS ENERGY GROUP

TerraLogos Energy Efficiency Report

PREPARED FOR

Adriana & Don Bevis
4 Revell Street
Annapolis, Maryland

DATE OF ENERGY AUDIT

July 8, 2011

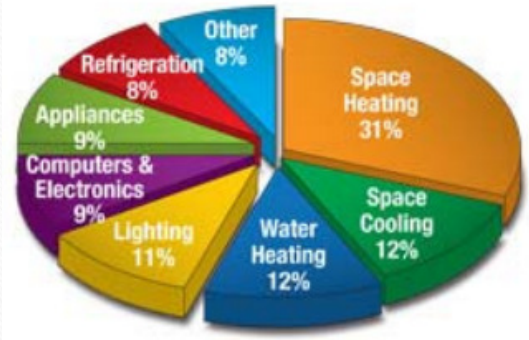
BUILDING ANALYSTS

Cory Fox & Kevin Knight

Building Reuse

Energy Efficiency in Historic Buildings

Return on Investment (ROI) chart provides a listing of improvements along with their typical costs, savings and expected payback period. Insulation, sealing & HVAC have the most immediate return.



Improvement		Typical costs w/o incentives	Reduction in related energy	Expected annual savings	Years for payback w/incentives
Air Sealing		$1,500-3,000	50%	$300-700	5
Insulation	Attic	$1,500-3,500	25-40%	$250-450	4
	Basement Crawlspace	$1,000-4,000	50%	$150-300	6
Duct Sealing	Manual	$500-1000	20%	$150	4
	AeroSeal®	$1,550/system	30%	$250-350	4
Storm doors		$200	45%	$27	7
Replace Windows		$350-1,000/each	10-35%	$25-40	10-30
Cool Roof Installation		$7,000	20-70%	$125	N/A; Install when needed
HVAC, Energy Star upgrade		$7-15,000	10-50%	$300-600	3-5*
Water Heater	Heat Pump	$4,200	60%	$415	7-8*
	Solar	$9-10,000 (less incentives)	70-90%	$225-525	5-6*
Geothermal		$15-30,000 (less incentives)	70%	$600-1,200	8-10*
Solar Photovoltaic		$25-30,000 (less incentives)	up to 100%	$890	7
Programmable thermostat		$90	5-15%	$180	6 months
Compact fluorescents		$3	75%	$15	3 months
Replace pre-1993 fridge		$800	40%	$150	5

* To payback additional cost over a conventional system.

Building Reuse

Energy Efficiency in Historic Buildings

Audits were conducted using **Building Performance Institute (BPI)** Standards and considered the following:

- The conditions in the home and the identified energy issues;
- Concerns, plans and priorities;
- The costs and benefits of the possible solutions for the identified energy issues;
- Proper staging to optimize benefits and reduce costs.

Address **Health & Safety** first.

Then, fix the **Energy Leaks**.

Finally, **Upgrade Equipment**.

TERRALOGOS ENERGY GROUP

Property Information

Owner	Adriana & Don Bevis		
Address	4 Revell Street Annapolis, MD 21401		
Phone Number	301.220.5602		
Date of Energy Audit	July 8, 2011		
Building Analysts	Cory Fox & Kevin Knight		
Year Built	1907 Owner since 2005		
Type and Exterior	Detached, wood clapboard exterior		
Exposure	The front of the house faces southeast with solar exposure on the southwest side. The house is protected from north winds. The roof and exposure are well-suited for the installation of a solar thermal but not a photovoltaic system.		
Conditioned Space	Area: 4,800 sq. ft. Volume: 36,200 cu. ft.		
Basement & Crawlspaces	1 basement: no interior doors 3 crawlspaces connected to the basement		
Attic & Knee Walls	3 attics: main, baby room & wine room 8 knee walls		
Roof	Pitched, light metal		
Windows	Approximately 23, mostly double hung, single-glazed wood units with storms.		
Thermostats	3 manual	**Zones**	1 heating system and 1 zone 2 cooling systems and 2 zones
Open Combustion Equipment	Heating system	**Gas Service**	In use
Incentive qualifications	Owner occupied homes are eligible for the MEA's home performance incentives. Additionally, this home qualifies for the BGE home performance incentive program. Historic homes in Annapolis may qualify for a local city tax credit for exterior projects and the Maryland Historical Trust's Maryland Sustainable Communities Rehabilitation Tax Credit Program (subject to review).		

Building Reuse

Energy Efficiency in Historic Buildings

Maintenance helps preserve the integrity of historic structures. If existing materials are regularly maintained and deterioration is significantly reduced or prevented, the integrity of materials and workmanship of the building is protected. Proper maintenance is the most cost effective method of extending the life of a building.

Moisture in the wine room crawlspace

Moisture on the west wall of the basement appears to be from the dehumidifier hose

Building Resilience

Sustainability = Reuse

The Myth: Old wood windows lack energy efficiency and are not sustainable.

- Heat loss is typically through the attic, not windows
- 3 1/2 inches of cheap fiberglass insulation in the attic has three times the R factor impact than so-called energy efficient windows
- Repaired historic windows R factor are indistinguishable from new, "weatherized" windows
- 30% of replaced windows are less than 10 years old
- Energy savings ROI for replacement windows is 30 years.
- Energy consumed in manufacturing vinyl is 40 times more than in producing wood

Building Reuse

Energy Efficiency in Historic Buildings

- The original windows are a valuable architectural element for this property and are generally performing well for air tightness, though some repairs are needed.
- Preserve the existing original windows wherever practical. Have the windows serviced, repaired and weather-stripped so that they operate properly.
- If retained and serviced properly, the original wood windows will add substantial value to the property.

Building Resilience: Sea Level Rise

Historical Trends in the North Atlantic

The recession of the northern glaciers is growing… the long trend is toward a warmer earth; the pendulum is swinging.

- Rachel Carson, scientist, ecologist and writer – The Sea Around Us (1952)

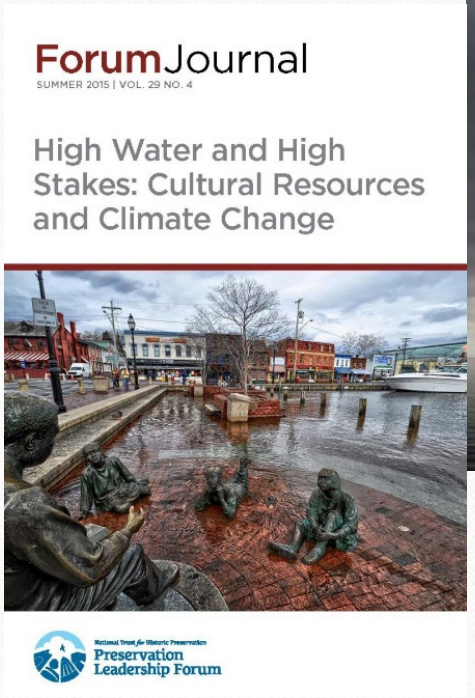
Sea Level Rise: Fact or Fiction

John Englander

TEDx
Boca Raton
May, 2014

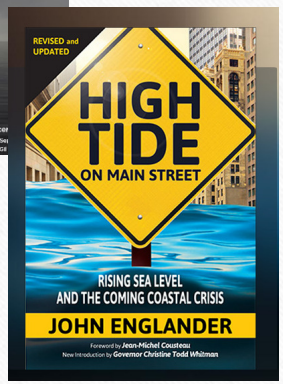
Building Resilience

The Politics of Sea Level Rise



Ice melts at 32 degrees. It doesn't care if you are a Republican or a Democrat.

- John Englander, oceanographer and author of *High Tide on Main Street*

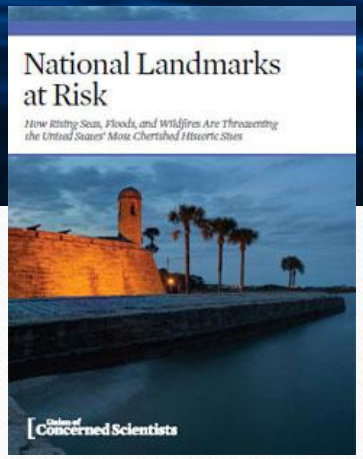


Building Resilience

UCS - National Landmarks at Risk

The crisis of rising sea levels

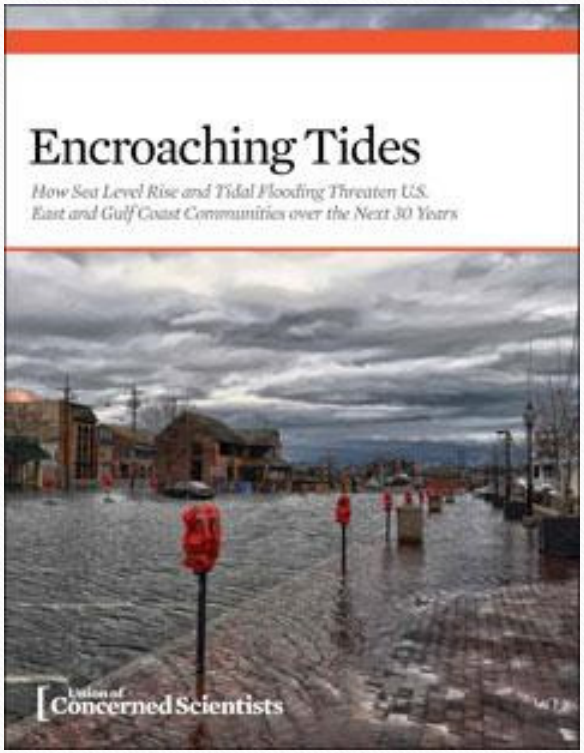
Water's Edge



Since 2001, water has reached flood levels an average of 20 days or more a year in Annapolis, Maryland; Wilmington, North Carolina; Washington, D.C.; Atlantic City, New Jersey; Sandy Hook, New Jersey; and Charleston, South Carolina. Annapolis had the highest average number… at 34.

Building Resilience

UCS - Encroaching Tides



In Annapolis, home to the U.S. Naval Academy, half a foot of water flooded the colonial district, a National Historic Landmark, at high tide on Chesapeake Bay during Spring rainstorms.

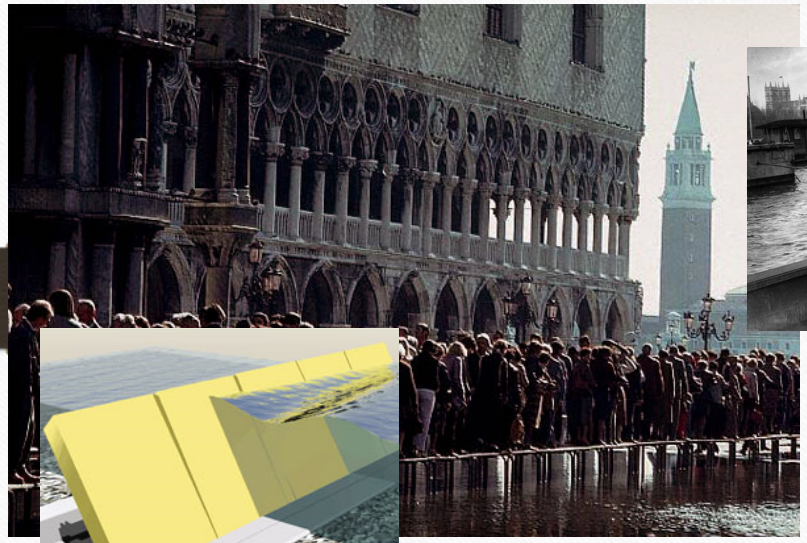
Building Resilience

Chesapeake Bay Lost Landmarks

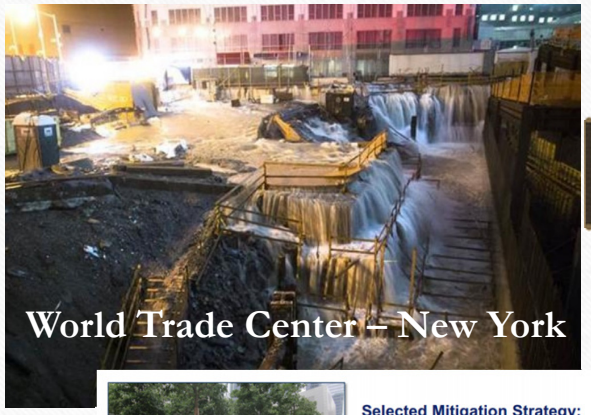
Holland, Hooper's and Sharp Islands – Last structures lost (2010)

Building Resilience

Structural Flood Barriers



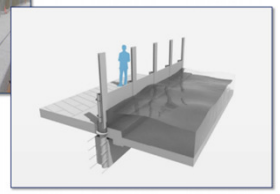
Delta Works - The Netherlands



World Trade Center – New York

MOSE (flood gates) - Venice

Thames Barrier - London



Bollard Protection / Michael Baker

Building Resilience

Tokyo's Metropolitan Area Underground Discharge Channel

Winding down a series of stairs, you soon come upon a massive hall, resembling an underground Parthenon, or a scene out of a science fiction film.
-- Alex Zolbert, CNN

Building Resilience

Top Cities Vulnerable to Climate Change

Ranking 130 port cities with high exposure and vulnerability to climate extremes finds that150 million people could be exposed to a 1 in 100 year coastal flood event by 2070, up from 40 million today. The estimated financial impact of such an event would also rise to $35 trillion by 2070, up from $3 trillion today.

Building Resilience: Miami

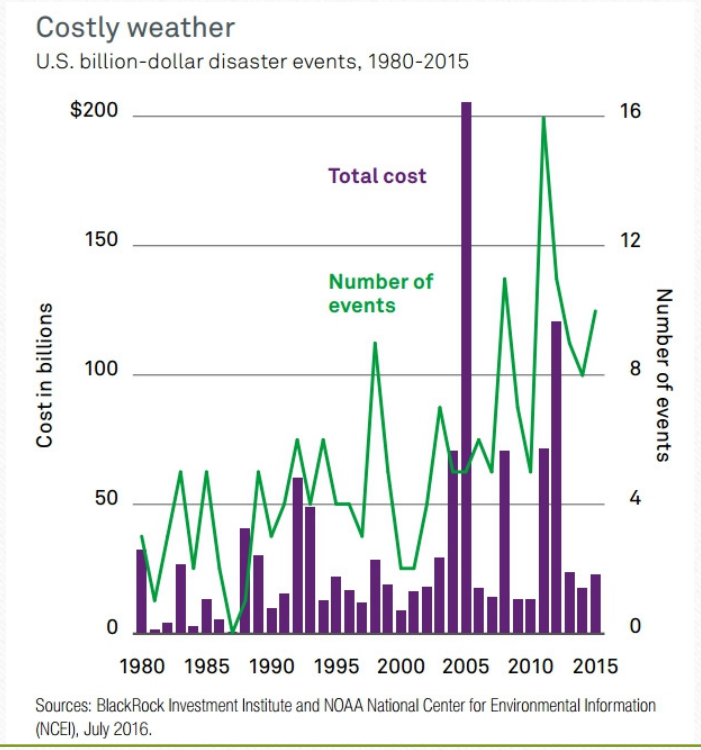
#1 Economy at Risk

$3.51 trillion and 4.8 million people at risk by 2070

Building Resilience

The Cost of Rising Tides

- Climate events with losses exceeding $1 billion.
- Nationwide, almost $1.9 million homes worth $882 billion are at risk of being underwater by 2100.
- In Maryland *Zillow* reports 64,299 properties underwater by 2100 at a total value of $19.6 billion



Will a rising tide sink all homes?

Zillow

Nationwide, almost 1.9 million homes (or roughly 2 percent of all U.S. homes) worth a combined $882 billion are at risk of being underwater by 2100 if sea levels rise by six feet. Some states will be hit harder than others.

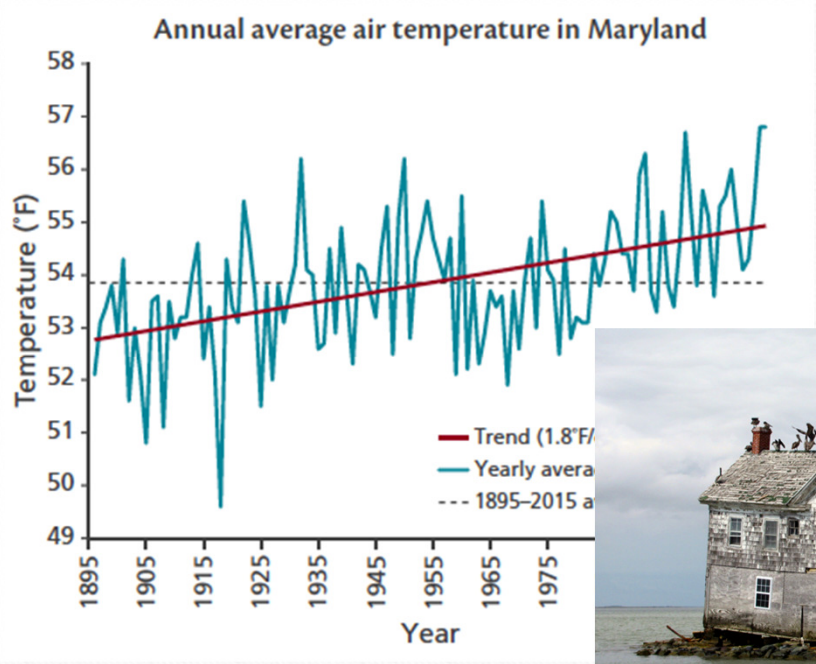
State	Number of Potentially Underwater Properties	Fraction of Total Housing Stock Underwater	Total Value of Potentially Underwater Properties
California	42,353	0.44%	$49.2B
Texas	46,804	0.61%	$12B
New York	96,708	2.10%	$71B
Florida	934,411	12.56%	$413B
Pennsylvania	2,661	0.06%	$730M
Georgia	24,379	0.75%	$10.2B
North Carolina	57,259	1.64%	$20.6B
New Jersey	190,429	7.35%	$93.1B
Virginia	46,287	1.77%	$14.4B
Washington	31,235	1.32%	$13.7B
Massachusetts	62,069	3.10%	$51.2B
Maryland	64,299	3.09%	$19.6B
Alabama	12,755	0.77%	$3.8B
South Carolina	83,833	4.42%	$45B
Louisiana	80,080	5.88%	$13.2B
Oregon	4,959	0.37%	$1B
Connecticut	18,173	1.61%	$13.2B
Mississippi	5,572	0.72%	$1B
Hawaii	37,556	9.07%	$25.3B
Maine	5,412	0.98%	$3.1B
New Hampshire	4,064	0.71%	$1.7B
Rhode Island	4,555	1.41%	$2.9B
Delaware	11,670	3.09%	$3.6B

Source: National Oceanic and Atmospheric Administration (NOAA); Zillow data

Building Resilience

Economic / Environmental Impact

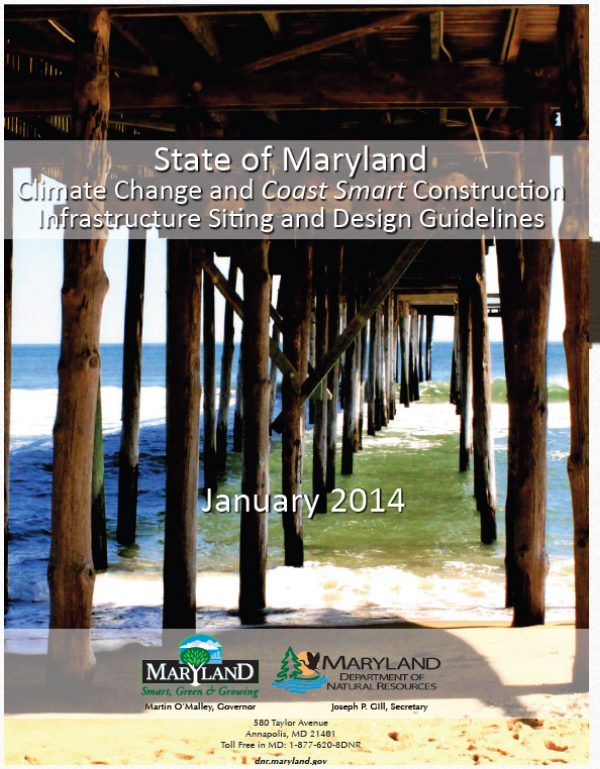
- Temperatures have increased 1.8°F since 1895
- 400,000 acres along the Eastern Shore could be submerged
- Over $23 billion in property value could be below sea level
- Coastal storms could cause damages of $340 million



Building Resilience: Maryland

Coast Smart Construction

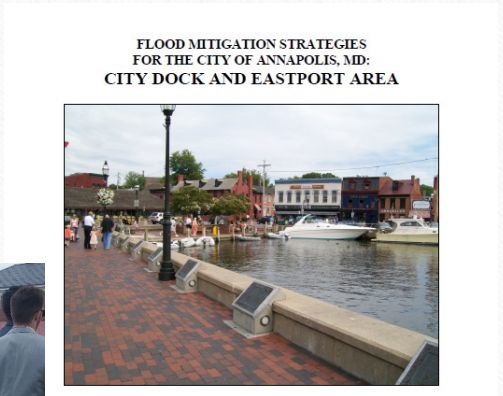
"Exceptions should be based on an analysis of the scope, function and importance of the project, including historic and cultural preservation considerations."



Building Resilience: Annapolis

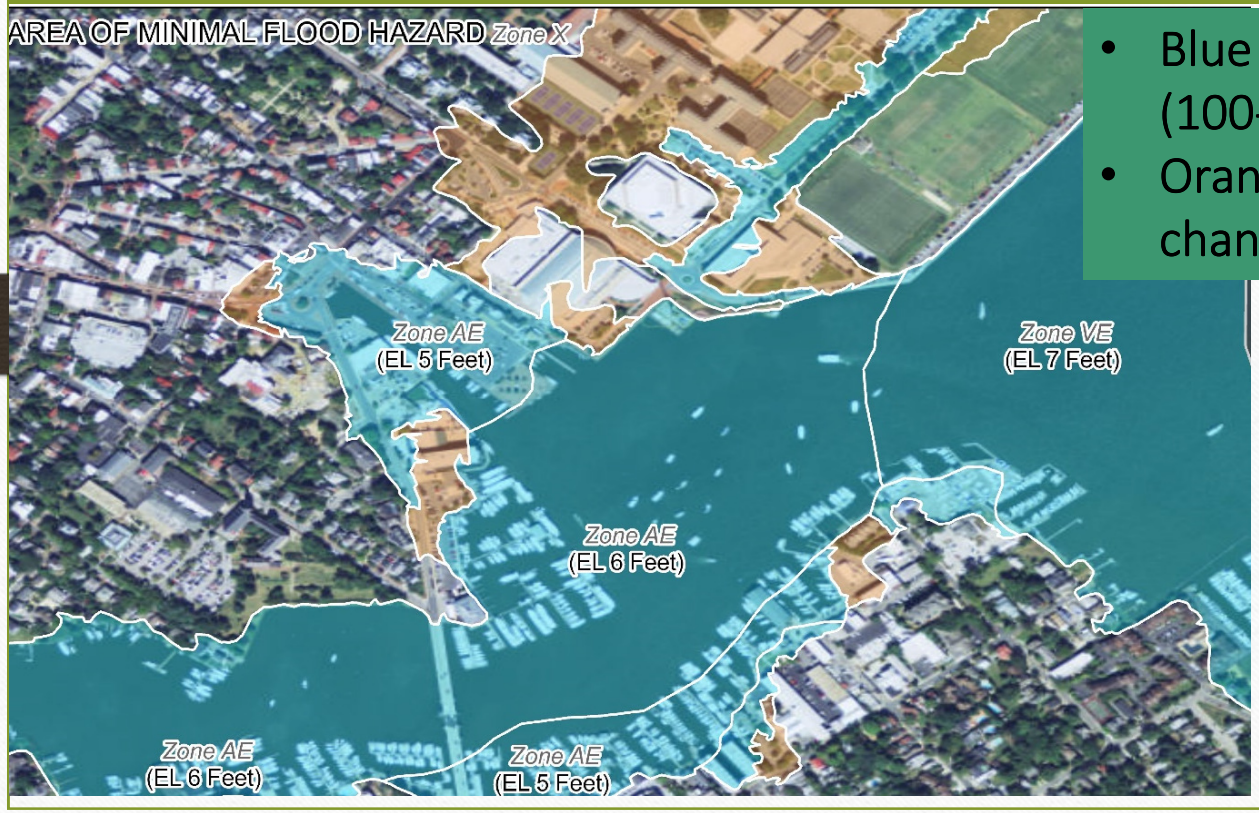
Flood Mitigation

- Focus on protecting existing structures
- Study downtown to determine the costs and benefits of public decision-making in mitigating property damage
- Evaluate the need and options for protecting historic structures
- Require floodproofing to the extent feasible



Building Resilience: Annapolis

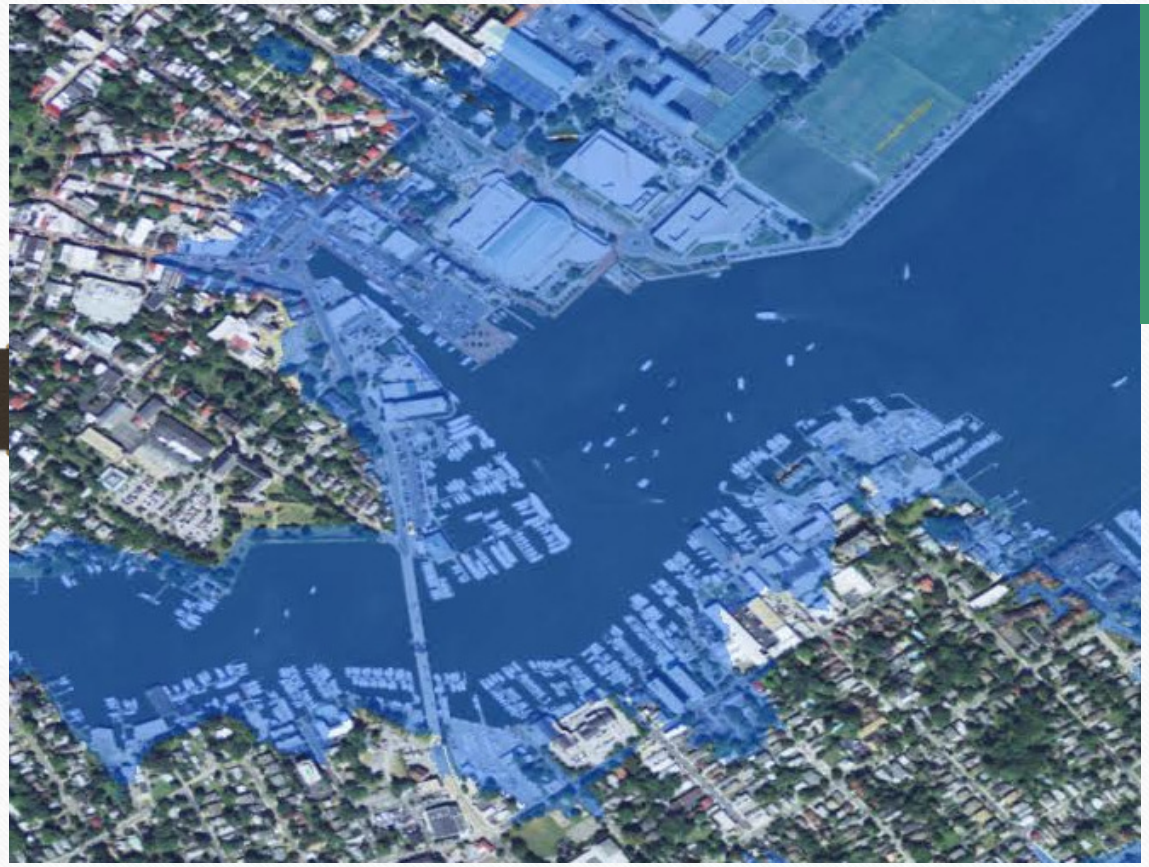
FEMA Flood Insurance Map



- Blue shading 1% annual chance (100-year) flood
- Orange shading is 0.2% annual chance (500-yr) flood

Building Resilience: Annapolis

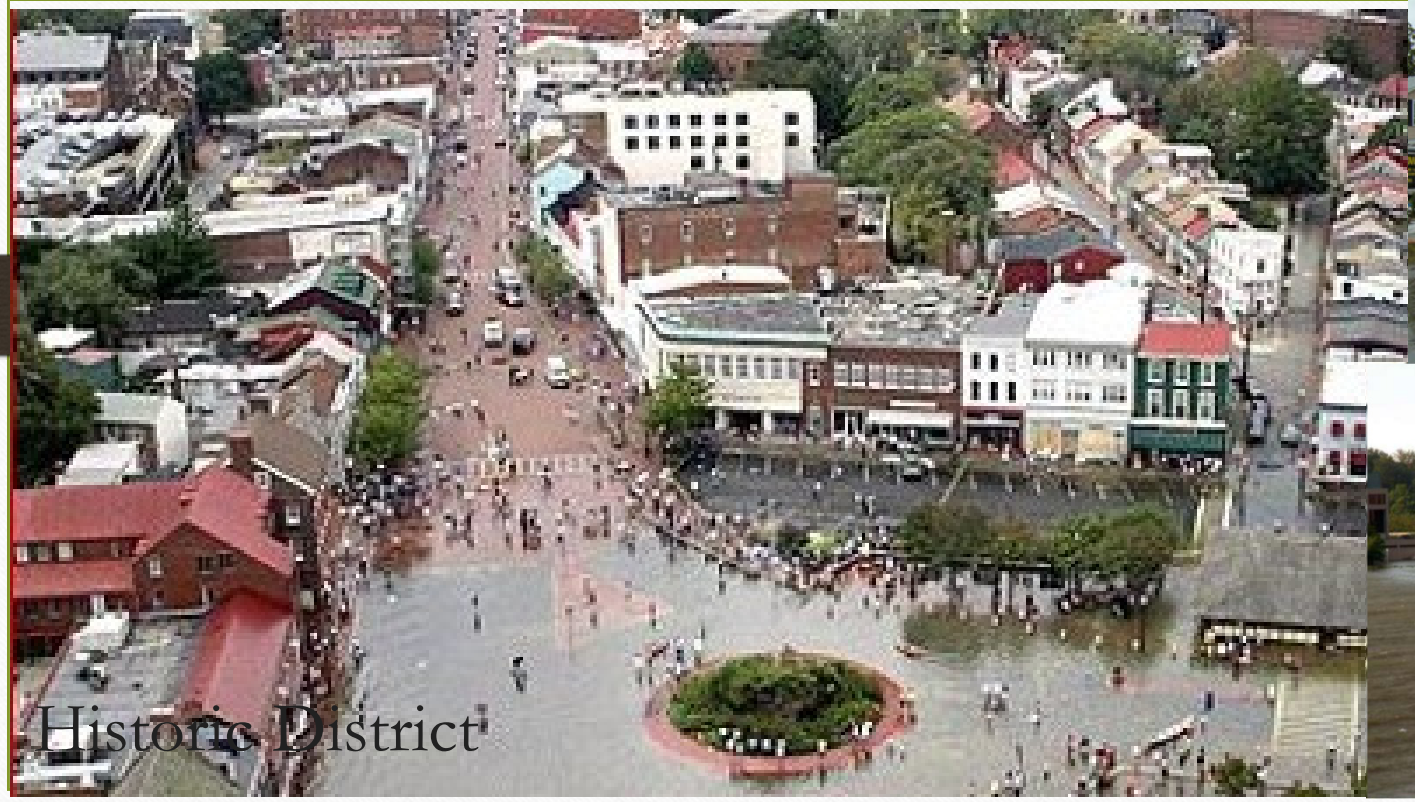
FEMA FIRM - 2100

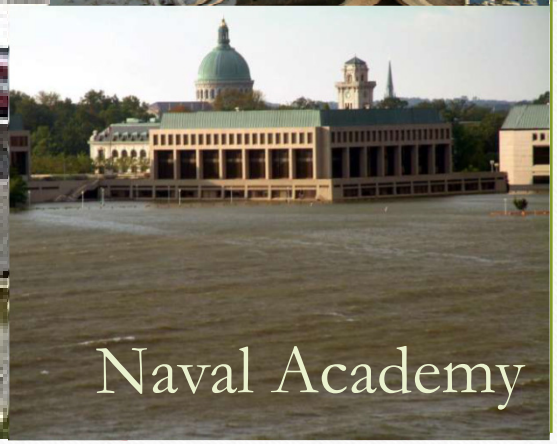


- Flood elevation 8.2 ft.
- 1% annual chance flood (4.5') plus 3.7 feet for sea level rise by the year 2100

Building Resilience

Isabel - September 19, 2003



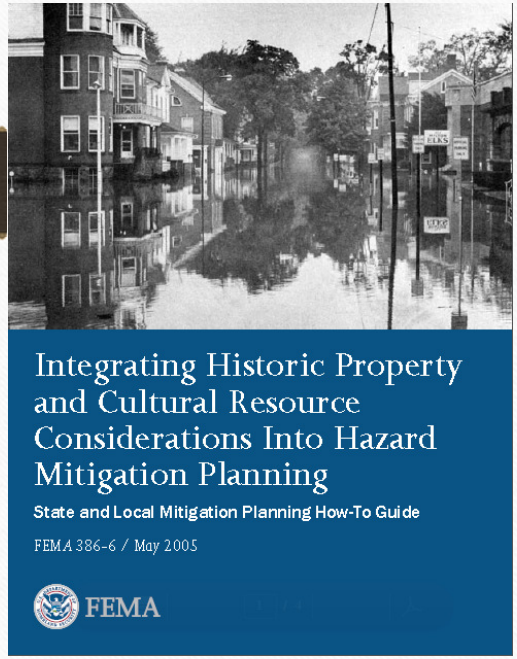


Building Resilience

Changing Perspectives

- Loss of private property
- Inability to provide services
- Tax base loss
- Unemployment

Building Resilience
Weather It Together: Protecting Our Historic Seaport
FEMA Hazard Mitigation Planning



Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and manmade hazards.

- Organizing your efforts to develop a mitigation plan;
- Identifying hazards and assessing losses to your community;
- Setting mitigation priorities and goals and writing the plan;
- Implementing the mitigation plan, including project funding.

Building Resilience: Weather It Together

Cultural Resource Inventory

Building Resilience: Weather It Together

Cultural Resource Inventory

			HAZARD: Coastal								
		SDAT Tax ID Number	Name and Address of Asset Subject to Hazard (same as previous Page	MHT Inventory Number (AA#)	Date of Construction	Type of Property / Type of Resource	Total Square Footage	Number of Stories	Structural System	Primary Exterior Materials of Property / Resource	Current Function / Use
		06 000 00030807	1 Southgate Avenue	1450	1910 - 1915	Detached House	4901	2	Wood Frame	Wood / Stone / Shingles	Residence / SFD
		06 000 05035575	12 Fleet Street	1267	1875	Attached House / Duplex	840	2	Wood Frame	Wood Siding	Residence / SFD
		06 000 00143206	9 Pinkney Street	1241	1880	Attached House / Rowhouse	1336	2	Wood Frame	Wood Siding	Residence / SFD
		06 000 03587510	18 Pinkney Street / Shiplap House	643	1713 / 1723	Detached House / Historic	2255	2	Wood Frame	Wood Siding / Shingles	Institutional / Office
		06 000 02047510	130 Prince George Street / Sands House	652	1739 / 1765	Detached House	2740	2	Wood Frame	Wood Siding / Metal Roof	Residence / SFD

Worksheet #3

- Name/Address of Resource
- Date of Construction
- Type of Property
- Square Footage
- Structural System
- Primary Materials
- Current Function
- Current Condition
- Owner Interest in Mitigation

Building Resilience: Weather It Together

Vulnerability Assessment

MHT INVEN. AA#	Column 1 Name and Address of Asset Subject to Hazard	Column 2 Date of Construction/ Creation	Column 3 Type of Property/ Type of Resource	Column 4 Square Footage	Column 5 Structural System	Column 6 Primary Material(s) of Property/ Resource	Column 7 Current Function/Use	C
1450	1 SOUTHGATE AVE	1910 1913	DETACHED HOUSE	4901	WOOD FR STONE	WOOD STONE	RESIDENCE SFD	
1267	12 FLEET CT.	1875 1885-1889	ATTACHED HOUSE	840	WOOD FRAME	WOOD SIDING	RESIDENCE SFD	
1241	9 PINKNEY	1880	ATTACHED HOUSE	1334	WOOD FRAME	WOOD SIDING	RES SFD	
643	SHIPLAP HOUSE 18 PINKNEY	1717 1723a	DETACHED HOUSE	2,255	WOOD FRAME POSTBEAM	BRICK WOOD SIDING SHINGLE	INSTIT. OFFICES	
692	JONES HOUSE 190 PRINCE GEORGE	1765 1759-1814	DETACHED HOUSE	2,720	WOOD FRAME	WOOD SIDING METAL ROOF	RESIDENCE SFD	
458	STEVENS WAREHOUSE 142 DOCK ST	c1880 1940	ATTACHED COMMERCIAL BLD	5 720	MAS BRK WALL & WD FRAME	BRICK METAL CLADS	COMMER	
536	A.L. GOODMAN 100 MAIN ST. (-04)	1908-19	COMMER BLD ATTACHED	7354	MASS BRK WALL CONC. & FRAME	BRICK METAL CLAD	COMMER	
535	'CUSTOMS HOUSE' SIGN OF THE WHALE 97 (99) MAIN ST	1792-19	COMMER BLD ATTACHED	3803	MASS BRK WALL WD FRAME	BRICK	INSTIT MUSEUM	

147 Properties Surveyed

- Property Vulnerability (High, Med. Low)
- Loss to Structure ($)
- Loss to Contents ($)
- Loss of Function / Use ($)
- Displacement Cost

Total Loss for Hazard Event

$288.5 million

Building Resilience: Flood Mitigation

Non-Structural Mitigation Assessment

Nonstructural Mitigation Assessment for the City of Annapolis Historic District
Annapolis, Maryland

Prepared for: **City of Annapolis**
145 Gorman Street, 3rd Floor
Annapolis, Maryland 21401

Prepared by: **Planning Division**
U.S. Army Corps of Engineers, Baltimore District
P.O. Box 1715
Baltimore, Maryland 21203-1715

DECEMBER 2014

FIGURE 2-1 BUILDING ELEVATION SURVEY POINT TYPES

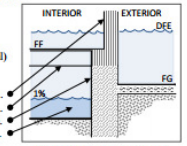
Lowest adjacent grade in this example is the front left corner, the lowest point closest to where the water is coming from. **Low opening** in this example is the basement window, where water would first enter the building during flooding. **First floor opening** here is the front door, where the most damage would typically occur if flood waters reached this elevation.

ANNAPOLIS, MARYLAND - HISTORIC DISTRICT – NONSTRUCTURAL ASSESSMENT SAMPLING

4.0 STRUCTURE DATA/ASSESSMENT SHEETS
STRUCTURE #1 - 130 PRINCE GEORGE STREET

Structure Information / Data

Name/Description:	Sands' House
Location:	130 Prince George Street
Occupancy type:	Single-Family Dwelling (Residential)
No of Stories:	2 ½
Building Construction:	
Exterior Walls:	Wood frame……
Floor Construction (1st Flr):	Wood Frame……
Foundation Wall:	Masonry w/crawlspace (+/- 4.33 ft.).
Grade/Crawlspace/Basement:	Crawlspace……



BUILDING SECTION (at Grade)
Not to Scale

Structure/Flood Elevations Table

FG	LO	FF	Δ FF-FG	1%	DFE	Δ 1%-FF	Δ DFE-FF	Δ 1%-FG	Δ DFE-FG
5.54'	*6.62'	7.29'	1.5'	4.50'	8.20'	-2.79'	0.91'	-1.04'	2.66'

Abbreviations: FG – Finish Grade [low point]; LO – Low Opening; FF – First Floor; 1% - One Percent Exceedance Flood [100 yr]; DFE - Design Flood Elevation; Δ-Delta/Difference
***See Site Visit and Analysis sections.**

Structure Photographs


South Elevation (Front)


Front Entrance


Crawl Space

Site Visit (Observations/Field Notes)

The structure was observed from the exterior and the interior of crawl space of the original building. The property owner was present for information or comment. Per property owner - Water infiltrated through the crawlspace perimeter foundation walls in the past flood. The structure has been elevated estimated 18 inches in the past.

The structure is wood framed construction on masonry foundation walls (unreinforced brick/stone), with a crawlspace. The masonry foundation is in poor condition, requiring repair/ rehab/renovation. The structure and site have been modified over time with upgrades/renovations/additions and fill.

*The first floor is the lowest habitable space. Field measurements taken show the first floor to be approximately 1'- 6" above the finish grade at low ground on the front elevation (right side of the front porch).

The crawlspace is the lowest level and is partially below exterior finish grade. The crawlspace (of the original structure) was accessed and observed via a floor hatch at front entrance hall. The crawlspace floor is

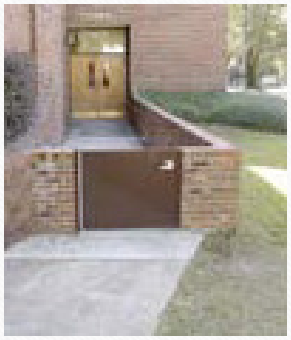
Building Resilience: Flood Protection

Private Property / Adaptation Measures

Door & Window Dams

Elevating a Building

Elevating Interior



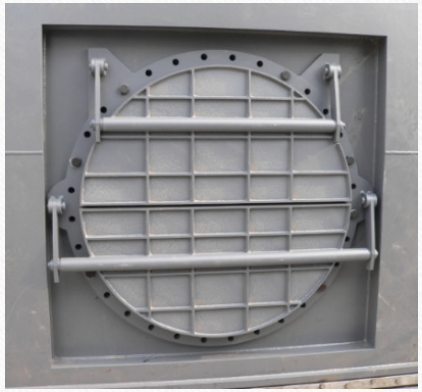
Perimeter Barrier

Living Shoreline

Building Resilience: Flood Protection

Public Property / Adaptation Measures

- Shared responsibility with the Naval Academy for protecting 4,500 linear feet of shoreline adjacent to the Academy.
- Backflow preventers installed at each sewer connection.
- Floodwalls, coffer dams, pumping station, temporary pumps, backflow preventers, flap valves and duckbill valves needed.



Building Resilience

Annapolis Historic Property Tax Credit

The tax credit is applied to expenses for rehabilitation and hazard mitigation equal to:

- 25% of qualified preservation, restoration and/or rehabilitation on residential and commercial properties to address hazard mitigation improvements

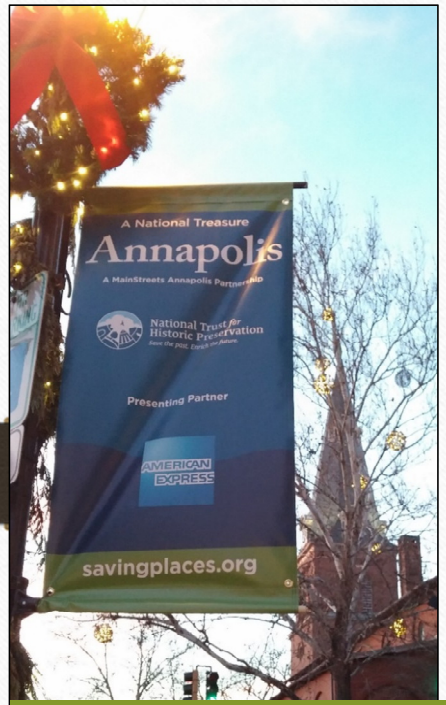
Community Resilience: Rebuilding After Disaster

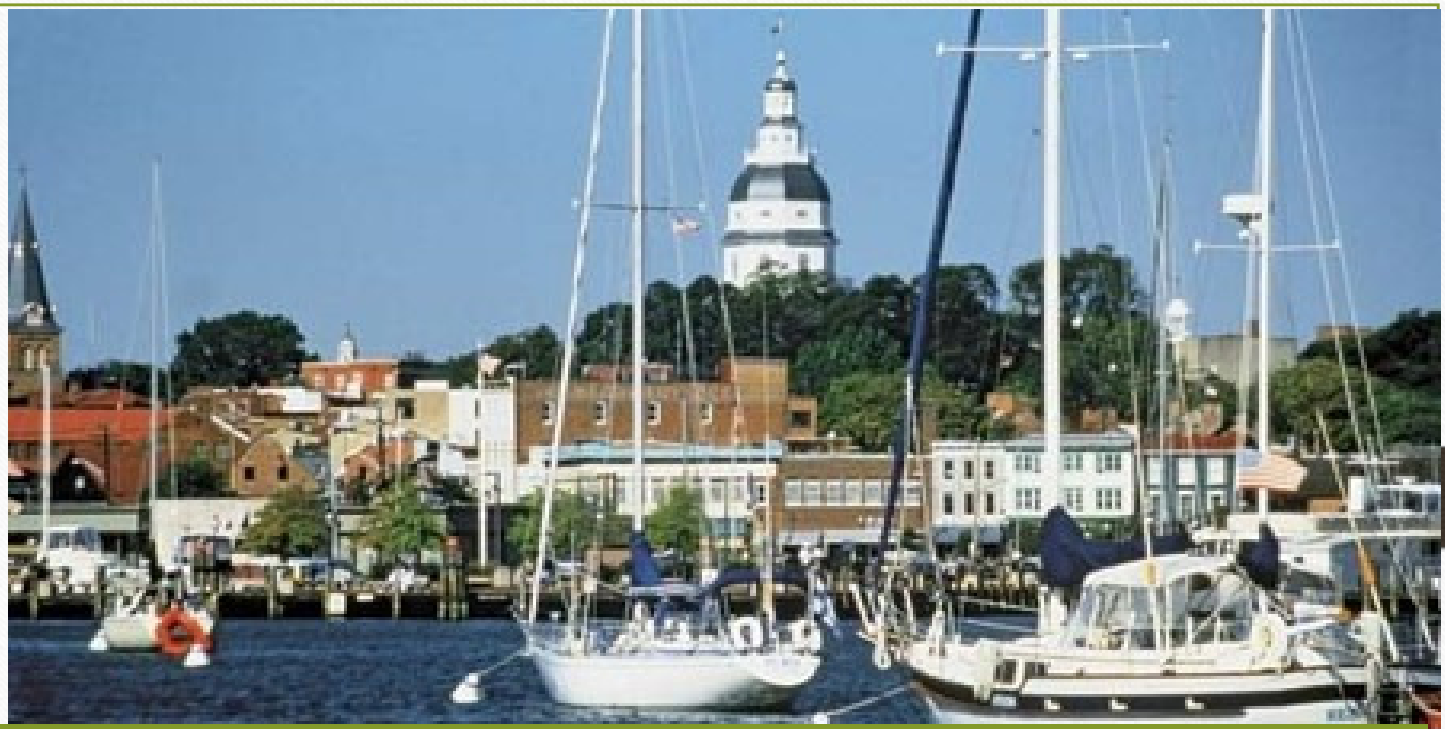
Post-Disaster Response

Crisfield, Maryland – Hurricane Sandy

"Annapolis is full of old architecture and if the powers that be had but the wisdom to preserve them, would become a place of great interest in the future."

-- Francis Blackwell Mayer, 1884
(resident, artist and Founder of the Local Improvement Association)





Building Resilience:

Economic and Environmental Impacts of Historic Preservation

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