PART 1 — Substantial Improvements to Historic Structures in Special Flood Hazard Areas (SFHAs)

FEMA and DCR GUIDANCE + LOCAL CASE STUDIES

Virginia Chapter of the American Planning Association
2021 Annual Conference
Deep Dives Session
Tuesday, July 20
11 a.m. —12:40 p.m.

BUILDING RESILIENT SOLUTIONS
Thoughtful, informed retrofit design.

COMMONWEALTH PRESERVATION GROUP

WPA WORK PROGRAM ARCHITECTS

Session Overview and Learning Objectives

- Review FEMA and VDCR guidance
- Understanding of key terms and definitions used
- Survey of local ordinances
- Implementation case studies
- Sharing experiences and challenges
- Continue dialogue to foster process improvements

Audience Polling

How FEMA Allows Substantial Improvements to Historic Structures in SFHAs:

Guidance to States and Localities re: Historic Structures

Presenter: Peter Johnston, Urban Designer/Industrial Designer, Work Program Architects (WPA), Norfolk, VA

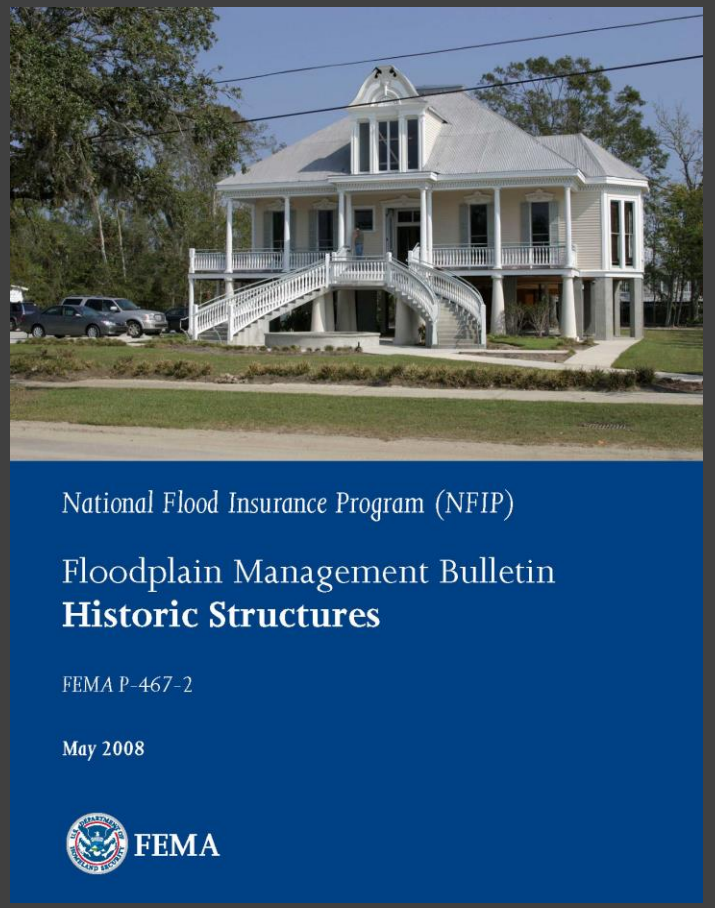
Historic Structures and the NFIP

Historic Structures and the NFIP

"The National Flood Insurance Program (NFIP) gives special consideration to the unique value of one of our Nation's most significant resources — its historic buildings, landmarks, and sites. It does so in two ways.

First, the NFIP floodplain management regulations provide significant relief to historic structures. Historic structures do not have to meet the floodplain management requirements of the program as long as they maintain their historic structure designation.

Secondly, a designated historic structure can obtain the benefit of subsidized flood insurance through the NFIP even if it has been substantially improved or substantially damaged so long as the building maintains its historic designation."



Two options — Pick one*

Variance

- Case-by-case
- Process

Exception

- Uniformly applied
- Administrative

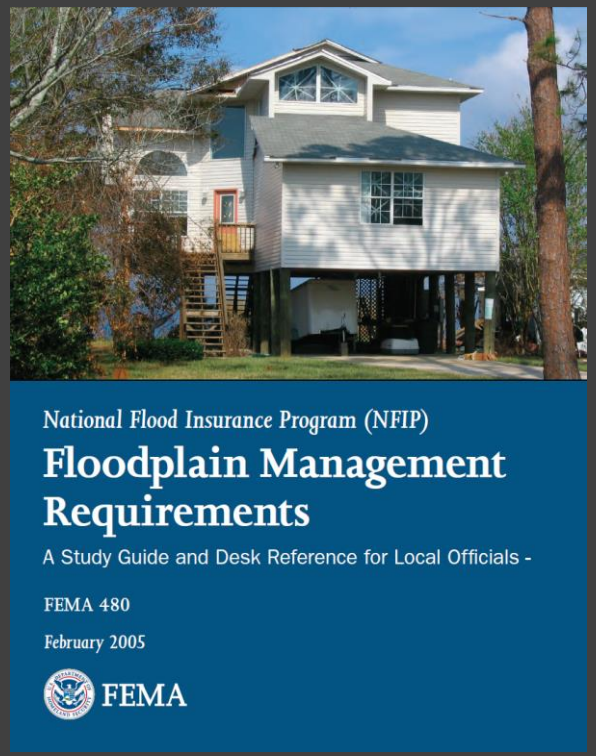
Substantial Improvement/Substantial Damage *Exception*

DEFINITIONS

- *Substantial improvement* means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either:
    1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or
    2. Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".

Title 44, Chapter I, Subchapter B, Part 59, Subpart A, §59.1

Substantial Improvement/Substantial Damage *Exception*



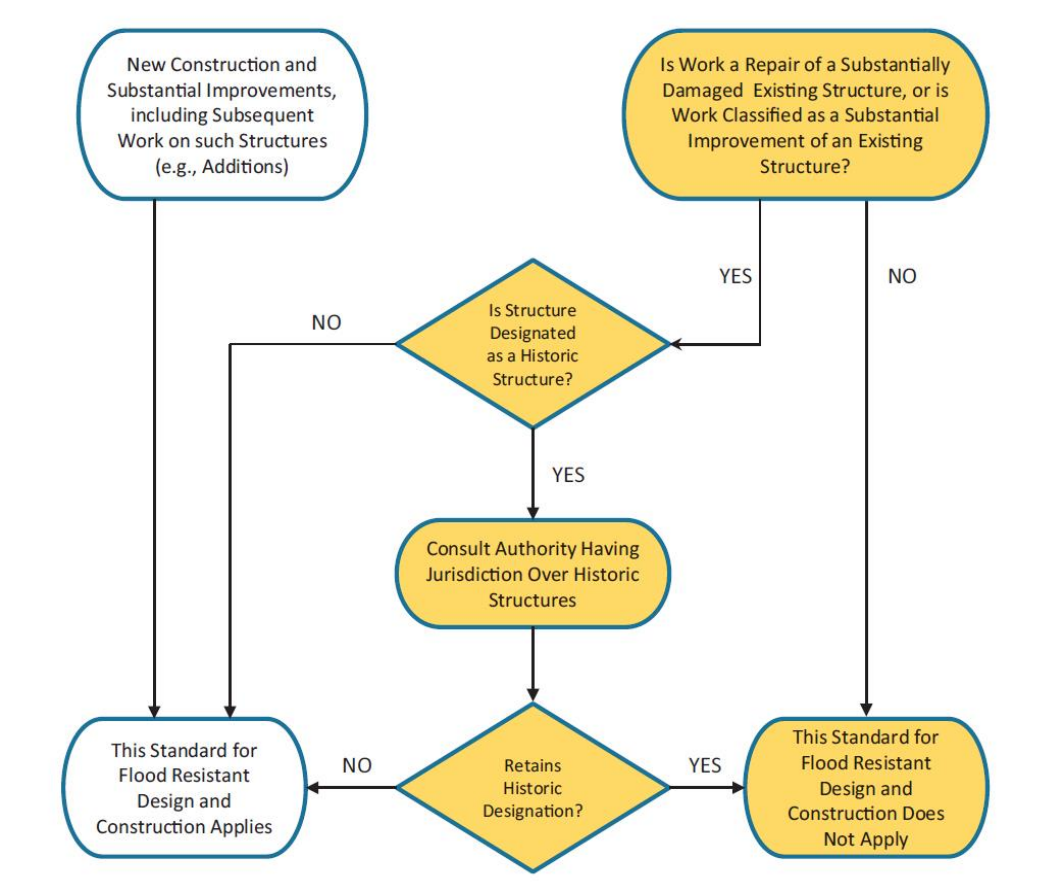
NFIP Floodplain Management Requirements - FEMA 480

1. The building must be a bona-fide "historic structure"
2. The project must maintain the historic status of the structure
3. Take all possible flood damage reduction measures

   Even though the exemption to the substantial improvement rule means the building does not have to be elevated to or above BFE, or be renovated with flood-resistant materials that are not historically sensitive, many things can and should be done to reduce the flood damage potential.

FEMA 480, Floodplain Management Requirements

Substantial Improvement/Substantial Damage *Exception*



- NFIP — Code of Federal Regulations, Title 44, Subchapter B
- FEMA Floodplain Management Requirements — FEMA 480
- FEMA P-758 — Substantial Improvement/Substantial Damage Desk Reference
- FEMA 213 — Answers to Questions About Substantially Improved/Substatially Damaged Buildings
- FEMA P-467 — Floodplain Management Bulletin, Historic Structures

- International Building Code
- Virginia Construction Code
- ASCE 24-14 Flood Resistant Design and Construction

Historic Structure
Variance

"Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure."

Title 44, Chapter I, Subchapter B, Part 60, Subpart A, §60.6 (a)

Historic Structure
Variance

- Many local and state ordinances
- International Building Code
- Virginia Construction Code

Requires submission of application for variance to established Appeals Boards. This may be multiple boards depending on how the community handles building code and zoning appeals.

Two options — Pick one*

Variance

- Case-by-case
- Application Process

SI/SD Exception

- Uniformly applied
- Administrative

"Communities should adopt only one option to address “historic structures.” Some communities have chosen to adopt an ordinance that requires variances for improvements or repairs to “historic structures” and do not exclude such improvements from the substantial improvement definition in their ordinance. Other communities include the “historic structures” exemption as part of their “substantial improvement” definition. In either case, “historic structures” can be excluded from the NFIP elevation and floodproofing requirements."

FEMA P-467-2 Floodplain Management Bulletin: Historic Structures

*Two options — Explain how and when to use each

Variance

- Particular cases
- Application Process

SI/SD Exception

- Uniformly applied, unless variance is required
- Administrative

- The community is free to include both options in order to better address expected applications within that community.
- The code should include specific guidance on when each procedure is intended to be applied.
- Exception and variance are both applicable irrespective of building use

Virginia Model Ordinance

Substantial improvement: Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the city's assessed value or the market value of the structure before the start of construction of the improvement as established by an independent, unbiased, third-party appraiser licensed in the Commonwealth of Virginia. This term includes structures which have incurred or substantial damage regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions,
2. Any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure,
3. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, must comply with all ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement will cause removal of the structure from the National Register of Historic Places or the state inventory of historic places must be obtained from the Secretary of the Interior or the State Historic Preservation officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.

Not a Get out of Jail Free Card

SI/SD Exception

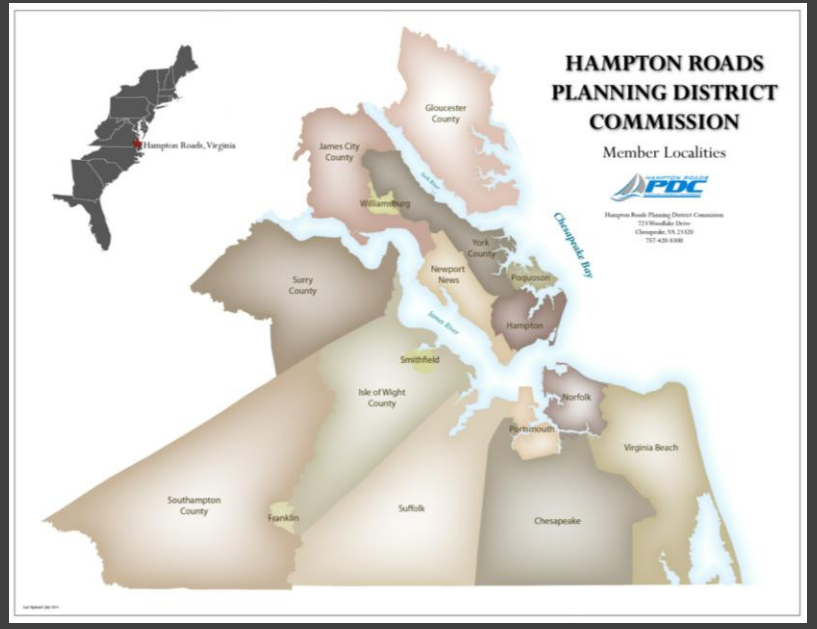
- Included in NFIP
- Intent is to provide *relief* to the owners of historic structures and to *encourage* the registration and continued use of historic structures
- Targeted, calculated tool for historic preservation

A Survey of Local Floodplain Ordinances in Coastal Virginia

Presenter: Ashlen Stump, Data Analyst and Business Operations Manager,
Building Resilient Solutions (BRS), Norfolk, VA

Coastal Virginia

- Hampton Roads PDC
- Middle Peninsula PDC
- Accomack-Northampton County PDC



https://www.hrpdcva.gov/uploads/images/localities.jpg

https://www.mppdc.com/

http://www.virginiaplaces.org/regions/eshore.html

Relief Language in Local Floodplain Ordinances

1. Substantial Improvement Definition Exemption (FEMA)
2. Substantial Improvement Definition Exemption **plus** additional requirement language (VDCR)
3. Variance Language (FEMA)
4. Existing Structures in Floodplain Areas Exception (VDCR)

Relief Language in Coastal Virginia's Local Ordinances

Localities using language provided by FEMA — Light Blue

- Substantial Improvement Exemption: 100%
- Variance Language: 92.31%

Localities using language from VDCR MFPO — Dark Blue

- Substantial Improvement Exemption, with additional requirements: 76.92%
- Existing Structures Exception: 19.23%

Data as of July 13, 2021. Data gathered by CPG and BRS from online, publicly accessible data sources (such as Municode and Locality Websites).

	Type of Relief Language for Historic Structures in Floodplain Ordinances			
Locality	Substantial Improvement Exemption?	Added to Substantial Improvement Defintion?	Variance Language?	Existing Structures Exception?
Accomack	Yes	Yes	Yes	No
Cape Charles	Yes	No	Yes	No
Chesapeake	Yes	Yes	Yes	No
Chincoteague	Yes	No	Yes	No
Essex	Yes	Yes	Yes	No
Franklin	Yes	Yes	Yes	Yes
Gloucester	Yes	No	Yes	No
Hampton	Yes	Yes	Yes	Yes
Isle of Wight	Yes	Yes	Yes	No
James City	Yes	Yes	Yes	No
King and Queen	Yes	Yes	Yes	Yes
King William	Yes	Yes	Yes	No
Mathews	Yes	Yes	Yes	No
Middlesex	Yes	Yes	Yes	No
Newport News	Yes	Yes	No	No
Norfolk	Yes	No	Yes	No
Northampton	Yes	No	Yes	No
Poquoson	Yes	Yes	Yes	No
Portsmouth	Yes	Yes	Yes	No
Southampton	Yes	Yes	Yes	Yes
Suffolk	Yes	Yes	Yes	No
Surry	Yes	Yes	Yes	No
Virginia Beach	Yes	Yes	Yes	No
West Point	Yes	No	Yes	No
Williamsburg	Yes	Yes	Yes	Yes
York	Yes	Yes	No	No
Percent of Localities with this language	100.00%	76.92%	92.31%	19.23%

Coastal Virginia Floodplain Administrator Contact Information				
Locality	Floodplain Administrator	Title	Phone	Email
Accomack	Mark Bowden	Deputy Director, Building & Code Department	757-787-5788	mbowden@co.accomack.va.us
Cape Charles	Jeb Brady	Code Official	757-331-2176	codeofficial@capecharles.org
Chesapeake	Jay B Tate	Director of Development & Permits	757-382-6263	jtate@cityofchesapeake.net
Chincoteague	Bill Neville	Planning	757-336-6519	wneville@chincoteague-va.gov
Essex	Wyn Davis, Jr.	Deputy Zoning Administrator	804-443-4951	awdavis@essex-virginia.org
Franklin	Carlee Smith	Environmental Specialist	757-562-4515	crsmith@franklinva.com
Gloucester	Brent Payne	Director of Engineering Services (Interim Floodplain Administrator)	804-693-5480	bpayne@gloucesterva.info
Hampton	Steve Shapiro	Deputy Director of Community Development	757-727-6246	sshapiro@hampton.gov
Isle of Wight	Kim Hummel	Environmental Planner	757-357-9114	khummel@isleofwightus.net
James City	Darryl Cook	Assistant Director, Stormwater and Resource Protection Division	757-253-6781	darryl.cook@jamescitycountyva.gov
King and Queen	Donna Sprouse	Assistant Zoning Administrator	804-785-5975	dsprouse@kingandqueenco.net
King William	Sherry Graham	Zoning Administrator	804-769-4978	sgraham@kingwilliamcounty.us
Mathews	Kevin Zoll	Building Official	804-725-7171	kzoll@mathewscountyva.gov
Middlesex	G. David Selph	Building Inspector	804-758-4305	dselph@co.middlesex.va.us
Newport News	Hai Tran	Floodplain Manager/Engineer	757-926-8264	tranhn@nnva.gov
Norfolk	Matthew Simons	Principal Planner	757-664-4750	matthew.simons@norfolk.gov
Northampton	Katie Spady	Environmental Specialist	757-678-0443	kspady@co.northampton.va.us
Poquoson	Dannan O'Connel	Planner	757-868-3040	dannan.oconnell@poquoson-va.gov
Portsmouth	Meg Pittenger	Environmental Manager	757-393-8836	pittengerm@portsmouthva.gov
Southampton	Donald Goodwin	Director of Community Development	757-562-8580	dgoodwin@franklinva.com
Suffolk	David Hainley	Director of Planning and Community Development	757-514-4005	dhainley@suffolkva.us
Surry	Chad Heath	Zoning Administrator	757-866-8427	chazzkell.electric@yahoo.com
Virginia Beach	Whitney McNamara	Environmental Planner	757-385-4621	wmcnamar@vbgov.com
West Point	Holly McGowan	Director of Community Development	804-843-3563	hmcgowan@west-point.va.us
Williamsburg	Heather Markle	Zoning Administrator	757-220-6131	hmarkle@williamsburgva.gov
York	Joe Brogan	Chief of Stormwater Programs	757-890-3831	broganj@yorkcounty.gov

Coastal Virginia Floodplain Administrator Contacts

Data as of July 13, 2021. Data gathered by CPG and BRS from VDCR Floodplain Contacts webpage (https://www.dcr.virginia.gov/dam-safety-and-floodplains/floodplain-directory).

Where to look…

- Definitions > Substantial Improvement
- Existing Structures in Floodplain Areas
- Variances > Factors to be considered

- What language does your ordinance use to provide relief to historic structures?

Audience Engagement — Floodplain Ordinance Review

Take a few moments to read through your local floodplain ordinance(s) and find key terms and definitions presented.

Notice if the ordinance provides a “variance”, an “exception,” or an “exemption” for historic structures.

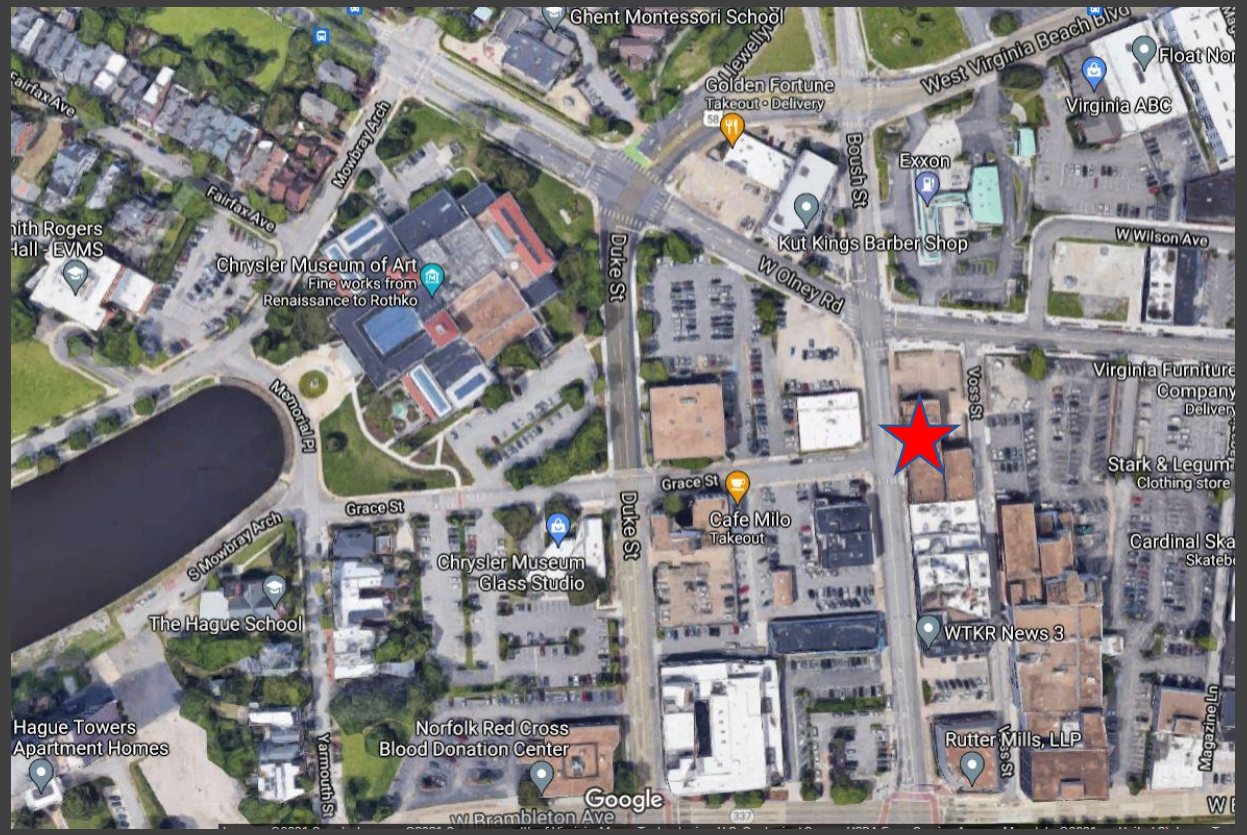
Q & A

Case Study #1

The Atlantic Permanent Building (740 Boush St.)

Presenter: Mel Price, Principal and Architect, Work Program Architects

Case Study #1 — Context



- Ca. 1954
- 22,466 SF
- Norfolk Auto Row Historic District
- Smith Creek Watershed
- AE Flood Zone
- Adjacent grade: 5.2' – 5.6'
- BFE: 8'0 "
- DFE: 11'0"
- Located in “Lake Olney”
- Assessed Value: $1,010,000

Case Study #1 – The Atlantic Permanent Bldg.

Blue Sky Flooding

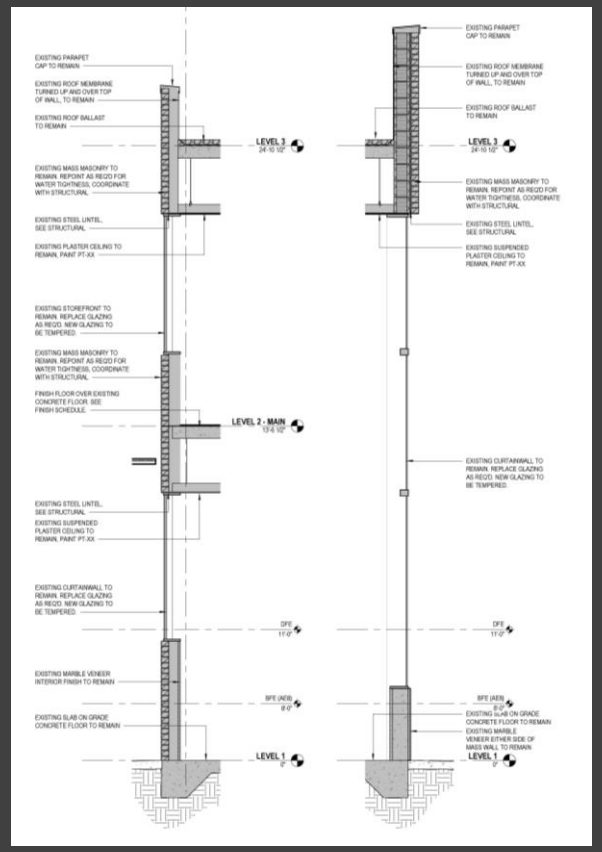
Case Study #1 – The Atlantic Permanent Bldg.

740 Boush Street

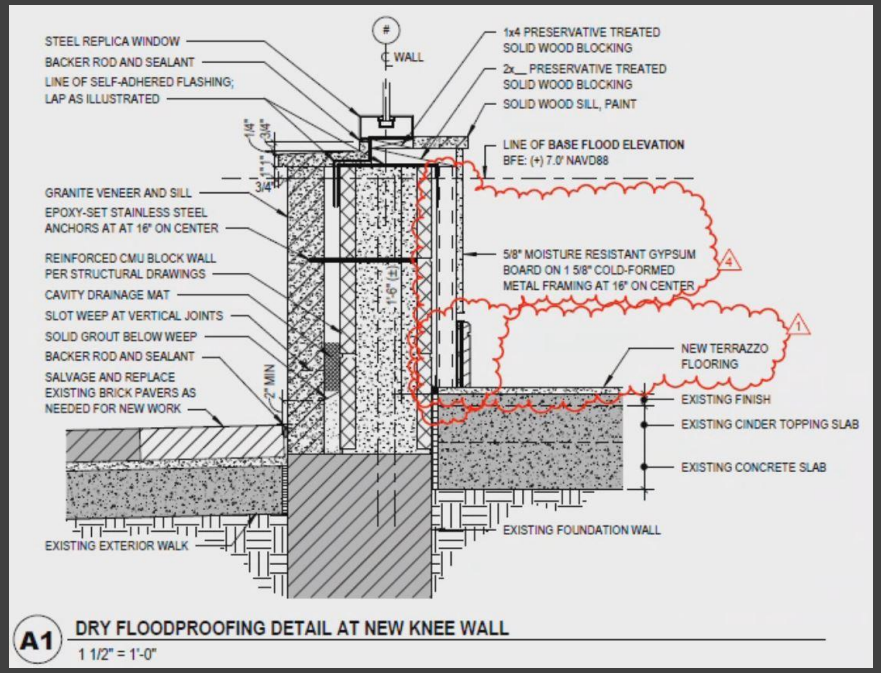
400 Granby Street

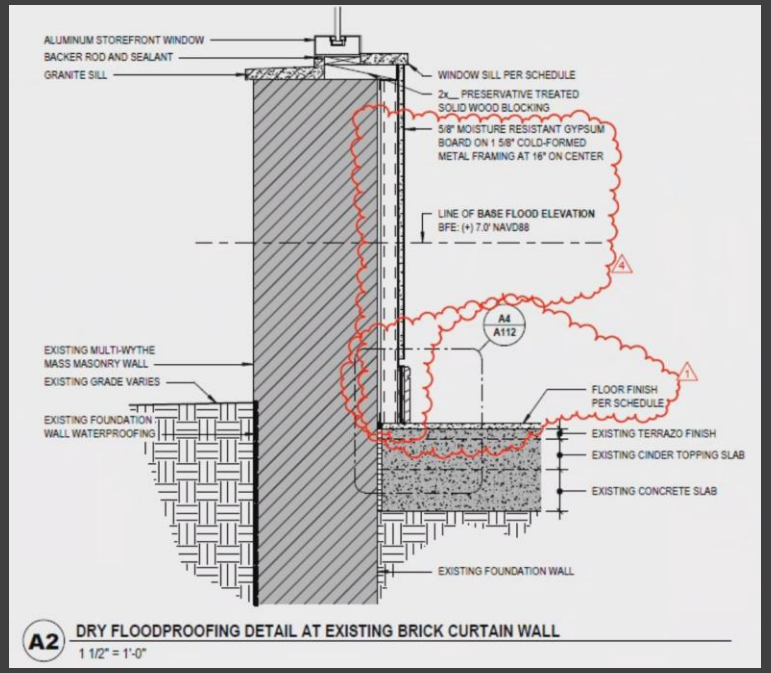
Case Study #1 – The Atlantic Permanent Bldg.

740 Boush Street



400 Granby Street





Case Study #1 – Questions

Big-picture questions on Floodproofing

- How does what we detail affect public safety?
- Do we worry about catastrophic failure and collapse?
- Are we willing to apply our seal that represents the protection of health, safety and welfare

Detailed Questions

- How do turn-of-the-century buildings differ from mid-century modern and international style?
- Should we really be mixing dry floodproofing and we floodproofing?
- Do we really believe that we can adapt historic walls to hold 6-feet of water inside or outside of the building safely?

Case Study #1 – The Atlantic Permanent Bldg.

Outcome after discussions and City review — take exceptions

- All interior finishes on the 1st floor replaced with flood-damage resistant materials up to the DFE per the FEMA wet floodproofing technical bulletin.
- All non-flood damage resistant wall structures replaced with flood damage resistant materials. A non-wicking break shall be inserted into finishes between flood damage resistant materials and non-resistant materials.
- Electrical service closet dry floodproofed to the DFE. All electrical circuits and outlets elevated above base flood elevation.
- Try to elevate everything above DFE once all equipment sizes are finalized if it can fit with the bottom of panels 5.3' above finish floor and the ceiling at 10'
- Elevator retrofitted in accordance with the FEMA technical bulletin on elevators in flood zones.
- Glass below the DFE shall replaced with shatterproof glass.
- Provide low (12") manually installed flood barriers at building entrances to mitigate nuisance flooding
- Provide two sump pumps to be coordinated with future tenant fit out, to remove remaining flood water should a flood event occur

Q & A

Case Study #2

Multi-family Residential

Presenter: Katie Paulson, Historic Preservation Project Manager,
Commonwealth Preservation Group

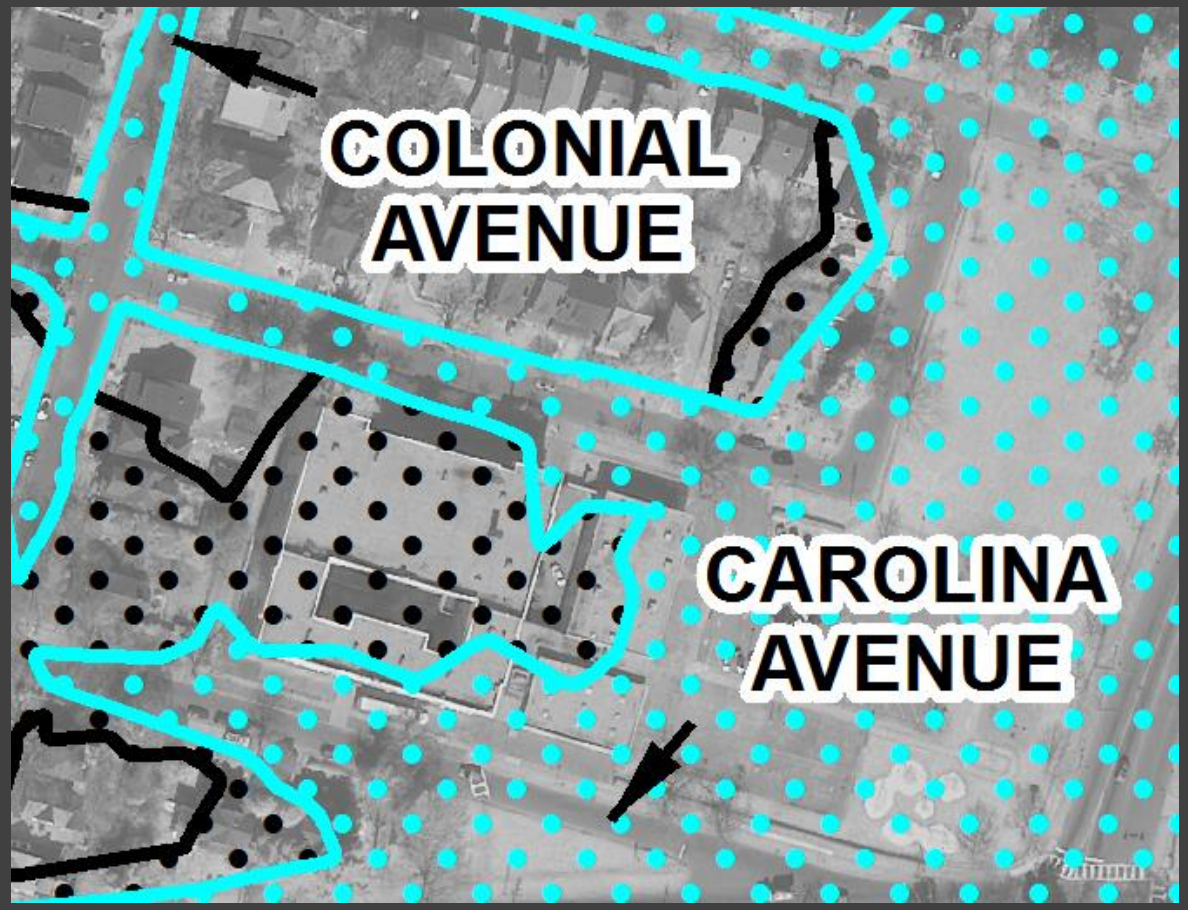
Case Study #2 — Stuart School

- Ca. 1920
- 70,115 SF
- Colonial Place Historic District
- AE and X Flood Zones
- BFE: 8'0"
- DFE: 11'0"
- Assessed Value: $4,635,600

Case Study #2 — Stuart School

- Traditional Building Type
  - Two-story historic school building with raised basement and multi-wythe brick masonry perimeter walls.
  - Modern (1970s) cafeteria and gym additions to the east.
  - Located in the Colonial Place Historic District, with a period of significance from 1903-1941.
  - Subject of an historic rehabilitation tax credit application; building being converted from educational (vacant) to multi-family residential.

Case Study #2 — Examination of Options



- Initially examined the use of flood vents (wet floodproofing) to meet floodplain requirements.
  - **Too Invasive:** Would require 35 32" x 16" exterior through-wall penetrations, as well as 45 interior 12" x 24" openings to balance the hydrostatic pressure.
  - **Not Functional:** The grade at the north of the building does not allow for water to enter and exit freely, impacting the effectiveness of this solution.

Case Study #2 — Examination of Options

Dry Floodproofing

- Requires all openings below the flood risk level to be temporarily or permanently sealed, impacting 40 historic windows and six historic doors.
  - Options include masonry infill or exterior/interior flood gates.
- Requires exterior foundation surfaces to be impervious to water, usually through the use of irreversible coatings.

Case Study #2 — Examination of Options

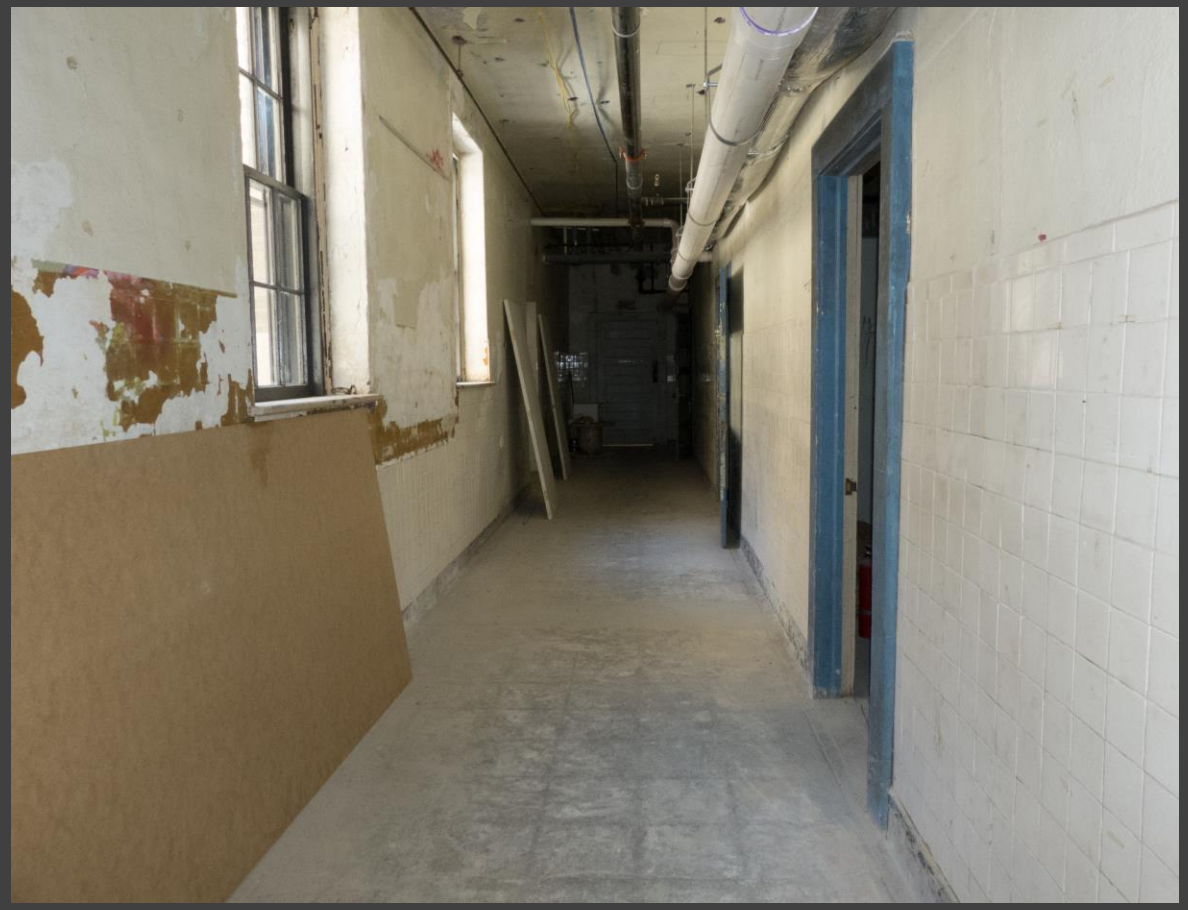
Modern addition entrance at east elevation before (above) and after (right).

Elevate the Interior Structure

This method allows for the insertion of a new floor that clears the flood risk level, and was utilized within the modern addition where the floor level was raised 3'-0".

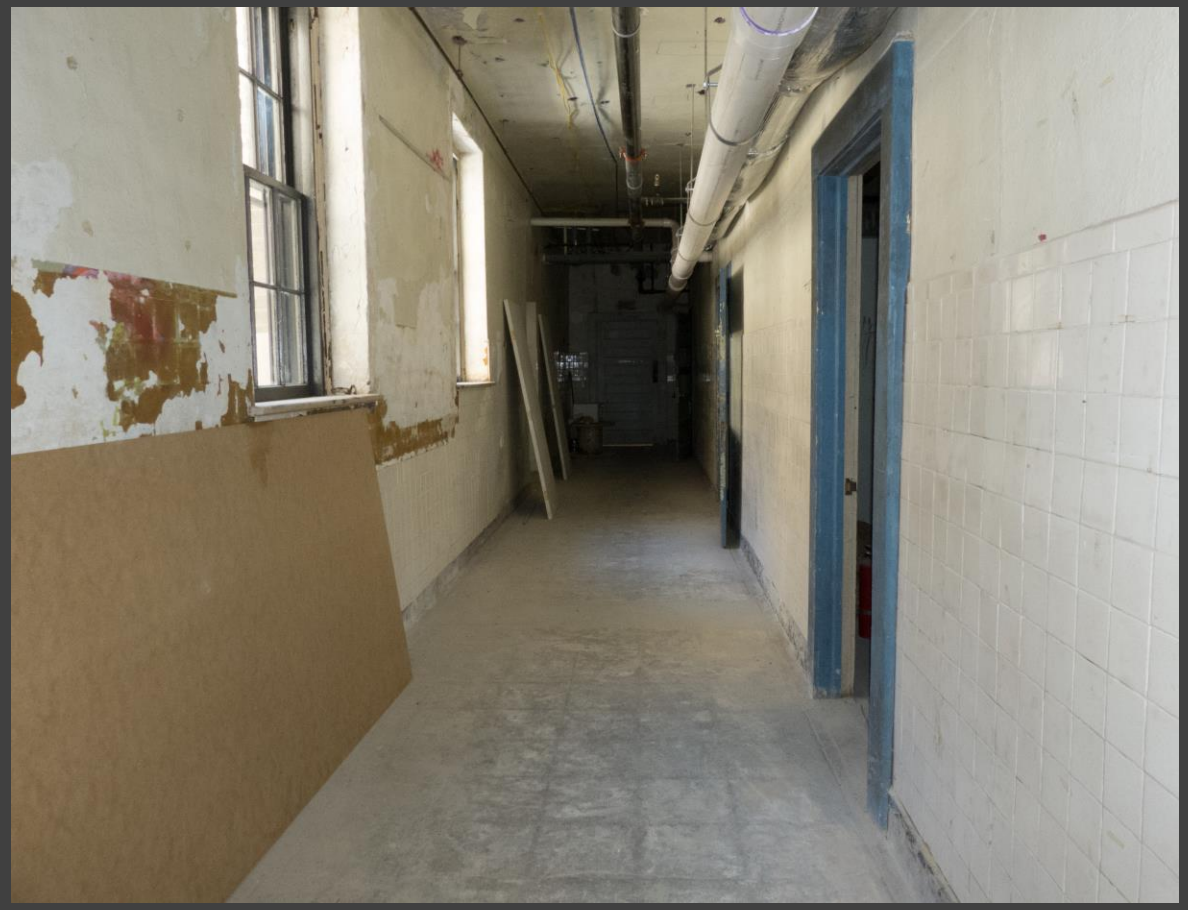
- The south elevation entrance, necessary for ADA access, is 8'-0" and the basement floor would need to be elevated 5'-0", making this area impassable.
- The floor elevation would also conflict with the south elevation windows, which measure 4'-1" above the finished floor.

Case Study #2 — Implemented Solution



- **Abandon the basement**
  - Basement utilized for utilities and storage. All systems and equipment installed above the BFE, and restricted areas will be secured and mothballed per preservation standards.
  - Allows for the retention of historic materials (interior and exterior), historic circulation paths, and building access, while reducing the risk of loss during flooding events.
  - Existing finishes in the basement will be retained; these materials are inherently flood resistant (ceramic tile wall coverings, plaster walls, and VAT flooring).

Case Study #2 — Implemented Solution



- **Develop a Flood Emergency Response Plan (FERP)**
  - At the time of a flood warning, steps outlined in the plan will be taken to ensure tenant safety and reduce damage to the building.
    - Sandbags and sump pumps to be installed to assist with loss prevention.
    - After the flood event, dehumidifiers to be used to remove residual moisture.
    - Prior to reoccupancy, moisture content and air quality will be tested, and systems will be inspected to ensure the building is safe for tenants to return.

Q & A

Case Study #3

Single-family Residential

Presenters: Jeryl Rose Phillips, AICP, Project Manager, Building Resilient Solutions and Kerry Shackelford, Contractor/Builder, Owner — Museum Resources Construction & Millwork and Co-Owner — Building Resilient Solutions, Norfolk, VA

Case Study #3 — Context

- Ca. 1921
- Family-owned since 1964
- Chesterfield Heights NR Historic District
- Ohio Creek Watershed (EB Elizabeth R.)
- AE Flood Zone
- BFE: 9
- DFE: 12; HVAC: 13
- Multiple flood events since 2009
- NFIP Insurance Premium: >$4K
- Assessed Value: $73K
- Substantial improvements proposed for flood retrofits and home renovation

Historic Photos: Fall 2018

Flood Event

Typical Post-Rain Event Photos:

Property impacted by site topography, adjacent development, poor drainage

External Hot Water Tank — Elevated

AC Compressor — Elevated

FIGURE 7
ALTERNATIVE 4 (PREFERRED ALTERNATIVE)

Foot of Filer Street and 8' Marsh Levee — Ohio Creek Watershed Project

8' Marsh Levee — Ohio Creek Watershed Project

Site-Specific Circumstances

- Recurrent flooding prior to public infrastructure project
- FEMA claims paid, replacement only – no preventative measures, no permits obtained
- Recovery time out of home, temp housing and storage costs not covered
- Public infrastructure project should prevent future tidal flooding of property
- Stormwater (rain events) remains an issue
- Bowl-shape topography of parcel
- Caring for elderly parent with mobility issues
- All bedrooms currently on 2nd floor
- No mortgage

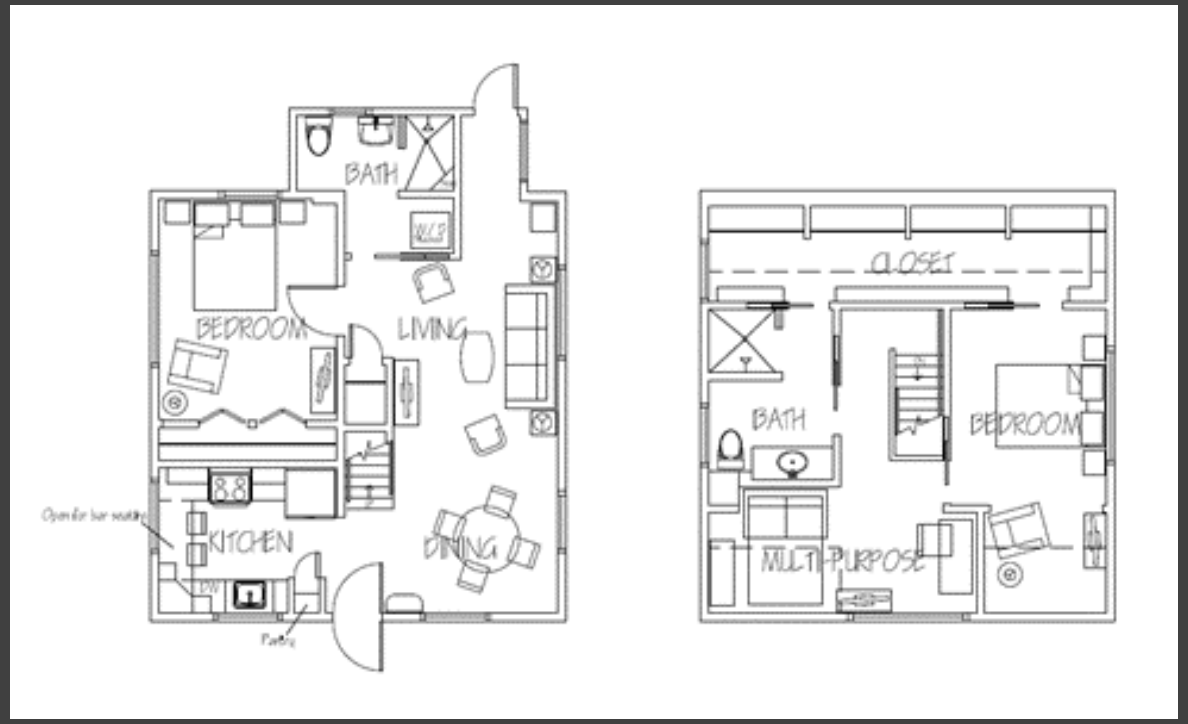
Owner Goals

- Renovate to improve parental mobility and care
- Modern improvements to age in place
- Flood risk/flood damage reduction
- Decrease recovery time and costs
- Lower NFIP premiums
- Use retirement savings for retirement, not new home or improvements!

Proposed Renovation

Existing Floor Plan

Proposed Floor Plan



SFHA Exemption for Historic Structures

Qualifications for Exemption:

- Designated historic structure
  - National Register Historic District — contributing structure
- Proposed substantial improvements exempt from compliance with floodzone ordinance requirements for AE zone

Proposed Plan of Development:

Home Renovation & Resiliency Retrofits

Please provide a detailed description of the proposed work to meet the local floodplain ordinance requirements identified above. If there is more than one option for compliance (e.g. elevate or dry-floodproof), please include the proposed work for each option in the description. If specific products will be used, such as flood vents, these should also be described. Design plans, photos, etc. must be attached. If additional space is needed, please attach additional pages.

Flood Resiliency Retrofits — Typical Compliance

Home Elevation

Typically, elevation of all habitable spaces above the base flood elevation (BFE) of 9.0 feet and any portion of the structure below the design flood elevation (DFE) of 12.0 feet would have to meet requirements to balance hydrostatic pressure in a flood event. Home elevation above the BFE is not feasible for three reasons:

- The magnitude of elevation required to meet DFE would be significant, it would impact the integrity of the property and detract from its historic status. It would also adversely impact the historic streetscape.
- The current assessed property value is less than the cost would be to the elevate the entire structure above BFE and therefore is not financially prudent.
- Lastly, the property owner is caring for an elderly parent living in the residence; this parent has mobility limitations and could not navigate entry and egress if the property were elevated to its DFE.

The BFE for the property is 9.0 (108"). The top of bottom floor is at 4'0" (48").
The existing first floor ceiling height in the dwelling is 7’11" (95").
Therefore, it is impossible to meet the BFE while retaining habitable space within the first floor envelope.

Flood Vents

Foundation vents previously installed have not been effective. New flood vents will be installed per the FEMA-approved selection provided in the attachments. However, it should be noted that the dwelling sits at the lowest point on the street.

Basement Infill

Since the house is built on a crawlspace, there is no basement to infill.

Elevation of Utilities and Systems

Compliance with elevation of electrical/HVAC is feasible. A detailed summary of planned work is provided in the Scope of Work section.

Flood Resiliency Retrofits — Approved Plan

Scope of Work

Taking into account the site and building constraints, the project has been designed to:

- reduce flood risk,
- implement wetproof solutions; and,
- facilitate cost effective and time efficient repair process should flooding occur in the future.

As an added challenge, the proposed interior renovations are being done to accommodate universal living needs within the home for the owner. The owner desires to remain in the property for her natural life.

Site Improvements

- The applicant proposes to regrade the site to promote water flow to the rear of the parcel, as intended by the larger neighborhood project; this work has been and will continue to be coordinated with the Ohio Creek Watershed Project
- There is currently a low point under the dwelling; there will be nominal grading to eliminate that condition and facilitate water flow to the back of the site.
- The concrete driveway will be removed and replaced with washed stone (Bluestone #57) to allow water to filter through, creating a pervious surface and reducing site imperviousness to improve stormwater infiltration into the soil.
- Improve infiltration and reduce overall site imperviousness: There is an opportunity to design a rain garden in the front and rear yards through redesigning these outdoor to improve stormwater retention and assimilation through soil. Pursue Elizabeth River Project's Rain Garden design grant program for this.

Flood Resiliency Retrofits — Approved Plan

Exterior Improvements

- The foundation and underlying structural system were compromised by a previous contractor ***during prior post-storm FEMA funded flood remediation efforts***. ***The original structural system has been modified so that the new structure is supported by non-load bearing skirt wall.*** As a part of this project, the contractor will repair this unsafe condition and reinstate a structurally sound foundation and flooring system. The new foundation will return to a system of piers with a wall in between, laid on a standard footing, to provide a stable foundation. Where needed, new footings meeting standard code will be installed under piers. This new foundation will ensure the building is safe during major storm events, unlike the current condition.
- In conjunction with the foundation repairs, the existing electrical and plumbing that is currently in the crawl space will be removed and relocated. The electrical system will be elevated above base flood elevation as described in interior improvements. The plumbing will be reworked to support the new layout and meet code.
- Exterior siding will be replaced entirely with new vinyl; mold and rot resistant pressure treated sheathing (rigid board) will be installed under the new siding up to DFE.
- The existing roofline is compromised and will be repaired; in conjunction with that work, properly functioning gutters and downspouts will be installed to direct water flow in concert with the regrading mentioned above.

Flood Resiliency Retrofits — Approved Plan

Interior Improvements

- The first floor of the dwelling will be modified to universal design for accessibility and to minimize risk and cost associated with repairs from any future flooding. The flood protection strategies are as outlined below. The owner will also be supplied with a checklist for pre-flood preparation and post-flood clean up to ensure proper steps are taken to minimize risk and cost.
- Existing subflooring and finish floor will be removed. Rot and mold resistant pressure treated subfloor (oak) and heart pine flooring will be installed. These flooring materials are known to have a high resiliency factor during and post-flood event compared to other woods and engineering flooring and, with adherence to a proper drying procedure, can eliminate the need for replacement. In the bathroom and kitchen, ceramic tile will be laid; the bathroom will have a barrier free shower floor with fiberglass walls. These materials are proven to be flood resistant if properly dried out post flood event.
- New wall framing below the DFE will be rot and mold resistant pressure treated material.
- New first floor baseboard and door trim will be rot and mold resistant heart pine.
- New drywall below the DFE will be rot and mold resistant ***Fibrex*** board material. Drywall will be held 3" above the finish floor on the first floor so that baseboards (at 5") can be popped off the walls for ease of drying out wall cavities.

Q & A

Audience Engagement — Application Process

Question:

1. Share with the group your perspective and experience with implementing or using the local ordinance and application process for historic structures in SFHAs.
2. What has worked well, what isn't necessarily clear and needs another look?

Audience Engagement — Working Group

Question:

1. Do you have interest in continuing this discussion to help identify “glitches” to provide feedback to DCR and FEMA Reg 3 from the front lines to help make the Model Ordinance better for local use and implementation?

Provide contact info/affiliation in Chat box.

Audience Engagement — Final Q & A

Questions for presenters?

Closing thoughts?

THANK YOU! Speaker Contacts

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