Proposed Floodplain Regulation Updates

DEPARTMENT OF ENERGY & ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Last Updated June 2021

Today's Agenda

- The District's Floodplain Management Program
- Defining a floodplain
- Types of flooding in the District
- Flood Risk and Impacts
- Existing Regulation-What We Regulate Now?
- Proposed Regulation-What May Change?
- Next Steps & Overview of Upcoming Workshops

The District's Flood Risk Management Program

The District's Flood Risk Management Program is based on the NFIP Program

In 1968, Congress established the **National Flood Insurance Program (NFIP)** to reduce flood damage, save lives, and protect structures through:

1. Mapping,
2. Regulation, and
3. Flood Insurance

The District's Flood Risk Management Program

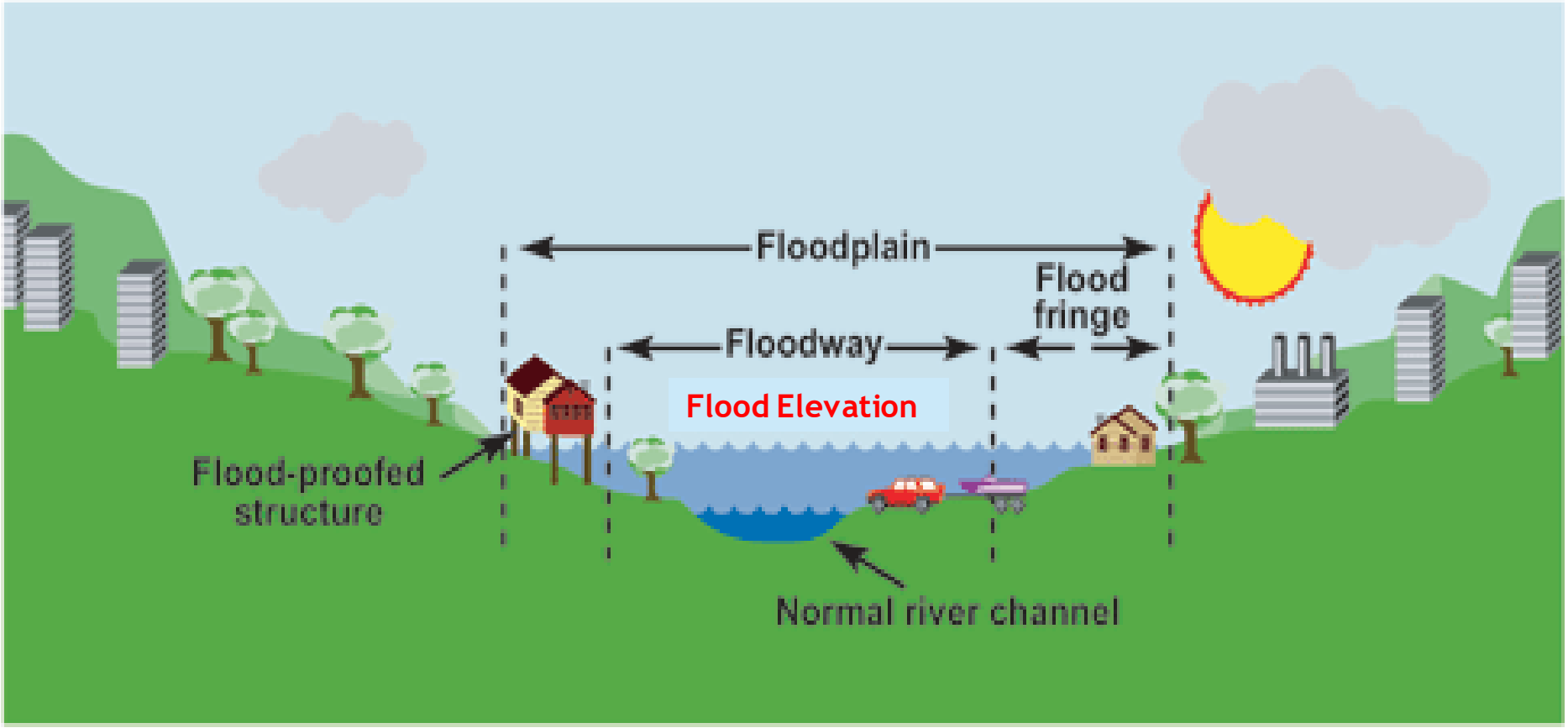
Established in 1985, The Distrct's Flood Risk Management Program aims to reduce flood damage, save lives, and protect assets through:

1. Mapping,
2. **Regulation**
3. Flood Insurance
4. Mitigation Projects
    - Emergency Preparedness Planning & Projects
    - Outreach, Education, and Engagement
    - Structural Retrofits
    - Flood Risk Reducing Infrastructure

Have you completed the poll?

What is a floodplain?

Definition-Any area susceptible to inundation by water from any source



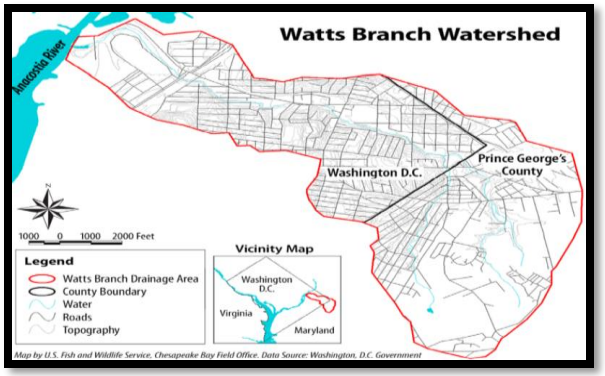
Types of Flooding

3 Types of Flooding in D.C.

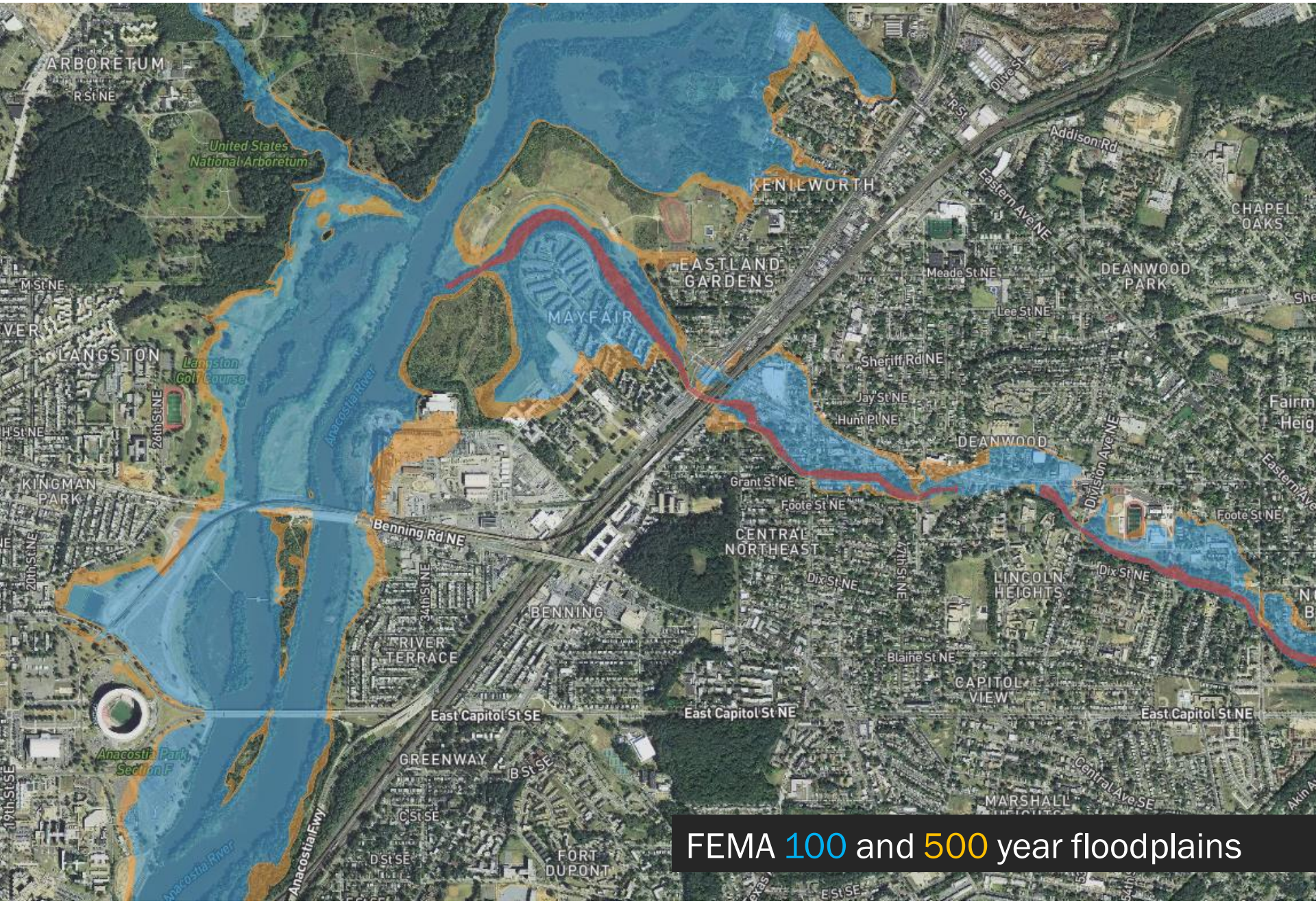
- **Riverine**-flooding caused by the overflow of riverbanks from rainfall within the watershed. FEMA maps.

- **Tidal**-flooding caused by storm surge and wind activity. FEMA Maps.

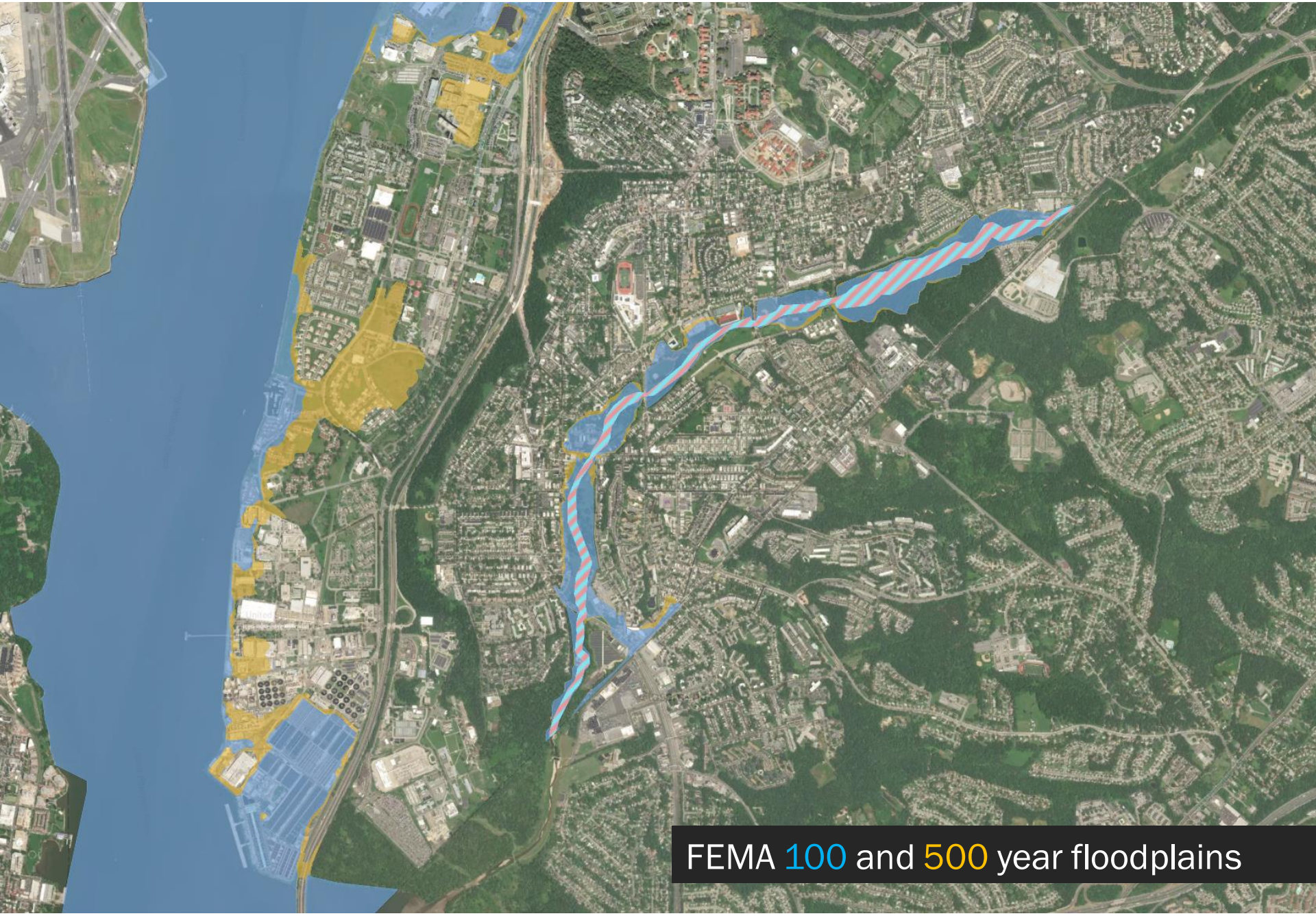
- **Interior**-flooding caused by heavy rainfall over a short period of time where there is not enough drainage capacity. No FEMA Maps. DOEE is working on mapping via Integrated Flood Model (IFM).



DCfloodrisk.org



DC Flood Risk Tool: http://dcfloodrisk.org/



DC Flood Risk Tool: http://dcfloodrisk.org/

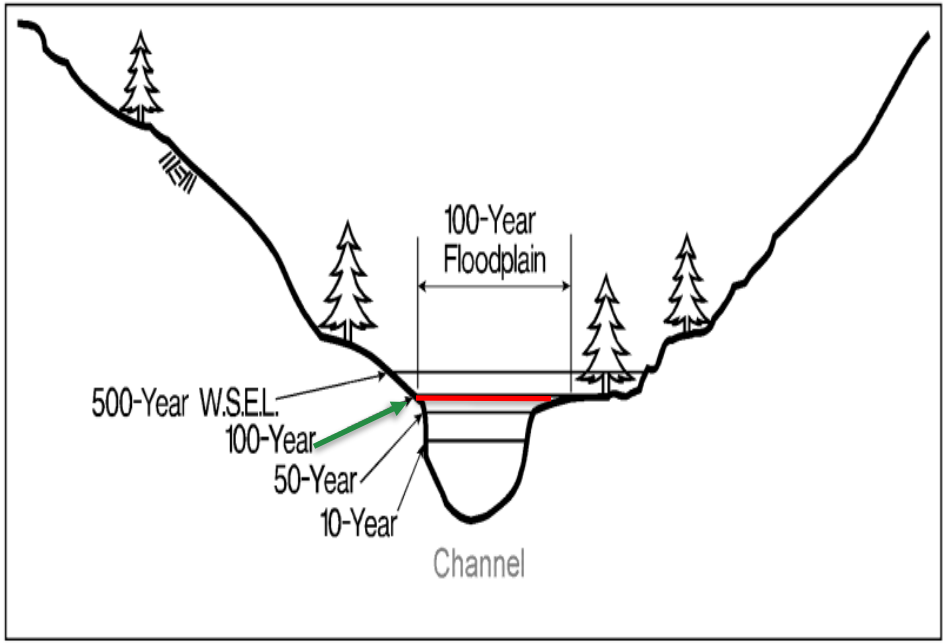
What's The Chance a 100 Year Flood Happens?

What's the Chance or Risk? 1 in 100

100-year flood event has at least a 1 in 100 chance of occurring in any year

Other examples, include:

- 10-year flood = 1 in 10 chance
- 50-year flood =1 in 50 chance
- 500-year flood= 1 in 500 chance



NOTE: Base Flood Elevation: The elevation of surface water resulting from 100-year flood, or a flood that has a 1% chance of equaling or exceeding that level in any given year.

What are The Potential Impacts To A Home?

Effects of Flooding – Building Damages

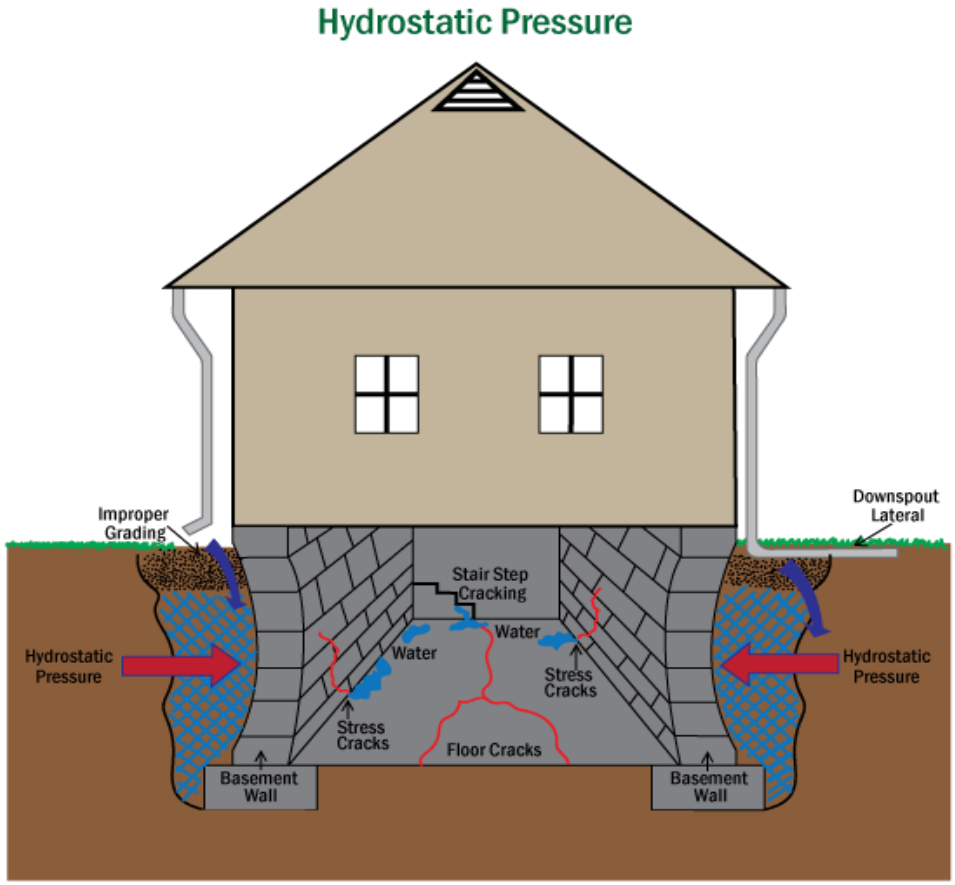
Contents

Courtesy of Axios

Floors and Walls

Courtesy Houston Chronical

Effects of Flooding – Structural



Collapse of basement and structural damage to foundation.

Effects of Flooding - Life Safety

Courtesy of 5 Star Complete Restoration

Courtesy of Service Master RHH

Flooded areas, especially basements, present risks of drowning, electrocution, chemical and sewage exposure, gas leakage, or physical injury from large floating items.

What Areas and Structures are Impacted by 100 Year Flooding?

Single Family Residences in the 100 Year Floodplain

	Single-Family	Ward % - 100-Year
Ward 2	5	1.10
Ward 3	3	0.66
Ward 7	394	86.98
Ward 8	51	11.26

Residences in the 100 Year Floodplain

ANC	Residential Structures in 100-Yr
2E	13
3C	2
3F	1
6D	3
7C	259
7D	261
8A	2
8C	41
8D	17
8E	16

Have you completed your poll?

What is Regulated Now?

What is Regulated Now?

- **New Construction**
- **Substantial Improvements/Damage**-development that exceeds 50% of the fair market value of a structure
- **Less than Substantial Improvements/Damage**-development that is less than 50% of the fair market value of a structure
- **Land disturbances**-grading, excavation, paving, mining, etc.

Substantial Improvements Are Regulated Now?

Substantial Improvement/Damage-Renovation exceeds 50% of Home Value

Home Value=$400,000

Renovation = $210,000

Cost of improvement is 52.5% of original value

- *Retrofit required include elevating lowest floor and utitlities*

Less than Substantial Improvement/Damage-Renovation does not exceed 50% of Home Value

Home Value= $200,000

Renovation = $90,000

Cost of improvement is 45% of original value

- *No retrofit required*

Substantial Improvements Are Regulated Now?

Substantial Improvement/Damage requires:

- Elevating the lowest floor of a structure
- Elevating Mechanical and Electric equipment
- Adding flood vents to enclosures

NOTE: Enclosures are enclosed walled in areas below the lowest floor of an elevated building.

Less Than Substantial Improvement/Damage:

- Elevating new or replacement mechanical, electric, and plumbing **OR** make water-tight

New Construction is Regulated Now?

New Construction

- Elevate lowest floor
- No basement
- Enclosure must have flood vents
- Elevate or Protect Mechanical, Electrical, and Plumbing

Lowest Floors Are Regulated Now?

Base Flood Elevation

+

1.5 feet

=

Design Flood Elevation

Examples

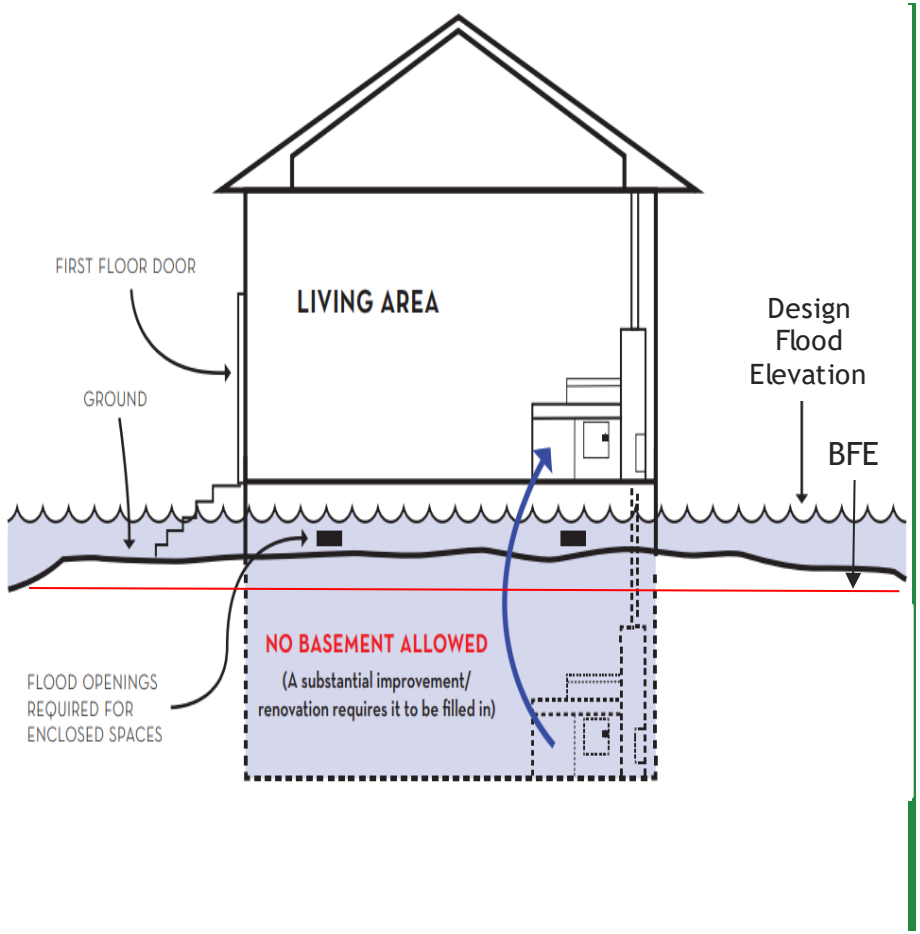
Elevating the Lowest Floor

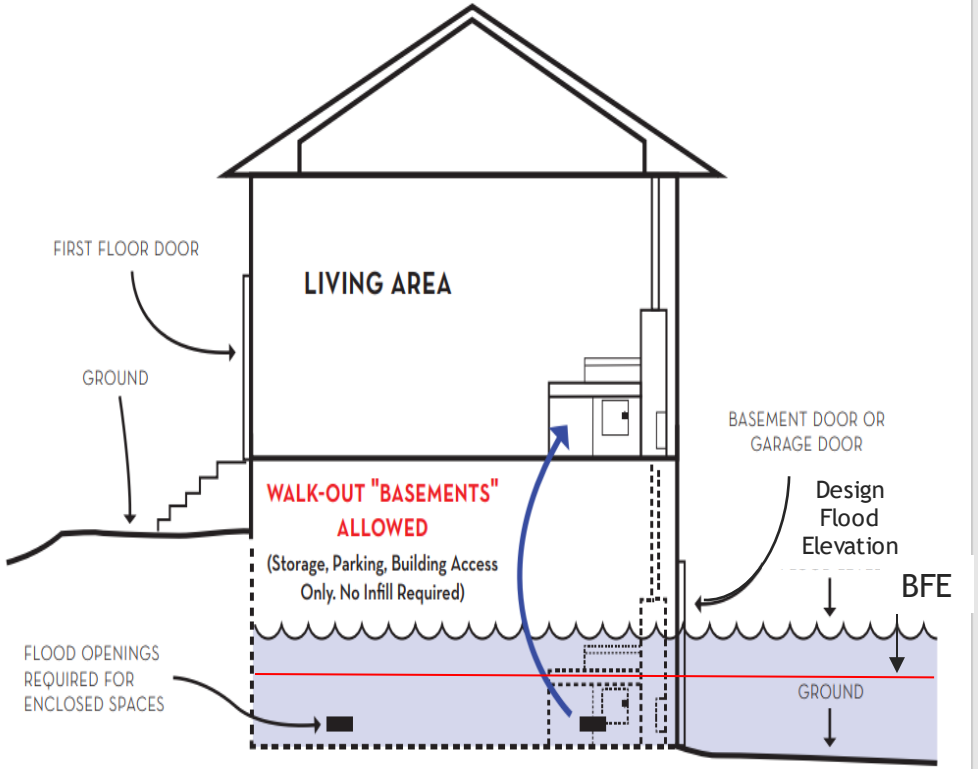
Elevating on Fill, Piles, or Walls

- No enclosed space, or crawl space
- No basement

**Provisions are consistent with Construction Codes Section 105.10 (2)*

Elevating by Basement Infill

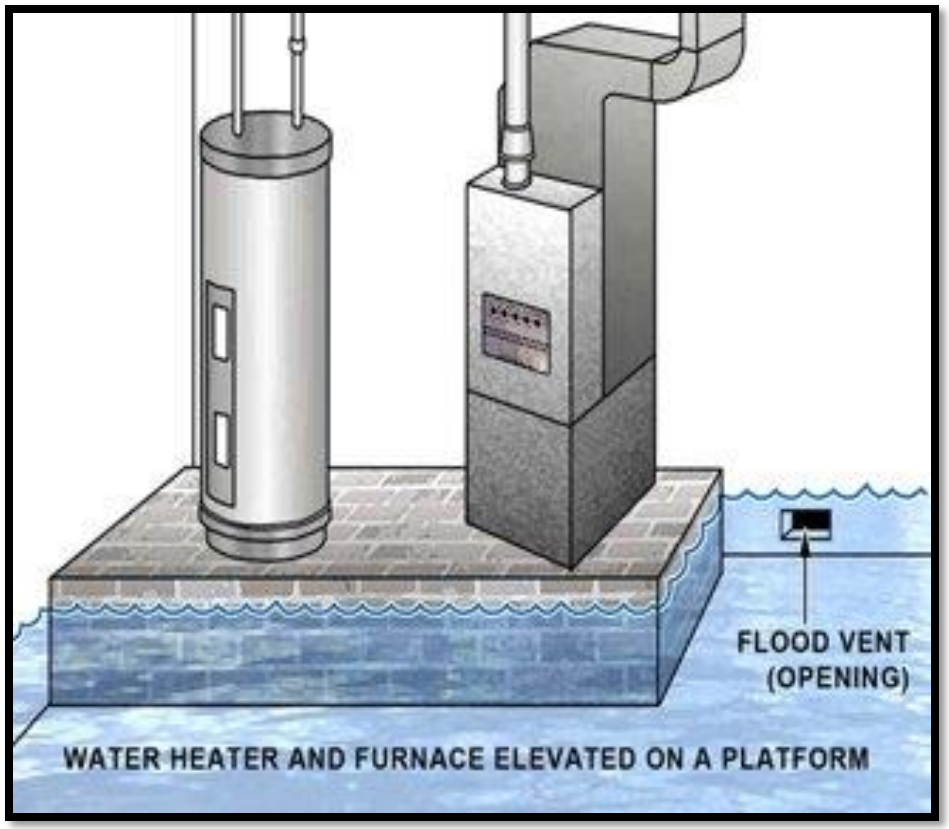


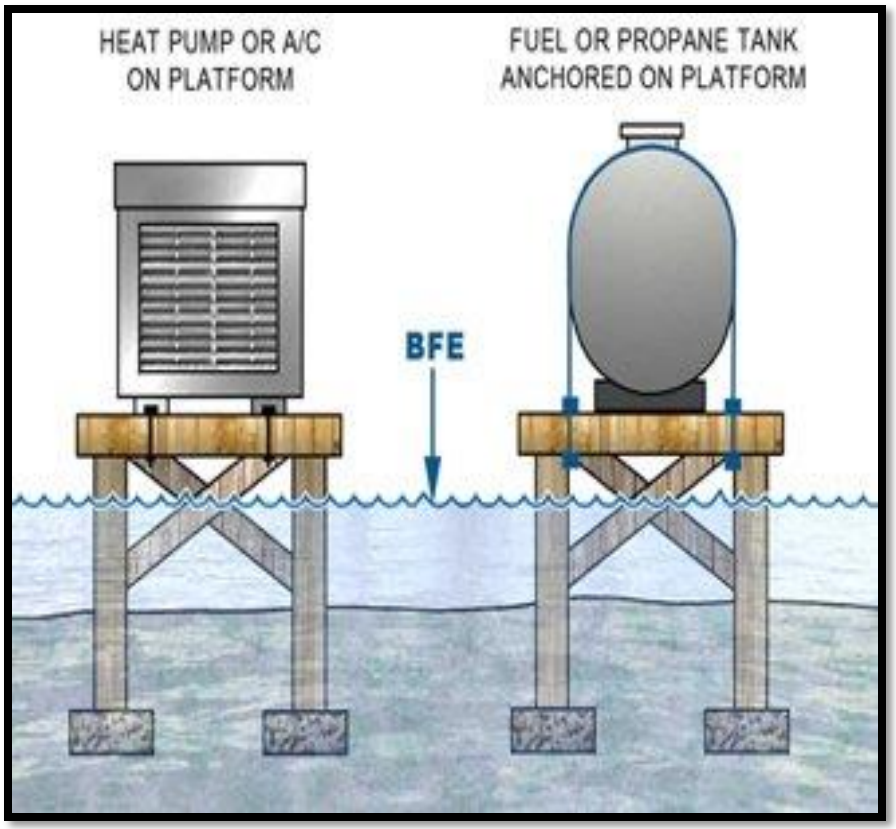


Examples

M.E.P Requirements

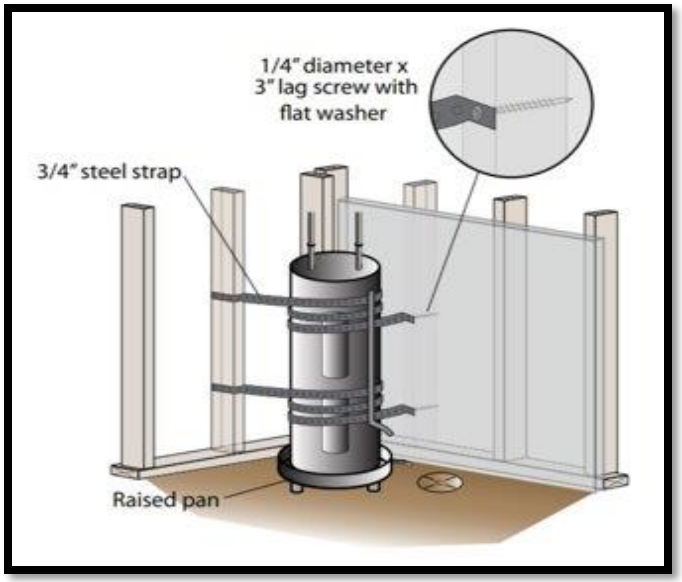
Elevating Mechanical/Electrical/Plumbing





**Provisions are consistent with Construction Codes Section 105.10 (2)*

Waterproofing and Anchoring Mechanical/Electrical/Plumbing Requirements

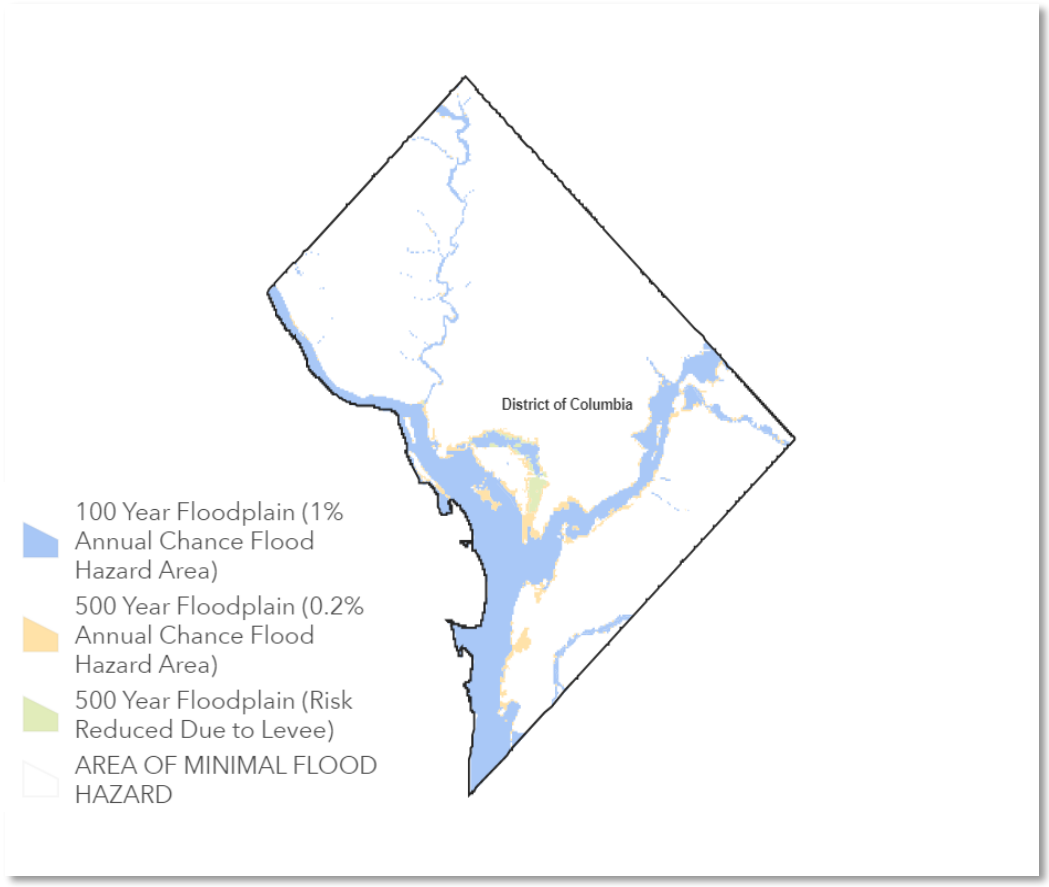


Provisions are consistent with Construction Codes Section 105.10 (2)

What is Proposed?

What is Proposed? 500 Year Area

Ward	Newly Added by 500-Year Floodplain
2	22 (3.5%)
3	1 (0.2%)
4	0
5	0
6	323 (52.1%)
7	157 (25.3%)
8	117 (18.9%)
Total Residential Structures Added	323



Residences Newly Added to the Floodplain (500-Year Only)

Ward	Newly Added by 500-Year Floodplain
1	0
2	22 (3.5%)
3	1 (0.2%)
4	0
5	0
6	323 (52.1%)
7	157 (25.3%)
8	117 (18.9%)
Total Residential Structures Added	323

What is Proposed? – Design Flood Elevation

Structures in 500-year should match current required elevation in 100-year

100 Year-Base flood elevation + 2 feet

OR

500 Year-Water Surface Elevation, whichever is higher

What is the proposed change for New Construction?

FEMA Requirements for 100-Year Floodplain

- Elevate lowest floor
- No basement
- Enclosures must have flood vents
- Elevate or Protect Mechanical, Electrical, and Plumbing

Proposed Local Exemptions in 500-Year Floodplain:

- No Change

What is Proposed for Substantial Improvement?

100-Year Floodplain: Substantial Improvement

- Basements Still prohibited

500-Year Floodplain: Substantial Improvement

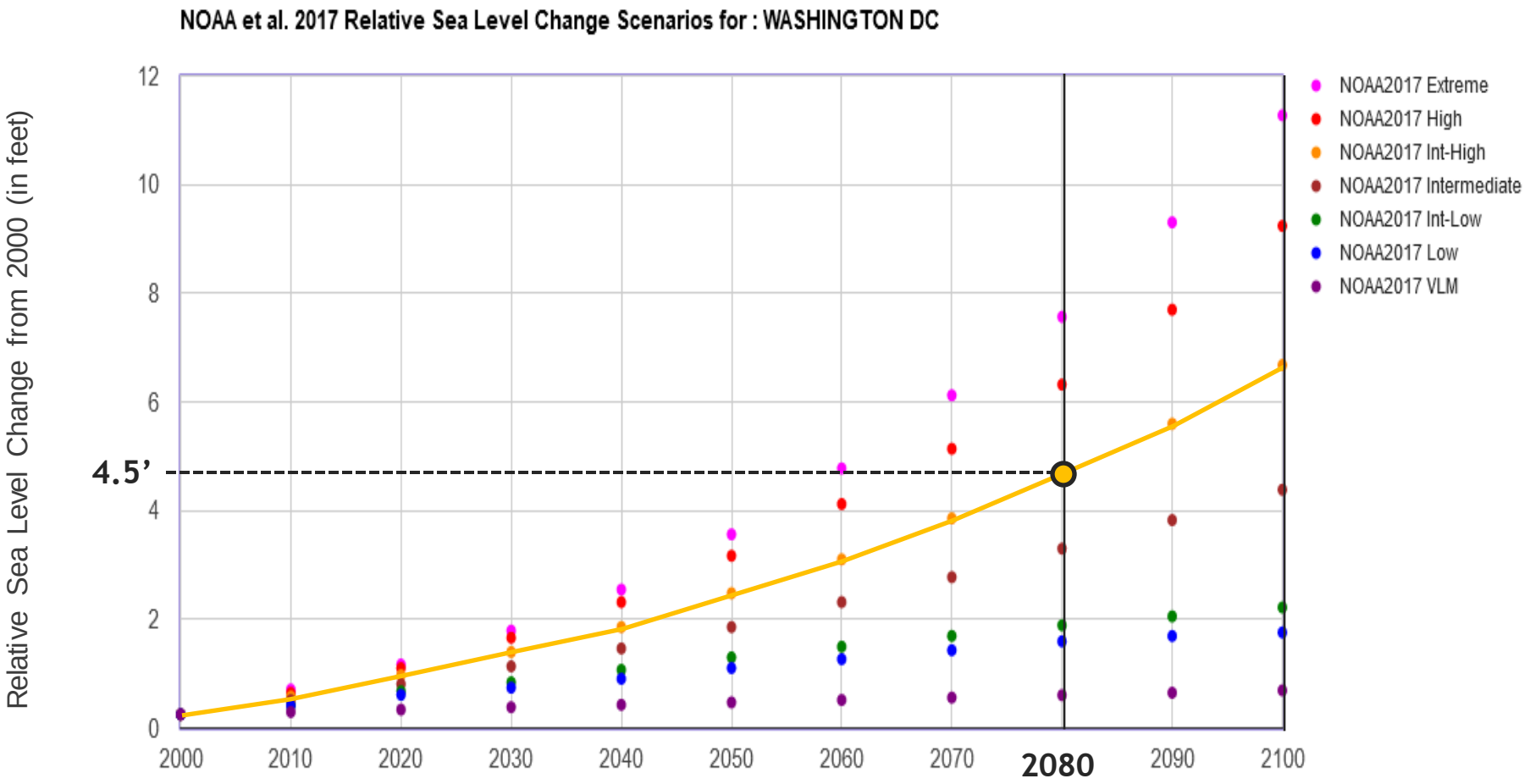
- Three options:
  1. Elevate home and fill basement to grade
  2. Elevate M.E.P equipment or make it water-resistant
  3. Use basement for storage only (no dwelling)

How Will My Existing Property be Affected By Proposed Regulation?

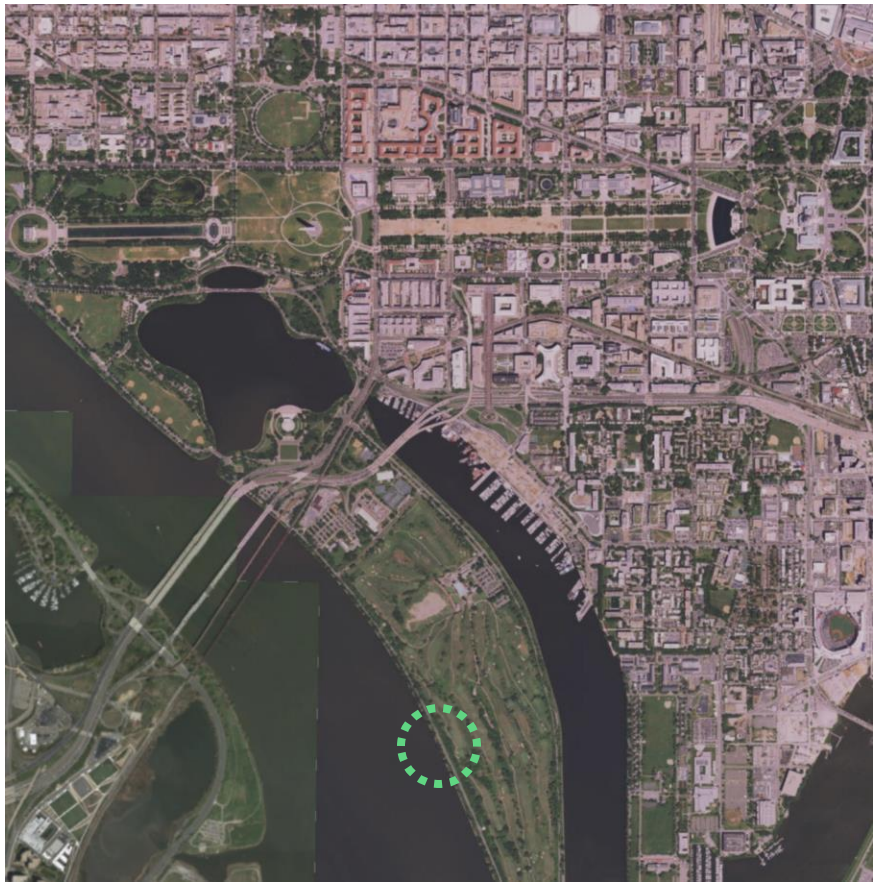
- **100-Year floodplain:**
  - Limited change, as 100-year floodplain requirements are set primarily by federal rather than local standards.
- **500-Year floodplain:**
  - Moderate change in the form of requirements to protect mechanical, electrical, plumbing equipment in the event of a substantial improvement.
  - This change will help make our community more resilient for future generations of residents. Most impactful changes will be experienced by developers of new property in the 500-Year floodplain.

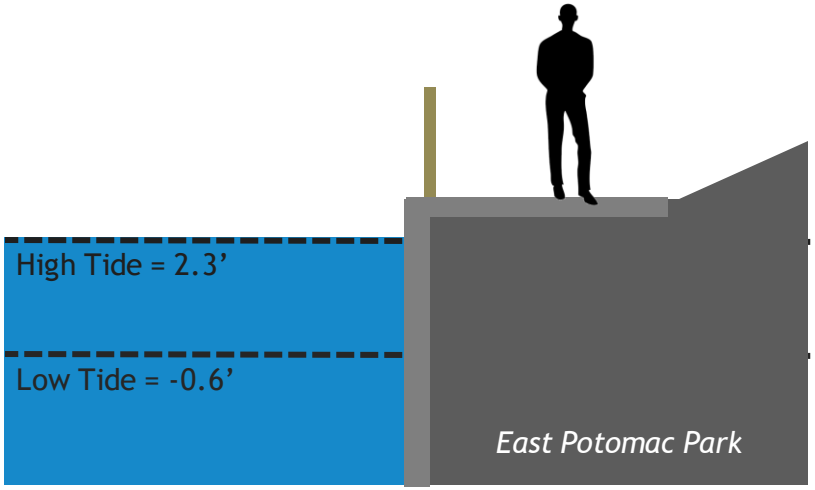
Why Update Now?

Sea Level Rise Projections for DC



High Tide at East Potomac Park

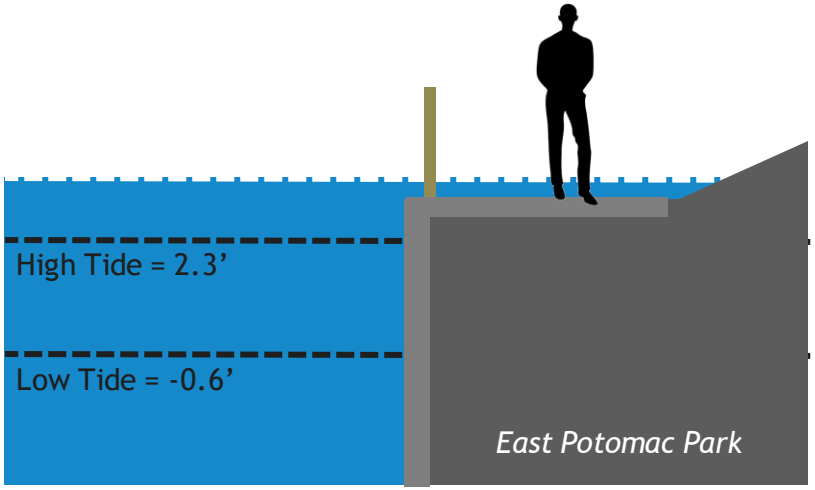




*Elevations in section are in the NGVD29 datum and are only accurate for the SW Waterfront Gage

High Tide and Sea Level Rise

Source: Flickr user TrailVoice



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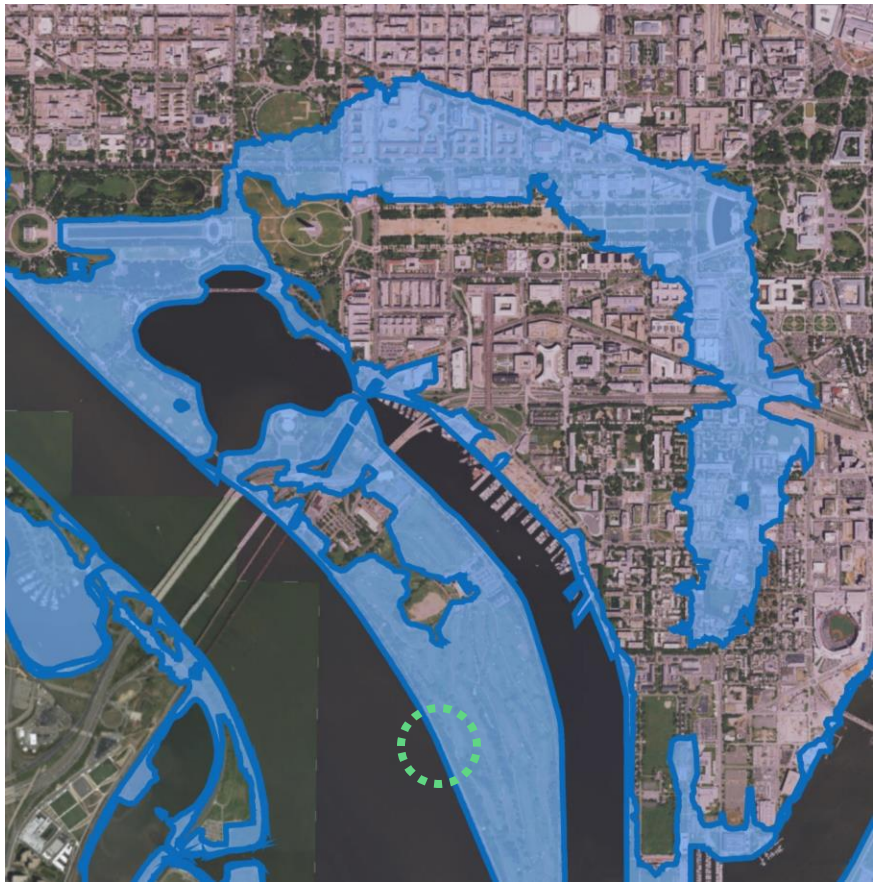
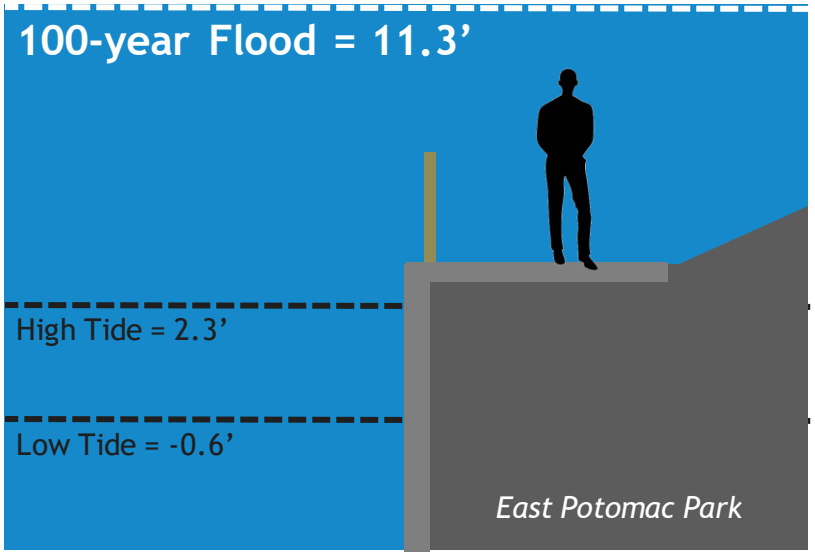
The 100-year Flood **Today***





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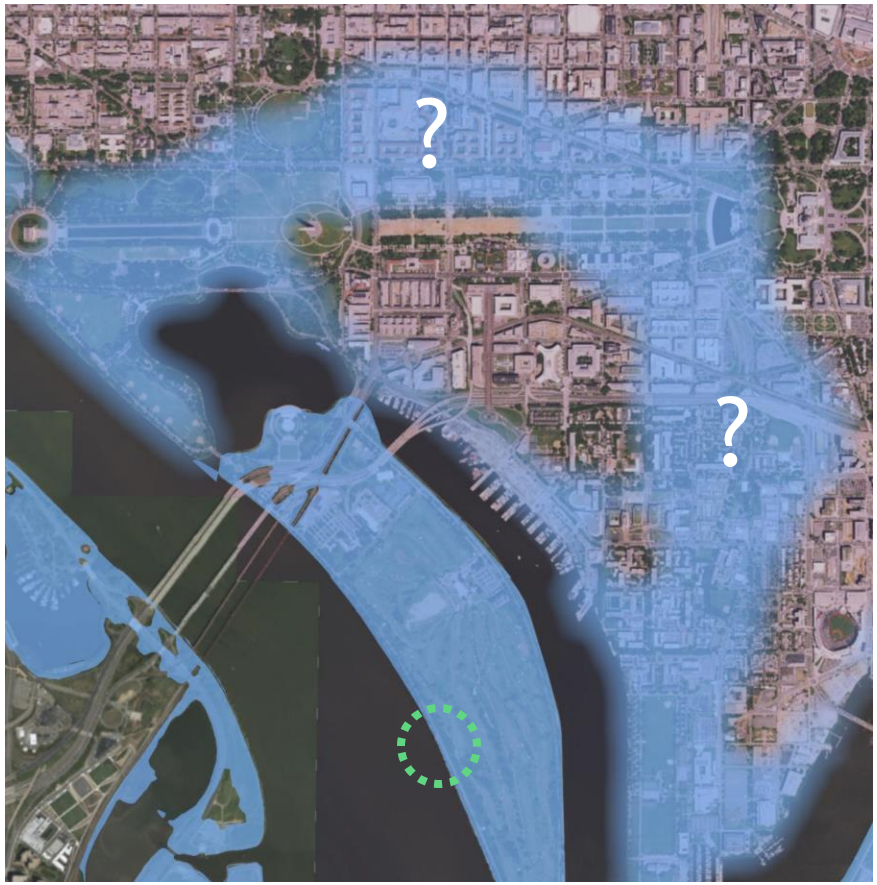
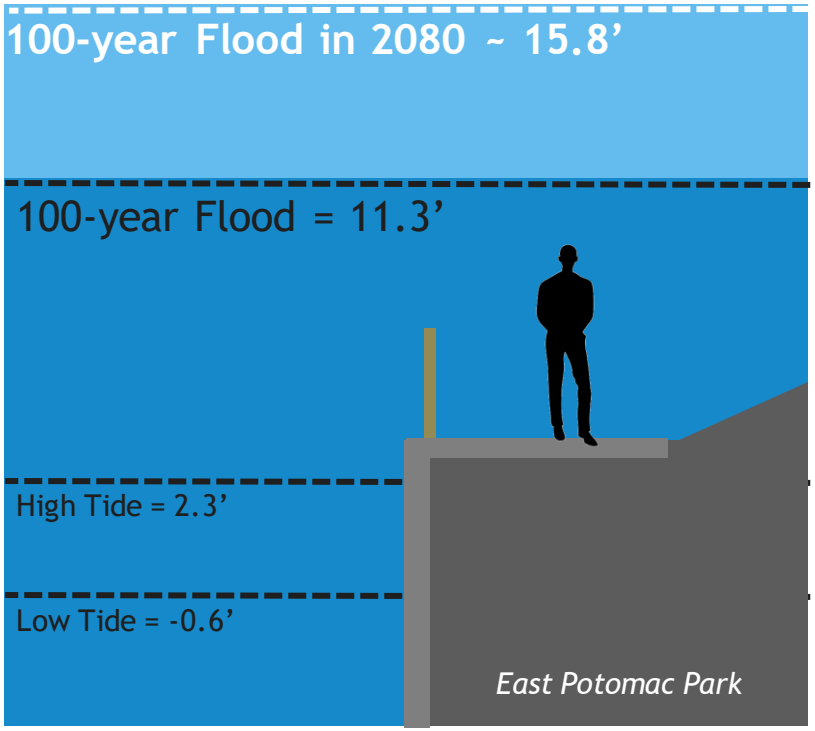
*Assumes the Potomac Park Levee System does NOT exist

The 100-year Flood **in 2080**





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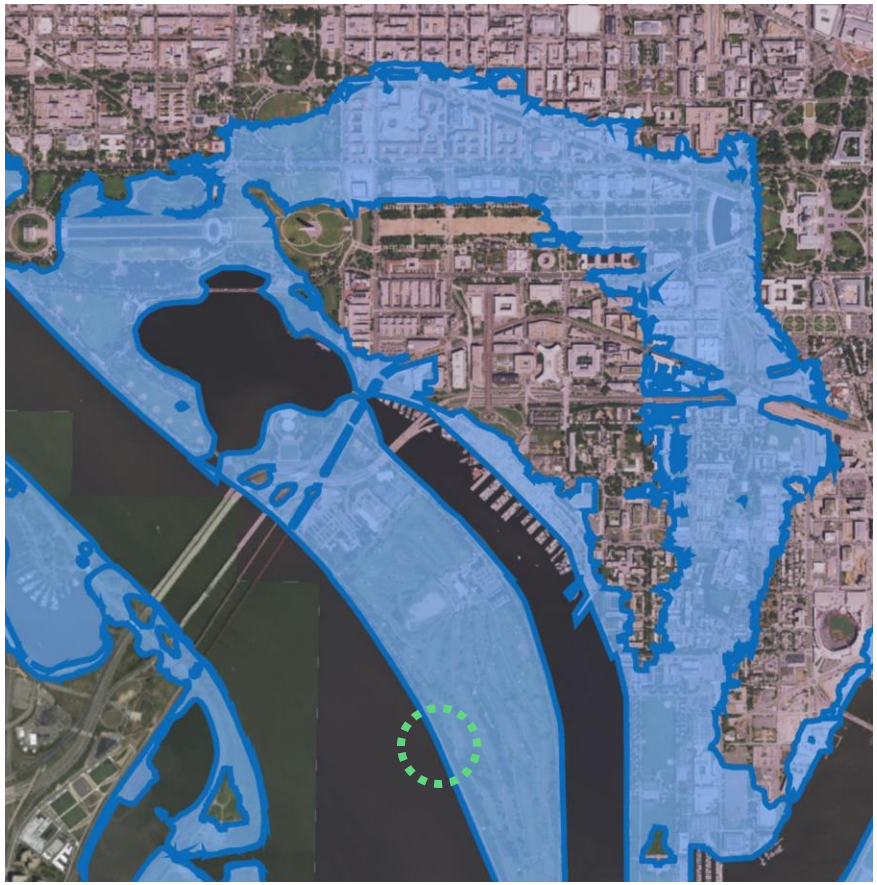
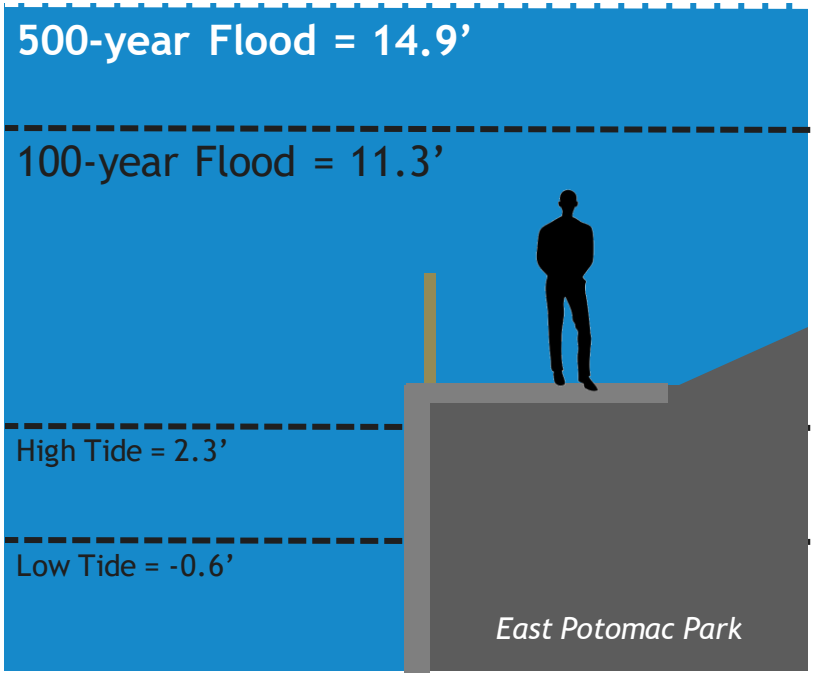
The 500-year Flood **Today** *will be more like* The 100-year Flood **in 2080**





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Upcoming Meetings and Next Steps

Upcoming Meetings

- **Resident Focused Meetings on Regulations**
  - Meeting #1 – 5:30 p.m. on July 29th
  - Meeting #2 - 6:30 p.m. on August 3rd
- **Business/Non Profit Focused Meetings on Regulations**
  - Meeting #3 – 2:30 p.m. on August 19th
- **Beginning of Sustained Engagement to Reduce Flood Risk**
  - Coming soon to Faunteroy Center!
  - https://doee.dc.gov/service/watts-branch-neighborhoods-flood-risk-management

Next Steps for the Regulations

- **Summer 2021:** Resident and local business focused meetings on new regulations.

- **Summer/Fall 2021**: Incorporate feedback into revised draft.

- **2021 and Beyond:** DOEE aims to begin the *formal* public rulemaking process, which includes:
  - DC Government internal approval process
  - Publication of proposed rules in the DC Register
  - A formal comment period available to all stakeholders
  - Consideration of formal public comments
  - Ultimately, publication of final rules in the DC Register
  - Will be a transition period

For More Information

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Find this Presentation & Learn More:

https://doee.dc.gov/publication/title-20-chapter-31-flood-hazard-rules