

Historic Structures and the National Flood Insurance Program (NFIP), Is There a Balance?

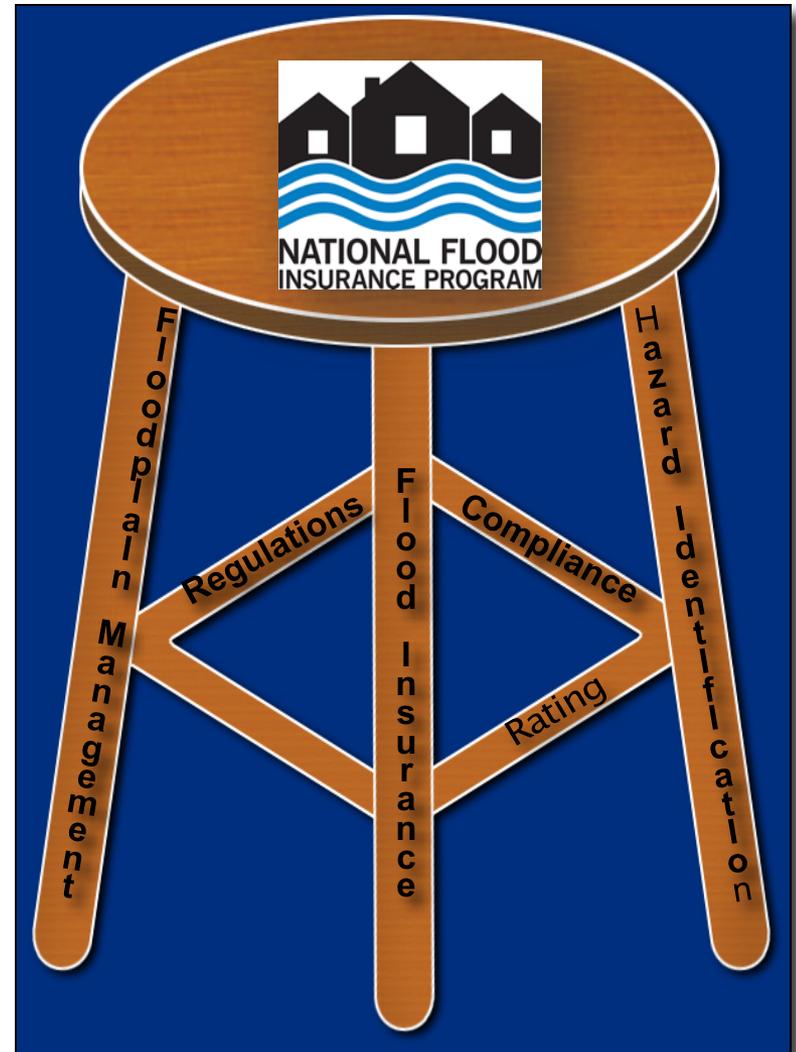
Keeping History Above Water: Annapolis
November 1, 2017



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Topics

- ▶ Overview of the NFIP
 - Flood Risk Mapping
 - Floodplain Management /Regulations & Mitigation Practices
 - Flood Insurance
- ▶ Higher Regulatory Standards
- ▶ Rehabilitation Projects
- ▶ Hazard Mitigation Planning
- ▶ Community Rating System (CRS)
- ▶ Maryland Resiliency Partnership

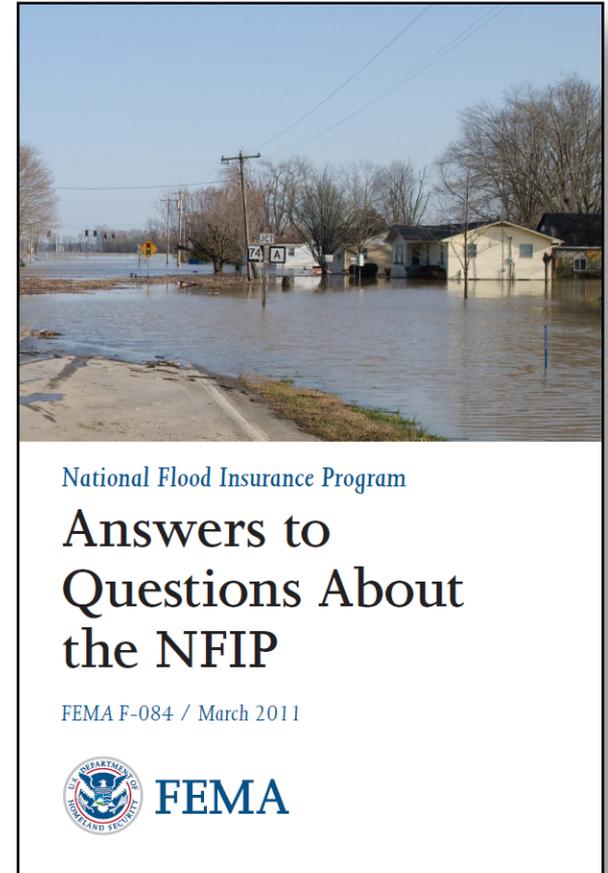


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National Flood Insurance Program

- ▶ Created by the National Flood Insurance Act of 1968
- ▶ Administered by FEMA
- ▶ Participation is **voluntary**
 - Adopt and enforce regulations
 - Eligible for flood insurance
- ▶ **Benefits** of participation:
 - Flood insurance
 - Grants and loans
 - Disaster assistance
 - Federally-backed mortgages
- ▶ **Partnership** between the Federal government and the “community”



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“Community”

- ▶ *Community* means any State or area or political subdivision thereof, or any Indian tribe or authorized tribal organization, or Alaska Native village or authorized native organization, which has **authority to adopt and enforce flood plain management regulations for the areas within its jurisdiction.**

Source: Title 44, § 59.1, Code of Federal Regulations



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Community's Role

- ▶ Adopt and enforce floodplain management regulations
 - Based on Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS)
- ▶ Use FIRMs and FIS for “development” review process
- ▶ Issue floodplain permits
- ▶ Respond to requests for assistance
- ▶ Meet with FEMA and/or State for Community Assistance Visit (CAV)
- ▶ Submit technical data to FEMA



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Maryland at a Glance

- ▶ 142 participating communities
 - 13 Non-Special Flood Hazard Area (NSFHA)
- ▶ 66,448 Policies
 - 243 V-Zone
 - 37,465 A-Zone
 - 28,740 B, C and X-Zone
- ▶ **\$15,604,238,000 total coverage**
- ▶ 18,165 total claims since 1978
- ▶ \$293,076,445 total paid since 1978

Source: FEMA Community Information System, 10/26/2017



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Components of the NFIP

Flood Risk Mapping



Flood Insurance and Outreach

**Floodplain Management/Regulations
& Mitigation Practices**



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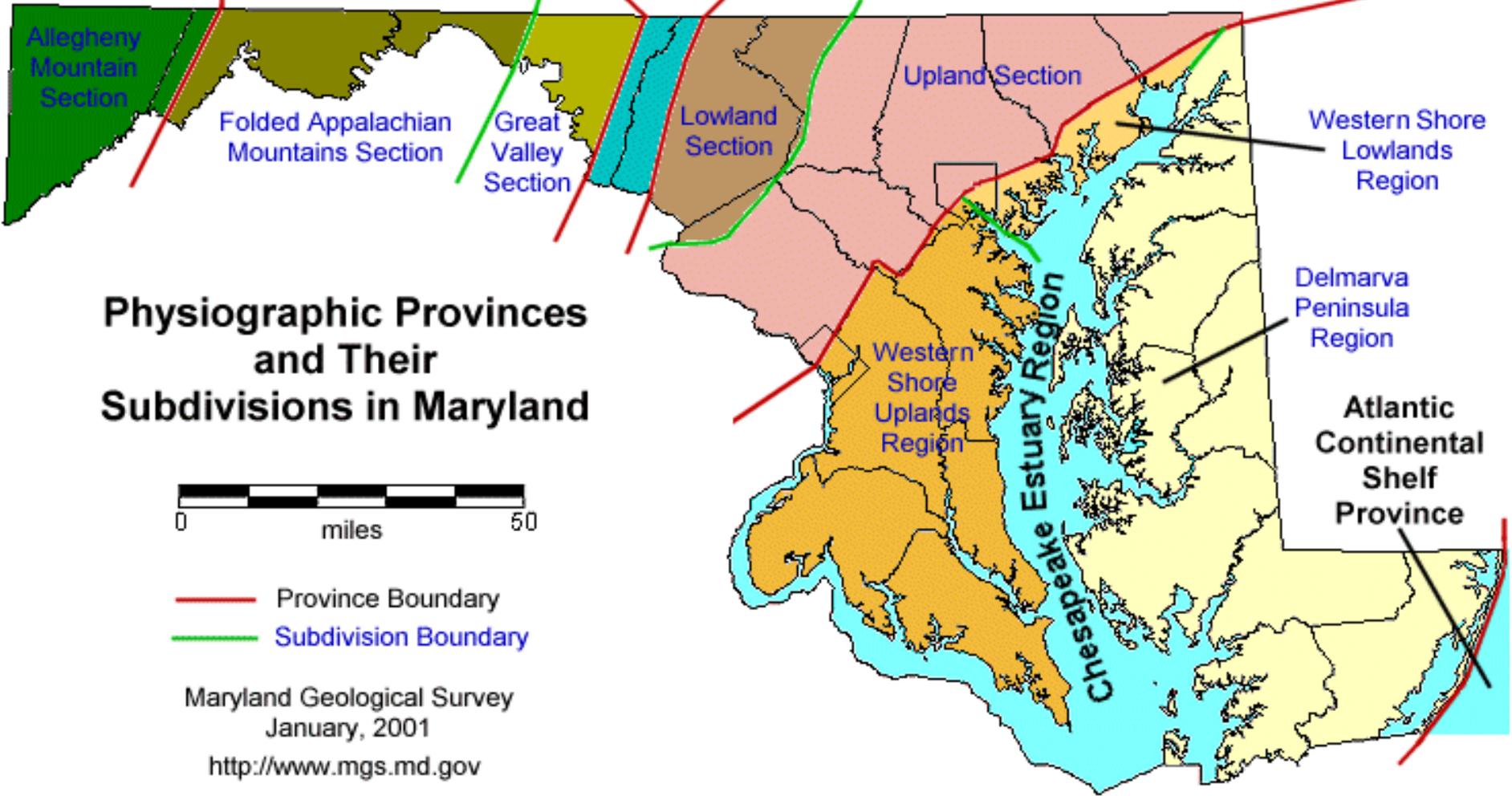


Appalachian Plateaus Province

Ridge and Valley Province

Blue Ridge Province

Piedmont Plateau Province



Physiographic Provinces and Their Subdivisions in Maryland



- Province Boundary
- Subdivision Boundary

Maryland Geological Survey
January, 2001

<http://www.mgs.md.gov>

Coastal Plain Province
Embayed Section

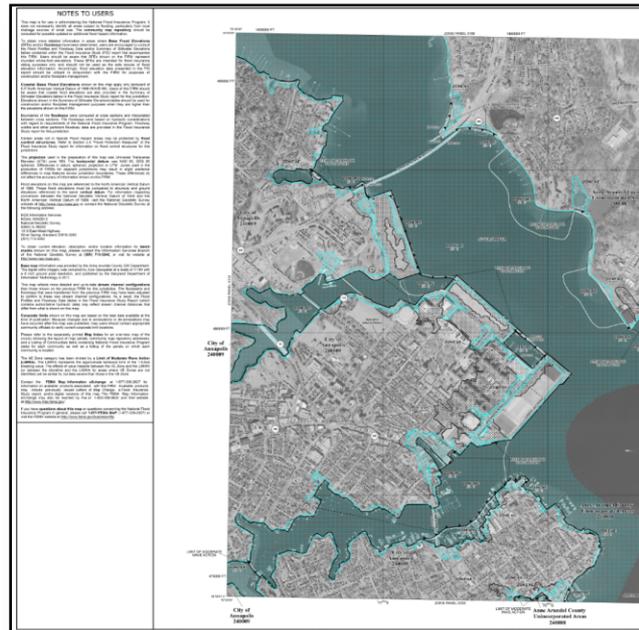


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Know Your Risk – Maps and Data

- ▶ Flood Insurance Study (FIS)
- ▶ Flood Insurance Rate Map (FIRM)
 - Digital FIRM (DFIRM)
- ▶ Community Identified Flood Risk
 - Historic high water marks
 - Other?



FLOOD INSURANCE STUDY

ANNE ARUNDEL COUNTY, MARYLAND AND INCORPORATED AREAS

Community	CID
Annapolis, City of	240009
Anne Arundel County, Maryland	240008
(Unincorporated Areas)	240161
Highland Beach, Town of	240161

REVISED:
February 18, 2015

Federal Emergency Management Agency
FLOOD INSURANCE STUDY NUMBER
24003CV0008



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Key Definitions – Mapping

- ▶ **Base Flood** – The flood having a 1% chance of being equaled or exceeded in any given year; the base flood also is referred to as the 1% annual chance (100–year) flood.
- ▶ **Base Flood Elevation (BFE)** – The water surface elevation of the base flood in relation to the datum specified on the Community's Flood Insurance Rate Map (FIRM).
- ▶ **Special Flood Hazard Area (SFHA)** – The land in the floodplain subject to a 1% or greater chance of flooding in any given year. SFHAs are designated by FEMA in Flood Insurance Studies and on FIRMs as Zones AE and VE.



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Flood Insurance Rate Map (FIRM)

- ▶ Delineates flood risk based on different recurrence intervals
 - **Floods don't follow map boundaries**
- ▶ National standard is the 1% annual chance flood (also known as 100-year flood, or special flood hazard area)
 - Flood insurance rating
 - Floodplain management & development review process



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Limitations of FIRMs

- ▶ Doesn't show where all flooding can occur
 - States and communities can regulate beyond the FEMA-mapped floodplain
- ▶ Doesn't take into account future conditions
 - Based on current and historical data



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CHANGING
Maryland
for the Better

Flood Risk Zones

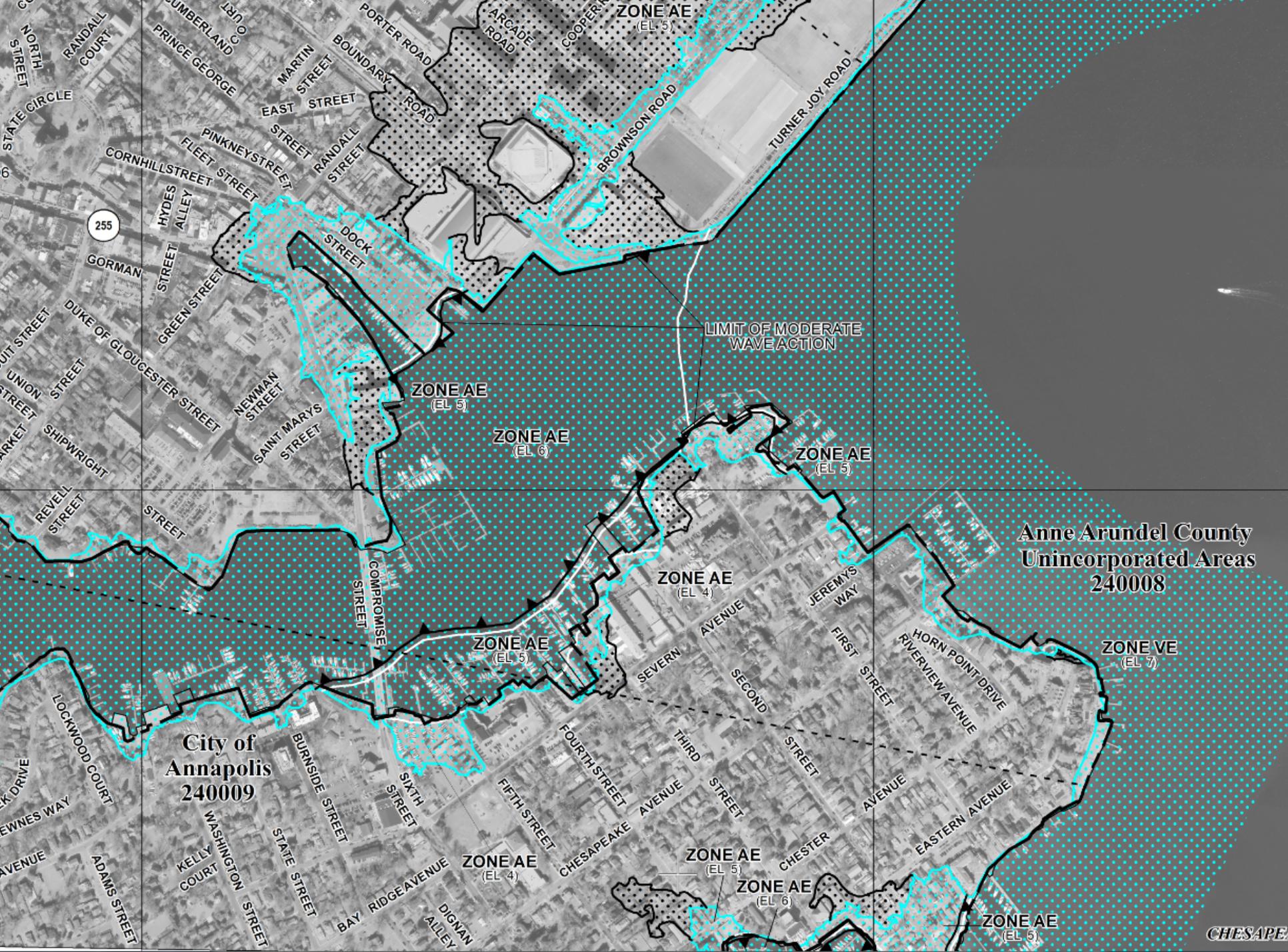
Risk	Zone
Low	X (unshaded)
Moderate	X (shaded)
High (Riverine/tidal)*	A, AH, AO, AE
High (Coastal)*	VE

***Mandatory purchase requirements for flood insurance, and regulatory requirements in high risk areas**



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Anne Arundel County
Unincorporated Areas
240008

City of
Annapolis
240009

LIMIT OF MODERATE
WAVE ACTION

FEMA Flood Map Service Center

- ▶ Access Products
 - FIRMs & FIS
 - LOMCs
 - DFIRM Database
 - Historic Products
 - Flood Risk Products
- ▶ Access Tools
 - Make a **FIRMette**
 - National Flood Hazard Layer (NFHL) Viewer
- ▶ Live Mapping Support
 - FEMA Map Information eXchange (FMIX)

FEMA Flood Map Service Center : Welcome!

Looking for a Flood Map? 

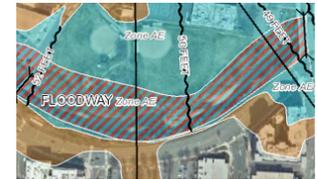
Enter an address, a place, or longitude/latitude coordinates:

Enter an address, a place, or longitude/latitude coordinates:

Search

Looking for more than just a current flood map?

Visit [Search All Products](#) to access the full range of flood risk products for your community.



About Flood Map Service Center

The FEMA Flood Map Service Center (MSC) is the official public source for flood hazard information produced in support of the National Flood Insurance Program (NFIP). Use the MSC to find your official flood map, access a range of other flood hazard products, and take advantage of tools for better understanding flood risk.

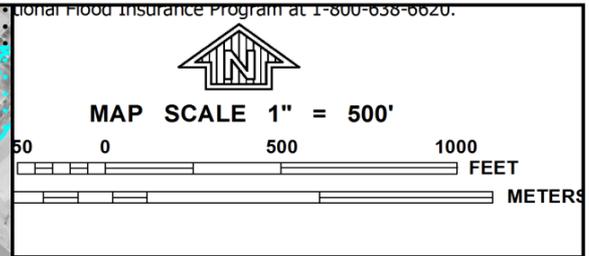
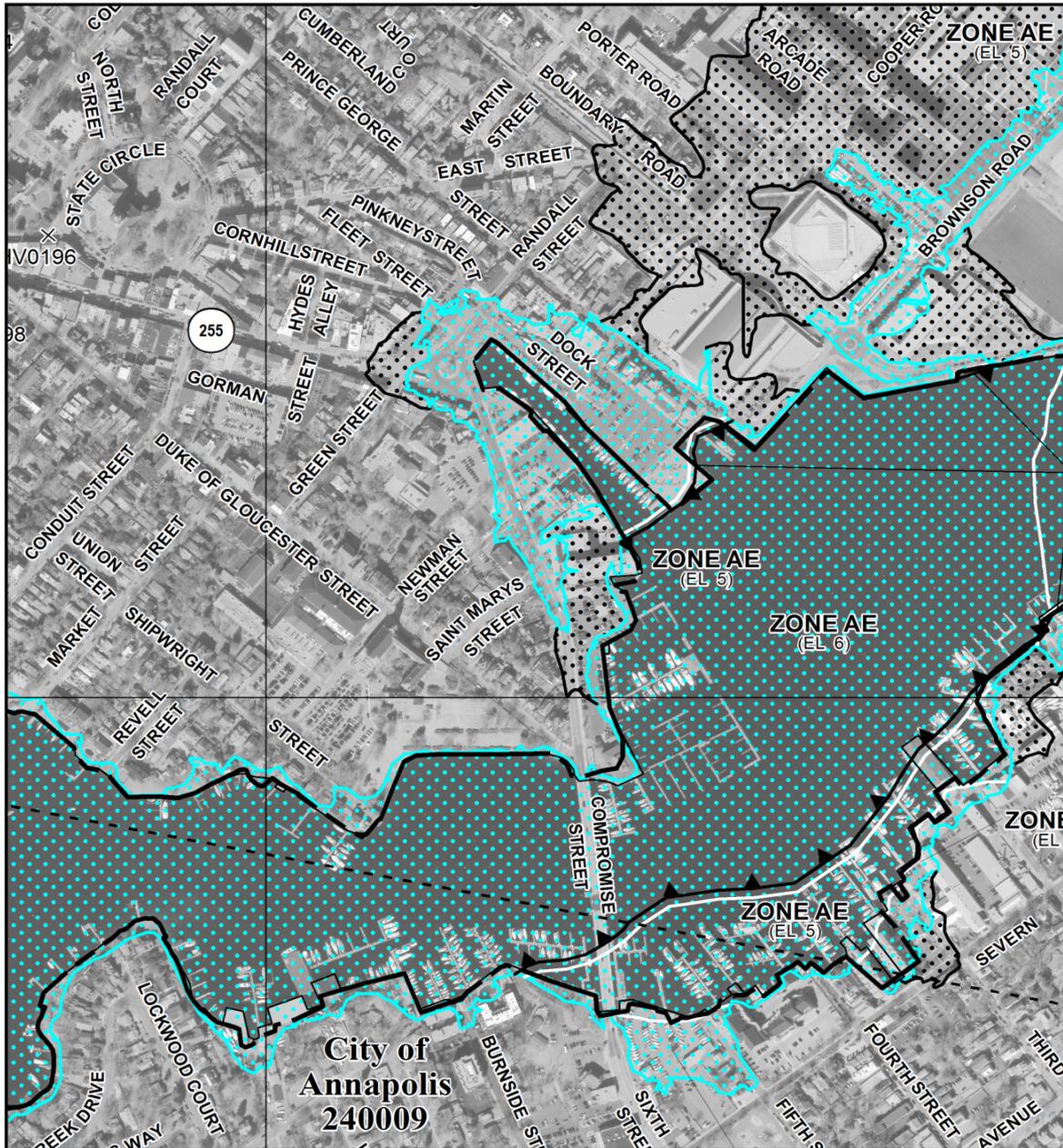
FEMA flood maps are continually updated through a variety of processes. Effective information that you download or print from this site may change or become superseded by new maps over time. For additional information, please see the [Flood Hazard Mapping Updates Overview Fact Sheet](#)

msc.fema.gov



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NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0251F

FIRM

FLOOD INSURANCE RATE MAP

**ANNE ARUNDEL COUNTY,
MARYLAND
AND INCORPORATED AREAS**

PANEL 251 OF 385

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ANNAPOLIS, CITY OF	240009	0251	F
ANNE ARUNDEL COUNTY	240008	0251	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
24003C0251F

MAP REVISED
FEBRUARY 18, 2015

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

www.mdfloodmaps.net

Maryland Department of Environment & Natural Resources

Maryland.gov Phone Directory State Agencies Online Services

Search

Email Friend print page

DFIRM OUTREACH PROGRAM

DIGITAL FLOOD INSURANCE RATE MAPS

HOME HOMEOWNERS/TENANTS COMMUNITIES MORE INFORMATION

ABOUT DFIRM

FAQs
Glossary

Participants

- Federal Emergency Management Agency (FEMA)
- Maryland Department of the Environment (MDE)

National Flood Insurance Program (NFIP)

nfip.gov
FloodSmart.gov

Maryland DFIRM Release Schedule



INSURE YOUR RISK

Flood Risk Application
View Maryland Flood Maps Here

Preliminary Schedule

- Allegany - September 2015: Riverine

Effective Schedule

- Prince George - Sept 2016: Riverine/Coastal
- Harford - April 2016: Riverine/Coastal
- Washington - August 2017: Riverine
- Allegany - March 2018: Riverine

Floodplain Fact Sheet

Flood Insurance Fact Sheet

DFIRM Outreach

The State of Maryland in conjunction with the Federal Emergency Management Agency (FEMA) has been systematically updating Flood Insurance Rate Maps (FIRMs) for communities over the past several years. This site is designed to guide homeowners/renters as well as communities through the process of determining their current flood risk as well as future flood risk based on the preliminary Digital Flood Insurance Rate Maps (DFIRMs).

The DFIRMs are digitally converted flood insurance rates maps that will be compatible with GIS (Geographic Information Systems). The improvements in spatial accuracy provided by the new base map, and the availability of electronic floodplain information should greatly enhance the ability to use the maps for planning, permitting, and insurance applications.

Using the schedule for map production in 2017, the average age of the DFIRM products in the Maryland is 4 years with 75% of the State at 3 years or less. Currently, 4 of the 6 oldest floodplain mapping products are in production to be remapped. MDE is the Cooperating Technical Partner (CTP) on three of these products in Baltimore City, Baltimore County, and Montgomery County. FEMA's Risk Assessment, Mapping and Planning Partners (RAMP) is producing the DFIRM product in Frederick County.

Researching Your Future Flood Risk

The DFIRMs are being released on a community by community basis. It is important to investigate your flood risk status and contact your insurance agent to make necessary modifications to your coverage while the maps are still preliminary. The digital files will be available when these maps become effective.

Using This Website

To use this website we recommend starting with your area of interest. If you are a homeowner, please visit the [HomeOwners/Tenants](#) section. If you are interested in an entire community, please

4:19 PM 9/6/2017

Flood Risk Application

Maryland Department of **DFIRM Outreach**

www.mdfloodmaps.net/dfirmimap/index.html

DFIRM Outreach Flood Risk Application

MDE | MDE Firm Outreach | Help

How To | Details | FAQs | Contents

Legend

Counties

FEMA STATUS

- PRELIMINARY
- EFFECTIVE
- NOT RELEASED

Effective Floodplain

Symbology

- 100 Year Floodplain
- Floodway
- 500 Year Floodplain

Preliminary Riverine Floodplain

Symbology

- 100 Year Floodplain
- Floodway
- 500 Year Floodplain

This tool is designed to aid you in researching your flood risk in the state of Maryland.

Content on this site is typically updated within a 30 days of any maps or data released by FEMA, so please check back as the status of your county may have changed. It is important to investigate your flood risk status and contact your insurance agent to make the necessary modifications to your coverage. A schedule for tentative county effective dates can be found [here](#).

Email questions or comments to flood.maps@maryland.gov

How to use the application:

Find your address:

Enter an address into the "Find a place" box on this page to zoom to the closest match.

- or -

powered by Esri, HERE, Garmin, FAO, USGS, MDIAG

4:20 PM 9/6/2017

Flood Risk Application

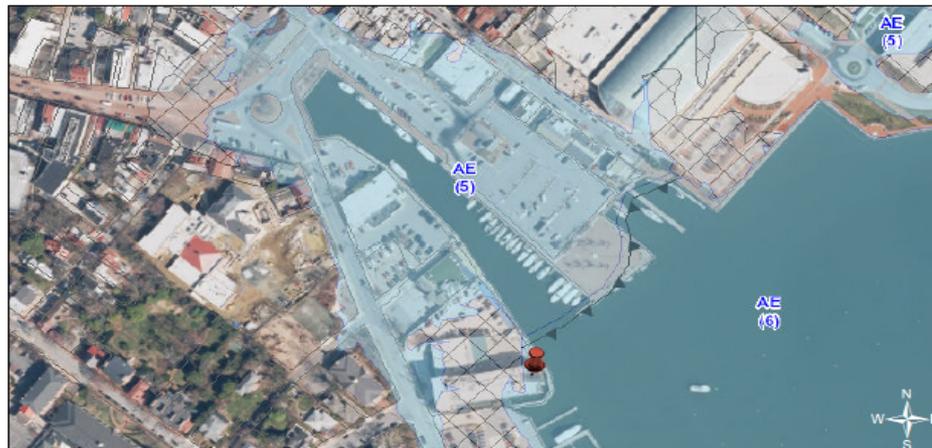
The screenshot shows a web browser window displaying the DFIRM Outreach Flood Risk Application. The browser's address bar shows the URL www.mdfloodmaps.net/dfirmimap/index.html. The page title is "DFIRM Outreach Flood Risk Application".

The interface includes a navigation menu with "How To", "Details", "FAQs", and "Contents". A legend on the left side lists various map layers, including "Preliminary Riverine", "Preliminary Coastal", "Effective Floodplain", "Changes Since Last Firm", "DFirm Data Download", "LIMWA", "Basemap", "Parcel Boundaries", and "Six Inch Imagery".

The main map area displays an aerial view of a waterfront area with a grid overlay. A red circle highlights the "Flood Risk" icon in the toolbar. The map shows flood zones, with labels such as "AE (5)" and "AE (3)". A search bar and "ZOOM TO COUNTY" button are visible in the top right corner.

At the bottom of the page, there is a footer with the text "powered by MD IMAP, DoIT | MD IMAP, MDP, SDAT | County of Anne Arundel, VITA, Esri, MDIMap".

Flood Risk Map



This map is not the official regulatory FIRM or DFIRM. Its purpose is to assist with determining potential flood risk for the selected location.

XY: null (State Plane Meters)
 The selected location on the map is within Zone AE.
 DFIRM Panel Number: 24003C0251F
 Scheduled Preliminary Release Date: 5/2013
 Effective/Current FIRM Panel Number: 24003C0251F
 *Scheduled DFIRM Effective Date: 2/2015
 *Dates are subject to change

For information about local floodplain regulations (i.e. local ordinances and building codes), or inquires related to mandatory flood insurance purchase requirements, please contact your community's floodplain management office: 410-263-7946

Disclaimer:
 The Mapping Services provided herein are for reference only. The user of this information understands and acknowledges that the data may be inaccurate or contain errors or omissions and the user assumes full responsibility for any risks or damages resulting from any use of or reliance upon this data. MDE and their Agents or Affiliates do not guarantee the accuracy or reliability of the data generated from this service.

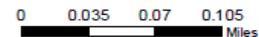
The user of this information should always consult official FEMA flood maps and certified elevation data if there is any doubt of a property's flood risk. Please consult with your local, county, and/or community floodplain administrator for availability of official DFIRMs in your county.



January 23, 2017

Legend

- XY Location
- Preliminary Riverine Floodplain**
 - 100 Year Floodplain
 - Floodway
 - 500 Year Floodplain
 - Preliminary Riverine Panels
- Preliminary Coastal Floodplain**
 - 100 Year Floodplain
 - Floodway
 - 500 Year Floodplain
 - Preliminary Coastal Panels
- Floodplain**
 - 100 Year Floodplain
 - Floodway
 - 500 Year Floodplain
 - Panels

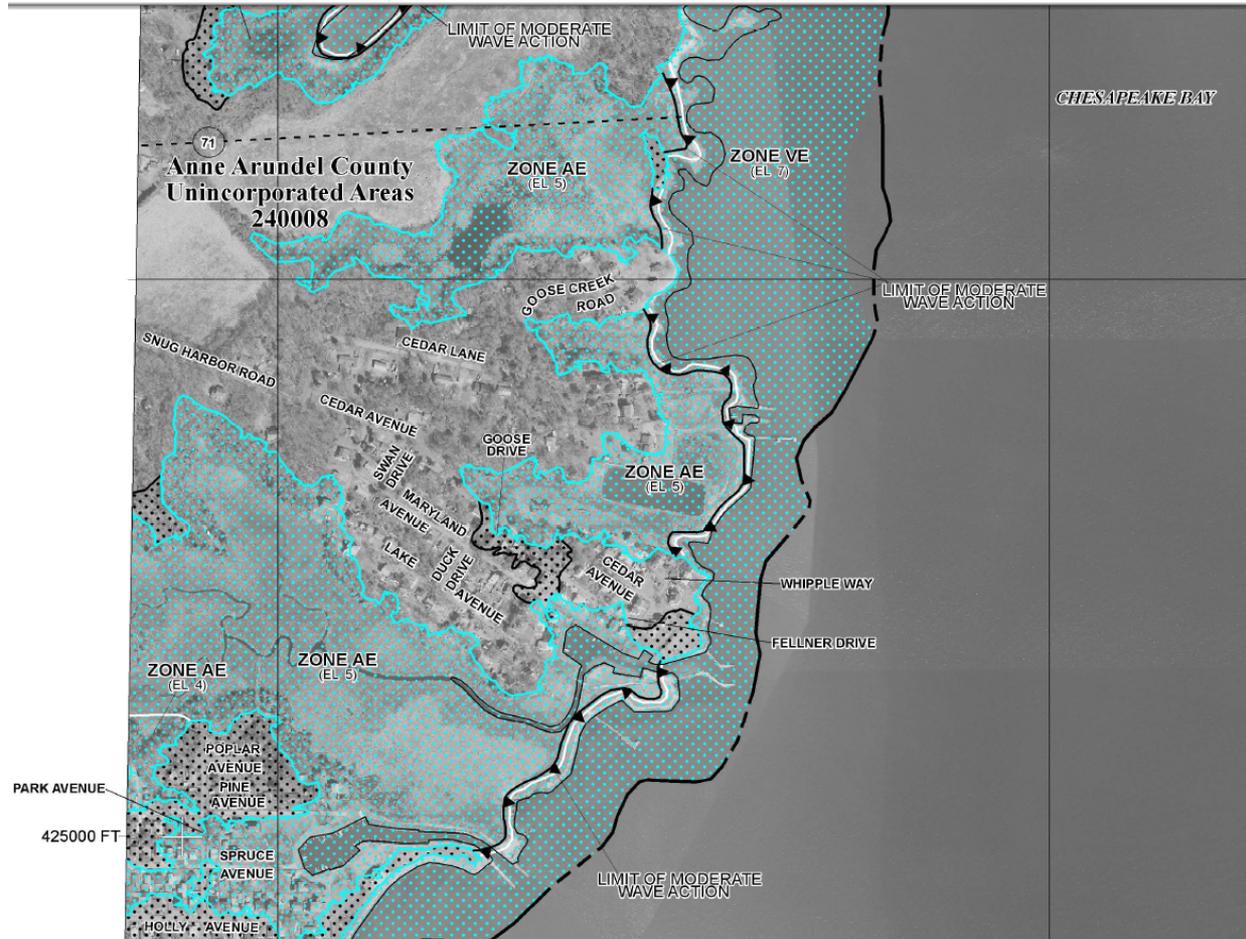


Data Sources:
 Preliminary and Effective Floodplain: FEMA
 FIRM and DFIRM Grid: FEMA
 High-Resolution Aerial Photography: MD iMap

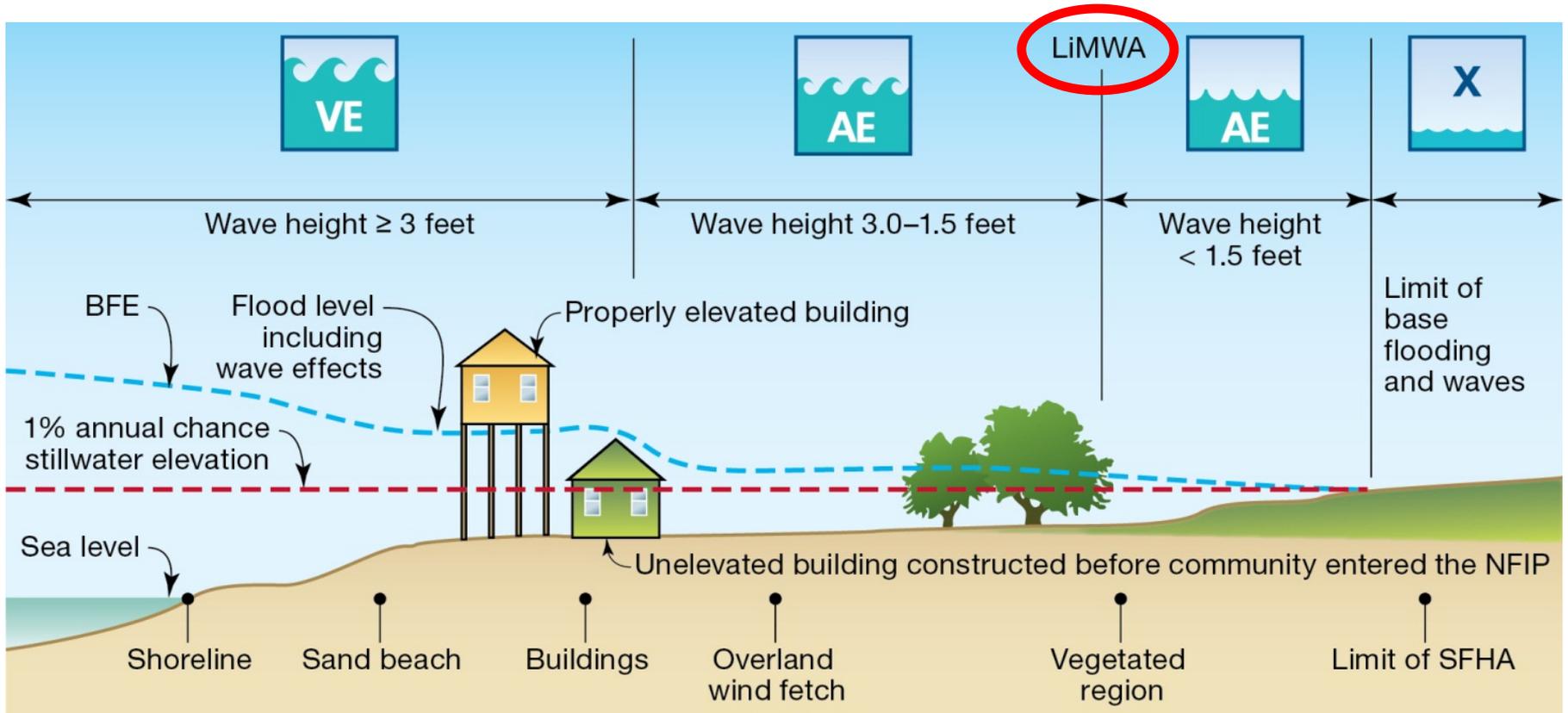
Map Projection: WGS 1984 Web Mercator Auxiliary Sphere

flood.maps@maryland.gov

Limit of Moderate Wave Action (LiMWA)



Coastal A Zone (CAZ)



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Reduce Your Risk – Floodplain Management/Regulations

- ▶ Minimum NFIP requirements found in the Code of Federal Regulations (CFR)
 - **Title 44, Subchapter B, Parts 59–60, § 59.1 & § 60.3(a)–(e)**
- ▶ State Laws and Regulations
- ▶ Community Requirements
 - In Maryland, often based on Model Ordinance
 - Higher Regulatory Standards?
- ▶ Building Codes
 - International Codes (I-Codes):
 - *International Building Code (IBC)*
 - *International Residential Code (IRC)*
 - *ASCE 24: Flood Resistant Design and Construction*
 - *ASCE 7: Minimum Design Loads for Building and Other Structures*



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Key Definitions – Regulations

- ▶ *Development* – Any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, placement of manufactured homes, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials. (44 CFR, § 59.1)
 - ▶ *Historic Structure*
 - ▶ *Substantial Damage*
 - ▶ *Substantial Improvement*
- } “50% Rule”



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“Historic Structure”

Historic Structure means any structure that is:

- (a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- (b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- (c) Individually listed on a **state inventory of historic places** in states with historic preservation programs which have been approved by the Secretary of the Interior; or
- (d) **Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified** either:
 - (1) By an approved state program as determined by the Secretary of the Interior or
 - (2) Directly by the Secretary of the Interior in states without approved programs.

Source: Title 44, § 59.1, Code of Federal Regulations



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Maryland Certified Local Governments

Maryland Historical Trust:

http://mht.maryland.gov/grants_clg.shtml

Cities

- Annapolis
- Baltimore
- Bel Air
- Cambridge
- Chestertown
- Cumberland
- Frederick
- Gaithersburg
- Hagerstown
- Rockville
- Salisbury

Counties

- Baltimore
- Calvert
- Charles
- Frederick
- Montgomery
- Prince George's
- St. Mary's
- Talbot
- Washington
- Wicomico

The screenshot shows the Maryland Historical Trust website. The header includes the Maryland state logo, the text 'DEPARTMENT OF PLANNING MARYLAND HISTORICAL TRUST', a search bar, and social media icons for Facebook, Twitter, and WordPress. A navigation menu contains links for HOME, FUNDING, RESEARCH AND SURVEY, PROJECT REVIEW, ARCHEOLOGY, and GET INVOLVED. The main content area features a 'My Grant Applications' button, a 'Resources' section with links to 'Become a CLG', 'Current Funding Opportunities', and 'FY 2015 CLG Grant Guidelines', and a 'Training' section with links to 'MAHDC' and 'NAPC'. The 'Certified Local Governments' section includes a paragraph explaining the program, a photograph of a historic brick building, and a link to the 'Grants page'. At the bottom, there is a section titled 'Maryland's Certified Local Governments' with a note to click on a link to go to their web site.



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“Substantial damage”

Substantial damage means **damage of any origin** sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Source: Title 44, § 59.1, Code of Federal Regulations



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“Substantial improvement”

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”.**

Source: Title 44, § 59.1, Code of Federal Regulations



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Regulatory Protections

- ▶ May be exempt from most floodplain management requirements
 - **Flood insurance rate will likely be higher**
- ▶ Community can adopt one of two options:
 1. Substantial improvement definition, or
 2. Variance provision
 - **Not recommended to adopt both**



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Second Option: Variance Provision

- ▶ Historic structures can only be substantially improved by variance
- ▶ Gives the community the ability to require additional conditions
- ▶ Should be applied consistently throughout the community



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Higher Regulatory Standards

- ▶ Freeboard – factor of safety
 - 2' common in Maryland
- ▶ Lower the substantial improvement/substantial damage threshold
 - For example, 30% instead of 50%
- ▶ Cumulative substantial improvement
 - For example, track over a 5 year period
- ▶ Coastal A Zone (CAZ)/Limit of Moderate Wave Action (LiMWA) provisions
 - May already be required by the building code



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Reduce Your Risk – Mitigation

- ▶ Use flood-resistant materials
- ▶ Install flood openings in enclosures
- ▶ Elevate HVAC equipment
- ▶ Anchor fuel tanks, extend vent pipe (oil)
- ▶ FEMA Hazard Mitigation Assistance (HMA) grants:
 - Floodproofing (dry, non-residential only)
 - Relocation (not preferred for historic buildings)
 - Elevation (at least 2' above BFE)
 - Demolition (definitely not preferred for historic buildings)
- ▶ **Purchase flood insurance**



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FEMA Floodproofing Certificate

- ▶ Non-residential buildings can be **dry floodproofed** as an alternative to elevating to or above the Base Flood Elevation (BFE)
- ▶ Must be dry floodproofed at least **one foot above the BFE to receive favorable flood insurance rate**
- ▶ Must be certified by a licensed professional

FLOODPROOFING CERTIFICATE FOR NON-RESIDENTIAL STRUCTURES (Continued)					
<small>The floodproofing of non-residential buildings may be permitted as an alternative to elevating to or above the Base Flood Elevation; however, a floodproofing design certification is required. This form is to be used for that certification. Floodproofing of a residential building does not alter a community's floodplain management elevation requirements or affect the insurance rating unless the community has been issued an exception by FEMA to allow floodproofed residential basements. The permitting of a floodproofed residential basement requires a separate certification specifying that the design complies with the local floodplain management ordinance.</small>					
BUILDING OWNER'S NAME				FOR INSURANCE COMPANY USE	
STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. Number) OR P.O. ROUTE AND BOX NUMBER				POLICY NUMBER	
OTHER DESCRIPTION (Lot and Block Numbers, etc.)				COMPANY NAIC NUMBER	
CITY		STATE		Zip Code	
SECTION I - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
<small>Provide the following from the proper FIRM:</small>					
COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM INDEX	FIRM ZONE	BASE FLOOD ELEVATION (in AO Zones, Use Depth)
<small>Indicate elevation datum used for Base Flood Elevation shown above: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____</small>					
SECTION II - FLOODPROOFED ELEVATION CERTIFICATION (By a Registered Professional Land Surveyor, Engineer, or Architect)					
<small>All elevations must be based on finished construction.</small>					
Floodproofing Elevation Information:					
Building is floodproofed to an elevation of _____ feet (In Puerto Rico only: _____ meters).					
<input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____					
<small>(Elevation datum used must be the same as that used for the Base Flood Elevation.)</small>					
Height of floodproofing on the building above the lowest adjacent grade is _____ feet (In Puerto Rico only: _____ meters).					
For Unnumbered A Zones Only:					
Highest adjacent (finished) grade next to the building (HAG) _____ feet (In Puerto Rico only: _____ meters).					
<input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____					
<small>(NOTE: For insurance rating purposes, the building's floodproofed design elevation must be at least 1 foot above the Base Flood Elevation to receive rating credit. If the building is floodproofed only to the Base Flood Elevation, then the building's insurance rating will result in a higher premium. See the Instructions section for information on documentation that must accompany this certificate if being submitted for flood insurance rating purposes.)</small>					
FEMA Form 088-0-34 (8/15)					
Page 2 of 4					



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Insure Your Risk – Flood Insurance

- ▶ **Check with your agent**
- ▶ Available to homeowners, business owners and renters within the community
- ▶ Homeowners insurance doesn't cover flood damage
- ▶ Can purchase even if structure is outside high risk flood hazard area
- ▶ Mandatory purchase requirement for structure in high risk area with federally-backed mortgage
- ▶ Lots of variables affect the rate:
 - Flood zone, date of construction, building elevations, ground elevations, Base Flood Elevation, etc.



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FEMA Elevation Certificate

1. To ensure compliance with a community's regulations
 - Properly elevated
 - Adequate flood openings
2. Flood insurance rating
 - **Proper documentation required**
3. Support Letter Of Map Change (LOMC) requests
 - ▶ Usually, must be certified by a licensed professional
 - In Maryland, only a land surveyor can certify as-built information

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB No. 1660-0008
Expiration Date: November 30, 2018

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A - PROPERTY INFORMATION		FOR INSURANCE COMPANY USE
A1. Building Owners Name		Policy Number:
A2. Building Street Address (Including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.		Company NAIC Number:
City	State	ZIP Code
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)		
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)		
A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983		
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.		
A7. Building Diagram Number _____		
A8. For a building with a crawlspace or enclosure(s):		
a) Square footage of crawlspace or enclosure(s) _____ sq ft		
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____		
c) Total net area of flood openings in A8.b _____ sq in		
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		
A9. For a building with an attached garage:		
a) Square footage of attached garage _____ sq ft		
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____		
c) Total net area of flood openings in A9.b _____ sq in		
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		
SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION		
B1. NFIP Community Name & Community Number		B2. County Name
		B3. State
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date
		B7. FIRM Panel Effective/Revised Date
		B8. Flood Zone(s)
		B9. Base Flood Elevation(s) (Zone AO, Use Base Flood Depth)
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9: <input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____		
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____		
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA		

FEMA Form 086-0-33 (7/15) Replaces all previous editions. Form Page 1 of 6



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Key Definitions – Insurance

- ▶ **Basement** – Any area of the building, including any sunken room or sunken portion of a room, having its floor below ground level (subgrade) on all sides.
- ▶ **Flood** – A general and temporary condition of partial or complete inundation of 2 or more acres of normally dry land area or of 2 or more properties (at least 1 of which is the policyholder's property)
- ▶ **Lowest Floor** – The lowest floor of the lowest enclosed area (including a basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building's lowest floor provided that such enclosure is not built so as to render the structure in violation of requirements.



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Flood Insurance

- ▶ National Flood Insurance Program (NFIP)
www.FloodSmart.gov or 1-800-720-1093
- ▶ Recent Legislation:
 - Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12)
 - Grandfathering eliminated
 - Homeowner Flood Insurance Affordability Act of 2014 (HFIAA)
 - Grandfathering reinstated
- ▶ **Only long-term solution is mitigation**

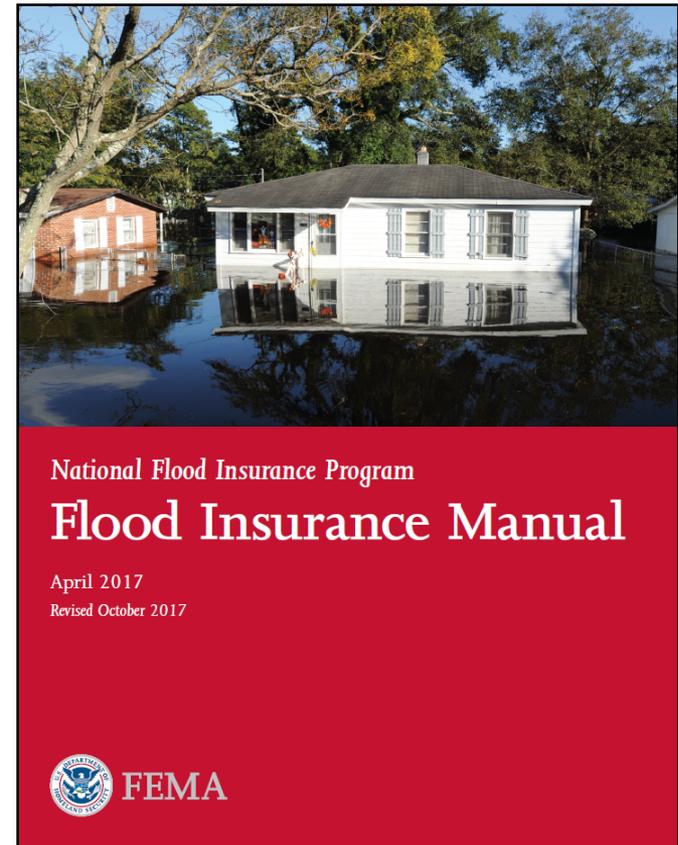


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Flood Insurance Rating

- ▶ Higher rates for:
 - Subgrade crawlspace
 - HVAC not elevated
 - Lack of flood openings
- ▶ Elevation Certificate may improve the rate
- ▶ **Agent to use whatever rating method yields cheaper rate**



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Subgrade Crawlspace = Basement



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Flood Openings

- ▶ Bottom of opening must be within 12" of grade
- ▶ Prescriptive: 1 square inch of net open area for every square foot of enclosed area (also an engineered option)
- ▶ On at least two different walls



Lowest Floor – Openings Covered



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Rehabilitation Projects



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FEMA Publications

- ▶ FEMA Technical Bulletins:
 - TB1, Openings in Foundation Walls and Walls of Enclosures
 - TB 2, Flood Damage-Resistant Materials Requirements
 - TB 3, Non-Residential Floodproofing – Requirements and Certification
 - TB 7, Wet Floodproofing Requirements
- ▶ Substantial Improvement/Substantial Damage Desk Reference (FEMA P-758)
- ▶ Floodplain Management Bulletin on Historic Structures (FEMA P-467-2)
- ▶ Protecting Building Utility Systems From Flood Damage (FEMA P-348)
- ▶ Floodproofing Non-Residential Buildings (FEMA P-936)
- ▶ Floodplain Management Bulletin: Variances and the National Flood Insurance Program (FEMA P-993)
- ▶ Fact Sheet: Historic Structures and the Biggert-Waters Flood Insurance Reform Act of 2012



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Where to go from here?

- ▶ Learn more about floodplain regulations and hazard mitigation
- ▶ Get involved in hazard mitigation planning
- ▶ Be flexible in balancing protection and preservation
- ▶ Look for community-wide solutions
- ▶ Understand that climate change is more than sea level rise



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Opportunities for Education

- ▶ FEMA's Emergency Management Institute
<https://training.fema.gov/is/>
- ▶ ASFPM's Certified Floodplain Manager Program
<http://www.floods.org/index.asp>
- ▶ Webinars –
 - APA Planning Information Exchange (PIE)
<https://www.planning.org/nationalcenters/hazards/planninginformationexchange/>
 - Local State Floodplain/Stormwater Manager Association
<http://www.floods.org/index.asp?menuID=195&firstlevelmenuID=179&siteID=1>



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Hazard Mitigation Planning



Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation Planning

State and Local Mitigation Planning How-To Guide

FEMA 386-6 / May 2005



National Flood Insurance Program (NFIP)

Floodplain Management Bulletin
Historic Structures

FEMA P-467-2

May 2008



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Protection and Preservation



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Holland Island House



Historic house brought by barge from Holland Island

Own a piece of history with this charming Victorian circa 1918. This 3 bedroom home was one of four homes brought over to Crisfield by barges from Holland Island. Holland Island is located in the Holland Straits within the Chesapeake Bay. The 1 1/2 mile long island has been undergoing erosion since the early 1900's, and residents were forced to leave by 1922. Many residents moved their homes, piece by piece, to mainland areas. Today, only one home still remains standing on the island.

Source:
<http://www.houseforsaleeasternshore.com/houseforsaleeasternshore/standard/index.htm>



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Community-wide Solutions



Source: Google Maps, 2017



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More than Rising Seas



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What will you do?



Source: Clip Art Fest, 2016

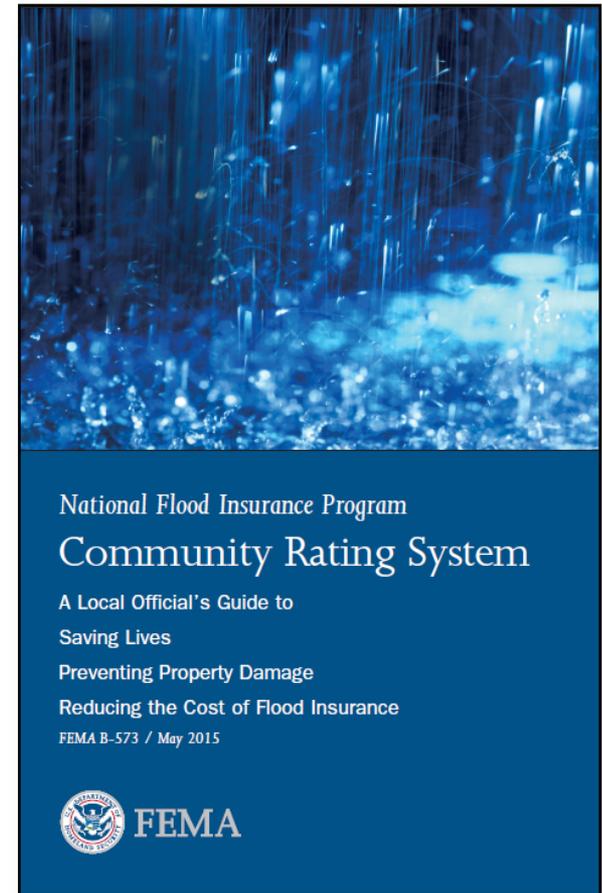


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Community Rating System (CRS)

- ▶ Voluntary incentive program
- ▶ Recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements
- ▶ For every 500 points earned, up to a 5% reduction in flood insurance
 - Up to 500 points for 3' freeboard (fill prohibited)
 - Up to 650 points for CAZ requirement



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Table 1:

How much discount property owners in your community can get

Rate Class	Discount		Credit Points Required
	SFHA*	Non-SFHA**	
1	45%	10%	4,500 +
2	40%	10%	4,000 - 4,499
3	35%	10%	3,500 - 3,999
4	30%	10%	3,000 - 3,499
5	25%	10%	2,500 - 2,999
6	20%	10%	2,000 - 2,499
7	15%	5%	1,500 - 1,999
8	10%	5%	1,000 - 1,499
9	5%	5%	500 - 999
10	0%	0%	0 - 499

* Special Flood Hazard Area

** Preferred Risk Policies are available only in B,C, and X Zones for properties that are shown to have a minimal risk of flood damage. The Preferred Risk Policy does not receive premium rate credits under the CRS because it already has a lower premium than other policies. Although they are in SFHAs, Zones AR and A99 are limited to a 5% discount. Premium reductions are subject to change.

19 Credited Activities

- ▶ **Public Information Activities (300 Series)**
 - Elevation Certificates, Map Information Service, Outreach Projects, Hazard Disclosure, Flood Protection Information and Assistance, Flood Insurance Promotion
- ▶ **Mapping and Regulations (400 Series)**
 - Flood Hazard Mapping, Open Space Preservation, Higher Regulatory Standards, Flood Data Maintenance, Stormwater Management
- ▶ **Flood Damage Reduction Activities (500 Series)**
 - Floodplain Management Planning, Acquisition and Relocation, Flood Protection, Drainage System Maintenance
- ▶ **Warning and Response (600 Series)**
 - Flood Warning and Response, Levees, Dams



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CRS What-If Report

- ▶ Generated from FEMA's Community Information System (CIS)
 - FEMA, ISO or State NFIP Office can help
- ▶ Gives an idea of the potential insurance savings in the community



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Community:	ANNAPOLIS, CITY OF	State:	MARYLAND
County:	ANNE ARUNDEL COUNTY ▼	CID:	240009

Current CRS Class = 10

[\[Printable Version\]](#)

		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
	PIF	483	183	76	224
	PREMIUM	\$493,314	\$332,099	\$63,529	\$97,686
	AVERAGE PREMIUM	\$1,021	\$1,815	\$836	\$436
CRS Class					
09	Per Policy	\$41	\$91	\$42	\$0
	Per Community	\$19,782	\$16,605	\$3,176	\$0
08	Per Policy	\$75	\$181	\$42	\$0
	Per Community	\$36,386	\$33,210	\$3,176	\$0
07	Per Policy	\$110	\$272	\$42	\$0
	Per Community	\$52,991	\$49,815	\$3,176	\$0
06	Per Policy	\$151	\$363	\$84	\$0
	Per Community	\$72,773	\$66,420	\$6,353	\$0
05	Per Policy	\$185	\$454	\$84	\$0
	Per Community	\$89,378	\$83,025	\$6,353	\$0
04	Per Policy	\$219	\$544	\$84	\$0
	Per Community	\$105,983	\$99,630	\$6,353	\$0
03	Per Policy	\$254	\$635	\$84	\$0
	Per Community	\$122,588	\$116,235	\$6,353	\$0
02	Per Policy	\$288	\$726	\$84	\$0
	Per Community	\$139,193	\$132,840	\$6,353	\$0
01	Per Policy	\$323	\$817	\$84	\$0
	Per Community	\$155,798	\$149,445	\$6,353	\$0

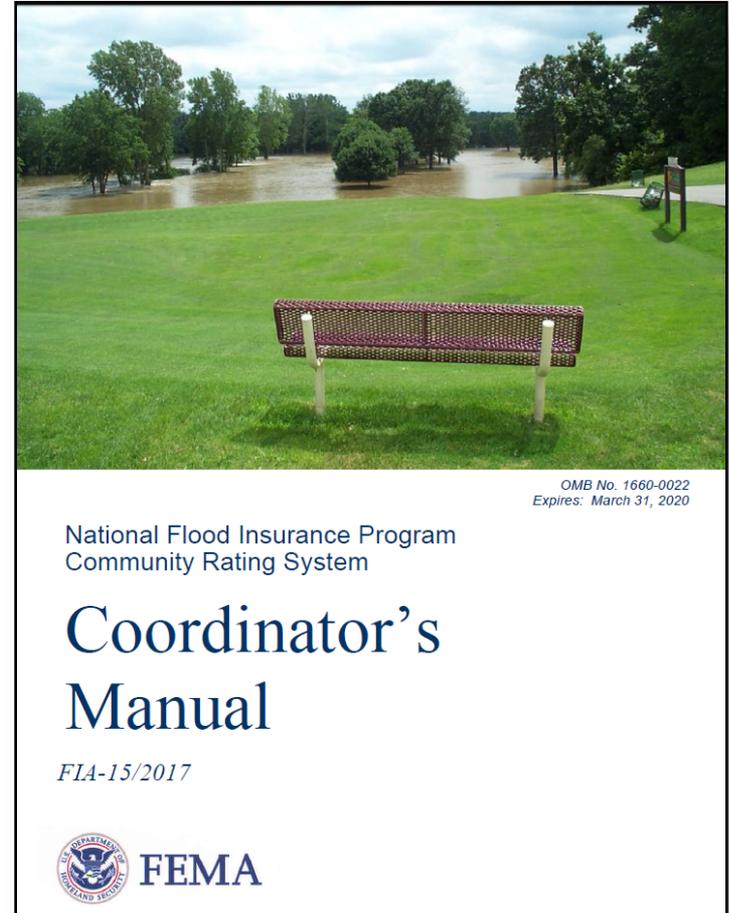
* SHFA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.

CRS Resources

- ▶ FEMA's [website](#)
 - Brochure
 - Fact Sheets
 - Award for Excellence
 - Additional Resources
 - NFIP/CRS Newsletter
- ▶ www.crsresources.org
 - CRS Coordinator's Manual
 - Application Letter and Quick Check
 - Series Credit Guidance
 - Training & Videos
 - Sign up for *NFIP/CRS Update* newsletter



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Maryland Resiliency Partnership

- ▶ Formed in 2015 (grassroots effort)
- ▶ Public–Private Partnership
 - Multiple state agencies
 - Private firms
 - Non profits
- ▶ Leverage funding, personnel, data and projects to support efforts that integrate hazard mitigation, floodplain management and coastal resiliency



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www.resiliencypartnership.com



Maryland Resiliency Partnership

Working together to create a more resilient Maryland

[Home](#) [Funding](#) [Events](#) [How We Can Help](#) [Search](#)

Resiliency is...

...*"the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions."*

Who We Are

The Resiliency Partnership is a collaboration of public and private partners to leverage funding, personnel, and projects to support efforts that integrate hazard mitigation, floodplain management, and coastal and climate resiliency.



Why We're Here

The damages and impacts resulting from natural hazards present a substantial threat to communities, infrastructure, cultural and natural resources throughout Maryland and will only be exacerbated by a changing



The Partnership

Resiliency Partnership members support and encourage activities throughout the state that improve water quality and reduce flood risk in day-to-day decision making, as well as long-term strategic planning. The MRP



Upcoming Events

June

- [Weather It Together Town Hall](#)
- [FEMA-MD Risk Reduction/Consultation Meeting](#)

August



Comprehensive Approach

Flood Risk Mapping



Flood Insurance and Outreach

**Floodplain Management/Regulations
& Mitigation Practices**



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**CHANGING
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Questions?

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Maryland Historical Trust
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