

# Recommended Strategies for Reducing Vulnerability and Exposure

May 12, 2022



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# Overview

- What is the NFIP ?
- Floodplain Management
- Higher Standards
- Flood Insurance and Risk Rating
- Mitigation
- Floodplain Mapping and the Delaware Flood Planning Tool



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What is  
the  
NFIP ?



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- Established by the National Flood Insurance Act of 1968
- Offers flood insurance to properties with significant flood risk
- Promotes reduction of flood risk through adoption of floodplain mgmt. standards.
- Managed by FEMA



**FEMA**



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# Floodplain Management Requirements

## 44 CFR (Code Federal Regulations) 60.3

- Outlines Floodplain management criteria for flood-prone areas.
- Provides minimum standards for participation in the NFIP.
- Communities must adopt and enforce floodplain management regulations that meet the minimum NFIP standards and requirements.
- Communities have the right to adopt higher standards.



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# Delaware Model Flood Ordinance

Delaware SB64 Model Floodplain Management Ordinance for Communities with Inland (Zone A) and Coastal High Hazard Areas (Zone V)

INSTRUCTIONS AND NOTES – May 14, 2014

ORDINANCE REVISION RESOURCES:

<http://www.dnrec.delaware.gov/swc/Pages/Ordinance-Revision-Resources.aspx>

TECHNICAL SUPPORT:

email: [DE.FloodOrd@gmail.com](mailto:DE.FloodOrd@gmail.com) (include community name in subject line)

Please use <track changes>

This document contains instructions and some explanatory notes for the Delaware Model Flood Damage Reduction Ordinance that includes provisions for all flood zones (Zone A & Zone V) and incorporates language for the recommendations of the Floodplain and Drainage Advisory Committee created through Senate Bill 64. The notes are keyed to the sections of the model ordinance. They are not intended to explain every provision, but to highlight those that clarify administration and enforcement and those that may be new to many communities.

The following are important aspects of the new model ordinance:

1. The model is written in regulatory language, rather than permissive and unenforceable language that appears in some local regulations.
2. The Floodplain Administrator's responsibilities are written to satisfy the community's commitment and responsibilities to the NFIP.
3. The model ordinance includes specific requirements for development other than buildings that may appear to be "new," but that are based on the overall performance expectation of the NFIP for any development, including activities other than buildings. The specific requirements come from FEMA guidance publications and ASCE 24 *Flood Resistant Design and Construction* (a standard referenced by the International Code Series). The specificity is intended to help both the local official and the applicant understand what constitutes resistance to flood damage for such activities.
4. The model ordinance includes requirements for all development, including buildings and structures. Communities that enforce building codes based on the 2009 or later editions of the International Code Series may rely on the flood provisions of those codes to meet the NFIP requirements. A list of communities and adopted codes posted by the Delaware Building Officials Association ([www.deboa.org](http://www.deboa.org)) indicates only a small number of communities use the 2009 or later edition. This list may be incomplete and it might not reflect the most recent edition of adopted codes. DNREC is preparing a separate, code-coordinated version of the model ordinance for consideration by these communities.
5. The <SB64> version of the model ordinance includes some "higher standards" in optional language. Higher standards are provisions that exceed the NFIP minimum

- Stand alone “model” ordinance
- Model Ordinance for Communities with Zone A Only
- Model Ordinance for Communities with Inland (Zone A) and Coastal High Hazard Areas (Zone V)
- Model is written in regulatory language
- Includes language for all development
- Includes optional language for “higher standards”





Improved floodplain regulations result in quicker recovery time from a flood event.



# Post Storm Damage

May 11, 2008



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December 13, 2011



# RECOVERY TIME 1,436 Days

April 17, 2012



February 2, 2012



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We Need to Incorporate  
**Higher Standards**



# What are Higher Standards?

- The NFIP has established minimum floodplain management requirements for participating communities.
- Communities may exceed the minimum standards by adopting more comprehensive floodplain management regulations.
- Community officials are more knowledgeable of local information or conditions that may require, particularly for human safety, higher standards than the minimum NFIP criteria.
- More restrictive regulatory requirements are encouraged by FEMA and take precedence.
- Communities that exceed the minimum requirements of the NFIP may be eligible to participate in the Community Rating System (CRS).



# Why Incorporate Higher Standards?



- Reduce risk to human life
- Reduce risk of flood damage to personal property.
- Reduce damage to the environment, structures, and the infrastructure.
- Reduce costs for flood insurance premiums, damage claims, repair costs, and lost revenue.
- Reduce Hardship – displaced families, lack of critical services, the community as a whole.



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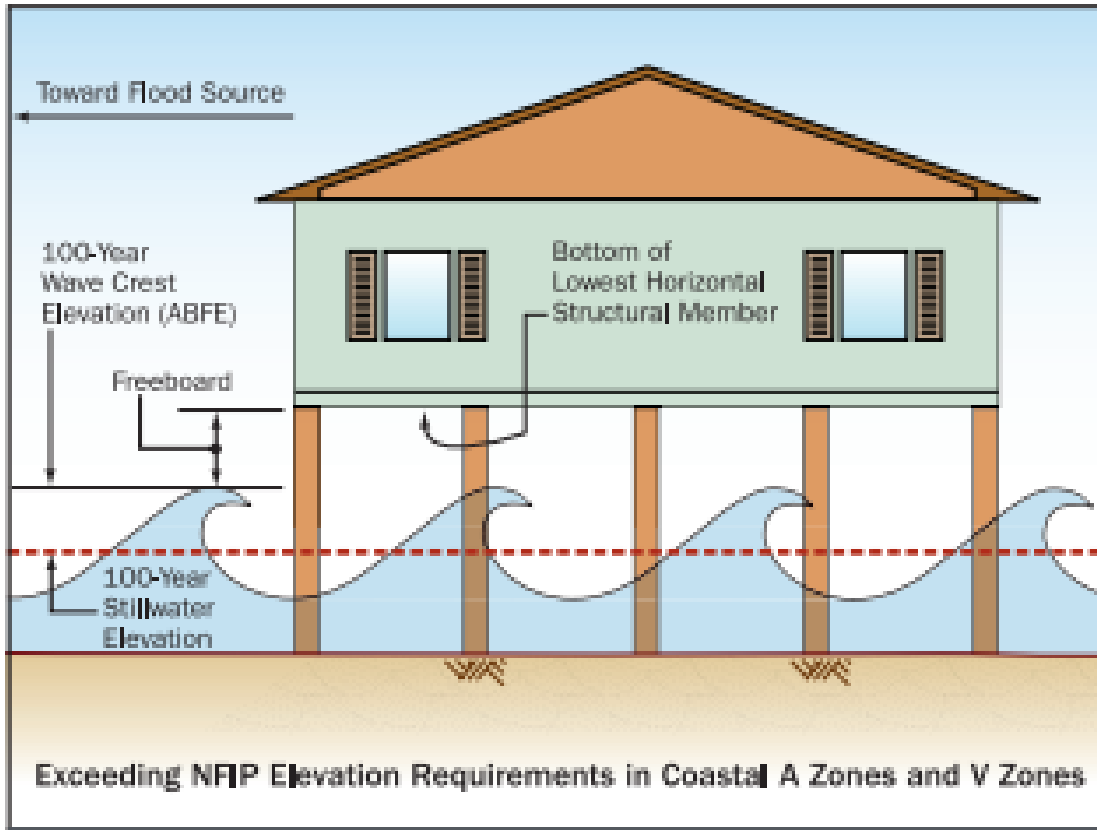
# Types of Higher Standards

- Freeboard – the most effective way to reduce flood risk to a structure in the floodplain.
- Accessibility – designing elevated roadways and ingress/egress access points
- Floodway Setback Requirement – protecting floodway carrying capacity by establishing fringe buffers that prevent encroachment and increase in flood elevation.
- Flood Elevation Rise - Limiting allowable flood elevation rise due to construction activities in the floodplain . (No Rise to 0.5 feet)
- Coastal A Zones - Requiring all new construction in coastal A zones to meet VE zone construction standards.



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# Freeboard



- Freeboard – the single most effective way to reduce flood risk to a structure in the floodplain.
- Factor of safety usually expressed in feet above the base flood elevation.
- Compensates for the many unknown factors that could contribute to flood heights greater than the flood heights calculated for a particular flood event.
- Extremely cost effective method for long term savings on flood insurance.



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# Freeboard



Lowest floor was built 1.5 feet above BFE - no damage

Foundation collapse of dwelling not elevated properly.



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# Coastal A Zones



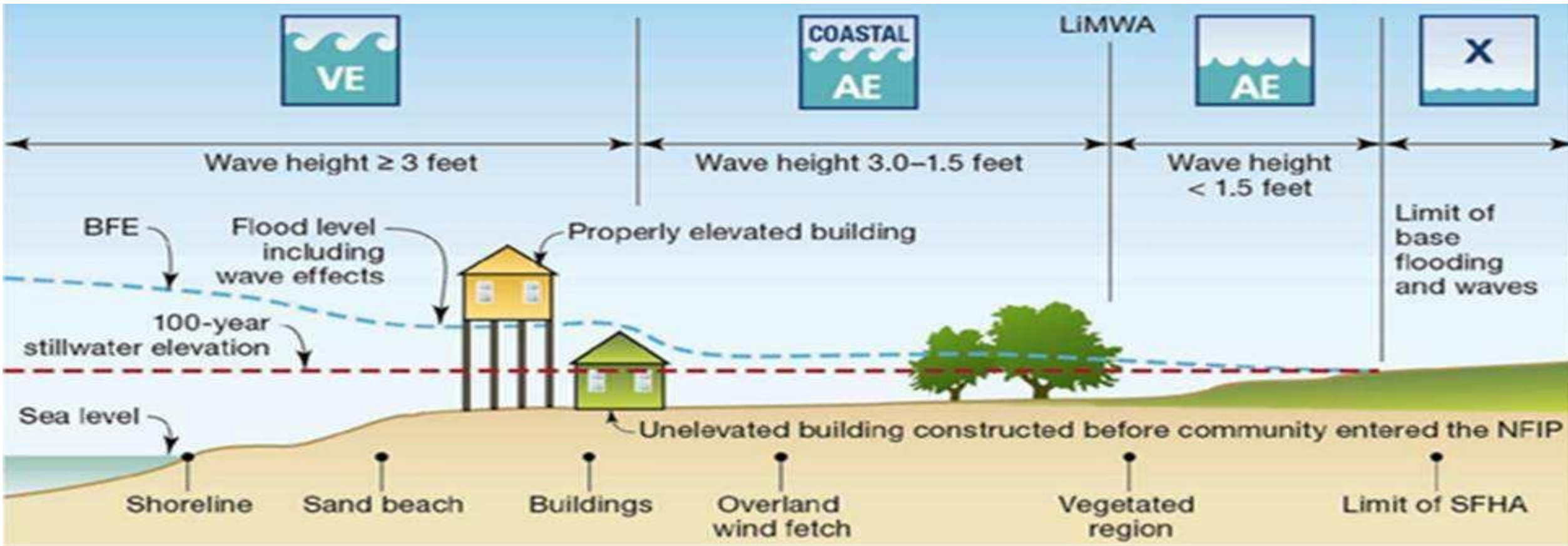
- Reconsider how development is permitted in Coastal A Zones
  - LiMWA line (Limit of Moderate Wave Action)
- Require structures seaward of the LiMWA line to be built to Zone VE standards.
  - Pile foundation
  - Buildings must be anchored to foundation.
  - Free of obstruction below BFE or Breakaway Wall Construction
  - No Structural Fill

Note: These structures are still susceptible to 1.5 feet of wave action.



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# Coastal A Zones



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[www.fema.gov](http://www.fema.gov)



# Floodplain Management



- Lowers the cost of flood insurance
- Reduces flood damage and need for expensive drainage solutions.
- Creates more resilient communities.
- Decreases recovery time.
- Enforcement of flood regulations helps avoid NFIP probation.



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# Flood Insurance



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# Flood Insurance Risk Rates

- Since the 1970s, flood insurance risk rating has based on:
  1. The amount and type of coverage being purchased.
  2. Your location – Flood Zone designation on the FEMA Flood Insurance Rate Map (FIRM).
  3. The design and age of your structure.
  4. The elevation of the building in relation to the base flood elevation.

That has all changed...



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# Risk Rating 2.0

## What is it?

- The National Flood Insurance Program's new risk rating methodology to utilize industry best practices and cutting-edge technology to enable FEMA to deliver rates that are actuarially sound, equitable, easier to understand and better reflect a property's flood risk.
- October 1, 2021 – All new policies and existing policyholders who were eligible for renewal fell under the new rating method.
- April 1, 2022 – All remaining policies utilize the new rating method.



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# Risk Rating 2.0

- Policy risk rating will be based on:

**FIRMs and Elevation Certificates are no longer used to calculate flood insurance premiums.**

1. Flood frequency
2. Flood sources and types - river overflow, storm surge, coastal erosion and heavy rainfall.
3. Distance to a water source, size of nearest water body.
4. Building characteristics.
5. Cost to rebuild your structure.

Policies will represent an individual property's risk, not an average.



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# Risk Rating 2.0

- What does this mean for Delaware
  1. Average NFIP claim payout in the last ten years: \$11,700
  2. 38% policies estimated to receive an immediate decrease.
  3. 52% policies estimated increase of up to \$120 per year.
  4. 8% policies estimated increase of \$120 - \$240 per year.
  5. 2% policies estimated increase greater than \$20 per month on average.

\* Risk Rating 2.0 Delaware statistics from FEMA  
[https://www.fema.gov/sites/default/files/documents/fema\\_delaware-state-profile\\_03-2021.pdf](https://www.fema.gov/sites/default/files/documents/fema_delaware-state-profile_03-2021.pdf)



# Risk Rating 2.0

More than 20 percent of all NFIP claims come from outside the areas of highest risk.



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# Mitigation





# Mitigation

Hazard mitigation is any sustainable action that reduces or eliminates long-term risk to people and property from future disasters.



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# Mitigation

## Hazard Mitigation Assistance Grants (HMA)

- Available for pre-disaster and post-disaster mitigation projects.
  - Prioritize mitigation grants for Severe Repetitive Loss and Repetitive Loss Properties
1. Flood Mitigation Assistance (FMA)
    - Pre-Disaster grant program
    - More information: <https://www.fema.gov/grants/mitigation/floods>
  2. Building Resilient Infrastructure and Communities (BRIC)
    - Pre-Disaster grant program
    - More information: <https://www.fema.gov/grants/mitigation/buildingresilient-infrastructure-communities>
  3. Hazard Mitigation Assistance Grant Program (HMGP)
    - Post-Disaster grant program
    - More information <https://www.fema.gov/grants/mitigation/hazardmitigation>



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# Mitigation Methods to Reduce Risk and Flood Insurance Rates

- Mitigation Strategies
  - Installation of Engineered Flood Vents
  - Elevate Structure
  - Relocate Structure
  - Buyout / Remove Structure
  - Local Adoption of Hazard Resistant Building Codes
  - Participation in the Community Rating System program



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# Engineered Flood Vents



Retrofit or install FEMA approved flood openings on structures in floodzones with no or inadequate venting to lower insurance premiums.



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# Elevate Structure



Fenwick Island, DE  
Elevation Project



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# Relocation and Elevated

Before



Bigstone Beach, DE

After



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# Buyout



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# Buyout

After



Before  
Before



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# Building Codes



## Building Codes Save: A Nationwide Study

Losses Avoided as a Result of Adopting  
Hazard-Resistant Building Codes

November 2020



FEMA

FEMA's landmark study, "Building Codes Save: A Nationwide Study," shows that modern building codes lead to major reduction in property losses from natural disasters.

FEMA's study indicated that over a 20-year period cities and counties with modern building codes avoided approximately \$32 Billion Dollars in losses.



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# Participation in CRS

- The Community Rating System (CRS) is a voluntary program that recognizes and encourages communities to adopt and enforce floodplain management standards that exceed the minimum requirements of the NFIP by offering discounts on flood insurance premium rates.
- Under Risk Rating 2.0, communities will continue to earn NFIP insurance rate discounts of 5% - 45% based on their CRS classification. Premium discounts will be applied evenly to all policies in a participating community for structures located in or out of the SFHA as flood zones will no longer be used to determine rates.

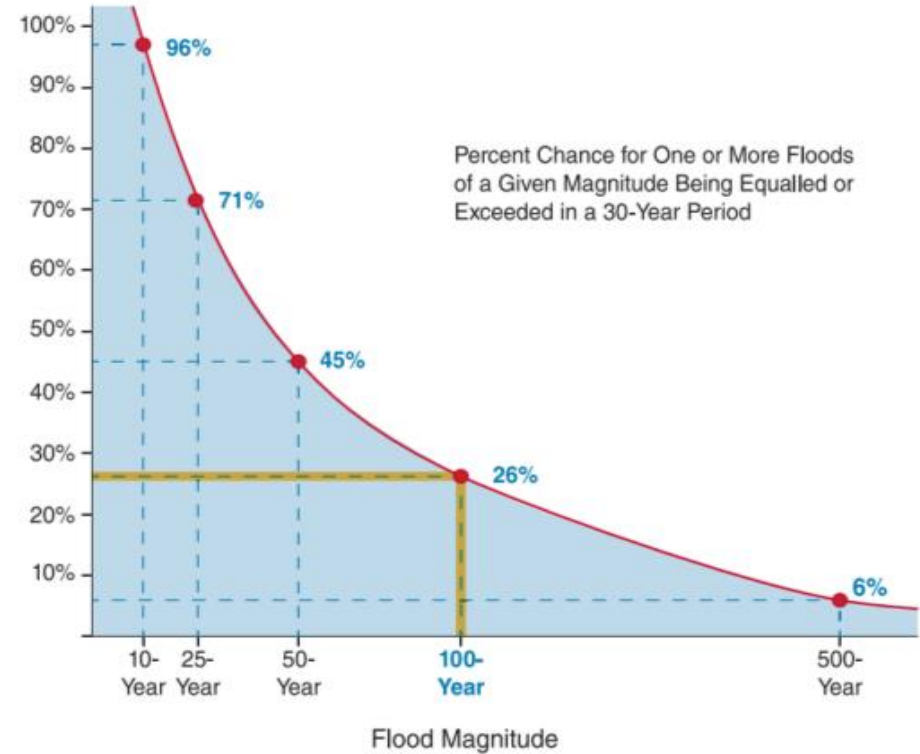


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# Floodplain Mapping – Know Your Risk



Figure 3-1. This graph shows the relationship between flood recurrence intervals and the probability of an event occurring within a 30-year period.



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# Delaware Flood Planning Tool

The screenshot displays the Delaware Flood Planning Tool web application. The interface is divided into a left sidebar and a main map area.

**Left Sidebar:**

- Header: Delaware.gov logo and navigation menu.
- Section: **FLOOD PLANNING TOOL**
- Icons: Information (i), Layers, Location, and Help (?).
- Description: "The Delaware Department of Natural Resources and Environmental Control (DNREC) Flood Planning Tool is an interactive web map application designed to aid you in researching your flood risk in the State of Delaware."
- Disclaimer: "Disclaimer: The Flood Planning Tool provided herein is for reference only within the State of Delaware boundaries. 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 or reliance upon this data. Delaware DNREC does not guarantee the..."
- Logo: Delaware Department of Natural Resources and Environmental Control.

**Main Map Area:**

- Search Bar: "Street / Tax Parcel / Watershed" with a search icon.
- Map: Aerial view of Delaware with a blue grid overlay. Yellow arrows point to the search bar and the grid with the text "SEARCH or CLICK".
- Map Labels: Philadelphia, Wilmington, Dover, Delaware, Nanticoke Wildlife Area, Delaware Bay, Atlantic City, Vineland, New Jersey, Wharton State Forest, Belleplain State Forest, Toms River, Easton, Annapolis, Baltimore, Aberdeen, Frederick, Westminister, Hanover, Sterling, Centerville, Reston, Washington, Aspen Hill, Germantown, Columbia, and Salisbury.
- Map Controls: Zoom in (+), zoom out (-), and reset (circular arrow) buttons on the left; full screen, print, and other utility icons on the right.
- Coordinates: A box at the bottom left shows "LAT/LONG -76.529108, 38.795750".

**Footer:**

Earthstar Geographics | FEMA | Delaware FirstMap, State of New Jersey, VITA, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Powered by Esri

# Purpose and Features

## **Purpose:**

Enable viewing of FEMA floodplain mapping for properties in Delaware along with additional resources

## **Features:**

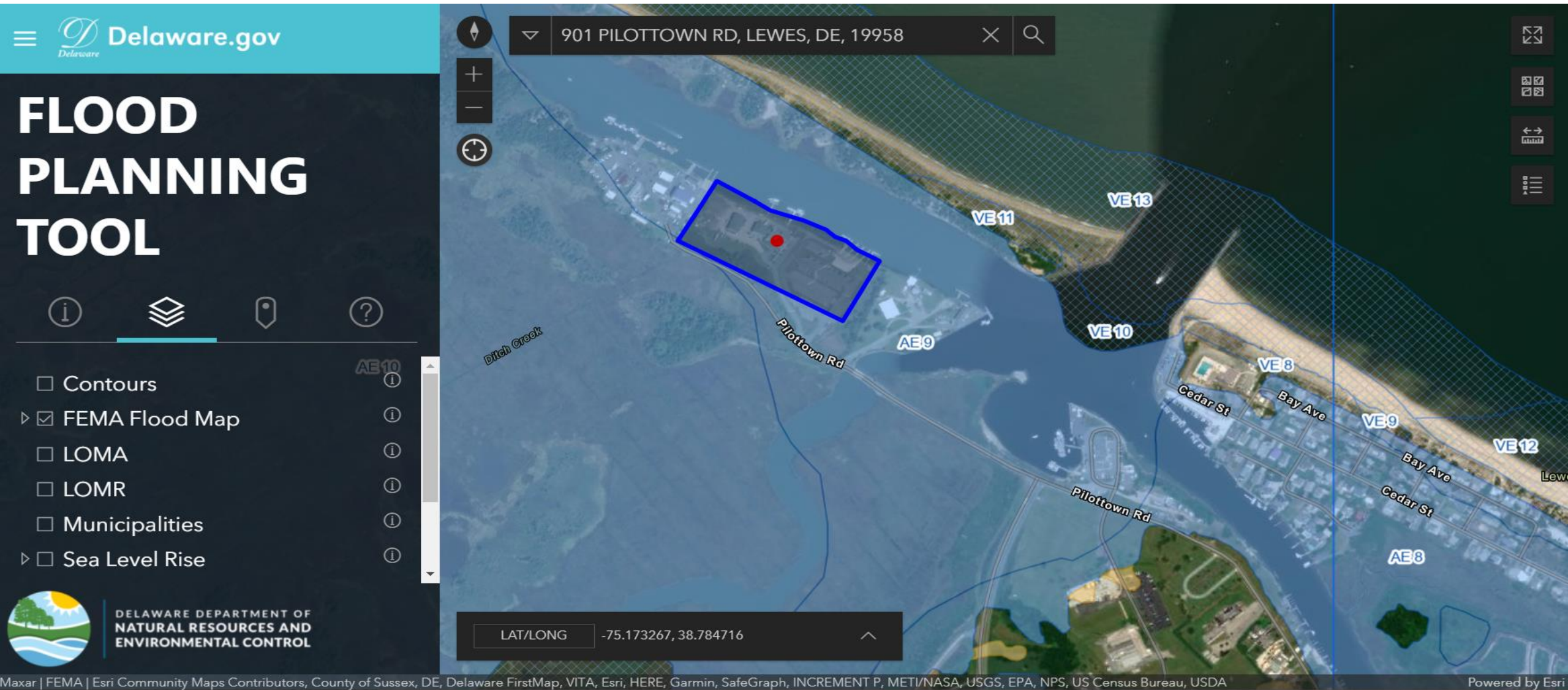
- Location search
- Location-specific (parcel) results
- Layers
- Map printouts
- Hydraulic models



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# Delaware Flood Planning Tool





# Key Takeaways

- Educate residents on their risk – USE THE TOOLS AVAILABLE TO YOU!
- Encourage Flood Insurance, even outside of the SFHA (Where it Rains It Floods)
- Flood insurance alone is not the solution.
- Adopt Higher Standards
- Buildings with floors 18 inches above the base flood elevation are far less likely to be damaged.
- Discourage construction/fill in the flood fringe.
- Locate critical facilities outside of high-risk areas
- Discourage development in the floodplain.
- Mitigate known issues.



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# [www.floodsmart.gov](http://www.floodsmart.gov)



**FEMA**



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INSURANCE PROGRAM**

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## Protect the life you've built.

Flood insurance is financial  
protection – and peace of  
mind.

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### [Why you need flood insurance](#)

Floods are the nation's most common natural



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# Thank you!



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