



**Division of Local  
Government Services**

# **Flood Plain Regulation**

## **For Local Review Boards**

**A Division of the New York Department of State**



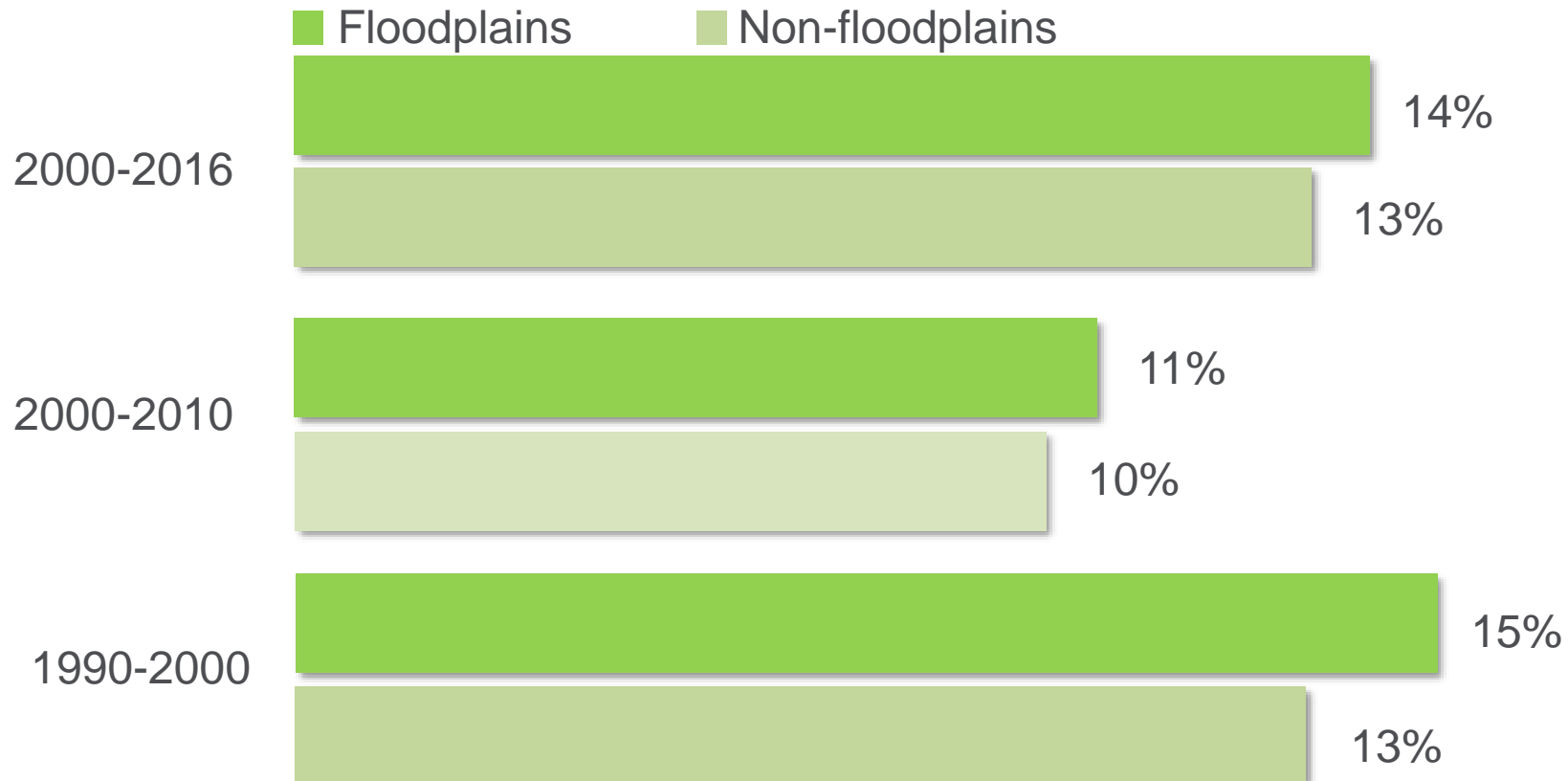
**Delaware River in Walton, Delaware County**

**Floods are  
'acts of God'  
but flood  
losses are  
largely acts  
of man.**

- Gilbert White

# U.S. Flood-Prone Population Growth

Calculated population estimates show areas in FEMA-designated 100-year floodplains are experiencing slightly faster growth.



SOURCE: Governing analysis of standardized U.S. Census tract data from IPUMS NHGIS, University of Minnesota; FEMA NFHL

# Why regulate floodplain development?

- It's in residential and building codes
- Make flood insurance available
- Reduce potential damage for new development
- Avoid adverse impacts to neighboring properties
- Promote safety for public and emergency responders

# Floodplain management is **your** responsibility

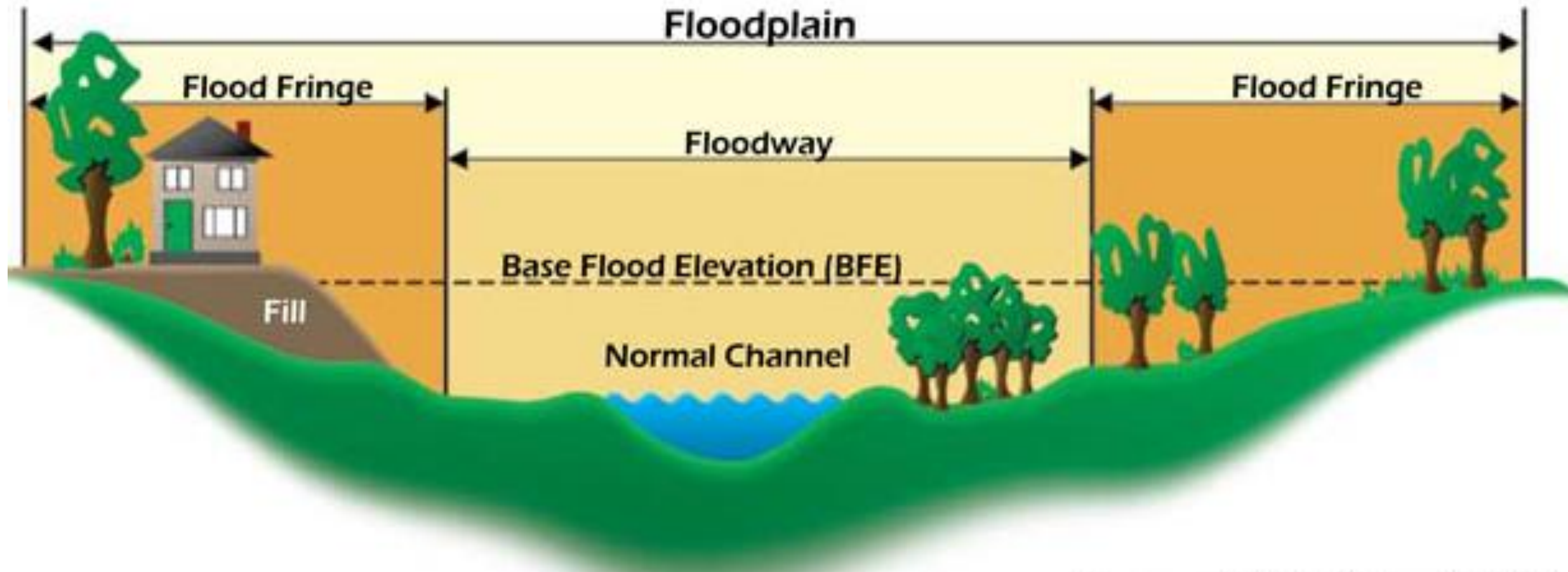
“All local governments with land use jurisdiction over any area of special flood hazard shall, and are authorized to, take action necessary to achieve and maintain participation in the national flood insurance program.”

NYS Environmental Conservation Law, Article 36

# Floodway

- Also known as “Regulatory Floodway”
- “...the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.”
- Most restrictive area

## Characteristics of a Floodplain



Source: NFIP Guidebook, FEMA

# Acronyms

<b>BFE:</b>	Base Flood Elevation
<b>CRS:</b>	Community Rating System
<b>DFIRM:</b>	Digital Flood Insurance Rate Map
<b>FEMA:</b>	Federal Emergency Management Agency
<b>FIRM:</b>	Flood Insurance Rate Map
<b>FIS:</b>	Flood Insurance Study
<b>NFIP:</b>	National Flood Insurance Program
<b>SFHA:</b>	Special Flood Hazard Area

# Special Flood Hazard Area

- “100-year floodplain”
- FEMA and building code development standards pertain only to special flood hazard area:

“land in the floodplain subject to a 1% or greater chance of flooding in any given year.”



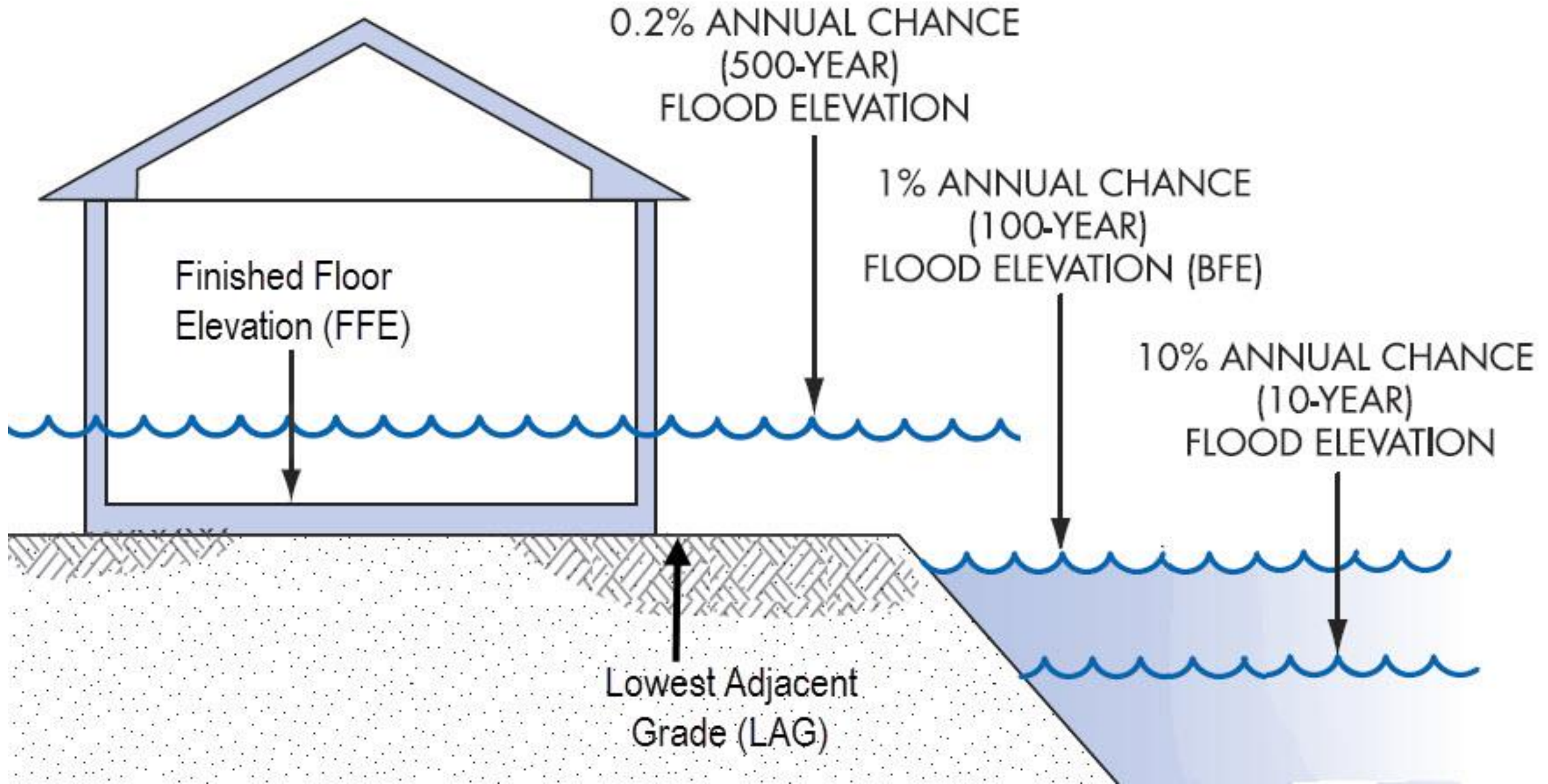
# Base flood elevation (BFE)

Often referred to as the "100-year" flood

Flood with 1% chance of being equaled or exceeded in any given year

- 26% chance of occurring in a 30-yr period
- 39% chance of occurring in a 50-yr period
- 63% chance of occurring in a 100-yr period

Residential buildings must be protected from flood damage to a level 2 feet above BFE; if no BFE is available, at least 3 feet above the highest adjacent grade.



# National Flood Insurance Program (NFIP)

- Partnership between the Federal Government and local communities.
- The Federal Government agrees to provide flood insurance if the municipality agrees to enforce sound mitigation practices.



# National Flood Insurance Program

Structures in regulatory floodplain with federally backed mortgage require flood insurance

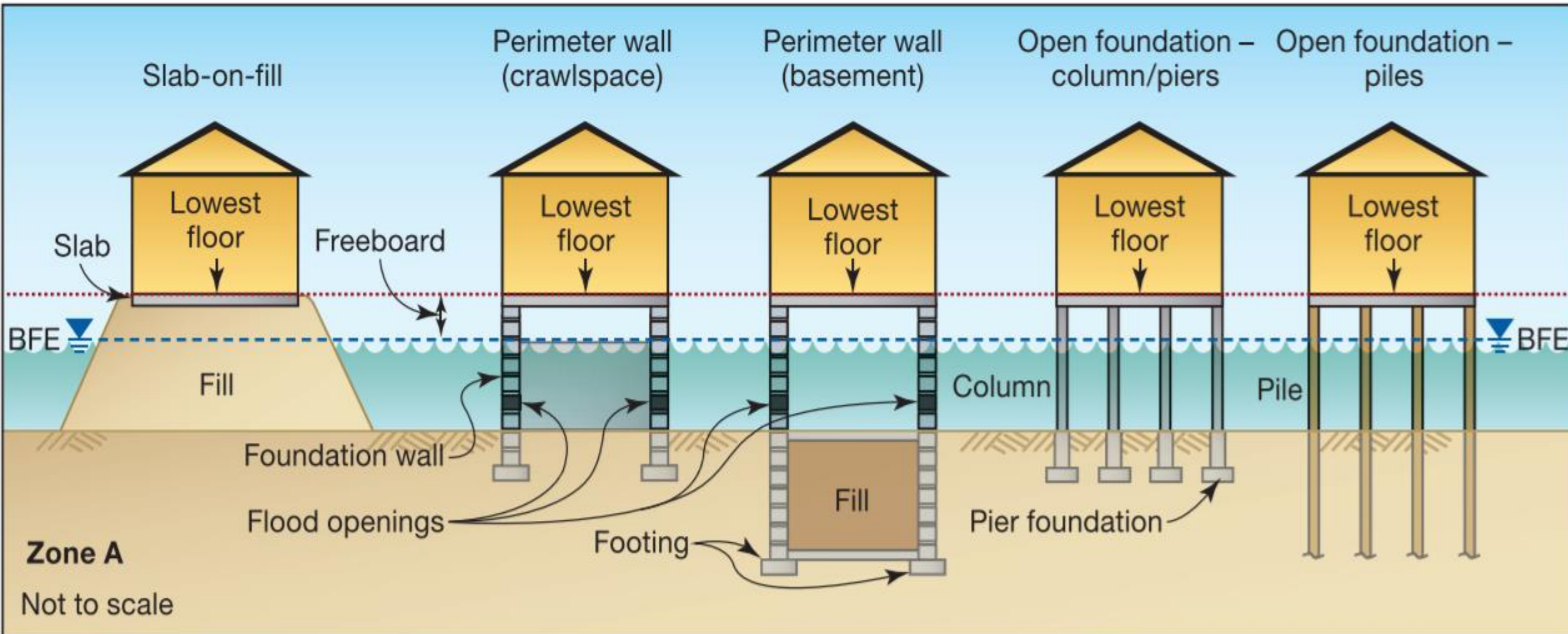
Municipalities not enforcing requirements can be kicked out!

Implications:

- flood insurance through NFIP will be unavailable;
- federally-backed mortgages will be unavailable; and
- real estate transactions will suffer



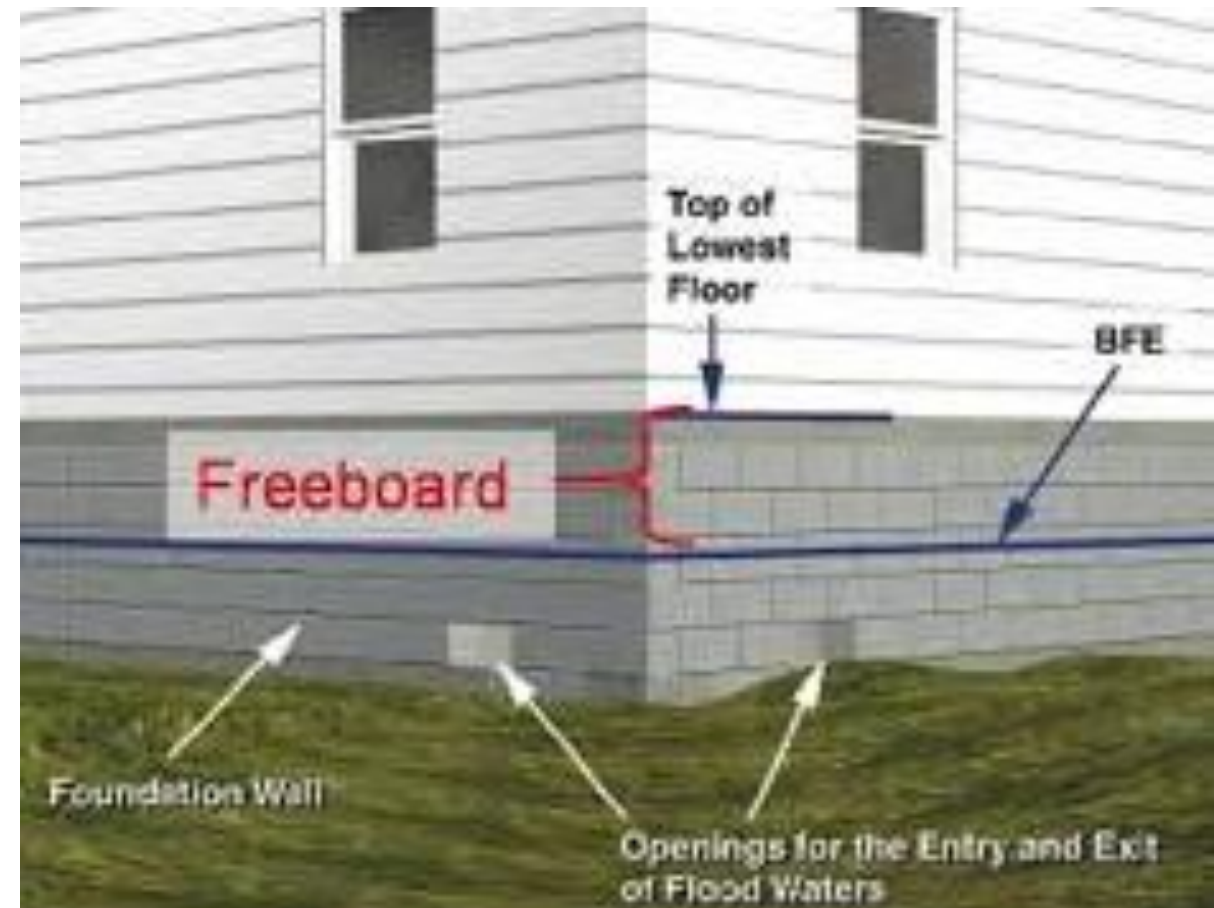
# NFIP-compliant homes: top of the lowest floor is above BFE



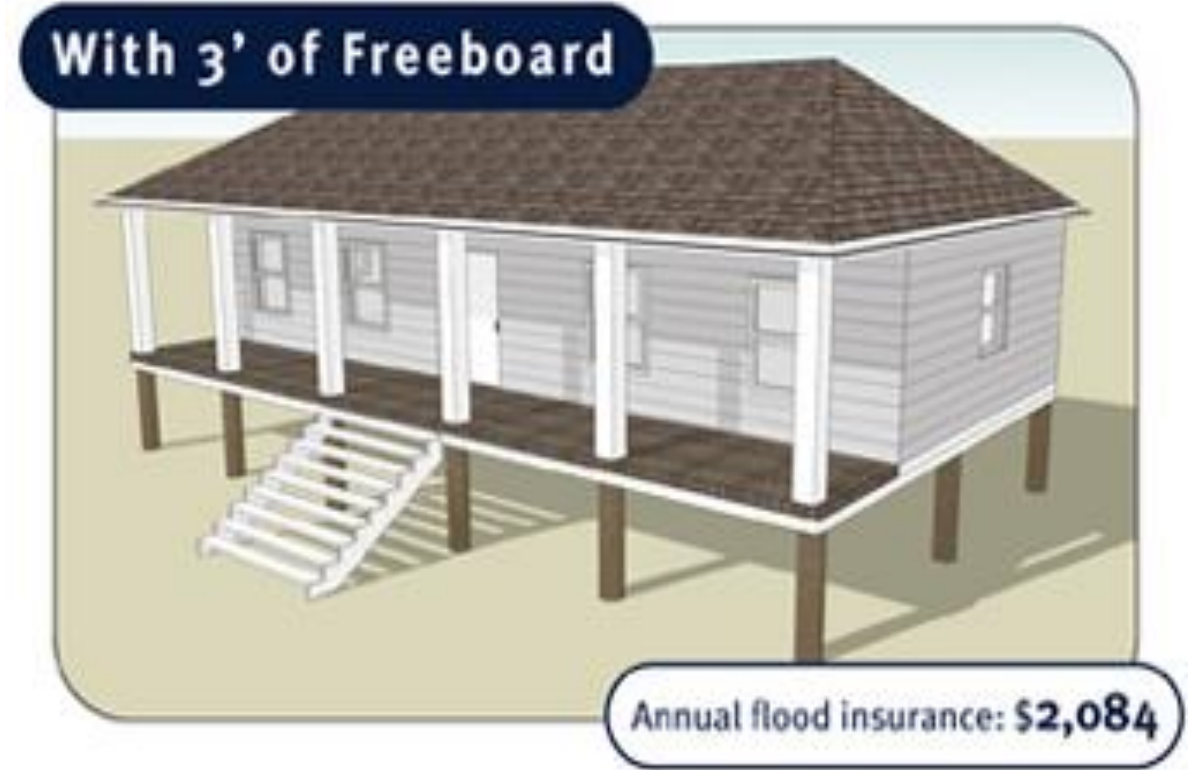
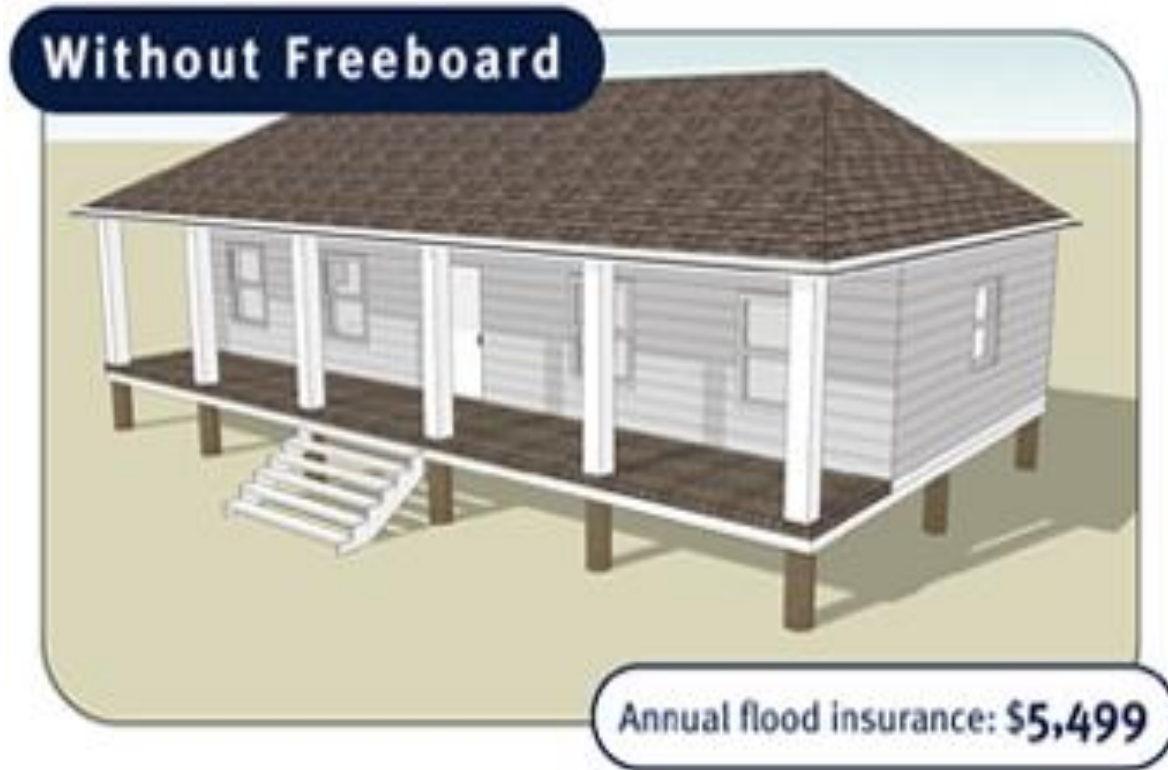
# Freeboard

The extra elevation above BFE and top of lowest floor

- NYS Residential Code requires protection to a level 2 feet above BFE
- Local law may still have older standard of protection to BFE, but freeboard requirement must be enforced.



# Freeboard relevance



Lower flood risk = significantly lower flood insurance rates

# Limit development in flood plains!

- It's the most effective strategy to protect people and property
  - allows nature to lessen the impacts of flooding
  - provides countless other benefits to communities
- Existing development is a complicated problem; new development is relatively simple.

# Natural floodplains work like a sponge



- Slow the flow
- Flood storage reservoirs

# Benefits of Undeveloped Floodplains



- Flood damage reduction;
- Recreational opportunities;
- Plants and animals habitat;
- Water pollution reduction;
- Stormwater management;
- Erosion control; and
- Cultural resource preservation

## Model floodplain zoning law

- DEC has model language for local flood-damage protection laws, with minimum floodplain management measures required to participate in the National Flood Insurance Program (NFIP)
- NYS Uniform Fire Prevention and Building Code (Uniform Code) requires building design includes 2 feet of freeboard above base flood elevation.

# “No Adverse Impact” Principle

- Ensure that actions taken in floodplains--and throughout the watershed--don't lead to adverse impacts on property and rights of others
- Local adverse impacts should be based on physical, environmental, social, and economic conditions

# Overlay zone

Applies a common set of standards over underlying districts:

- Base layer sets permitted uses and dimensions
- Overlay sets additional requirements within specified boundaries, regardless of the underlying base zone (i.e. R1 home might also be in Floodplain Overlay)
- Could include use restrictions, landscaping requirements, and standards for environmentally sensitive areas

## Benefits:

- Additional protection for defined hazard areas without negotiating on a case-by-case basis.
- Allows existing zoning to be superseded or complemented to solve a known problem.
- Implements comprehensive plan policies and strategies for future land use and environment.
- Relatively easy to maintain over time.

# VARIANCES

# Variances should be rare

- Not allowed for *floodway* requirements
- All of those must be approved by NYS DOS
- Many communities issue variances when they should not, and without DOS approval
- Never grant variances for multiple lots, phases of subdivisions, or entire subdivisions.

# **NYS Fire Prevention & Building Code Variance Procedures**

## **19 NYCRR Part 1205**

- When Code provision or requirement entails “practical difficulties or unnecessary hardship or would otherwise be unwarranted.”
- If code provision creates excessive or unreasonable economic burden
- May not substantially adversely affect provisions for health, safety and security, and equally safe and proper alternatives may be prescribed

# FEMA floodplain variance

Applications violating local flood protection laws passed to participate in the NFIP, and Uniform Fire Prevention and Building Code require variances from both.

## WARNING:

NFIP standing may be in jeopardy if you allow development in accordance with a state variance, and have not gone through local variance procedures.

# FEMA variance examples



- Functionally dependent uses along waterways (boat docking or repair facilities)
- Building on small urban lot, if unable to elevate within confines of lot
- Temporary construction facilities during building or repair of roads, bridges and dams



?  
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Jim & Julie

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# **ZBA Variances for historic structures**

- Qualifying structures are listed on National Register of Historic Places, State Inventory of Historic Places, or contribute to historic district
- Changes mustn't destroy or alter characteristics that made it historic
- Certified local historic board or state historic preservation officer must first review and approve work

# New residential buildings in floodplain

**ELEVATE** (elevate top of lowest floor to or above flood protection level)

- Prohibit below grade basements on all sides
- Permit unfinished flood-resistant enclosed area solely used for parking, building access, or limited storage

**ANCHOR** (building, service equipment, storage tanks must prevent flotation, collapse, or lateral movement during 100-yr flood event)

- Ensure foundation won't move due to water force, erosion, or scour

# New non-residential buildings in floodplain

Construction protected against flood damage from 100-yr flood must:

- **Elevate** (top of lowest floor must be elevated to or above flood protection level)
- **Dry floodproof** (watertight below flood protection level, with walls substantially impermeable to passage of water)

# Hazardous materials

- The NFIP does not strictly prohibit hazardous materials from areas subject to flooding.
- **TIP:** Require them to be protected from floodwaters to reduce or eliminate damage associated with their release.



# NFIP subdivision standards

- Determine if proposals will be reasonably safe from flooding.
- If subdivision is in flood-prone area, review to assure that:
  - Proposal is consistent to minimize flood damage in flood-prone area;
  - Public utilities and facilities (sewer, gas, electrical, water systems) are located and constructed to minimize or eliminate flood damage; and
  - Adequate drainage is provided to reduce exposure to flood hazards.
- Base Flood Elevation (BFE) data requirement:
  - Require new subdivisions and other development (manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include BFE data.

# NYS subdivision requirement

"land shown on the plat be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood, drainage or other menace to neighboring properties or the public health, safety and welfare."

Integrate hazard mitigation by adopting local standards (i.e., don't allow development on steep slopes)



# Subdivision tips

- **DON'T** approve lots that don't conform with floodplain regulations
- **DO** show floodplain boundaries/elevations on preliminary/final plats
- **DO** require watercourse or drainageway traversing subdivision have dedicated public easements for maintenance
- **DO** require public drainage installation and improvements
- **DO** tie soil erosion and sediment control regulations into plat approval procedure

# Site Plan Review Tips\*

## DO

- Preserve natural vegetative buffers
- Locate new streets outside 100 yr floodplain (or elevate them)
- Ensure adequate stormwater and drainage facilities, and their maintenance

## DON'T

- Disturb sensitive resource areas
- Locate structures in 100 yr floodplain unless they comply with Flood Damage Prevention local law
- Site critical facilities in 100 and 500 yr floodplain

\*Specify additional standards for shorelines, riparian buffers, or sensitive areas

# Wetlands regulations in addition to state and federal permits

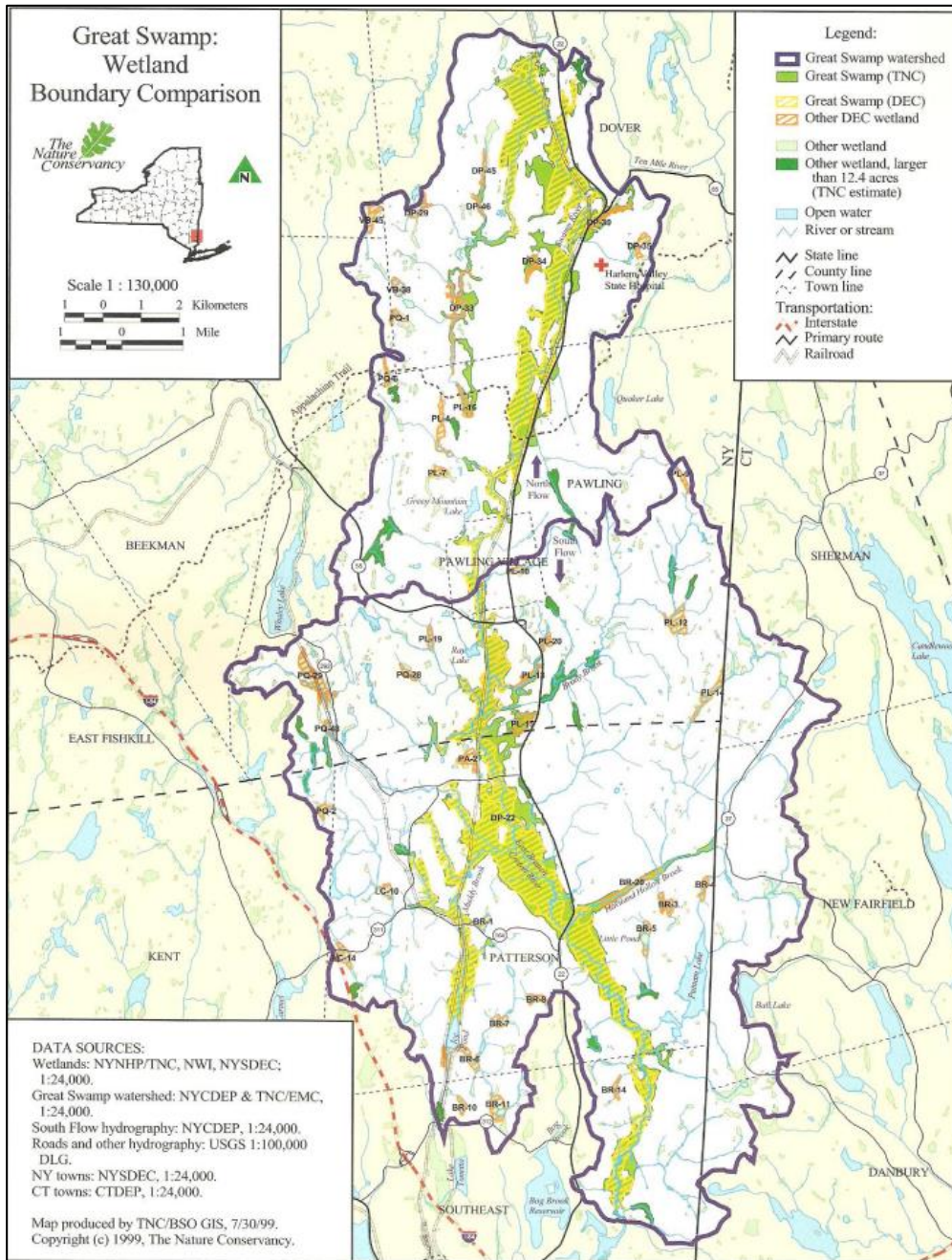
Common elements:

- Wetland protection goals
- Wetland definition
- Permitted/prohibited uses, or performance standards
- Penalties

Association of State  
Wetland Managers'  
model wetland  
protection ordinance:

[www.aswm.org](http://www.aswm.org)

# MAPPING



## • Wetlands Maps

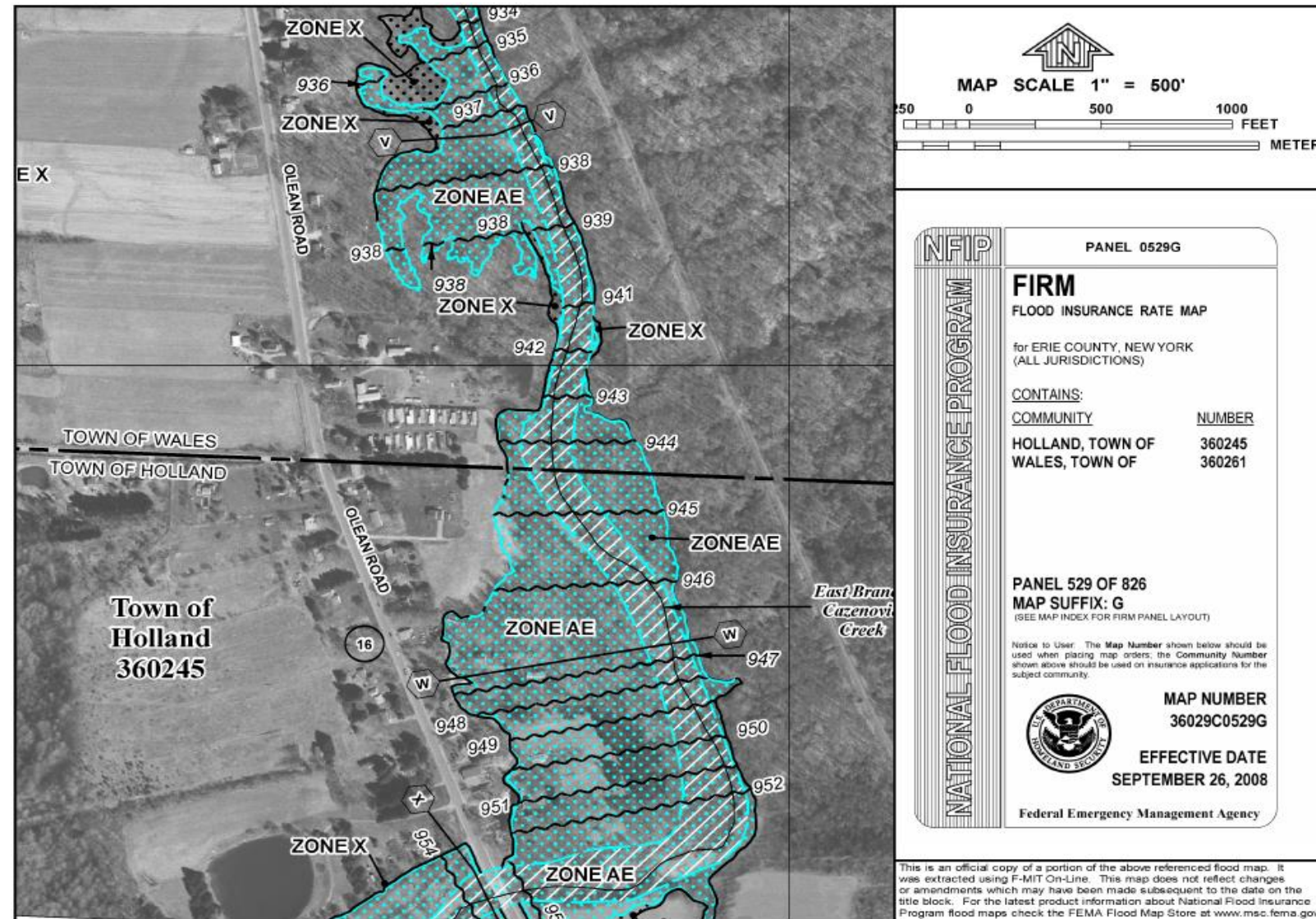
Prepared by both U.S. Fish and Wildlife Service (National Wetland Inventory) and NYS DEC

## • Floodplain Maps

Typically prepared by National Flood Insurance Program (administered through FEMA), so these are older versions of FIRMS

# Flood Insurance Rate Map (FIRM)

- FIRMs display Special Flood Hazard Areas (areas within boundary of a 100-year flood) within a flood plain
- FIRMs are used to balance risk of flood against rate of insurance



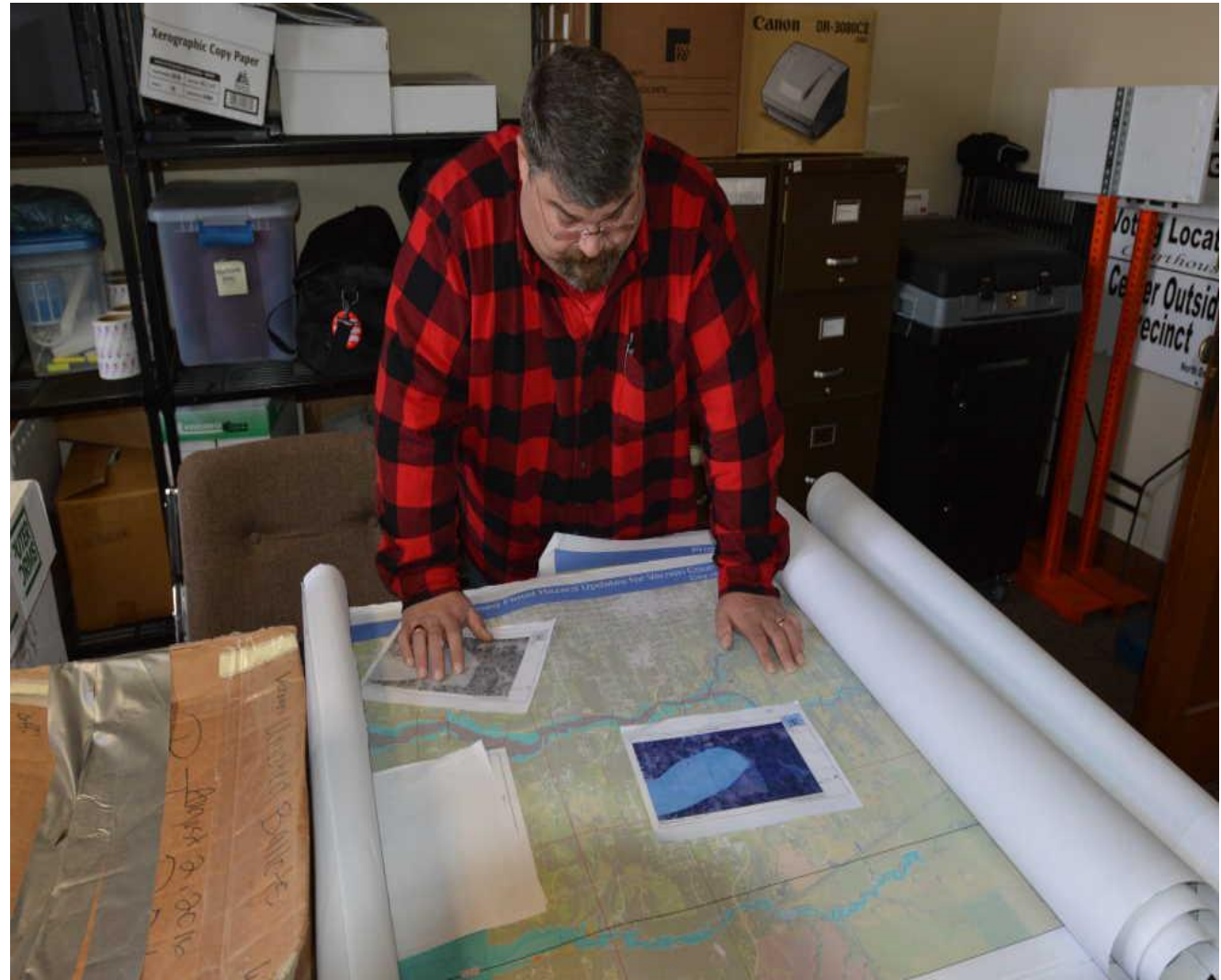
# The Local Floodplain Administrator

A Division of the New York Department of State



**Division of Local  
Government Services**

- Identified in local Flood Damage Prevention Law
- May also be Building Inspector, Code Enforcement Officer, or engineering department staff



# Flood Plain Administrator's Duties

- ✓ Review applications
- ✓ Provide base flood data
- ✓ Review plans and specifications
- ✓ Ensure all other permits are obtained
- ✓ Issue or deny permits
- ✓ Inspect development
- ✓ Notification of watercourse alteration
- ✓ Record keeping
- ✓ Remedy violations

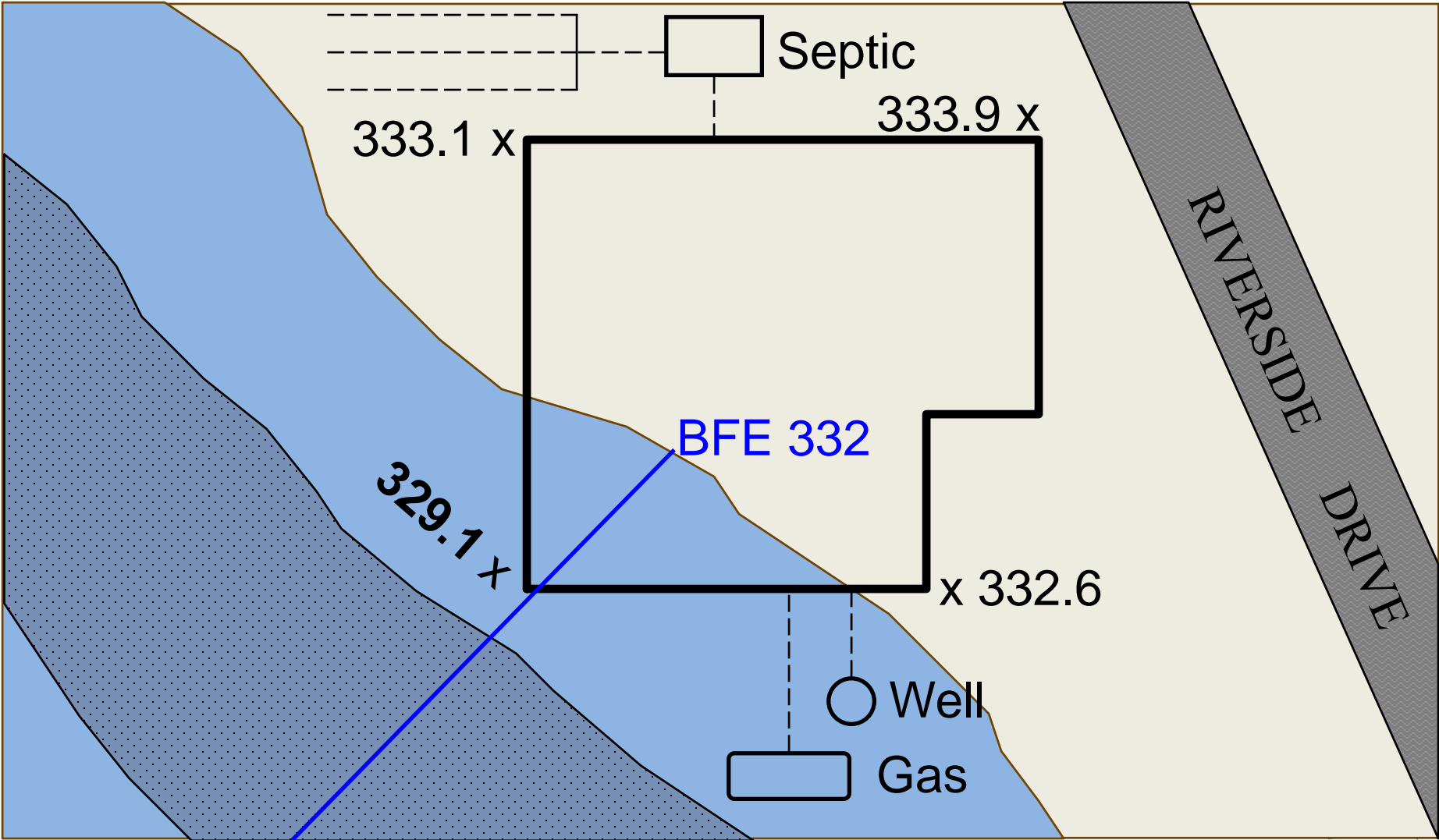
# Duty: Base Flood Data

- Interpret floodplain boundaries  
(different from interpreting other kinds of maps-- it's actuarial in the sense that it shows area that would be flooded at a given risk in any year)
- Provide base flood elevations.

# Duty: Plans and Specifications

- Reviews plans and specifications for conformance with NFIP floodplain management criteria...
- Site plan
- Thoroughly notated plans
- Foundation design details

# Site Plan



## Duty: Other Permits

Advises applicant of other permits or approvals needed

- State or Federal Wetlands
- Stream permits
- Local Permits

DEC and Army Corps of Engineers permits do not imply compliance with local floodplain permit requirements

# Duty: Floodplain development permit

(Not issued by FEMA)

Needed for any man-made change in the regulatory floodplain:

- grading, excavating, filling, mining;
- enclosures, storage;
- elevating a structure;
- substantial damage or improvement



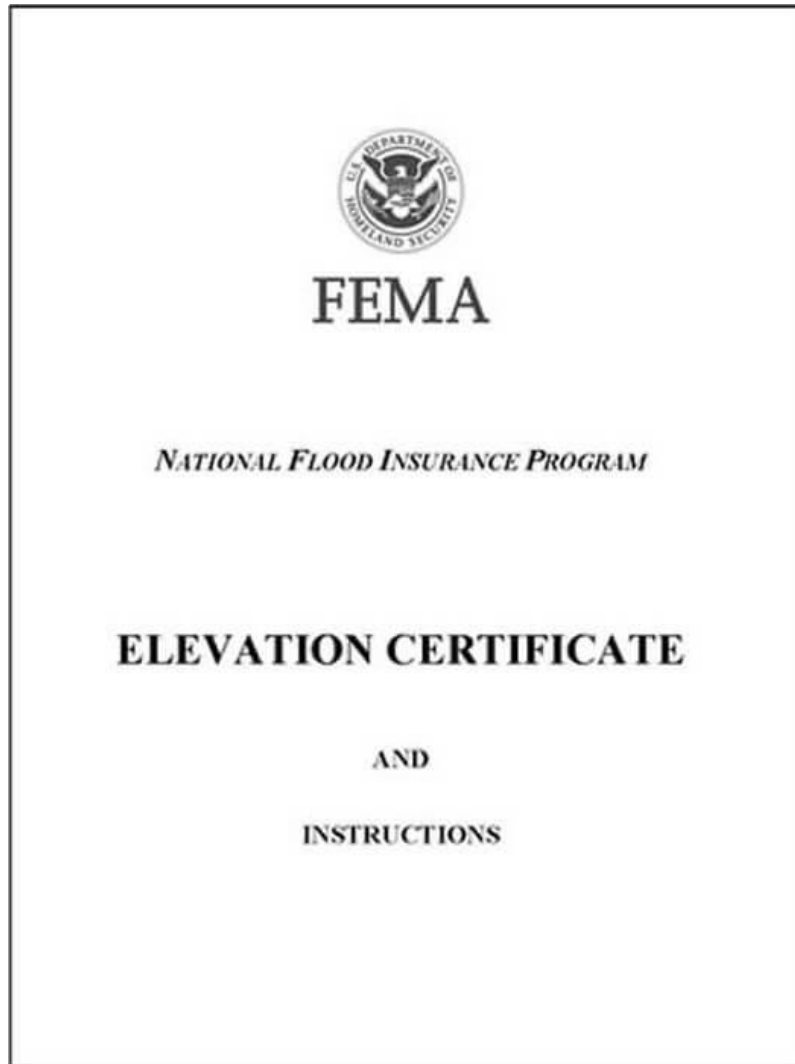
# Duty: Watercourse Alterations

Provides required notifications of changes in existing watercourses to FEMA, DEC, and adjacent communities

**Note:** Permit holder must provide for maintenance of altered portion of watercourse in perpetuity



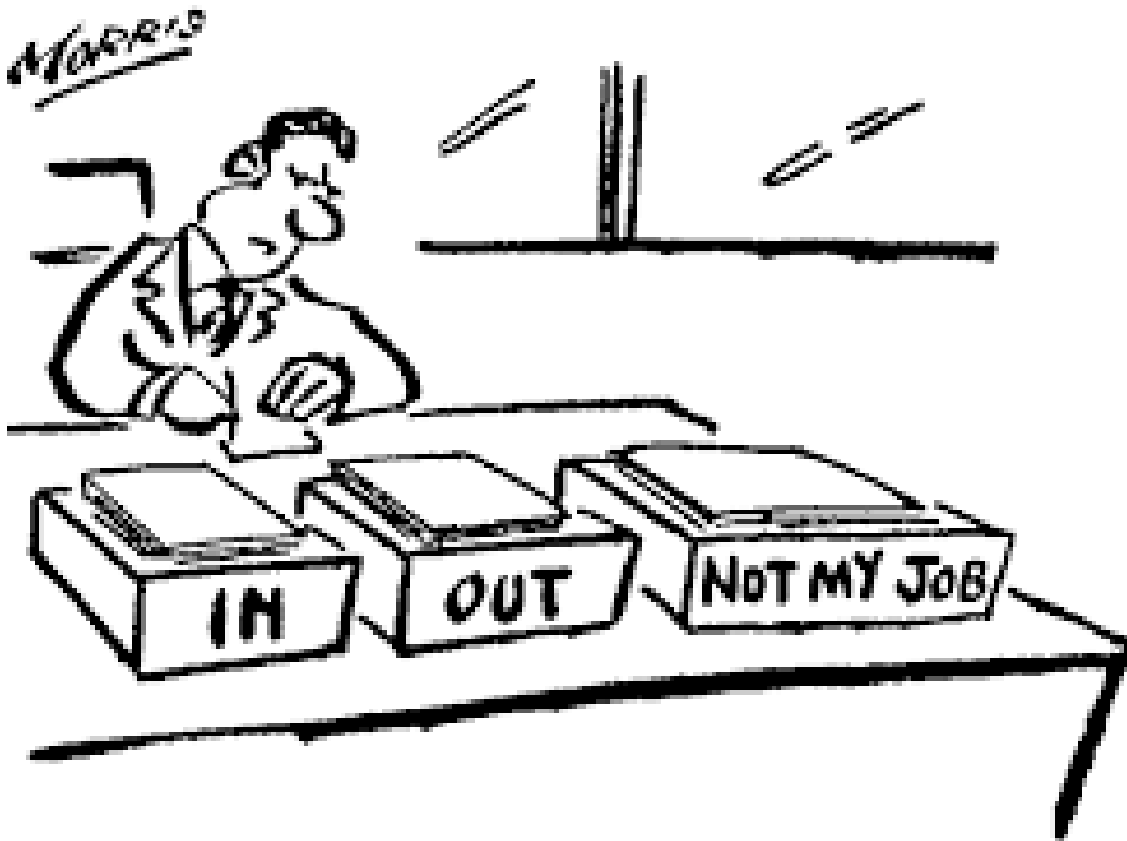
# The Elevation Certificate



- NFIP administrative tool
- Policy rating
- Supports map revisions and amendments
- Certify building elevations
- Community compliance

[www.fema.gov/elevation-certificate](http://www.fema.gov/elevation-certificate)

# What's Not on Duties List?



- Flood Zone determinations for lenders and insurance agents
- Communities are not expected to provide flood insurance related information to the public



FIRST ALERT

**FLOOD WARNING**

IRONDEQUOIT CREEK

# Flood Warning Systems

- **Flood watch:** A Flood Watch is issued when conditions are favorable for flooding. It does not mean flooding will occur, but it is possible.
- **Flood warning:** issued when flooding is imminent or occurring.
- **Urban/small stream advisories:** indicates flooding which is generally only an inconvenience (not life-threatening) to those living in the affected area.

# Preparedness Plans

Plans guide and coordinate responses to flood warning; identify what must be done; and by whom.

## Emergency Response Actions:

- predetermined,
- documented,
- reviewed, and
- practiced in advance.



# Conclusion

- Avoid development in the floodplain; natural floodplains increase resiliency during storms.
- The goal of the NFIP was to provide insurance for properties historically in flood-prone areas, not to subsidize further development in the floodplain
- The model floodplain law needed for the NFIP is a compromise for buildings already in the flood zone and provides a minimum standard of protection for new building in the floodplain.
- Examples that build on and go further than this law are in the Office of Planning and Development's Model Laws to Increase Resilience. Some efforts have even restored natural floodplains after a storm to increase resilience.

# New York Department of State Division of Local Government

518-473-3355

[www.dos.ny.gov/lg/index.html](http://www.dos.ny.gov/lg/index.html)