

Floodplain Workshop

BOROUGH OF MIDDLETOWN

JUNE 2019

NOTE: This simplified bullet point outline of educational meeting discussion topics is not intended to be used, and cannot be used, as legal, engineering or technical advice. Please review actual applicable laws, regulations, and ordinances with your professional advisors.

Significant Portions of Middletown are Federally Designated “Floodplain” areas.

- ▶ “Floodplains,” which include designated “Floodway” and “Flood Fringe” areas, are areas that have been determined to be at a special risk of flooding, generally based on what is commonly referred to as the 100-year flood levels (but more accurately is based on an annual 1% chance of being flooded).
- ▶ “Floodplains” are heavily regulated under various federal, state, and local laws, regulations, and ordinances.
 - ▶ “Floodway” portions are even more heavily restricted.

National Flood Hazard Layer FIRMette



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/10/2019 at 12:11:27 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

40°11'40.16"N

76°44'17.20"W



USGS The National Map: Orthomagey. Data refreshed April, 2019.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

40°11'42.68"N

76°43'39.75"W

FEDERAL

(Federal Emergency Management Agency or "FEMA")
(National Flood Insurance Program or "NFIP")
National Flood Insurance Act / Flood Disaster Protection Act

**STATE**

(Department of Community and Economic Development)
Pennsylvania Flood Plain Management Act of 1978

**BOROUGH**

Borough Floodplain Ordinance Provisions – Chapter 158
("Floodplain Damage Prevention") and Chapter 260
("Zoning Ordinance")

(Meeting required minimum standards of 44 CFR 60.3 of NFIP Regs. and also Pa. Flood Plain Management Act)

THE BOROUGH MUST HAVE AND ENFORCE FLOODPLAIN REGULATIONS THAT MEET FEDERAL STANDARDS IN ORDER FOR ANY RESIDENTS AND BUSINESSES IN THE BOROUGH TO BE ABLE TO GET FLOOD INSURANCE UNDER THE NATIONAL FLOOD INSURANCE PROGRAM ("NFIP").

- ▶ Mortgages generally require flood insurance for homes in floodplains.
- ▶ A municipality's standing can also impact on whether it is eligible for certain disaster relief.

Middletown Borough NFIP Insurance Statistics (Policies and Claims) per FEMA as of 2014:

Policies in Force:	182
Insurance Coverage in Force:	\$23,625,100
No. of Paid Losses	323
<i>Total Losses Paid:</i>	<i>\$8,697,938</i>

Middletown Floodplain Management Facts:

- ❖ FEMA first mapped the Borough flood zones in 1973
- ❖ The Borough has had floodplain management regulations since 1974, which have been updated over the years.
- ❖ In the Borough, there are 3 flood zones:
 - ❖ Floodway - The area needed for a waterway to convey high water
 - ❖ Zone AE – Floodplain areas with floodwater “base flood elevations” determined and shown on the Floodplain Insurance Rate Map. (Sometimes called the 100-year flood.)
 - ❖ Zone X – Areas of minimal flood potential (Sometimes called the 500-year flood).

Grandfathered Status

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► “Pre-FIRM” vs. “Post-FIRM” Structures

- “Pre-FIRM” structures are those that were existing before the effective date of the initial Flood Insurance Rate Map (FIRM) for the Borough. They are essentially grandfathered (not an official term) from full compliance requirements (i.e. they do not have to be demolished or reconstructed, etc.) unless there is a loss of that status.
- However, certain events (like a “substantial improvement” or a “substantial damage” incident) can trigger a loss of that grandfathered status, and require the structure to be comprehensively brought up to compliance with current more demanding standards.
- The specific compliance requirements for a particular existing structure are also generally dependent upon when the improvement was (lawfully) constructed, and what ordinance standards (and map details) were in place at that time.
 - Again, this level of grandfathering is also lost in certain situations, triggering application of current standards.
- Also, even for otherwise grandfathered structures, additions and new improvements, etc. are subject to current regulations.

Floodplain Management Facts:

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- ❖ What does the "100-year" flood mean? Once in a lifetime?
 - ❖ This is an old term. The new name is the 1% (one percent chance) flood.
 - ❖ Marked as Zone A or Zone AE on FEMA maps.
 - ❖ The 1 percent flood can happen anytime, even in the same year.
 - ❖ These 1% floodplain areas are strictly **REGULATED**.
- ❖ What does the 500-year flood mean?
 - ❖ This is an old term. The new name is the 0.2% (point two percent chance) flood.
 - ❖ Marked as Zone X with shading on FEMA maps.
 - ❖ Can also indicate areas of floodwater less than one foot deep or areas of poor drainage.

National Flood Hazard Layer FIRMette

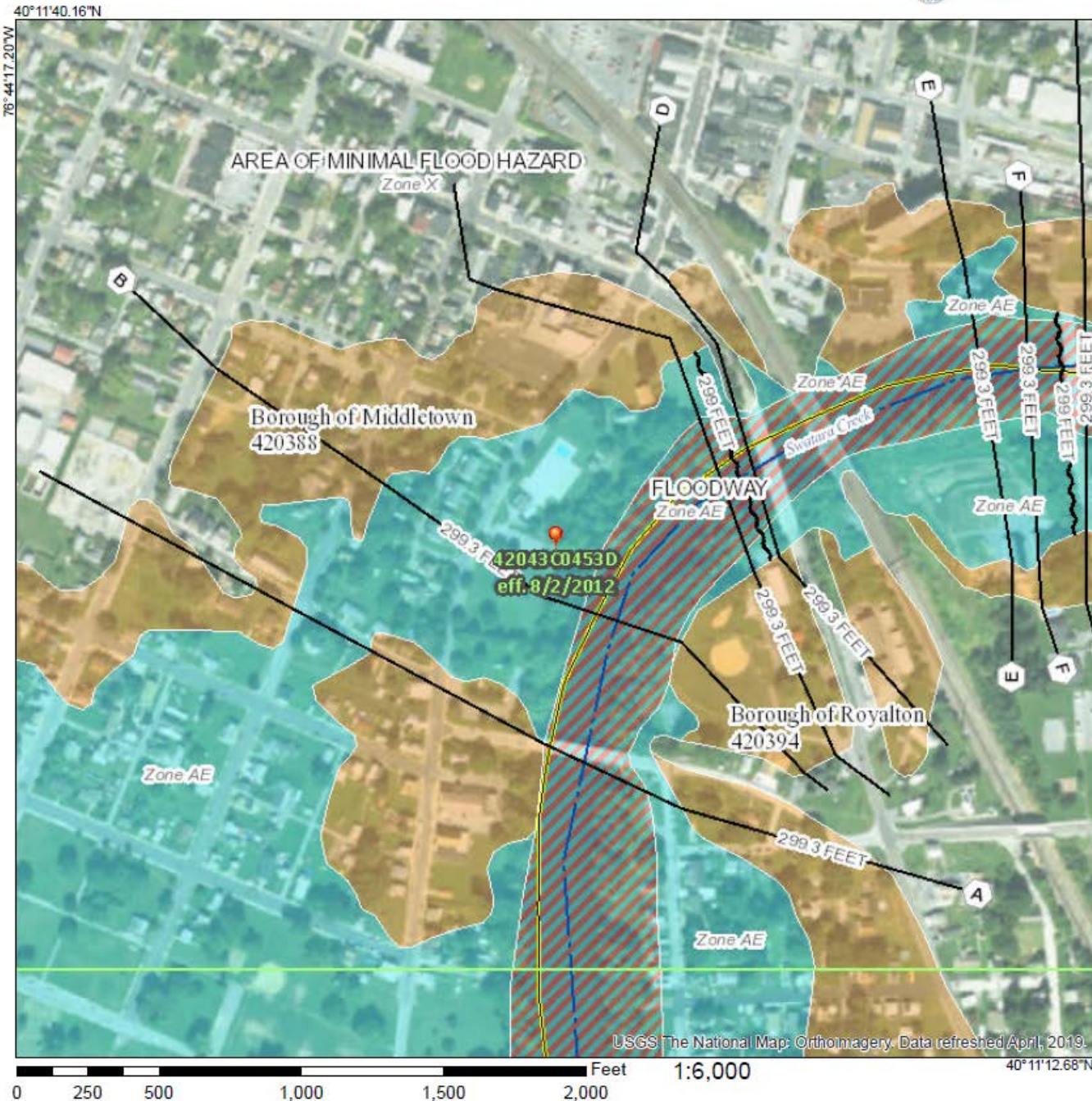


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Floodplain Management Facts:

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- ❖ The Borough can get flooded from both the Susquehanna River and the Swatara Creek.
- ❖ Due to the increased flood risk, FEMA has determined water elevations for the 1% chance flood throughout the Borough. These base flood elevations are shown on the Flood Insurance Rate Maps ("FIRM") and the corresponding flood insurance study (FIS).
- ❖ The Borough participates in the ***National Flood Insurance Program***, which allows residents to purchase federally subsidized flood insurance.
- ❖ A requirement of participating in the NFIP is having regulations which control and limit activities within mapped flood areas – and enforcing those regulations.

Flood Insurance Myths:

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- ❖ Myth # 1 – I can't get flood insurance if I'm not in a flood zone.
 - ❖ False – everyone can get flood insurance. It is less costly if you're out of a flood hazard area.
- ❖ Myth # 2 - I'm not in a flood zone or near water; I don't need flood insurance.
 - ❖ Many people living far from a waterway experience flooding. Intense rainfall rates can cause water to enter homes, ice jams can cause flooding in unexpected areas, clogged storm sewers can create flooding.
- ❖ Myth # 3 – My general homeowner's insurance will cover any damage.
 - ❖ Most policies do not cover damage from a flood.

Floodplain Ordinance Compliance

Myth:

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- ▶ **COMMON MYTH:** If I choose not to have flood insurance I do not have to be concerned about the requirements of the Floodplain Ordinance.
- ▶ **FALSE!!!** The requirements of the Floodplain Ordinance do **not** depend on whether the owner has flood insurance.

History of Borough Floodplain Ordinances:

- ❖ Floodplain ordinances were first implemented in the Borough in 1974, and have been amended over the years.
- ❖ The Pennsylvania Floodplain Management Act of 1978 dictates that local municipalities are responsible for managing floodplains.
- ❖ A comprehensive update of Chapter 158 of the Borough's Code occurred in July 2012, and parallel provisions were incorporated into the Zoning Ordinance when it was comprehensively updated in December 2013.
- ❖ In August 2012, FEMA released new mapping for the Borough. The new FIRMs provide more clarity and use photos as the base map.
- ❖ The updated on-line FIRM is also searchable by address.
- ❖ Insurance underwriters and the Borough use the FIRMs for rating and regulatory purposes.

Goals of Floodplain Ordinances:

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- ❖ The goal of Floodplain Ordinances is to:
 - ❖ Promote the general **health, welfare, and safety** of the community.
 - ❖ Encourage the utilization of appropriate construction practices in order to prevent or minimize flood damage in the future.
 - ❖ Minimize danger to public health by protecting water supply and natural drainage.
 - ❖ Reduce financial burdens imposed on the community, its governmental units, and its residents by preventing excessive development in areas subject to flooding.
 - ❖ Comply with federal and state floodplain management requirements.
- ❖ There are parallel floodplain regulations set forth in Chapter 158 ("Flood Damage Prevention"), Chapter 260 ("Zoning"), of the Borough Code.

IMPORTANCE OF GOOD FLOODPLAIN MANAGEMENT:

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- ❖ Managing development within the floodplain is important for many reasons in addition to making the community eligible for NFIP flood insurance and certain disaster relief:
 - ❖ **Safety** – minimizing building in areas subject to flooding – keeping residents out of harm's way
 - ❖ **Minimizing debris** which can float away and cause jams or obstructions at locations further downstream
 - ❖ **Preventing release of hazardous materials** into the environment
 - ❖ **Preventing repetitive losses** to buildings and property
 - ❖ **Minimizing placing first responders** in dangerous rescue situations

OVERVIEW OF IMPORTANT COMPLIANCE CONCEPTS

FLOODPLAIN ORDINANCE (PER NFIP STANDARDS) IS COMPREHENSIVE IN WHAT IT REGULATES:

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- ▶ Placement of structures
- ▶ Methods of Construction
 - ▶ Note: This is in addition to any applicable Uniform Construction Code general building code requirements
- ▶ Types of structures and alterations to structures (including manufactured homes)
- ▶ Installation of water and sewer utilities
- ▶ Filling, grading, and excavating
- ▶ Roads and bridges
- ▶ Storage of materials/equipment
- ▶ Recreational vehicle placement
- ▶ Etc.

BOROUGH ORDINANCE MUST MEET MINIMUM FEDERAL STANDARDS SET BY NFIP REGULATIONS, 44 C.F.R. 60.3

and “**VARIANCES**” ARE EXTREMELY LIMITED IN
FLOODPLAINS

- ▶ TOUGHER STANDARDS APPLY FOR GETTING SUCH VARIANCES
- ▶ DISCOURAGED BY FEMA
- ▶ IMPACT FLOOD INSURANCE PREMIUMS

SOME IMPORTANT DEFINITIONS

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- ▶ “Development”
- ▶ “Base Flood Elevation”
- ▶ “Regulatory Flood Elevation”
 - ▶ And the “Freeboard” safety cushion
- ▶ “Lowest Floor”
- ▶ “Substantial Improvement”
- ▶ “Substantial Damage”
 - ▶ And “Repetitive Loss”

THE FLOODPLAIN ORDINANCE REGULATES NOT ONLY CONSTRUCTION BUT ALSO OTHER BROADLY DEFINED **“DEVELOPMENT”** IN FLOODPLAINS.

- ▶ Generally includes *“any man-made change to improved or unimproved real estate, including but not limited to the construction, reconstruction, renovation, repair, expansion, or alteration of buildings or other structures; the placement of manufactured homes; streets and other paving; utilities; filling, grading and excavation;...storage of equipment or materials.”*
- ▶ MUCH broader than the “Land Development” definitions that apply for Subdivision & Land Development Ordinance Purposes
- ▶ Must have a Floodplain Development Permit!

▶ “Base Flood Elevation”

- ▶ The projected flood level of a 1% “base flood” above mean sea level as shown on the FIRM.

▶ “Regulatory Flood Elevation”

- ▶ “The base flood elevation (BFE) plus a freeboard safety factor of 1 1/2 feet.” (See, e.g., Z.O. §260-135.)

“LOWEST FLOOR”

- ▶ “The lowest floor of the lowest fully enclosed area (**including basement**)....”
- ▶ “... An unfinished, flood resistant, partially enclosed area used solely for parking of vehicles, building access, and incidental storage in an area other than a basement area is not considered the lowest floor of a building, provided that such space is not designed and built so that the structure is in violation of the applicable nonelevation design requirements of this chapter.”

(See, e.g., Z.O. §260-135.)

TRIGGERS TO APPLICABILITY OF UPDATED ORDINANCE STANDARDS INCLUDE:

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- ▶ **"Substantial Improvement"** of a Structure (building)
 - ▶ "equals or exceeds" 50% of Market Value of the STRUCTURE at Start of Construction
 - ▶ Not based on the value of the land and other improvements.
 - ▶ **Example:** A \$100,000 house on a \$50,000 lot (with a total market value of \$150,000) that has a \$50,000 renovation has been "substantially improved."
- ▶ **"Substantial Damage"** (any cause) to a Structure
 - ▶ Cost to restore (even if not done) is 50% of Market Value
 - ▶ Or **"Repetitive Loss"**
 - ▶ 2 occasions of FLOOD damage over 10 years where average damage is 25% of Market Value.
- ▶ NOTE – Values of construction are based on market (*i.e.* contractor) value, even for do-it-yourself work.

OTHER IMPORTANT CONCEPTS

THE FLOODPLAIN ORDINANCE REQUIREMENTS ARE IN ADDITION TO ALL OTHER GENERALLY APPLICABLE FEDERAL, STATE & LOCAL LAWS, REGULATIONS & ORDINANCES AND PERMIT/LICENSE REQUIREMENTS

E.G.:

- ▶ DEP Sewer System Requirements
- ▶ General Zoning
- ▶ Subdivision & Local Development Ordinance
- ▶ Building Codes
 - ▶ Note: Floodplain regulations even cover structures, like recreational cabins, that are not covered by UCC.
- ▶ Dam Safety and Encroachments Act
- ▶ Pennsylvania Clean Streams Act
- ▶ U.S. Clean Water Act
- ▶ NPDES Permitting
- ▶ Etc.

STRICTER RULES FOR RESIDENTIAL THAN COMMERCIAL BUILDINGS

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- ▶ Non-residential may be either elevated or flood-proofed to or above Base Flood Elevation (BFE) + 1 ½ ft.
- ▶ Residential – Lowest floor must be elevated to/above BFE + 1 ½ ft.

"Accessory Structures" (like sheds) have special rules.

- ▶ ***Generally need not be elevated***, but must be floodproofed and meet various restrictions (whether secondary to residential or non-residential principal buildings). See Z.O. §260-124.D
 - ▶ ANCHORING requirements
 - ▶ Requirements for openings in Walls
 - ▶ Floor area maximum of 600 sf.
 - ▶ Etc.

UTILITIES AND MECHANICALS, LIKE HVAC EQUIPMENT ALSO HAVE SPECIAL RULES...

- ▶ *E.g.*, Electrical distribution panels are to be 3 feet, not just 18 inches, above BFE.
- ▶ Furnaces, water heaters, air conditioning equipment, etc. are to be located 18 inches above BFE.

How did we get to tonight's meeting?

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- ❖ FEMA periodically visits communities which participate in the flood insurance program – the visit is called a **COMMUNITY ASSISTANCE VISIT** or CAV.
- ❖ FEMA did a CAV in Middletown in 2014 and identified items the Borough needed to follow up on:
 - ❖ Ensure accurate information is provided when development is proposed within a floodplain – The Borough developed a specific floodplain development permit.
 - ❖ Ensure “substantial improvement”/“substantial damage” assessments are completed – The Borough now requests a detailed cost estimate, including labor, for development in a floodplain. The estimate is checked using accepted construction cost tools.
 - ❖ Staff should have additional training related to managing floodplain activities – Borough staff have completed suggested trainings, as well as advanced topics

- ❖ As part of the CAV, FEMA and Borough staff conducted a driving tour of floodplain areas.
- ❖ The following are some examples of the noted *potential violations* (depending on a deeper review of actual facts and measurements, grandfathering issues, etc.):
 - ❖ Unsecured fuel tanks, etc. – must be anchored strapped down to prevent flotation.
 - ❖ Rebuilt flood loss homes without substantial damage/substantial improvement costs calculated.
 - ❖ Homes with possible failure of lowest floor to meet the regulatory flood elevation requirements (or failure to have proper documentation showing compliance).
 - ❖ Accessory structures, such as sheds, not properly anchored, etc.– Accessory structures can become floatables, contributing to additional damage and need secured.
 - ❖ Newer looking HVAC/mechanical equipment, etc. below the regulatory flood elevation.

- ▶ Notices have been sent by the Borough to owners of all properties that were identified in the CAV as having POSSIBLE compliance issues.
 - ▶ Some are very minor – like missing paperwork, or the potential need to anchor a shed.
 - ▶ Some are potentially more serious.
 - ▶ The Borough is dealing with these individually on a case-by-case basis.

SOME OF THE POSSIBLE RAMIFICATIONS FOR BOROUGH & RESIDENTS IF BOROUGH DOES NOT ENFORCE NFIP COMPLIANT ORDINANCE:

- ▶ Worst Case -- "SUSPENSION" by FEMA
 - ▶ Loss of Flood Insurance Availability in Borough
 - ▶ Loss of Federal Grants or Loans for buildings in floodplains
 - ▶ Loss of certain Federal Disaster Assistance in a floodplain
 - ▶ No Federal Mortgage Insurance in a floodplain

POSSIBLE DENIAL OF FLOOD INSURANCE FOR INDIVIDUAL VIOLATORS

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Under Section 1316 of the National Flood Insurance Act, flood insurance also can be denied to individual properties that are in violation of state or local floodplain regulations. FEMA may not allow new flood insurance coverage for any property declared in violation of floodplain regulations by the state or local entity in which the violation exists.

Questions?

-- Not about specific cases/properties