

NFIP Training for Floodplain Administrators

Guidance and Best Practices for Meeting Day to Day Challenges

Tioga County, Pennsylvania
April 30, 2019



Introduction

- **Welcome**
- **Logistics**
 - Attendance Sheet
 - Restrooms
 - Cell phones
 - Exits
 - Interactive/Questions
- **Introductions / Course Expectations**



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Training Objective

Provide community floodplain administrators with additional resources and clarity to effectively perform their duties, including:

- Enhancing community **permitting** process
- **Administering** the floodplain ordinance
- Improving **communications** strategies
- Highlighting **pre- and post-disaster** considerations



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Today's Agenda

- **Introduction and Overview**
- **Section 1:** Accessing and Using Flood Hazard Data
- **Section 2:** Administering Floodplain Ordinances
- **Section 3:** Permitting Process – Overview and Application Review
- **Section 4:** Ordinance Enforcement
- **Section 5:** Pre- and Post-Disaster Considerations
- **Section 6:** Changing FIRMs and FIS Reports
- **Section 7:** Useful Resources
- **Wrap Up**



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National Flood Insurance Program (NFIP) Background

- Created by National Flood Insurance Act of 1968
- Participation is **voluntary**
 - Adopt and enforce regulations
 - Eligible for flood insurance
- **Benefits** of participation
 - Flood insurance
 - Grants and loans
 - Disaster assistance
 - Federally-backed mortgages
- **Goals** of the NFIP include
 - Save lives and protect property
 - Encourage a comprehensive approach to floodplain management

The Base Flood:
The flood having a 1% chance of being equaled or exceeded in a given year. Used by the NFIP as the basis for mapping, insurance rating, and regulating development.



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NFIP Flood Insurance Basics

- Sold by licensed P&C insurance agents through
 - "Write Your Own" insurance companies
 - FEMA's Direct Servicing Agent
- Essential elements of rating include
 - Flood Zone
 - Elevation Difference (BFE, LFE)
 - Building/Occupancy Type
 - Construction Date (pre-FIRM vs. post-FIRM)
 - Coverage Limits & Deductible

	Emergency Program	Regular Program
Residential (1-4 family)		
Building	\$35,000	\$250,000
Contents	\$10,000	\$100,000
Other Residential		
Building	\$100,000	\$500,000
Contents	\$ 10,000	\$100,000
Non-Residential		
Building	\$100,000	\$500,000
Contents	\$100,000	\$500,000



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NFIP Flood Insurance Basics



- Increased Cost of Compliance
 - Included in policy to help property owners in SFHA to pay for mitigation measures to bring NFIP insured structures into compliance
 - Provides up to \$30,000* for mitigation
 - Floodproofing (non-residential)
 - Relocation
 - Elevation
 - Demolition

*Can't exceed total NFIP building limit



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NFIP Flood Insurance Basics

- Impacts of recent reform legislation
 - Annual premium increase caps of 15% (per rating class) or 18% (per individual policy). There are some exceptions, including those below.
 - Certain pre-FIRM subsidize-rated buildings in Zone A's increase 25% until reach full-risk rate*:
 - Non-primary residences
 - Commercial buildings
 - Repetitive loss structures
 - Substantially damaged buildings

*Rate using information from Elevation Certificate



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NFIP Flood Insurance Basics



- Impacts of recent reform legislation (cont.)
 - Properties newly mapped into SFHA can get lower-cost NFIP Flood Insurance Basics Preferred Risk Policy (PRP) rates first year if the policy effective date is within 12 months of the map change effective date.
 - Will then increase no more than 15-18% until reach standard Zone X rate or rated using current map, whatever is cheaper
 - Lapsed policies more than 90 days will be rewritten using full-risk rates
 - This affects pre-FIRM subsidize-rated and Newly Mapped policies



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NFIP Roles: Federal and State

▪ Federal

- National program oversight
- Risk identification (mapping)
- Establish development/building standards
- Provide technical assistance to state/communities/agencies
- Provide insurance coverage

▪ State

- State program oversight
- Establish development/building standards(UCC)
- Provide technical assistance to local communities/agencies
- Evaluate and document floodplain management activities
- PA Act 166 of 1978, The Flood Plain Management Act
- PA Act 167 of 1978, The Storm Water Management Act



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NFIP Roles: Local

▪ Local Officials and Floodplain Administrators

- Adopt and enforce floodplain management ordinance compliant with Federal/State laws
- Issue or deny development
- Inspect development **and maintain records**
- Make substantial damage determinations

- Development oversight is a **local responsibility**



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Accessing and Using Flood Hazard Data

Section 1

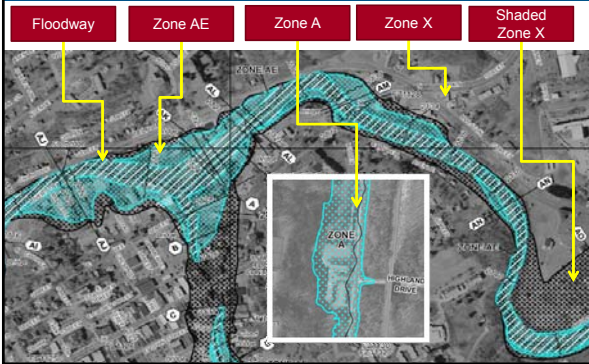


Key Terms Refresher

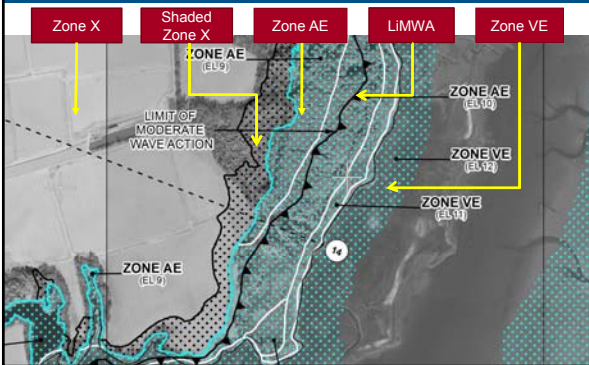
- Flood Insurance Rate Map (FIRM)
- Flood Insurance Study (FIS) Report
- Special Flood Hazard Area (SFHA)
- Flood Zone
- Base Flood Elevation (BFE)
- Regulatory Floodway
- Cross Section



Flood Zones on the FIRMs (Riverine)

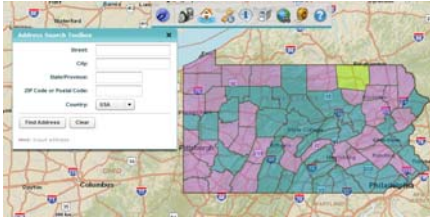


Flood Zones on the FIRMs (Coastal)



PA Flood Maps

- Flood status tool to aid in determinations
- Map viewer showing preliminary and effective FIRM data allows for the comparison



<https://www.pema.pa.gov/planningandpreparedness/floodplainmanagement/PAFloodMaps/Pages/default.aspx>

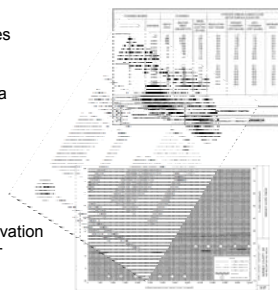


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Using the Flood Insurance Study

- Use the FIS report for
 - Flood determinations for specific sites
 - Finding the **most accurate BFE** data
 - **DO NOT** use the FIRM for elevation determinations
 - Red flag when reviewing riverine elevation data from surveyors – whole number BFEs



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Exercise 1: Getting the Most Out of FIRM and FIS Data/Tools

- Using **Google Earth and the handouts** provided, obtain the flood zone and BFE for the building on this property:
 - **1226 Mud River Road, Hazardville, U.S.A.**
- Goals of the exercise: using Google Earth as a tool and establishing a BFE using the FDT/profile
 - Using NFHL in Google Earth
 - Using FIRM and FIS together
 - Use of a FIRMette (tutorial and more details on MSC at www.msc.fema.gov).



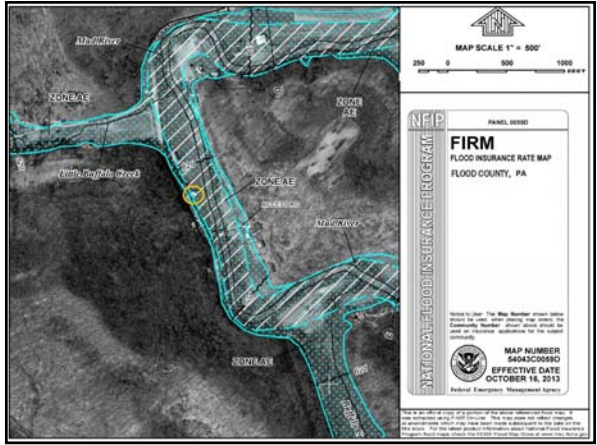
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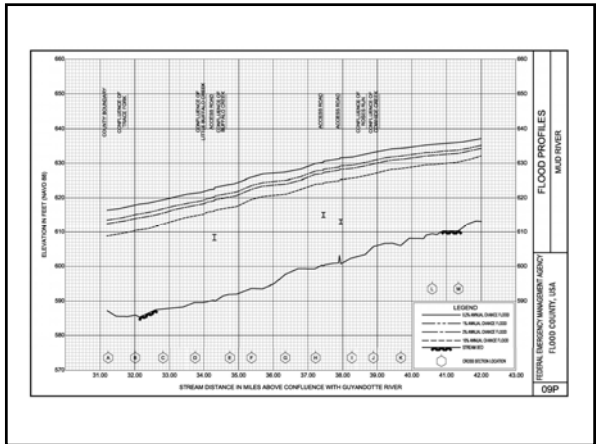


Exercise 1: Questions and Answers 1226 Mud River Road, Hazardville, USA

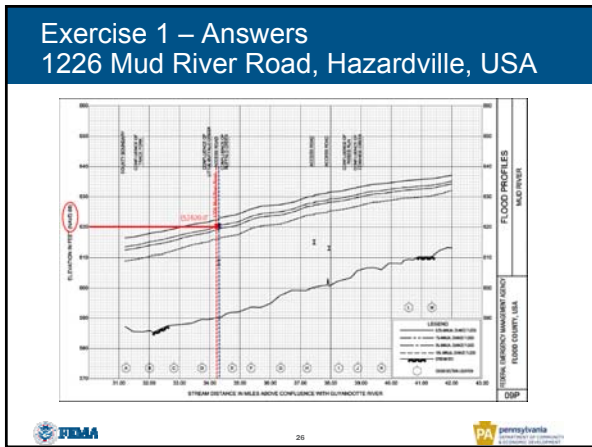
- Which flood zone is this structure located in?
- Zone AE
- What is the name of the flooding source the structure is affected by?
- Mud River
- Is the structure located in the regulatory floodway?
- Yes, the majority of the structure is located in the regulatory floodway
- What is the FIRM panel number and suffix that applies for this structure?
- 54043C0059D
- Determine the Base Flood Elevation (BFE) that applies for this structure and include the value to 1/10 of a foot. Be sure to indicate which datum the elevation is referenced to.

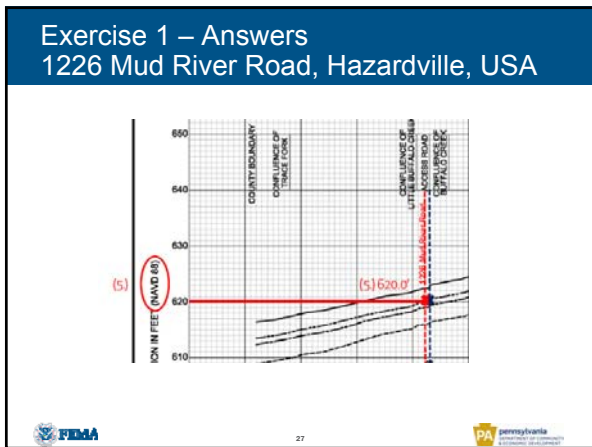












Exercise 1 – Answers (continued) 1226 Mud River Road, Hazardville, USA

5. Determine the Base Flood Elevation (BFE) that applies for this structure and include the value to 1/10 of a foot. Be sure to indicate which datum the elevation is referenced to.

- BFE = 620.0'
- Datum = NAVD 88

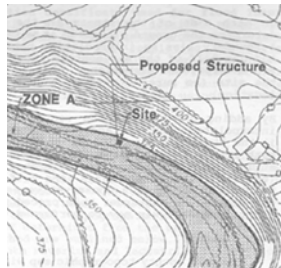


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Zone A: Estimating a 1% Contour Interpolation

- Obtain a topographic map of the site
- Reduce/enlarge to FIRM scale
- Overlay Zone A floodplain boundary on the topographic map (can be done digitally)
- Does floodplain boundary follow contour lines within acceptable limits?
 - Elevations of left and right overbanks must be within one-half of the contour interval of the map
- If accuracy is acceptable, determine the 1%

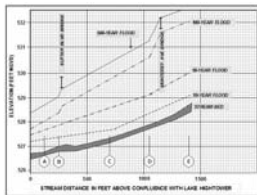


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Zone A: Estimating a 1% Data Extrapolation

- Be within 500 feet of the detailed study area
- Have floodplain characteristics similar to the detailed study area
- Have no hydraulic structures such as dams and bridges



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Zone A: Estimating a 1% Additional Data May be Available

- Zone A floodplains present a challenge
 - No BFEs available to inform how high to build
- Automated H&H was run for Zone A
 - Floodplain exists behind the scenes
 - Not detailed enough to be included on the FIRMs but can be used to approximate a 1% flood elevation
 - Another method to compare estimated methods
- Caveats:
 - Bridges and culverts not taken into consideration
 - Requires special skills to interpret data

Zone A cross sections will soon be available online!



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Accessing and Using Flood Hazard Data

Questions?



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Administering Floodplain Ordinances

Section 2



Floodplain Management Regulations

The Ordinance

- NFIP participating municipalities in PA agreed to **adopt and enforce** an ordinance meeting the minimum requirements of the NFIP and PA Act 166
- Ordinance must
 - Be legally enforceable
 - Applied uniformly throughout the community
- Floodplain regulations are usually found in one of, or a combination of, five types of regulations: "stand alone", zoning ordinances, building codes, subdivision regulations, and sanitary regulations



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Stand Alone Ordinances

- May be **easier to enforce**
- One ordinance contains all NFIP requirements for development standards
- Developers and officials can easily see the requirements in **one place**
- Ensure that all offices/agencies are aware of floodplain standards when inconsistent
- May not be coordinated with other regulations or codes – regulations **could be in conflict**
- **ZONING, SALDO, BLDG CODES ???**



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Contents of an Ordinance

- **Purpose:** Why was the ordinance adopted? What are its objectives?
- **Definitions:** What technical terms are needed?
- **Adoption of effective flood data**
- **Requirement for a floodplain development permit**
- **Development standards:** Must include provisions for
 - Building protection standards (elevation, floodproofing, anchoring) commensurate to the flood zones in your community
 - Standards for manufactured homes and manufactured home parks
 - Standards for subdivisions
 - Substantial damage/improvements
 - Construction in the floodway and standards for encroachments where floodways are not mapped



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Contents of an Ordinance

- **Designation of an administrator**
- **Variance and Appeals process**
- **Enforcement:** Clear penalties for violations must be specified
- **Abrogation and greater restriction:** Higher standard takes precedence
- **Severability:** One provision ruled invalid does not invalidate the rest



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PA Suggested Provisions

- Stand alone "model" ordinance
- Includes the provisions needed to meet NFIP and PA Act 166 requirements
- Also includes suggested higher standards
- **PA Act 166 Requirements**
 - Restrictions on hazardous material storage
 - Regulated high risk land uses (including manufactured homes)
 - 50 foot Setbacks / Buffers



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Higher Standards



- **Recommended higher standards are included in the model ordinance, including**
 - 1.5 feet of freeboard
 - Repetitive Loss Provisions
 - Conservation / Open Space Preservation
 - Estimate 1% elevation in Zone A
 - Lower threshold for Substantial Damage



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Common Higher Regulatory Standards

- Freeboard
- Cumulative Substantial Improvement/Damage
- Community Identified Flood Hazard Areas
- Restrictions to Subdivision of Land
- Non Conversion Agreement
- Location Restrictions
- Prohibition
 - Development in SFHA or Floodway
 - Manufactured Homes
 - Fill
- Flood Protection Setback
- Certificate of Compliance
- Historic Structures

Bruceton Mills, WV (from FEMA Region III)

Higher Standards Reduce...

- ...**work** and administrative burden
- ...**risk** and response/recovery efforts
- ...**costs** for insurance and rebuilding



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Administrative Requirements

- Generally, the NFIP requires an administrative process but does not detail what these administrative processes must look like
- Communities must establish administrative procedures that work and are compatible with other regulations and ordinances
- Other requirements not detailed in the regulations
 - Duties of the Floodplain Administrator
 - Appeals process
 - Issuance of variances
 - Permitting systems
 - Recordkeeping systems



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Duties of the Floodplain Administrator

- Review applications
- Make floodplain determinations
- Make Substantial Improvement / Damage determination
- Issue or deny permits
- Review plans and specifications
- Ensure all other permits are obtained
- Notification of watercourse alterations
- Maintain and help update flood data and maps
- Inspect development
- Recordkeeping
- Remedy violations



Keep good records! A project file should be kept for each development permit application to demonstrate that the project was built in compliance with your regulations.



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Duties of the Floodplain Administrator

- **Training and education:** Understand the NFIP regulations, State regulations, and local ordinances
- **Community Outreach:** Educate residents on the need for permits, the benefits of floodplains, the economic sustainability of good floodplain management, and the benefits of flood insurance
- **Coordinate with other agencies:** State agencies, adjacent communities, public works, zoning, code enforcement, or building dept.
- **Apply ordinances consistently:** Get specific guidance from your community's legal counsel as necessary

Common legal questions and answers about floodplain regulations in the courts can be found in **Appendix C of ASFPM's No Adverse Impact: A Toolkit for Common Sense Floodplain Management.**

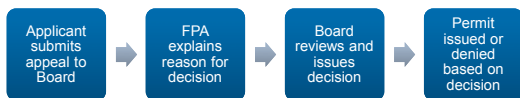


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Appealing a Floodplain Admin's Decision

- Appeals are typically **administrative** in nature (could be to a floodplain determination, substantial improvement/damage determination, etc.)
- Appeals apply to the application of an administrative decision of a floodplain administrator ordinance
- Communities must establish a **process** and an **entity** for applicants to appeal an administrative decision when they disagree
- Basic appeals process



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Issuance of Variances

- Granting relief from ordinance requirements
- Establish a process and an entity for applicants to request variances
- Equal Treatment/Conditions of the property NOT the person
- Notice of increase to risk and insurance premiums
- Patterns of variances may result in sanctions



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Evaluate the Merits of a Variance

- General rule – **Do not grant variances**
- Very specific conditions must be satisfied to justify a variance
 - Good and sufficient cause
 - Unique site conditions (personal considerations do not apply)
 - Hardship – must be exceptional
 - No threat to public safety
 - Minimum necessary to afford relief



Think carefully before granting a variance to build below the BFE. The property will be more likely to suffer damage and insurance will be costly. Communities with patterns of issuing variances may face sanctions – costing all property owners more!



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Appealing an Appeal/Variance

If you **disagree** with the decision of the board to grant the appeal or variance...

...**appeal** the appeal/variance

- Why appeal? Granted for reasons inconsistent with criteria in ordinance
- Become familiar with the timeframe to file the appeal (30 days?)
- FEMA expects communities to exhaust all legal avenues



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Floodplain Management Ordinance

Questions?



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The Permitting Process – Overview and Application Review

Section 3



Permits are Required for ALL Development

ALL development in the SFHA requires a permit

- Definition of development (as per 44 CFR 59)

Any manmade change to improved or unimproved real estate, **including, but not limited to** buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials

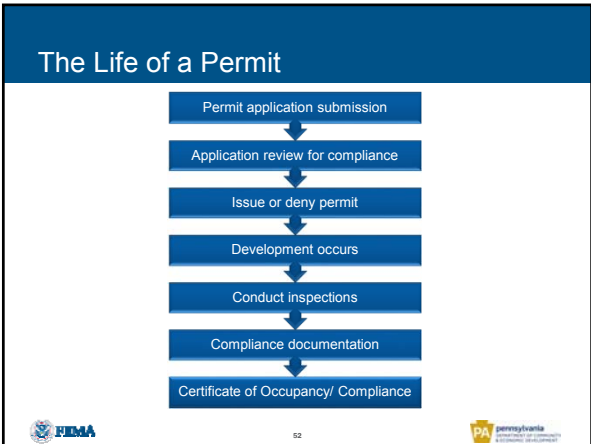
Ensure you have a process for capturing all floodplain development



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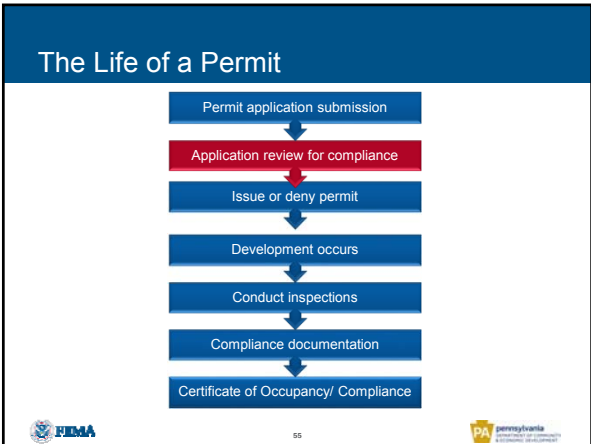
Popouson, VA (from FEMA Region III)





- ## Permit Application Submission
- ### Which activities in the SFHA require a development permit?
- Construction of new buildings
 - Additions to existing buildings
 - Substantial improvements of existing buildings
 - Repair of substantially damaged buildings
 - Renovation of existing building interiors
 - Installation of manufactured homes
 - Subdivision of land
 - Placement of temporary buildings and accessory structures
 - Construction of roads, bridges, and culverts
 - Placement of fill, grading, excavation, and dredging
 - Alteration of stream channels
 - Construction of a fence
 - Paving
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- ## Application Should Include...
- A good permit application should **capture all information** needed to evaluate the proposed work for compliance with required building/development standards of proposed work
 - Application **MUST** include a **floodplain determination** and a **substantial improvement determination** (for modifications to an existing building)
 - For Official Use Only:**
 - Floodplain Determination: _____
 - Base Flood Elevation: _____
 - Cost of Improvement: \$ _____
 - Market Value of Structure: \$ _____
 - Improvement Percentage: _____ %
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Application Review

Who are the people typically responsible for reviewing permits?

- Floodplain Administrator
- Building Code Officer
- Zoning Officer
- Municipal Engineer
- Third-party permitting/inspection company

Coordination with other reviewers:

- Is one person responsible for all aspects of floodplain development?
- If not, are all parties aware of the floodplain requirements?
- How is the permit application routed and either approved or denied?

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Uniform Construction Code (UCC) and the NFIP

<ul style="list-style-type: none"> ▪ Establishes building standards for new and substantially-improved buildings ▪ UCC is consistent with all NFIP requirements related to flood resistant buildings ▪ Not all NFIP requirements appear in these codes <ul style="list-style-type: none"> • Does not establish site or location requirements • Other types of development (non-structures) 	<ul style="list-style-type: none"> ▪ Challenges of Administration <ul style="list-style-type: none"> • Regulating development beyond buildings • Designate responsible party for meeting all NFIP requirements • Establish administrative procedures to assure coordination • Do not assume that the flood provisions of the UCC will be carried out by the community building official or third party
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Uniform Construction Code (UCC) and the NFIP



- **REMEMBER!**
 - You must adhere the most restrictive code, provision, or requirement
 - The absence of certain floodplain management requirements from existing building codes does not absolve the municipality from applying the requirements of its floodplain management ordinance and vice versa



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Application Review

Review for completeness

- Forms filled out
- Site plan
 - Floodplain delineation
 - Elevations
- Building plans
- Certifications
- All other permits obtained (see PA model)

Review for compliance

- Proposed building elevations
- Proposed design standards
- Building/fill/material placement
- Mechanical elevations
- Compliant openings
- Flood resistant materials



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Review Permits For...

- **Location/Siting**
 - Floodplain determination
 - Zone and BFE identification
- **Use**
 - Residential
 - Non-residential
- **Type of work**
 - New construction/addition
 - Placement of fill, etc.
- **Cost of improvement**
 - Substantial improvement?
- **Design standards**
 - Compliance with minimum and higher standards?
 - Is a variance necessary?



Elevated utilities in Yardley Borough, Bucks County, PA (from FEMA)



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Considerations for Zone A



Possible sources of elevation data

- Check other sources: Federal, State, and local
- Contour interpolation: point on boundary
- Data extrapolation: estimating from the FIS
- H&H study may be available – FEMA Engineering library



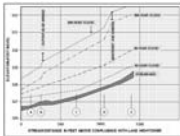
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Considerations for Zone AE, AH, and AO

Zone AE

- Provide the necessary elevation data for effective permitting
- Use the flood profile to determine site-specific water surface elevations



Zone AH and AO

- Represent areas subject to shallow flooding and sheet flow where average depths range from 1-3 feet
- Average whole-foot elevation/depth derived from the FIRM
- Lowest floor \geq flood depth
or
Lowest floor \geq 2' when no depth is specified



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Considerations for Zone AE

AE Zones without Floodways

- Where FEMA has provided BFEs but no floodway, the community must review all development to **track cumulative rise**
- Ensure development does not increase the BFE more than 1.0 foot
- Once allowable rise is reached, **no further rise** is permitted
- Administrative procedure to track and collect cumulative impact



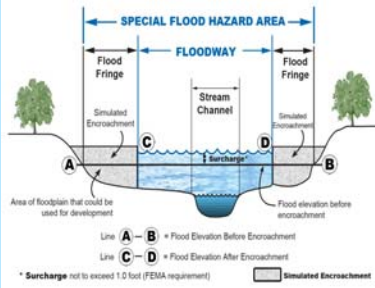
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Floodways

Floodway is the channel designated to convey the fastest deepest moving waters during the base flood.

Also designed to help floodplain management – no federal minimum requirement for development outside the floodway to submit studies about BFE impacts.



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Considerations for Floodways

Development must prove “no rise”

- No rise = zero foot (0.00')
- Rise is tracked both upstream and downstream of development location

Documentation requirement

- H&H study
- If existing structure, site plan showing footprint will not expand

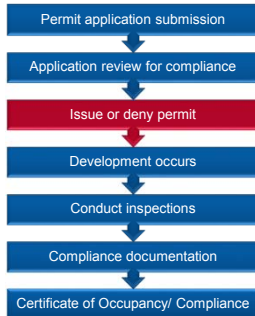
Ensure “no rise” certificate is prepared and certified by a qualified and licensed engineer. Read the certification; ensure it shows no rise.



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The Life of a Permit



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Issue/Deny Permit

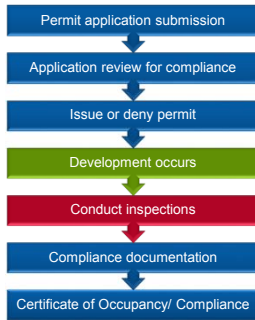
- **Issue the permit**
 - Include any conditions (i.e. required inspections)
 - Start of work must commence within 180 days from the issuance of the permit
- **Deny the permit**
 - Provide written explanation citing the specific provisions of the ordinance not met in the application
 - Citation of specific provisions point out how to resubmit application in compliance with regulations
 - Provide instructions regarding appeal or a variance



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The Life of a Permit



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Conduct Inspections

- **Importance of coordination:** Check for compliance with the NFIP minimum standards
 - Inspect frequently during construction
 - Check openings and mechanicals
- Recommend a **minimum** of three inspections
 1. After site is staked but before permanent foundation work
 2. After foundation is complete
 3. Before issuing certificate of occupancy



Schoharie, N.Y. (FEMA photo library)

Identifying compliance issues prior to construction will be much easier – and cheaper – to correct than correcting compliance issues post-construction.



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Considerations During Inspections

Address Non-Compliance Early

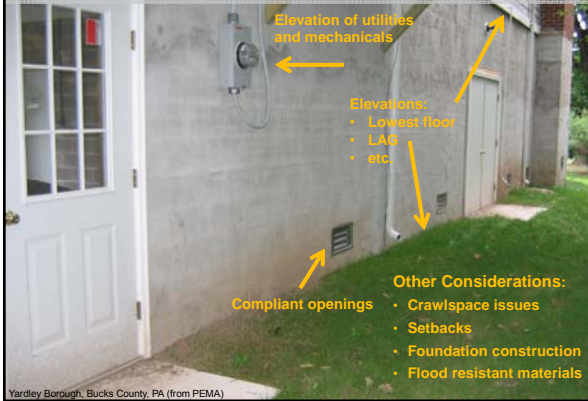
- If inspections reveal violations, take steps to bring into compliance
 - Voluntary option
 - Provide written notice
 - Issue fines or penalties
 - Withhold final approvals
- Refer to ordinance for specific enforcement procedures
- Insurance for non-compliant structures is available, **but it's very expensive!**



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On-site Changes Can Cause Non-Compliance



Exercise: Inspections Review



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Exercise: Inspections Review

- Vents are too high
Maximum 12" above grade
- When in the inspection process could this have been corrected?
- **Foundation inspection**
- Air vents, not flood openings



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Exercise: Inspections Review



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Exercise: Inspections Review



- Mechanicals OK
- Living space under the elevated portion of the home is below the BFE
- Lack of openings



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Exercise: Inspections Review

Most significant issues nationwide:

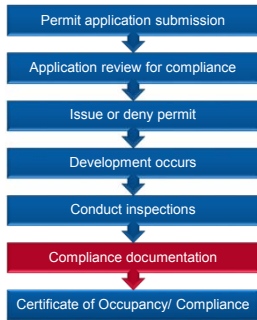
- Insufficient venting
 - Insurance rating heavily impacted
- Equipment not elevated
 - Expensive to replace
- Propane tanks not secured
 - Become explosive projectiles



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The Life of a Permit



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Collecting Compliance Documentation

- Permit file **must contain as-built** or finished construction data for all new structures or substantial improvements in SFHA
- Required to prove compliance with the floodplain ordinance
- Must be **signed and sealed** by the design or certifying professional
- Examples of compliance documentation
 - Site plans and surveys
 - Building/architectural plans
 - FEMA Elevation Certificate (EC)
 - Floodproofing certificate
 - Engineered openings
 - Non conversion agreement



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Non-Conversion Agreement

- For enclosed spaces below BFE, uses are limited to parking, access, some storage
- Gives community official authority to revisit potential violations
- Consider requiring in ordinance
- Collect in advance of C.O.
- Attach to deed



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The Elevation Certificate (EC)

- Administrative tool used to provide elevation information necessary to
 - **Ensure compliance with community floodplain management ordinances**
- Determine the proper insurance premium rate
- Support requests for certain Letters of Map Change



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Reviewing an Elevation Certificate

- Floodplain Administrators should review for accuracy
- Incomplete form received? Send it back for revision
- **Considerations for EC Review**
 - Lowest floor in comparison to BFE
 - Lowest floor in comparison to LAG and HAG
 - Building diagram
 - Mechanicals elevations
 - Openings requirement (engineered require certification)

A surveyor's mistake can lead to a very expensive insurance rate, and a less safe and non-compliant structure.



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Exercise: What's Wrong with this EC?

Assumptions

- Structure is Post-FIRM
- Structure has a basement
- Zip code is correct (hypothetical)
- Community, map panel, and dates are correct
- There is a seal for the surveyor
- Form is properly signed
- Datum conversion is -0.7 feet NGVD 29 to NAVD 88
- BFE is 1610.4' NGVD 29 (1609.7' NAVD 88)



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Exercise: What's Wrong with this EC?



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Exercise: Answers

- **A4.** Building use (Building use is blank)
- **A5.** Lat/Long (switched)
- **A6.** Only one photograph is attached
- **A7.** Building diagram (Incorrect building diagram - Should be Diagram 2A: basement instead of Diagram 9: below grade crawlspace)
- **A8.** Venting (Insufficient venting - 1300 sq. ft. and 1000 sq. inch venting and basement issue)
- **B9.** Whole foot BFE for a detailed area (1610' NAVD 88 listed, actual is 1610.4' NGVD 29)
- **B11.** and **C2.** Vertical Datum (Datum different for BFE and Structure elevations)



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Exercise: Answers (cont.)

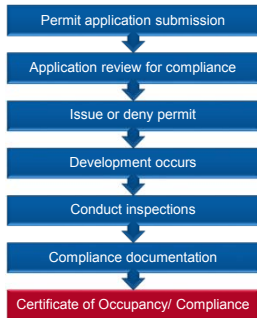
- **C2a.** Bottom floor (Low floor below BFE; basement at 1603.7' NAVD 88)
- **C2e.** Machinery and equipment (Equipment at 1605.4' NAVD 88 which is below the BFE)
- **C2h.** Deck posts (Attached deck/stair posts at 1607.3' NAVD 88 which below the BFE)
- **Section D.** License number is missing
- **Section G.** Low floor [Design flood elevation (DFE) is 1611.2' NAVD 88 and low floor listed is 1612.2' NAVD 88 but there is a basement at 1603.7' NAVD 88 which is below the BFE of 1609.7' NAVD 88]



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The Life of a Permit



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Certificate of Occupancy/Compliance

- Final step in the permit process
- After final inspection, construction/development is completed, and all as built compliance documentation is received
- Certificate of Occupancy is key to:
 - Utility connection
 - Property sale
 - Occupancy
- Compliance checks do not end with occupancy
 - Periodic "windshield" inspections are encouraged
 - Enclosure/full foundation wall issues




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Record Keeping Requirements

- Requirement to maintain compliance documentation **indefinitely**
- What records?
 - Permit application
 - Inspections
 - As-built documentation
 - Other compliance documentation (for instance, certifications)
 - Flood map changes and updates
- Best practices
 - Store permits by address (rather than property owner name)
 - Use colored file folders to identify floodplain properties

 For a structure located in the SFHA, FEMA and the State will require data to prove a potential violation is compliant.



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Permit Process and Review

Questions?



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Ordinance Enforcement

Section 4



Ordinance Enforcement

Discovering and Investigating Potential Violations

- Violations can be found through
 - Periodic inspections
 - Reports by other government agencies
 - Citizen's complaint
- Violations not remedied can result in
 - Increased risk to life and property
 - Increased insurance premiums
 - Probation – increased insurance rates for everyone
 - Suspension – NFIP insurance and many grants/loans unavailable

Investigate potential violations and take appropriate action!



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Other Types of Development



Dauphin County, PA (from FEMA Region III)
Floodplain tour revealed unpermitted trailer storage in floodway, about 10 feet from top of bank

- Other types of development require inspections
 - Placement of fill
 - Installation of fences
 - Storage of equipment and materials
 - Placement of recreational vehicles
 - Etc.
- Develop **administrative procedures** to permit for and inspect non-building development



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Other Types of Development

- Develop a permitting and inspection process for manufacture homes and recreational vehicles
- Manufactured homes must be elevated on a permanent foundation and securely anchored
- Recreational vehicles are required to
 - Be licensed and road-ready
 - Be on site less than 180 days **or**
 - Meet the requirements of a manufactured home



Tunkhannock Township, Wyoming County, PA (from FEMA Region III)
A recreational vehicle washed into a manufactured home unit



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Ordinance Enforcement Options

- **Check your ordinance for the enforcement procedures that have already been outlined**
- May include
 - Voluntary compliance by property owner
 - Written Notice of Violation or stop work order and/or revoke permit
 - Per day fine
 - Withhold certificate of occupancy
 - Record on Deed
 - Injunction – court order to stop non-compliant activity
 - Municipal housing court or building court
 - **Coordinate with your solicitor**



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Community Liability

- Flood problem awareness with no action
- Failure to warn citizens of known flood hazard
- Improper development that increases flood risk
- Inconsistent administration of floodplain provisions



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Legal Backing

State and local governments are more likely to be successfully sued for permitting development that causes increased flooding than they are for prohibiting such development.

Ordinances that meet the NFIP minimum requirements have not been found to be a “taking”.

State laws

- Provide communities with the authorities necessary to adopt and enforce floodplain management ordinances
- Establish procedural and other requirements that communities must follow in adopting and implementing land use ordinances
- State floodplain management laws and regulations establish additional requirements that communities must include in their floodplain management ordinances



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When You've Exhausted All Legal Recourse...

Your community can consider the use of **Section 1316**

No new flood insurance coverage shall be provided for any property that has been declared to be in violation of State or local laws, regulations, or ordinances which are intended to discourage or otherwise restrict land development or occupancy in flood-prone areas

Denying flood insurance means:

- Risk of flood losses with no insurance coverage
- Property may be difficult to sell
- Market value of the property may fall
- Lending institutions holding a mortgage could foreclose
- Some disaster assistance will be denied

Work with your State NFIP Coordinator and FEMA contact



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Ordinance Enforcement

Questions?



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Pre- and Post-Disaster Considerations

Section 5



Increase Your Capacity Pre-Disaster

- Know your areas of risk
- Obtain training (Floodplain management training, SD Estimator)
- Educate residents on the ordinance and substantial damage requirements
- Ensure ordinance is compliant
- Enter into a Mutual Aid Agreement
- Pre-load data onto SDE Tool
- Pre-identify an alternative site for permit office
- Contractor vetting
- Develop a Mitigation Plan



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Post-Flood Disaster Checklist

- Review floodplain management ordinance **Section 2**
- Notify property owners of permit and building requirements **Section 3**
- Require permits for all development, not just for substantial damage **Section 3**
- Make floodplain determination for permitting using FIRMs **Section 1**
- Determine BFEs using FIS **Section 1**
- Perform substantial damage determination
- Notify property owners of determination results and subsequent building requirements in writing
- Tour floodplain to ensure development/rebuilding is compliant



Middletown Borough, Dauphin County, PA (FEMA)

Allegheny County, PA (from FEMA)



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Permits Are Required

- **A permit is required regardless of whether or not the repairs rise to the level of substantial damage.**
 - Permits are required for repairs
 - The permit fee can be waived
 - The permit requirement **cannot be waived**
- Non-compliance post-disaster will have negative insurance implications and could result in sanctions.



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Substantial Improvement/Damage

Definition:

- Cost to restore the structure to its **pre-damaged** condition equals or exceeds **50% of its pre-damage market value**



Middletown Borough, Dauphin County, PA (from FEMA)

Town of Bloomburg, Columbia County, PA (from FEMA)

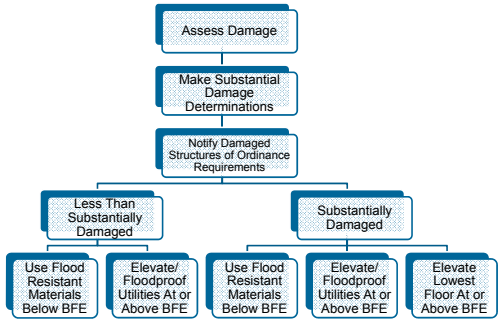


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Substantial Damage Determination Process



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Making Substantial Damage Determinations

- Substantial damage determinations are a **local responsibility**
- Ways to determine market value:
 - Tax assessed value
 - Appraisal (licensed professional)
 - Actual cash value, including depreciation
 - "Qualified estimates" based on professional judgment of local official



Foundation failure, West Pittston, PA (from FEMA Region III)



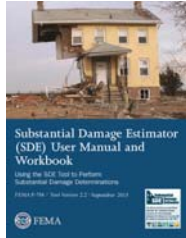
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Substantial Damage Estimator

- Pre-populate property information pre-disaster in preparation for post-disaster substantial damage determinations
 - Basic structure characteristics, market value, etc.
- Downloadable for free at
 - [Substantial Damage Estimator Tool \(3.0\)](http://www.fema.gov/media-library/assets/documents/18692?id=4166) (<http://www.fema.gov/media-library/assets/documents/18692?id=4166>)
 - [Substantial Damage Estimator Best Practices](http://www.fema.gov/media-library/assets/documents/26753) (<http://www.fema.gov/media-library/assets/documents/26753>)



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Substantial Damage Implications

Benefits

- Reduces exposure to flood risk
- Compliance with local codes
- Fulfills one prerequisite for ICC eligibility
- Cost beneficial for HMGP grants
- Long term reduction in insurance premiums and damage costs

Challenges

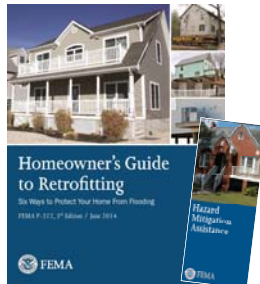
- Long term increase in insurance premiums and damage costs
- Jeopardizes entire community's participation in the NFIP
- Short term increase in construction costs
- Typically requires significant changes to design of structure

Ocean City, NJ
(from FEMA
photo library)

Post-Flood Opportunities

Mitigation Opportunities

- Increase awareness of flood risk
- Encourage residents to build back safer and stronger
- Share low cost mitigation actions with property owners
- Distribute information on grant opportunities
- Capture high water marks



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Pre- and Post-Disaster Actions

Questions?



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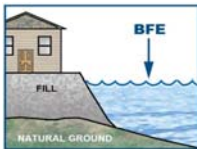
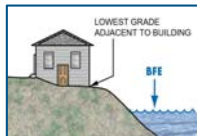


Changing FIRMs and FIS Reports

Section 6



When to Use the LOMC Process



- To update the map due to better topographic data, a physical change in the floodplain, or better modeling (LOMR)
- To remove the mandatory Federal flood insurance requirement
 - Inadvertent inclusions – structures built on natural high ground (LOMA)
 - Structures elevated on fill* (LOMR-F)
- * **Caution:** Placement of fill around an existing foundation to increase the LAG could result in a low floor violation.



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Requirement to Submit New Data

When is a community **required** to initiate a revision?

- Development occurring in Zones A1-30 and AE without a designated floodway for proposed increases of more than 1.0 foot
- Floodway encroachment (no rise requirement)
- Alteration or relocation of a stream (including but not limited to installing culverts and bridges)
- Submission of new technical or scientific data within 6 months of receipt/completion
 - Proposals greater than 50 lots or 5 acres
 - Better topographic information

The **Coordinated Needs Management Strategy (CNMS)** (<https://msc.fema.gov/cnms/>) tracking tool is used by FEMA to track map update needs. Communities can share needs with FEMA using this tool.



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Requirement to Submit New Data

Role of the FPA

- Review CLOMR and LOMR applications
 - Appropriate revision and in line with ordinance?
 - Make use of local resources, such as an engineer or legal counsel
 - Pass the cost along to the applicant
- Make use of conditional process to ensure compliance
- Clearly communicate to developers their responsibility in the revision process
- Follow-up: ensure a LOMR is completed for final projects before issuance of certificate of occupancy/compliance



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LOMCs and Community Responsibility

- Community Acknowledgement form- understand your role: you do not have to sign!
- Assist applicant (review required for C/LOMR-F and C/LOMR)
- Requirement to submit new technical data within 6 months
- Tracking and storing information
 - LOMC determinations
 - Elevation Data
 - Permit and Inspection Data



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LOMC Scenario: Timing is Critical

Example 1

- A permit application is received for a proposed structure currently located on a site currently shown in the SFHA
- The building site is on naturally high ground and the lowest adjacent grade is above the current BFE
- The applicant is proposing a single-story residential structure with a basement

Question: Since the ground elevations are above the corresponding BFE can the floodplain management requirements be waived?



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LOMC Scenario: Importance of Timing

Answer: No

- For both regulatory and insurance purposes the site is considered to be in the SFHA
- The structure must be constructed in compliance with the floodplain ordinance – no basements (if the lowest floor of the basement will be below BFE)

Recommended Action: Recommend that the applicant obtain a LOMA

- A LOMA for the land will remove the structure from the SFHA and the requirements of the floodplain ordinance will not apply
- A LOMA for the land will remove the requirement to purchase flood insurance, and insurance will be available at reduced rates
- Single and multiple lot or structure LOMA applications are no cost



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LOMC Scenario: Importance of Timing

Example 2

- A permit application is received for a proposed structure on a site currently located within the SFHA. Structural fill will be placed, elevating the structure above the corresponding BFE.
- A CLOMR-F has been received by the applicant stating the property, including the building pad, will be above the BFE if built as proposed. There is no floodway and no other fill restrictions.

Question: Since the applicant has a conditional letter from FEMA stating the property will be outside of the SFHA when filled as proposed, they want to waive the low floor requirement for structures built within the SFHA and propose adding a basement. Is this allowable?



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LOMC Scenario: Importance of Timing

Answer: No

- For both regulatory and insurance purposes the site is considered to be in the SFHA until the effective map is officially revised through a LOMR-F. Even then, having a lowest floor below the adjacent BFE is strongly discouraged.
- The structure must be constructed in compliance with the floodplain ordinance – no basements

Recommended Action: If the LOMR-F is received removing the land from the SFHA, use FEMA Technical Bulletin 10-01 to ensure the structure is reasonably safe from flooding.

Potential issues:

- Flood insurance covers limited damages in basements from overland flow
- Foundation damage/collapse from subsurface flow



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Changing FIRMs and FIS Reports

Questions?



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Useful Resources

Section 7



Elevating Above the BFE Saves Money

- One-floor residential structure with no basement built Post-FIRM in SFHA
- NFIP premiums based on April 2016 rates
- \$200,000 coverage for the building and \$80,000 for contents
- At BFE Insurance Premium: \$2,136

Zone AE	Annual NFIP Insurance Savings	Savings Over 30 Year Mortgage*
1 ft. below BFE	-\$2,650	-\$79,500
At BFE	0	0
1 ft. freeboard	\$1,063 (50%)	\$31,890
2 ft. freeboard	\$1,426 (67%)	\$42,780
3 ft. freeboard	\$1,545 (72%)	\$46,350

*Estimate based on April 2016 rates only



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The Community Rating System (CRS)

- Voluntary program for communities participating in the NFIP
- Recognizes activities beyond the minimum NFIP requirements by **reducing the cost of flood insurance from 5 to 45 %**
- Goals
 - Reduce flood damage to insurable property
 - Encourage a comprehensive approach to floodplain management
 - Strengthen/support the insurance aspects of the NFIP



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Map and Data Sources

Preliminary FIRM Viewing Tools

- FEMA Map Service Center
 - Preliminary, effective, and historic maps
 - www.msc.fema.gov
- PA Flood maps
 - <https://www.pema.pa.gov/planningandpreparedness/floodplainmanagement/PAFloodMaps/Pages/default.aspx>

Other Data Sources

- PA Spatial Data Access
 - Flood Depth Grids
 - Imagery
 - Elevation data/LiDAR
 - <http://www.pasda.psu.edu/>
- FEMA Engineering Library
 - Backup engineering data from FEMA flood studies
 - <https://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/engineering-library>
- Approximate Zone A Manual
 - <http://www.fema.gov/media-library/assets/documents/7273?id=2215>



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Floodplain Ordinance Resources

- PADCED website: **Suggested Provisions: Meeting the Minimum Requirements of the NFIP and PA Act 166**
 - <http://www.newpa.com/local-government/insurance>
- FEMA 480, NFIP Floodplain Management Requirements
 - http://www.floods.org/ace-files/documentlibrary/CFM-Exam/FEMA_480_Complete.pdf
- FEMA Building Code Resource page
 - <http://www.fema.gov/building-code-resources>
- Free Assistance Updating an Ordinance
 - **Leslie Rhoads, Floodplain Ordinance Update Coordinator**
(717) 516-1630
FloodplainUpdate@gmail.com



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LOMC and Permit Resources

- Application Forms and Instructions: <http://www.fema.gov/forms>
- Elevation Certificate: <http://www.fema.gov/media-library/assets/documents/160?id=1383>
- LOMC Tutorials: <http://www.fema.gov/online-tutorials#4>
- FEMA Map Service Center (MSC): <http://msc.fema.gov>
- FIRMeTte Resources: <https://www.fema.gov/media-library/assets/documents/34930>
- VERTCON: http://www.ngs.noaa.gov/cqi-bin/VERTCON/vert_con.pr



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Resources: Help is Available!

- **PADCED Municipal Assistance Program**
www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/municipal-assistance-program-map
- **FEMA Map Information Exchange (FMIX)** 1-877-FEMA MAP
FEMAMapSpecialist@riskmapcde.com
- **FloodSmart**
1-888-379-9531, FloodSmart.gov
- **FEMA Map Service Center**
www.msc.fema.gov
- **FEMA Contact Program**
Zane Hadzick, Mitigation Planning Specialist
FEMA Region III
Phone: (215) 931-5615
zane.hadzick@fema.dhs.gov
- **PA State Floodplain Coordinator**
Thomas S. Hughes,
PEMA
Phone: 717.651.2726 or 717-439-4302
E-mail: thughes@pa.gov



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