

Floodplain Administrator Best Practices

Guidance and Tools for Meeting Day to Day
Challenges

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Introduction

- **Welcome**
- **Logistics**
 - Attendance sheet
 - Restrooms
 - Coffee, water, drinks
 - Lunch and breaks
 - Cell phones
 - Exits
 - Interactive discussion/questions & answers
- **Introductions / Course Expectations**



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



Today's Agenda

- **Introduction**
- **Section 1:** Accessing and Using Flood Hazard Data
- **Section 2:** Administering Floodplain Ordinances – Overview
10 Minute Break
- **Section 3:** Permitting Process – Overview and Application Review
30 Minute Lunch
- **Section 4:** Ordinance Enforcement
- **Section 5:** Pre- and Post-Disaster Considerations
- **Section 6:** Changing FIRMs and FIS Reports
- **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 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
 - Provide technical assistance to local communities/agencies
 - Evaluate and document floodplain management activities



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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)**

Official map of a community participating in the NFIP; used for flood insurance requirements/rating and local floodplain management purposes
- **Flood Insurance Study (FIS) Report**

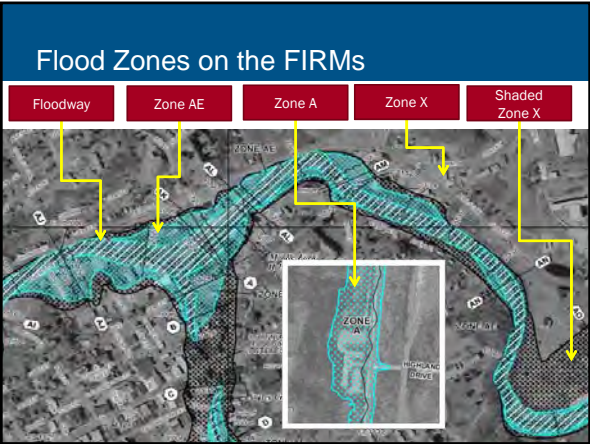
Supplements the FIRM with additional information, including flood profile plots for streams/rivers
- **Special Flood Hazard Area (SFHA)**

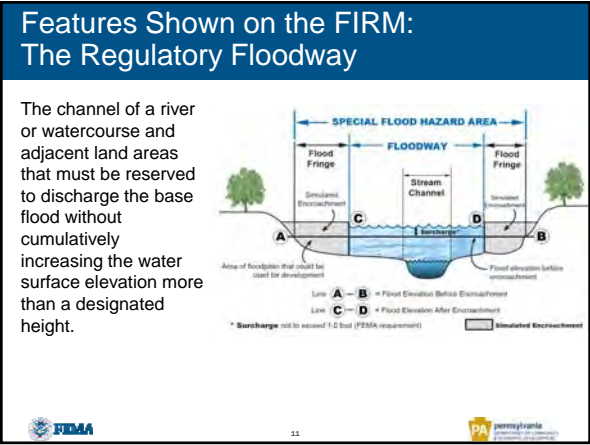
The land area covered by the floodwaters of the base (1% annual chance) flood; shown on the FIRM.

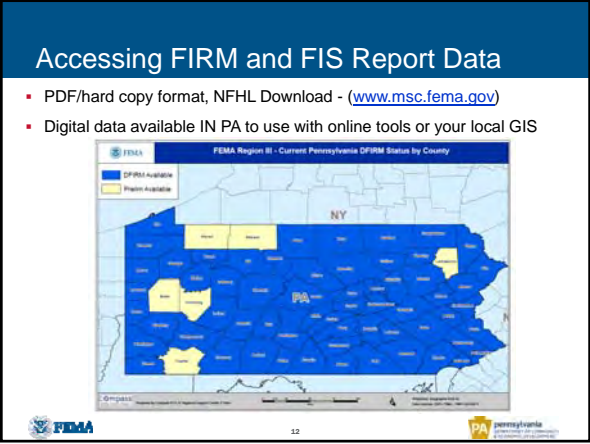


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The National Flood Hazard Layer (NFHL)

- FEMA's nationwide geospatial database of all digital **effective** FIRM data
 - Integrates FIRM data including LOMCs
 - Available in GIS format
 - FIRM and FIS are still the official source of data
 - Viewer available through the FEMA GeoPlatform



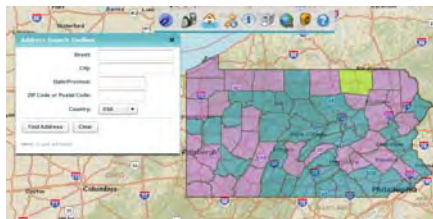
Summary of NFHL Tool Functionality

	Transfer Data to GeoDB	Integrate Community Datasets	Display Attributes & Data	Download Data	Admin Tools	Perform spatial analysis	Display map Map Search and LOMCs	Inventory Overlay	View Data Points	Map search markers / view polygons
NFHL GIS Database*	X	X	X	X	X				X	
NFHL on Google Earth	X	X	X	X	X		X	X	X	X
NFHL on GeoPlatform	X	X	X	X	X		X	X	X	X

*Specialized GIS software is required for use

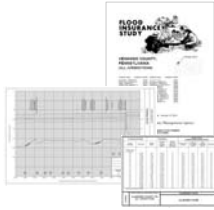
PA Flood Maps (pafloodmaps.pa.gov)

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



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 elevation data from surveyors – whole number BFEs



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Exercise: Using the FIRM to obtain flood information for a property

- Using the portion of the FIRM provided, answer the questions in the worksheet for each of the locations indicated
 - Name of flooding source
 - Flood zone
 - Is the location in the floodway?
 - Is a BFE available?
 - If yes, what is the **ROUNDED** (less detailed) BFE shown on the FIRM panel?
 - What portion of the FIS report needs to be used to determine the most detailed BFE?

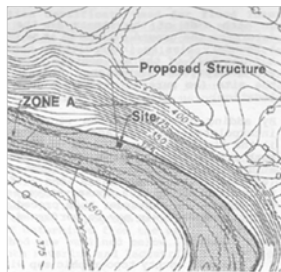


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Zone A - Estimating a 1% Contour Interpolation

- 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% contour

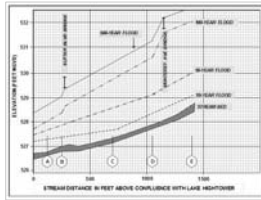


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Zone A - Estimating a 1% Data Extrapolation

- 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

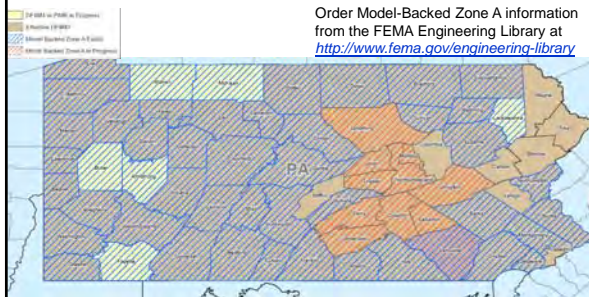
- Zone A floodplains present a challenge
 - No BFEs available to inform how high to build
- Automated H&H was run for Zone A
 - Floodplain exists behind the scenes
 - Not detailed enough to be included on the FIRMs but can be used to approximate a 1% flood elevation
 - Another method to compare estimated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



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Counties With Model-Backed Zone As



Order Model-Backed Zone A information from the FEMA Engineering Library at <http://www.fema.gov/engineering-library>



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Accessing and Using Flood Hazard Data

Questions?



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Administering Floodplain Ordinances - Overview

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

- Might 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**



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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**
- **Prohibit development in the floodway or entire floodplain**
- **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**

Bruceston 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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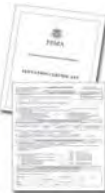


Duties of the Floodplain Administrator

- 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
 - **Conditions of the property** NOT the person.
 - Notice of increase to risk and insurance premiums
 - Patterns of variances may result in **sanctions**



Galveston, TX (FEMA photo library)



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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 Permit Process

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**

Poquoson, VA (from FEMA Region III)

The Life of a Permit

```

graph TD
    A[Permit application submission] --> B[Application review for compliance]
    B --> C[Issue or deny permit]
    C --> D[Development occurs]
    D --> E[Conduct inspections]
    E --> F[Compliance documentation]
    F --> G[Certificate of Occupancy/ compliance]
  
```

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:

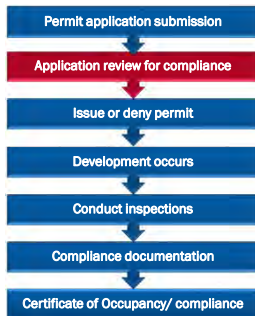
Floodplain Determination: _____
Base Flood Elevation: _____
Cost of Improvement: \$ _____
Market Value of Structure: \$ _____
Improvement Percentage: _____ %



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The Life of a Permit



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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

- 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
 - Does not establish site or location requirements
 - Other types of development (non-structures)
- **Challenges of Administration**
 - 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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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 PEMA)



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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



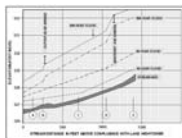
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Considerations for Zone AE, AH, and AO

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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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



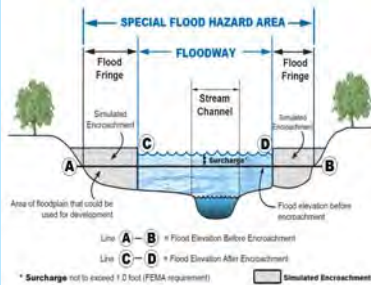
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Considerations for Floodways

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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Sample Checklists

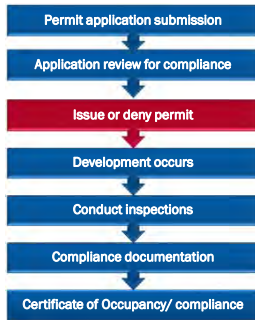
- Handout – Sample Checklists
 - Will help avoid review gaps
 - All are available at https://www.rampp-team.com/fact_region3.htm
- For applicants
 - *Checklist to Acquire a Building Permit*
<http://www.fema.gov/media-library/assets/documents/30350>



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The Life of a Permit



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Issue/Deny Permit

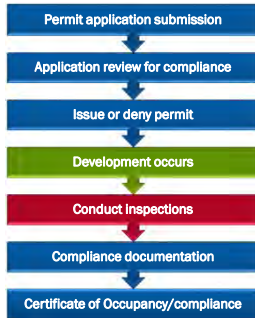
- **Issue the permit:**
 - Include any conditions (i.e. required inspections)
 - Start of work must commence within 180 days from the issuance of the permit
- **Deny the permit:**
 - Provide written explanation citing the specific provisions of the ordinance not met in the application
 - Citation of 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

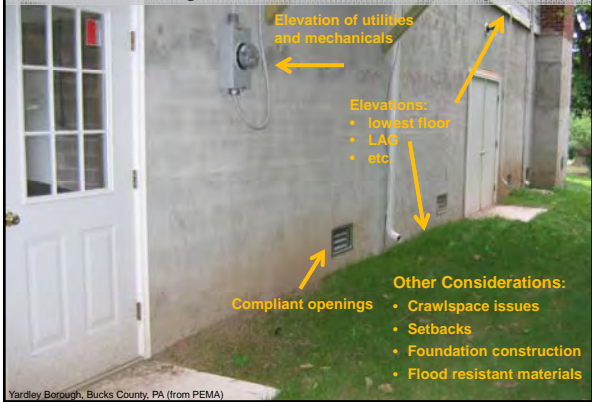
- If inspections reveal violations, take steps to bring into compliance:
 - Voluntary option
 - Provide written notice
 - Issue fines or penalties
 - Withhold final approvals
- Refer to ordinance for specific enforcement procedures
- Insurance for non-compliant structures is available, **but it's very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



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On-site Changes Can Cause Non-Compliance



Exercise: Inspections Review



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
Automatic entry



Exercise: Inspections Review

Most significant issues nationwide:

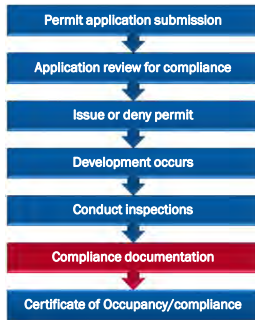
- Insufficient venting
 - Insurance rating heavily impacted
- Equipment not elevated
 - Expensive to replace
- Propane tanks not secured
 - Become explosive projectiles



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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



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Non-Conversion Agreement

- Signed agreement from the property owner that an enclosed area below the BFE will not be converted to living space.
- Uses are limited to parking, access, some storage
- Gives community official authority to revisit potential violations
- Consider requiring in ordinance
- Collect in advance of CO
- 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?

- Review the Elevation Certificate handout and check for completeness and compliance
- 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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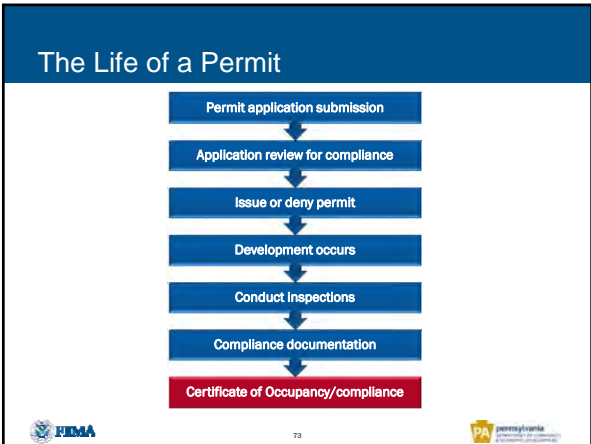
Exercise: Answers

- A4. Building use (Building use is blank)
- A5. Lat/Long (switched)
- A7. Building diagram (Incorrect building diagram - Should be 2 - basement instead of 9- below grade crawlspace)
- A8. Venting (Insufficient venting - 1300 sq. feet and 1000 sq inch venting and basement issue)
- B9. Whole foot BFE for a detailed area (1610, actual is 1610.4 NGVD 29)
- B11. and C2. Vertical Datum (Datum different for BFE and Structure elevations)
- C2a. Bottom floor (Low floor below BFE (basement - 1603.7))
- C2e. Machinery and equipment (Equipment below BFE (1605.4))
- C2h. Deck posts (Attached deck posts below - 1607.3)
- Section D. License number (No license number in D (blank))
- Section G. Low floor (DFE is 611.2 and low floor listed is 612.2 but there is a basement at 1603.7' below BFE of 1609.7' NAVD 88)



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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
- FEMA logo and PA logo are visible at the bottom of the slide.

- ## 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.
- FEMA logo and PA logo are visible at the bottom of the slide.

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
 - Other....
- 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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Full Compliance	Partial Mitigation	Non-Compliance
<ul style="list-style-type: none"> Risk and liability reduction Greatest insurance savings Ensure continued participation in NFIP 	<ul style="list-style-type: none"> Often less expensive Less time consuming 	<ul style="list-style-type: none"> Cheapest (short term) Least time consuming
<ul style="list-style-type: none"> Can be expensive Can be time consuming 	<ul style="list-style-type: none"> Jeopardizes participation in NFIP Risk and liability increase Increase in insurance costs Transfer of increased risk & costs to future owners 	<ul style="list-style-type: none"> Surcharge existing and no new policies Loss of disaster assistance Loss of federal grants/loans Increase in risk and insurance costs
<ul style="list-style-type: none"> Elevation/Floodproofing of lowest floor and utilities Installation of openings Proper anchoring Flood resistant materials 	<ul style="list-style-type: none"> Note on deed citing violations Partial elevation and/or floodproofing 	<ul style="list-style-type: none"> Take no corrective actions

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



Erie County, PA (from PEMA)

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.

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 Actions

Section 5



Increase Your Capacity Pre-Disaster

- Know your areas of risk
- Obtain training (Floodplain management training, Substantial Damage 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

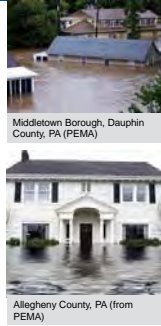


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Post-Flood Disaster Checklist

- 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



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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)

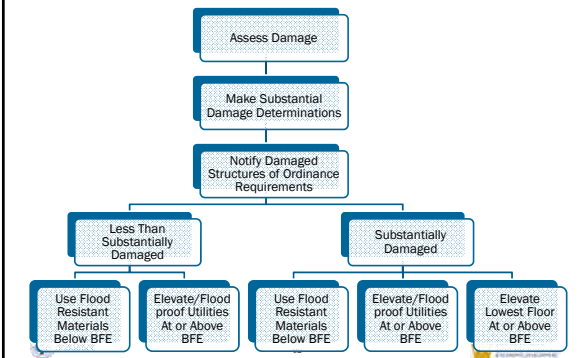
Town of Bloomburg, Columbia County, PA (from FEMA)



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Substantial Damage Determination Process



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, other
- Downloadable for free at:

- [Substantial Damage Estimator Tool \(2.0\)](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



Amendments versus Revisions

- **Letters of Map Amendment:**
 - Structures or Legally Defined Parcels
 - Does Not Involve H&H Analysis (Unless maybe in Zone A)
 - Requires Submittal of MT-1 Forms
- **Letters of Map Revision:**
 - More Complex Map Changes
 - Not Usually Lot or Structure Specific
 - Typically Involves H&H Analysis
 - Requires Submittal of MT-2 Forms



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Letters of Map Change (LOMC) Comparison

Type of Request	Existing Conditions	Proposed Conditions	Fill	Revise Base Flood Elevations	Revise Map
CLOMA	N	Y	N	N	N
LOMA	Y	N	N	N	N
CLOMR-F	N	Y	Y	N	N
LOMR-F	Y	N	Y	N	N
CLOMR	N	Y	Y or N	Y or N*	Y*
LOMR	Y	N	Y or N	Y or N	Y

* CLOMRs do not directly result in revised BFEs or maps; as-built information must be submitted to obtain LOMR

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.

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://hazards.fema.gov/cnms/Main.aspx>) tracking tool is used by FEMA to track map update needs. Communities can share needs with FEMA using this tool.

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 Exercise: Timing is Critical

Example

- A permit application is received for a proposed structure location 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 Exercise: 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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Changing FIRMs and FIS Reports

Questions?



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Resources/Wrap-up



Elevating Above the BFE Saves Money

- NFIP premiums based on October 2011 rates
- One-floor residential structure with no basement built Post-FIRM
- \$250,000 coverage for the building and \$100,000 for contents
- At BFE Insurance Premium: \$1,315 building, \$380 contents

Zone AE	Annual NFIP Insurance Savings	Savings Over 30 Year Mortgage
1 ft. below BFE	-\$3,415	-\$102,450
At BFE	0	0
1 ft. freeboard	\$675 (49%)	\$20,250
2 ft. freeboard	\$911 (69%)	\$27,330
3 ft. freeboard	\$983 (75%)	\$29,490



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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
- RAMPP website
 - Preliminary data and projected effective dates
 - www.rampp-team.com
- Recorded training webinars
 - www.riskmap3.com
- PA Flood maps
 - <http://www.pafloodmaps.com>

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/index.asp?menuid=388>
- FEMA Building Code Resource page
 - <http://www.fema.gov/building-code-resources>
- For free assistance updating an ordinance, contact:
Leslie Rhoads
Phone # 717-516-1630
Fax # 717-763-9732
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://msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=10001&langId=-1&content=firmetteHelp_A&title=FIRMetteTutorial
- Sample Permit Review Checklists - https://www.rampp-team.com/fact_region3.htm
- VERTCON - http://www.ngs.noaa.gov/cgi-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**
Katie Lipiecki, CFM
(215) 931-5655
kathryn.lipiecki@dhs.gov
- **PA State Floodplain Coordinator**
Daniel Fitzpatrick, CFM
PA Department of Community & Economic Development (PADCED)
1-888-223-6827
dafitzpatr@state.pa.us



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