

Course Topics

- Part 1 Flooding and Floodplain Management
- Part 2 A Flood Maps and Studies
- Part 2 B Map Changes
- Part 3 Regulations
- Part 4 Ordinance Administration
- Part 5 Flood Insurance & CRS
- Part 6 Mitigation and Disaster Operations
- Part 7 Coastal V Zones
- Questions

.

2

4

1

Part 1 – Flooding and Floodplain Management

Topics

- What is the NFIP
- Basic Abbreviations & Terms
- Floodplain vs Floodway
- Minimum Standards of the NFIP

NFIP – A voluntary federal program that provides flood insurance to property owners in participating communities, maps and grants in exchange for communities adopting and enforcing floodplain management regulations





NFIP - Shared Responsibilities

5

Basic Abbreviations

- BFE = Base Flood Elevation
- FIRM = Flood Insurance Rate Map
- FEMA = Federal Emergency Mngt. Agency
- FIS = Flood Insurance Study
- LOMC = Letter of Map Change
- NFIP = National Flood Insurance Program
- SFHA = Special Flood Hazard Area

Definition: "Flood"

- General and temporary condition of
- partial or complete inundation of:
- •2 or more acres of normally dry land or
- •2 or more properties...

7







10

Or From: Mudflow, a river of liquid or flowing mud over normally dry land (not a landslide)







Primary Types of Flooding

- Riverine
- Coastal
- Shallow
 - Sheet flow (AO Zones)
 - Ponding (AH Zones)

13



14













BASE or 1% CHANCE FLOODPLAIN





Part 3 - Topics

Regulations:

- State floodway permits
- Dams
- Public Waters
- NFIP Building Protection (elevation/floodproofing)
- Utilities
- RVs
- Substantial Damage and Substantial Improvement





State Regulatory Involvement

- Passage of State Legislation
- Adoption of State Model Floodplain Ordinances
- Six Northeastern Illinois Counties
- "Downstate" Counties





IDNR/OWR Permit Programs Adm. Rules

- Construction in Floodways of Rivers, Lakes and Streams: Part 3700 Rules
- Rules for Construction and Maintenance of Dams: Part 3702 Rules
- Regulation of Public Waters: Part 3704 Rules
- Floodway Construction in Northeastern Illinois: Part 3708 Rules
- Allocation of Water from Lake Michigan: Part 3730 Rules





IDNR/OWR Floodway Permit Program (Part 3700 Rules)

The IDNR/OWR exercises jurisdiction over construction in the floodway of watercourses which have a drainage area of:

• 1 square mile or more (640 acres) in an urban area, or

- 10 square miles or more (6400 acres) in a rural area.
- Consult with IDNR/OWR for assistance with determining jurisdiction

29

IDNR/OWR Floodway Permit Program (Part 3700 Rules)

- · All jurisdictional streams in downstate counties regardless of the floodway/floodplain mapping
- Jurisdictional streams in NE IL which do not have regulatory (designated) floodways

30

IDNR/OWR Floodway Permit Program (Part 3700 Rules)

Two types of Permits are currently offered:

1. Statewide Permit

Statewide Permits are pre-authorizations of certain minor projects which are permissible per the Part 3700 rules. A permit application submittal is usually not needed.

2. Formal Permit

Formal Permits are needed for significant projects which do not meet a Statewide Permit. These projects generally require an extensive project review of engineering data. Examples: New Bridges and Culverts, Levees

IDNR/OWR Floodway Permit Program (Part 3700 Rules)

Current Active Statewide Permits

- SWP
 2 Bridge and Culvert Crossings of Streams in Rural Areas

 SWP
 3 Mooring Facilities Used Exclusively for Barge Fleeting Purposes

 SWP
 4 Aerial Utility Crossings

 SWP
 5 Minor Boat Docks
- SWP 6 Minor Non-Obstructive Floodway Construction SWP 7 Outfalls

- SWP 8 Underground Pipeline and Utility Crossings SWP 9 Minor Shoreline, Stream Bank, and Channel Protection activities SWP 10 Accessory Structures and Additions to Existing Residential Structures
- Structures SWP 11 Minor Maintenance Dredging SWP 12 Bridge and Culvert Replacement Structures SWP 13 Temporary Construction Activities SWP 14 Special Uses of Public Waters

IDNR/OWR Floodway Permit Program (Part 3708 Rules)

The IDNR/OWR exercises jurisdiction over **construction** in the **regulatory floodway** of watercourses in Cook, DuPage, Kane, Lake, McHenry and Will counties (excluding the City of Chicago) if the watercourse has a drainage area of:

1 square miles or more (640 acres) in an urban area
10 square miles or more (6400 acres) in a rural area
Consult with IDNR/OWR for assistance with determining jurisdiction

33

IDNR/OWR Floodway Permit Program (Part 3708 Rules)

Two types of Permits are offered:

 Regional Permit No. 3 Regional Permit No. 3 is a pre-authorizations of certain minor projects which are considered permissible per the Part 3708 rules. A permit application submittal is usually not needed.

2. Formal Permit

Formal Permits are needed for significant projects which do not meet Regional Permit No. 3. These projects generally require an extensive project review of engineering data. Examples: Bridges and Culverts, Channel Modification Projects, Flood Control Projects

34

IDNR/OWR Floodway Permit Program (Part 3708 Rules)

Current Active Regional Permit

Regional Permit No. 3 - Authorizes underground and overhead utilities, storm and sanitary sewer outfalls, sidewalks, patios, athletic fields, playground equipment and streambank protection activities.

RP1 and RP2 are administered by IDOT

RP3 can be found at https://www.dnr.illinois.gov/WaterResources/Pages/PermitsStatewideRegionalGeneral.aspx

IDNR/OWR Floodway Permit Program-Part 3708 Rules Compared to Part 3700 Rules

- Appropriate Uses
- Floodway Map Revisions
- Delegation
 - Municipalities/Counties - IDOT Agreement

36



IDNR/OWR Floodway Permit Program (Parts 3700 and 3708 Rules)

- Permit Application Review Fees
- Check or Electronic Payment
- Fee Schedule and FAQ

can be found at http://www.dnr.illinois.gov/WaterResources/Pages/default.aspx

38



When to Submit...

- An application submittal is only needed for <u>jurisdictional</u> construction activities that require a <u>formal</u> permit.
- A permit application submittal <u>is needed</u> for work in a delegated community

What to Submit...

- Permit application package that is tailored to obtaining an IDNR/OWR permit.
- One size does not fit all.
- Properly completed IDNR/OWR copy of application form.



An application submittal is <u>not</u> needed for construction activities that:

- are not jurisdictional.
- are authorized by a regional or statewide permit.
- are an exempted activity per administrative rules.
- can be authorized by IDOT/DOH per MOA.



42

Application Form
 9. Brief description of Project.
 10. Purpose of Project.
 11. For Dredging Projects Only
 22. Start Date of Project.
 13. Projected Date of Completion.
 14. Signature.

Support Information

- Narrative
- Location Map
- FIRM
- Site Plan
- Grading Plan
- Plotted Cross Sections
- Design Drawings
- Computations/H&H Analyses
- Engineering Report

43

Do Not Submit...

- More than one copy of the application form, engineering report, drawings, etc.
- Corps of Engineers, IEPA, and Applicant's copy of the application form.
- Wetland reports needed by COE.
- Full sets of engineering drawings.
- Soil boring reports.*
- Contract documents. *
 - * May be needed for a dam safety submittal.

45

Proposed Updates to the Part 3700 Rules

- Definitions
- Adds New Definitions
- Expands Definition for Worst Case Analyses
- Jurisdiction

 Expands Explanation for Exempted Activities (converted from some statewide permits- ex: outfalls, minor utility projects, etc.)

- Permit Application
- Update Website reference
- Timetable for OWR Response to applications

46

Proposed Updates to the Part 3700 Rules

Fees

- General Construction Activities
- Bridge/Culvert Crossings
 - New Construction
 - Reconstruction
 - Modification
- Streambank Stabilization
- Boat Docks

Proposed Updates to the Part 3700 Rules

- New Levees/ Floodwalls
- Modified Levees/Floodwalls
- Floodplain Construction Without Floodways
- Violations and Enforcement

47



Definition

"Dam" – All obstructions, walls, embankments, or barriers, together with their abutments and appurtenant works, if any, constructed for the purpose of storing or diverting water or creating a pool.



50

Part 3702 Rules Dam Categorization

 Size (Small, Intermediate or Large)

-Based on Impounding Capacity and Dam Height

 Hazard: Class I (High), Class II (Moderate) or Class III (Low)



IDNR/OWR Dam Safety Permit Program

When is a dam safety permit required?

- Construction of a new dam (Class I, Class II, or jurisdictional Class III)
- Major Modification to an existing or new dam (Major Structural Change)
- Breach or remove an existing or new dam

An $\underline{existing\ dam}$ is defined as a dam which was constructed prior to September 2, 1980.







IDNR/OWR Public Waters Permits (Part 3704 Rules) Natural Waterways . Waterways Improved for Navigation . Man-Made Waterways . Appendix A •

IDNR/OWR Public Waters Permits (Part 3704 Rules)

- Activities in Public Waters
- Navigation Impacts
- Encroachments
- Impairment of Public's rights, interests and uses
- Impairment of Natural Resources
- No Delegation





58

57

Public Notices

Needed for:

- Projects that involve revisions to the regulatory floodway or flood profile.
- Projects in public waters that are not authorized by a regional, statewide or general permit.
- Formal permits for dams.





 Northeastern Illinois Regulatory Programs Section 2050 W. Stearns Road Bartlett, IL 60103 Phone 847/608-3116 Fax 847/931-2037

 Downstate Illinois Regulatory Programs Section One Natural Resource Way Springfield, IL 62702-1271

Phone 217/782-0900 Fax 217/785-8100



61



62

64

Development is ...

- Construction of new buildings
 Addition or substantial
- improvements to existing buildings
- Manufactured (mobile) homes and RVs
- Subdivisions or commercial developments
- Storage of materials
- Filling, grading, & excavating
- Fences, culverts, bridges & roads
- ANYTHING else that changes the floodplain













Get a Site Plan with elevations

333.1 x

329

Septic

332.6

ÓWell] Gas

68

66





















Technical Bulletin #1

> www.FEMA.gov Search window: Technical Bulletin 1

Openings in Foundation Walls and Walls of Enclosures Below Elevated Buildings in Special Flood Hazard Areas in accordance with the National Flood Insurance Program Tedmaid Buildin 1 / August 2008

😵 FEMA

78





80

House built on elevated foundation walls





82

81





























96



Recreational Vehicles & Travel Trailers

- 1. Self propelled or towable by a light duty truck
- 2. No porch or deck
- 3. No permanent dwelling. Only seasonal use.
- 4. No more than 400 sq. ft.
- 5. Wheels on axles and inflated
- 6. Quick disconnect utilities
- 7. Licensed and titled as an RV
- 8. Supported by wheels or jacks. No blocks.





Wet Floodproofing / Minor Accessory Structures

"Permanent or contingent measures applied to a structure and/or its contents that prevent or provide resistance to damage from flooding by allowing flood waters to enter the structure."



98

Wet Floodprofing / Minor Accessory Structures

When to use Wet Floodproofing

- Enclosed areas below the BFE that are used for parking, building access, or limited storage
- Attached or detached garages
- Minimal value storage sheds and garages

Wet Floodproofing Garages and sheds

- Non-habitable
- Use only for storage and parking & no later modification
- Accessory to an existing structure on same lot
- Flood resistant materials
- No HVAC
- Flow-thru openings
- Less than \$15,000 in value and less than 500 sq. ft.

100













106



"Improvement" Triggers

- ✓ Reconstruction
- ✓ Rehabilitation
- ✓ Addition
- ✓ Other improvements



108



- Lateral additions or vertical additions
 - 50% increase in market value or 20% increase in floor area*

(*Illinois specific ordinance)

109

Substantial Improvement The Formula <u>Cost of improvement project</u> Market value of the building 50% Market value of the building 50% Example: \$140,000 house 54% 110

"Market Value"

REVIEW of SLIDE

- · Independent professional appraisal
- NFIP claims data (Actual cash value)
- Tax or building department estimates
- Detailed Actual Cash Value estimates
- Uniform Residential Appraisal Report (URAR): value depreciated by age/quality



















Existing House with Floor Below FPE

118







Perfect time to reconstruct the RIGHT WAY!

- Available mitigation funds???
- Flood Insurance help???

Obtain state or cooperative assistance

ALL RED TAGGED (substantially damaged) buildings must be brought into compliance regardless of insurance or mitigation availability.

121



122









FEMA Technical Bulletins and References

- TB 1 Openings in Foundation Walls and Walls of Enclosures
- TB 2 Flood Damage-Resistant Materials Requirements
- TB 3 Non-Residential Floodproofing -- Requirements and Certification
- TB 4 Elevator Installation
- TB 6 Below-Grade Parking Requirements
- **TB 7 Wet Floodproofing Requirements**

TB 10 - Ensuring that Structures Built on Fill In or Near Special Flood Hazard Areas are Reasonably Safe From Flooding

TB 11 - Crawlspace Construction for Buildings Located in Special Flood Hazard Areas

126

125

Critical Facilities

Critical Facility- Any facility which is critical to the health and welfare of the population and, if flooded, would create an added dimension to the disaster. Damage to these critical facilities can impact the delivery of vital services, can cause greater damage to other sectors of the community, or can put special populations at risk.

Examples:

✓ Fire and police stations,

- ✓ schools,
- ✓ Hospitals ✓ retirement homes
- ✓ major roads and bridges,
- ✓ critical utility sites,
- ✓ Hazardous material facilities.





Snow Valley Nursing Home Lisle, IL

128

elevation!



Federal Flood Risk Management Standards (2016) – Added layer to EO11988. Fed agencies and funding must comply with FPM regs. Additional flood protection (freeboard, climate change, etc.). RESCINDED

129



130



Part 4 - Topics

- Duties of Floodplain Administrators
- Variances
- Community Audits & Compliance
- Recordkeeping
- Elevation Certificates

LOCAL PERMIT RESPONSIBILITIES



To participate in the National Flood Insurance Program (NFIP) certain duties are required!!!!!

133

Everyday Activities

- A. Review applications
- B. Provide base flood data (where
- available) C. Review plans and specifications
- D. Ensure that other state and federal permits
- are obtained
- E. Provide notice of water course alterations
- F. Issue/deny permits
- G. Inspect development
- H. Look out for violations
- I. Maintain records
- J. Complete post- flood damage inspections and estimates



- A. Review Applications
- Review and evaluate development permit applications
 - Is development in flood plain?
 - Is development in flood way?
- Require a permit for <u>any</u> development in the floodplain











E. Notice of water course alterations

Provide required notification of changes in existing water courses to:

- •FEMA
- State
- Adjacent communities

140





- I. "Perfect" Set of Records
- Applications
- Permit and inspection records
- Compliance files variances, ECs*
- LOMCs and other flood studies
- Old ordinances, old flood maps
- Back-up copies in secure location
- Logical filing system, i.e., by address

* Although not required by NFIP, helps community show compliance to state and FEMA and helps the future owner with flood insurance rating.
Variance

- Grant of relief from requirements of floodplain development ordinance
- Permits construction in a manner that would otherwise be prohibited
- · Stays with property if sold
- Not relief from flood insurance! Can lead to high flood insurance premiums
- · Granted by local governing body



145

Conditions for Variances

- 1. For a piece of property, not owner
- 2. Is the minimum necessary to afford relief
- 3. If within designated regulatory floodway, cannot cause increase in flood levels during base flood
- 4. No extraordinary public expense
- 5. No increase in flood heights
- 6. No fraud or victimization of public
- 7. No conflict with existing local laws or ordinances
- 8. No increased threat to public safety or creation of nuisance

146



Insufficient Reasons



- Less than drastic depreciation of property
- Convenience of property owner
- Circumstances of owner not the land
- To obtain better financial return
- Property similar to others in neighborhood
- Hardship created by owner's own actions

If a Variance is Issued



A community must maintain a record of all variance actions, including those denied, along with the justifications (findings of fact).

149



...This is the community's only protection after the flood when damages have occurred.

150

If full compliance isn't possible...

Corrective measures should be coordinated with state NFIP Coordinator and FEMA.



Got GIS? Risk Identification!

- Use of digital maps identifying flooded structures.
- GIS database used for extracting information about structures and flooding
- Add photos, elevation certificates, damage/improvement records, etc.
- Link to permitting software to identify floodplain/floodway parcels







154

Community Assistance Visit (CAV) Community Assistance Contact (CAC)

CAVs and CACs provide a way for the FEMA and the state to offer technical assistance to NFIP communities and a way of addressing deficiencies or violations.



National Flood Insurance Program (NFIP) Guidance for Conducting Community Assistance Contacts and Community Assistance Visits PIMA F-776/Appl 2011

S FEMA

Community Assistance Visit Possible Violations

Examples of deficiencies and violations......

- Failure to require ANY permits;
- Failure to obtain state floodway permit;
- Failure to use proper flood elevation data;
- Non-compliant ordinance;
- Structures newly built below BFE;
- Substantial improvements without compliance
- Substantial damage repairs allowed without compliance
- HVAC or electric components not elevated;
- Failure to correct violations to practicable extent;
- Pattern & practice of issuing non-compliant variances;
 Allowing non-compliant lower enclosures or no vents;
 - Allowing non-compliant lower enclosures or no vents;

Fill and debris.



Community Assistance Visit (cont)

IF YOU CAN'T GET THE WHOLE THING, GET WHAT YOU CAN REASONABLY AND PRACTICALLY GET, to limit flood damage exposure to people and property. Save your community's good standing in the National Flood Insurance Program!

157

158

WHO'S TO BLAME?

- ≻The developer?
- ➤The builder?
- ➤The owner?
- ➤The building official?
- ➤The realtor?
- ≻The prior administration?

WE DON'T CARE!!!!

Regardless of who is at fault, the violation must be corrected.

Probation

- Formal notification to the community that FEMA regards the community's floodplain management program as not compliant with the minimum standards of the NFIP.
- An additional \$50 dollar premium will be charged on policies sold or renewed during the probation period.
- > The minimum probation period is one year.



160



Effects of Suspension or Non-Participation in the NFIP • No federally-backed flood insurance. • No federal/state grants and loans. • No federal flood disaster assistance. • No federal mortgage insurance.

162

If your community has any Rep Loss properties...

> > NO REASON!

Illinois is ranked #1 in the nation:

- 1. Overall flood loss reduction
- Fewest number of flood insurance claims occurring on newer post-FIRM structures (1%). *Some states have as much as 50% of flood claims taking place on newer post-FIRM buildings.
- 3. Mitigation of repetitive loss properties (50% no longer make damage claims)



164







































178





Openings in Foundation Walls and Walls of Enclosures Below Elevated Buildings in Special Flood Hazard Areas in accordance with the National Flood Insurance Program Technical Bulletin 1 / August 2008

FEMA

179



Technical

Bulletin #1









Watch the vents!

16,7 inches

sine he wan he sound a star

Figure 20. Con screening shown

182

Closure de in the oper

where pole down pole downloke and day

ays (insect Figure 21. Wood frame with insect : opening in poured concrete foundation

state

"standard vents" are only 42 sq. in.

184















189

BFEs in Unnumbered A Zones (unstudied floodplains)

- Check with Illinois State Water Survey
- LOMAs in the area –Use National Flood Hazard Layer
- Highway Engineer/IDOT bridge designs
- Engineering study Required if development is greater than 5 acres or 50 lots, even if an IDNR permit is not required.
- <u>Apply for a LOMA--determination will be based on a</u> (conservative) approximate BFE
- DO NOT CALL Paul Osman!

190



Deck elevation? Section C(h) now captures the lowest adjacent grade at lowest elevation of deck or stairs, including structural support. This information is required if the EC is being used to support a request for a LOMA or LOMR-F.

 Is Deck connected to the structure? If standalone structure add details to Comments

















Elevation Certificates

Make sure you have the latest form Download from: <u>http://www.fema.gov/</u> or go to www.FEMA.gov and search "elevation certificate"

198





Part 5 - Topics

- Basic Terms & Abbreviations
- NFIP Insurance Overview
- Policy Types and Rating
- Increased Cost of Compliance
- Community Rating System
- Grandfathering

201

Common Acronyms...

BFE	= Base Flood Elevation
CRS	= Community Rating System
FIRM	I = Flood Insurance Rate Map
ICC	= Increased Cost of Compliance
NFIP	= National Flood Insurance Program
PRP	= Preferred Risk Policies
wyo	= Write Your Own

202

National Flood Insurance Program (NFIP)

- Now covers 5.1 million policies in 23,000+ communities.
- \$1.3 trillion in risk exposure



In floodplains - less than 50% coverage. In all risk zones - less

- than 10% coverage.
- Adverse selection only those who need it buy it.



203



Buildings

- > Up to \$250,000 1-4 family residential
- ➢ Up to \$500,000 other residential
- > Up to \$500,000 non-residential

Contents

- > Up to \$100,000 Residential
- > Up to \$500,000 Non-Residential

Less if community is in the Emergency phase of the program

205





Definition of an eligible building

- 2 or more outside rigid walls
- A fully secured roof
- Permanently affixed to a site
- At least 51% of ACV above ground
- Could be manufactured home or travel trailer if it meets above criteria

208

NFIP Does NOT Cover

- Basement improvements
- Most personal belongings in a basement
- Structures built over water



209

Limitations

Basements and enclosures beneath the lowest floor of elevated post-FIRM buildings – limited coverage $% \left({{\rm D}_{\rm A}} \right)$



210

When It's Written



Waiting Period > Generally 30 days, unless...it's at the time of loan closing, mortgage review or map revision

Lenders

Must have determination on file May require insurance even outside SFHA



211

Who MUST buy Flood Insurance?

• Required for buildings in <u>SFHA</u> (floodplain) when:

- <u>M</u>aking
- Increasing
- <u>R</u>enewing
- <u>E</u>xtending
- a mortgage, home equity, improvement, construction, commercial or farm credit loan secured by the building
- <u>OR</u>, when lender becomes aware a building in the SFHA securing the loan is not insured

213

Who MUST Buy Flood Insurance?

Community Status Does the community participate in the NFIP? Is insurance available?

Type of Loan Is the lender Federally regulated?

Type of Property Is it an insurable structure?

Location of Property Is it located within a floodplain?

214

Lender's Responsibility Insurance is required when:

- A lender makes, renews, extends, or increases a loan.
- That loan is from a federally regulated lender
- The loan collateral is a building insurable under the NFIP's standard policy.
- The building is or will be located in an SFHA.
- The community participates in the NFIP.

Insurance is also required when a lender learns that such a building is not insured (such as when a lender is notified by its flood hazard determination vendor of a <u>map</u> <u>revision</u>)



When do flood insurance policies become effective?

30-Day Waiting Period

- Exceptions for:
- Insurance in connection with a loan
- Purchased within 13 months of a map change (1 day)





Lender must complete (or have a vendor complete) a Standard Flood Hazard Determination Form and maintain it in the loan file for the life of the loan. Lender must notify borrower of the results and maintain documentation that the borrower received the notification. Do lenders HAVE to hire a third-party determination company?

Lenders Documentation

NO!

218

Flood "Certification" Vendors

- Not FEMA endorsed
- Essentially unregulated industry
- Approx 150 firms but only 1/3 subscribe to NFDA standards and practices
- Quality control issues
- What are they *really* determining ?
- Some perform 10,000+ determinations per day (mostly automated)



219







Risk-Rating Redesign

- NFIP rating methodology is undergoing significant redesign.
- $\ensuremath{\cdot}$ More factors will be incorporated into the rating
- Will rely less on insurance agents' inputs
- $\ensuremath{\bullet}$ Elevation above or below BFE will still be an important component
- More detail coming in the next several months

223

Th >Writte floodpla >Sold in	e Prefer en only for area ain (B,C and X Z n "packaged" c	red Ris as located ou Zones) soverage am	sk Polic utside of the ounts. Very c	cy (PRI mapped heap!	?)
	Building Type	Building Coverage	Contents Coverage	Annual Premium	
	Residential w/o basement	\$30,000	\$12,000	\$150	
	Residential with basement	\$30,000	\$12,000	\$175	
	Non-Residential w/o basement	\$50,000	\$50,000	\$557	

"Newly mapped" (formerly the PRP Extension)

- Rating for "newly mapped" properties added to the SFHA by a new FIRM start at a low price, which gradually increases each year.
- Homeowner must ask for the rate procedure



226

Grandfathering

If homeowner:

- maintains continuous coverage or
- was <u>built in compliance</u> with an old FIRM, insurance can be rated using previous map if it benefits them.

"Old Maps" Rule

Keep old maps!!!

If old maps aren't available, check for historical maps at: www.msc.fema.gov



Many, but not all, old maps are there.

228



FLOODPLAIN MANAGEMENT & ITS EFFECTS ON FLOOD INSURANCE Building Construction:

- Get it right and insurance premiums will be affordable
- Get it wrong and premiums will be very expensive
- Exceed minimum standards and insurance will be relatively cheap



What is Increase Cost of Compliance (ICC)??

- Part of the standard Flood Insurance Policy.
- •Not a grant—property must be <u>substantially</u> <u>damaged</u> by flood while insured to claim ICC.
- Up to \$30,000 to assist with code compliance:
 - Floodproof
 - Relocate
 - Elevate
 - Demolish

232

231

What can a Community Do?

- Join CRS/Increase CRS Rating
- Be aware of mitigation grants
- Work together!
- Provide technical advice
 - Elevation Certificates
 - Building/Rebuilding to reduce flood risk
 - Implement Higher Standards

How to Qualify for ICC??

Three conditions must be met to claim the ICC coverage:

- Building must be insured under the NFIP and have a paid claim for flood damage.
- Building must be substantially damaged by a flood or meet the definition of "repetitive loss" due to flood damage.

The community must determine that the building is substantially damaged by flood and is required by the community's ordinance to be elevated or removed from the SFHA (and *notify* the owner of this).

233



QUICK Mitigation is the Key





234





235

69 Active	e Con	זש מנו	unities	9111		
 Adams County 	8		Lake Forest	7	Riverwoods	8
Addison	6		Lake in the Hills	6	 Rock Island Co 	7
 Aurora 	7	•	Lansing	7	Roxana	8
 Bartlett 	6	•	LaSalle County	8	 Sangamon County 	7
 Calumet City 	6	•	Libertyville	6	 South Elgin 	5
 Carpentersville 	6	•	Lincolnshire	5	 South Holland 	5
 Champaign 	5	•	Lisle	5	 St. Charles 	5
 Country Club Hills 	8	•	McHenry County	7	 St. Clair County 	6
 Crystal Lake 	6	•	Melrose Park	8	 Sugar Grove 	6
Deerfield	6	•	Metropolis	8	Swansea	7
 DeKalb City 	7	•	Midlothian	7	 Sycamore 	7
 Des Plaines 	7	•	Moline	8	 Tinley Park 	7
 Downers Grove 	6	•	Montgomery	5	 Westchester 	8
 DuPage County 	6	•	Mount Prospect	6	Wheaton	6
 Flossmoor 	7	•	Niles	6	 Wheeling 	6
 Glen Ellyn 	7	•	Northbrook	7	 Whiteside County 	8
 Glendale Heights 	7	•	Northfield	7	 Willowbrook 	6
 Glenview 	5	•	Oak Brook	7	 Winnetka 	6
 Gurnee 	6	•	Ogle County	7	Wood Dale	5
 Hampshire 	7	•	Orland Hills	5		
 Highland Park 	8	•	Ottawa	2		
 Hoffman Estates 	6	•	Palatine	7		
 Huntley 	7	•	Peoria County	5		
 Jersey County 	5	•	Prospect Heights	7	(As of Feb 2019)	

CRS in Illinois

- $\mbox{ \ \ }$ Illinois is consistently one of the top states in the nation for CRS participation
- Thirteen communities are class 5 or better
- One CLASS 2 community only 7 in the nation
- 23 of top 50 policy communities enrolled
- 40% of all flood insurance policies in Illinois are in communities that receive CRS discounts.

238

Incentive



CRS provides an incentive for communities to initiate new flood protection activities.

CRS Activity Examples

Activity 300 - Elevation certificates, Outreach projects

- Activity 400 Higher standards, Open space preservation, Stormwater management
- Activity 500 Acquisition and relocation, Drainage system maintenance
- Activity 600 Flood warning program, levee safety, dam safety

240

CRS Activities

• 300 Public Information Activities

- 310 Elevation Certificates
- 320 Map Information
- •330 Outreach Projects
- 340 Hazard Disclosure
- 350 Flood Protection Information
- 360 Flood Protection Assistance



241

CRS Activities

- 400 Mapping & Regulatory Activities
 - •410 Additional Flood Data
 - •420 Open Space Preservation
 - •430 Higher Regulatory Standards
 - •440 Flood Data Maintenance
 - •450 Stormwater Management



242

CRS Activities

- 500 Flood Damage Reduction Activities
 - 510 Floodplain Management Planning
 - 520 Acquisition and Relocation
 - 530 Flood Protection
 - 540 Drainage System Maintenance





- 630 Dam Safety



CRS Premium 9 8 7 6 5 4	Points 500-999 1000-1499 1500-1999 2000-2499 2500-2999	Discount 05% 010% 020% 025% 030%
2 1	□ 3000-3499 □ 3500-3999 □ 4000-4499 □ 4500+	□35% □40% □45%

CRS Representative for Illinois

Lou Ann Patellaro, CFM ISO / CRS Specialist ISO - Commercial Property Cell – (954) 651-5021 Office/Fax – (708) 634-3040

SISO











Mitigation Grant Programs HMGP PDM FMA Entity State Agencies + + + Federally-recognized Tribes + + + Local Governments/Communities + + + Private Nonprofit Organizations (PNPs) +

Cost Sharing Re	quired
Program	Federal / Non Federal Share
HMGP	75/25
PDM	75/25
PDM – If subrecipient is small and impoverished community or tribal government	90/10
FMA – insured properties and planning grants	75/25
FMA – repetitive loss property	90/10
FMA – severe repetitive loss	100/0

251



- Some projects too small
- Must show a cost benefit
- Some don't qualify under the rules

Presidential Declaration

- If a disaster is large enough it can receive a Presidential Declaration
- Declaration can be for Individual Assistance, Public Assistance, and/or Mitigation
- Public Assistance has 406 Program funds that can be used for mitigation. They also have ability to do alternative projects.
- Small Business Administration has there own process.
- Mitigation funds can be used anywhere in the state for any type of project.
- Mitigation project does not have to relate to the disaster, i.e. flood buyouts after a tornado
- Projects need to be a part of the local hazard mitigation plan

253

254

Hazard Mitigation Grant Program (HMGP)

- FEMA allocates 15 % of the total disaster assistance generated in response to a Presidential declaration toward HMGP.
- Program is administered by the State.
- 75% Federal /25% Local cost share.
- Voluntary and Competitive (No Guarantee).
- Projects must meet benefit-cost, environmental and other Federal, State and local criteria.
- Can fund acquisition, elevation, and small structural flood projects, wind and earthquake projects
- Retrofitting Elevation, relocation, floodwalls, wet & dry floodproofing and demolition
- Priorities: Substantial damage and repetitive loss
- Voluntary for property owners

HMGP - Examples

- Acquisition and Structure Demolition/Relocation
- Dry Floodproofing of Historic Residential Structures
- Elevation-
- Hazard Mitigation Plan
- Structural Retrofitting of Existing Buildings
- Residential and Community Safe Rooms
- Wildfire Mitigation
- Wind Retrofit





Flood Mitigation Assistance (FMA)

- Annual nationwide competitive program
- Yearly Allocation from Insurance Policy Base.
- Requires Flood Mitigation Plan.
- Administered by the State.
- Repetitive Loss properties are targeted.
- Community needs to be in good standing in the NFIP.
- Structures must be insured.
- · Voluntary and Competitive (No Guarantee).

257

Pre-Disaster Mitigation Program (PDM)

- · Annual nationwide competitive program.
- Funds projects for all natural hazards
- Flood insurance is not a prerequisite
- · Local Hazard Mitigation plan is a prerequisite
- · Can fund hazard mitigation plans
- Changing emphasis –floodwalls, green
 infrastructure, floodplain and stream restoration
- Potential for a LOT more money
- Communities (subapplicant) applies to state who then applies to FEMA by an annual deadline

258

IDNR Funds

- Acquisition and demolition
- No elevations, no Mobile Homes
- Funds are on a reimbursement basis
- No Cost share
- Can be used as Cost Share for FEMA
- Easier than the FEMA program
- Limited funding and highly competitive



- Has incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event (ICC)
- CRS defines as 2 or more claims over \$1,000 in any 10-yr period

Severe Repetitive Loss Structure

- Has at least 4 claim payments (including building and contents) over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000;
- For which at least 2 separate claims payments (building payments only) total exceeds the market value of the building.

259





What is in a mitigation plan?

- Analyzing the communities risks
- •What steps can be taken to mitigate them
- •The Pro's and Con's of the methods
- Prioritizing the mitigation methods
- How will you accomplish them
- •Uploads into the State Mitigation Plan
- Adopted by the local government
- Emphasis on the process want involvement, dialogue

Don't Plan for the Past; Plan for the Future

- Urban flooding is becoming more significant
- Increasing number of extreme events



264









Public Assistance Program

FEMA will require building repairs or replacements meet the most recent ICC codes and other hazard mitigation features and will provide funding for the eligible increase in cost.

If a jurisdiction doesn't have sufficient flood insurance coverage on a damaged building, the assistance will be reduced accordingly.



CRS communities must certify to having the necessary flood insurance coverage.





MITIGATION

IEMA Point of Contact:

Sam Al-Basha State Hazard Mitigation Officer Illinois Emergency Management Agency 1035 Outer Park Drive Springfield, IL 62704 217-785-9942 sam.m.al-basha@illinois.gov

> IDNR-OWR Point of Contact Ron Davis 217-524-7200 Ron.davis@illinois.gov



IDNR/OWR Contacts:



Paul Osman Statewide Programs Manager (217) 782-4428 Paul.Osman@Illinois.gov

Marilyn Sucoe NE Illinois Floodplain Manager (847) 608-3181 Marilyn.Sucoe@Illinois.gov

273

Coastal Floodplains

 Coastal High Hazard Area: an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The area is designated on the FIRM as Zone V1 – V30, or VE or V.

274

Coastal Floodplains

Definitions.....

 Coastal A Zone: the portion of the SFHA landward of a V zone...which may be subject to wave effects, velocity flows, erosion, scour, or combinations of these forces and are treated as V zones.

Coastal transect



275

Coastal Floodplain







Levels of Detail in Floodplain Delineations



278

Coastal Floodplain Map

Coastal Barrier Resource Act (CoBRA) of 1982 Coastal Barrier Improvement Act of 1990

- Areas subject to certain flood coverage restrictions. The NFIP is prohibited from writing flood insurance policies on new or substantially improved buildings in these areas.
- There are no CBRS or OPA areas in Illinois.

Building Protection Standards Coastal High Hazard or V Zone Construction

- Mean High Tide: All new construction in V Zones must be located landward of the reach of mean high tide.
- Modification of Dunes: Prohibit man-made alteration of sand dunes in V Zones.

280

Building Protection Standards Coastal High Hazard or V Zone Construction (cont.)

• New and substantially improved structures must have the bottom of the lowest horizontal member at or above the BFE.

Building Protection Standards Coastal High Hazard or V Zone Construction (cont.)



282

Building Protection Standards Coastal High Hazard or V Zone Construction (cont.) ▲≕ nte homenent, and he reparted General Road Associated V situation design, plane and specifications to constitution one has been in propriate with prove bid a landaria of

Building Protection Standards Coastal High Hazard or V Zone Construction (cont.)

- Structural Fill is prohibited to support buildings.
- Nonstructural fill, such as might be used for landscaping, should be placed so that it does not divert waves and surging floodwaters onto other structures.



285

Building Protection Standards Coastal High Hazard or V Zone Construction (cont.)

Connecting the Load Path in the V Zone

- Continuous path from roof to wall to foundation
- Materials that resist deterioration

286





287


Building Protection Standards Coastal High Hazard or V Zone Construction (cont.)

V Zone / Breakaway Wall Certificate

• In V Zones, the applicant must include the V Zone Certificate and an engineer's certification of design on a breakaway wall.





291

292



Building Protection Standards Coastal High Hazard or V Zone Construction (cont.)

Altering Sand Dunes

• Your flood damage prevention ordinance prohibits manmade alterations of sand dunes that will increase potential flood damage.

COBR/

- NFIP insurance not available.
- You must still review and issue permits.

294





Floodplain Mapping and Map Changes

1

Part 2 - Topics

- Basic Terms
- Types of FEMA Maps
- Flood Zones
- Flood Insurance Studies (FIS)
- Locating BFEs on Maps and Exhibits
- Updating Maps (Map Changes)
- Levees

2

Common Acronyms...

BFE = Base Flood Elevation FHBM = Flood Hazard Boundary Map FIRM = Flood Insurance Rate Map FIS = Flood Insurance Study LOMC = Letter of Map Change LOMA = Letter of Map Amendment LOMR = Letter of Map Revisions NFIP = National Flood Insurance Program SFHA = Special Flood Hazard Area

Types of FEMA Maps

- Flood Hazard Boundary Maps (FHBM)
- Flood Insurance Rate Map (FIRM)
- Flood Boundary Floodway Map (FBFM)
- Digital Flood Insurance Rate Map (DFIRM)

4











How Do They Make Floodplain Maps?





Floodplain Mapping

• How do we determine flood elevations?

• Ideally...

- Multiple gages on every stream
- 100+ years of observations
- Stationary climate/watershed conditions

10







Floodplain Mapping

- Need hydrology and hydraulic analyses to define flood elevations
- Hydrology How much precipitation runs off land surfaces and collects in streams and rivers
- Hydraulics How high does water flow through stream and bridges

13

Hydrology

- Hydrology defines flow rates (discharges) at various flood frequencies
- Most interested in 1% Annual Chance (100-year) stream flow
- Several methods
 - Watershed Modeling
 - Stream gage analysis statistical approach
 - Regression equations/StreamStats empirical approach



Hydraulics

• Typical hydraulic models require:

- Cross sections of channel and overbank topography
 Bridge/culvert data
- Peak flow rates
- Boundary conditions (starting water-surface elevation)









Topography • Greater accuracy and precision for floodplain mapping



19





Flood Zones

- Flood Zone name depends on Floodplain Map Vintage
- A Zones depict 1% Annual Chance Floodplain
 - Zone A (No BFEs) = typically riverine approximate
 - Zone AE or A1-30 (includes BFEs) = riverine detailed
 Zone AO depth of 1' to 3' given = shallow sheet flow
 - **Zone AH** (includes BFEs) = shallow ponding
- 22



- Approximate A Zones do not have BFEs
- Permits still required
- Permits necessitate the estimation of a BFE
- Vital reference : FEMA Publication 265 "Managing Floodplain Development in Approximate A Zones"











26

Other A Zones

- Zone AR Floodplain resulting from decertification of a previously accredited flood protection system that is being restored to provide at least 1% Annual Chance protection
- Zone A99 Floodplain to be protected by a Federal flood protection system under construction; no BFEs





















- Zone X (shaded)/Zone B 0.2% Annual Chance (500-year) floodplain or 1% Annual Chance (100year floodplain with average depth less than 1 foot
- Zone X/Zone C Area of minimal flood hazard
- Zone D Area of undetermined flood hazard (no regulatory requirements but mandatory flood insurance purchase required)



Flood Zone	Floodplain Frequency?	BFE or Depth Given?	Mandatory Flood Insurance Purchase Requirement?	Regulatory (requires permits)?
Zone A	1% AC (100 Year)	No	Yes	Yes
Zone AE or A1-30	1% AC (100 Year)	Yes	Yes	Yes
Zone AO	1% AC (100 Year)	Yes	Yes	Yes
Zone AH	1% AC (100 Year)	Yes	Yes	Yes
Zone AR	1% AC (100 Year)	Yes	Yes	Yes
Zone A99	1% AC (100 Year)	No	Yes	Yes
Zone V	1% AC (100 Year)	No	Yes	Yes
Zone VE or V1-30	1% AC (100 Year)	Yes	Yes	Yes
Floodway	1% AC (100 Year)	Yes	Yes	Yes
Zone X (shaded) or Zone B	0.2% (500-Year); sometimes 1% less that 1' depth	No	No	No
Zone X (unshaded) or Zone C	N/A	No	No	No
Zone D	N/A	No	Yes	No

Flood Zone	Floodplain Frequency?	BFE or Depth Given?	Mandatory Flood Insurance Purchase Requirement?	Regulatory (requires permits)?
Zone A	1% AC (100 Year)	No	Yes	Yes
Zone AE or A1-30	1% AC (100 Year)	Yes	Yes	Yes
Zone AO	1% AC (100 Year)	Yes	Yes	Yes
Zone AH	1% AC (100 Year)	Yes A	Yes	Yes
Zone AR	1% AC (10 Y)	es 🛆	C Yes	Yes
Zone A99	1% AC (100 Year)	H d	Yes	Yes
Zone V	1% AC (100 Year)	No	Yes	Yes
Zone VE of V1-30	1% AC (100 Year)	Yes	Yes	Yes
Floodway	1% AC (100 Year)	Yes	Yes	Yes
Zone X (shaded) or Zone B	0.2% (500-Year); sometimes 1% less that 1' depth	No	No	No
Zone X (unshaded) or Zone C	N/A	No	No	No
Zone D	N/A	No	Yes	No







Accessing Floodplain Maps

- National Flood Hazard Layer (NFHL) - <u>https://www.fema.gov/national-flood-hazard-layer-</u> <u>nfhl</u>
- Online Interactive Map of All DFIRM data
- Can be loaded into Google Earth
- Displays LOMCs

41

Flood Insurance Study (FIS)

- Appraises a community's flood problems
- Community's flood history
- Study information
- Provides hydrology and hydraulic results
- Provides flood elevation profiles
- Provides floodway data information































Determining a BFE Example



52

Updating Maps (Map Changes)

- Sometimes the maps are just wrong!
- There is a process to correct or update the maps



53

Types of Map Changes

MT-1 Map Changes

- Letter of Map Amendment (LOMA)
- Conditional letter of Map Amendment (CLOMA)
- Letter of Map Revision Based on Fill (LOMR-F)
- Conditional Letter of Map Revision Based on Fill (CLOMR-F)

MT-2 Map Changes

- Letter of Map Revision (LOMR)
 Conditional Letter of Map Revision (CLOMR)
- Physical Map Revisions (PMR)





Letter of Map Amendment (LOMA) Situation: Structure is located on NATURALLY high ground _____ -----Information needed by FEMA: Completed MT-1 Form 1 (or MT-EZ) Lowest Adjacent Grade must be higher than BFE -----Cost: "free"

56











59

The E-LOMA

- Internet based system to quickly process simple LOMA requests
- Only available to licensed land surveyors and professional engineers
- Allows determinations to be printed out locally by the user
- Random audits to be completed to verify accurate determinations

Letter of Map Revision Based on Fill (LOMR-F)

Situation:

Fill placed in "Flood Fringe" (outside floodway) to elevate ground or structure above BFE

Information needed by FEMA:

MT-1 Forms including Community Acknowledgement

Cost: Relatively inexpensive

61

















Conditional Map Changes

- FEMA's comments on the impacts of a proposed project on the floodplain/floodway/BFEs
- Ensures that structures are constructed in compliance with NFIP regulations
- Map change not official until follow-up LOMC request made with certified as-built drawings











71

Levee Accreditation

- Not all levees are created...
 - ...for the same purpose
 - ...for the same flood frequency
 - ...using engineering design standards
- Only levees that meet the requirements of 44 CFR 65.10 can be accredited to show protection provided against the base flood on the floodplain map





• Levees <u>may be able</u> to meet 44 CFR 65.10 requirements but the floodplain map will not show base flood protection until the documentation is accepted by FEMA <u>and</u> a revised floodplain map is issued showing protection.

• Accredited Levees...

- ...can be overtopped or fail (sometimes resulting in
- damage/loss of life greater than without levee)
- $\ensuremath{\, \bullet \,}$...can deteriorate over time
- ...require regular maintenance

74

44 CFR 65.10 Accreditation Requirements

- Freeboard (3 ft. or more)
- Closures
- Embankment Protection
- Stability Analysis
- Settlement Analysis
- Interior DrainageOperation &
- Maintenance Plan



Community/Levee Owner Responsibilities

- Levee Owners are responsible to provide the 44 CFR 65.10 documentation to FEMA for initial and continued accreditation status on the floodplain map
- Massive effort to obtain accreditation and maintain accreditation

76

Levee Myths					
Myth	Truth				
I won't flood if I live behind an accredited levee	Accredited levees can fail or be overtopped by larger events; does not eliminate all risk				
My home will never be mapped in floodplain since I live behind an accredited levee	Levee accreditation is not granted in perpetuity; maintenance and upgrades are often needed to maintain accreditation status				
Levees only fail when overtopped by floodwaters	Levees can fail due to seepage, erosion, or collapse				







80

Part 2 Summary Review

Where did we confuse you in covering:

- Types of FEMA Maps
- Flood Zones
- Flood Insurance Studies (FIS)
- Locating BFEs on Maps and Exhibits
- Updating Maps (Map Changes)

• Levees