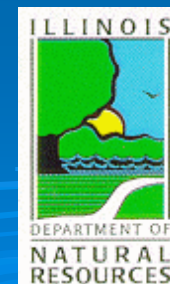


# Floodplain IAFSM 2011

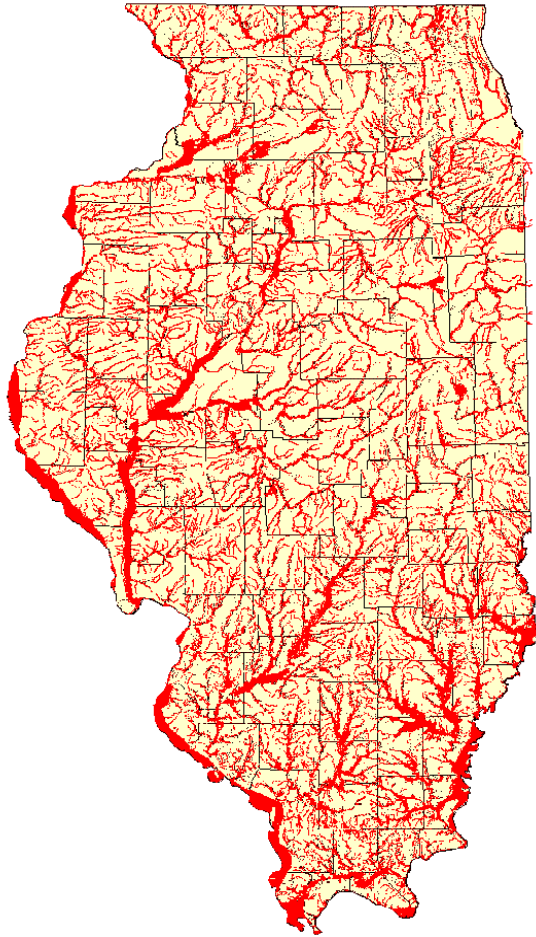


**Tuesday March 8, 2011**  
**IAFSM Conference**  
**Normal, IL**





# Illinois? Floods?



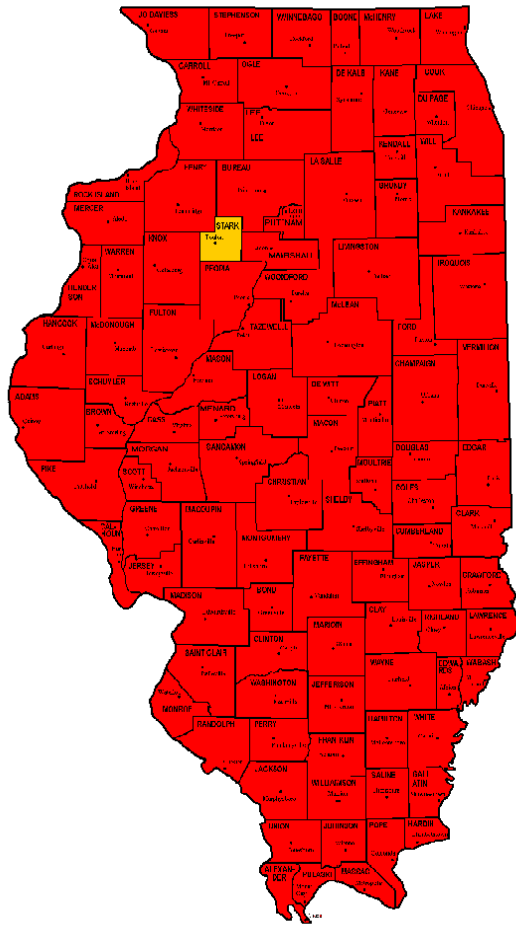
**FLOOD  
PLAINS**

- The largest inland system of rivers, lakes, and streams in the entire nation!





# Illinois is a VERY Wet State!



Floods are BY FAR the most common and the most costly disasters in Illinois.

Floods happen **EVERY YEAR** in Illinois.

**DISASTERS  
1993-2008**



# 1993 – Midwest Floods







**2008 – Midwest Floods**



# **FEMA Region V's Largest Flood Event?**

**The Election Year Flood of 2011**



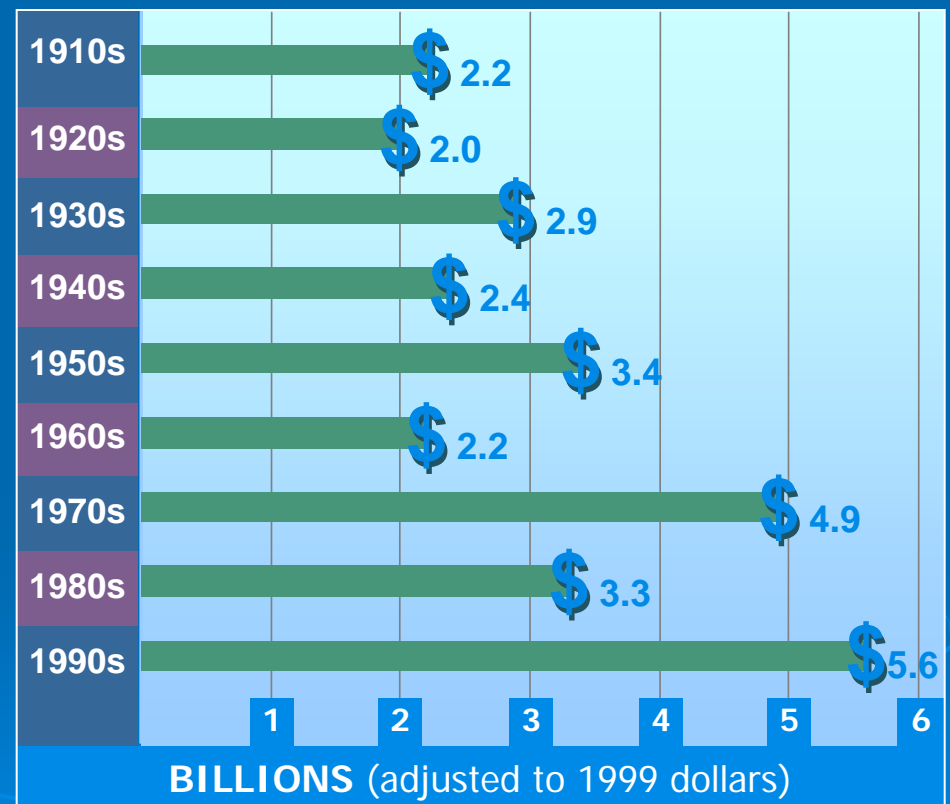
**\$320 Million in individual  
assistance**



# Trends in Flood Damages

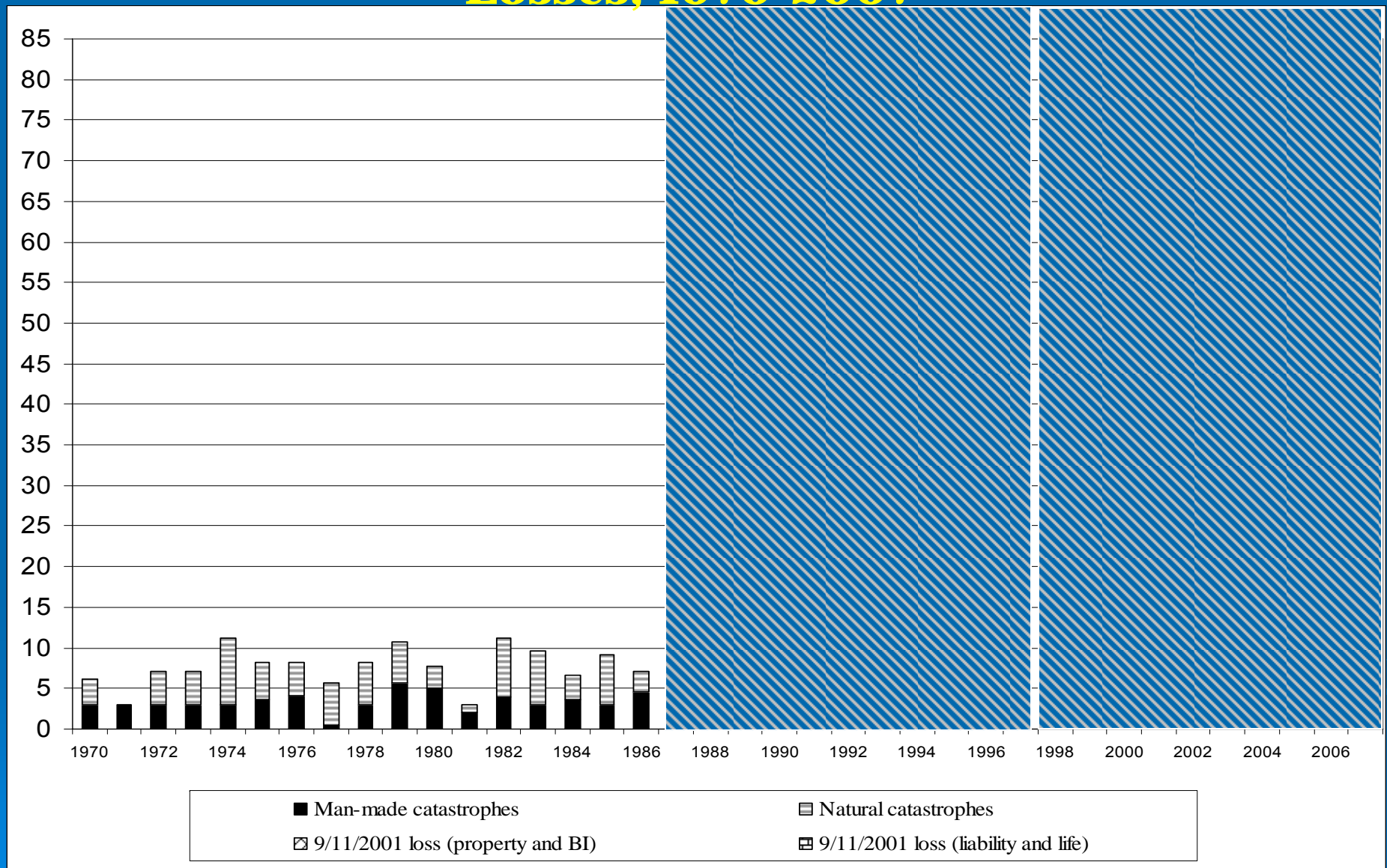
- \$10 billion annually
- Four-fold increase from early 1900s
- USGS report:
  - \* Extreme weather events have not increased.
  - \* Damages have increased.

Society is to blame.....  
not the weather!





# Worldwide Evolution of Catastrophe Insured Losses, 1970-2007



(Property and business interruption (BI); in U.S.\$ billion indexed to 2007)

Sources: Wharton Risk Center (2008) - data from Swiss Re and Insurance Information Institute



# People and Property Are at Risk in the Floodplain

Many Floodplain Residents Don't Understand the Risk



Many Structures Unnecessarily Located in Floodplain



**Engineered Structures  
Have Provided  
Protection to Millions**



**But flood control  
is not always the  
answer.**





**FOR SALE**

**200' OCEAN FRONTAGE  
+ 100' BAYOU FRONTAGE**

**1 3/4 MILLION FIRM**

**231-798-3065**

**What's wrong with  
these pictures?**





# The Hydro ILLOGICAL Cycle

**Flood Amnesia**

**Panic**

**Flooding**

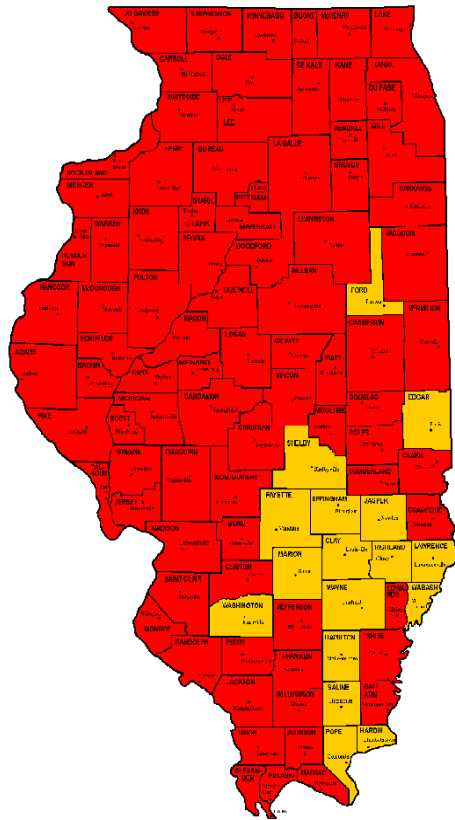
**Devastation**

**Concern**

**Recovery &  
Reconstruction**



# National Flood Insurance Program



**NFIP  
COUNTIES**

To join the National Flood Insurance Program (NFIP), a community must adopt local floodplain management regulations.

In Illinois:  
85 of 102 Counties have joined the NFIP. 820 communities have also joined the NFIP.



# The Two Edged Sword

- **Regulations:**  
The most under rated form of mitigation! Hard to quantify.
- **Mitigation:**  
\$4 saved for every \$1 spent. Easy to quantify.





# Floodplain Basics





# Understanding the Floodplain



The floodplain is the land that is subject to a 1% or greater chance of flooding in any given year.



# Understanding the Floodplain

## Base Flood

A flood that has a one-percent chance of being equaled or exceeded in any given year. It often is referred to as the

~~“100-year” flood.~~

“1% chance flood”

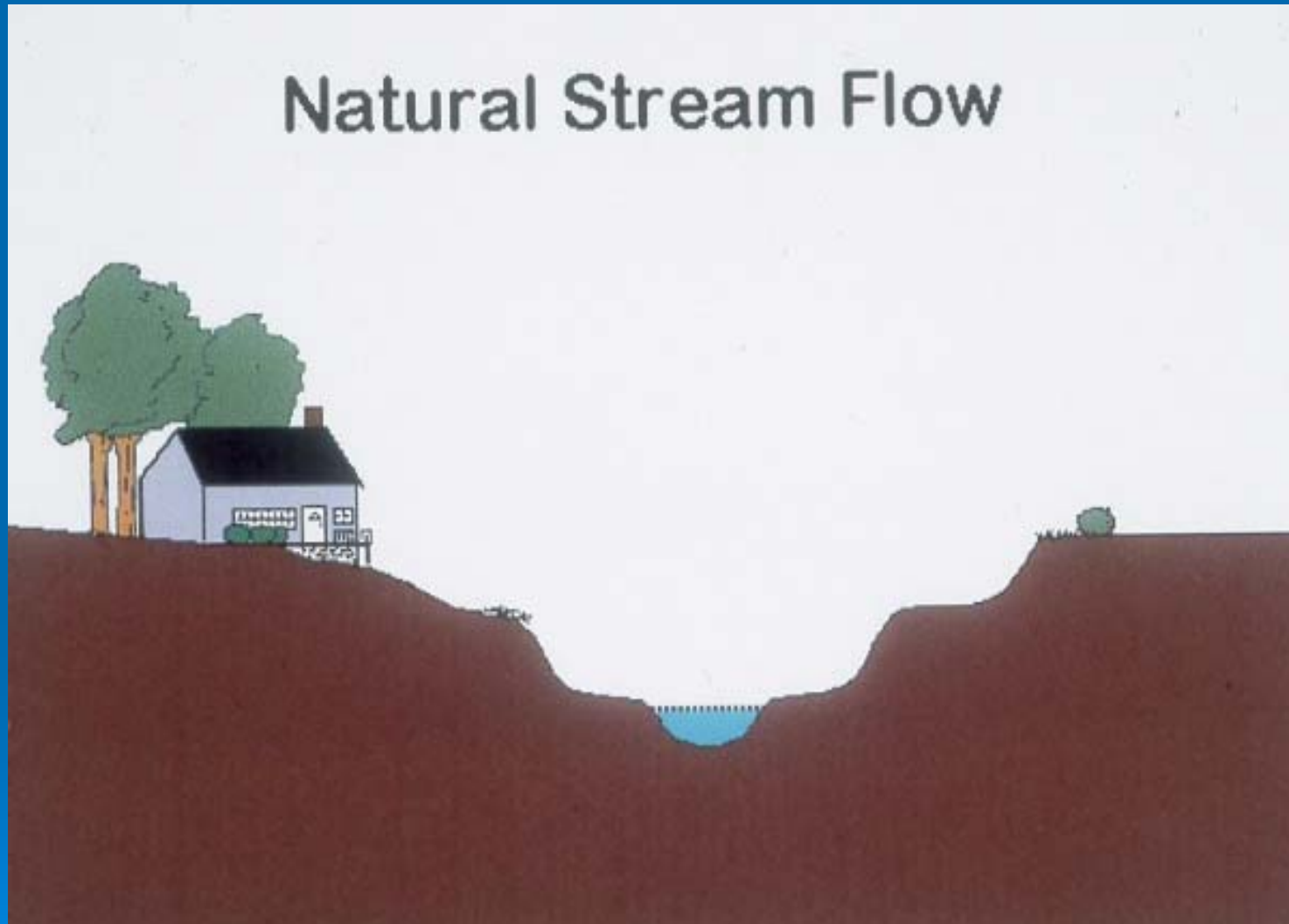


# What is a Special Flood Hazard Area (SFHA)?

- Land areas that are at **High Risk** for flooding are called Special Flood Hazard Areas (SFHA), or floodplains.
- These areas are indicated on Flood Insurance Rate Maps (FIRMS) as A Zones.

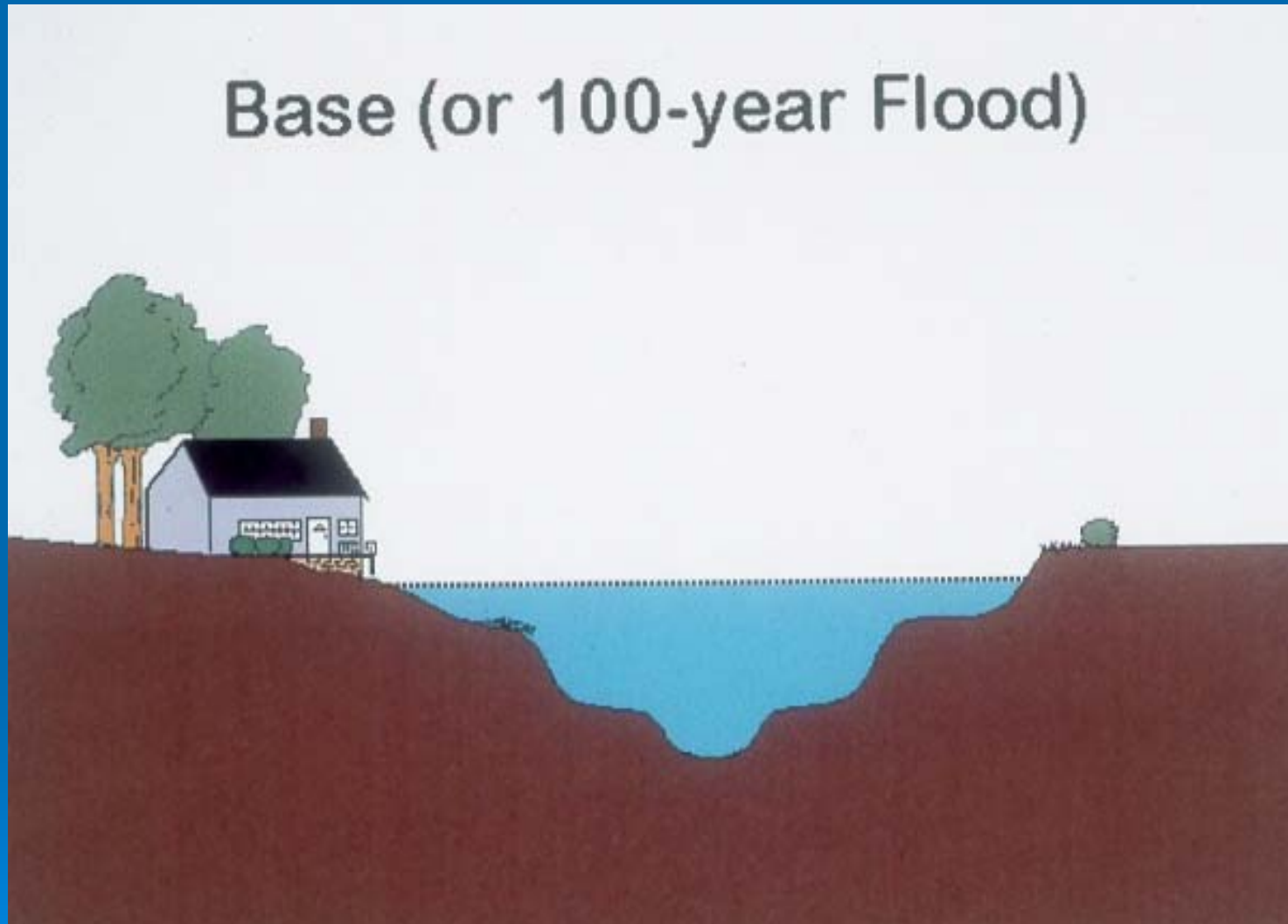


# Understanding the Floodplain



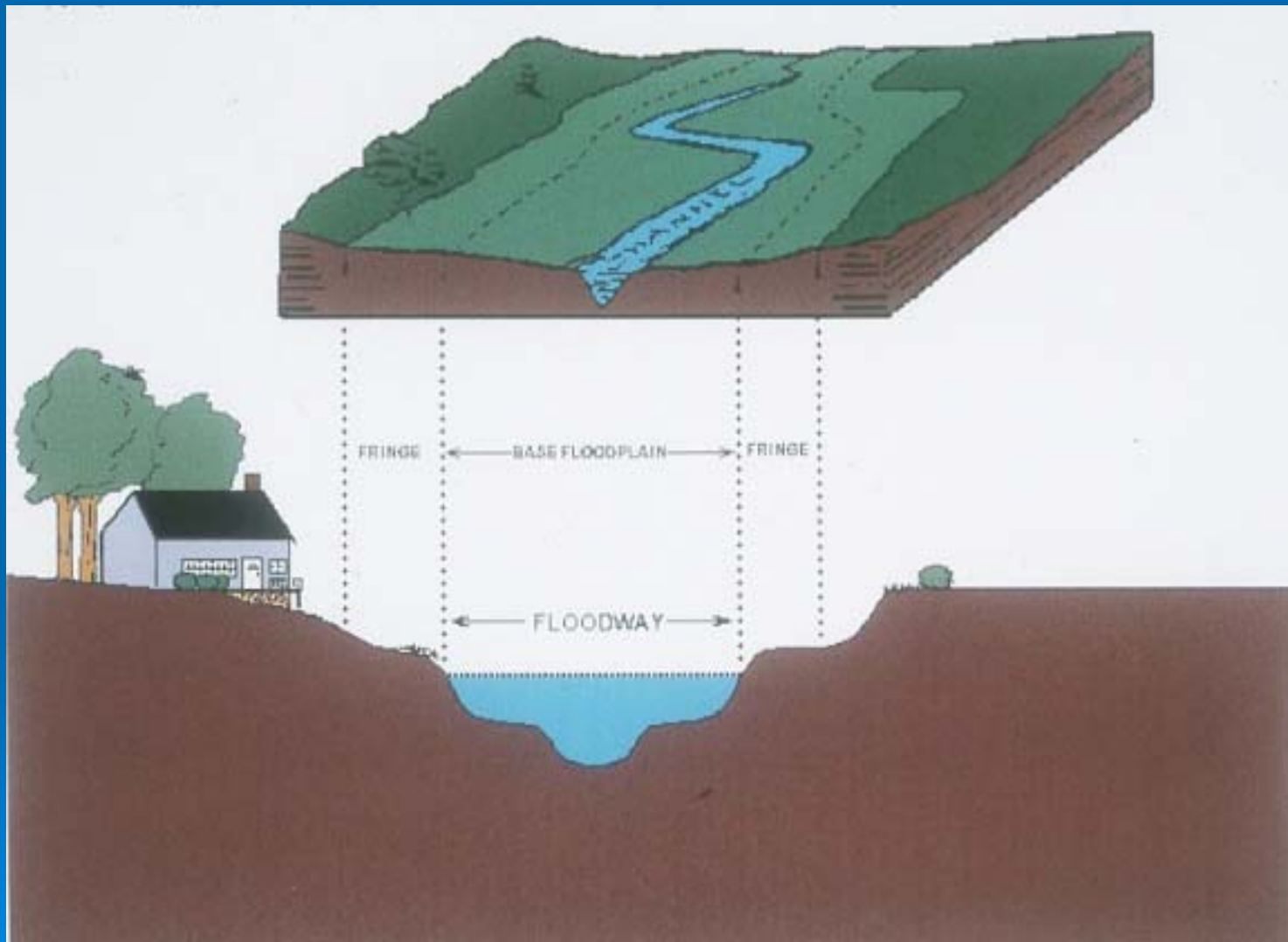


# Understanding the Floodplain



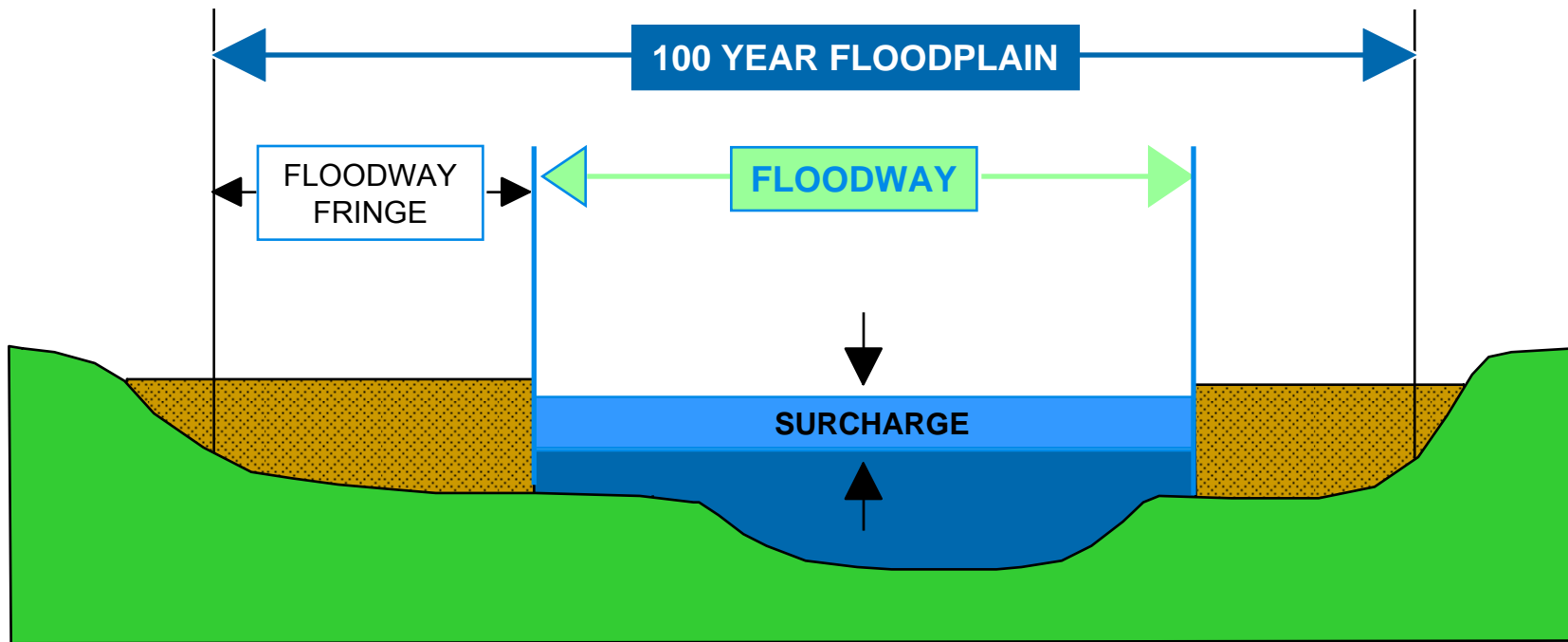


# Understanding the Floodway





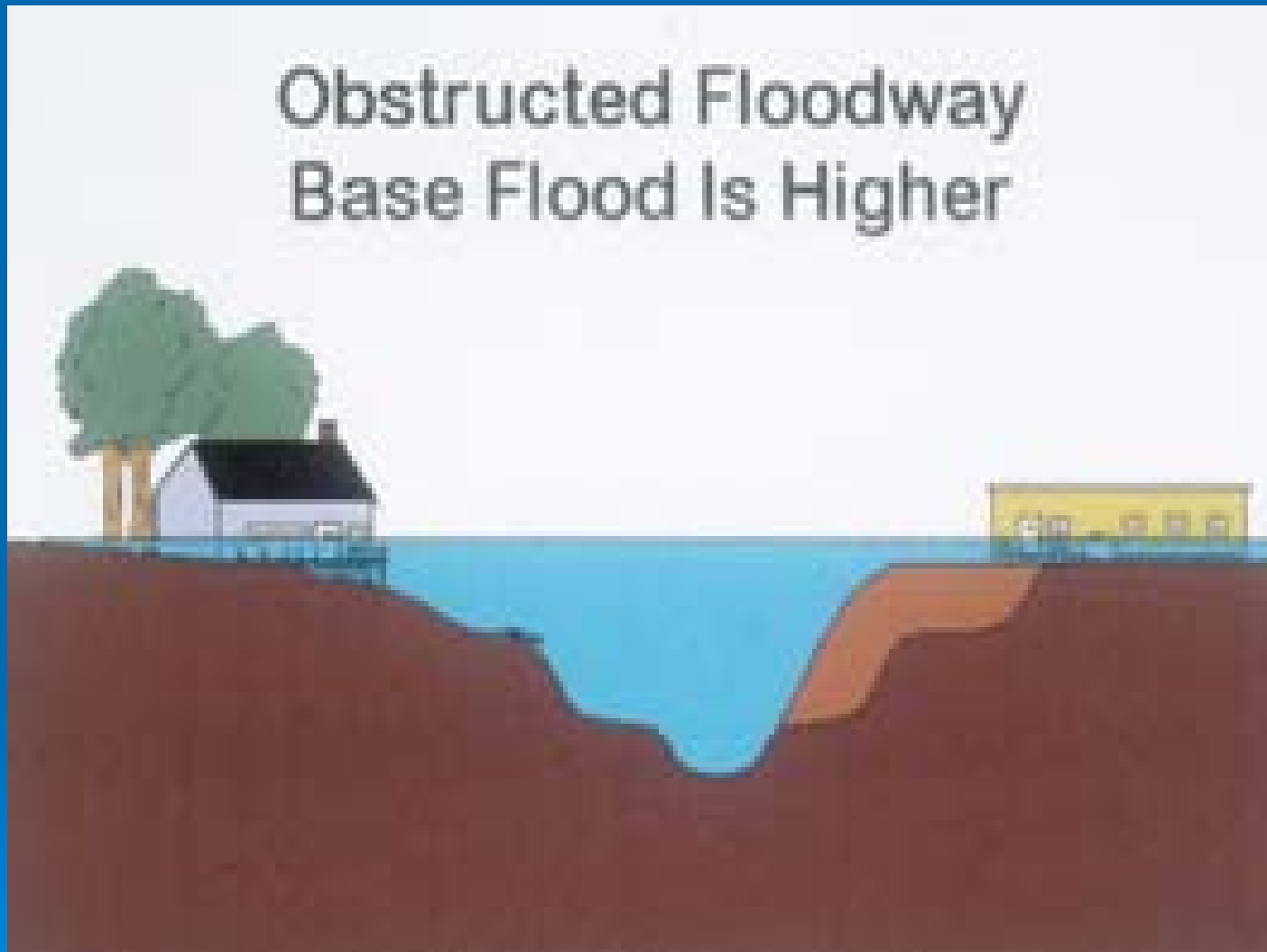
# Understanding the Floodway



**FLOODWAY + FLOODWAY FRINGE = 100 YEAR FLOODPLAIN**  
**SURCHARGE NOT TO EXCEED 0.1 FOOT**



# Understanding the Floodway





# FLOODPLAIN MAPS



QG pages 6 - 9

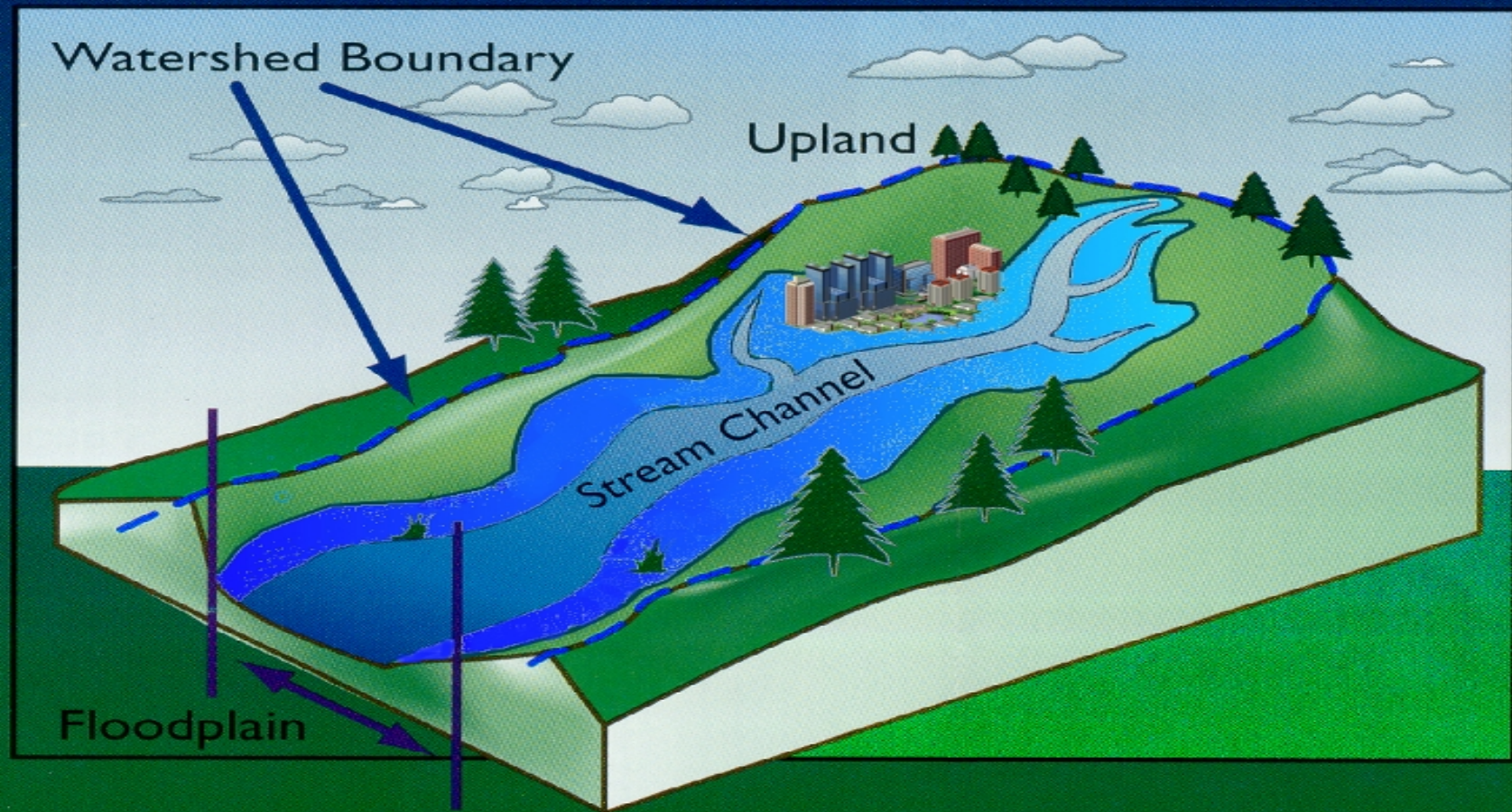


# Existing Types Of Maps

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



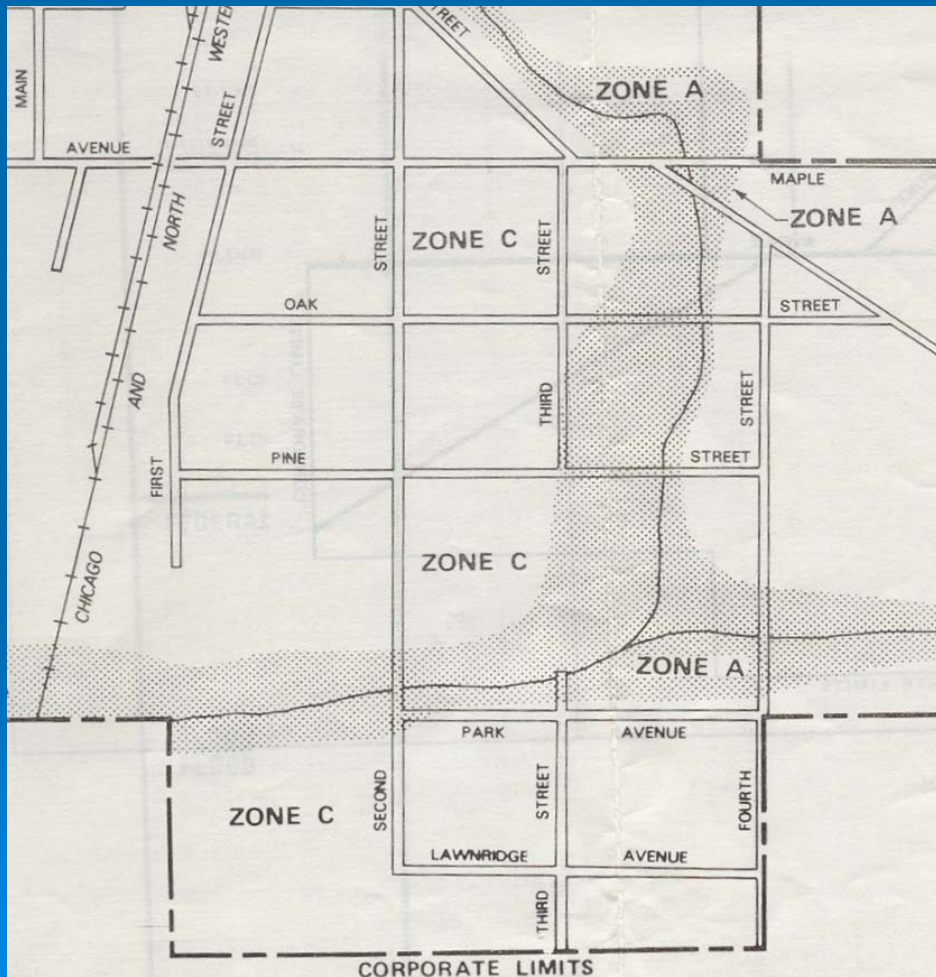
# How Do They Make Those EXCELLENT Floodplain Maps?





# Approximate Floodplain Map

## (Flood Hazard Boundary Map)



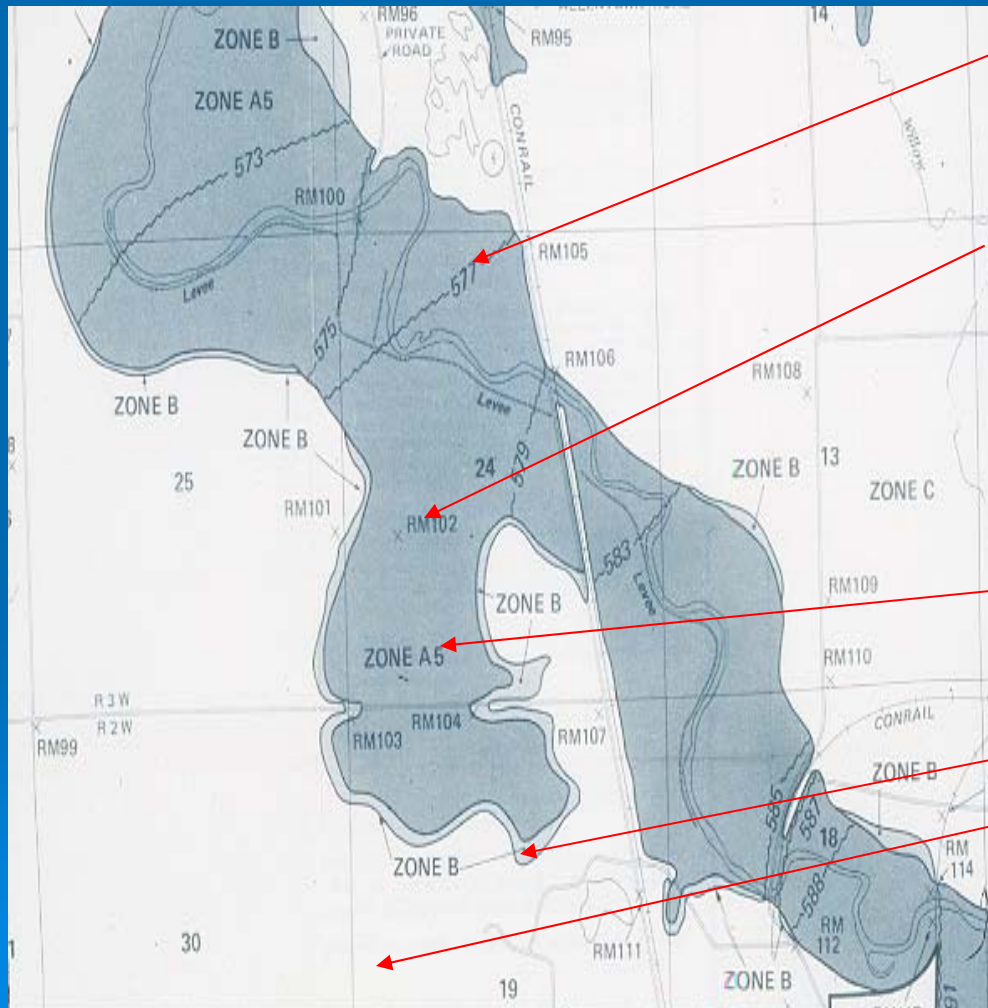
Shows  
approximate  
location of  
flood risk.

Detailed information  
(ground elevation and  
flood height) are  
required to make  
accurate determinations

QG page 9



# Flood Insurance Rate Map (FIRM)



## Base Flood Elevation (BFE)

Water Surface elevation (in feet) of the base flood at specific locations

## Elevation Reference Marks (RM)

Points for which ground elevation data have been established and recorded on the FIRM

## Flood Hazard Zones.

Zone A, Zone A1–A30, and Zone AE — 100-year or base flood

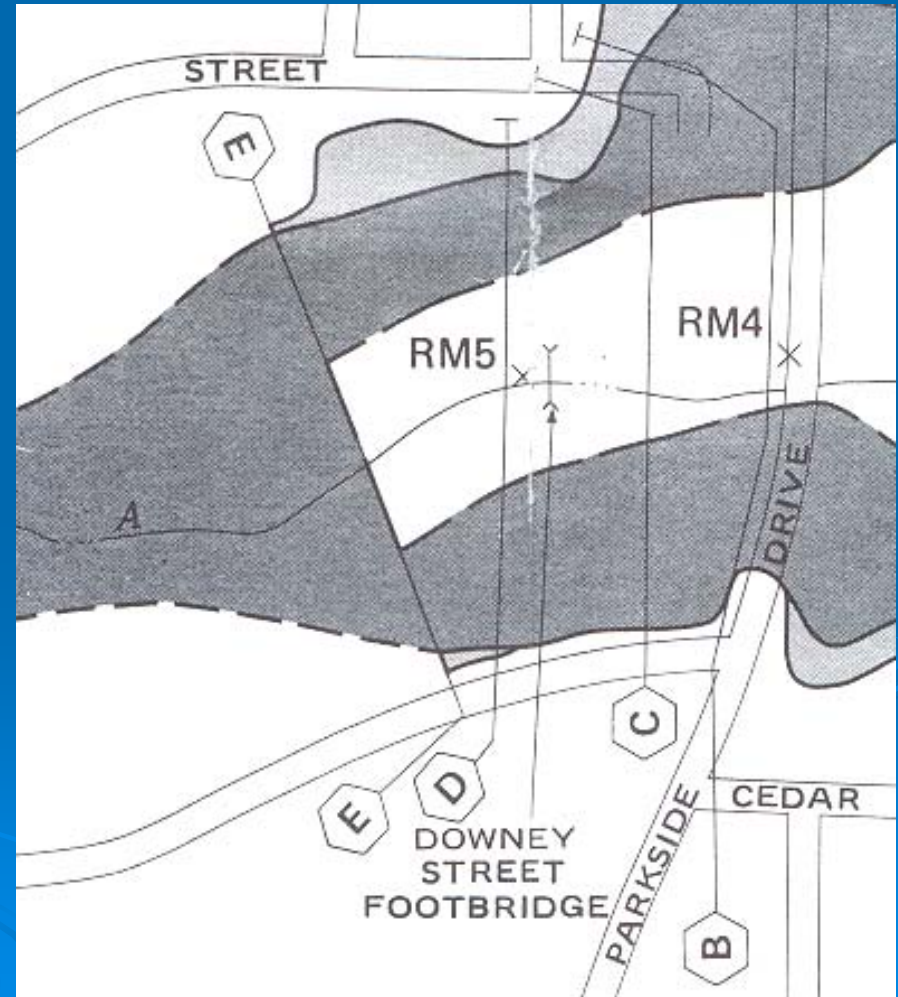
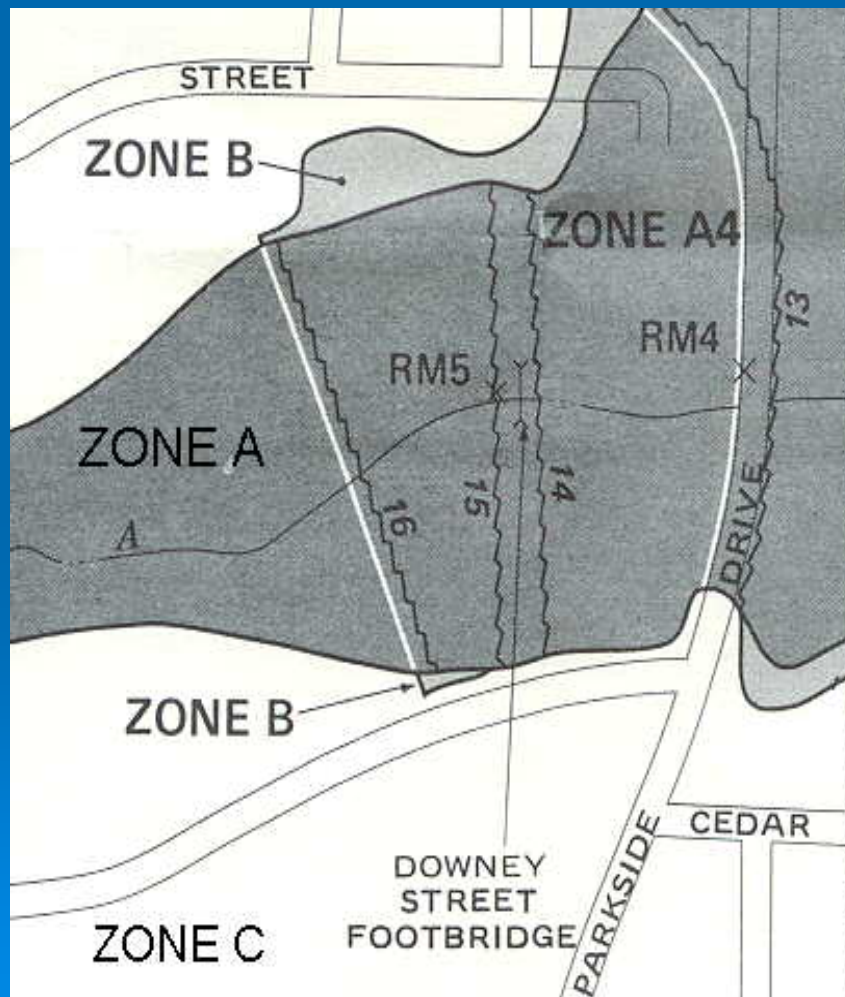
Zone B - 500 – year flood.

Zone C or X — All other areas

QG page 7



# Flood Boundary and Floodway Map (old format)





# Flood Insurance Rate Map (new format)

Unshaded X Zone

Zone AE

Floodway

Floodway fringe

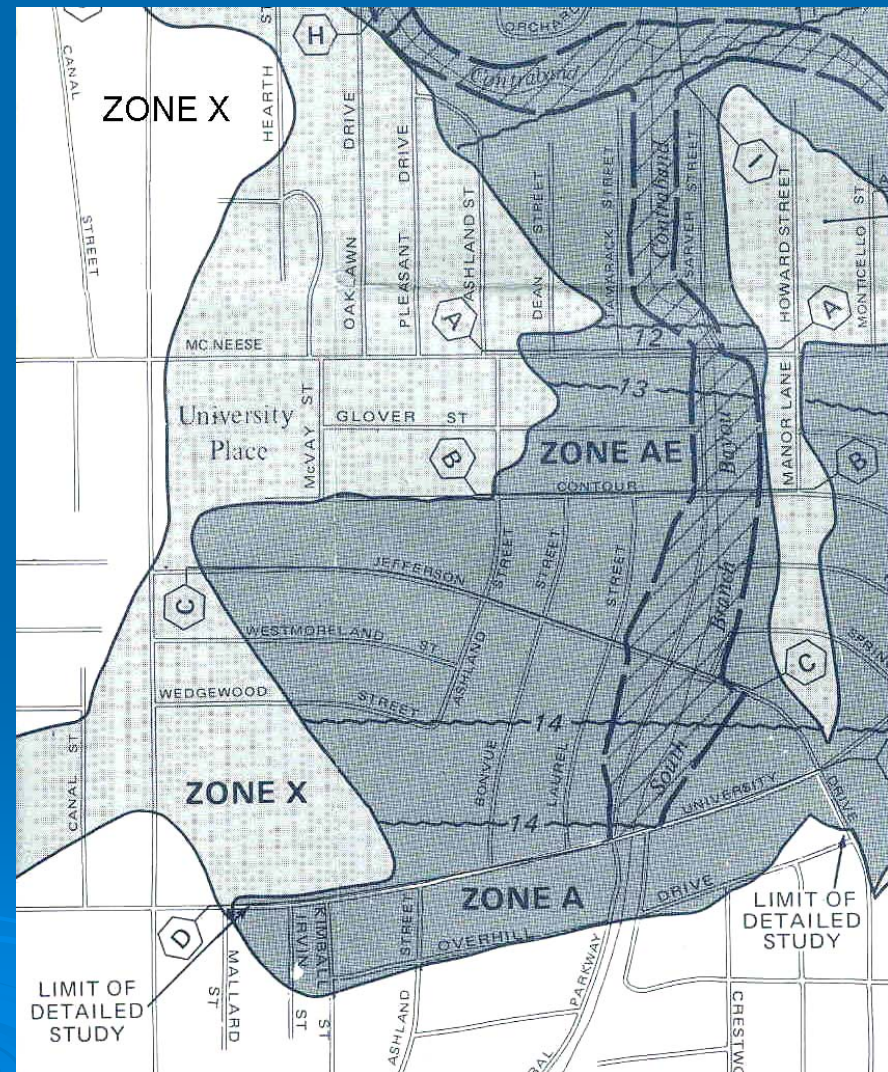
Cross section

Base flood elevation

Shaded X Zone

Zone boundary

Approximate A Zone



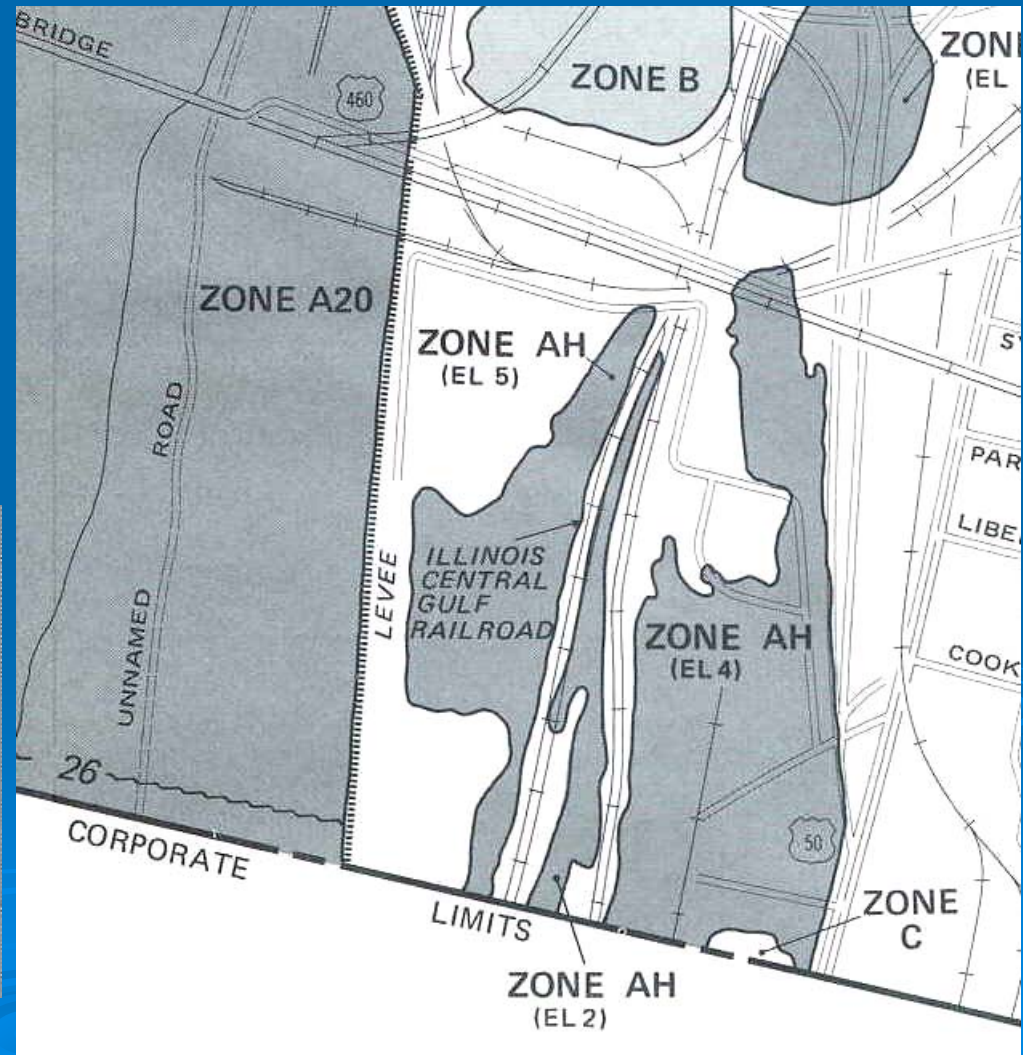
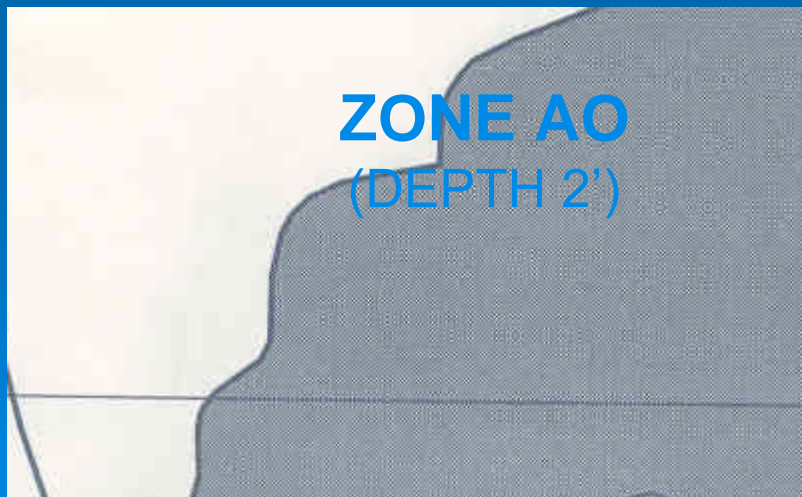


# Other Floodplain Map Zones

Shallow flooding

AO –sheet flow

AH – ponding

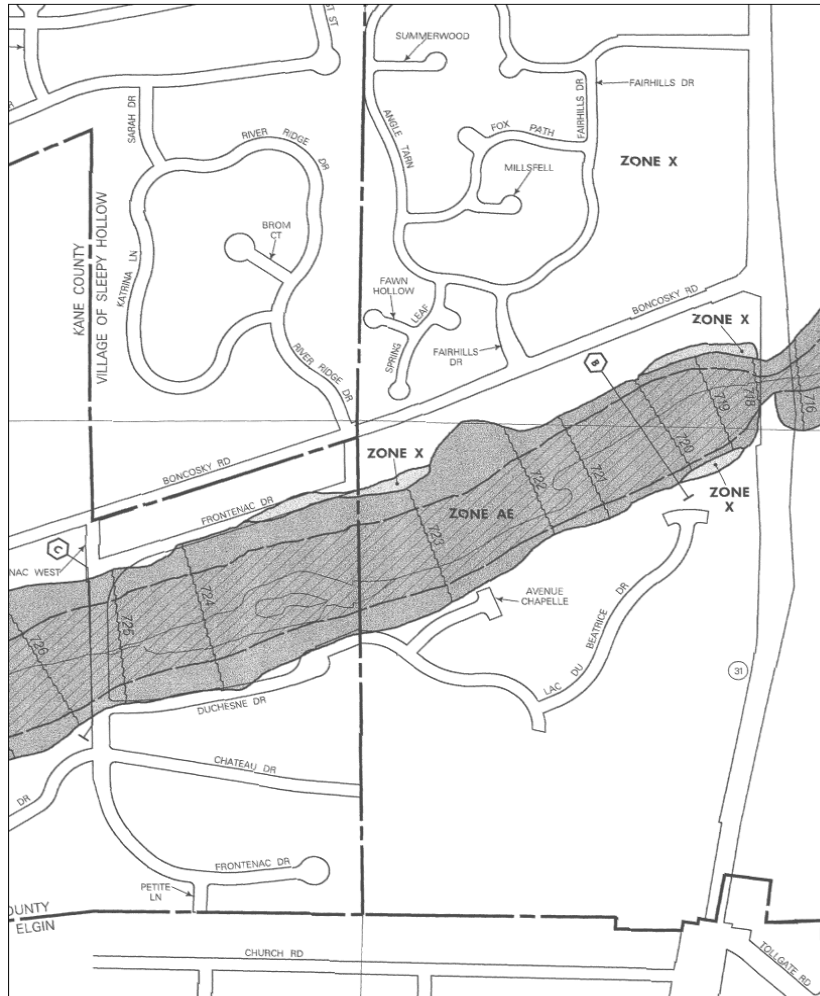




# Digital Flood Insurance Rate Maps

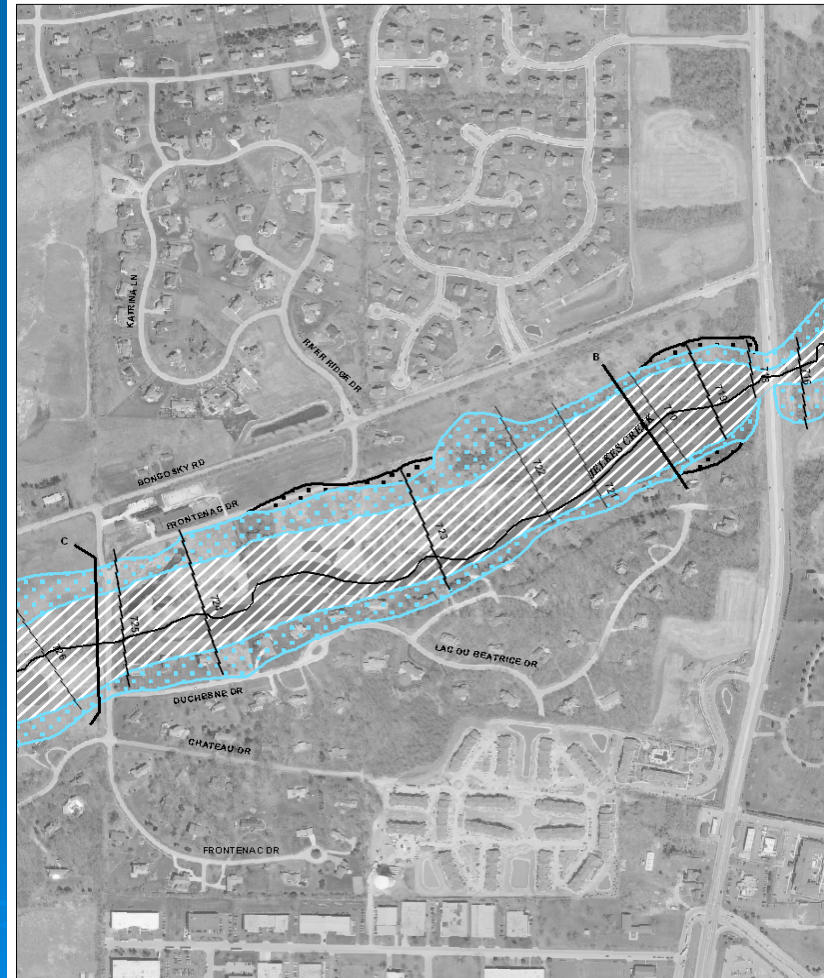
## The Next Generation

**Original FIRM (Flood Insurance Rate Map)**  
Kane County - Jelkes Creek



KANE COUNTY, ILLINOIS AND INCORPORATED AREAS  
PANEL 158 OF 410

**DFIRM (Digital Flood Insurance Rate Map)**  
Kane County - Jelkes Creek



— Stream Centerline  
— XS  
— BFE  
0.2 PCT ANNUAL CHANCE FLOOD HAZARD  
1 PCT ANNUAL CHANCE FLOOD HAZARD  
FLOODWAY

**QC page 6**



# Advantages of DFIRMs

- Map revisions will be faster and easier – months instead of years
- Communities will be able to use the digital flood map data with their local data, such as parcel data
- The new flood risk maps will cover entire counties
- If a community is located in more than one county, it will be mapped only to the county border



# Keithsburg, Illinois Flood Map

*(Wow! We are we GOOD!)*

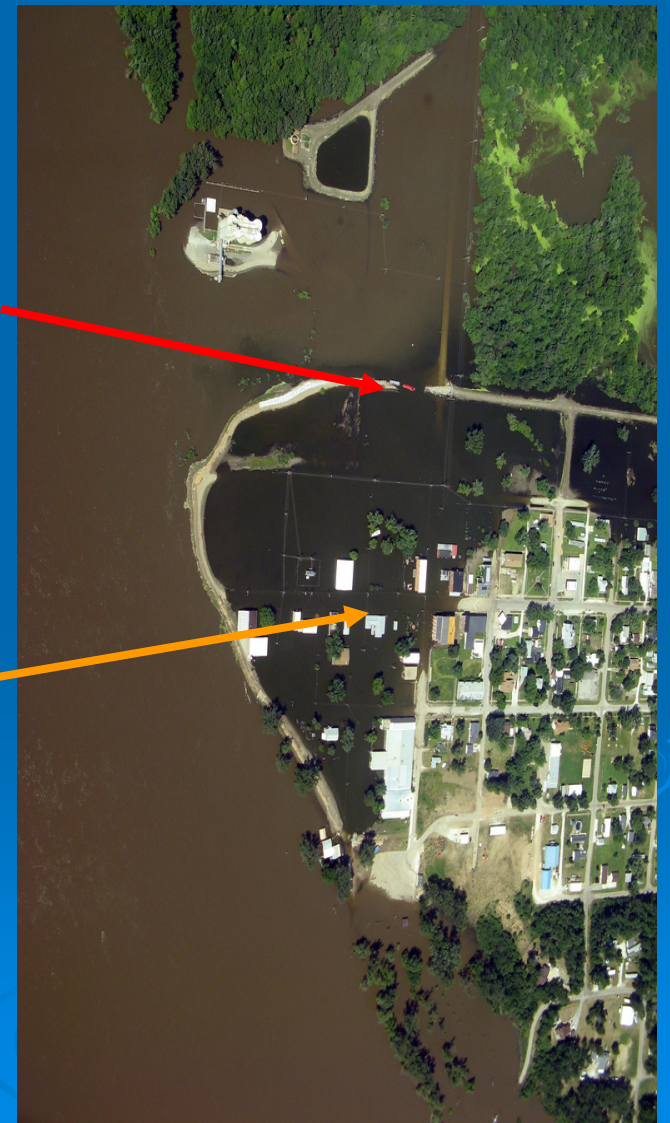


Cargil Grain Elevator

2008 Levee Breach

Jackson Street  
(110 buyouts in 1993)

Downtown





# 2008 Flooding

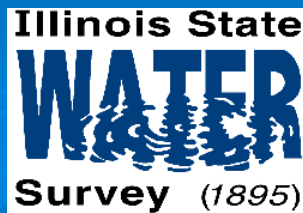
## Keithsburg, Illinois





# Illinois Flood Map Modernization

- Illinois Department of Natural Resources
  - Office of Water Resources
  - Illinois State Water Survey
- Federal Emergency Management Agency





# Flood Map Modernization

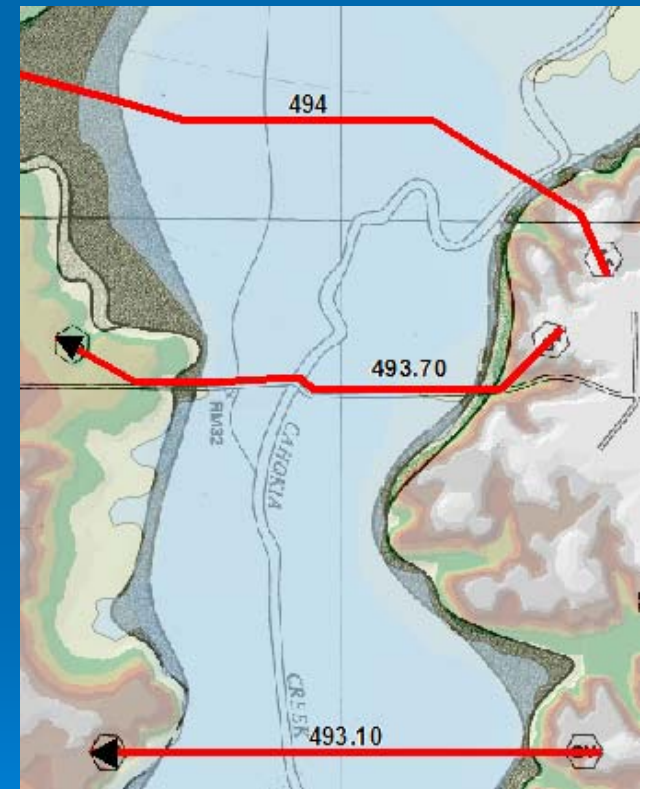
- FEMA 5-year, \$1 billion national program
- IDNR has a Cooperating Technical Partner agreement with FEMA to convert maps in Illinois — 96 counties
- Illinois is one of just a few states doing the actual mapping
- FEMA sets the schedule and the funding -- annually updated in the Multi-Year Flood Hazard Identification Plan



# Mapping Process

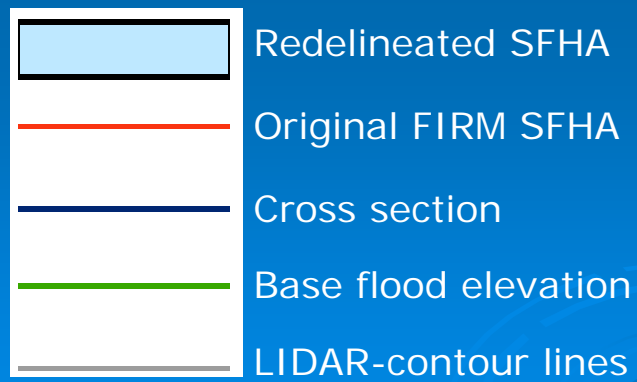
## Convert FIRM

- Register (align) existing FIRM to the community base map
- Digitize flood data (floodplain boundaries, cross sections, BFEs, etc.)
- Convert to NAVD 1988 vertical datum
- Incorporate LOMCs

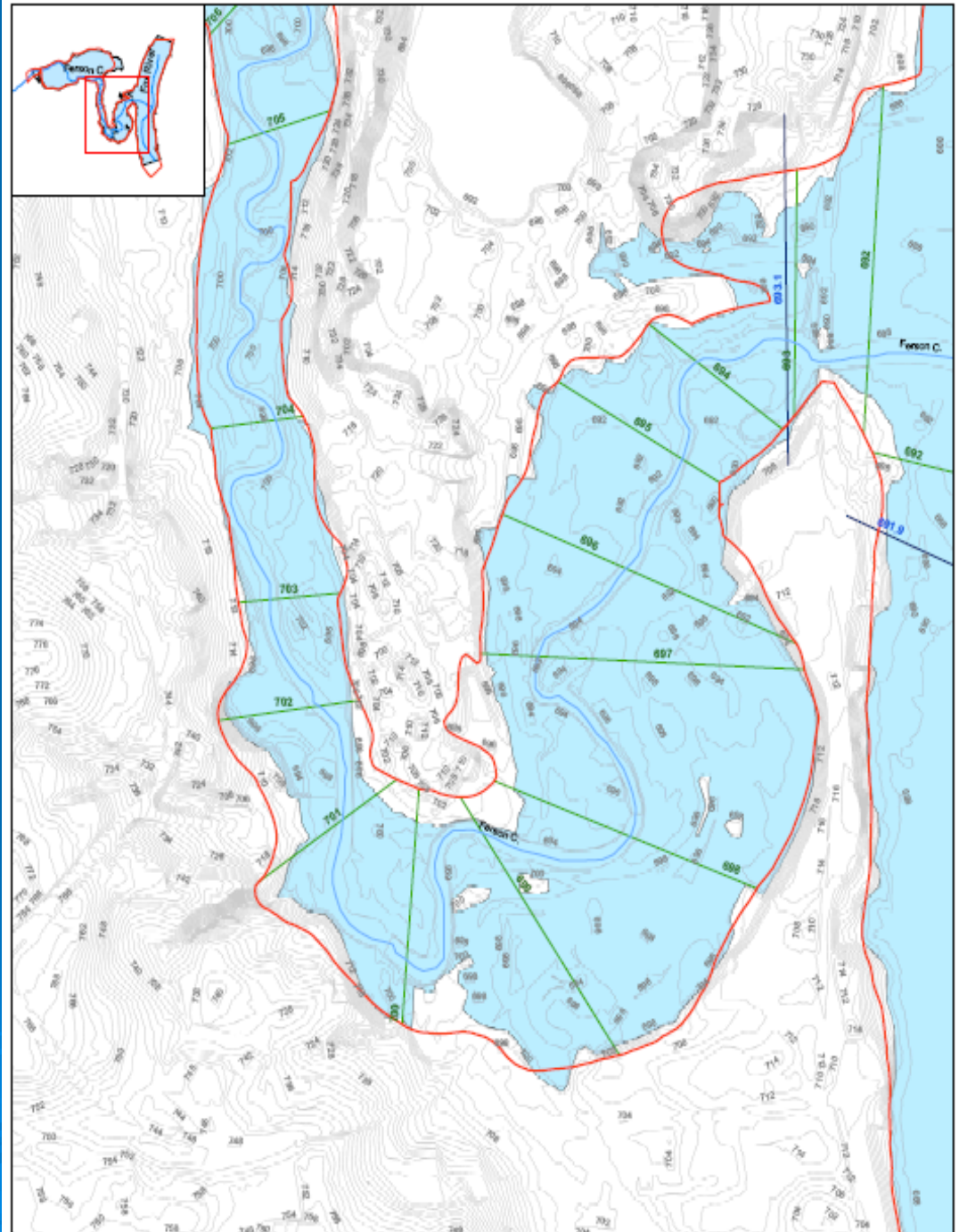




# Example Redelineation



Kane County - Fox River & Ferson Creek





# **What About Areas That Need a New Study?**

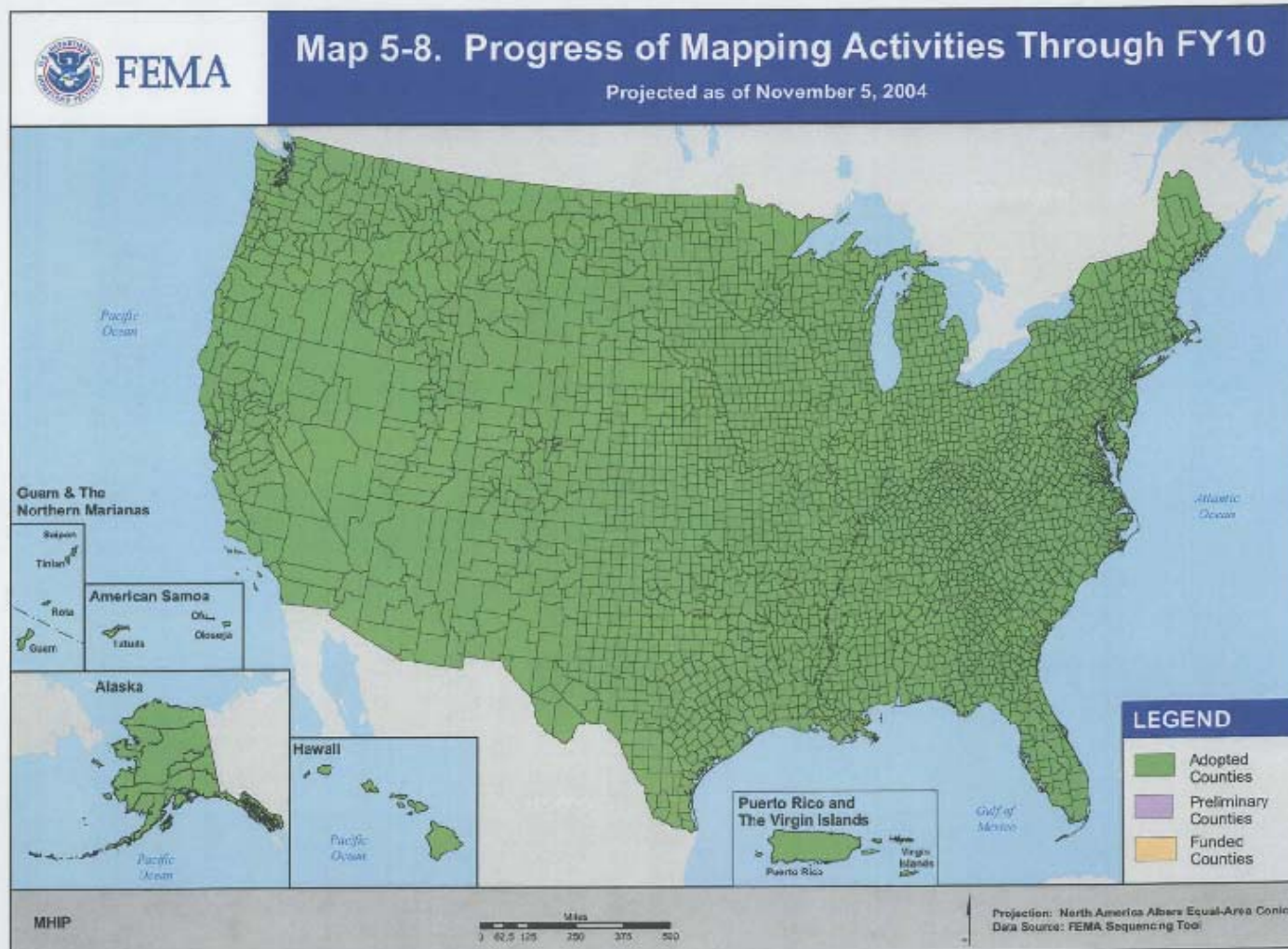
**Get a FEMA map revision  
prior to our re-mapping!!**





# FEMA

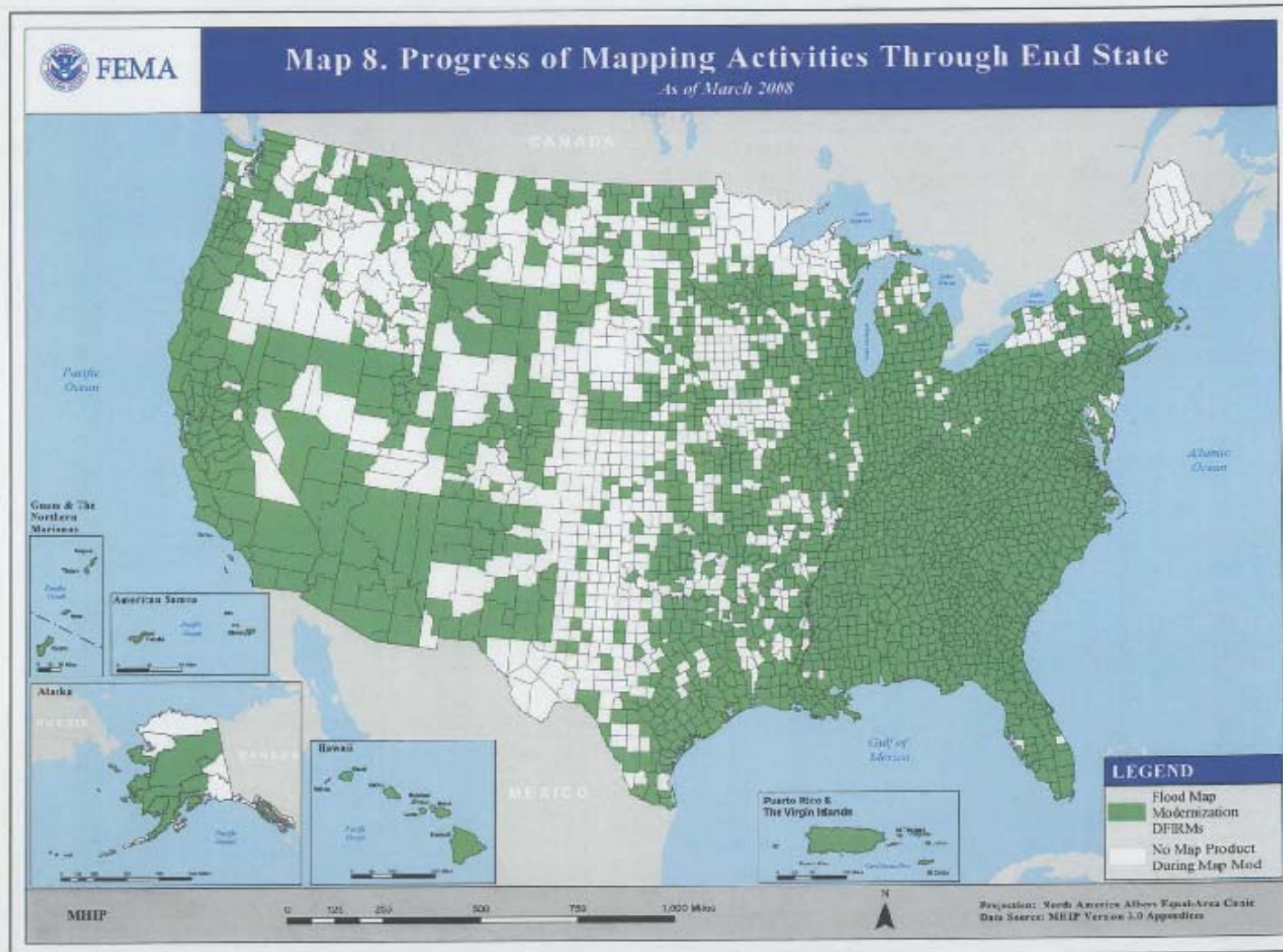
## Map Mod Vision – Nov. 2004





# FEMA

## Map Mod Reality – March 08





# Map Mod Schedule

**Funding Year**

- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- Not Yet Funded

# Illinois Flood Map Modernization



# FEMA FLOOD MAP STORE

*WEB2.MSC.FEMA.GOV*

*1-800-358-9616*

- | Online mapping products:
  - | Digital Flood Insurance Rate Maps (DFIRM)
  - | Flood Insurance Rate Maps (FIRMs)
  - | Flood Insurance Study reports (FIS reports)
  - | Digital Q3 flood data
  - | Community Status Book
  - | Flood Map Status Information Service (FMSIS)
  - | Letters of Map Change (LOMCs)
  - | NFIP Insurance Manuals.



# The “FIRMette”

- Available online
- Scaled to use as regulatory map
- Printable
- [www.FEMA.gov](http://www.FEMA.gov)
  - Click “Map Store”
  - Click “Map Search”
  - Type in address
  - Click “view” map



# Paper Map?


## A thing of the past.....

➤ As of October 1, 2008, customers may **ONLY** order Digital maps:

- New DFIRM in GIS
- Old non-converted maps will simply be scanned pdfs.
- Existing paper maps in the warehouse will not be distributed. They have been recycled!



# FEMA Map Service Center



## FEMA

Map Service Center

Product Catalog | Map Search | Quick Order | Digital Post Office | Help

### Product Search by...

**Address** **Map Panel ID**

1) Select a Product:

2) Enter an Address:  
Street:   
City:   
State:  Zip:

### New to the FEMA Map Service Center?

- Homeowners/Renters
- Real Estate/Flood Determination Agents
- Insurance Agents
- Engineers/Surveyors
- Federal/Exempt Customers

### What are you looking for?

- Flood Maps
- FIRMettes
- DFIRM Databases
- MapViewer - Web
- Documents, Publications & Forms

### More Information

- Product Availability
- How do I find the flood map for my area?
- What is a FIRMette?
- How do I find a LOMC?
- Definitions of FEMA Flood Zone Designations
- Product Information
- Price List
- How to Order
- Need Assistance?

### Log On

User ID (email address):

Password:

[Forgot Password?](#)

[Register](#)

[Why register?](#)

### Announcements

#### FEMA Digital Vision

On October 1, 2009, as part of FEMA's Digital Vision Initiative, the FEMA MSC discontinued general distribution of paper mapping products. This affects Flood Insurance Rate Maps, Flood Hazard Boundary Maps, Flood Boundary and Floodway Maps, and Flood Insurance Study reports. Customers can continue to view these products free of charge and/or purchase them in digital formats. For more information, click [here](#) to visit our Digital Vision page.

### FIRMette - Desktop 3.1 Upgrade

Update. The Map Service Center now has version 3.1 of the FIRMette - Desktop viewer available for download. This new version includes additional features that allow users to search for map panels by address or coordinates, search for and download Letter of Map Changes (LOMCs) for a panel, and print full-size Flood Insurance Rate Maps. You can download it [here](#).  
([learn more](#))

### MapViewer - Desktop 2.04

FEMA has updated its MapViewer Desktop tool for viewing GIS flood data. Significant improvements to v. 1.0 had been made, including

### NFHL

#### National Flood Hazard Layer ([learn more](#))

[View the NFHL Online using MapViewer - Web](#)

[Order NFHL GIS Datasets by state on DVD](#)


[Use Web Map Service in your own GIS application](#)

[Use Web Map Service in Google Earth™](#)

[Got Comments?](#)

### FIRMette Tutorial

Learn how to create FIRMettes. They're free!



[Click here to learn how to create a FIRMette.](#)



# www.illinoisfloodmaps.org

## Illinois Floodplain Maps



[Site Map](#)

[Home](#)  
[About Map Mod](#)  
[IL Business Plan](#)  
[Related Links](#)  
[SFHA at Risk](#)  
[CHAMP Brochure](#)  
[Designed For DFIRMs](#)  
[Discovery Map](#)  
[Contact](#)  
[Jump to DFIRM Maps](#)  

Choose County...

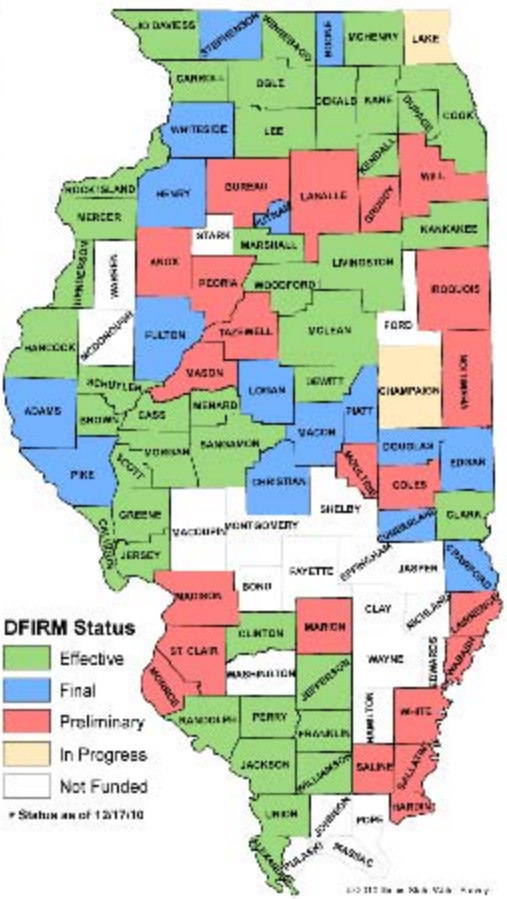
Go

Unmapped Special Flood Hazard Areas



The [Map Modernization Project](#) at the Illinois State Water Survey is providing preliminary and final maps on this web site. Maps revised between preliminary and final phases are not posted. To download or view a map, click the boxed counties on the map below. Counties in **red** are preliminary, and are for review purposes only. **Preliminary maps are not official, and are not to be reproduced or used as official SFHA maps until they are finalized.** There is a six month period, before maps become effective, in which the community updates, revises, and adopts ordinances to comply with the new SFHA maps. During this six month period a county's status is considered final. Counties in **blue** have final maps. Counties in **green** have become effective. Please see our [FAQ](#).

To view completed meeting dates and the status of Map Modernization in your County, click [here](#).



**DFIRM Status**

- Effective
- Final
- Preliminary
- In Progress
- Not Funded

\* Status as of 12/17/10

[Home](#) [About Map Mod](#) [IL Business Plan](#) [Related Links](#) [SFHA at Risk](#) [Contact](#)

Copyright MapMod Project © 2011

Data & Map Disclaimer Privacy Contact



# The Risk M-A-P Vision

Flood Map  
Modernization  
—  
Risk MAP

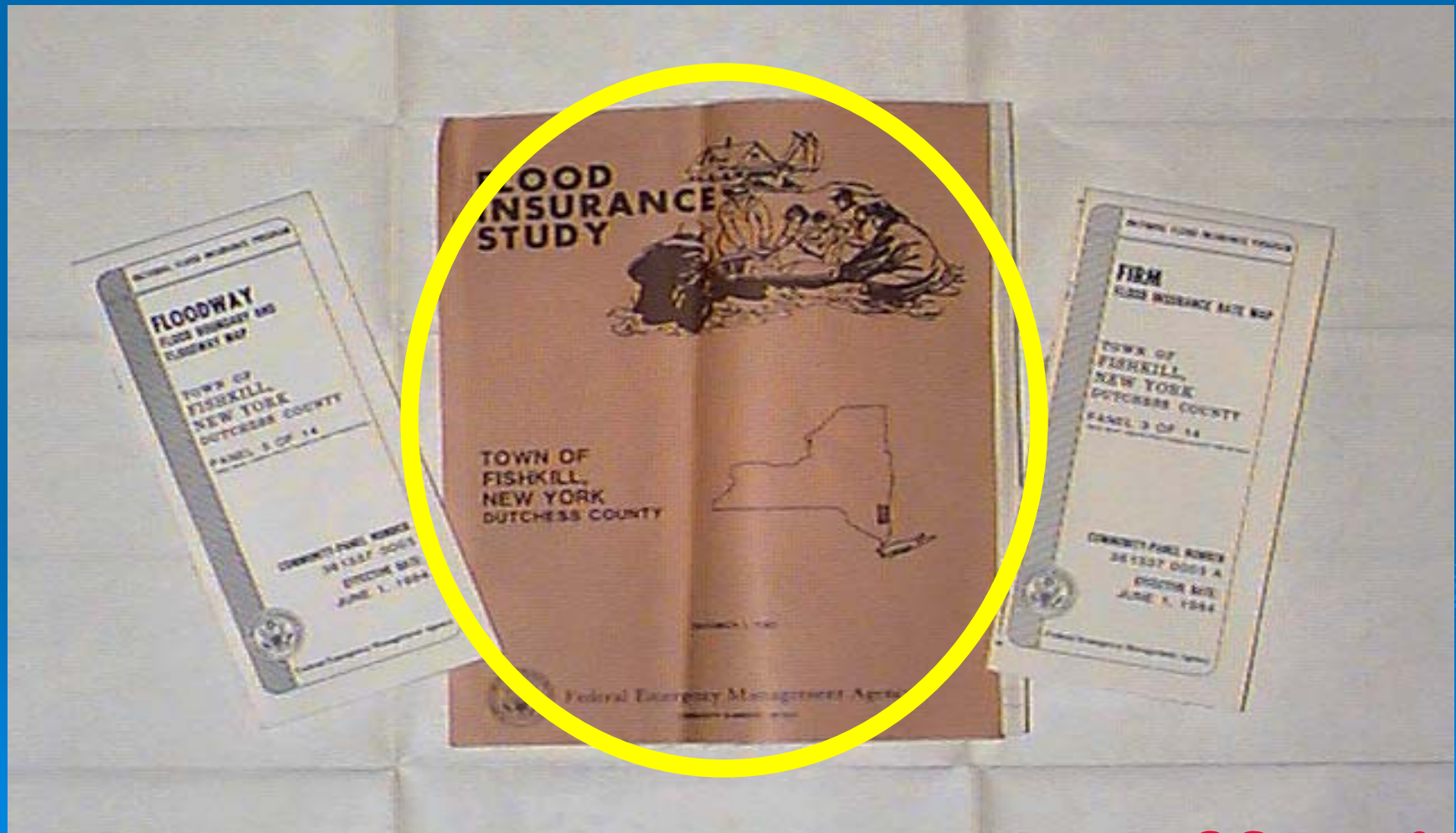


**FEMA**

Risk Mapping, Assessment, and Planning (Risk MAP) Life Cycle



# Flood Insurance Study (FIS)





# Components of a Flood Insurance Study (FIS)

*Narrative*

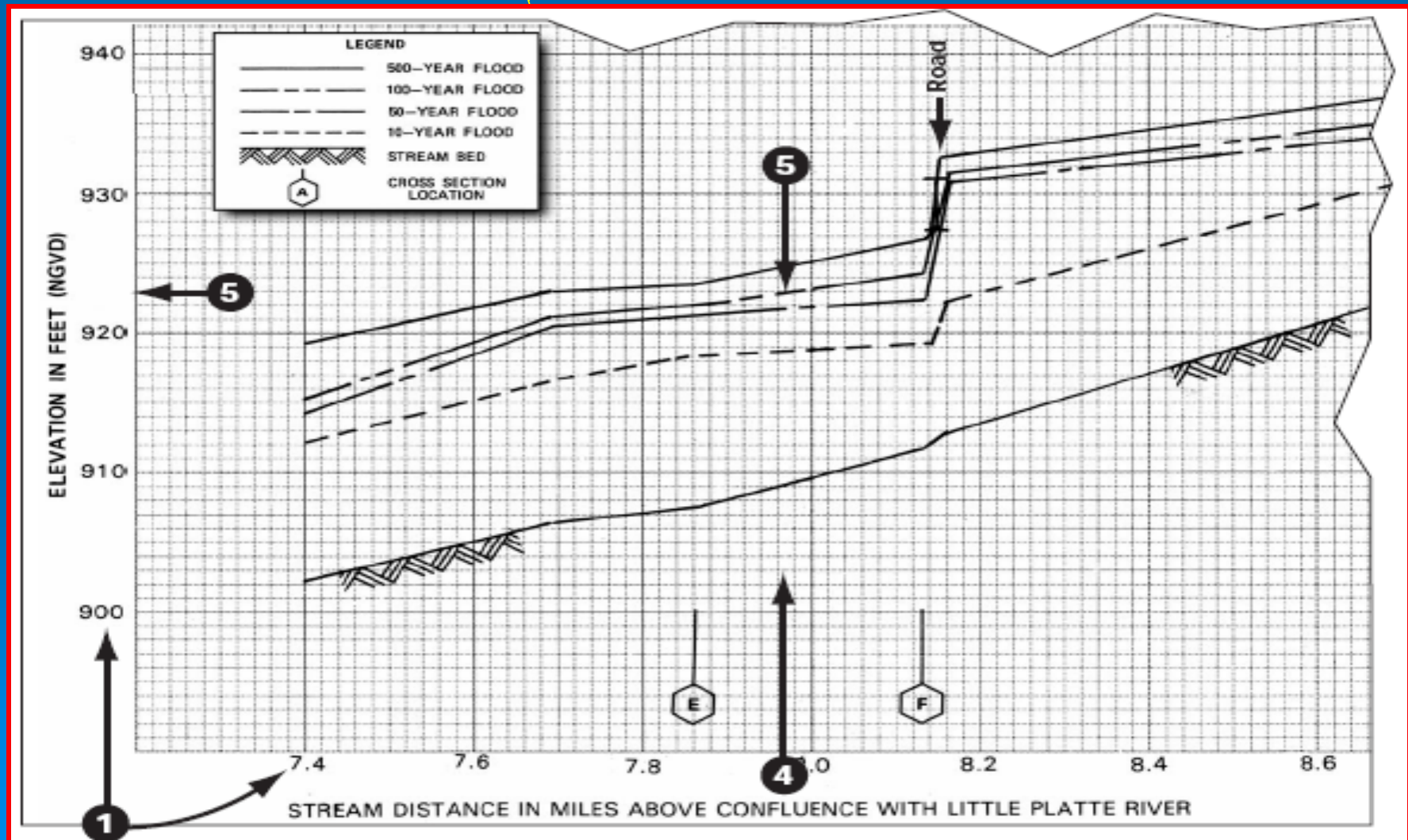
- Appraises a community's flood problems
- Establishes insurance risk zones
- Community flood history
- Study information
- Plots floodplain boundaries
- Flood elevation profiles
- Provides data to delineate floodways in some communities



# Components of a Flood Insurance Study (FIS)

QG page 8

*Flood Profile*





# Floodway Data Table

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Green River								
A	0	188	1,691	6.9	267.5	257.3 <sup>2</sup>	257.4 <sup>2</sup>	0.1
B	380	161	1,539	7.6	267.5	258.0 <sup>2</sup>	258.1 <sup>2</sup>	0.1
C	480	161	1,550	7.6	267.5	258.1 <sup>2</sup>	258.2 <sup>2</sup>	0.1
D	980	155	1,143	10.3	267.5	259.6 <sup>2</sup>	259.7 <sup>2</sup>	0.1
E	1,560	319	2,103	5.6	267.5	262.9 <sup>2</sup>	262.9 <sup>2</sup>	0.0
F	1,770	288	2,345	5.0	267.5	265.2 <sup>2</sup>	265.2 <sup>2</sup>	0.0
G	2,270	73	849	13.8	267.5	265.3 <sup>2</sup>	265.3 <sup>2</sup>	0.0
H	2,770	119	1,564	7.5	267.5	267.5	268.5	1.0
I	2,940	169	1,971	6.0	267.5	267.5	268.5	1.0
J	3,440	170	1,802	6.5	268.1	268.1	269.1	1.0
K	4,540	207	2,164	5.4	270.1	270.1	270.7	0.6
L	4,840	227	1,839	6.4	270.3	270.3	271.0	0.7
M	5,370	113	837	14.0	271.2	271.2	271.5	0.3

<sup>1</sup> Feet Above Confluence With Lake Highwater

<sup>2</sup> Elevation Computed Without Consideration of Backwater From Lake Highwater

TABLE 1	FEDERAL EMERGENCY MANAGEMENT AGENCY City of Floodville, CA	FLOODWAY DATA
		GREEN RIVER



# Map Changes



Sometimes the maps are just plain wrong!

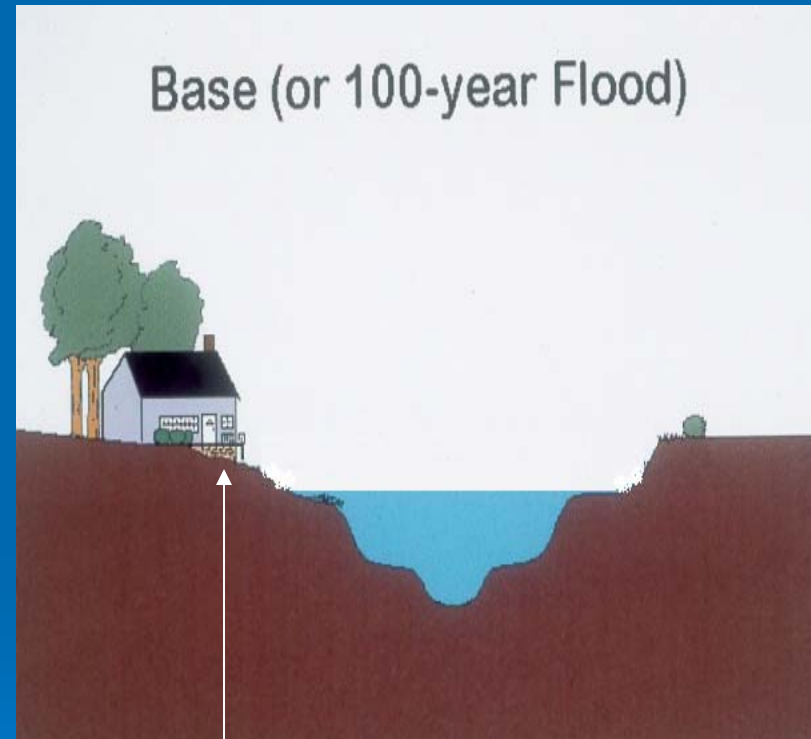
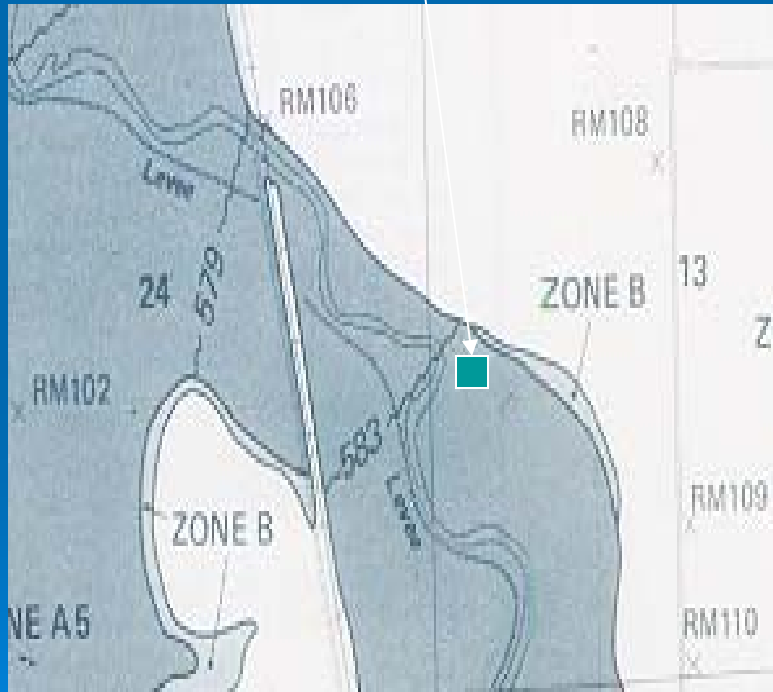
Sometimes the floodplains are modified.

There is a process to correct them



# Letter of Map Amendment (LOMA)

House is shown in the floodplain



But NATURAL ground  
elevations prove it to be higher  
than the flood elevation



# 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)

---

**Cost: “free”**



# MT-EZ

Insurance Program (NFIP) map showing the area in an SFHA is considered natural grade.

LOMA:

A letter from FEMA stating that an existing structure or parcel of land that has not been elevated by fill would not be inundated by the base flood.

A – This section may be completed by the property owner or by the property owner's agent.

1. Has fill been placed on your property?

- ☐ No ☐ Yes – If Yes, STOP!! – You must complete the MT-1 application forms; visit [http://www.fema.gov/fim/dl\\_mt-1.shtml](http://www.fema.gov/fim/dl_mt-1.shtml) or call the FEMA Map Assistance Center toll free: (877-FEMA MAP) (877-336-2627)

2. Legal description of Property (Lot, Block, Subdivision) and street address of the Property (if different from mailing address):

3. Are you requesting that the flood zone designation be removed from (check one):

- ☐ Your entire legally recorded property?
- ☐ A portion of your legally recorded property? (a metes and bounds description and map of the area to be removed, certified by a registered professional engineer or licensed land surveyor are required)
- ☐ A structure on your property? What is the date of construction?

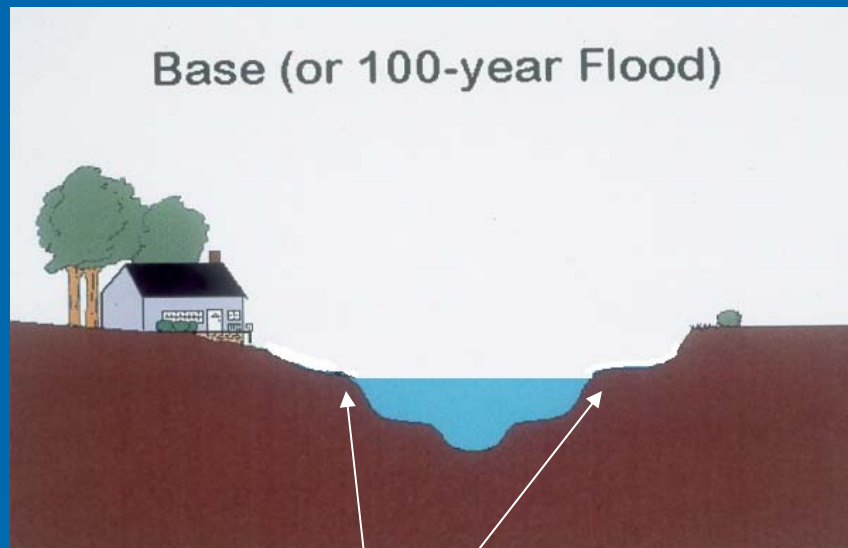


# The E-LOMA

- Internet based system to 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 (LOMR)



Floodplain as shown  
on the floodplain map

New floodplain based on  
PHYSICAL modification





# Letter of Map Revision (LOMR)

## **Situation:**

Physical changes to the floodplain, the floodway, or flood elevations.

---

## **Information needed by FEMA:**

Detailed engineering and MT-2  
Form


---

**Cost:** not cheap



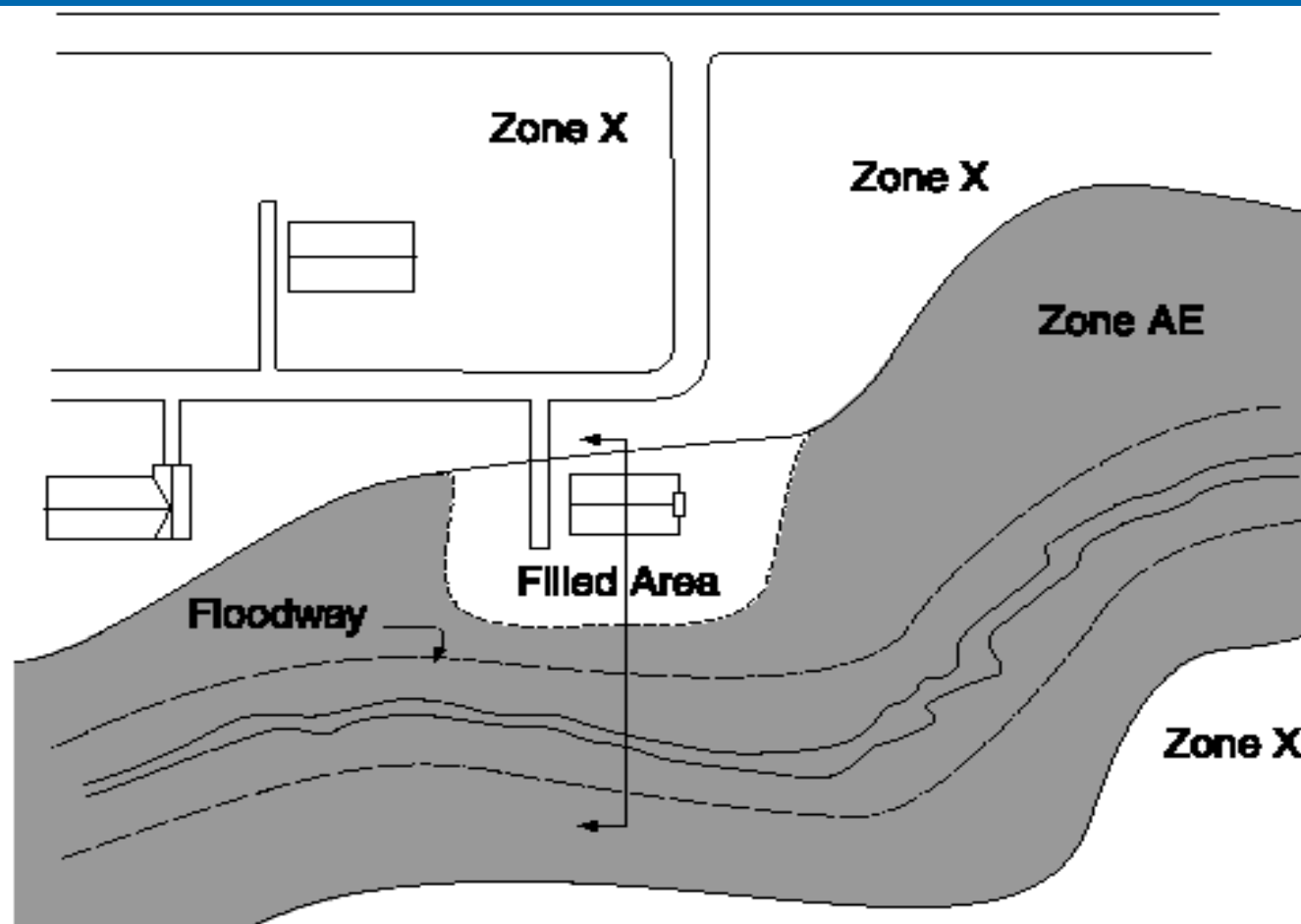
# Conditional Letter of Map Revision CLOMR-F

A letter from FEMA stating that a proposed development project would not be inundated by the 1% chance flood if built as proposed.

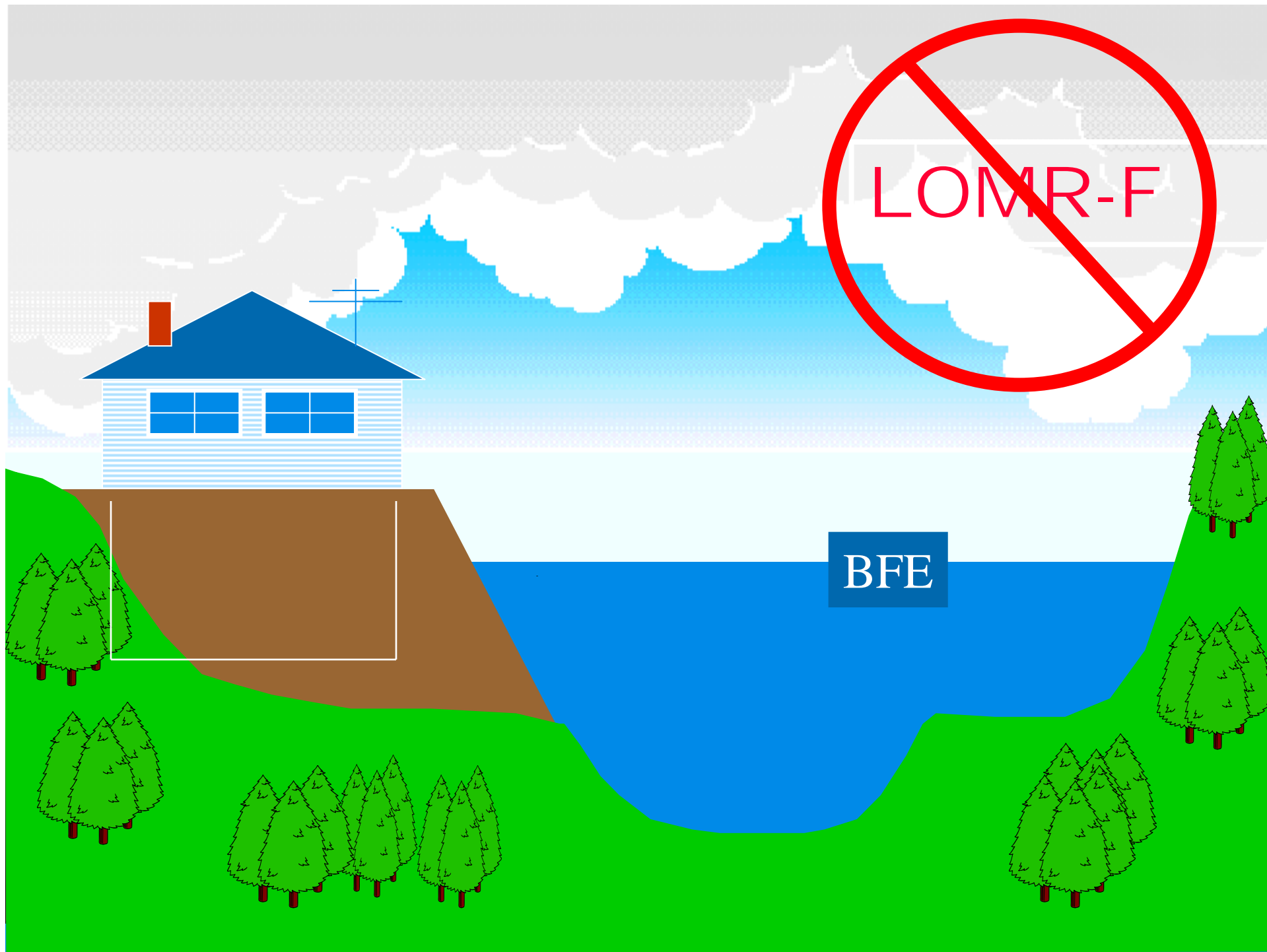




# LOMR-F

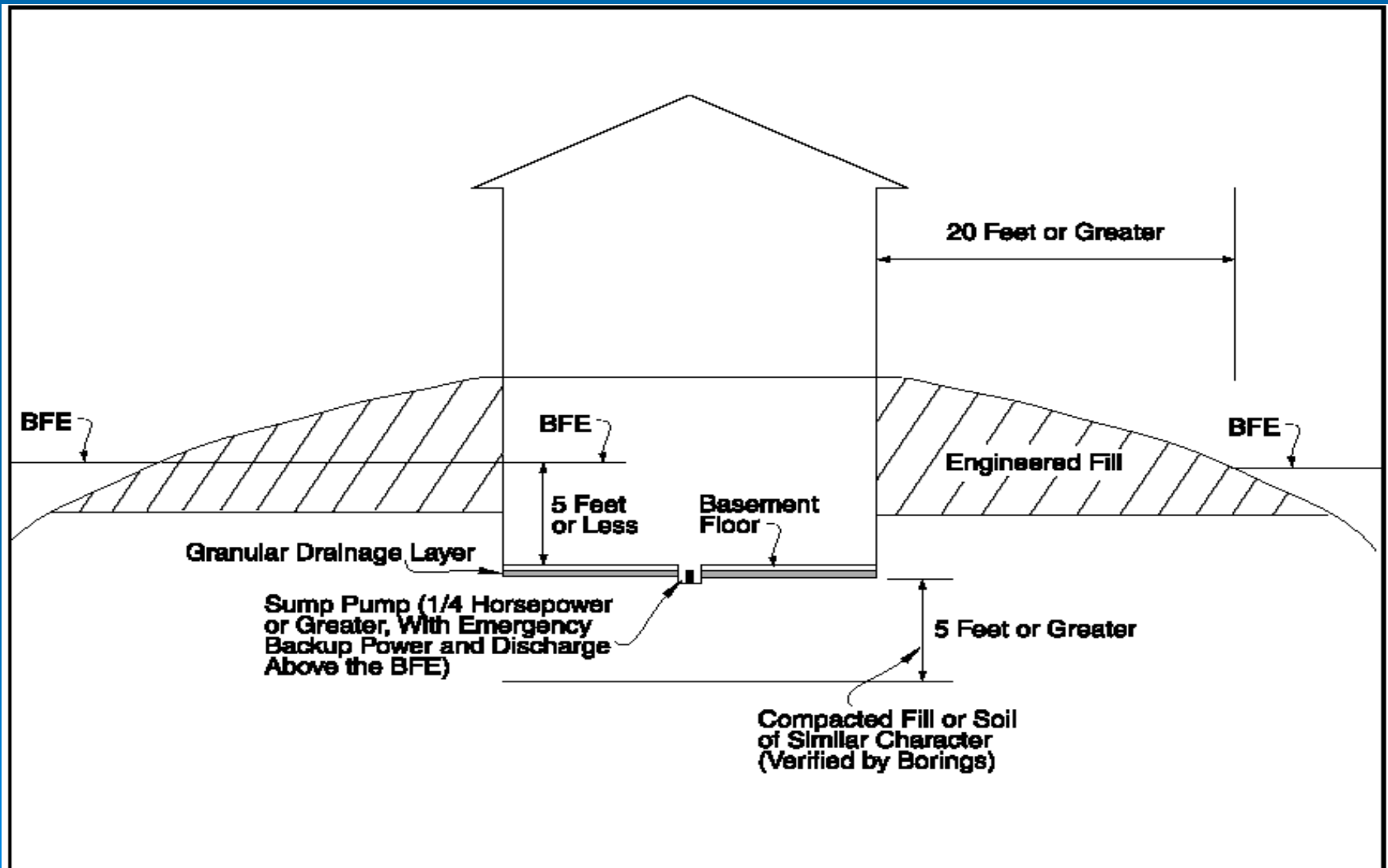








# Technical Bulletin 10-01





**LOMR-F?**

**With a basement below BFE??**

**NOT in Rock Island County!**

**NOT while I've got a say!**




**QG page 24**



# LOMC

## TOLL-FREE HOTLINE

### 1-877-FEMA MAP (366-2627)

- | Inundated with calls about changing the maps from residents, insurance companies, or appraisers, etc?
  - | Need to know the status of a current LOMA/R request?
- 



# Current FEMA LOMC Fee Schedule

## Current Fee Schedule for Map Change Requests

The current fee schedule for conditional and final map change requests is provided below.

REQUESTS FOR SINGLE-LOT, SINGLE-STRUCTURE MAP CHANGE	FEE	COMMENT
Single-Lot or Single-Structure LOMA	Free	N/A
Single-Lot/Single-Structure CLOMA and CLOMR-F	\$500	Flat Fee
Single-Lot/Single-Structure LOMR-F	\$425	Flat Fee
Single-Lot/Single-Structure LOMR-F Based on As-Built Information (CLOMR-F previously issued by FEMA)	\$325	Flat Fee

REQUESTS FOR MULTIPLE-LOT,/MULTIPLE-STRUCTURE MAP CHANGES	FEE	COMMENT
Multiple-Lot/Multiple-Structure LOMA	Free	N/A
Multiple-Lot/Multiple-Structure CLOMA	\$700	Flat Fee
Multiple-Lot/Multiple-Structure CLOMR-F and LOMR-F	\$800	Flat Fee
Multiple-Lot/Multiple-Structure LOMR-F Based on As-Built Information (CLOMR-F previously issued by FEMA)	\$700	Flat Fee

REQUESTS FOR MAP CHANGES REQUIRING SPECIAL TECHNICAL REVIEW	FEE	COMMENT
CLOMR Based on New Hydrology, Bridge, Culvert, Channel, or Combination Thereof	\$4,400	Flat Fee
CLOMR Based on Levee, Berm, or Other Structural Measures	\$6,050	Flat Fee
LOMR/PMR Based on Bridge, Culvert, Channel, or Combination Thereof	\$5,300	Flat Fee
LOMR/PMR Based on Levee, Berm, or Other Structural Measures	\$7,150	Flat Fee
LOMR Based on As-Built Information (CLOMR previously issued by FEMA)	\$5,000	Flat Fee
LOMR/PMR Based Solely on Submission of More Detailed Data	Free	N/A
LOMR/CLOMR Based on Structural Measures on Alluvial Fans	\$5,600	Initial fee plus \$60 per hour. Requester will be invoiced for remaining balance

Payment must be received before services will be rendered. Checks, money orders, and credit cards are accepted. Checks and money orders must be made payable, in U.S. funds, to the National Flood Insurance Program.



# University of Illinois LOMC Contacts

## General Inquiries:

Chris Hanstad

217-333-2059

[hanstad@illinois.gov](mailto:hanstad@illinois.gov)

## H & H Inquiries:

Brian Challe

217-244-3522

[b.challe@illinois.edu](mailto:b.challe@illinois.edu)





# Levees In Illinois



Failures somewhere in Illinois  
with every major flood!

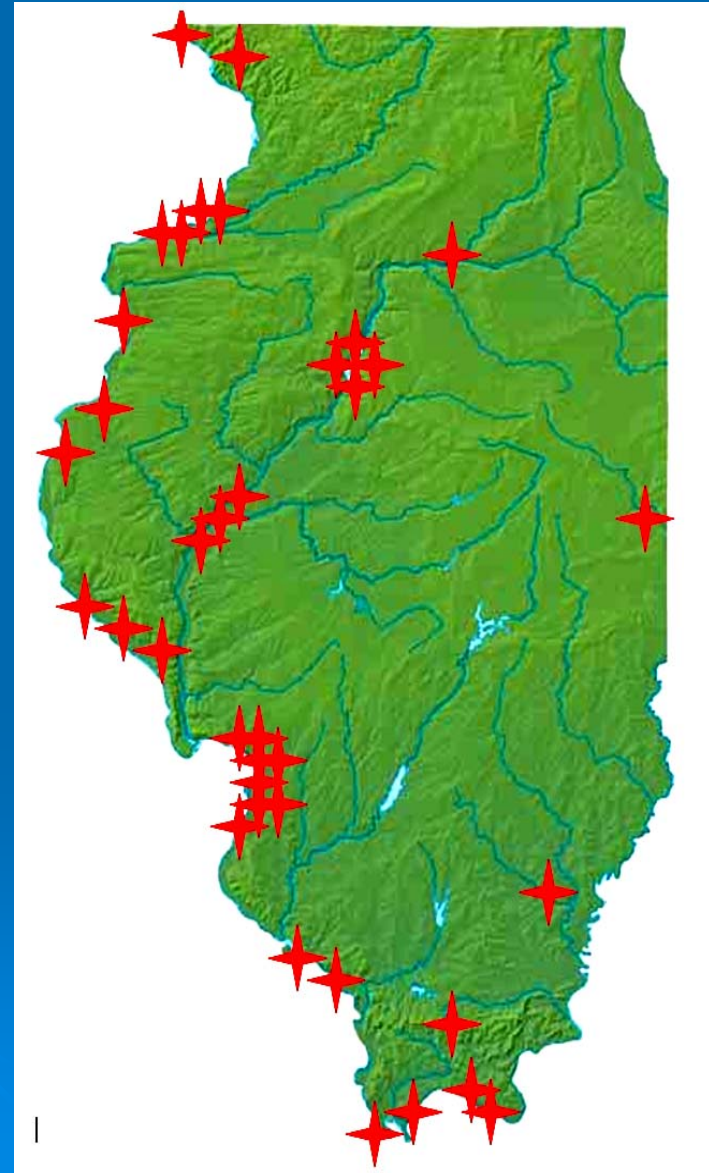


# “Certified” Levees In Illinois

Alorton  
Alton  
Andalusia  
Beardstown  
Bethalto  
Brooklyn  
Brookport  
Cahokia  
Cairo  
Caseyville  
Centreville  
Collinsville  
Creve Coeur  
Dupo  
East Alton  
EastCarondelet  
East Dubuque  
East Moline  
East Peoria  
East St. Louis  
Fairmont City  
Fulton  
Galena  
Golconda  
Granite City  
Gulfport  
Hartford

Harrisburg  
Hull  
Karnak  
Kaskaskia  
Keithsburg  
Madison  
Meredosia  
Milan  
Moline  
Mound City  
Mt. Carmel  
North Pekin  
Oquawka  
Ottawa  
Peoria  
Pleasant Hill  
Pontoon Beach  
Prarie du Rocher  
Quincy  
Rock Island  
Rosiclare  
Roxana  
Sauget  
Silvis  
South Roxana  
Venice  
Washington Park  
Wood River

yellow font = levee certification in question





# What is a FEMA “Certified Levee”?

- Freeboard (3 ft. ++)
- Closures
- Embankment protection
- Foundation stability
- Settlement
- Interior Drainage
- Operation & Maintenance plan



■ In lieu of these structural requirements, a Federal agency with responsibility for levee design may certify that the levee meets these standards.



# FEMA Levee Responsibilities

- Determine and establish appropriate risk zone designations in areas behind levees
- Reflect those determinations on maps
- Establish mapping standards (design, operations, and maintenance criteria) to ACCREDIT levees that provide at least 1-percent-annual-chance flood protection
- FEMA DOES NOT certify levees



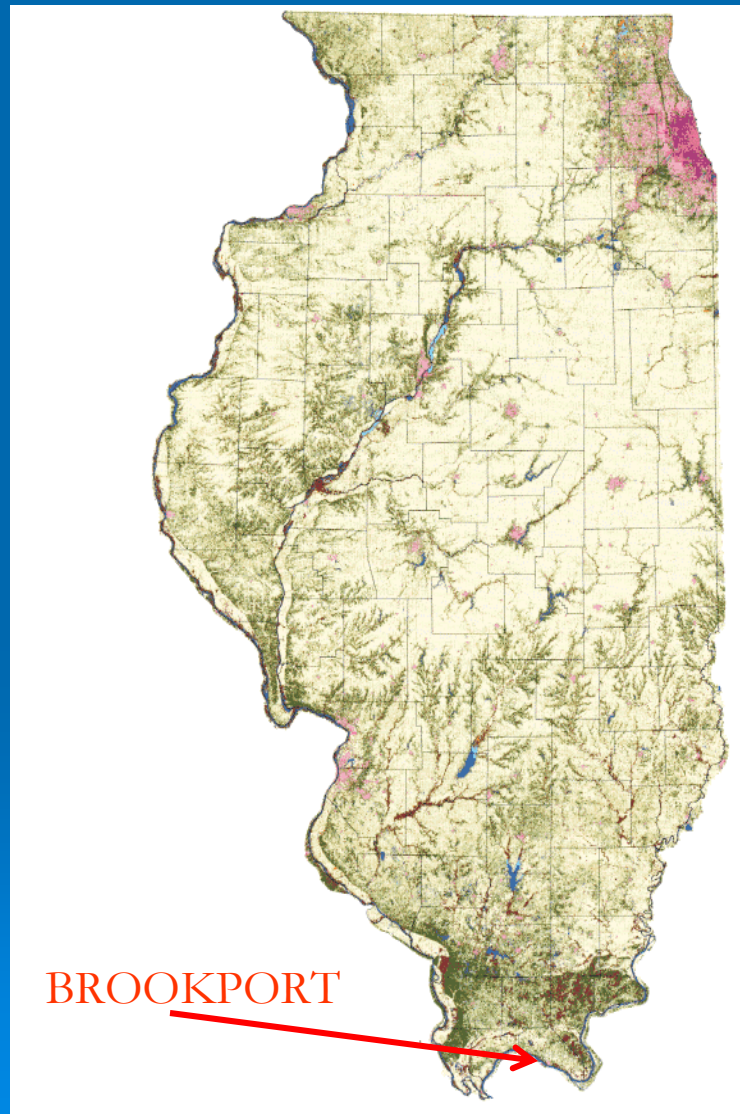
# Community/Levee owners Responsibilities

If a community or levee owner wants the floodplain maps to recognize protection from the 100-year flood, the levee owner must provide the documentation to show that the levee meets design, construction, and operation & maintenance standards for 100-year flood protection.



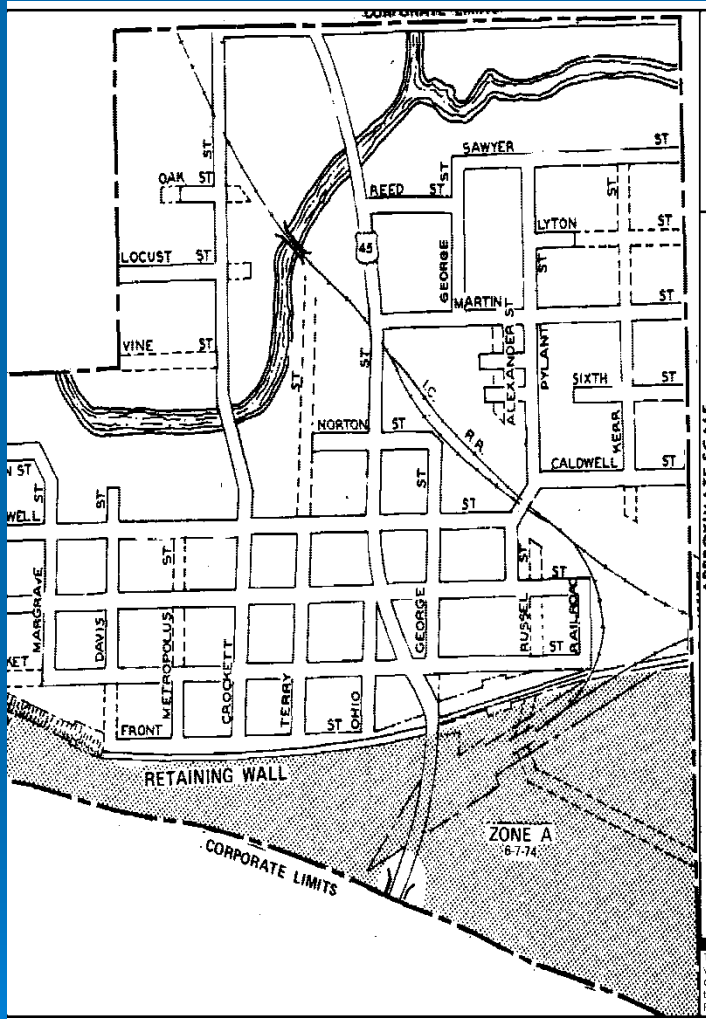


# Brookport, Illinois Levee

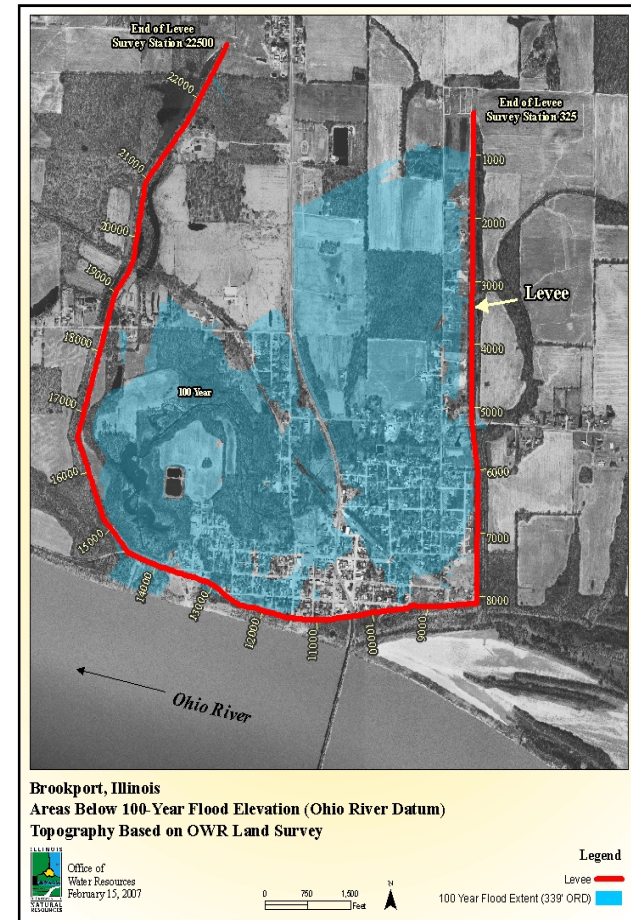




# Brookport, Illinois Maps



**Brookport, Illinois  
Flood Insurance Rate Map  
April 1976**



**Brookport, Illinois  
IDNR Residual Risk Map  
February 2007**



# Residual Risk Awareness ?

~million residents      ~1% are covered by a  
behind levees..... Flood InsurancePolicy!!!!





# **IL DNR-OWR PERMITTING**

A scenic view of a river flowing through a grassy field. The river is in the center, surrounded by dry, yellowish-brown grass and some rocks. In the background, there are bare trees and a clear blue sky. The overall scene is peaceful and natural.

**IDNR/OWR (Northeast)**

**2050 West Stearns Road**

**Bartlett, IL 60103**

**(847) 608-3100**

**IDNR/OWR (Downstate)**

**One Natural Resources Way**

**Springfield, IL 62702**

**217-782-3863**





**State Jurisdiction**

**Floodways**

**Dams**

**Public Waters**

12 8:56AM



# **IDNR/OWR Permit Programs**

---

**Construction in Floodways of Rivers, Lakes and Streams:  
Part 3700 Rules**

**Regulations for Dam Construction : Part 3702 Rules**

**Regulations of Public Waters: Part 3704 Rules**

**Floodway Construction in Northeastern Illinois:  
Part 3708 Rules**

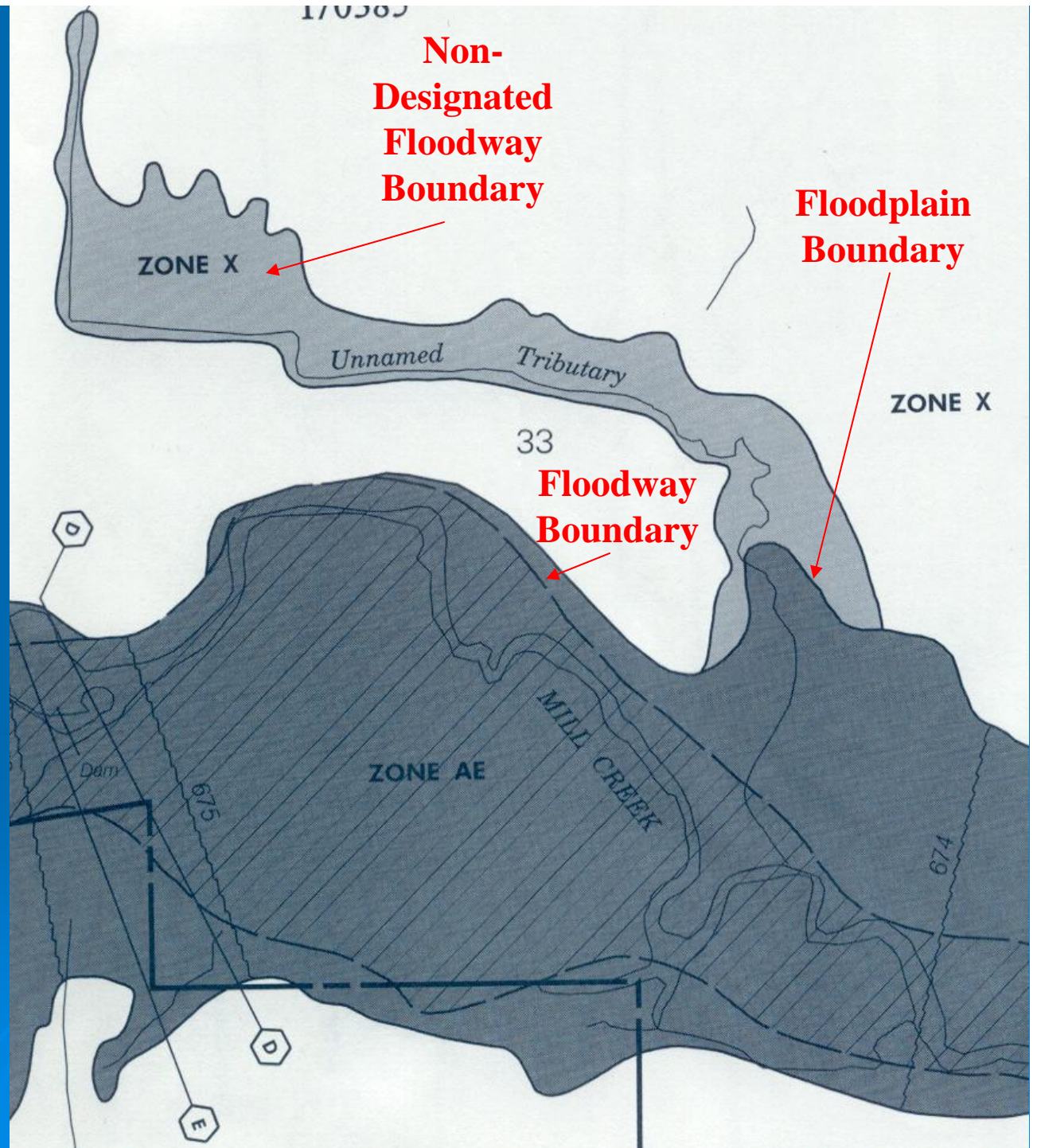


# Floodway Encroachments





# FIRM

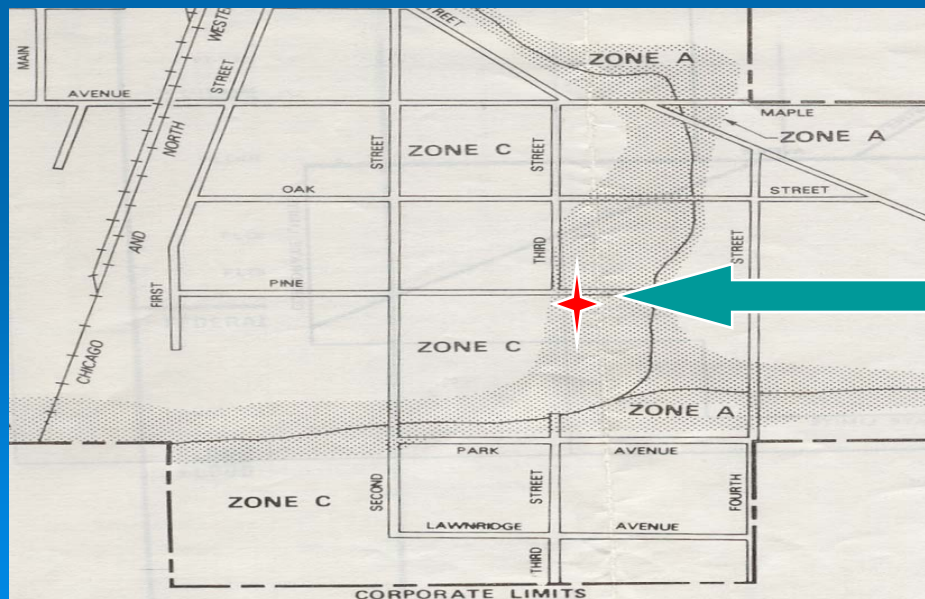






State Permit  
required in a:  
Mapped Floodway

Or



Floodplain with no  
identified Floodway



# IDNR/OWR Floodway Permit Program

---

## Part 3700 Rules

### Construction in the Floodways of Rivers, Lakes and Streams

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.

If the stream DOES NOT  
meet these thresholds.

DON'T EVEN SEND IT IN.



# IDNR/OWR Floodway Permit Program (cont.)

---

Two types of Permits are offered:

## 1. Statewide Permit

Statewide Permits are offered for pre-approved projects which are considered minor projects which are permissible per our Part 3700 rules.

**Examples: Bank Stabilization, Minor Maintenance Dredging**

## 2. Formal Permit

Formal Permits are permits which are issued for significant-type projects which do not meet a Statewide Permit. These projects generally require an extensive project review of engineering data.

**Examples: New Bridges or Culverts, New Levee Construction**



# IDNR/OWR Floodway Permit Program (cont.)

---

## Statewide Permits

- SWP 2 - Bridge & Culvert Structures in Rural Areas on Streams Draining Less than 25 square miles.
- 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
- SWP 11 - Minor Maintenance Dredging**
- SWP 12 - Bridge and Culvert Replacement Structures
- SWP 13 - Temporary Construction Activities
- SWP 14 - Special Uses of Public Waters

Can be found at <http://dnr.state.il.us/owr/resman/apform.htm>



# Statewide Permit #9 Example

- No Buicks or Maytags
- Less than 1000 feet
- Sized or anchored to resist flows
- No higher than the existing bank
- Maintain x-section
- Minimize erosion




# IDNR/OWR Floodway Permit Program

---

## Part 3708 Rules Floodway Construction in Northeastern Illinois

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.





# IDNR/OWR Floodway Permit Program (cont.)

---

Two types of Permits are offered:

## 1. Regional Permit

Regional Permits are offered for pre-approved projects which are considered minor projects which are permissible per our Part 3708 rules.

**Examples: Bank Stabilization, Utilities, Boat Docks**

## 2. Formal Permit

Formal Permits are permits which are issued for significant-type projects which do not meet a Statewide Permit. These projects generally require an extensive project review of engineering data.

**Examples: New Bridges or Culverts, New Levee Construction**



---

# Regional Permits


RP 1-2 Authorize minor highway improvements by the Illinois Department of Transportation

RP 3 Authorizes underground and overhead utilities, storm and sanitary sewer outfalls, sidewalks, patios, athletic fields, playground equipment and streambank protection activities

Can be found at <http://dnr.state.il.us/waterresources>



# Regional and Statewide Permits

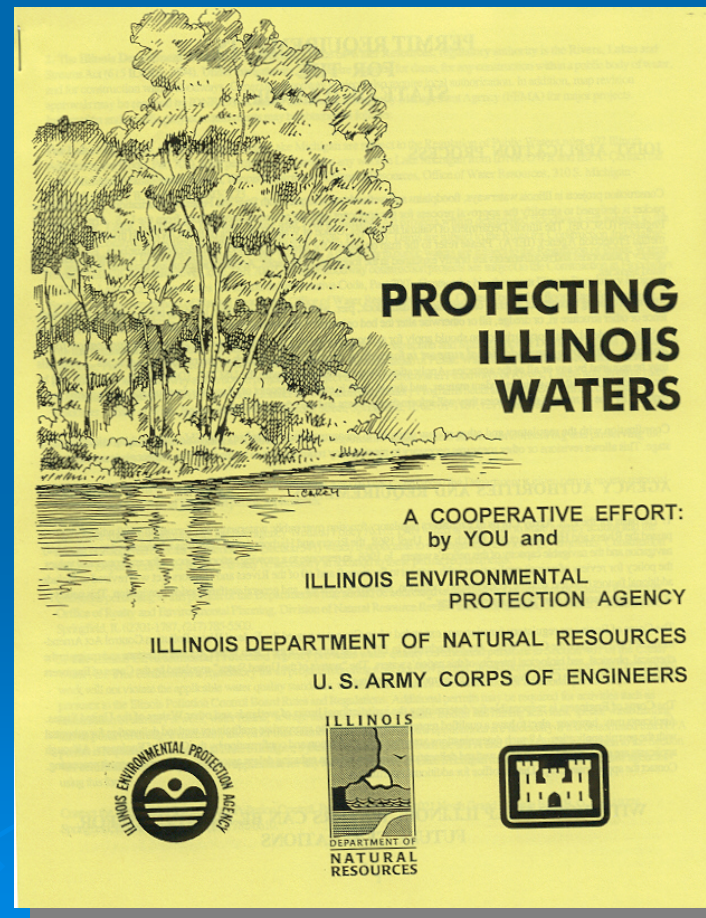
- “Blanket” pre-authorization of minor projects.
  - Application submittal not needed.
  - Letter, drawings, etc. not needed.
  - No IDNR-OWR record keeping.
- 



# IDNR/OWR Permit Program Process

## Joint Application Form

Complete and Submit Joint Application Form



QG page 21



# When to Submit...

- An application submittal is only needed for jurisdictional construction activities that require a formal or general permit.



# When NOT to Submit...

- An application submittal is not 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 permitted by a delegated community.
  - can be authorized by IDOT/DOH per MOA.



# 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.



# Application Form

1. Application number.
2. Date (day/month/year).
3. Applicant's name with contact person.
4. Agent's name.
5. Brief project description.
6. Section, township, range.
7. Name of local governing community.
8. Signature.

JOINT APPLICATION FORM				
1. Application Number (to be assigned by Agency)		2. Date Day Month Year		3. For agency use only (Date Received)
4. Name and address of applicant		5. Name, address, and title of authorized agent		
Telephone no. during business hours A/C ( )		Telephone no. during business hours A/C ( )		
6. Project Description and Remarks: Describe in detail the proposed activity, its purpose, and intended use. Also indicate the drainage area at the watershed to the downstream limit. Use attachments if needed.				
7. Names, addresses, and telephone numbers of all adjoining and potentially affected property owners, including the owner of the subject property if different from applicant.				
8. Location of activity		Legal Description		
Name of waterway at location of the activity		1/4 Sec. Twp. Rge. P.M.		
Address:		UTM (Universal Transverse Mercator):		
Street, road, or other descriptive location		If available Zone North East		
In or near city or town		Name of Local Governing Community		
County		State		Zip Code
9. Date activity is proposed to commence		Estimated Time of Construction		
10. Is any portion of the activity for which authorization is sought now complete? Yes No If answer is "Yes" give reasons in item 6.				
Month and Year the activity was completed Indicate the existing work on drawings.				
11. List all approvals or certifications required by other federal, interstate, state, or local agencies for any structures, construction, discharges, deposits, or other activities described in this application. If this form is being used for concurrent application to the Corps of Engineers, Illinois Department of Natural Resources, and Illinois Environmental Protection Agency, these agencies need not be listed.				
Issuing Agency Type Approval Identification No. Date of Application Date of Approval				
12. Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein? Yes No (If "Yes", explain in item 6.)				
13. Application is hereby made for authorizations of the activities described herein. I certify that I am familiar with information contained in the application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.				
Signature of Applicant or Authorized Agent				
Typed or Printed Name of Applicant or Authorized Agent				



# Narrative

- Recommended for most projects.
- Essential for complex projects.
- Detailed project description.
- Explain how project meets applicable rules.
- Include support information for computations and modeling.



# Location Map

- Show project site.
- Include road names.
- Show stream with name.
- Show/name nearby municipalities.
- Include scale.
- North arrow.




# FIRM/FBFM

- Show project site.
- Include road names.
- Show stream name.
- Include scale.
- North arrow.
- go to: <http://www.msc.fema.gov/> and click on "The FEMA Flood Map Store"



# Site Plan

- Show property lines.
  - Show stream channel (if located on subject property).
  - Show regulatory floodway limits as scaled from FIRM/FBFM, or non-designated floodway limits.
  - Include scale.
  - North arrow.
- 



# Grading Plan

- Full-size.
- Existing and proposed contour lines clearly shown and labeled.
- Proposed grades must “tie in” with existing grades on the plans.
- Reference marks and elevation datum.
- Show regulatory floodway limits as scaled from FIRM/FBFM or non-designated floodway limits.



# Plotted Cross Sections

- Existing and proposed grades on same plot.
- Must match grading plan.
- Properly labeled.



# Engineering Report

- Not required, but usually very helpful.
- Do not bury application form in report.
- Include narrative, maps, summary tables, computations, models, photographs, other support information.



# Design Drawings

- Plan, elevation, cross-section views of bridges, culverts and other structures.
- Size, length, width, type of structure.





# Do Not Submit...

- More than one copy of the application form, engineering report, etc., however, 2 copies of drawings are preferred.
- 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.*



# Hydraulic Modeling

- Not always needed.
- Do not include entire watershed.
- Work map showing cross-section locations with labels.
- Include 100 year flood event and other events, such as 10 year and 50 year flood events.



# Delegation

- Voluntary program.
- Good standing in NFIP.
- Up-to-date ordinance.
- Professional Engineer.



# Delegation

- Regular
  - 57 communities
- Countywide
  - Lake & DuPage Counties



# Regular Delegation

- Minor and some major projects in regulatory floodways.
- IDNR-OWR approval needed for bridge and culvert hydraulics.
- IDNR-OWR permit needed for jurisdictional dams, projects in public waters, and community projects.



# Countywide Delegation

## (6-County area only)

- Minor and major projects.
- IDNR-OWR approval not needed for bridge and culvert hydraulics.
- IDNR-OWR permit needed for jurisdictional dams, projects in public waters, and LCSMC and DuPage County EDP projects.





# Jurisdiction Dam Safety

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 existing dam is defined as a dam which was  
constructed prior to September 2, 1980.



# Jurisdiction

- All Class I and Class II dams require a permit.
- Certain Class III dams require a permit.





# Class I High Hazard Dam Part 3702 Rules





Class II Dam with Pedestrian Bridge  
Part 3702 Rules





# Class III Low Hazard Dam Part 3702 Rules



# Public Water Rules

## REGULATION OF PUBLIC WATERS

(ILL. ADM CODE PART 3704)

- Regional and Statewide Permits may be applicable.
- No delegation.











# 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 or statewide permit.
- Formal permits for dams.



# Public Notices

- Names and addresses on mailing labels.
- Black and white annotated floodway maps.
- Joint public notice with COE.
- Twenty-one days.



# **IDNR-OWR Offices**

- **Northeastern Illinois**  
**Regulatory Programs Section**  
**2050 W. Stearns Road**  
**Bartlett, IL 60103**

**Phone 847/608-3100,**  
**Extension 2025**  
**Fax 847/931-2037**

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

**Phone 217/782-3863**  
**Fax 217/785-5014**

- **Web Site: <http://dnr.state.il.us/owr>**

26 2:07 PM

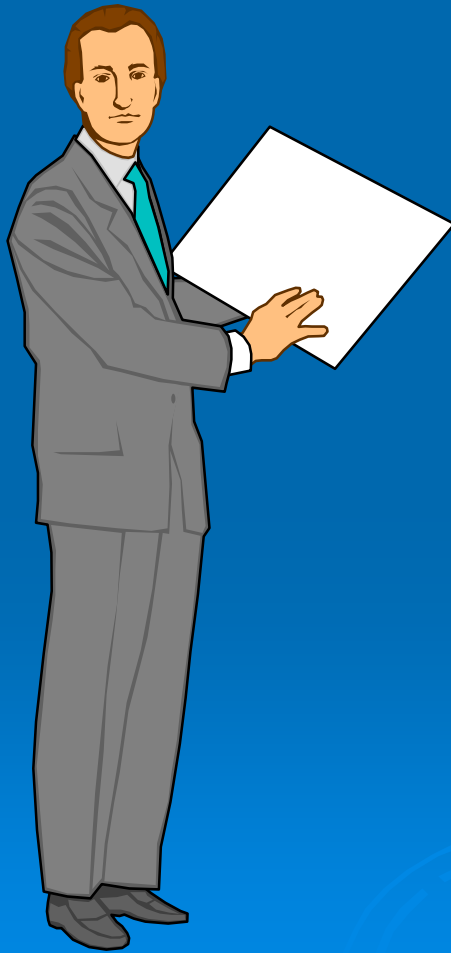




**Questions?**



# LOCAL PERMIT RESPONSIBILITIES



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



# The Nine Fundamental Duties

- ✓ Adopt and Enforce a floodplain ordinance
- ✓ Require permits for all floodplain development
- ✓ Assure that buildings are reasonably safe from flooding
- ✓ Require new or replacement homes to be elevated above BFE
- ✓ Require other buildings to be elevated or floodproofed
- ✓ Conduct field inspections and cite violations
- ✓ Require Elevation Certificates to document compliance
- ✓ Carefully consider requests for variances
- ✓ Maintain accuracy of maps. Notify FEMA of changes





## In Exchange For:

- Local floodplain ordinance and permits which:
- Prevent increased damages
- Protect new buildings
- Keep flooding from getting worse

## Makes Available:

- flood insurance
- disaster assistance
- grants and loans





# 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**
- **Fill, grading, excavating**
- **Fences, culverts, bridges, roads**
- **And ANYTHING else that changes the floodplain**





# Building Protection Standards

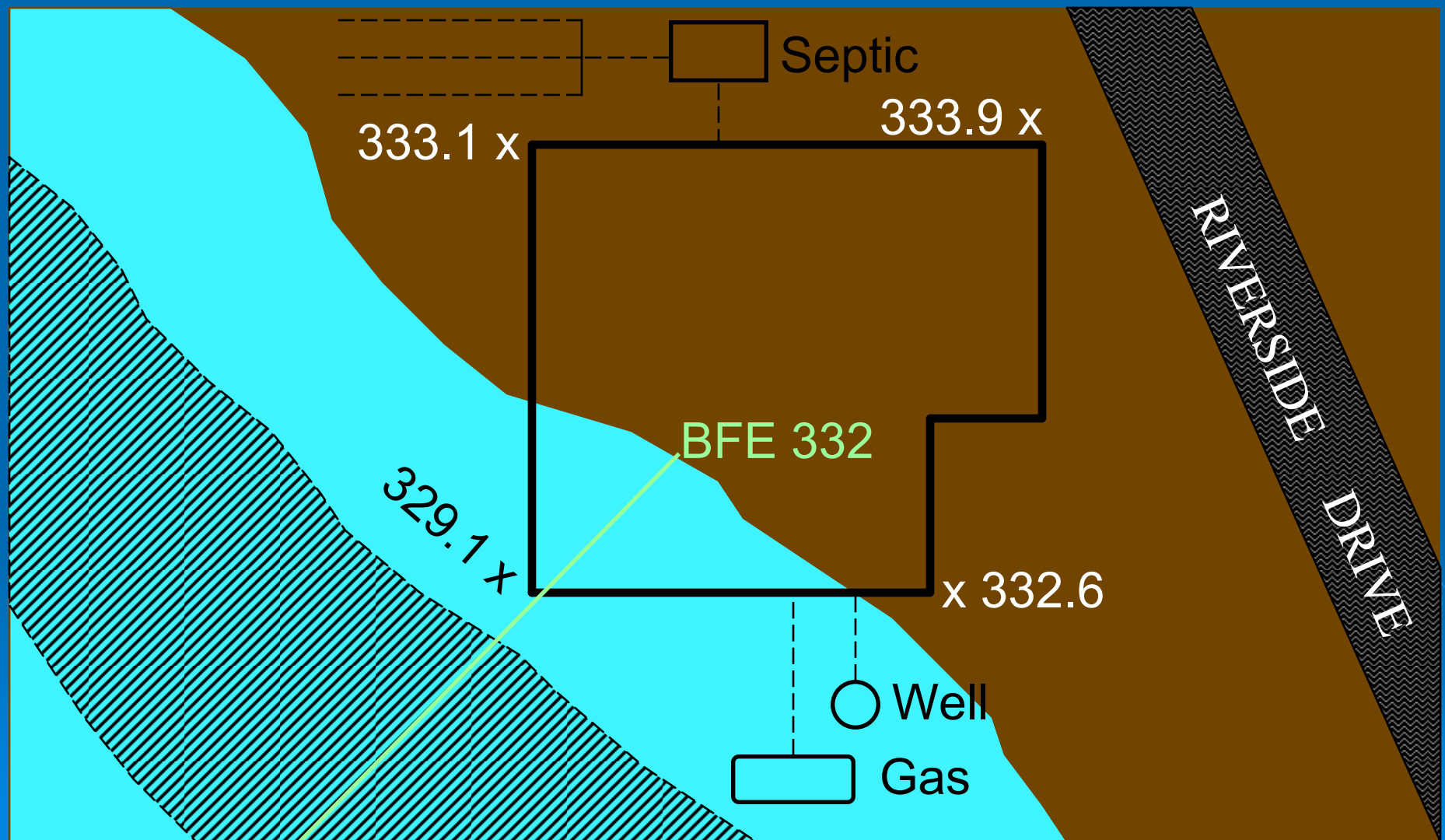
*Methods to Elevate Buildings in an A Zone*

- Elevation on Fill
- Elevation on flow-thru walls
- Elevation by poles, piers, or columns



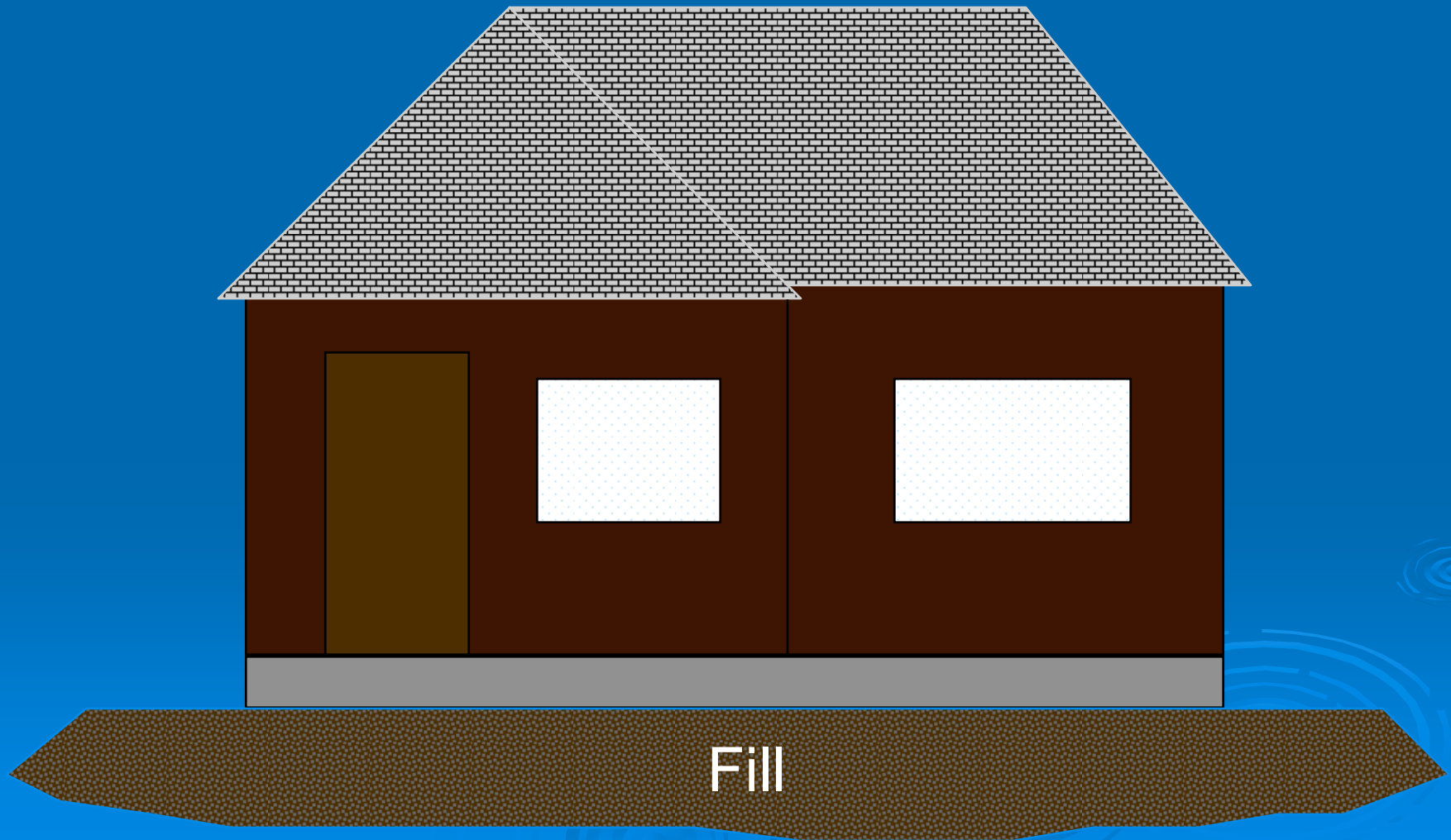


# Site Plan





# Slab on Fill





# Criteria for Elevation on Fill

- Usually limited to three or four feet in height
- Fill placed in 6' layers and compacted (95% proctor)
- Extend fill 10' around structure
- Side slopes 1' vertical to 1.5' horizontal
- Erosion control

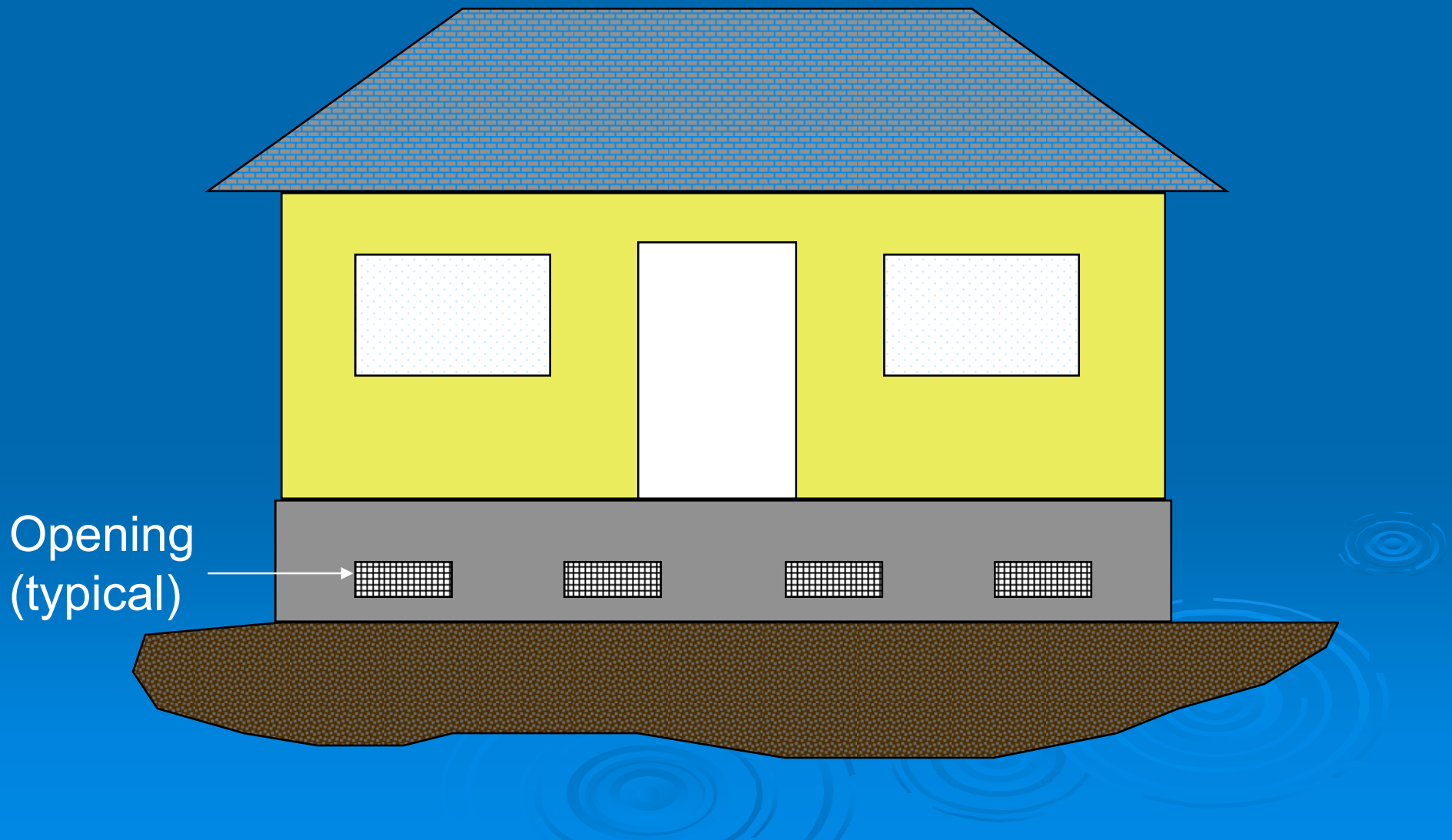




**House built on  
fill above the  
flood elevation**



# Perimeter Wall Foundation



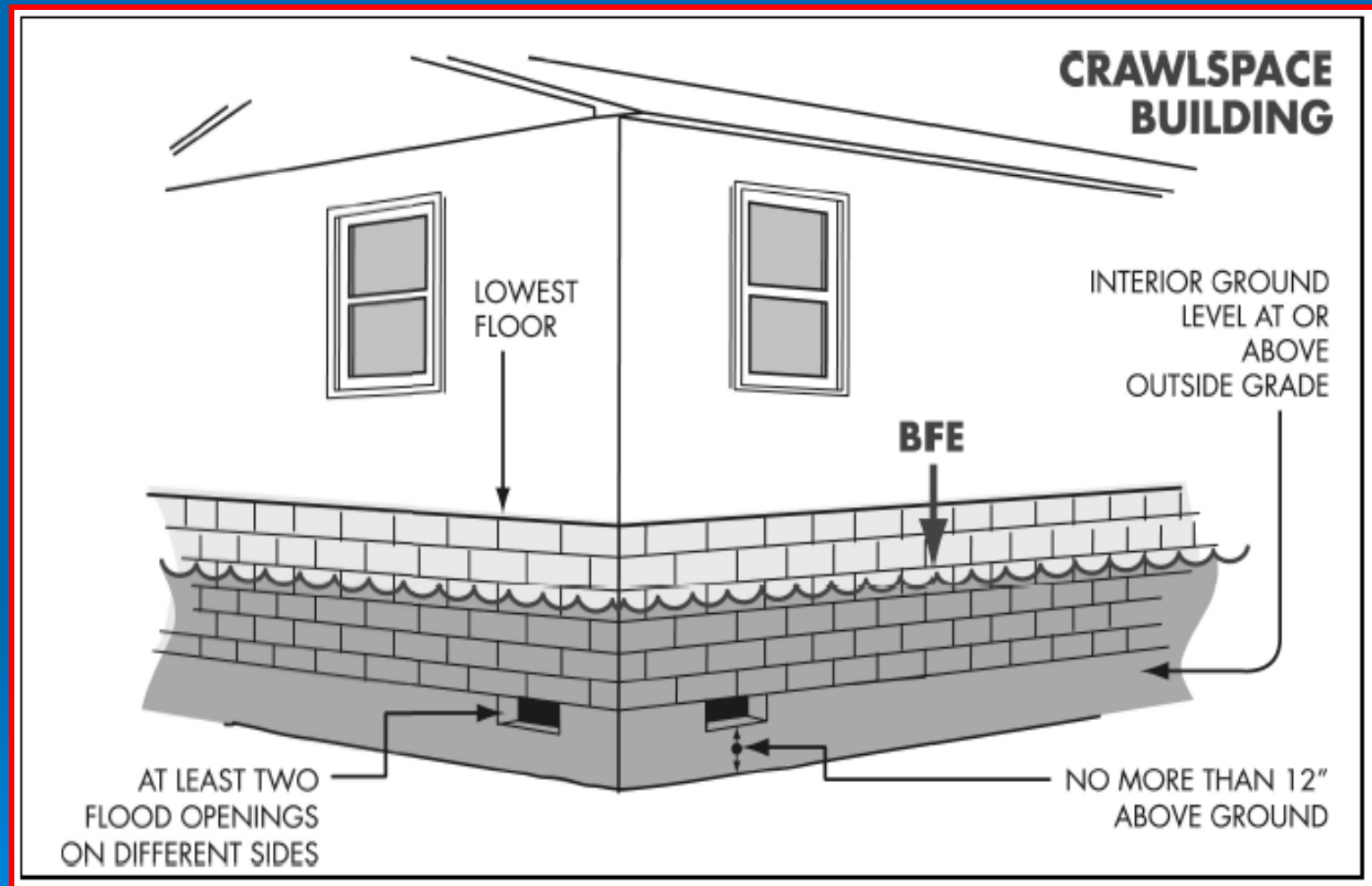


# Criteria for Elevation on Perimeter Wall Foundations

- Usually limited to three or four feet in height above grade
- Enclosed areas below the lowest floor must have openings to equalize hydrostatic pressures (1" per 1 sq. ft.).
- Openings no more than one foot above grade.
- Flood resistant materials
- NO HVAC, electric, utilities, etc..

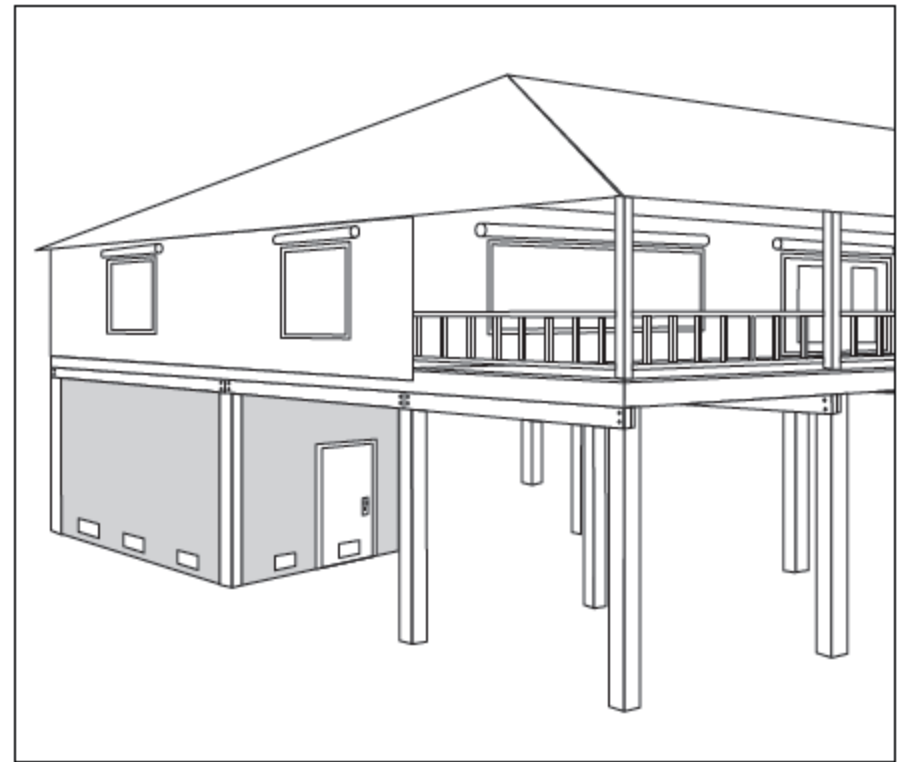
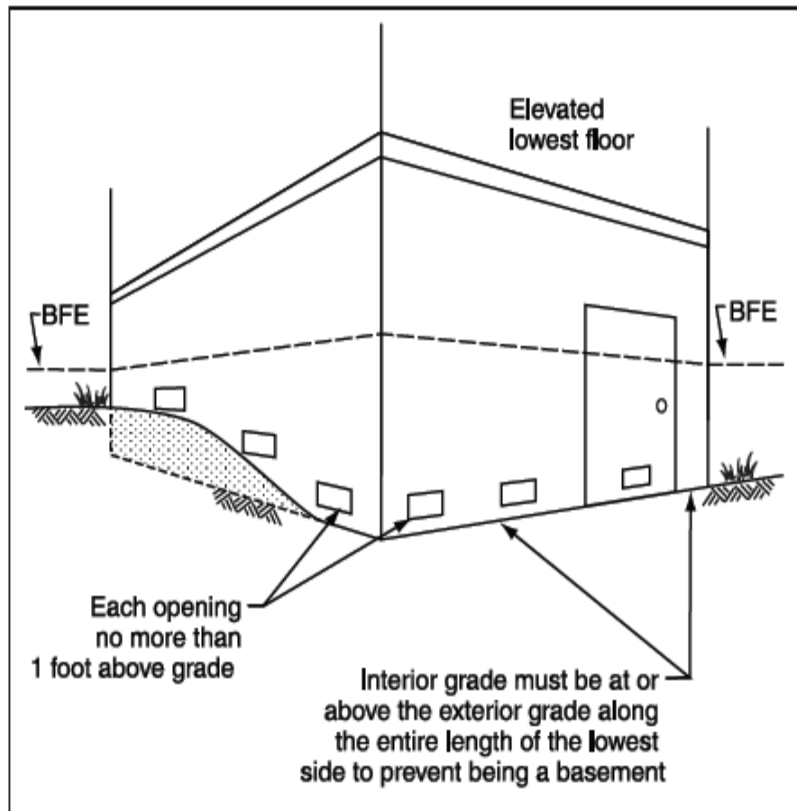


# Elevation on Solid Perimeter Walls

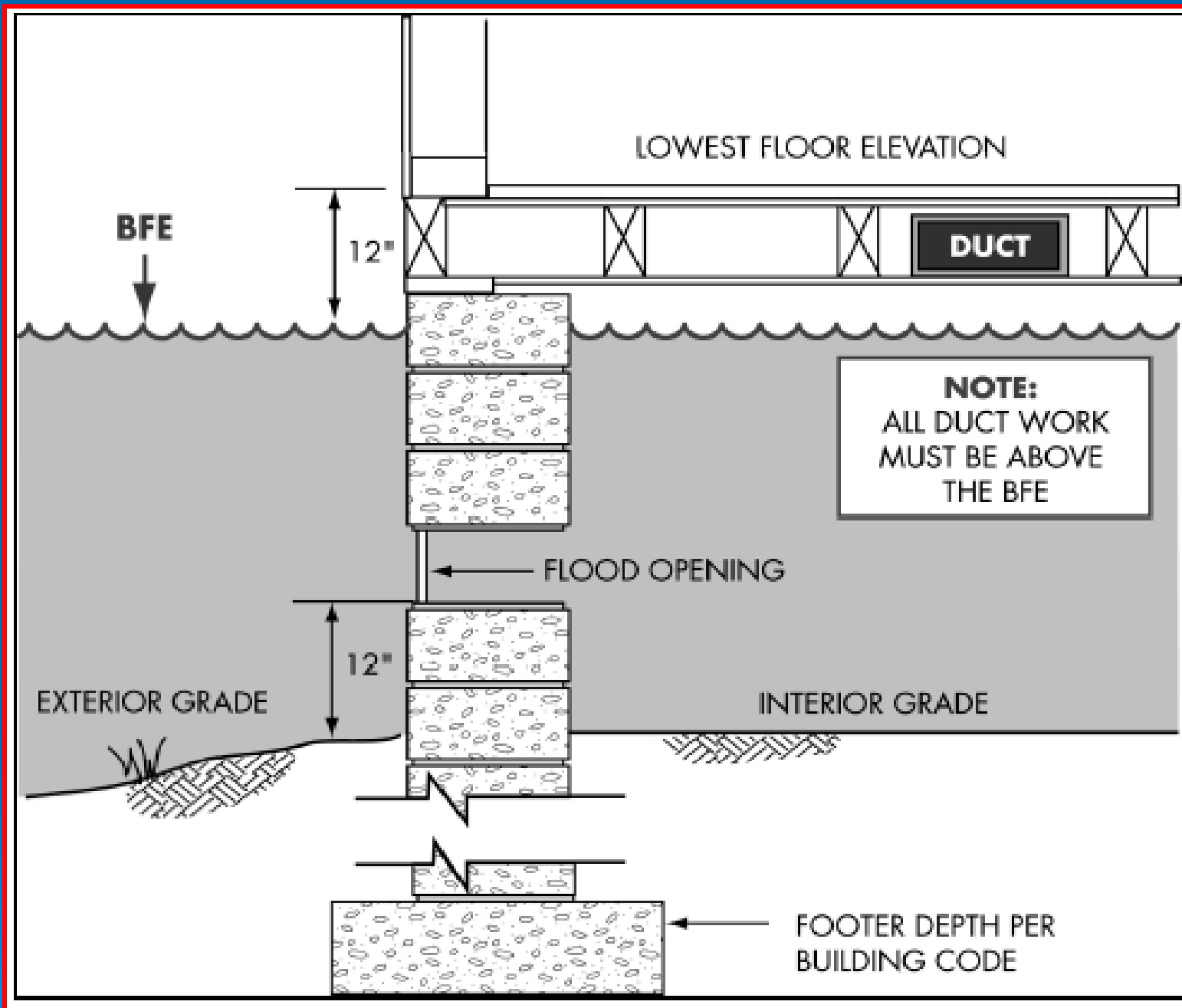




# Any enclosed area must be flow thru







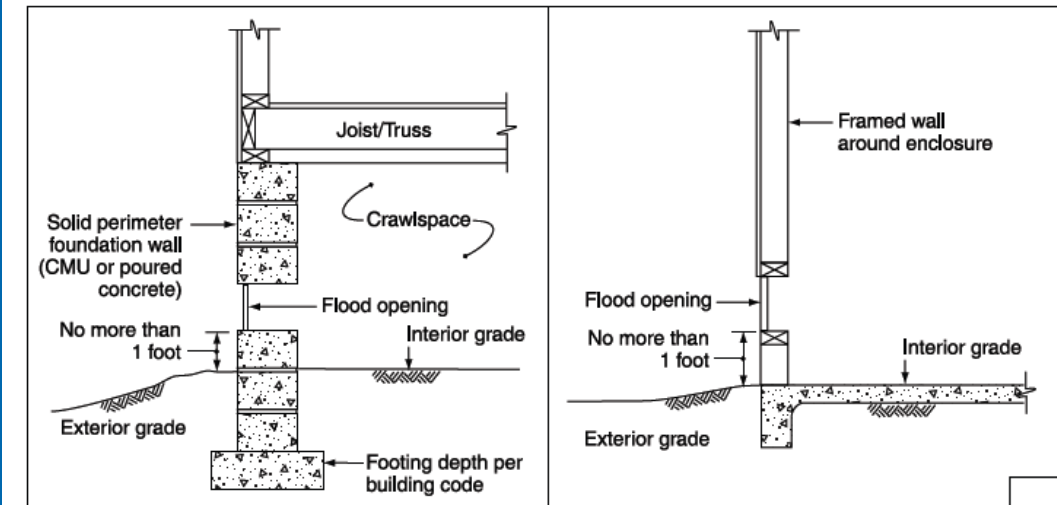


# Crawlspace Rules

- Total height no more than 4 feet.
- No more than 2' below grade.
- Flow through openings
- Interior drainage controls
- Flood resistant materials



# Crawlspaces



Interior above grade?

or

Interior below grade?

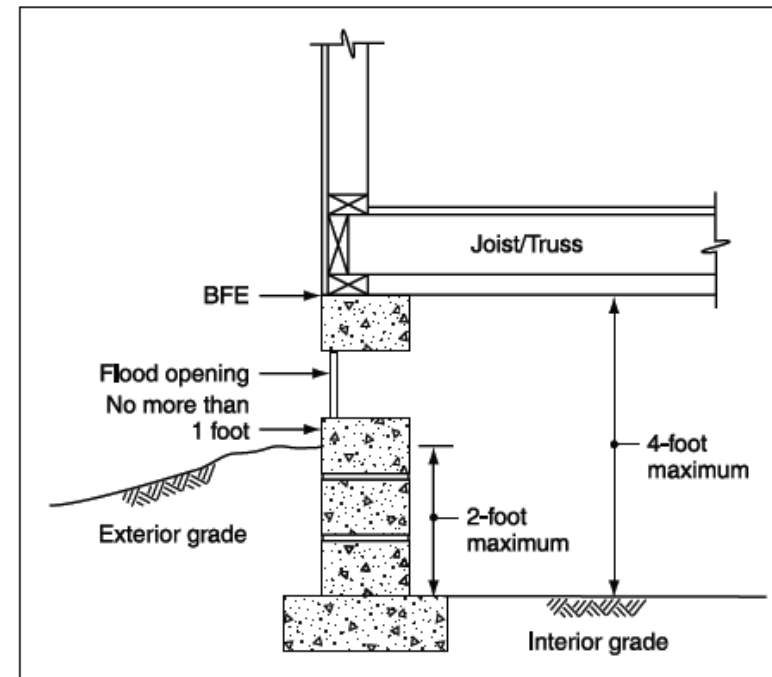
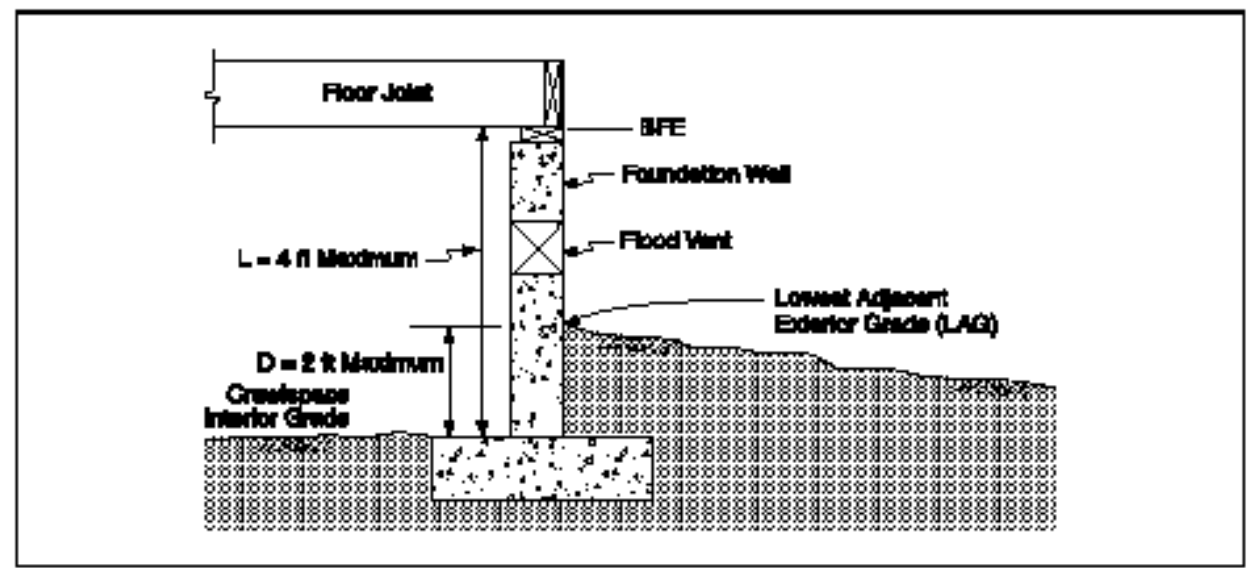
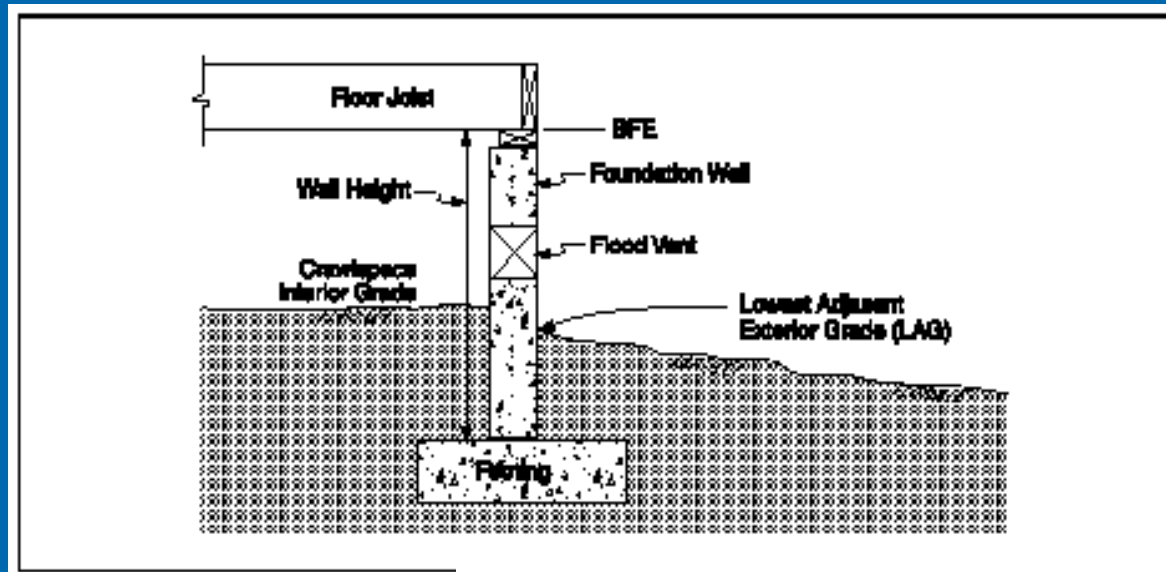


Figure 2. Limitations on below-grade crawlspaces in shallow flood hazard areas (TB 11)



# Technical Bulletin 11-01







# 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**

## Technical Bulletin #1

[www.FEMA.gov](http://www.FEMA.gov)

Search window:  
Technical Bulletin 1



# Watch the vents!

## “standard vents” are only 42 sq. in.

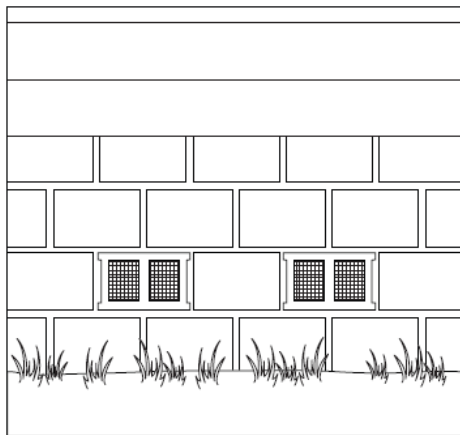
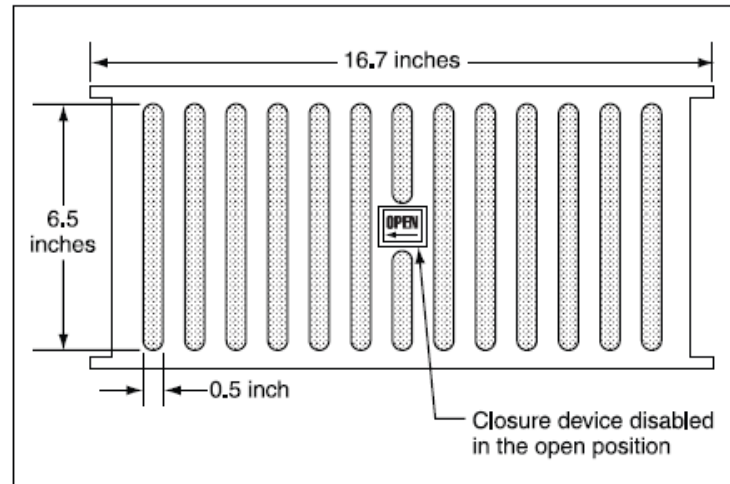


Figure 20. Concrete block turned sideways (insect screening shown)

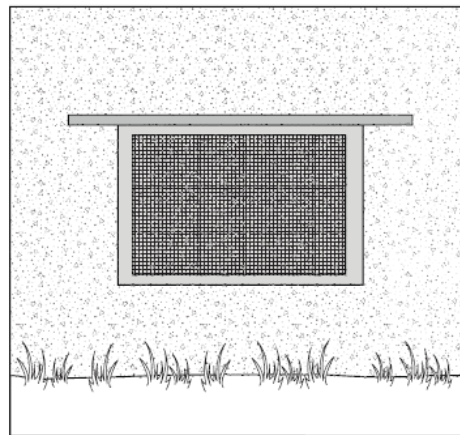
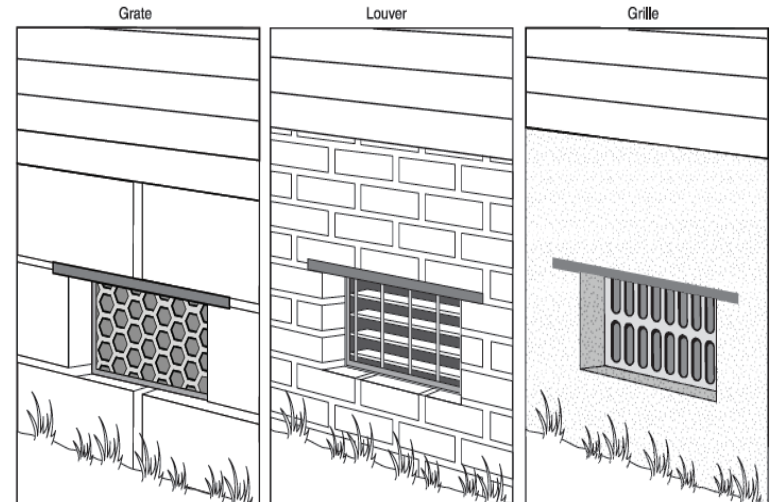


Figure 21. Wood frame with insect screen inserted in opening in poured concrete foundation wall





# Section A – Property Information

## Engin-nerd Vents?





**House built on  
elevated  
foundation walls**



**Flow through  
lower area**





What do you notice about the vents?







**NON-CONVERSION AGREEMENT FOR ENCLOSURE BELOW THE BASE FLOOD ELEVATION**

This DECLARATION made this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by \_\_\_\_\_ ("Owner") having an address at \_\_\_\_\_

**WITNESSETH:**

WHEREAS, the Owner is the record owner of all that real property located at \_\_\_\_\_ in the City of \_\_\_\_\_ in the County of \_\_\_\_\_, as designated in the Tax Records as \_\_\_\_\_

WHEREAS, the Owner has applied for a permit to place a structure on that property that has an enclosed area below the base flood elevation constructed in accordance with the requirements of Article \_\_\_\_\_, Section \_\_\_\_\_ of the Floodplain Management Ordinance of \_\_\_\_\_ ("Ordinance") and under Permit Number \_\_\_\_\_ ("Permit").

WHEREAS, the Owner agrees to record this DECLARATION and certifies and declares that the following covenants, conditions and restrictions are placed on the affected property as a condition of granting the Permit, and affects rights and obligations of the Owner and shall be binding on the Owner, his heirs, personal representatives, successors, future owners, and assigns.

UPON THE TERMS AND SUBJECT TO THE CONDITIONS, as follows:  
The structure or part thereof to which these conditions apply is:

1. At this site, the Base Flood Elevation is \_\_\_\_\_ feet above mean sea level, National Geodetic Vertical Datum.
2. Enclosed areas below the Base Flood Elevation shall be used solely for parking of vehicles, limited storage, or access to the building.
3. All interior walls, ceilings and floors below the Base Flood Elevation shall be constructed of flood resistant materials.
4. Mechanical, electrical or plumbing devices shall not be installed below the Base Flood Elevation.
5. The walls of the enclosed areas below the Base Flood Elevation shall be equipped and remain equipped with permanent flow-thru openings as shown on the Permit.
6. The jurisdiction issuing the Permit and enforcing the Ordinance may take any appropriate legal action to correct any violation. Any alterations or changes from these conditions also may render the structure uninsurable or increase the cost for flood insurance.
7. A duly appointed representative of the City is authorized to enter the property for the purpose of inspecting the exterior and interior of the enclosed area to verify compliance with this Declaration.

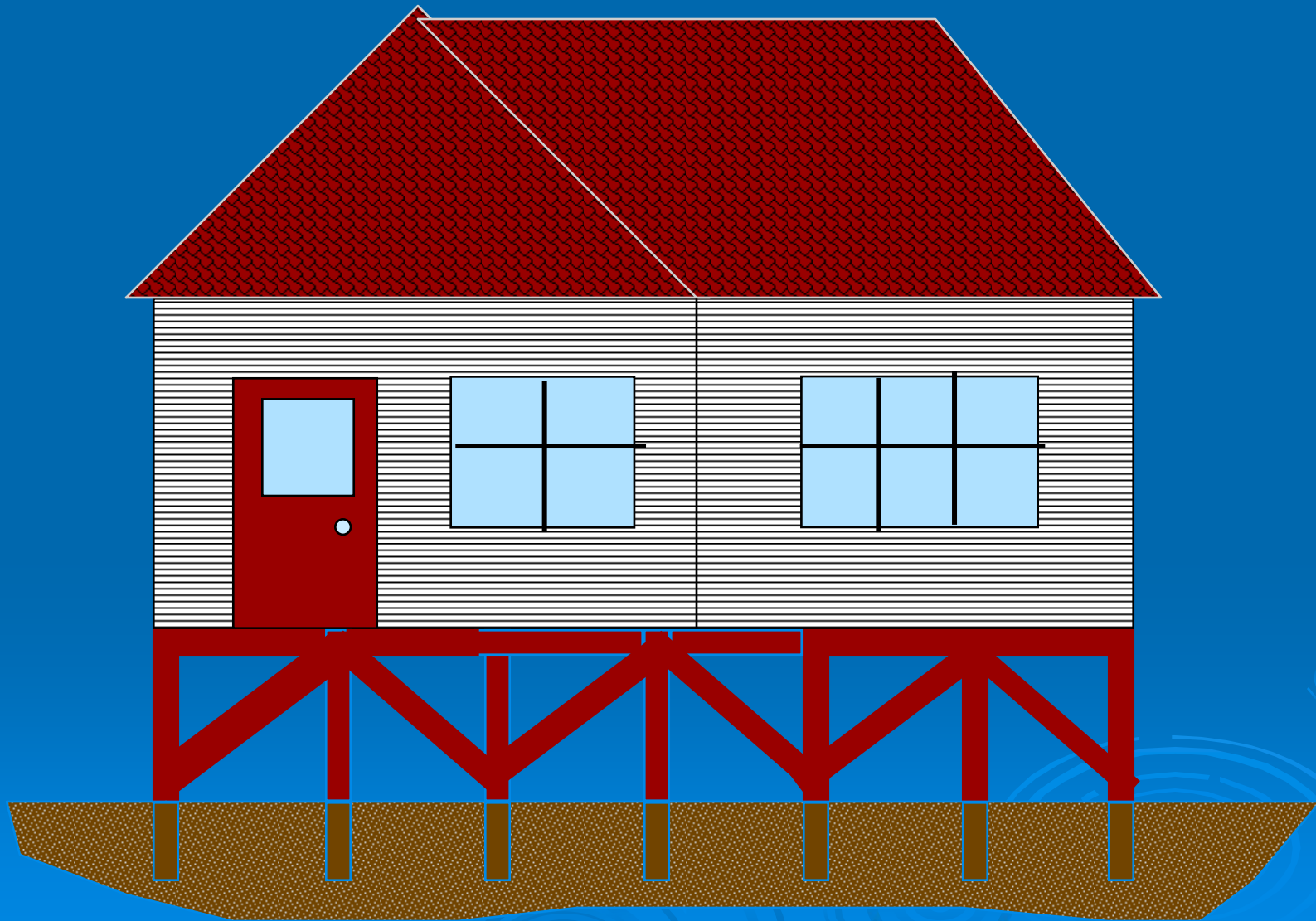
# Non Conversion Agreement

**Recommended on  
all enclosed lower  
areas!!**





# Post or Pile Foundation





# Post or Pile Foundations

- Should be used in areas of deep flooding and/or high velocities (floodways)
- Properly anchored to resist wind and water forces
- Lower area must remain open (not enclosed later). Get non-conversion agreement.

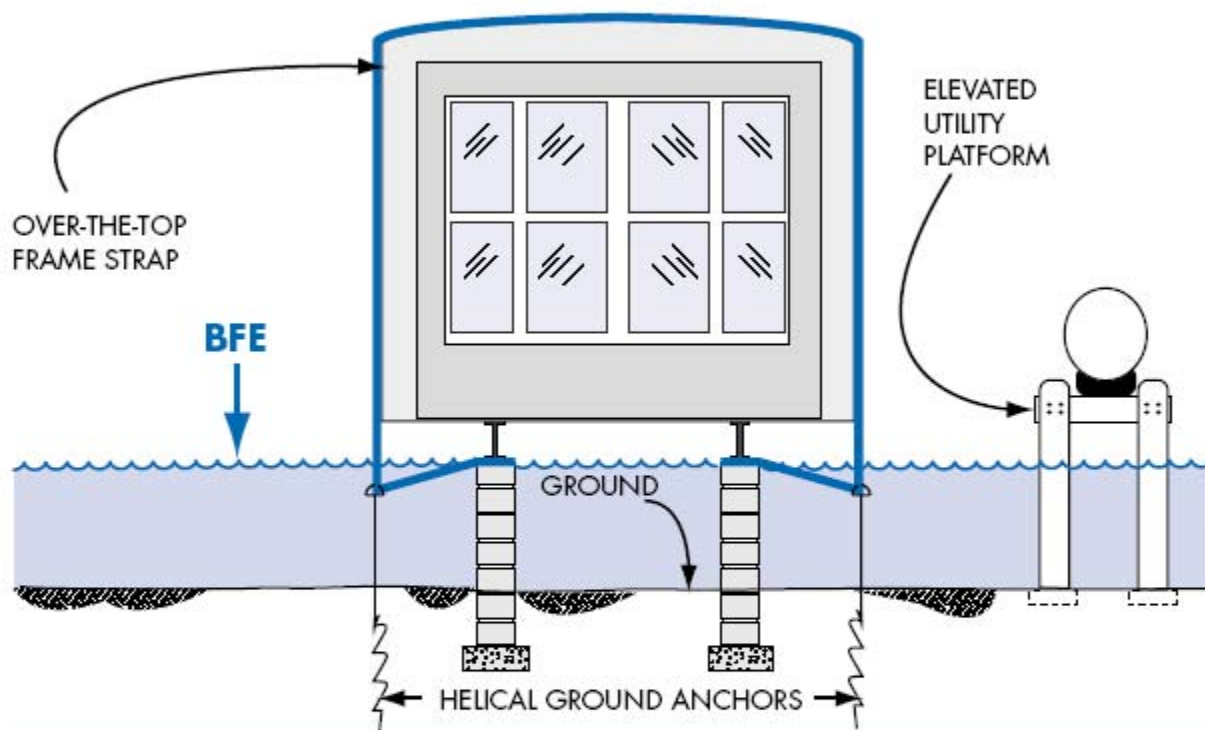


**House built on  
piers or poles  
above the flood  
elevation**





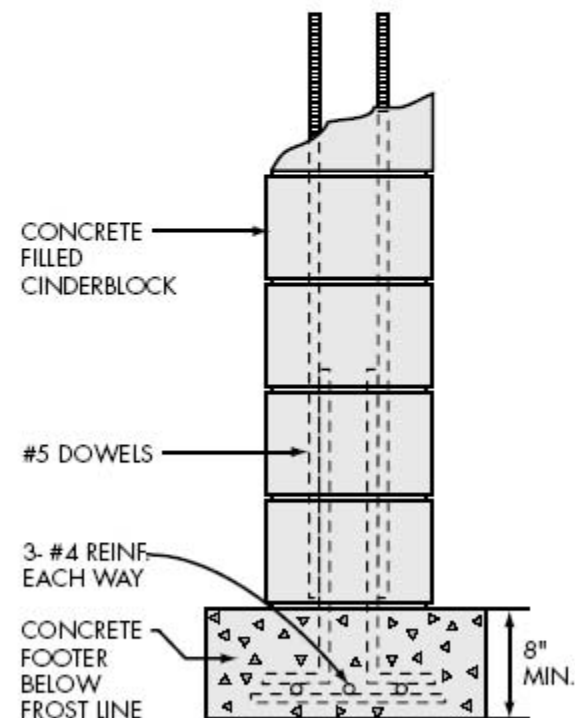
## Manufactured Homes Deserve Special Attention



Manufactured homes must be anchored to resist flotation, collapse, or lateral movement by being tied down in accordance with the Rules and Regulations for the Illinois Mobile Home Tie-Down Act (77 IL Administrative Code 870, IL Dept. of Public Health).

Experience shows that manufactured homes are easily damaged. As little as one foot of water can cause substantial damage.


Dry stacked blocks are not acceptable — they will **NOT** withstand a flood.





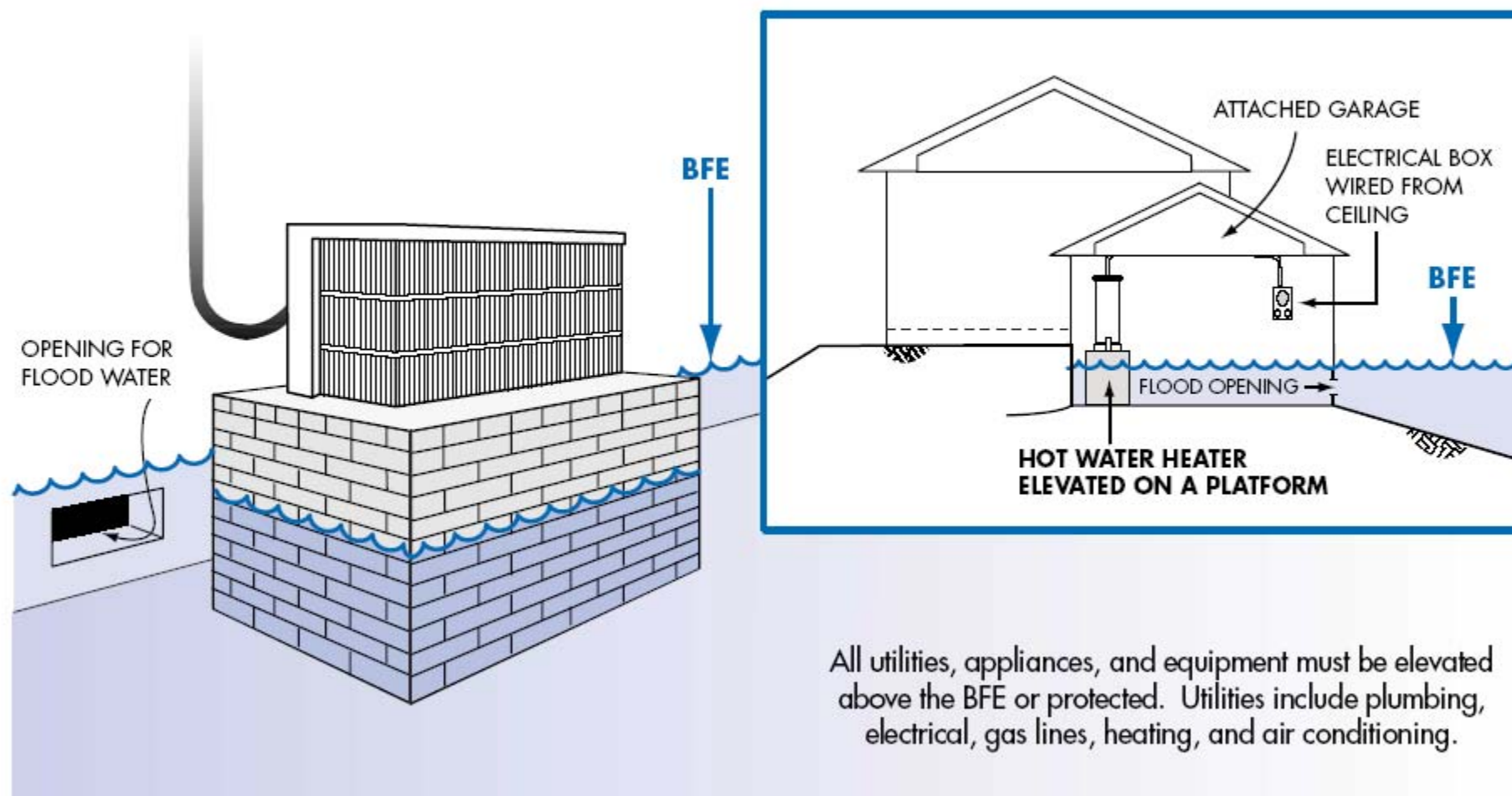
# Standards for Utilities and Building Systems

All new construction and improvement shall be constructed with electrical, HVAC, plumbing and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.





## Utility Service for Buildings



All utilities, appliances, and equipment must be elevated above the BFE or protected. Utilities include plumbing, electrical, gas lines, heating, and air conditioning.





Above ground tanks









Utilities



Vented area below elevated floor.







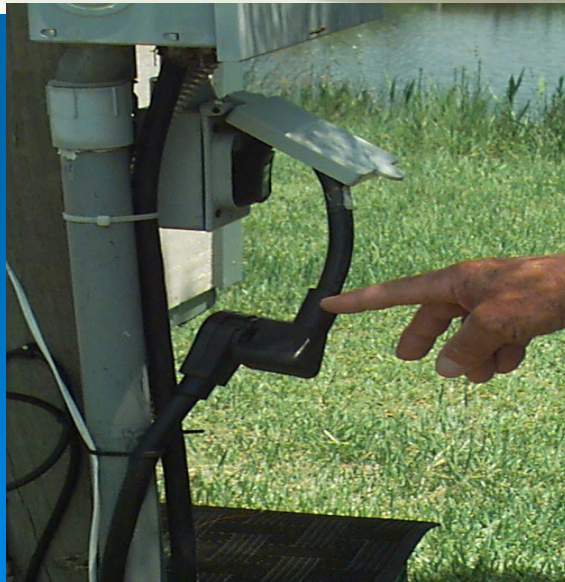
# Recreational Vehicles & Travel Trailers

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.





If an RV is on-site for more than 180 days, it must:



QG page 29



# 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.”





# Wet Floodproofing / 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

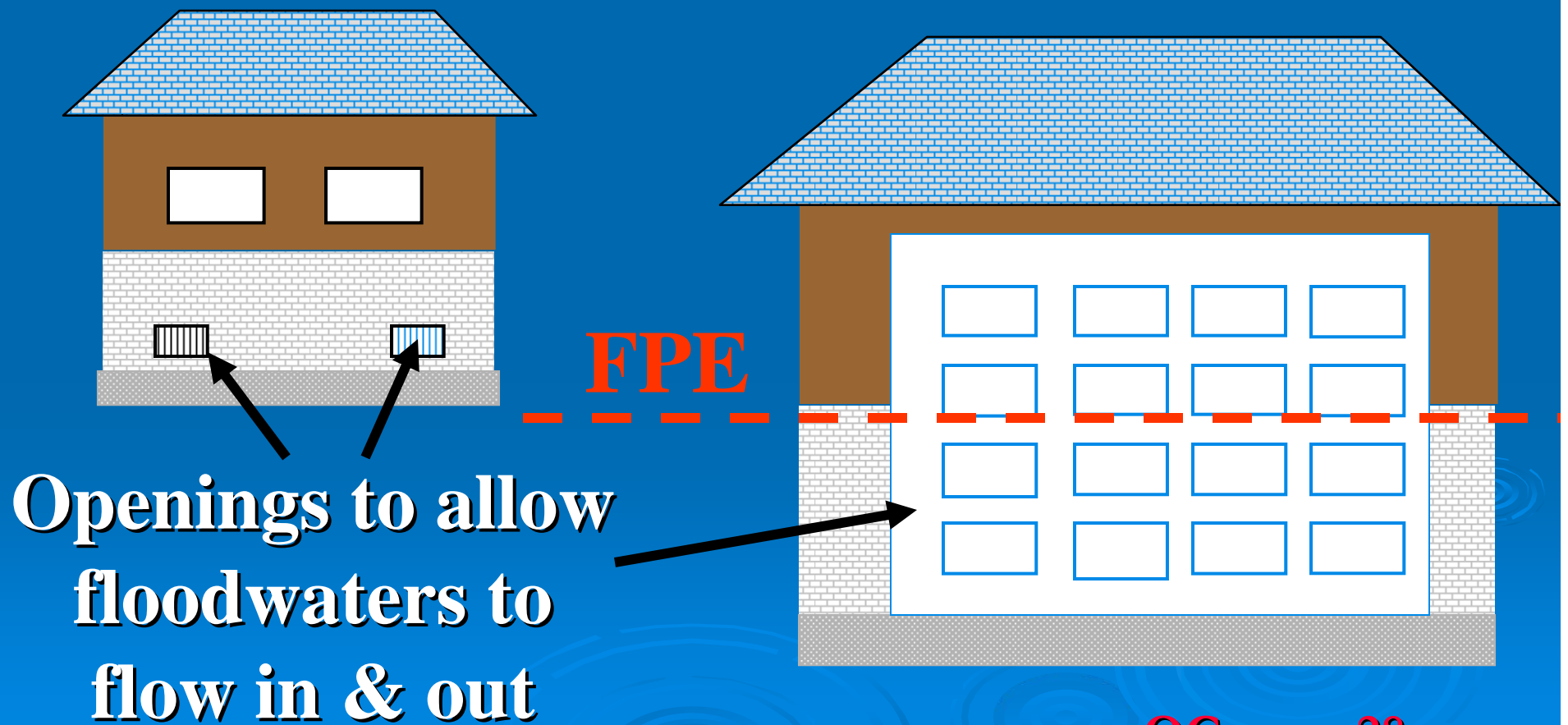
- Non-habitable
- Use only for storage and parking & no later modification
- Accessory to an existing structure on same lot
- Flood resistant materials
- No HVAC
- Flow-thru openings
- Less than \$10,000 in value and less than 500 sq. ft.





# Accessory Structure

## Wet Floodproofing Standards

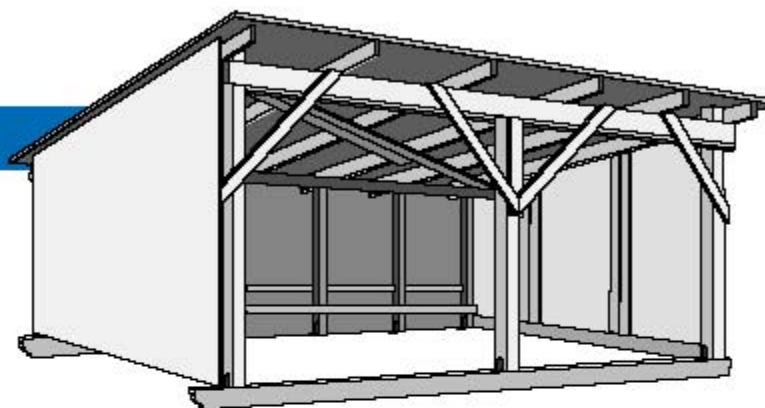




## Agricultural Structures

### Variances are allowed for:

- Pole frame buildings
- Steel grain bins
- Steel frame corn cribs
- General purpose feeding barns open on one side



### Important Information

Farm houses are not agricultural structures.

Contact IDNR/OWR for additional guidance on variances for agricultural structures.

### Variances are not allowed for:

- Livestock confinement buildings
- Poultry houses
- Dairy operations
- Similar livestock operations



### State Specific Guidance

Non-elevated agricultural structures must be considered on a site-specific basis and may be permitted only by a variance. Applicants must show that sites are in "wide, expansive floodplain areas" and no other alternative location outside of the Floodplain exists.

The best flood protection is to elevate agricultural buildings, but certain types can be approved by variance if they are "wet floodproofed."



# Non-Residential Floodproofing

ONLY NON-RESIDENTIAL STRUCTURES MAY BE FLOODPROOFED IN LIEU OF ELEVATION.





# Floodproofing Requirements

1. Non-residential construction may be floodproofed below the BFE so that the structure is watertight with walls substantially impermeable to the passage of water.
2. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.



# Floodproofing Certificate

- A Floodproofing Certificate is required for all floodproofed structures
- The Floodproofing Certificate must be signed by an Engineer
- The form can be obtained at:  
[www.FEMA.gov/library/floodproof](http://www.FEMA.gov/library/floodproof)



NATIONAL FLOOD INSURANCE PROGRAM  
**FLOODPROOFING CERTIFICATE**  
FOR NON-RESIDENTIAL STRUCTURES

*The floodproofing of non-residential buildings may be permitted as an alternative to elevating to or above the Base Flood Elevation; however, a floodproofing design certification is required. This form is to be used for that certification. Floodproofing of a residential building does not alter a community's floodplain management elevation requirements or affect the insurance rating unless the community has been issued an exception by FEMA to allow floodproofed residential basements. The permitting of a floodproofed residential basement requires a separate certification specifying that the design complies with the local floodplain management ordinance.*

BUILDING OWNER'S NAME

STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. Number) OR P.O. ROUTE AND BOX NUMBER

OTHER DESCRIPTION (Lot and Block Numbers, etc.)

CITY

STATE

ZIP CODE

FOR INSURANCE COMPANY USE

POLICY NUMBER

COMPANY NAIC NUMBER

SECTION I FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Provide the following from the proper FIRM:

COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM INDEX	FIRM ZONE	BASE FLOOD ELEVATION (In AO Zones, Use Depth)

SECTION II FLOODPROOFING INFORMATION (By a Registered Professional Engineer or Architect)

Floodproofing Design Elevation Information:

Building is floodproofed to an elevation of ..... feet NGVD. (Elevation datum used must be the same as that on the FIRM.)

Height of floodproofing on the building above the lowest adjacent grade is ..... feet.

*(NOTE: for insurance rating purposes, the building's floodproofed design elevation must be at least one foot above the Base Flood Elevation to receive rating credit. If the building is floodproofed only to the Base Flood Elevation, then the building's insurance rating will result in a higher premium.)*

SECTION III CERTIFICATION (By Registered Professional Engineer or Architect)

Non-Residential Floodproofed Construction Certification:

*I certify that, based upon development and/or review of structural design, specifications, and plans for construction, the design and methods of construction are in accordance with accepted standards of practice for meeting the following provisions:*

The structure, together with attendant utilities and sanitary facilities, is watertight to the floodproofed design elevation indicated above, with walls that are substantially impermeable to the passage of water.

All structural components are capable of resisting hydrostatic and hydrodynamic flood forces, including the effects of buoyancy, and anticipated debris impact forces.

*I certify that the information on this certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

CERTIFIER'S NAME

LICENSE NUMBER (or Affix Seal)

TITLE

COMPANY NAME

ADDRESS

CITY

STATE

ZIP CODE

SIGNATURE

DATE

PHONE

Copies should be made of this Certificate for: 1) community official, 2) insurance agent/company, and 3) building owner.

The Floodproofing  
Certificate must be  
signed by an  
engineer and on  
file for **EVERY**  
floodproofed  
structure



# Substantial Improvement



QG page 31



# Substantial Improvement

## ➤ Lateral additions or vertical additions

- 50% increase in market value or
- 20% increase in floor area\*

(\*Illinois specific ordinance....not true in IA)



# Substantial Improvement

## The formula

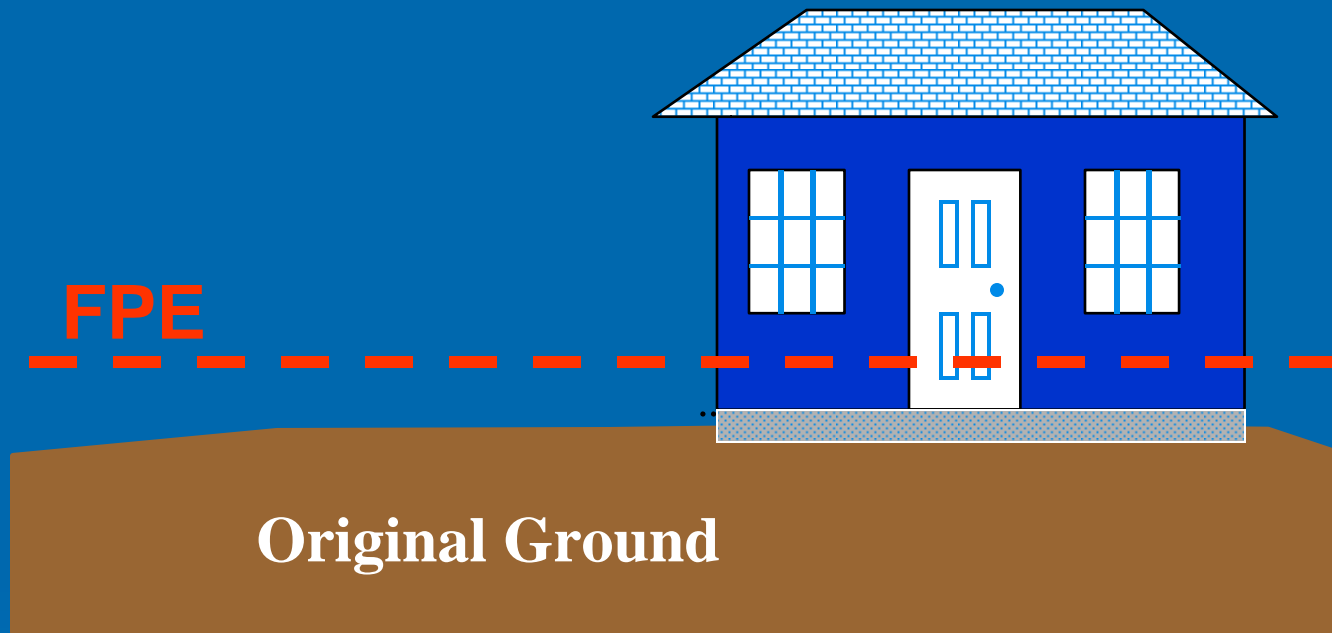
$$\frac{\text{Cost of improvement project}}{\text{Market value of the building}} \geq 50\%$$

Example:

$$\frac{\$75,000 \text{ project}}{\$140,000 \text{ house}} = 54\%$$

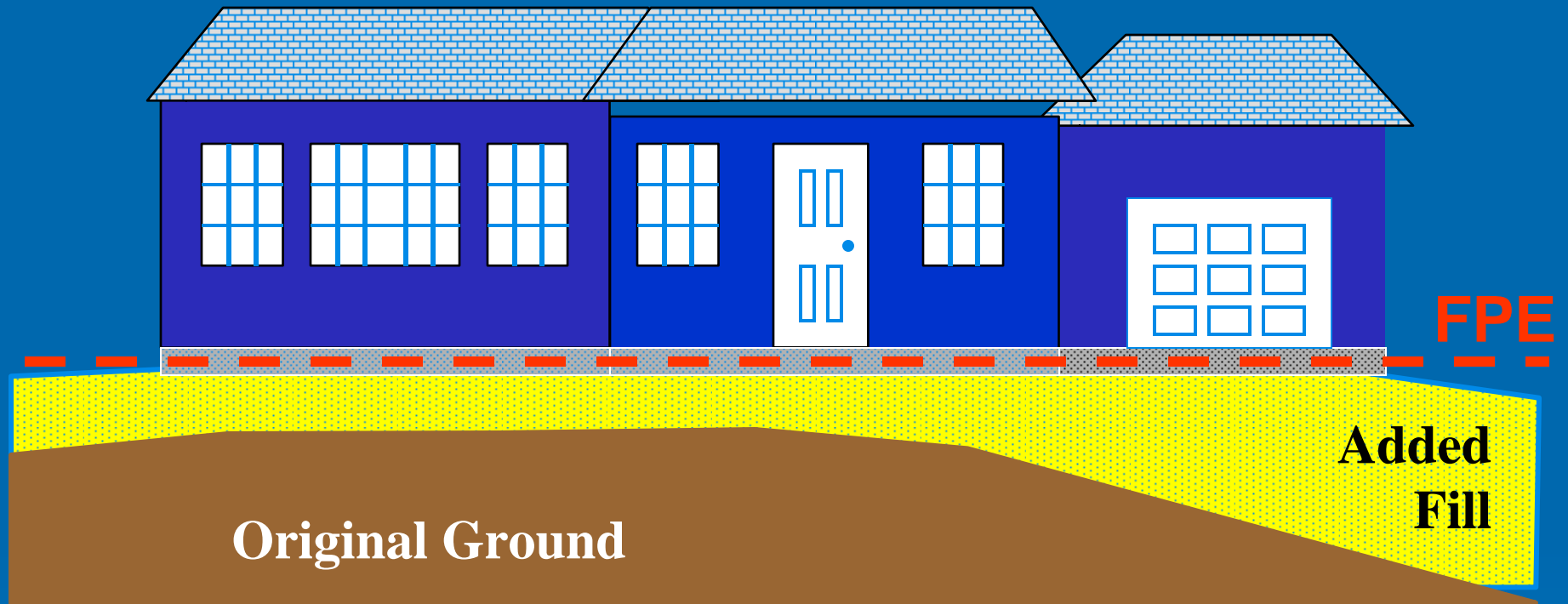


# Existing House





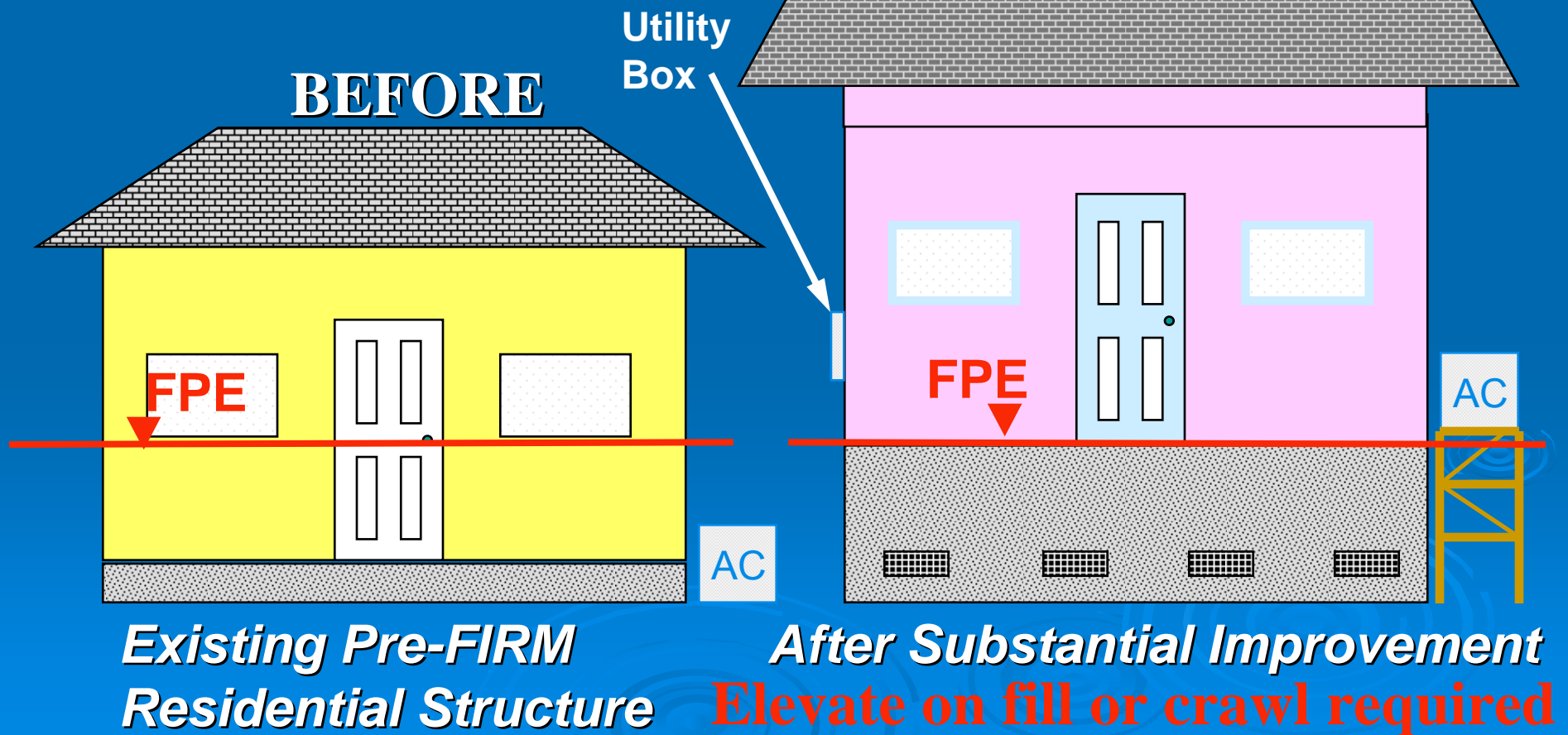
# Substantial Improvement Existing House + Garage/FR/BR Addition



- Raise Existing House & Build Addition above FPE



# Vertical Addition Compliant With NFIP Criteria (Zone A)





# Substantial Damage (The 50% Rule)





# Substantial Damage

## “The 50% Rule”:

If damages from ANY source (flood, fire, tornado, etc..) exceed 50%.

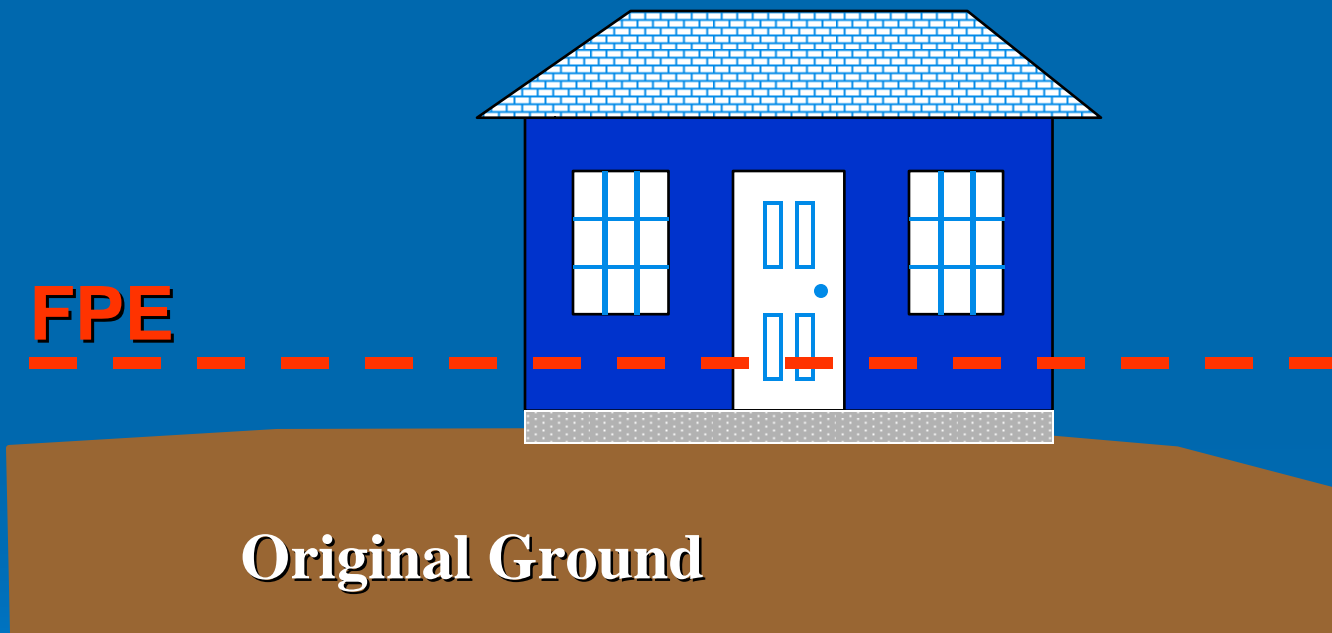
The structure must be brought into compliance with floodplain regulations (elevated or floodproofed).

THE Illinois state model ordinance tracks CUMMULATIVE substantial damage



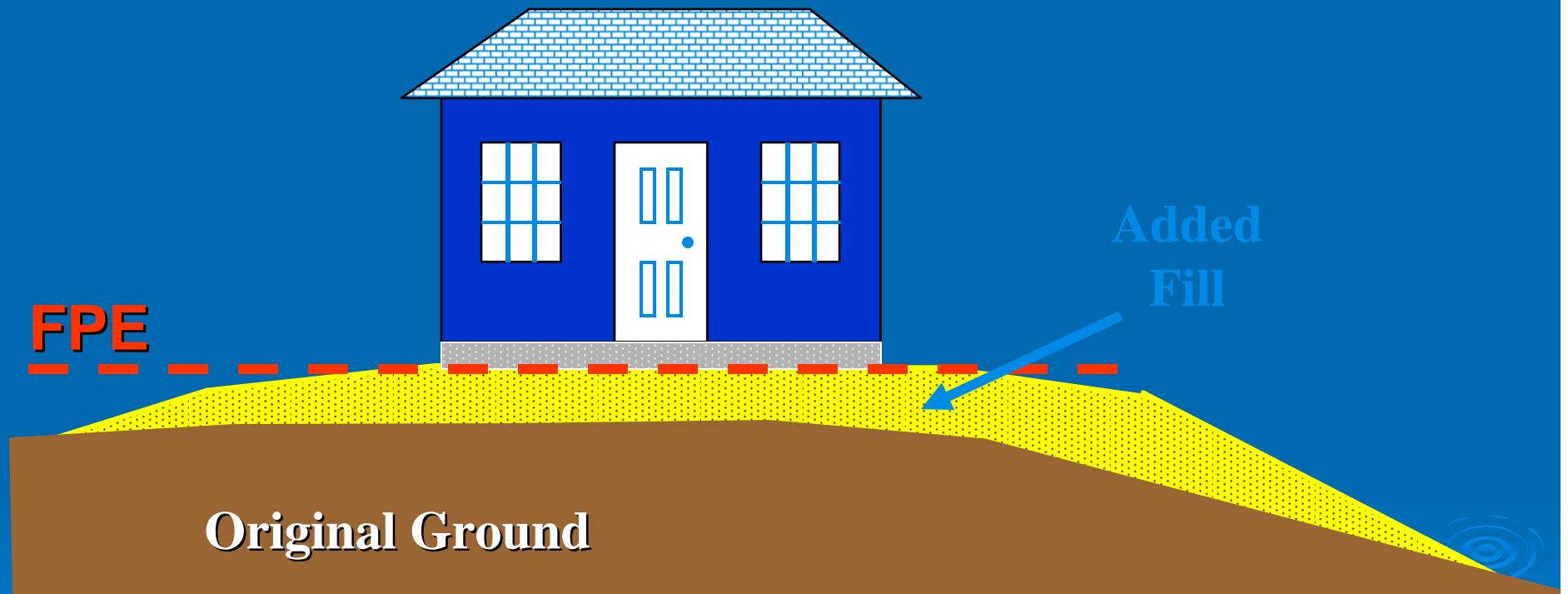
# Existing House

## One-Story with Floor Below FPE





# Substantially Damaged House Raised & Rebuilt above FPE





# Post-Flood Requirements

- 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.



# Post Flood Responsibilities

- **MOVE FAST! Don't wait for FEMA!**
- **Identify, tag, and document flooded structures**
- **Post information for the public on permit requirements. Use media sources.**
- **Provide technical information**
- **Contact State or FEMA for assistance and guidance if needed.**

## State of Illinois Flood Damage Assessment Packet



A cooperative effort by:

Illinois Department of Natural Resources  
Office of Water Resources

Illinois Emergency Management Agency

Federal Emergency Management Agency



2008 update

### Includes Information On:

Steps to take following a flood  
Substantial damage determinations  
Blank damage assessment worksheets  
FEMA Residential Substantial Damage Estimator (RSDE)  
RSDE Field Worksheet  
Information on state floodway permit requirements  
Sample letter  
Sample Notice  
Information on mitigation programs



# Field Inspections During FloodCrest





# Post Flood – Survey

- Document high water marks
- Digital photos
- Mark locations on map
- Post notices on properties
- Follow up letters



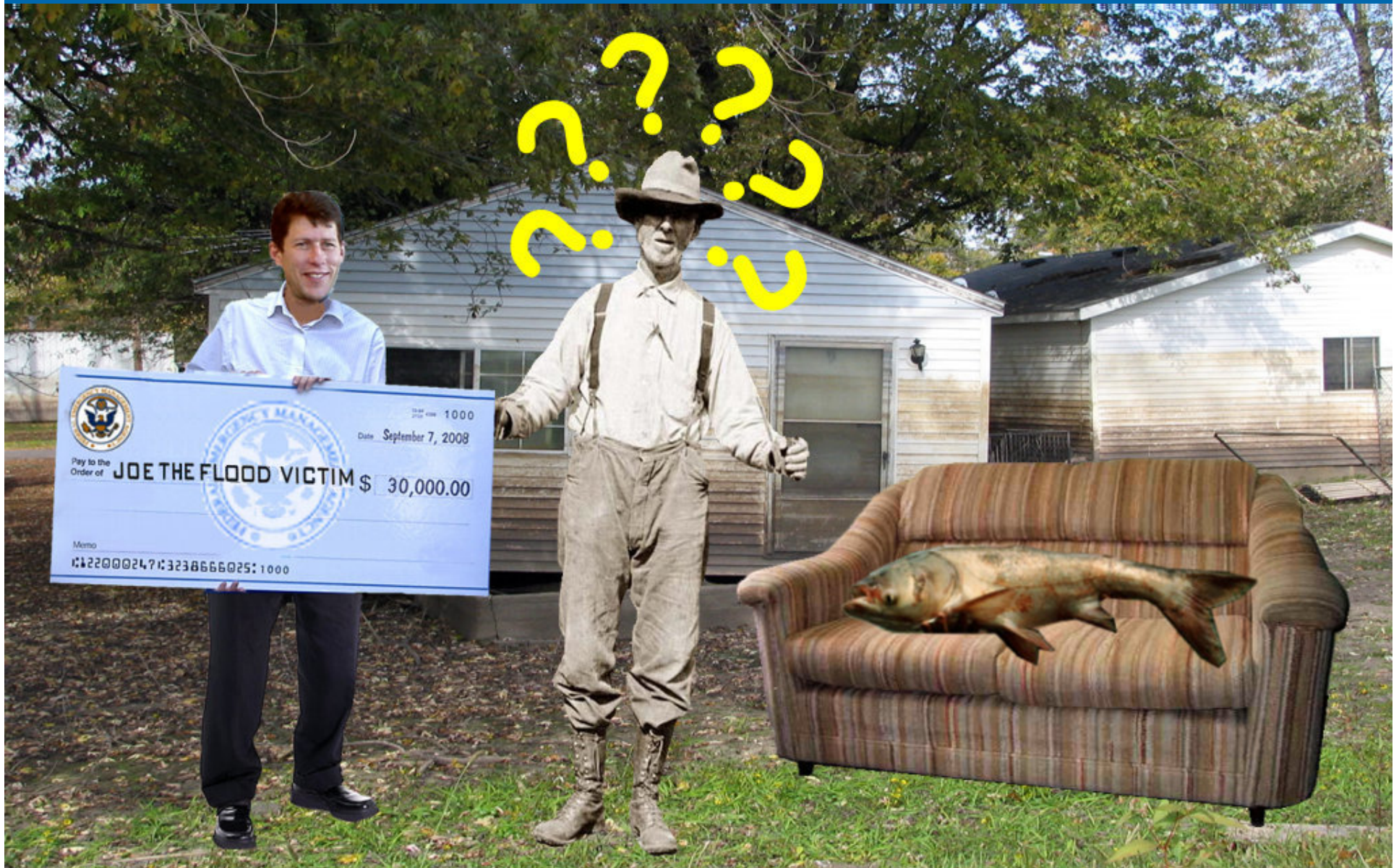


# What is Increase Cost of Compliance (ICC)??

- Part of the standard Flood Insurance Policy.
- Not a grant.
- Up to \$30,000 to assist with code compliance:
  - Floodproof
  - Relocate
  - Elevate
  - Demolish



# ICC opens the Window of Opportunity





# How to Qualify for ICC??

Three conditions must be met for an ICC claim to be paid:

- | Building must be covered by a Standard Flood Insurance Policy.
- | Structure must be substantially damaged or cumulatively substantially damaged by a flood.
- | The building has a history of NFIP claim payments that satisfy the definition of “target group repetitive loss structure”.





## When ICC is Approved

- NFIP will release  $\frac{1}{2}$  of the estimated amount to begin construction.
- NFIP will release the other  $\frac{1}{2}$  when an elevation certificate and local building permit showing compliance is provided.





# QUICK Mitigation is the Key



One month  
after the  
flood!!!!







# ICC Before and After





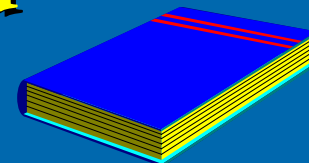
If your community has any Rep Loss properties...

- There is **NO, NO, NO, NO, NO, NO, NO, NO** reason that you should not have adopted a cumulative substantial damage provision in your local ordinance!!!

**NO REASON!**



# 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](#)

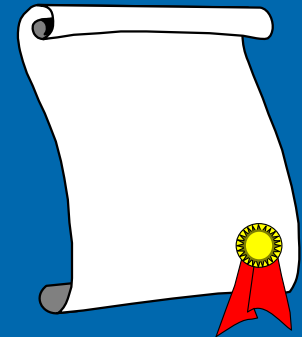
TB 11 - [Crawlspace Construction for Buildings Located in Special Flood Hazard Areas](#)



# Record Keeping

Maintains records of floodplain development...

- Application, Inspection Records
- Compliance Records, i.e., Certified As-Built Lowest Floor Elevations, Variance Actions
- Flood Insurance Rate Map Corrections (LOMCs)
- Assist public in reviewing maps.





# Got GIS? Risk Identification!

GIS\_Floodplain\_Editing\_Map - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

Editor Task: Create New Feature Target: Shortest Path... Spatial Adjustment

1:208,680 BHA FarmLand 3.2

Attributes of Structures1

OBJECTID	SHAPE*	TOWNSHIP	SECTION	PROP ID	OWN NAME	OWN ADD1	OWN ADD2	DESCRIP
1	Point	RICHWOODS	33	42-09-230-007-00	Brado, James & Linda	28080 Spankey Ln	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 07
7	Point	RICHWOODS	33	42-09-230-006-50	Burdell, Martha & Fred	28096 Spankey Ln	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 06
9	Point	RICHWOODS	33	42-09-230-008-00	VACANT	Vacant	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 08
12	Point	RICHWOODS	33	42-09-231-002-00	Kimbrel, Clifford	28174 Spankey Ln	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 10
14	Point	RICHWOODS	33	42-09-230-009-00	Squires, Harry & Pam	28290 Spankey Ln	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 09
15	Point	RICHWOODS	33	42-09-230-001-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 01
16	Point	RICHWOODS	33	42-09-231-006-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 13
17	Point	RICHWOODS	33	42-09-231-013-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 20
18	Point	RICHWOODS	33	42-09-231-012-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 18 EAST
20	Point	RICHWOODS	33	42-09-231-012-50			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 19
21	Point	RICHWOODS	33	42-09-231-010-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 18 WEST
24	Point	RICHWOODS	33	42-09-240-010-00			Fieldon, IL 62031	Plat of Peters Park Block 1, Lot 10
25	Point	RICHWOODS	33	42-09-230-002-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 02 & 03
26	Point	RICHWOODS	33	42-09-230-004-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 04
28	Point	RICHWOODS	33	42-09-230-005-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 05
30	Point	RICHWOODS	33	42-09-231-003-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 11
31	Point	RICHWOODS	33	42-09-231-004-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 12
32	Point	RICHWOODS	33	42-09-231-005-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 15
33	Point	RICHWOODS	33	42-09-231-007-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 14
34	Point	RICHWOODS	33	42-09-231-008-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 16
35	Point	RICHWOODS	33	42-09-231-009-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 17
36	Point	RICHWOODS	33	42-09-240-009-00			Fieldon, IL 62031	Plat of Peters Park Block 1, Lot 09
42	Point	ROSEDALE	6	42-10-206-003-00			Fieldon, IL 62031	Plat of OtterCreek Block 01, Lot 01
43	Point	ROSEDALE	6	42-10-206-004-00			Fieldon, IL 62031	Plat of OtterCreek Block 01, Lot 02
44	Point	ROSEDALE	6	42-10-206-005-00			Fieldon, IL 62031	Plat of OtterCreek Block 01, Lot 03

Select by Attributes

Enter a WHERE clause to select records in the table window.

Method: Create a new selection

[PANEL]  
[ZONE]  
[IN\_OUT]  
[BFE]  
[REQUIRED]  
[LOWEST\_FL]

= <> Like  
> >= And  
< <= Or  
? \* () Not

Is Get Unique Values Go To:

SELECT \* FROM Dataset\Structures1 WHERE:  
[LOWEST\_FL] >= 440

Clear Verify Help Load... Save... Apply Close

FarmlandProtection  
Soil Data  
Fire\_Districts  
Townships  
County Board Districts  
17th Congressional District  
19th Congressional District  
97th State Legis  
111th Leg Dist  
Grafton Voting Districts  
low flights  
☒ high flights

Display Selection CAD Layers

Drawing Arial

2243784.95 952626.41 Feet

start GIS\_Floodplain\_... Microsoft Power... Clip Art Downba... USGS Real-Time... untitled - Paint Microsoft Clip Ga...

3:06 PM



[illegible]



# The Elevation Certificate

U.S. DEPARTMENT OF HOMELAND SECURITY  
Federal Emergency Management Agency  
National Flood Insurance Program

## ELEVATION CERTIFICATE

OMB No. 1660-0008  
Expires March 31, 2012

Important: Read the instructions on pages 1-9

SECTION A - PROPERTY INFORMATION		For Insurance Company Use:
A1. Building Owner's Name		Policy Number
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.		Company NAIC Number
City	State	ZIP Code
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)		
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)		
A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983		
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.		
A7. Building Diagram Number _____		
A8. For a building with a crawlspace or enclosure(s): a) Square footage of crawlspace or enclosure(s) _____ sq ft b) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____ c) Total net area of flood openings in A8.b _____ sq in d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		
A9. For a building with an attached garage: a) Square footage of attached garage _____ sq ft b) No. of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____ c) Total net area of flood openings in A9.b _____ sq in d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
B1. NFIP Community Name & Community Number		B2. County Name		B3. State	
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in item B9. <input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other (Describe) _____					
B11. Indicate elevation datum used for BFE in item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other (Describe) _____					
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? Designation Date _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA <input type="checkbox"/> Yes <input type="checkbox"/> No					

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)	
C1. Building elevations are based on: <input type="checkbox"/> Construction Drawings* <input type="checkbox"/> Building Under Construction* <input type="checkbox"/> Finished Construction	
*A new Elevation Certificate will be required when construction of the building is complete.	
C2. Elevations - Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, ARIA, ARIAE, ARIA1-A30, ARIA/H, AR/AO. Complete items C2.a-h below according to the building diagram specified in item A7. Use the same datum as the BFE.	
Benchmark Utilized _____ Vertical Datum _____	
Conversion/Comments _____	
Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	_____ feet <input type="checkbox"/> meters (Puerto Rico only)
b) Top of the next higher floor	_____ feet <input type="checkbox"/> meters (Puerto Rico only)
c) Bottom of the lowest horizontal structural member (V Zones only)	_____ feet <input type="checkbox"/> meters (Puerto Rico only)
d) Attached garage (top of slab)	_____ feet <input type="checkbox"/> meters (Puerto Rico only)
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____ feet <input type="checkbox"/> meters (Puerto Rico only)
f) Lowest adjacent (finished) grade next to building (LAG)	_____ feet <input type="checkbox"/> meters (Puerto Rico only)
g) Highest adjacent (finished) grade next to building (HAG)	_____ feet <input type="checkbox"/> meters (Puerto Rico only)
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____ feet <input type="checkbox"/> meters (Puerto Rico only)

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION	
This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.	
<input type="checkbox"/> Check here if comments are provided on back of form. Were latitude and longitude in Section A provided by a licensed land surveyor? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Certifier's Name	License Number
Title	Company Name
Address	City
State	ZIP Code
Signature	Date
Telephone	

FEMA Form 81-31, Mar 09

See reverse side for continuation.

Replaces all previous editions

IMPORTANT: In these spaces, copy the corresponding information from Section A.		For Insurance Company Use:
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.		Policy Number
City	State	Company NAIC Number

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)	
Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.	
Comments	
Signature _____ Date _____ <input type="checkbox"/> Check here if attachments	

SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)	
For Zones AO and A (without BFE), complete items E1-E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B, and C. For items E1-E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.	
E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG). a) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ feet <input type="checkbox"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the HAG. b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ feet <input type="checkbox"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the LAG.	
E2. For Building Diagrams 8-9 with permanent flood openings provided in Section A items 8 and/or 9 (see pages 8-9 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____ feet <input type="checkbox"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the HAG.	
E3. Attached garage (top of slab) is _____ feet <input type="checkbox"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the HAG.	
E4. Top of platform of machinery and/or equipment servicing the building is _____ feet <input type="checkbox"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the HAG.	
E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown. The local official must certify this information in Section G.	

SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION	
The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.	
Property Owner's or Owner's Authorized Representative's Name _____	
Address	City
State	ZIP Code
Signature	Date
Telephone	
Comments	
<input type="checkbox"/> Check here if attachments	

SECTION G - COMMUNITY INFORMATION (OPTIONAL)	
The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in items G8 and G9.	
G1. <input type="checkbox"/> The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)	
G2. <input type="checkbox"/> A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.	
G3. <input type="checkbox"/> The following information (items G4-G9) is provided for community floodplain management purposes.	
G4. Permit Number	G5. Date Permit Issued
G6. Date Certificate Of Compliance/Occupancy issued	
G7. This permit has been issued for: <input type="checkbox"/> New Construction <input type="checkbox"/> Substantial Improvement	
G8. Elevation of as-built lowest floor (including basement) of the building	_____ feet <input type="checkbox"/> meters (PR) Datum _____
G9. BFE or (in Zone AO) depth of flooding at the building site	_____ feet <input type="checkbox"/> meters (PR) Datum _____
G10. Community's design flood elevation	_____ feet <input type="checkbox"/> meters (PR) Datum _____

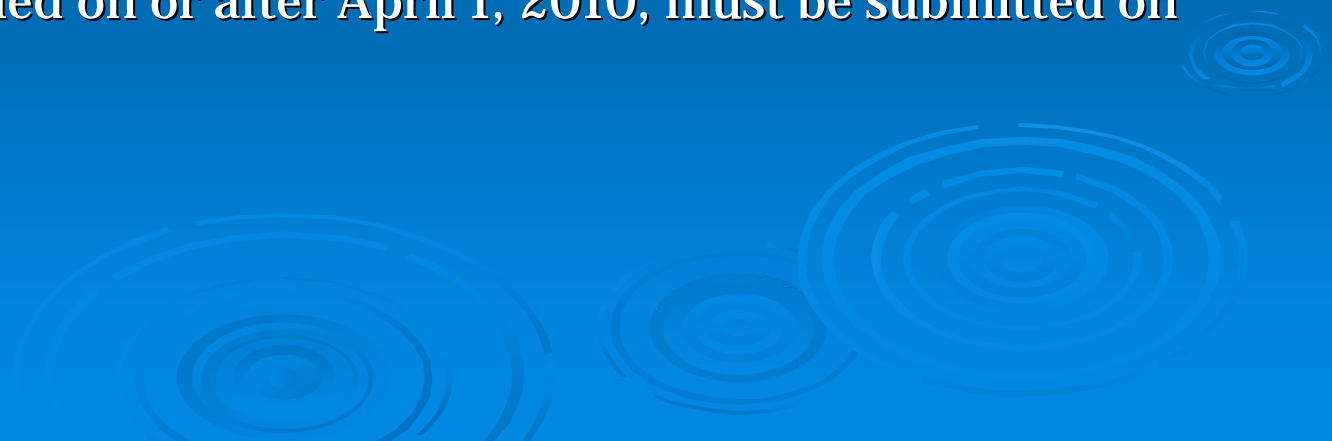
Local Official's Name	Title
Community Name	Telephone
Signature	Date
Comments	
<input type="checkbox"/> Check here if attachments	

FEMA Form 81-31, Mar 09

Replaces all previous editions



# What About The Date??

- FEMA's new Elevation Certificate (EC) was approved for use, effective March 16, 2009, through March 31, 2012.
  - The new EC will be phased in on a voluntary basis until March 31, 2010.
  - Existing (older) Elevation Certificates may be used until March 31, 2010.
  - Elevations certified on or after April 1, 2010, must be submitted on the new form.
- 



# Section A

## What's New

**Identify whether the enclosure, crawlspace, or garage has engineered flood openings.**

**Two new Building Diagrams have been added:**

- 1. The new Diagram 1B is for raised-slab-on-grade or slab-on-stem-wall-with-fill single- and multiple-floor buildings.**
- 1. The new Diagram 9 is for all buildings (other than split-level) elevated on a subgrade crawlspace.**



# Section C – Building Elevation Information

## SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings\* ☐ Building Under Construction\* ☐ Finished Construction

\*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete Items C2.a-g below according to the building diagram specified in Item A7.

Benchmark Utilized  Vertical Datum

Conversion/Comments

Check the measurement used.

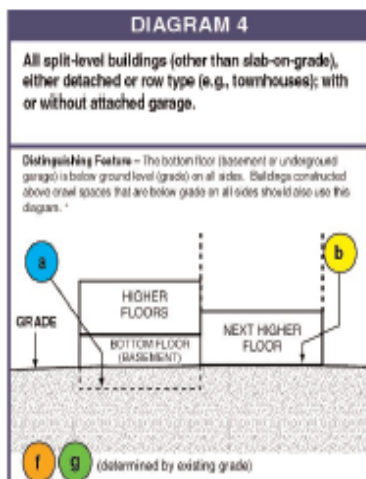
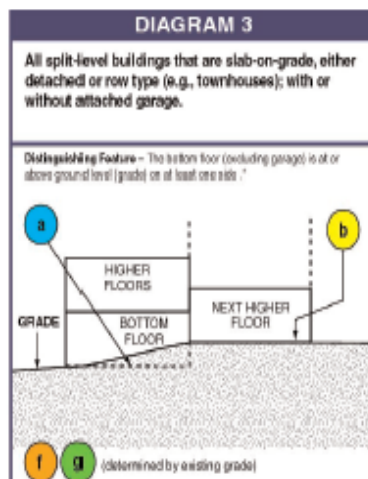
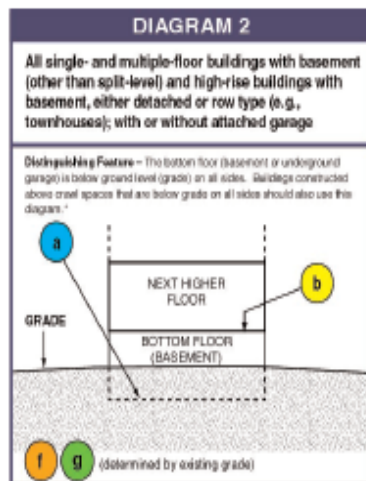
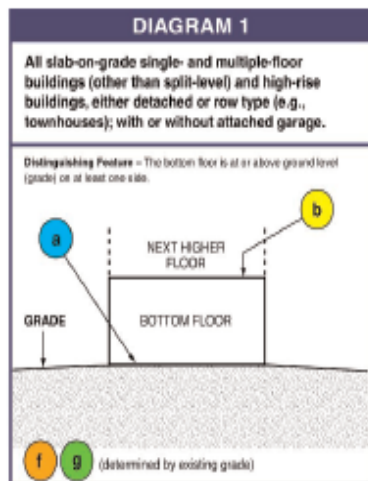
- |  |   |                               |  |
|--|---|-------------------------------|--|
| a) Top of bottom floor (including basement, crawl space, or enclosure floor).                                    | <input type="text"/> <input type="text"/> | <input type="checkbox"/> feet | <input type="checkbox"/> meters (Puerto Rico only) |
| b) Top of the next higher floor  | <input type="text"/> <input type="text"/> | <input type="checkbox"/> feet | <input type="checkbox"/> meters (Puerto Rico only) |
| c) Bottom of the lowest horizontal structural member (V Zones only)  | <input type="text"/> <input type="text"/> | <input type="checkbox"/> feet | <input type="checkbox"/> meters (Puerto Rico only) |
| d) Attached garage (top of slab)   | <input type="text"/> <input type="text"/> | <input type="checkbox"/> feet | <input type="checkbox"/> meters (Puerto Rico only) |
| e) Lowest elevation of machinery or equipment servicing the building<br>(Describe type of equipment in Comments) | <input type="text"/> <input type="text"/> | <input type="checkbox"/> feet | <input type="checkbox"/> meters (Puerto Rico only) |
| f) Lowest adjacent (finished) grade (LAG)  | <input type="text"/> <input type="text"/> | <input type="checkbox"/> feet | <input type="checkbox"/> meters (Puerto Rico only) |
| g) Highest adjacent (finished) grade (HAG)   | <input type="text"/> <input type="text"/> | <input type="checkbox"/> feet | <input type="checkbox"/> meters (Puerto Rico only) |



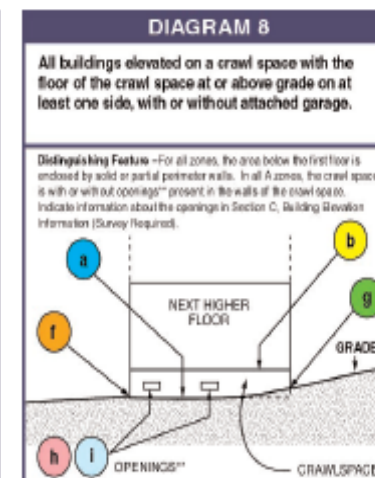
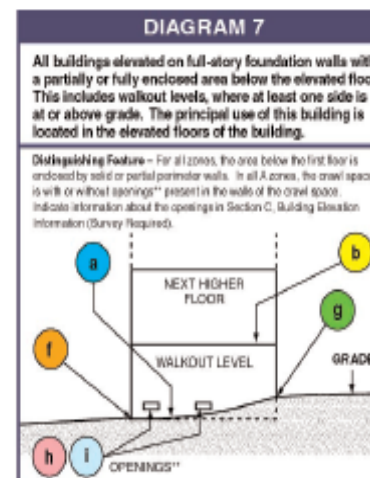
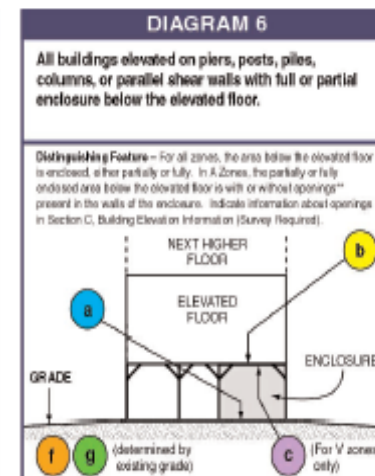
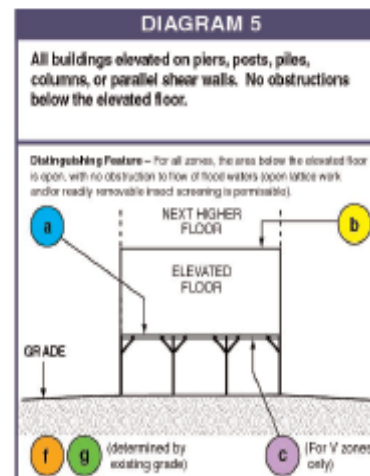
## BUILDING DIAGRAMS

The following eight diagrams illustrate various types of buildings. Compare the features of the building being certified with the features shown in the diagrams and select the diagram most applicable. Enter the diagram number in Item C2 and the elevations in Items C3a-C3g.

In A zones, the floor elevation is taken at the top finished surface of the floor indicated; in V zones, the floor elevation is taken at the bottom of the lowest horizontal structural member (see drawing in instructions for Section C).



\* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.



\*\* An "opening" (flood vent) is defined as a permanent opening in a wall that allows for the free passage of water automatically in both directions without human intervention. Under the NFIR, a minimum of two openings is required for enclosures or crawl spaces with a total net area of not less than one square inch for every square foot of area enclosed. Each opening must be on different sides of the enclosed area. If a building has more than one enclosed area, each area must have openings on exterior walls to allow floodwater to directly enter. The bottom of the openings must be no higher than one foot above the grade underneath the flood vents. Alternatively, you may submit a certification by a registered professional engineer or architect that the design will allow for the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening.



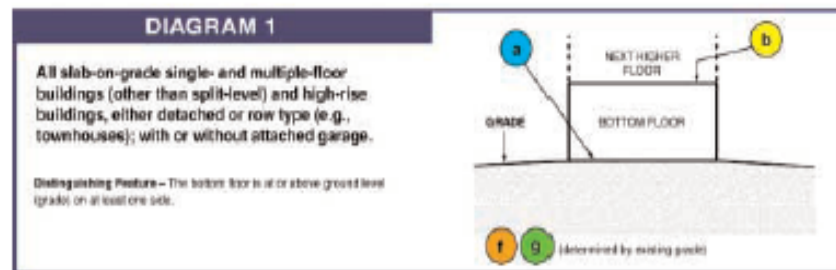


FEDERAL EMERGENCY MANAGEMENT AGENCY  
NATIONAL FLOOD INSURANCE PROGRAM

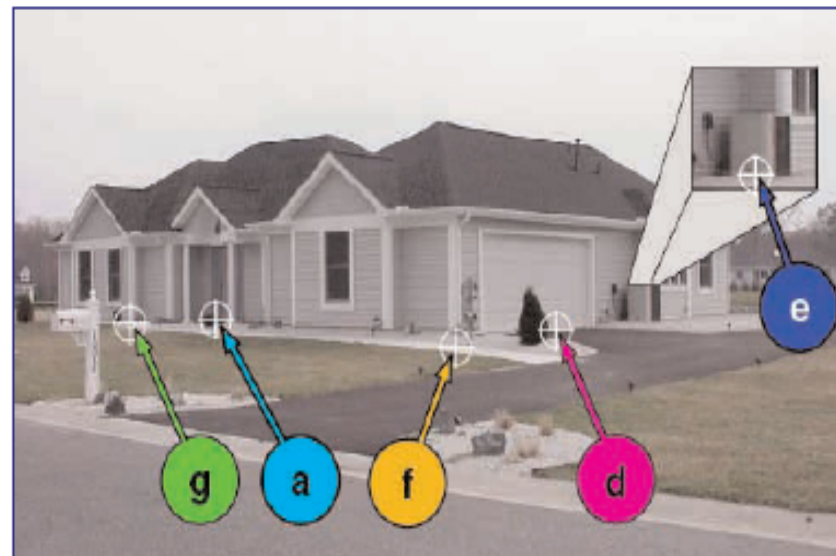
## Elevation Certificate

Building Diagram 1  
Example Photographs





**Slab-on-grade, one story building with attached garage.**



- Top of bottom floor (measure at doorsill)
- Attached garage (measure at top of slab)
- Elevation of machinery and equipment (measure at top of platform)
- Lowest adjacent finished grade
- Highest adjacent finished grade
- and Indicate No Openings in the garage
- and Not Applicable



# Section A – Property Information Openings

U.S. DEPARTMENT OF HOMELAND SECURITY  
Federal Emergency Management Agency  
National Flood Insurance Program

## ELEVATION CERTIFICATE

OMB No. 1660-0008  
Expires February 28, 2009

Important: Read the instructions on pages 1-8.

SECTION A - PROPERTY INFORMATION		For Insurance Company Use:
A1. Building Owner's Name <input type="text"/>		Policy Number
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. <input type="text"/>		Company NAIC Number
City <input type="text"/> State <input type="text"/> ZIP Code <input type="text"/>		
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) <input type="text"/>		
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) <input type="text"/>		
A5. Latitude/Longitude: Lat. <input type="text"/> Long. <input type="text"/>		Horizontal Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.		
A7. Building Diagram Number <input type="text"/>		
A8. For a building with a crawl space or enclosure(s), provide: a) Square footage of crawl space or enclosure(s) <input type="text"/> sq ft b) No. of permanent flood openings in the crawl space or enclosure(s) walls within 1.0 foot above adjacent grade <input type="text"/> c) Total net area of flood openings in A8.b <input type="text"/> sq in		A9. For a building with an attached garage, provide: a) Square footage of attached garage <input type="text"/> sq ft b) No. of permanent flood openings in the attached garage walls within 1.0 foot above adjacent grade <input type="text"/> c) Total net area of flood openings in A9.b <input type="text"/> sq in



# Copies of the Elevation Certificate

Download from:

<http://www.fema.gov/>

or

simply go to [www.FEMA.gov](http://www.FEMA.gov) and  
search “elevation certificate”



# National Flood Insurance Program (NFIP)

- Now covers 5.1 million policies in 20,000 communities.
- \$994 billion in risk exposure (almost all high risk properties).



- In floodplains - less than 50% coverage.
- In all risk zones – less than 10% coverage.
- Adverse selection – only those who need it buy it.



# Flood Insurance Coverage

	<u>Structure</u>	<u>Content</u>
Single Family Home	\$250,000	\$100,000
Non-Residential	\$500,000	\$500,000

- ✗ Waiting period 30 days
- ✗ Insurance required  
if Disaster Assistance is received



# Insurable Property





# 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



# NFIP Does NOT Cover

- Basement improvements
- Basement personal belongings
- Structures built over water





# Who Can Buy Flood Insurance?

- Anybody in a community participating in the NFIP.
- Anywhere within that community (all zones)





# Who MUST buy Flood Insurance?

➤ Required for buildings in SFHA (floodplain) when:

- Making
- Increasing
- Renewing
- Extending

a mortgage, home equity, improvement, construction, commercial or farm credit loan

**Remember MIRE**



# 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?





# How Much Coverage is Required?

- **Amount of the loan at initiation**

**or**

- **Maximum available through the NFIP**

**or**

- **Value of building at loan origination**

- **Whichever is less**





# Lender's Responsibility

Insurance is required when:

- A lender makes, renews, extends, or increases a loan.
- That loan is from a federally regulated or insured lender
- The loan collateral is insurable under the NFIP's standard policy.
- That collateral is or will be located in a high risk flood area (A Zone)
- The community participates in the NFIP.



# Lenders Documentation

**“a lender’s decision made in the exercise of due diligence and good faith as to the location of a property, which is the subject of the loan, on such a map will be final and sufficient to comply with the Act”.**

Do lenders HAVE to depend on the Zone Determination Company’s floodplain determination?

**NO!**



# 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 ?



## Flood Insurance Requirements For Typical Residential Sitings In FEMA/HUD Designated Special Flood Areas

STRUCTURE [E] IN SFHA ALTHOUGH ON HIGH BLUFF - (THIS SITUATION CAN RESULT FROM INADEQUATE BASE DATA/MAPS):

LENDER MUST REQUIRE INSURANCE INITIALLY BUT BUYER [BUILDER] MAY REQUEST "LETTER OF MAP AMENDMENT" UPON APPROVAL BUYER/BUILDER MAY RECEIVE REFUND.

PROPERTY IN FLOOD HAZARD  
STRUCTURE [A] IS NOT:

INSURANCE IS NOT REQUIRED.

STRUCTURE [B] IN SFHA - BUT SUBSTANTIALLY  
ELEVATED ON NATURAL KNOLL - TOO SMALL TO  
BE SHOWN ON MAP.

LENDER MUST INITIALLY REQUIRE INSURANCE.  
BUYER [OR BUILDER] CAN REQUEST "LETTER  
OF MAP AMENDMENT" - IF REQUEST IS  
GRANTED, INSURANCE MAY BE REFUNDED.

STRUCTURE [C] PARTIALLY  
IN SFHA.

INSURANCE IS REQUIRED.

STRUCTURE [D] LOCATED IN  
SFHA, NOT ELEVATED.

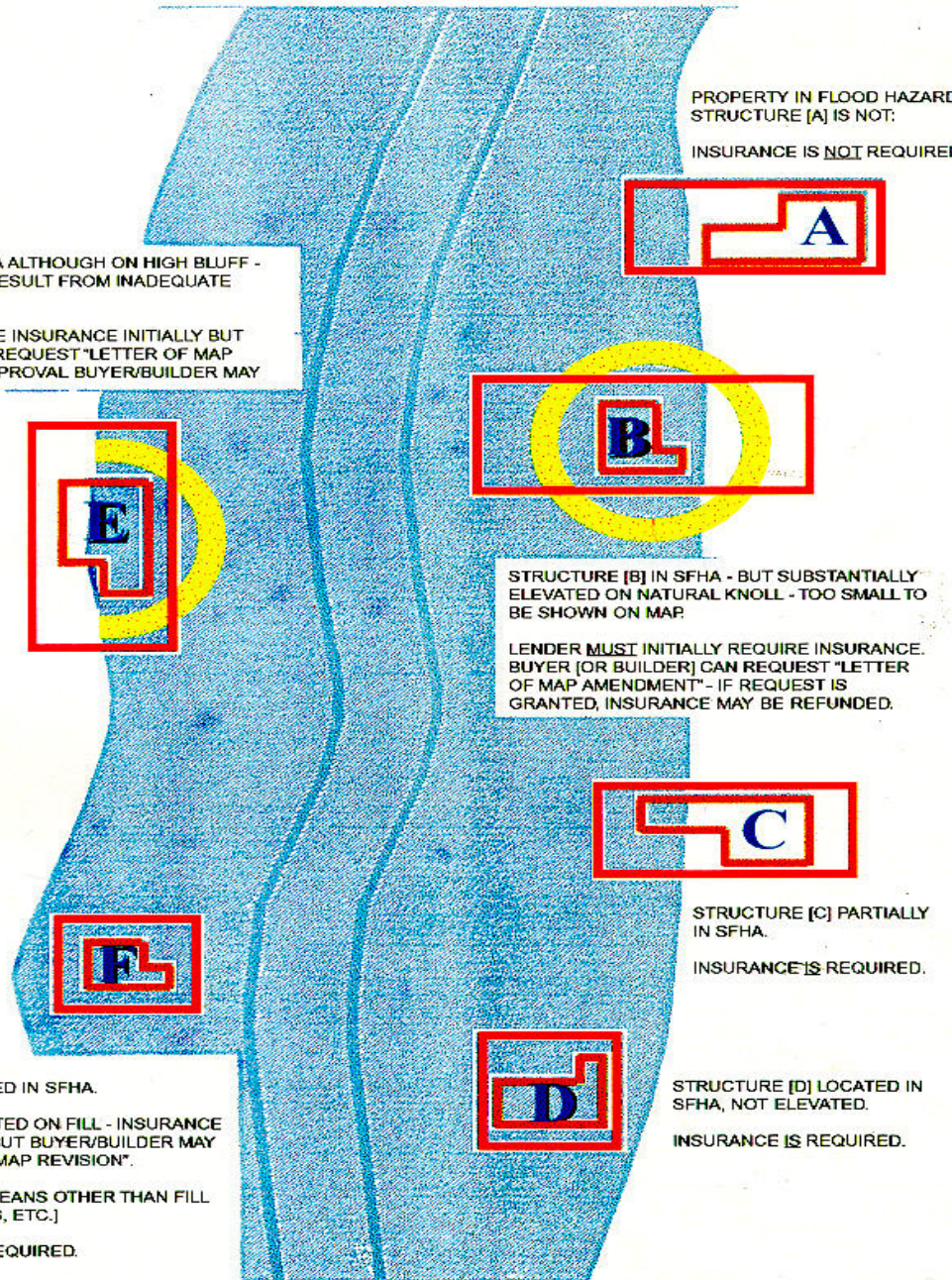
INSURANCE IS REQUIRED.

STRUCTURE [F] LOCATED IN SFHA.

SUBSTANTIALLY ELEVATED ON FILL - INSURANCE  
INITIALLY REQUIRED - BUT BUYER/BUILDER MAY  
REQUEST "LETTER OF MAP REVISION".

ELEVATED THROUGH MEANS OTHER THAN FILL  
(POSTS, PIERS, PILINGS, ETC.)

INSURANCE ALWAYS REQUIRED.





# Waiting Period

- 30-day waiting period between purchase of flood insurance and coverage
- Exceptions include:
  - Mandatory purchase
  - Map revision





# Deductibles

## Standard

- \$1,000

Post FIRM

-\$2,000

Pre FIRM

**Higher deductibles available for  
lower premiums**

**Separate deductible for building  
and contents**



# Comparison Cost of Flood Insurance

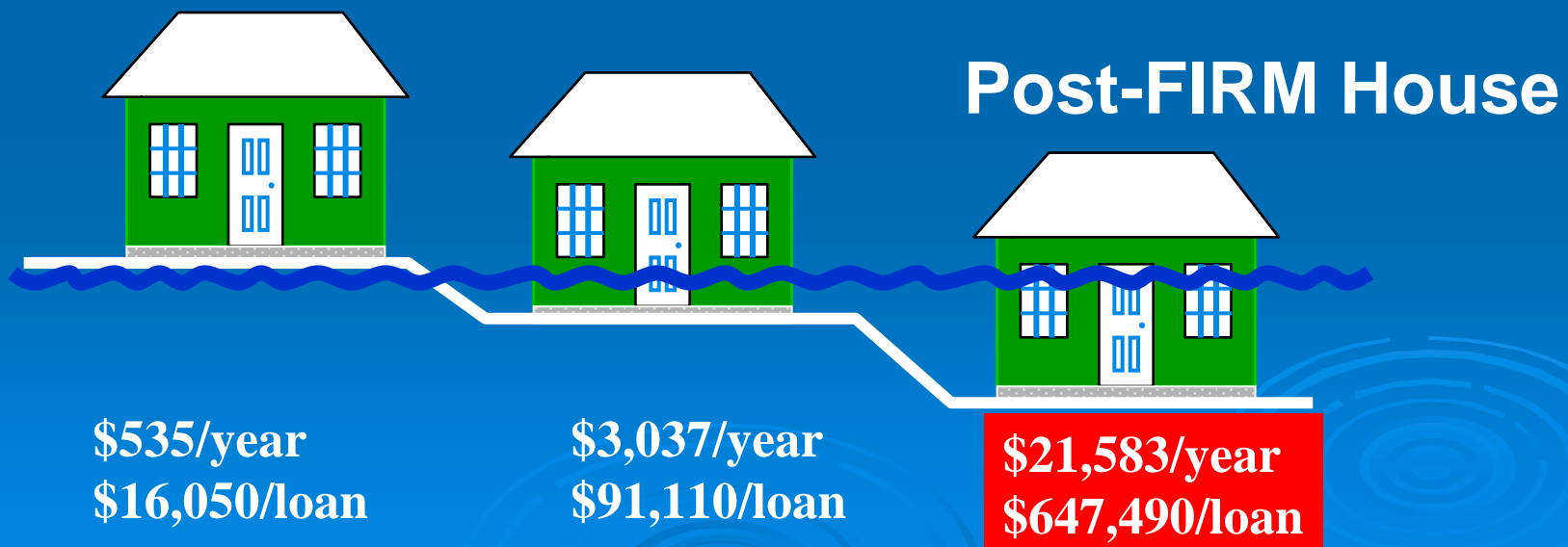
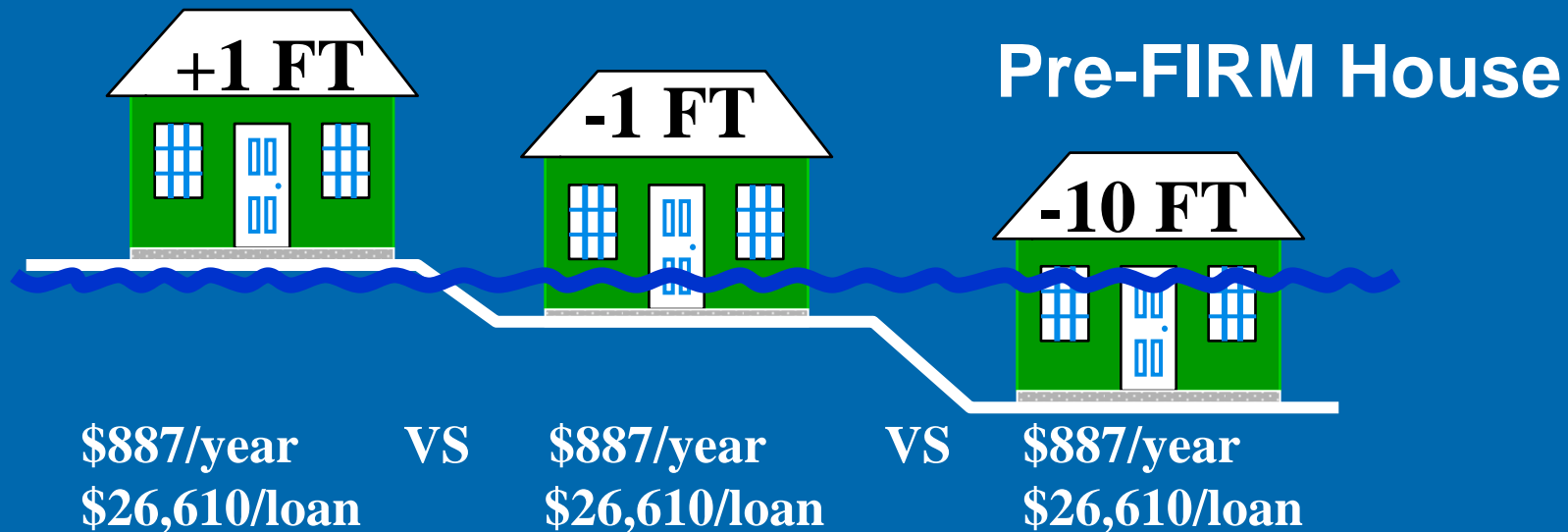
## *Existing Pre-FIRM House*



Based on \$75,000 bldg. & \$20,000 contents coverage. Single family, no basement, standard deductible



# Comparison cost of Flood Insurance





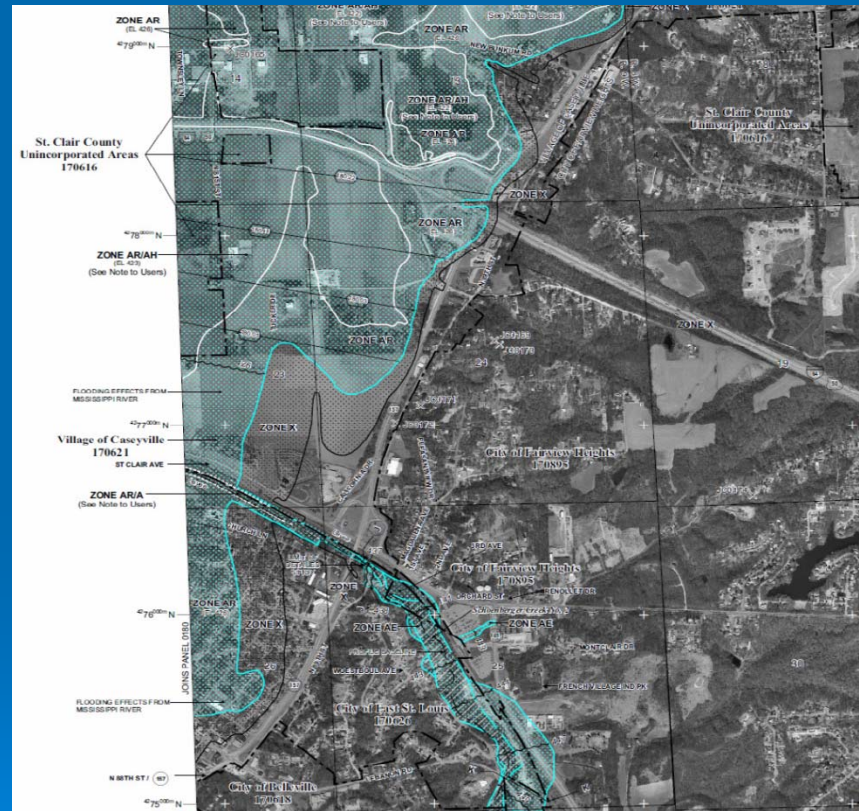
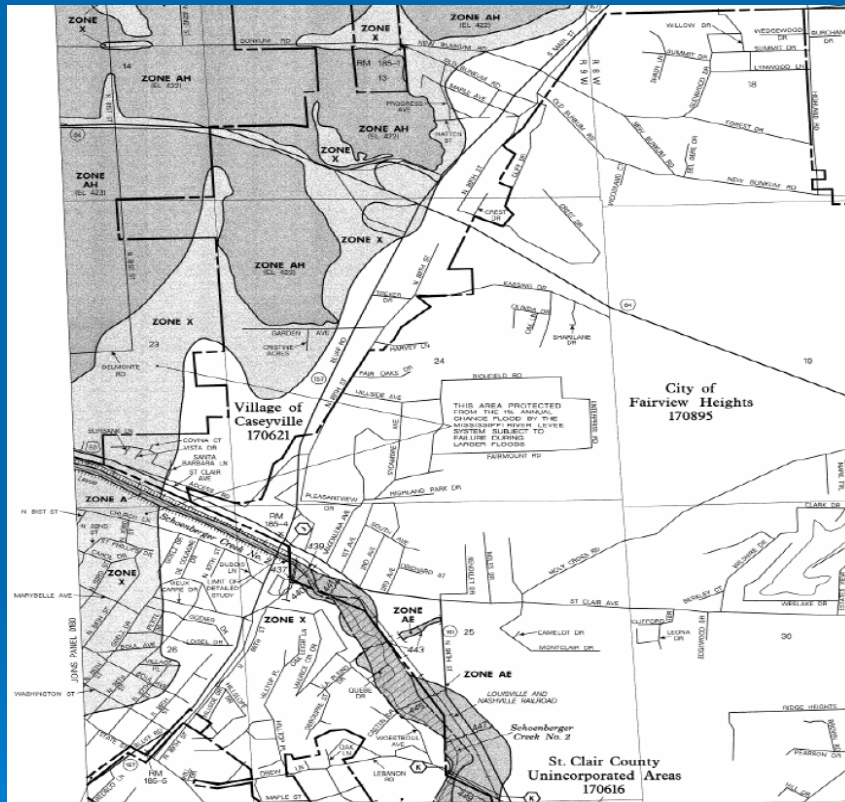
# The Preferred Risk Policy (PRP)

- Written only for areas located outside of the mapped floodplain (B,C and X Zones)
- Sold in “packaged” coverage amounts. Very cheap!

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



# PRP Extension





# PRP Extension

- Effective January 1, 2011, buildings that are newly designated within a Special Flood Hazard Area due to a map revision are eligible for coverage under PRP for a period of up to 2 years after the effective date of the map.




# October 1, 2010 NFIP Rate Changes

Post FIRM A1-30 and AE Zones	Premium will increase 6%
Pre-FIRM AE Zones	Premium will increase 3%
AO, AH, AOB and AHB Zones	Premium will increase 1%
Unnumbered A Zones Where elevations have not been determined	Premium will increase 5%
A99 Zones and AR Zones	Premium will increase 9%



# How can Homeowners reduce the cost of their Flood Insurance?

- With lenders approval, increase the amount of deductible
  - If location of the structure is a close call, apply for Letter of Map Amendment
  - Mitigate to reduce vulnerability
- 





**David Schein, Senior Natural Hazards Specialist  
Insurance Liaison  
FEMA Region V  
536 South Clark Street  
Chicago, IL 60605  
312-408-5539  
[David.schein@dhs.gov](mailto:David.schein@dhs.gov)**



**Rich Slevin  
Senior Territory Training Manager  
National Flood Insurance Program  
H2O Partners, Inc.  
2900 N. Quinlan Park Rd., Suite 240-135  
Austin, TX 78732  
888.318.5112  
[rich@h2opartnersusa.com](mailto:rich@h2opartnersusa.com)**





**NATIONAL  
FLOOD  
INSURANCE  
PROGRAM**

**“We Can’t Replace Your  
Memories ...  
But We Can Help You  
Build New Ones”**

**EXPLODING THE MYTHS:**

- **Flood Insurance does not cover basements.**
- **You can only buy flood insurance in the floodplain.**
- **Federal disaster assistance will cover your damages.**
- **You can’t buy flood insurance during a flood.**
- **Flood Insurance is only available from the government.**



# 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



# Community Audits

Illinois  
LEADS THE  
NATION  
in the  
number of  
communities  
kicked out of  
the National  
Flood  
Insurance  
Program

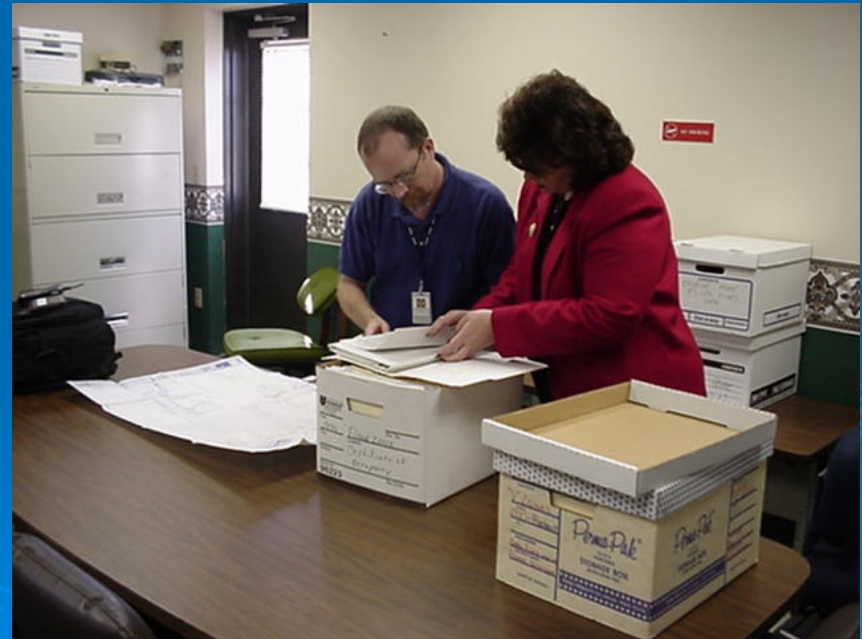


I'm here to see your  
Floodplain Permit files



# Community Assistance Visit

The CAV provides a means to render technical assistance and a process to correct program deficiencies and violations.





# 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 below BFE;
- 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;
- Fill and debris.




# Community Assistance Visit





## 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!

The background of the slide is a solid blue color. In the lower right portion, there are several faint, concentric white circles that resemble ripples on water, adding a visual element to the design.

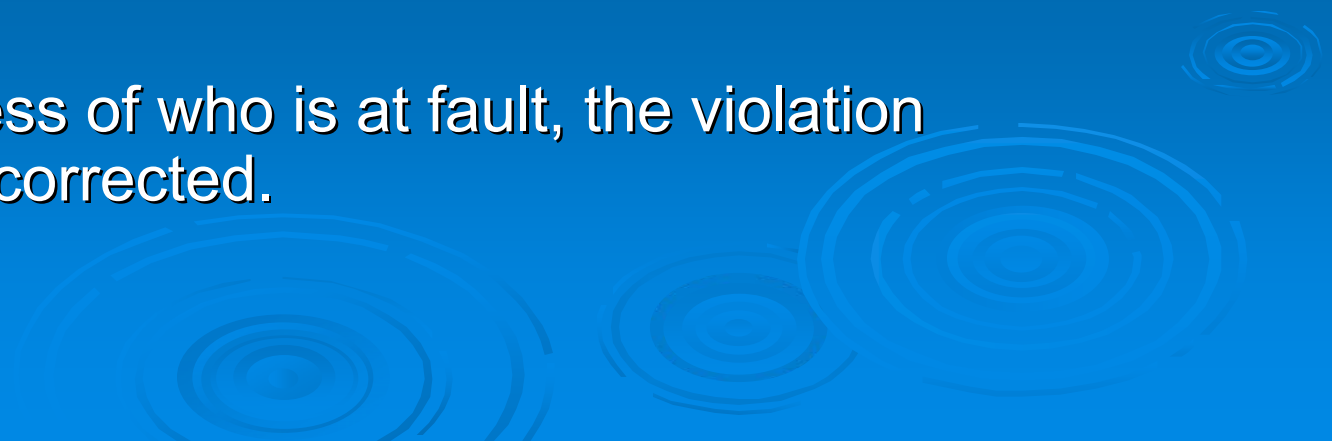


# WHO'S TO BLAME?

- 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 maximum probation period is one year.
- 




# Suspension

A community is subject to suspension unless it corrects program deficiencies and remedies all violations by the compliance deadlines set during the probation period.





# **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.**
- 

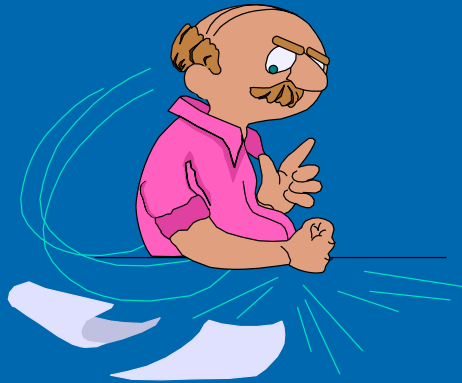


# If a Variance is Issued

A community must

- Maintain a record of all variance actions, including those denied, along with the justifications (findings of fact).
- Report such actions in Biennial Report to FEMA.





## A Word of Advice...

### **DO NOT GRANT VARIANCES!**

They place people and property at risk,  
and flood insurance costs sky-rocket.

If you're going to grant a variance be sure  
to **DOCUMENT!...**

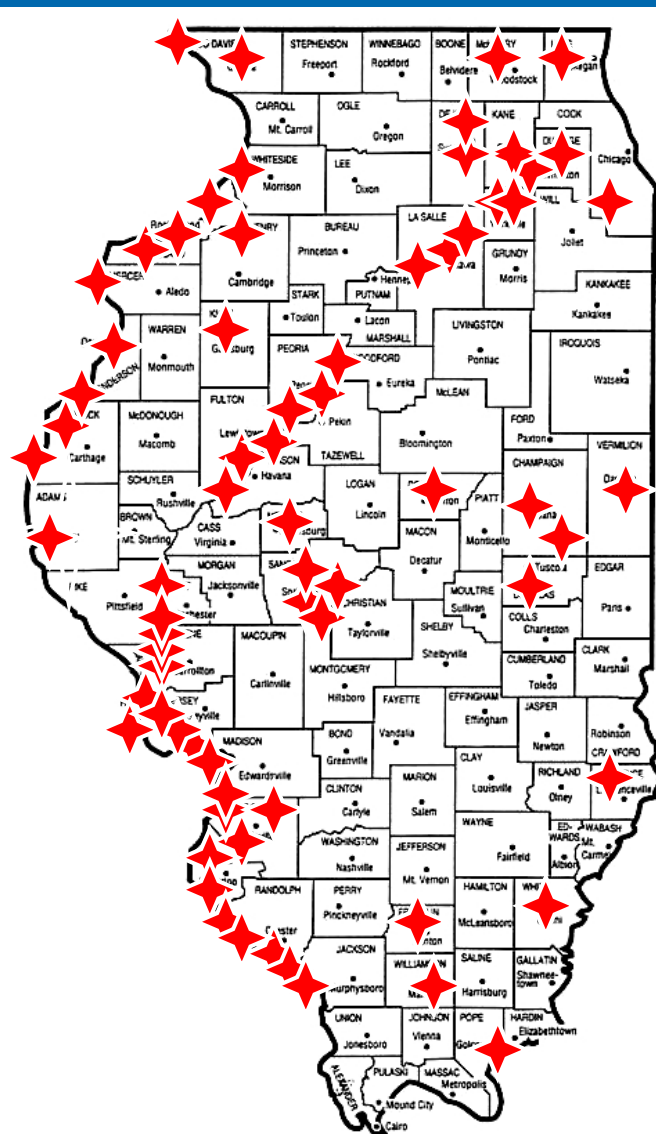
...This is the community's only protection  
after the flood when damages have  
occurred.



# Mitigation Works!

## 3,500 Buyouts

Adams County	23
Aurora	25
Aurora Township	3
Bath	8
Belleville	52
Birds	67
Birds Bridge	15
Browning	54
Calhoun County	70
Carmi	32
Champaign County	1
Chatham	9
Cleveland	21
Clinton	38
Danville	23
DeKalb	6
DuPage County	49
East Dubuque	8
East St. Louis	572
Elizabethtown	2
Elsah	2
Evansville	18
Fults	25
Grafton	106
Greene County	113
Hamburg	3
Hancock County	54
Hardin	43
Havana	44
Hillview	15
Jersey County	93
JoDaviess County	2
Kampsville	13
Kaskaskia	6
Keithsburg	110
Kendall County	7



Kirkland	65
Knox County	17
LaSalle County	14
Lake County	53
Madison County	47
Marion	46
Mason County	28
McHenry County	1
Montgomery	39
Monroe County	1,400
Oquawka	32
Ottawa	57
Palos Hills	3
Pawnee	3
Pearl	4
Peoria	14
Peoria County	100
Peoria Heights	23
Petersburg	42
Pike County	33
Pontoosuc	20
Randolph County	24
Riverside	10
Riverton	6
Rock Island County	63
Rockwood	11
Rocky Run	12
Sangamon County	61
Shorewood	47
Sidney	10
St. Clair County	270
Thebes	1
Valmeyer	244
Villa Grove	15
Warsaw	5
West Frankfort	31
Whiteside County	8



# Grafton, Illinois...my favorite city!





# City of Ottawa



**1982. The Ottawa “flats”.  
Under water.**



**2008. The same Ottawa “flats”  
After buyouts.**



# Mitigation Grant Programs

FEMA currently has 4 mitigation grant programs:

- Hazards Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA)
- Pre-Disaster Mitigation (PDM)
- Repetitive Flood Claims (RFC)
- ICC (part of the flood insurance policy)



# Hazard Mitigation Grant Program (HMGP)

- FEMA allocates a percentage of the total disaster assistance generated in response to a Presidential declaration toward HMGP.
- Program is administered by the State.
- Cost share with the State/Local Community.
- Voluntary and Competitive (No Guarantee).
- Projects must meet benefit-cost, environmental and other Federal, State and local criteria.
- 4 Priorities: Mitigation Plan, Rep Loss, Sub Dam, & primary residence



# Flood Mitigation Assistance (FMA)

- Yearly Allocation from Insurance Policy Base.
- Requires Mitigation Plan.
- Administered by the State.
- Repetitive Loss properties are targeted.
- Community needs to be in good standing in the NFIP.
- Applied to insured structures only.
- Voluntary and Competitive (No Guarantee).



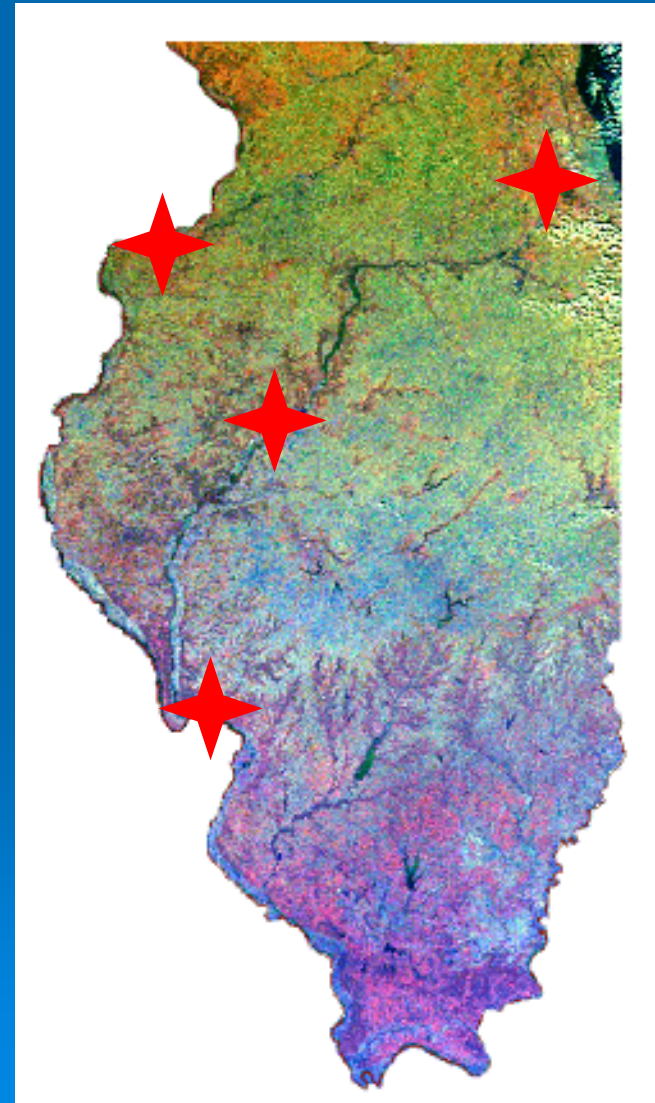
# Pre-Disaster Mitigation Program (PDM)

- Provides technical and financial assistance to States and communities for pre-disaster hazard mitigation activities that complement a comprehensive mitigation program.
- FEMA provides grants for mitigation activities such as planning and the implementation of projects identified through the evaluation of natural hazards.



# Rep Loss in Illinois

- 2,815 rep loss properties (5.5% of 50,000 policies)
- \$67 million in total rep. loss payments (31% of our total claims)
- Located in 303 communities
- 1993 - #5 on the national list!
- 2007- #15 on the national list!
- Most greivous remaining Rep Loss properties are located on Federal lease property.





## Repetitive Loss

- Four or more separate claim payments of more than \$5,000 each (including building and contents payments); or
- Two or more separate claim payments (building payments only) where the total of the payments exceeds the current market value of the property.



# Repetitive Flood Claims (RFC) Program

- Must be a NFIP Community.
- \$10 Million available annually.
- Priority is Rep. Loss.
- Eligible up to 100% Federal cost.

# Severe Repetitive Loss (SRL) Program

- Same rules as RFC.
- \$40 million available annually.
- Priority is severe rep loss.
- Prioritized to those with the greatest savings to the NFIP based on a benefit/cost analysis.



# Mitigation Planning

- Communities must have mitigation plans to be eligible for Federal Mitigation projects. (DMA 2000).
- Approved plans by April 2005.

## Natural Hazards Mitigation Plan

### Kane County, Illinois



Natural Hazards Mitigation Planning Committee



# Current mitigation plan status

**Green = Plan done**  
**Yellow = Developing plans**  
**White = Haven't started**  
**Black = non-NFIP county**



## State of Illinois Local Mitigation Plan (LMP) Status 2/1/11



Local jurisdictions with an approved/adopted LMP  
52/102 = 51%

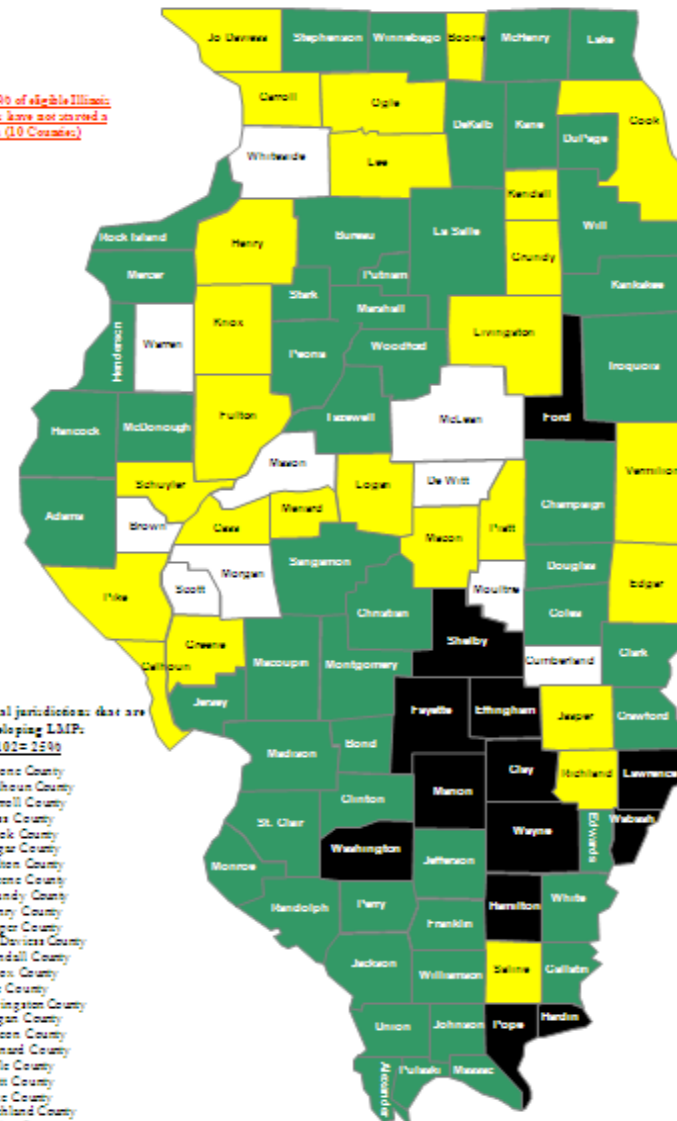
- Adams County
- Alexander County
- Bond County
- Bureau County
- Champaign County
- Christian County
- Clark County
- Clinton County
- Coles County
- Crawford County
- DeKalb County
- Douglas County
- DuPage County
- Edwards County
- Franklin County
- Gallatin County
- Hancock County
- Henderson County
- Ingham County
- Jackson County
- Jefferson County
- Jersey County
- Johnson County
- Kane County
- Kankakee County
- Lake County
- LaSalle County
- Macoupin County
- Madison County
- Marshall County
- Massac County
- McDonough County
- McHenry County
- Menard County
- Montgomery County
- Peoria County
- Perry County
- Pulaski County
- Putnam County
- Randolph County
- Rock Island County
- Sangamon County
- Stark County
- Stephenson County
- St. Clair County
- Tazewell County
- Union County
- White County
- Will County
- Williamson County
- Winnebago County
- Woodford County

Note: 19% of eligible Illinois Counties have not started a plan (10 Counties)

Local jurisdictions that are developing LMPs  
26/102 = 26%

- Boone County
- Calhoun County
- Cass County
- Carroll County
- Cass County
- Cook County
- Edgar County
- Fulton County
- Greene County
- Grundy County
- Henry County
- Jasper County
- Kendall County
- Knox County
- Lee County
- Livingston County
- Logan County
- Mason County
- Menard County
- Ogle County
- Pike County
- Pulaski County
- Saline County
- Schuyler County
- Vermilion County

Local jurisdictions not participating in the NFIP are ineligible for FEMA/FMA/RFC/SRL funding  
13/102 = 13%







# **IEMA Point of Contact**

**Ron Davis**  
**State Mitigation Officer**  
**Illinois Emergency Management Agency**  
**1035 Outer Park Drive**  
**Springfield, IL 62704**

**217-524-1003**

**[Ron.Davis@illinois.gov](mailto:Ron.Davis@illinois.gov)**



# Community Rating System (CRS)



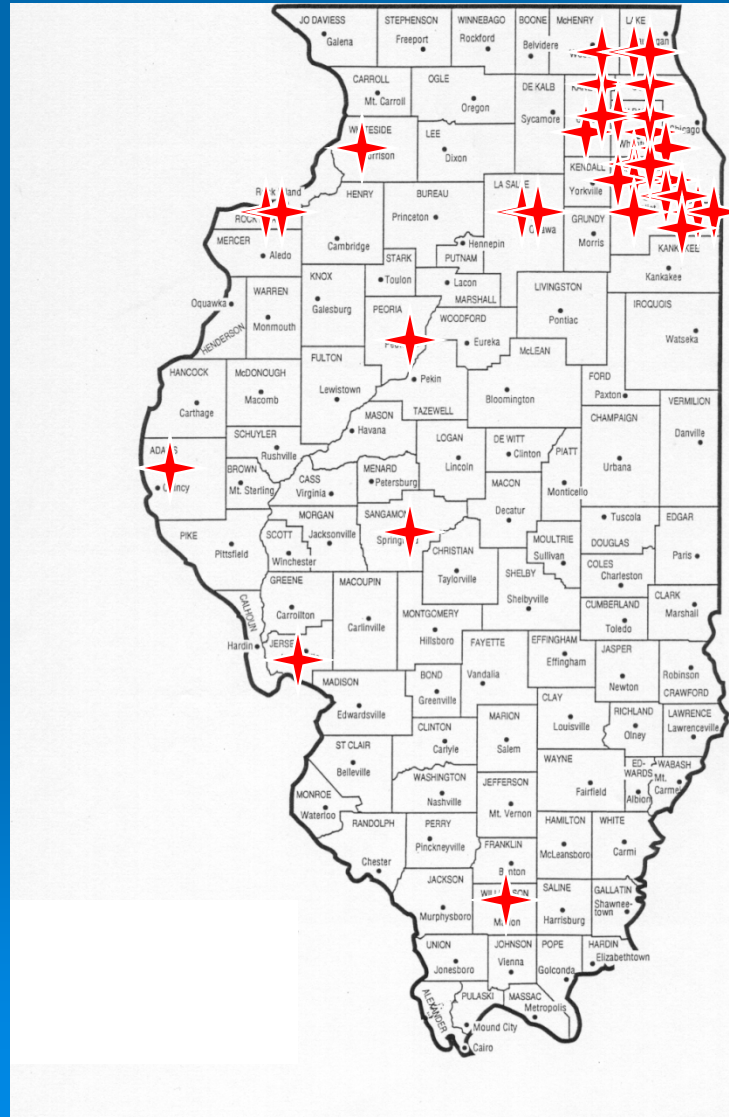
Exceeding the  
Requirement for  
NFIP Participation

Another way to  
reduce the cost of  
a flood policy!



# Community Rating System in Illinois (43 Communities)

Adams County  
Addison  
Bartlett  
Calumet City  
Carbondale  
Champaign  
Country Club Hills  
Deerfield  
DeKalb City  
Des Plaines  
Downers Grove  
Flossmoor  
Glendale Heights  
Hampshire  
Hoffman Estates  
LaSalle County  
Lansing  
Lincolnshire  
Lisle  
Moline  
Mount Prospect



Naperville  
North Utica  
Northbrook  
Oak Brook  
Orland Hills  
Ottawa  
Palatine  
Peoria County  
Prospect Heights  
Rock Island County  
Sangamon County  
South Holland  
St. Charles  
Tinley Park  
Wheeling  
Willowbrook  
Whiteside County  
Wood Dale  
Woodstock



# CRS in Illinois

- Ranked #6 in the nation for participation
- Six communities are class 5 or better
- Only four communities in the nation with higher CRS ratings.
- 40% of all flood insurance policies in Illinois are subject to CRS discounts.



# Incentive



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



# 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





# 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





# CRS Activities

## ➤ *500 Flood Damage Reduction Activities*

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





# CRS Activities

## ➤ *600 Flood Preparedness Activities*

- 610 Flood Warning Program
- 620 Levee Safety
- 630 Dam Safety





# CRS Premium Discounts

<u>Class</u>	<u>Points</u>	<u>Discount</u>
9	500-999	5%
8	1000-1499	10%
7	1500-1999	15%
6	2000-2499	20%
5	2500-2999	25%
4	3000-3499	30%
3	3500-3999	35%
2	4000-4499	40%
1	4500+	45%



# ISO Representative for Illinois

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Peru, Illinois 61354  
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# FEMA Point of Contact

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Natural Hazard Specialist  
536 South Clark Street  
Chicago, IL 60605-1521

312-408-5321

[Frank.shockey@dhs.gov](mailto:Frank.shockey@dhs.gov)



# IDNR/OWR Point of Contact:



Paul Osman

Floodplain Programs Manager

Illinois Department of Natural Resources/Water Resources

One Natural Resources Way

Springfield, IL 62702

(217) 782-4428

[paul.osman@illinois.gov](mailto:paul.osman@illinois.gov)



# IF YOU REMEMBER ANYTHING, REMEMBER.....

1. Get your communities floodplain maps!  
1-800-358-9616
2. Anything and everything is floodplain  
“development”. Review Permits!
3. If it is in the floodway (or a floodplain with  
no mapped floodway)...get a state permit  
first.
4. If your community is in the NFIP, local  
permits are required for any development.
5. Buildings must be elevated or floodproofed









THANK YOU

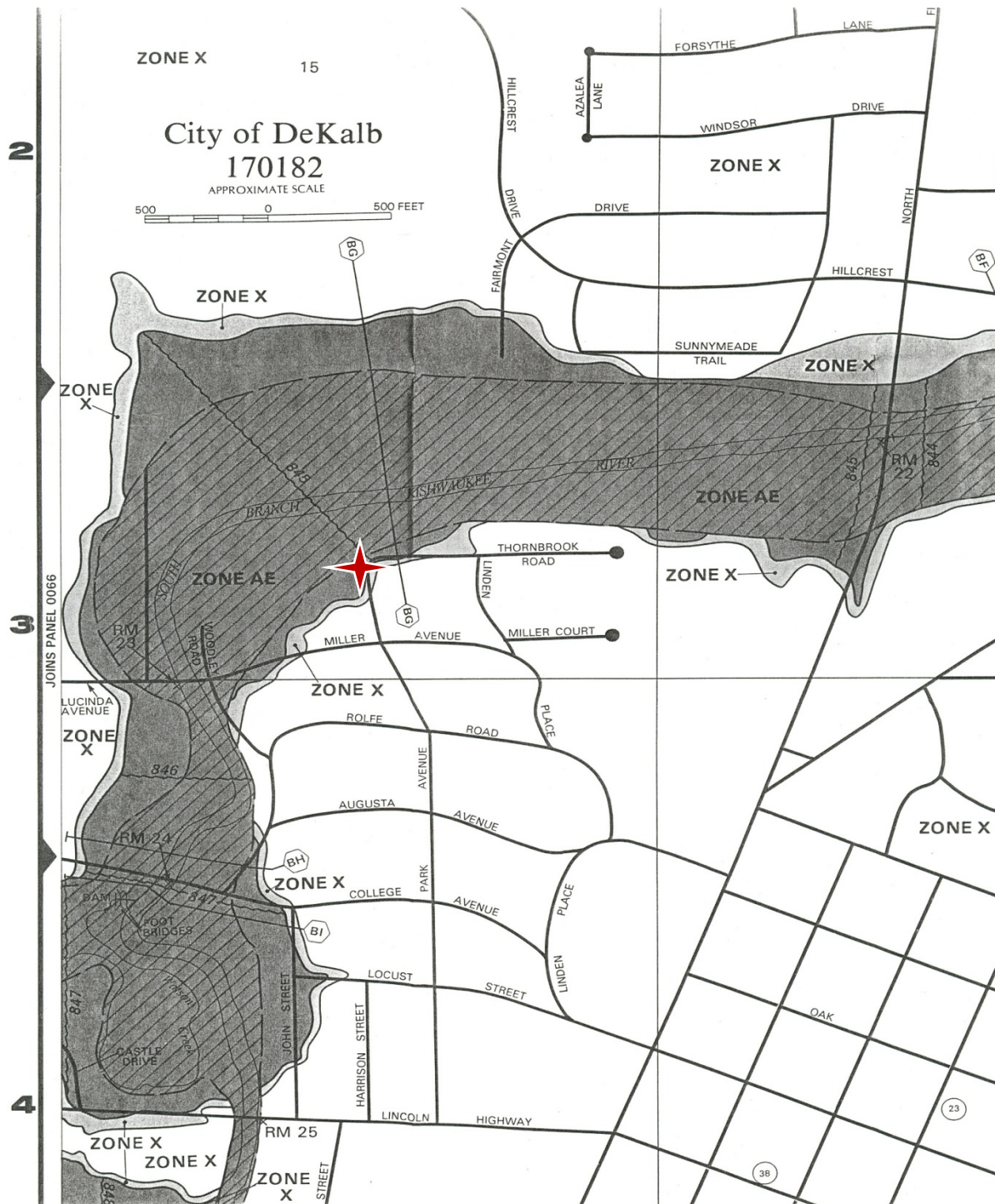


**A great View! Look at all that GREEN  
in Grafton!**



**THANK YOU**





# Floodplain Exercise

Single family home located at 1212 Thornbrook Road (on the curve)

1. Floodplain?
2. Floodway?
3. Base Flood Elevation?
4. Construction method to use?



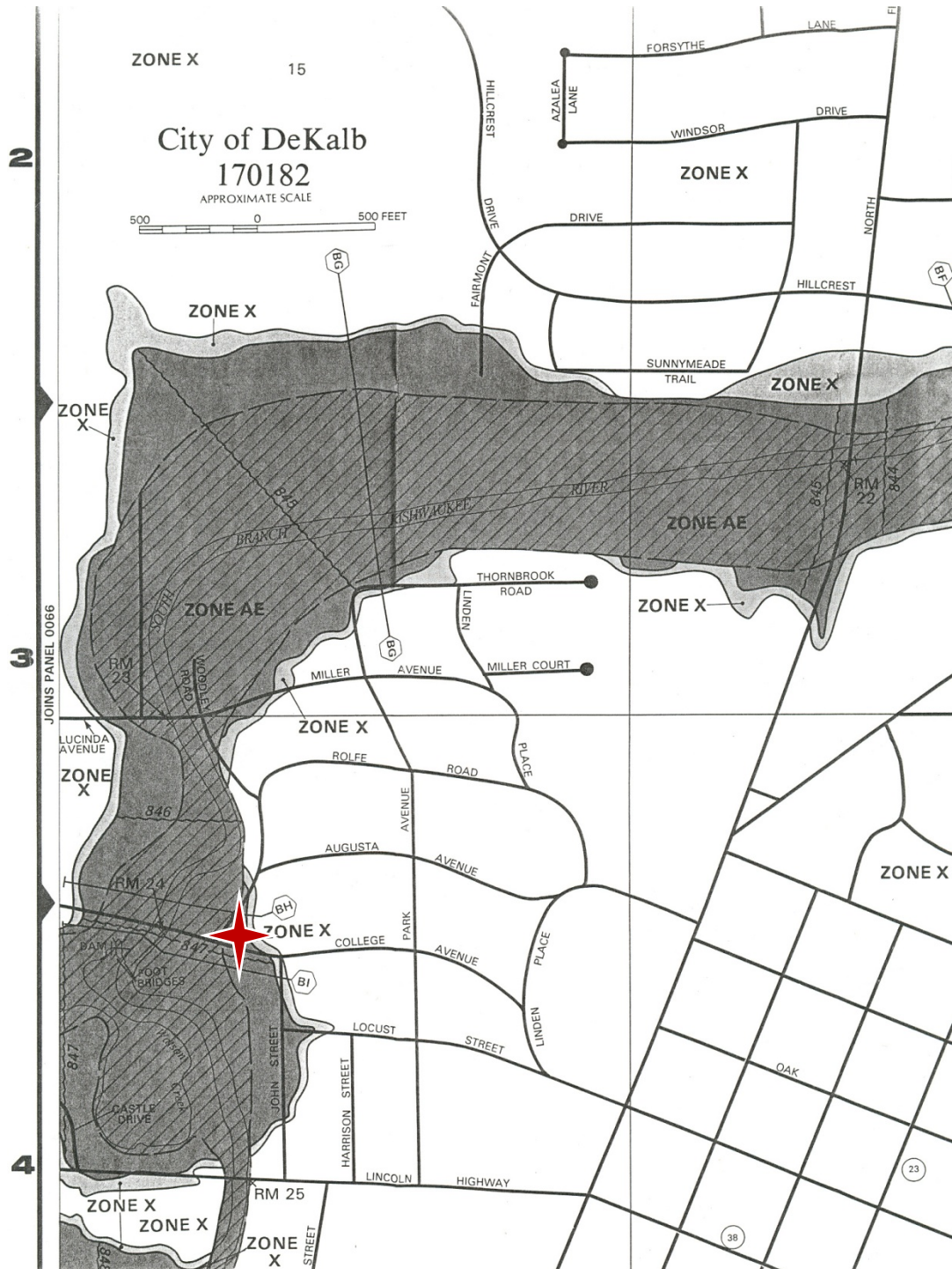




# Floodplain Exercise

A convenient store is proposed at 2207 E. College Avenue (northeast corner of College and Rolfe Road)

1. Floodplain?
2. Floodway?
3. Base Flood Elevation?
4. Construction method to be used?





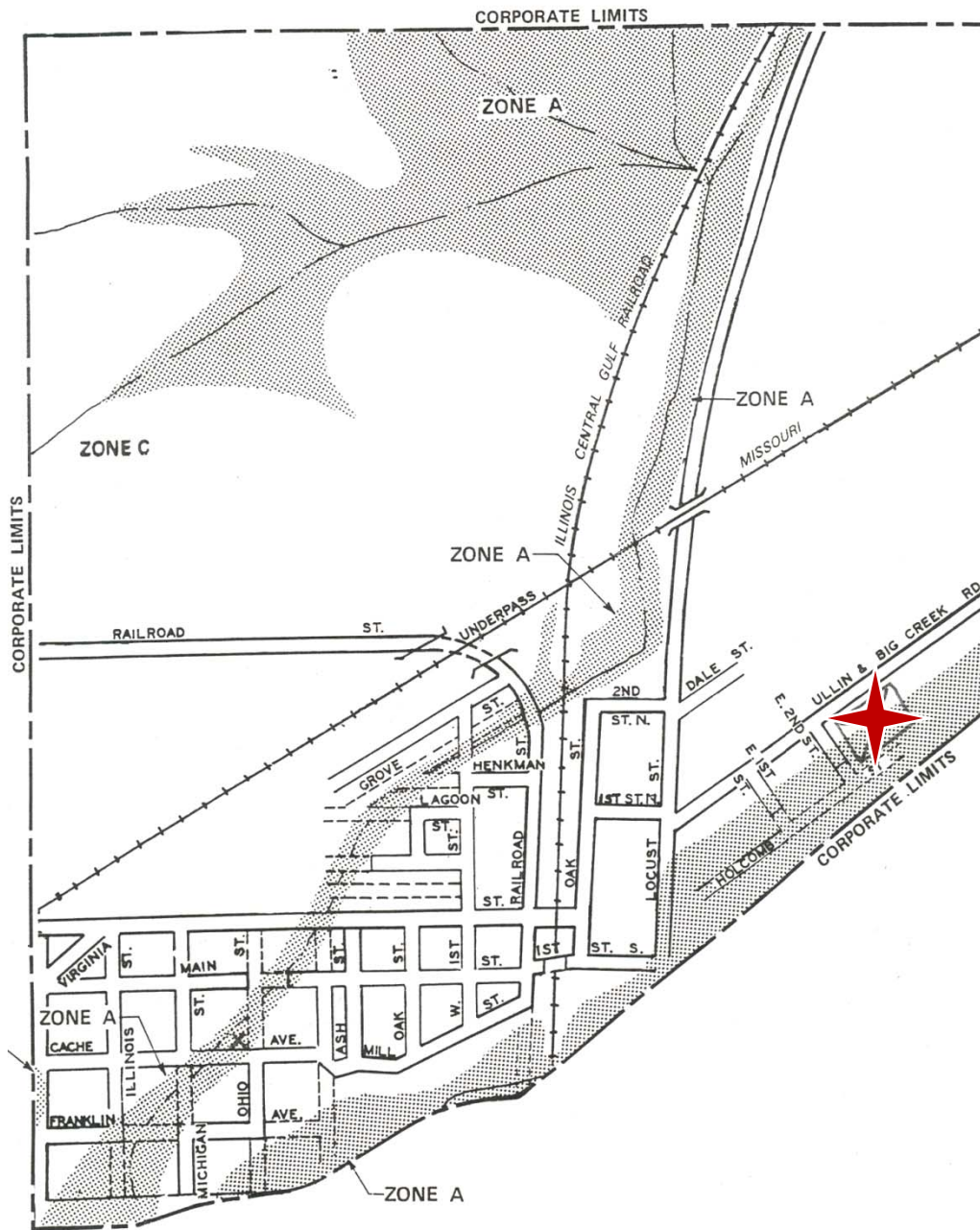
1. Floodplain?
2. Floodway?
3. Base Flood Elevation?
4. Lender zone determination?
5. Filling on lot?
6. Nursing home w/ basement?



# Floodplain Exercise

Ullin is getting a new Super Walmart on the corner of Ullin Road and East 2<sup>nd</sup> Street!!!!

1. Floodplain?
2. Floodway?
3. Base Flood Elevation?
4. Construction methods to be used?





# Floodplain Exercise

The Mayor of Ullin got a raise! He wants to do a \$100,000 improvement to his double-wide trailer. He lives on the corner of Ohio and Cache Street.

1. Floodplain?
2. Floodway?
3. State permit required?
4. Local permit required?
5. Base flood elevation?

