Tuesday March 8, 2011
IAFSM Conference
Normal, IL
Illinois? Floods?

• 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.
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!

<table>
<thead>
<tr>
<th>Decade</th>
<th>Billions (adjusted to 1999 dollars)</th>
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<tbody>
<tr>
<td>1910s</td>
<td>$2.2</td>
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<tr>
<td>1980s</td>
<td>$3.3</td>
</tr>
<tr>
<td>1990s</td>
<td>$5.6</td>
</tr>
</tbody>
</table>

(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.
What's wrong with these pictures?
The Hydro ILLOGICAL Cycle

Rain

Flood Amnesia

Panic

Recovery & Reconstruction

Flooding

Concern

Devastation
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 "1% chance flood".

"100-year" 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

Base (or 100-year Flood)
Understanding the Floodway
Understanding the Floodway

FLOODWAY + FLOODWAY FRINGE = 100 YEAR FLOODPLAIN
SURCHARGE NOT TO EXCEED 0.1 FOOT
Understanding the Floodway

Obstructed Floodway
Base Flood Is Higher
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

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

- Redelineated SFHA
- Original FIRM SFHA
- Cross section
- Base flood elevation
- LIDAR-contour lines

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 Reality – March 08

Map 8. Progress of Mapping Activities Through End State
As of March 2008

[Map of the United States showing progress of mapping activities through end state, with different shades indicating stages of completion.]
Illinois Flood Map Modernization

County Schedule

Illinois Flood Map Modernization
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
  - Click “Map Store”
  - Click “Map Search”
  - Type in address
  - Click “view” map
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!
The Risk M-A-P Vision

Flood Map Modernization
Risk MAP

Identify Risk
Assess Risk
Mitigate Risk
Communicate Risk

Risk MAP:
REDUCE LOSS OF LIFE & PROPERTY AT LOCAL LEVELS

Continuous Renewal & Improvement
Transfer Risk
Reduce Risk

Assess Present & Future Risks
Goal – Measure Quantifiable Risk Reduction

Risk Mapping, Assessment, and Planning (Risk MAP) Life Cycle
Flood Insurance Study (FIS)
Components of a Flood Insurance Study (FIS)

- 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)

Flood Profile
# Floodway Data Table

<table>
<thead>
<tr>
<th>CROSS SECTION</th>
<th>DISTANCE¹ (FEET)</th>
<th>WIDTH (FEET)</th>
<th>SECTION AREA (SQUARE FEET)</th>
<th>MEAN VELOCITY (FEET PER SECOND)</th>
<th>BASE FLOOD WATER SURFACE ELEVATION (FEET NGVD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>REGULATORY</td>
<td>WITHOUT FLOODWAY</td>
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<td>837</td>
<td>14.0</td>
<td>271.2</td>
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</tbody>
</table>

¹ Feet Above Confluence With Lake Highwater
² Elevation Computed Without Consideration of Backwater From Lake Highwater
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.

QG page 15
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”
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/fhm/ll_mb-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
A letter from FEMA stating that a proposed development project would not be inundated by the 1% chance flood if built as proposed.
Technical Bulletin 10-01

Diagram:
- BFE
- Granular Drainage Layer
- Basement Floor
- Engineered Fill
- Compacted Fill or Soil of Similar Character (Verified by Borings)
- Sump Pump (1/4 Horsepower or Greater, With Emergency Backup Power and Discharge Above the BFE)
- 20 Feet or Greater
- 5 Feet or Less
- 5 Feet or Greater
LOMR-F?
With a basement below BFE??
NOT in Rock Island County!
NOT while I’ve got a say!
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 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

<table>
<thead>
<tr>
<th>Request Description</th>
<th>Fee</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Lot/Single-Structure LOMA</td>
<td>Free</td>
<td>N/A</td>
</tr>
<tr>
<td>Single-Lot/Single-Structure LOMA and LOMR-F</td>
<td>$500</td>
<td>Flat Fee</td>
</tr>
<tr>
<td>Single-Lot/Single-Structure LOMR-F</td>
<td>$425</td>
<td>Flat Fee</td>
</tr>
<tr>
<td>Single-Lot/Single-Structure LOMR-F Based on As-Built Information (LOMR-F previously issued by FEMA)</td>
<td>$325</td>
<td>Flat Fee</td>
</tr>
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</table>

## Requests for Multiple-Lot, Multiple-Structure Map Changes

<table>
<thead>
<tr>
<th>Request Description</th>
<th>Fee</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple-Lot/Multiple-Structure LOMA</td>
<td>Free</td>
<td>N/A</td>
</tr>
<tr>
<td>Multiple-Lot/Multiple-Structure LOMA and LOMR-F</td>
<td>$700</td>
<td>Flat Fee</td>
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<tr>
<td>Multiple-Lot/Multiple-Structure LOMR-F</td>
<td>$800</td>
<td>Flat Fee</td>
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<tr>
<td>Multiple-Lot/Multiple-Structure LOMR-F Based on As-Built Information (LOMR-F previously issued by FEMA)</td>
<td>$700</td>
<td>Flat Fee</td>
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</table>

## Requests for Map Changes Requiring Special Technical Review

<table>
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<tr>
<th>Request Description</th>
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<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOMR Based on New Hydrology, Bridge, Culvert, Channel, or Combination Thereof</td>
<td>$4,400</td>
<td>Flat Fee</td>
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<tr>
<td>LOMR Based on Levee, Berm, or Other Structural Measures</td>
<td>$6,050</td>
<td>Flat Fee</td>
</tr>
<tr>
<td>LOMR/PMIR Based on Bridge, Culvert, Channel, or Combination Thereof</td>
<td>$5,300</td>
<td>Flat Fee</td>
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<tr>
<td>LOMR/PMIR Based on Levee, Berm, or Other Structural Measures</td>
<td>$7,150</td>
<td>Flat Fee</td>
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<tr>
<td>LOMR Based on As-Built Information (LOMR previously issued by FEMA)</td>
<td>$5,000</td>
<td>Flat Fee</td>
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<tr>
<td>LOMR/PMIR Based Solely on Submission of More Detailed Data</td>
<td>Free</td>
<td>N/A</td>
</tr>
<tr>
<td>LOMR/CLOMR Based on Structural Measures on Alluvial Fans</td>
<td>$5,600</td>
<td>Initial fee plus $50 per hour. Requester will be invoiced for remaining balance</td>
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</tbody>
</table>

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.
General Inquiries:
  Chris Hanstad
  217-333-2059
  hanstad@illinois.gov

H & H Inquiries:
  Brian Challe
  217-244-3522
  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
East Carondelet
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
Prairie 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

10 years of successive USCOE Levee Inspection Failures!
Brookport, Illinois Maps

Brookport, Illinois
Flood Insurance Rate Map
April 1976

Brookport, Illinois
IDNR Residual Risk Map
February 2007
Residual Risk Awareness?

~1% are covered by a Flood Insurance Policy!!!!

~million residents behind levees………. 
State Jurisdiction
Floodways
Dams
Public Waters
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

Fill at corner Edward & Naquin
State Permit required in a:

Mapped Floodway

Or

Floodplain with no identified Floodway
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
- 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.
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
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.
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

PROTECTING ILLINOIS WATERS

A COOPERATIVE EFFORT: by YOU and
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
ILLINOIS DEPARTMENT OF NATURAL RESOURCES
U. S. ARMY CORPS OF ENGINEERS

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.
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.
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.
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
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.
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](http://dnr.state.il.us/owr)
Questions
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**
Makes Available:

- flood insurance
- disaster assistance
- grants and loans

In Exchange For:

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

Opening (typical)
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

- Lowest Floor
- Interior ground level at or above outside grade
- BFE
- At least two flood openings on different sides
- No more than 12" above ground

TB 1-93
QG page 26
Any enclosed area **must** be flow thru.
NOTE:
ALL DUCT WORK MUST BE ABOVE THE BFE

FLOOD OPENING

FOOTER DEPTH PER BUILDING CODE

EXTERNAL GRADE

INTERIOR GRADE
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

www.FEMA.gov

Search window:
Technical Bulletin 1
Watch the vents!
“standard vents” are only 42 sq. in.
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

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 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.

CONCRETE FILLED CINDERBLOCK

#5 DOWELS

3- #4 REINF. EACH WAY

CONCRETE FOOTER BELOW FROST LINE

8" MIN.
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.
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:
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

Openings to allow floodwaters to flow in & out
Agricultural Structures

**Variances are allowed for:**
- Pole frame buildings
- Steel grain bins
- Steel frame corn cribs
- General purpose feeding barns open on one side

**Variances are not allowed for:**
- Livestock confinement buildings
- Poultry houses
- Dairy operations
- Similar livestock operations

---

**Important Information**
Farm houses are not agricultural structures.
Contact IDNR/OWR for additional guidance on variances for agricultural structures.

**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
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.

SECTION I FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Provide the following from the proper FIRM:

<table>
<thead>
<tr>
<th>COMMUNITY NUMBER</th>
<th>PANEL NUMBER</th>
<th>SUFFIX</th>
<th>DATE OF FIRM INDEX</th>
<th>FIRM ZONE</th>
<th>BASE FLOOD ELEVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 anticipate design 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 (as Aff. Bldg)
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.
Substantial Improvement
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

\[
\frac{\text{Cost of improvement project}}{\text{Market value of the building}} > 50\%
\]

Example:

\[
\frac{\$75,000 \text{ project}}{\$140,000 \text{ house}} = 54\%
\]
Substantial Improvement
Existing House + Garage/FR/BR Addition

• Raise Existing House & Build Addition above FPE

Original Ground

Added Fill

FPE

QG page 31
Vertical Addition Compliant With NFIP Criteria (Zone A)

Existing Pre-FIRM Residential Structure

Before Substantial Improvement

Utility Box

Elevate on fill or crawl required

After Substantial Improvement

FPE

AC
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

Original Ground

FPE

QG page 32
Substantially Damaged House Raised & Rebuilt above FPE

Original Ground

Added Fill

QG page 32
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.
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
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 ½ of the estimated amount to begin construction.

- NFIP will release the other ½ when an elevation certificate and local building permit showing compliance is provided.
QUICK Mitigation is the Key

One month after the flood!!!!
If your community has any Rep Loss properties...

- There is **NO, NO, 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!
The FEMA Elevation Certificate
The Elevation Certificate

**SECTION A - PROPERTY INFORMATION**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1. Building Owner’s Name</td>
<td>Policy Number</td>
</tr>
<tr>
<td>A2. Building Street Address (Including Apt., Unit, Suite, and/or Bldg. No.)</td>
<td>Policy Number</td>
</tr>
<tr>
<td>A3. City, State, ZIP Code</td>
<td>Company ERC Number</td>
</tr>
<tr>
<td>A4. Building Use (e.g. Residential, Non-Residential, Addition, Accessory, etc.)</td>
<td>Policy Number</td>
</tr>
<tr>
<td>A5. Latitude/Longitude</td>
<td>Policy Number</td>
</tr>
<tr>
<td>A6. Horizontal Date</td>
<td>Policy Number</td>
</tr>
<tr>
<td>A7. Building Diagram Number</td>
<td>Policy Number</td>
</tr>
<tr>
<td>A8. Building with an attached garage</td>
<td>Policy Number</td>
</tr>
<tr>
<td>a. Square footage of attached garage</td>
<td>Policy Number</td>
</tr>
<tr>
<td>b. Total net area of floor openings in A8a</td>
<td>Policy Number</td>
</tr>
<tr>
<td>a. No. of permanent flood openings in the attached garage</td>
<td>Policy Number</td>
</tr>
<tr>
<td>b. No. of permanent flood openings in the attached garage</td>
<td>Policy Number</td>
</tr>
<tr>
<td>c. Total net area of floor openings in A8b</td>
<td>Policy Number</td>
</tr>
<tr>
<td>A9. Total net area of floor openings in A8</td>
<td>Policy Number</td>
</tr>
<tr>
<td>A10. Total net area of floor openings in A8c</td>
<td>Policy Number</td>
</tr>
</tbody>
</table>

**SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1. NIPF Community Name &amp; Community Number</td>
<td>Policy Number</td>
</tr>
<tr>
<td>B2. County Name</td>
<td>Policy Number</td>
</tr>
<tr>
<td>B3. State</td>
<td>Policy Number</td>
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**SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>C1. Building elevations are based on</td>
<td>Building Diagram Number</td>
</tr>
<tr>
<td>C2. Elevation(s) are rounded to the nearest tenth foot</td>
<td>Building Diagram Number</td>
</tr>
<tr>
<td>C3. Vertical Datum</td>
<td>Building Diagram Number</td>
</tr>
</tbody>
</table>

**SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1. Building Elevation</td>
<td>Policy Number</td>
</tr>
<tr>
<td>D2. Building Diagram Number</td>
<td>Policy Number</td>
</tr>
<tr>
<td>D3. Measured elevation</td>
<td>Policy Number</td>
</tr>
<tr>
<td>D4. Measured elevation</td>
<td>Policy Number</td>
</tr>
<tr>
<td>D5. Measured elevation</td>
<td>Policy Number</td>
</tr>
</tbody>
</table>

**SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1. Name</td>
<td>Policy Number</td>
</tr>
<tr>
<td>F2. Date</td>
<td>Policy Number</td>
</tr>
</tbody>
</table>

**SECTION G - COMMUNITY INFORMATION (OPTIONAL)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1. Permit Number</td>
<td>Policy Number</td>
</tr>
<tr>
<td>G2. Date Issued</td>
<td>Policy Number</td>
</tr>
</tbody>
</table>

**SECTION H - ADDITIONAL INFORMATION**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1. Elevation Certificate</td>
<td>Policy Number</td>
</tr>
<tr>
<td>H2. Building Address (including Apt., Unit, Suite, and/or Bldg. No.)</td>
<td>Policy Number</td>
</tr>
<tr>
<td>H3. City, State, ZIP Code</td>
<td>Policy Number</td>
</tr>
<tr>
<td>H4. Company ERC Number</td>
<td>Policy Number</td>
</tr>
</tbody>
</table>

**IMPORTANT:** In these spaces, copy the corresponding information from Section A, B, and C.

**For Insurers, Use Only:**

- Building Diagram Number
- Measured elevation
- Building Diagram Number
- Elevation Certificate

**For Surveyors/Engineers/Architects:**

- Building Diagram Number
- Measured elevation
- Building Diagram Number
- Elevation Certificate

**For Owners/Property Owners:**

- Building Diagram Number
- Measured elevation
- Building Diagram Number
- Elevation Certificate
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

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Top of bottom floor (including basement, crawl space, or enclosure floor)</td>
<td>feet, meters (Puerto Rico only)</td>
</tr>
<tr>
<td>b)</td>
<td>Top of the next higher floor</td>
<td>feet, meters (Puerto Rico only)</td>
</tr>
<tr>
<td>c)</td>
<td>Bottom of the lowest horizontal structural member (V Zones only)</td>
<td>feet, meters (Puerto Rico only)</td>
</tr>
<tr>
<td>d)</td>
<td>Attached garage (top of slab)</td>
<td>feet, meters (Puerto Rico only)</td>
</tr>
<tr>
<td>e)</td>
<td>Lowest elevation of machinery or equipment servicing the building (Describe type of equipment in Comments)</td>
<td>feet, meters (Puerto Rico only)</td>
</tr>
<tr>
<td>f)</td>
<td>Lowest adjacent (finished) grade (LAG)</td>
<td>feet, meters (Puerto Rico only)</td>
</tr>
<tr>
<td>g)</td>
<td>Highest adjacent (finished) grade (HAG)</td>
<td>feet, meters (Puerto Rico only)</td>
</tr>
</tbody>
</table>

*Construction Drawings* *Building Under Construction* *Finished Construction*

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


Benchmark Utilized: Vertical Datum: Conversion/Comments:

Check the measurement used.
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 Form C2 and the elevations in Form 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).

**Diagram 1**
All slab-on-grade single- and multi-level buildings, including split-level and high-rise buildings, either detached or row type (e.g., townhouses), with or without attached garage.

**Diagram 2**
All single- and multi-level buildings with basement, either detached or row type (e.g., townhouses), with or without attached garage.

**Diagram 3**
All split-level buildings that are slab-on-grade, either detached or row type (e.g., townhouses), with or without attached garage.

**Diagram 4**
All split-level buildings (other than slab-on-grade), either detached or row type (e.g., townhouses), with or without attached garage.

**Diagram 5**
All buildings elevated on piers, pilons, columns, or parallel pier walls. No obstructions below the elevated floor.

**Diagram 6**
All buildings elevated on piers, pilons, columns, or parallel pier walls with full or partial enclosure below the elevated floor.

**Diagram 7**
All buildings elevated on full-story foundation walls with a partially or fully enclosed area below the elevated floor. This includes walkout levels, where at least one sides is at or above grade. The principal use of the building is located in the elevated floors of the building.

**Diagram 8**
All buildings elevated on crawl space with the floor of the crawl space at or above grade on at least one side, with or without attached garage.

* 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.

**Instructions — Page 6**

**Instructions — Page 7**

**An "opening" (floor 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 NFIP, a minimum of two openings is required for enclosures or crawl spaces with a total net area of not less than one square foot 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 at least two sides to allow openings to be clearly visible. The bottom of the opening must be no higher than one foot above the grade underneath the floor vent. Alternatively, you may submit a certification by a registered professional engineer or architect that the design will allow for the automatic equalization of hydraulic flow through exterior walls. A window, door, or 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 1 Indicate No Openings in the garage**
- **and 2 Not Applicable**
### Elevation Certificate

**Important:** Read the instructions on pages 1-8.

#### Section A - Property Information

<table>
<thead>
<tr>
<th>A1</th>
<th>Building Owner's Name</th>
<th>65%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>Building Street Address (including Apt., Unit, Suite, and/or Block No.) or P.O. Route and Box No.</td>
<td>Company NAIC Number</td>
</tr>
<tr>
<td>City</td>
<td>State</td>
<td>ZIP Code</td>
</tr>
<tr>
<td>A3</td>
<td>Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)</td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)</td>
<td></td>
</tr>
<tr>
<td>A6</td>
<td>Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.</td>
<td></td>
</tr>
<tr>
<td>A7</td>
<td>Building Diagram Number</td>
<td></td>
</tr>
<tr>
<td>A8</td>
<td>For a building with a crawl space or enclosure(s), provide:</td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Square footage of crawl space or enclosure(s)</td>
<td>sq ft</td>
</tr>
<tr>
<td>b)</td>
<td>No. of permanent flood openings in the crawl space or enclosure(s) walls within 1.0 foot above adjacent grade</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Total net area of flood openings in A8.b</td>
<td>sq in</td>
</tr>
<tr>
<td>A9</td>
<td>For a building with an attached garage, provide:</td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Square footage of attached garage</td>
<td>sq ft</td>
</tr>
<tr>
<td>b)</td>
<td>No. of permanent flood openings in the attached garage walls within 1.0 foot above adjacent grade</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Total net area of flood openings in A9.b</td>
<td>sq in</td>
</tr>
</tbody>
</table>
Copies of the Elevation Certificate

Download from:
http://www.fema.gov/

or

simply go to 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

<table>
<thead>
<tr>
<th></th>
<th>Structure</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family Home</td>
<td>$250,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Non-Residential</td>
<td>$500,000</td>
<td>$500,000</td>
</tr>
</tbody>
</table>

- **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
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
- Maximum available through the NFIP
- 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

PROPERTY IN FLOOD HAZARD STRUCTURE [A] IS NOT.
INSURANCE IS NOT REQUIRED.

STRUCTURE [E] IN SFHA ALTHOUGH ON HIGH BLUFF -
[THIS SITUATION CAN RESULT FROM INADEQUATE BASE DATAMAP][B]
LENDER MUST REQUIRE INSURANCE INITIALLY BUT
BUYER/BUYER MAY REQUEST "LETTER OF MAP AMENDMENT" UPON APPROVAL BUYER/BUYER MAY
RECEIVE REFUND.

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'S REQUIRED.

STRUCTURE [F] LOCATED IN SFHA.
SUBSTANTIALLY ELEVATED ON FILL - INSURANCE INITIALLY REQUIRED BUT BUYER/BUYER MAY REQUEST "LETTER OF MAP REVISION".
ELEVATED THROUGH MEANS OTHER THAN FILL [POSTS, PIERS, PILINGS, ETC.]
INSURANCE ALWAYS REQUIRED.

STRUCTURE [D] LOCATED IN SFHA NOT ELEVATED.
INSURANCE IS 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

<table>
<thead>
<tr>
<th>Height Above BFE</th>
<th>Cost of Insurance</th>
<th>Cost of Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 FT ABOVE BFE</td>
<td>$887/year</td>
<td>$26,610/loan</td>
</tr>
<tr>
<td>1 FT BELOW BFE</td>
<td>$887/year</td>
<td>$26,610/loan</td>
</tr>
<tr>
<td>10 FT BELOW BFE</td>
<td>$887/year</td>
<td>$26,610/loan</td>
</tr>
</tbody>
</table>

Based on $75,000 bldg. & $20,000 contents coverage. Single family, no basement, standard deductible.
Comparison cost of Flood Insurance

Pre-FIRM House

+1 FT
$887/year
$26,610/loan

VS

-1 FT
$887/year
$26,610/loan

VS

-10 FT
$887/year
$26,610/loan

Post-FIRM House

+1 FT
$535/year
$16,050/loan

VS

-1 FT
$3,037/year
$91,110/loan

VS

-10 FT
$21,583/year
$647,490/loan
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!

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Building Coverage</th>
<th>Contents Coverage</th>
<th>Annual Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential w/o basement</td>
<td>$30,000</td>
<td>$12,000</td>
<td>$150</td>
</tr>
<tr>
<td>Residential with basement</td>
<td>$30,000</td>
<td>$12,000</td>
<td>$175</td>
</tr>
<tr>
<td>Non-Residential w/o basement</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$557</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Category</th>
<th>Premium Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post FIRM A1-30 and AE Zones</td>
<td>6%</td>
</tr>
<tr>
<td>Pre-FIRM AE Zones</td>
<td>3%</td>
</tr>
<tr>
<td>AO, AH, AOB and AHB Zones</td>
<td>1%</td>
</tr>
<tr>
<td>Unnumbered A Zones Where elevations have not been determined</td>
<td>5%</td>
</tr>
<tr>
<td>A99 Zones and AR Zones</td>
<td>9%</td>
</tr>
</tbody>
</table>
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

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
“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
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
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!
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.
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.
<table>
<thead>
<tr>
<th>County</th>
<th>Mitigation Works!</th>
<th>3,500 Buyouts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams County</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>Aurora</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Aurora Township</td>
<td>3</td>
<td>47</td>
</tr>
<tr>
<td>Bath</td>
<td>8</td>
<td>46</td>
</tr>
<tr>
<td>Belleville</td>
<td>52</td>
<td>28</td>
</tr>
<tr>
<td>Birds</td>
<td>67</td>
<td>43</td>
</tr>
<tr>
<td>Birds Bridge</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Browning</td>
<td>54</td>
<td>1</td>
</tr>
<tr>
<td>Calhoun County</td>
<td>70</td>
<td>54</td>
</tr>
<tr>
<td>Carmi</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Champaign County</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Chatham</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Cleveland</td>
<td>21</td>
<td>4</td>
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<tr>
<td>Clinton</td>
<td>38</td>
<td>2</td>
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<tr>
<td>Danville</td>
<td>23</td>
<td>3</td>
</tr>
<tr>
<td>DeKalb</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>DuPage County</td>
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<td>1</td>
</tr>
<tr>
<td>East Dubuque</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>East St. Louis</td>
<td>572</td>
<td>3</td>
</tr>
<tr>
<td>Elizabethtown</td>
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<td>3</td>
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<td>Elsah</td>
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<tr>
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<tr>
<td>Fults</td>
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<tr>
<td>Grafton</td>
<td>106</td>
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<tr>
<td>Greene County</td>
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<tr>
<td>Hamburg</td>
<td>3</td>
<td>1</td>
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<tr>
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<tr>
<td>JoDaviess County</td>
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</tr>
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<td>Kampsville</td>
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<td>15</td>
</tr>
<tr>
<td>Kaskaskia</td>
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<tr>
<td>Keithsburg</td>
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<tr>
<td>Knox County</td>
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<tr>
<td>Madison County</td>
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<td>1</td>
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<tr>
<td>Marion</td>
<td>46</td>
<td>2</td>
</tr>
<tr>
<td>Mason County</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>McHenry County</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Montgomery</td>
<td>39</td>
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</tr>
<tr>
<td>Monroe County</td>
<td>1,400</td>
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<tr>
<td>Oquawka</td>
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<td>Ottawa</td>
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</tr>
<tr>
<td>Palos Hills</td>
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<td>1</td>
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<tr>
<td>Pawnee</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Pearl</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Peoria</td>
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<tr>
<td>Peoria County</td>
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<tr>
<td>Peoria Heights</td>
<td>23</td>
<td>1</td>
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<tr>
<td>Petersburg</td>
<td>42</td>
<td>6</td>
</tr>
<tr>
<td>Pike County</td>
<td>33</td>
<td>20</td>
</tr>
<tr>
<td>Pontoosuc</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Randolph County</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Riverside</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Riverton</td>
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</tr>
<tr>
<td>Rock Island County</td>
<td>63</td>
<td>1</td>
</tr>
<tr>
<td>Rockwood</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Rocky Run</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Sangamon County</td>
<td>61</td>
<td>47</td>
</tr>
<tr>
<td>Shorewood</td>
<td>47</td>
<td>1</td>
</tr>
<tr>
<td>Sidney</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>St. Clair County</td>
<td>270</td>
<td>1</td>
</tr>
<tr>
<td>Thebes</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Valmeyer</td>
<td>244</td>
<td>15</td>
</tr>
<tr>
<td>Villa Grove</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Warsaw</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>West Frankfort</td>
<td>31</td>
<td>1</td>
</tr>
<tr>
<td>Whiteside County</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>
Grafton, Illinois…my favorite city!

1993

2008

1999
City of Ottawa


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)
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 in 303 communities
- 1993 - #5 on the national list!
- 2007 - #15 on the national list!

Most previous 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.
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
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
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

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ISO Representative for Illinois

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(217) 782-4428 paul.osman@illinois.gov
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
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?
A single family home located at 512 Woodley Road (southeast corner of Woodley Road and Miller Avenue) has suffered fire damage. The owner wants to repair the home.

1. Floodplain?
2. Floodway?
3. Base Flood Elevation?
4. Construction method to be used?
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?
A single family home is proposed at 1022 John Street (southwest corner of College Avenue and John Street)

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\textsuperscript{nd} Street!!!!

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