FLOODPLAIN 101 IAFSM 2019





Tuesday March 12, 2019 East Peoria, IL



IAFSM

Illinois Association for Floodplain and Stormwater Management

Housekeeping

> Restrooms > Phones, PDAs, Pagers, etc. Breaks & Lunch > Attendance - CECs Ability to Hear / See Pacing– Too Fast, Slow > Questions???

Course Topics

Part 1

Part 2

Flooding and Floodplain Management Flood Studies, Maps and Map Changes

- Part 3 Regulations
- Part 4 Ordinance Administration
- Part 5 Flood Insurance & CRS
- Part 6 Mitigation and Disaster Operations
- Questions
- > Exercises
- > CFM exam help (coastal, etc..)

Part 1 Flooding and Floodplain Management







Part 1 - Topics

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

Common Acronyms...

BFE = Base Flood Elevation
FIRM = Flood Insurance Rate Map
NFIP = National Flood Insurance Program
SFHA = Special Flood Hazard Area



Floodplain Basics



Illinois is a VERY Wet State!



Illinois has the nation's largest <u>inland</u> system of floodplains Floods are <u>BY FAR</u> the most common and the most costly disasters in Illinois.

Floods happen EVERY YEAR in Illinois.





Declared Disasters 1993 - 2015

1993 & 1995 MIDWEST FLOODS

Ohio River

2011 MIDWEST FLOODS

Mississippi River

Cairo

Bird's Point

February 2018 Watseka, Illinois

Worldwide Evolution of Catastrophes

Insured Losses, 1970-2007



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

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

Climate Change

In Illinois, It's Happening No Doubt



Heavy Precipitation Difference in Number of Days

0.9

1.2

1.5

Consider higher standards!!

0.6

0.3

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.



The Hydro

ILLOGICAL

Cycle



Flood Amnesia



Panic

Recovery & Reconstruction





Concern



Devastation

National Flood Insurance Program



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

In Illinois: 89 of 102 Counties have joined the NFIP. Approx. 900 communities have also joined the NFIP.



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



Three related program areas support the NFIP:

- Flood Hazard Identification (mapping)
- Floodplain Management (regulations, building codes, and zoning)
- Flood Insurance (coverage for residents in NFIP communities).





Definition: "Flood"

General and temporary condition of partial or complete inundation of:

> 2 or more acres of normally dry land or ≥ 2 or more properties...







Overflow of inland or tidal waters





Unusual and rapid accumulation or runoff of surface waters from any source



Or from:

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



Or from:

Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood.



Primary Types of Flooding





Shallow

Sheet flow (AO Zones)Ponding (AH Zones)



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

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)



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"







"Floodway"

A 'Regulatory Floodway' means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without increasing the water surface elevation more than a designated height (IL = 0.1').





Understanding the Floodway



FLOODWAY + FLOODWAY FRINGE = 100 YEAR FLOODPLAIN SURCHARGE NOT TO EXCEED DESIGNATED HEIGHT (IL- 0.1 FOOT)

Understanding the Floodway



Understanding the Floodway

Obstructed Floodway Base Flood Is Higher

Part 1 Summary Review Where did we confuse you?

 Basic terms and abbreviations
 NFIP goals
 Floodplain vs Floodway
 Federal, state and local roles


Chris

MAPPING START

9:30 - 10:30





Part 2 - Topics

> Basic Terms
> Types of FEMA Maps
> Flood Insurance Studies (FIS)
> Locate flood elevation on FIRMs
> Updating Maps (LOMCs)
> Levees



Conference Hotel (WE ARE HERE)

Common Acronyms...

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

 Types of FEMA Maps

 > Flood Hazard Boundary Maps (FHBM)

Flood Insurance Rate Map (FIRM)

Flood Boundary Floodway Map

Digital Flood Insurance Rate map (DFIRM)

How Do They Make Those EXCELLENT Floodplain Maps?



FIRM Detailed Delineations 3 Mapping Elements > #1 Land Elevations = Topography Shape and surface of the floodplain > #2 Flow = Hydrology How much rain runs off and how fast it collects > #3 Flow Height = Hydraulics How does the water move downstream

Note: Special methods used for coastal flood studies

Topography

1st Mapping Element



Channel Geometry are points in a straight line, each point having distance and elevation. Channel roughness is given by segments called Manning's "n".

Topography

1st Mapping Element

Bench Marks (BM) and Reference Marks (RM)

- BM or RM = Carefully measured elevation points from which other elevations are surveyed. These are a surveyor's starting elevation.
- Datums (Not all elevations are equally accurate!)
 - MSL =Mean Sea level
 - NGVD 29 = National Vertical Datum 1929
 - NAVD 88* =Earth's geoid or mass
 - Local datum =Usually very confusing
 * this datum is used for most DFIRMS



Read text of FIS Report for explanation of datum used. Reference marks (RM) are identified on older FIRMS.

Hydrology 2nd Mapping Element

Hydrology how rainfall runs-off on different land types

- Flood Discharge (flow), cubic feet per second typically
- Flood Frequency (how often), % chance every year
- Climatology (Global Warming), esp. coastal areas

Calibration check computer model with real flows

- Computer modeling
- Gaged streams statistical analysis
- Ungaged streams regression equations
- Coastal storm modeling

Hydraulics 3rd Mapping Element

Hydraulics how runoff flows in lakes, creeks and structures

Lakes and Wetlands store water, releasing overflows

Rivers and Creeks water slowly moves down hill / slopes

Bridges and Culverts force water into smaller openings, increases upstream water levels

Computer Models estimate flows and water levels Flood elevation and Floodway determinations Coastal Storms surge oceans causing wave run-up

Approximate A Zones

- > Also called "unnumbered A zones"
- > Unique no BFEs
- Permits still required



 Vital reference: FEMA publication 265
 Managing Floodplain Development in Approximate A Zones



Flood Insurance Rate Map (FIRM) Flood Zones



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 - All other areas

Flood Insurance Rate Map (DFIRM) Flood Zones



Base Flood Elevation (BFE) Water Surface elevation (in feet) of the base flood at specific locations

Bench Marks Points for which ground elevation data have been established. To obtain information, the FIRM directs you to the National Geodetic Survey

Flood Hazard Zones

Zone A, AE, AH, AO, AR, A99

- 100-year or base flood

Zone X shaded - 500 – year flood

Zone X unshaded - All other areas

Flood Zones

Zone AR – SFHAs from the <u>decertification</u> of a previously accredited flood protection system that is being restored to provide at least 100 year protection.

Zones AR/A1-30, AR/AE, AR/AH, AR/AO, and AR/A -After restoration is complete, these areas will still experience residual flooding from other flooding sources.

Zone A99 - SFHAs inundated by the 100-year flood to be protected by a Federal flood protection system under construction; no BFEs.

Zone D - Areas in which flood hazards are undetermined. Used with levee protected areas.





Zone V - SFHAs inundated by the 1% annual chance (100year) flood; coastal floods with velocity hazards (wave action); no base flood elevations are determined.

Zone B and X (shaded) - 0.2% annual chance (500-year) area; areas subject to the 100-year flood with average depths of less than 1 foot or with contributing drainage area less than 1 square mile; and areas protected by levees from the base flood.

Zone C and X (unshaded) - Areas determined to be outside the 500-year floodplain.



Flood Insurance Rate Map (DFIRM) **Flood Zones - V**



Base Flood Elevation (BFE) Water Surface elevation (in feet) of the base flood at specific locations

Bench Marks Points for which ground elevation data have been established. To obtain information, the FIRM directs you to the National Geodetic Survey

Flood Hazard Zones Zone X unshaded - All other areas Zone X shaded - 500 – year flood Zone V, VE – Coastal flood zone with velocity hazard (wave action)

Flood Zones

Zone AO - Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths are shown, but no floodway

Zone AH - Flood depths of 1 to 3 feet (usually areas of ponding; BFEs are shown, but no floodway



AO and AH Floodplain Zones

Shallow flooding AO –sheet flow - depth AH – ponding - elevation

> Zone AO (DEPTH 3 Peet) (MEL 9 Peet / Second)

Zone AO (DEPTH 2 Feet) (MEL 7 Feet/Second)

Zone Aro (DEPTH 2 Feet)

(MEL 6 Feet / Second))

Zone AO

(DEPTH 1 Feet) /BL 6 Feet/ Second Zono AO (DEPTH & Feet) (MEL 8 Feet / Second)

eff

HICKORY HILLS Zone AE (EL 624 Feet) 170103 EL 625 Peet



100 Year Storm

The 1% chance flood is the basis for the NFIP program

- 100-year flood, also known as "Base Flood"
- Base Flood Elevation also known as "BFE"
- Flood area, also known as "Special Flood Hazard Area" "SFHA"

Detailed maps show 0.2% annual chance "500-year" flood

FIS profiles include: 10-year 50-year 100-year 500-year Annual Chance: 10% 2% 1% 0.2%



Approximate Floodplain maps Flood Hazard Boundary Maps (FHBM) Late 1970s, Very inaccurate



Some maps were flooding area recollections by the Public Works Director

Pre-1988 FIRMS

and

FBFM

DO NOT REMOVE

390007 0005

MAP REVISED:

SEPTEMBER 1, 1983





Flood Insurance Rate Map (new format)

Un-shaded X Zone Zone AE Floodway Floodway fringe **Cross section** Base flood elevation Shaded X Zone Zone boundary Approximate A Zone



Digital Flood Insurance Rate Maps The Next Generation



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



National Flood Hazard Layer



Legend

GeoIndex GeoIndex

No Digital Data Available

Use same 100-yr. flow (Q100)

Total allowable surcharge

Fringe

Fringe Floodway

Flood Level With Fringe Filled (BFE with Floodway)

BFE

Normal Stream Level

How are floodways delineated?

Encroachment limits are adjusted to an allowable surcharge <u>0.1 foot surcharge in Illinois</u>

 The allowable surcharge (one foot FEMA) <u>must not be</u> <u>exceeded</u> at any point along the reach



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

FEMA Flood Map Service Center: Welcome!

Looking for a Flood Map? @

Enter an address, a place, or longitude/latitude coordinates:

Enter an address, a place, or longitude/latitude coo Search

Looking for more than just a current flood map?

Visit **Search All Products** to access the full range of flood risk products for your community.



About Flood Map Service Center

The FEMA Flood Map Service Center (MSC) is the official public source for flood hazard information produced in support of the National Flood Insurance Program (NFIP). Use the MSC to find your official flood map, access a range of other flood hazard products, and take advantage of tools for better understanding flood risk.

FEMA flood maps are continually updated through a variety of processes. Effective information that you download or print from this site may change or become superseded by new maps over time. For additional information, please see the <u>Flood Hazard Mapping Updates Overview Fact Sheet</u>

FEMA Map Service Center

www.msc.fema.gov

FEMA's Map Service Center

Online Digital Maps and FIS Scanned images of older maps **DFIRMS** of newer maps **Option to create FIRMette** Records of letters of map change Create FIRMettes, FIRMette Tutorial http://www.msc.fema.gov Flood Map Help "FMIX" 800 - FEMA MAP

National Flood Hazard Layer (NFHL)

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

The "FIRMette"

Available online
Scaled to use as regulatory map
Printable
www.msc.fema.gov
Useful for map determination



Paper Maps? 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!

Flood Insurance Study (FIS)



Search Results for LISLE, VILLAGE OF

Click subscribe to receive email notifications when products are updated.

Please Note: Searching All Products by county displays all products for all communities within the county. You can refine your search results by specifying your specific jurisdiction location using the drop-down menus above.

📂 Effective Products (39) 😢

- FIRM Panels (9) -DL ALL
- FIS Reports (4) -DL ALL

Product ID	Effective Date	Size	Download
17043CV001A	12/16/2004	13MB	♦ DL
17043CV002A	12/16/2004	12MB	∲ DL
17043CV003A	12/16/2004	33MB	♦ DL
17043CV004A	12/16/2004	33MB	♦ DL

LOMC (25)

NFHL Data-State (1)

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) Flood Profile



Floodway Data Table

		_			BASE FLOOD				
FLOODING SOURCE		F	LOODWA	Y	WATE	R SURFACE ELEVATION			
			SECTION	MEAN	WITHOUT WITH				
CROSS	DISTANCE ¹	WIDTH	AREA	VELOCITY	REGULATORY	FLOODWAY	FLOODWAY	INCREASE	
SECTION		(FEET)	(SQUARE	(FEET PER					
			FEET)	SECOND)	(FEET NGVD)				
Green River									
Α	0	188	1,691	6.9	267.5	257.3 ²	257.4 ²	0.1	
В	380	161	1,539	7.6	267.5	258.0²	258.1 ²	0.1	
С	480	161	1,550	7.6	267.5	258.1 ²	258.2 ²	0.1	
D	980	155	1,143	10.3	267.5	259.6 ²	259.7 ²	0.1	
E	1,560	319	2,103	5.6	267.5	262.9 ²	262.9 ²	0.0	
F	1,770	288	2,345	5.0	267.5	265.2 ²	265.2 ²	0.0	
G	2,270	73	849	13.8	267.5	265.3 ²	265.3 ²	0.0	
н	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	
К	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	
Μ	5,370	113	837	14.0	271.2	271.2	271.5	0.3	
¹ Feet Above (Confluence	With I al	.e Highwaf	er			<u> </u>	<u> </u>	
² Elevation Co	omputed Wit	thout Co	nsideratio	n of Backw	ater From La	ke Highwate	er		

City of Floodville, CA

GREEN RIVER



Mapping Level Of Detail

> Approximate study—

- Draws flood floodplain boundaries;
- no base flood elevations or depths

Limited Detail study –

- Draws rough flood elevations to low degree of accuracy;
- BFEs not displayed on FIRM;
- more accurate than approximate study,
- less accurate than detailed study

> Detailed study—

- Draws flood elevations (BFEs) or depths on FIRM;
- often includes floodway and coastal high hazard areas



Accuracy Precedence in riverine flood areas #1 Floodway Data Table (Most Accurate)

#2 Plotted Profiles(Second Most Accurate)

#3 BFE on FIRM Panel (Least Accurate)

BREAK 10:15 – 10:30

Chris Map Changes START 10:30 to 11





Map Changes Letter of Map Change (LOMC)



Sometimes the maps are just plain wrong!

Sometimes the floodplains are modified.

There is a process to correct them

Types of Map Changes

MT-EZ Map Changes

Letter of Map Amendment (LOMA)

MT-1 Map Changes

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

MT-2 Map Changes

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



Letter of Map Amendment (LOMA)

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)



DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY APPLICATION FOR SINGLE RESIDENTIAL LOT OR STRUCTURE AMENDMENTS TO NATIONAL FLOOD INSURANCE PROGRAM MAPS O.M.B. NO. 1660-0015 Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this data collection is estimated to average 2.4 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and submitting this form. This collection of information is required to obtain or retain benefits. You are not required to respond to this collection of information unless a valid OM8 control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0015) NOTE: Do not send your completed form to this address.

This form should be used to request that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) remove a single structure or legally recorded parce of land or portion thereof, described by metes and bounds, certified by a registered professional engineer or incensed land surveyor, from a designated Special Flood Hazard Area (SFHA), an area that would be inundated by the flood having a 1%-chance of being equaled or exceeded in any given year (base flood), via Letter of Map Amendment (LOMA). It shall not be used for requests submitted by developers, for requests involving multiple structures or lots, for property in alluvial fan areas, for property located within the regulatory floodway, or requests involving the placement of fill. (NOTE: Use MT-1 forms for such requests). Fill is defined as material from any source (including the subject property) placed that raises the grade to or above the Base Flood Elevation (BFE). The common construction practice of removing unsuitable existing material (topsof) and backfilling with select structural materials in so to considered the placement of fill (NOTE: Use MT-1 forms Bacement of fill (NOTE) hereing and the substruction practice are in a SFHA is considered har taiges the BFE. Also, fill that is placed before the date of the first National Flood Insurance Program (NFIP) map showing the area in an SFHA is considered fung grade.

	A letter from DHS-FEMA stating that an existing structure or parcel of land that has not been elevated by
LOMA:	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. In order to process your request, all information on this form must be completed *in its entirety*, unless stated as optional. Incomplete submissions will result in processing delays.

1. Has fill been placed on your property to raise ground that was previously below the BFE?

L	No Yes – If Yes, STOP!! – You must complete the MT-1 application forms; visit				
					http://www.fema.gov/plan/prevent/fhm/dl_mt-1.shtm
					or call the FEMA Map Information eXchange toll free: (877-FEMA MAP) (877-336-2627)

. Legal description of Property (Lot, Block, Subdivision or abbreviated description from the Deed) and street address of the Property (required):

Are you requesting that a flood zone determination be completed for (check one):

A structure on your property? What is the date of construction? ______(MM/YYYY)

A portion of your legally recorded property? (A certified metes and bounds description and map of the area to be removed, certified by a registered professional engineer or licensed land surveyor, are required. For the preferred format of metes and bounds descriptions, please refer to the MT-F2I Instructions.)

Your entire legally recorded property?

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Applicant's Name (required):	E-mail address (optional) (By checking here you may receive correspondence electronically at the email address provided):		
Mailing Address (include Company name if applicable) (required):	Daytime Telephone No. (required):		
	Fax No. (optional):		
Signature of Applicant (required)	Date (required)		
End of Section A			

DHS - FEMA Form 086-0-22, FEB 11

MT-EZ Form

Page 1 of 3

MT-EZ Form

- This section must be completed by a registered professional engineer or licensed land surveyor. Incomplete submissions will result in processing delays.

NOTE: If the request is to have a flood zone determination completed for the structure, and an Elevation Certificate has been completed for this property, it may be submitted in lieu of Section B. If the request is to have a flood zone determination completed for the entire legally recorded property, or a portion thereof, the lowest elevation on the lot or described portion must be provided in Section B.

Applicable Regulations

The regulations pertaining to LOMAs are presented in the National Flood Insurance Program (NFIP) regulations under Title 44, Chapter I, Parts 70 and 72, Code of Federal Regulations. The purpose of Part 70 is to provide an administrative procedure whereby DFS-FEMA will review information submitted by an owner or lesse of property who believes that his or her property has been inadvertently included in a designated SFHA. The necessity of Part 70 is due in part to the technical adfinctive of accurately delineating the SFHA boundary on an NFIP map. Part 70 procedures shall not apply if the topography has been altered to raise the original ground to or above the BFE since the effective date of the first NFIP map [e.g., a Flood Insurance Fate Map (FIRM) or Flood Hazard Boundary Map (FHBM)] showing the property to be within the SFHA.

Basis of Determination

DHS-FEMA's determination as to whether a structure or legally recorded parcel of land, or portion thereof, described by metes and bounds, may be removed from the SFHA will be based upon a comparison of the Base (1%-annual-chance) Flood Elevation (BFE) with certain elevation information. The elevation information required is dependent upon what is to be removed from the SFHA. For Zones A and AO, please refer to Page 7 of the MT-EZ Form instructions for information regarding BFE development in those areas and supporting data requirements.

Determination Requested For: (check one)	Elevation Information Required: (complete Item 5)					
Structure located on natural grade (LOMA)	Lowest Adjacent Grade to the structure (the elevation of the lowest ground touching the structure including attached patios, stairs, deck supports or garages)					
Legally recorded parcel of land, or portion the	reof (LOMA)	Elevation of the lowest ground on the parcel or within the portion of land to be removed from the SFHA				
1. PROPERTY INFORMATION						
Property Description (Lot and Block Number, Tax	Parcel Number,	or Abbreviated Desc	ription from 1	the Deed, etc.):		
2. STRUCTURE INFORMATION						
Street Address (including Apt. Unit, Suite, and/or	Bldg. No.):					
What is the type of construction? (check one)	crawl s	space s	lab on grade	🗌 ba	sement/enclosure	
other (explain):						
3. GEOGRAPHIC COORDINATE DATA						
Please provide the Latitude and Longitude of the	most upstream e	edge of the <i>structure</i>	(in decimal d	legrees to neare:	t fifth decimal place)	
Indicate Datum: WGS84 NAD83 NAD27 Lat Long						
Please provide the Latitude and Longitude of the	Please provide the Latitude and Longitude of the most upstream edge of the property (in decimal degrees to nearest fifth decimal place)					
Indicate Datum: WGS84	Indicate Datum: WGS84 NAD83 NAD27 Lat Long					
4. FLOOD INSURANCE RATE MAP (FIRM) INFORM	MATION					
NFIP Community Number: Map Panel Number: Base Flood Elevation (Bi			on (BFE):	Source of BFE:		
5. ELEVATION INFORMATION (SURVEY REQUIRED)						
Lowest Adjacent Grade (LAG) to the structure (to the nearest 0.1 foot or meter) Elevation of the lowest grade on the property; or within metes and bounds area (to the nearest 0.1 foot or meter) Indicate the datum (if different from NGVD 29 or NAVD 88 attach datum conversion) NGVD 29 NAVD 88 Other (add attachment) Has FEMA identified this area as subject to land subsidence or uplift? No Yes (provide date of current releveling):						
The domation is done and agree and agree and agree and agree of the domation and the domatical agree of the domati						
Certifier's Name:	License No.:	Expiration Date:				
Company Name:	Telephone No.:	.: Fax No.: Seal (option		Seal (optional)		
Email:						

DHS - FEMA Form 086-0-22, FEB 11



DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY APPLICATION FORM FOR SINGLE RESIDENTIAL LOT OR STRUCTURE AMENDMENTS TO NATIONAL FLOOD INSURANCE PROGRAM MAPS

O.M.B. NO. 1660-0015 Expires February 28, 2014

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This form should be used to request that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) remove a single structure or legally

LOMA:

A letter from DHS-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. In order to process your request, all information on this form must be completed *in its entirety*, unless stated as optional. **Incomplete submissions will result in processing delays.**

1. Has fill been placed on your property to raise ground that was previously below the BFE?

NO Yes – If Yes, STOP!! – You must complete the MT-1 application forms; visit <u>http://www.fema.gov/plan/prevent/fhm/dl_mt-1.shtm</u> or call the FEMA Map Information eXchange toll free: (877-FEMA MAP) (877-336-2627)

2. Legal description of Property (Lot, Block, Subdivision or abbreviated description from the Deed) and street address of the Property (required):

First Question: Is there fill??

Applicant's Name (required):	E-mail address (optional) (By checking here you may receive correspondence electronically at the email address provided):		
Mailing Address (include Company name if applicable) (required):	Daytime Telephone No. (required): Fax No. (optional):		
Signature of Applicant (required)	Date (required)		
End of Section A			

DHS - FEMA Form 086-0-22, FEB 11

LOMAs are shown on the NFHL



Example – Oswego, Illinois

Even w/o the DFIRM – LOMAs are shown!



Scores of LOMAs in Downers Grove area!

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

Carefully Read



Two houses just one block away from each other w/ drastically different outcomes

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 \$8000+

LOMR-F





Technical Bulletin 10-01



FMIX (Map and LOMC Help) 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 /LOMR ?

LOMC Fee Schedule

Requests for Single-Lot, Single-Structure Map Change	Paper Form Fee	Online LOMC Fee
Single-Lot or Single-Structure LOMA	Free	Free
Single-Lot/Single-Structure CLOMA and CLOMR-F	\$600	\$500
Single-Lot/Single-Structure LOMR-F	\$525	\$425
Single-Lot/Single-Structure LOMR-F Based on As-Built Information (CLOMR-F previously issued by FEMA)	\$425	\$325
Requests for Multiple-Lot/Multiple-Structure Map Changes	Paper Form Fee	Online LOMC Fee
Multiple-Lot/Multiple-Structure LOMA	Free	Free
Multiple-Lot/Multiple-Structure CLOMA	\$800	\$700
Multiple-Lot/Multiple-Structure CLOMR-F and LOMR-F	\$900	\$800
Multiple-Lot/Multiple-Structure LOMR-F Based on As-Built Information (CLOMR-F previously issued by FEMA)	\$800	\$700
Requests for Map Changes Requiring Special Technical Review	Paper Form Fee	Online LOMC Fee
CLOMR Based on New Hydrology, Bridge, Culvert, Channel or Combination Thereof	\$6,750	\$6,500
CLOMR Based on Levee, Berm or Other Structural Measures	\$7,250 (plus \$60/hr)	\$7,000 (plus \$60/hr)
LOMR Based on Bridge, Culvert, Channel, Hydrology, or Combination Thereof	\$8,250	\$8,000
LOMR Based on Levee, Berm or Other Structural Measures	\$9,250 (plus \$60/hr)	\$9,000 (plus \$60/hr)
LOMR Based on As-Built Information Submitted as a Follow-up to a CLOMR	\$8,250	\$8,000
LOMR Based Solely on Submission of More Detailed Data	Free	Free
LOMR/CLOMR Based on Structural Measures on Alluvial Fans	\$7,250 (plus \$60/hr)	\$7,000 (plus \$60/hr)

Levees In Illinois





Failures somewhere in Illinois with every major flood!

"Accredited" 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 Elmhurst **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





What is a FEMA "Accredited 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

> FEMA ACCREDIT levees

- Establish mapping standards
- Design, operations, and maintenance
- Vast Involvement: Public and Local Government
- 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...

<u>The levee owner must provide the</u> 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

Levee Ohio River Brookport, Illinois Areas Below 100-Year Flood Elevation (Ohio River Datum) Topography Based on OWR Land Survey Legend Water Reso Leves (many 15, 200 100 Year Flood Extent (339' ORD)

wey Shiftin 825

End of Levee Survey Station 225

Brookport, Illinois IDNR Residual Risk Map February 2007

Residual Risk Awareness ?

There are about 1 million residents behind levees YET only 1% are covered by a Flood Insurance !!



Floodplain Manager just became aware of his residual levee risk

Part 2 Summary Review

Where did we confuse you in covering:

- Types of flood maps
- Flood insurance studies (FIS)
- Using maps
- Working with Approximate A zones
- Letters of Map Change (LOMC)?
- Levee accreditation



Part 3 Regulations





Part 3 - Topics

> Regulations:

- State floodway permits
- > Dams
- > Public Waters
- NFIP Building Protection (elevation/floodproofing)
- > Utilities
- > RVs





State Regulatory Involvement

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


Questions ?????

STATE PERMITS START 11 – 11:30 Heather



IL. DEPT. OF NATURAL RESOURCES OFFICE OF WATER RESOURCES PERMITTING

IDNR/OWR (Northeast) 2050 West Stearns Road Bartlett, IL 60103 (\$47) 608-3116

- WILLS - TO

IDNR/OWR (Downstate) One Natural Resources Way Springfield, IL 62702 (217) 782-0900

IDNR/OWR Permit Programs Adm. Rules

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

Floodway Encroachments





PARK

LAWNRIDGE

CORPORATE LIMITS

ZONE C

ZONE A

AVENUE

AVENUE

State Permit required in a: Mapped Floodway

Or

Floodplain with no identified Floodway





IDNR/OWR Floodway Permit Program (Part 3700 Rules)

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

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

IDNR/OWR Floodway Permit Program (Part 3700 Rules) The Part 3700 Rule are applicable to:

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

IDNR/OWR Floodway Permit Program (Part 3700 Rules)

Two types of Permits are currently offered:

1. Statewide Permit

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

2. Formal Permit

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

IDNR/OWR Floodway Permit Program (Part 3700 Rules) Current Active Statewide Permits

SWP 2 - Brids, and Culvert Crossings of Streams in Rural A SWP 3 - Mooring . rilities Used Exclusively for Barge F' ang Purposes SWP 4 - Aerial Utility sings SWP 5 - Minor Boat Docks SWP 6 - Minor Non-Obstructive hoodway struction SWP 7 - Outfalls SWP 8 - Underground Pipeline ap _____ Crossings SWP 9 - Minor Shoreline, Street, Bank, and bannel Protection activities SWP 10 - Accessory Struct is and Additions to intring Residential Structures SWP 11 - Minor Mainten Lince Dredging SWP 12 - Bridge Culvert Replacement Structures SWP 13 - Ter ary Construction Activities SWP 14 Jecial Uses of Public Waters

IDNR/OWR Floodway Permit Program (Part 3708 Rules)

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

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

IDNR/OWR Floodway Permit Program (Part 3708 Rules)

Two types of Permits are offered:

1. Regional Permit No. 3

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

2. Formal Permit

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

IDNR/OWR Floodway Permit Program (Part 3708 Rules) Current Active Regional Permit

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

RP1 and RP2 are administered by IDOT

RP3 can be found at https://www.dnr.illinois.gov/WaterResources/Pages/PermitsStatewideRegionalGenera l.aspx IDNR/OWR Floodway Permit Program (Part 3708 Rules)

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





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

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

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

IDNR/OWR Permit Program Process

Joint Application Form

Complete and Submit Joint Application Form

	ITEMS	1 AND 2 FO	R AGENCY US	8					
1. Application Number		2. Date Received							
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When to Submit...

• An application submittal is only needed for <u>jurisdictional</u> construction activities that require a <u>formal</u> permit.



When not to Submit...

- An application submittal is <u>not</u> needed for construction activities that:
 - are not jurisdictional.
 - are authorized by a regional or statewide permit.
 - are an exempted activity per administrative rules.
 - can be authorized by IDOT/DOH per MOA.
 - * a permit application submittal <u>is needed</u> for work in a delegated community

What to Submit...

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



Application Form

- 1. Application number.
- 2. Date Received (day/month/year).
- 3. Applicant's name with contact person.
- 4. Agent's name.
- 5. <u>Statement of</u> <u>Authorization</u>.
- 6. Adjacent Property Owners Information.
- 7. Project Location.
- 8. Municipality(ies).



Application Form

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

https://www.dnr.illinois.gov/Wat erResources/Pages/PermitApplic ationandInstructions.aspx

Support Information

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

Do Not Submit...

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

Proposed Updates to the Part 3700 Rules

Definitions

- Adds New Definitions
- Expands Definitions for Worst Case Analyses
- Jurisdiction
 - Expands Explanation for Exempted Activities (converted from some statewide permits)
- Permit Application
 - Update Website reference
 - Timetable for OWR Response to applications
 - Technical Guidance for Applications on website

Proposed Updates to the Part 3700 Rules

Fees

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

Proposed Updates to the Part 3700 Rules

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

Dam Safety Permit Program

Part 3702 Rules Regulation of Dams



Definition

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

Part 3702 Rules Dam Categorization

> Size (small, intermediate or large)> Hazard (Class I, II or III)

IDNR/OWR Dam Safety Permit Program

When is a dam safety permit required?

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

An <u>existing dam</u> is defined as a dam which was constructed prior to September 2, 1980.







IDNR/OWR Public Waters Permits (Part 3704 Rules)

- Activities in Public Waters
- Navigation impacts
- Encroachments
- Impairment of Public's rights, interests and uses
- Impairment of Natural Resources

IDNR/OWR Public Waters Permits (Part 3704 Rules)

- Natural Waterways
- Waterways Improved for Navigation
- Man-Made Waterways
- Appendix A




Public Notices

Needed for:

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





IDNR-OWR Offices

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

Phone 847/608-3116 Fax 847/931-2037 Downstate Illinois Regulatory Programs Section One Natural Resource Way Springfield, IL 62702-1271

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

Web Site:

https://www.dnr.illinois.gov/WaterResources/Pages/default.aspx



Dallas LOCAL REGS. START 11:30 – 12:00



Development is

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





Any Floodplain "Development" (fences, fills, grading, etc..) Cannot Block or Obstruct the Flow of Water



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





Get a Site Plan with elevations



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 <u>must</u> be flow thru







Crawlspace Rules

Total height no more than 4 feet. No more than 2' below grade. Flow through openings <u>Ratio = 1" per 1'</u> Interior drainage controls Flood resistant materials





Crawlspaces – TB 11





Technical Bulletin

Crawlspace Construction

for Buildings Located in Special Flood Hazard Areas National Flood Insurance Program Interim Guidance

FEMATB-11 / November 2001



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



Technical Bulletin #1

www.FEMA.gov

Search window: Technical Bulletin 1

Watch the vents!



"Standard vents" are only 42 sq. in.

Must account for any obstruction due to grates or screening



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

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



Engineered Flood Vents



Each is rated differently.

Get the ICC Evaluation Report! Most Widely Accepted and Trusted EVELUATION SERVICE Immovation Immovation

> DIVISION: 08 00 00—OPENINGS SECTION: 08 95 43—VENTS/FOUNDATION FLOOD VENTS

> > **REPORT HOLDER:**

SMART VENT PRODUCTS, INC.

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514 FLOOD VENT SEALING KIT #1540-526

 $\mathcal{H}_{\scriptscriptstyle \mathrm{ICC}}$



"2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence"

TABLE 1—MODEL SIZES			
MODEL NAME	MODEL NUMBER	MODEL SIZE (in.)	COVERAGE (sq. ft.)
FloodVENT®	1540-520	15 ³ /4" X 7 ³ /4"	200
SmartVENT*	1540-510	15 ³ /4" X 7 ³ /4"	200
FloodVENT [®] Overhead Door	1540-524	15 ³ /4" X 7 ³ /4"	200
SmartVENT [®] Overhead Door	1540-514	15 ³ /4" X 7 ³ /4"	200
Wood Wall FloodVENT®	1540-570	14" X 8 ³ /4"	200
Wood Wall FloodVENT® Overhead Door	1540-574	14" X 8 ³ /4"	200
SmartVENT [®] Stacker	1540-511	16" X 16"	400
FloodVent [®] Stacker	1540-521	16" X 16"	400
or SI: 1 Inch = 25.4 mm; 1 square foot = m ²			•

House built on elevated foundation walls





What do you notice about the vents?

CERTITION

Non conversion Agreements essential when permitting elevated structures.

Allows for annual inspections with 48 hours notice of a visit.

Recorded with the deed with the County Recorder



NONCONVERSION AGREEMENT FOR CERTAIN STRUCTURES IN THE FLOODPLAIN

Whereas, Permit #______ has been issued to construct, improve, or repair the property at ______ [address] in the City of ______, [state], and

Whereas, the permitted building has the lowest floor elevated above the [design flood elevation/base flood elevation plus __feet] and the design and construction of the building meets current building code and flood damage prevention ordinance requirements, and

Whereas, as a condition of a Certificate of Occupancy, the owner must agree to not alter the building at a later date so as to violate the building code or flood damage prevention ordinance requirements,

Now, therefore, the undersigned owner of said property hereby agrees to the following:

- That the enclosed area below the lowest floor shall be used solely for parking of vehicles, limited storage, or access to the building and will never be used for human habitation without first becoming fully compliant with the flood damage prevention ordinance in effect at the time of conversion.
- That all interior walls, ceilings, and floors below the [design flood elevation/base flood elevation plus ______feet] shall be unfinished or constructed of flood-resistant materials.
- That mechanical, electrical, or plumbing devices that service the building shall not be installed below the [design flood elevation/base flood elevation plus __feet].
- That the openings in the walls of the enclosed area below the lowest floor shall not be blocked, obstructed, or otherwise altered to reduce the size of the openings or restrict the automatic entry and exit of floodwater.
- That any variation in construction beyond what is permitted shall constitute a violation of this agreement and Section _____ of Ordinance #_____.
- That this Agreement shall be recorded with the deed to the above property so that subsequent owners are made aware of these restrictions.

Signature of Property Owner

Witness

Printed name:

Printed name:

Date: _____

Date:

This space reserved for deed recording notations.

Non Conversion Agreement

CRS Credit Available



Post or Pile Foundation



Post or Pile Foundation

- 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



Why Anchor?



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




Above ground tanks





Utilities

Power Outlet

Base Flood Elevation

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
- 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 Floodprofing / Minor Accessory Structures

When to Use Wet Floodproofing

Enclosed areas below the BFE that are used for parking, building access, or limited storage

Attached or detached garages

Minimal value storage sheds and garages

Wet Floodproofing Garages and sheds

Non-habitable

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



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

Variances are not allowed for:

Livestock confinement buildings

Poultry houses

Dairy operations

Similar livestock operations





Farm houses are not agricultural structures.

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

Non-elevated agricultural structures must be considered on a sitespecific 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.

strategy in the second strategy and second str

	FOR INSURANCE COMPANY USE
BUILDING OWNER'S NAME	POLICY NUMBER
STREET ADDRESS (Including Apt., Unit, Sulle, and/or Bidg, Number) OR P.O. ROUTE AND BOX NUMBER	COMPANY NAIC NUMBER
OTHER DESCRIPTION (Lot and Block Numbers, etc.)	
CITY	STATE ZIP CODE

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:

(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 foodproofed design elevation indicated above, with wails 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)			
	000000000000000000000000000000000000000			
lite	COMPARTNAME			
ADORESS	OTTY	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



"Improvement" Triggers

 Reconstruction
 Rehabilitation
 Addition
 Other improvements



Substantial Improvement

Lateral additions or vertical additions

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

(*Illinois specific ordinance)

Substantial Improvement

The Formula

<u>Cost of improvement project</u> \geq 50% Market value of the building

Example:

\$140,000 house



"Market Value"

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



"Improvement or Damage Cost"

Repair or improvement cost data:

- Qualified contractors' estimates
- NFIP data
- Standard Building Code/Marshall & Swift

Related data:

- Tax assessments
- Surveys
- Other local agencies or departments



Excludable Costs

- Repairing existing health/safety violations
- Preparation specifications, surveys, building permit fees, plans
- Site work septic systems, wells, water supplies, landscaping
- Items separate from / incidental to improvement

Existing House



Original Ground



Raise Existing House & Build Addition above FPE



Existing Pre-FIRM Residential Structure

After Substantial Improvement Elevate on fill or crawl required

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 CUMULATIVE substantial damage



Existing House with Floor Below FPE



Substantially Damaged House Raised & Rebuilt above FPE





Non-Triggers

Correcting existing violations of codes that are minimum necessary for safe living conditions, including:

- Health codes
- Sanitary codes
- Safety codes



Alteration of registered "historic structure" that maintains its historic character

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 Substartial Damage Estimator (RSDE) RSDEField Worksheet Information on state floodway pegnit 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



Substantial Damage Regs Work!

Flooded 2008



Red Tagged!



Not Flooded 2013



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
Critical Facilities

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

Examples:

- $\checkmark\,$ Fire and police stations,
- ✓ schools,
- ✓ Hospitals,
- $\checkmark\,$ retirement homes ,
- $\checkmark\,$ major roads and bridges,
- ✓ critical utility sites,
- ✓ Hazardous material facilities.



Nursing Home under construction in the floodplain. Caseyville, IL



The last word.. Critical Facilities

If they can't be located outside of the floodplain all together, make sure the facility and all ingress and egress is located above the 500-year flood elevation!



Snow Valley Nursing Home Lisle, IL

State and Federal Executive Orders

Illinois Executive Order V (2006) – All state agencies must comply with State Regs and NFIP. Critical Facilities.

Federal Executive Order 11990 (1977) – Federal agencies, to consider alternatives to wetland sites.

Federal Executive Order 11988 (1978) – Federal agencies must protect against flooding. Written prior to NFIP. Vague.

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



LUNCH 12:00 – 12:30

Where did we confuse you on regulations: State floodway permits > Dams > Public Waters NFIP Building Protection (elevation/floodproofing) > Utilities > RVs Sub Dam and Sub Imp





Part 4 Ordinance Administration



Part 4 - Topics

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

LOCAL PERMIT RESPONSIBILITIES



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

Everyday Activities

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



A. Review Applications

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



Figure 1: FIRM Panel Showing Delineation of the Floodway, FIRM Panel No. 48201C0860L

B. Provide Base Flood Data

- Interpret floodplain boundaries and provide BFE data when available
- If your community map has unnumbered A zones
 - Determine BFE <u>or</u>
 - Require that applicant hire engineer or
 - Make FEMA do it (by applying for a LOMA)



C. Review plans and specs

Ensure conformance with NFIP floodplain management criteria

Include review of

- site plan
- foundation design
- thoroughly notated plans





D. Ensure other permits obtained

Advise applicant of other state or federal permits or approvals that may be necessary

Examples include:

- Wetland/404 permit Corps of Engineers
- NPDES permit IEPA
- <u>Endangered Species Act</u> *– USFWS/Nat'l Marine Fisheries Service
- State floodway permit requirements
- Other local permits such as storm water management permits, septic permits, etc.



Endangered Species Act

U.S. Fish & Wildlin Endanger	red Species			Eco	logical Services		
Search Endangered Species Database	Species C Endangered Spe	cies OUSFWS Search					
ES Home Species What We Do For Land	downers Permits Grants	News About Us FWS Re	gions Laws & Po	olicies Library	For Kids		
Find Endangered Species Home >	county: L Need to con	aSalle, Illinois tact a FWS field office abo	out a species?	Follow <u>this link</u>	to find your local FW	S Office.	
Species in Your State and U.S. Territories:	QUICK Group	Name	Population	Status	Lead Office	Recovery Plan	
Alabama Species Search: Species common/scientific name	 * Thre: * Thre: * ESA * Spec * Spec 	Decurrent false aster (<i>Boltonia decurrens</i>)	Wherever found	Threatened	Illinois-Iowa Ecological Services Field Office	<u>Decurrent False</u> <u>Aster</u>	
	* <u>Spec</u> * <u>Spec</u> More :	Leafy prairie-clover (<u>Dalea foliosa</u>)	Wherever found	Endangered	Tennessee Ecological Services Field Office	Leafy Prairie-clover	
	Flowering Plants	Eastern prairie fringed orchid (<u>Platanthera</u> <u>leucophaea</u>)	Wherever found	Threatened	Chicago Ecological Service Field Office	Eastern Prairie Fringed Orchid	
	Insects	Rusty patched bumble bee (<u>Bombus</u> <u>affinis</u>)	Wherever found	Endangered	Minnesota- Wisconsin Ecological Services Field Office	Recovery Outline for the Rusty Patched Bumble Bee	



E. Notice of water course alterations

Provide required notification of changes in existing water courses to:

- FEMA
- State
- Adjacent communities



F. Issue or deny permits

Floodplain Administrator can:
Issue floodplain development permit
Conditionally approve permit
Deny permit





G. Inspect development

Check development location

Verify construction according to plans

Inspect

- Setback from floodway
- Foundation construction



- Flood resistant material requirements
- Utilities and other building systems
- Anchoring, at/above BFE, floodproofing



H. Look out for violations

Investigate potential violations Reported by citizens Reported by other officials ✓ Found by chance Implement enforcement provisions Retrofit to protect from future flooding EDUCATE to avoid future violations!

I. "Perfect" Set of Records

> Applications

- > Permit and inspection records
- Compliance files variances, ECs*
- LOMCs and other flood studies
- Old ordinances, old flood maps



Back-up copies in secure location
Logical filing system, i.e., by address

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

Got GIS? Risk Identification!

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GIS_Floodplain_Editing_Map - ArcMap - ArcView

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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	Lot 7, Nelson,
7 Point RICHWOODS	33 42-09-230-006-50	Burdell, Martha & Fred	28096 Spaneky Ln	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 06	Lot 6, Nelson,
9 Point RICHWOODS	33 42-09-230-008-00	VACANT	Vacant	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 08	Lot 8, Nelson,
12 Point RICHWOODS	33 42-09-231-002-00	Kimbrel, Clifford	28174 Spankey Ln	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 10	Lot 10, Nelsor
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	Lot 9, Nelson,
15 Point RICHWOODS	33 42-09-230-001-00	Colors by Astrobuses		Fieldon, IL 62031	Plat of Nelson Block 1, Lot 01	Lot 1, Nelson,
16 Point RICHWOODS	33 42-09-231-006-00	Select by Attributes		Fieldon, IL 62031	Plat of Nelson Block 1, Lot 13	Lot 13, Nelsor
17 Point RICHWOODS	33 42-09-231-013-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 20	Lot 20, Nelsor
18 Point RICHWOODS	33 42-09-231-012-00	Enter a WHERE clause to select records in the tag	able window.	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 18 EAST	LOT 16 EAST,
20 Point RICHWOODS	33 42-09-231-012-50	Mathematic and a second second		Fieldon, IL 62031	Plat of Nelson Block 1, Lot 19	Lot 19, Nelsor
21 Point RICHWOODS	33 42-09-231-010-00	Method : Create a new selection	_	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 18 WEST	Lot 18 WEST,
24 Point RICHWOODS	33 42-09-240-010-00	(DANEL)		Fieldon, IL 62031	Plat of Peters Park Block 1, Lot 10	Lot 10, Peters
25 Point RICHWOODS	33 42-09-230-002-00	[PANEL]		Fieldon, IL 62031	Plat of Nelson Block 1, Lot 02 & 03	Lot 2 & 3, Nel
26 Point RICHWOODS	33 42-09-230-004-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 04	Lot 4, Ivelson,
28 Point RICHWOODS	33 42-09-230-005-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot U5	Lot 5, Nelson,
30 Point RICHWOODS	33 42-09-231-003-00	_ [BFE]		Fieldon, IL 62031	Plat of Nelson Block 1, Lot 11	Lot 11, Nelsor
31 POINT RICHWOODS	33 42-09-231-004-00	[REQUIRED]		Fieldon, IL 62031	Plat of Nelson Block 1, Lot 12	Lot 12, Nelsor
32 Point RICHVVOODS	33 42-09-231-005-00	[LOWEST_FL]	~	Fieldon, IL 62031	Plat of Nelson Block 1, Lot 15	Lot 15, Nelsor
33 Point RICHWOODS	33 42-09-231-007-00	· · · · · · · · · · · · · · · · · · ·		Fieldon, IL 62031	Plat of Nelson Block 1, Lot 14	Lot 14, Nelson
34 Point RICHWOODS	33 42-09-231-008-00	= <> Like		Fieldon, IL 62031	Plat of Nelson Block 1, Lot 16	Lot 16, Nelsor
35 Point RICHWOODS	33 42-09-231-009-00			Fieldon, IL 62031	Plat of Nelson Block 1, Lot 1/	Lot 1/, Nelsor
36 Point RICHWOODS	33 42-09-240-009-00	And A		Fieldon, IL 62031	Plat of Peters Park Block 1, Lot 09	Lot 9, Peters
42 Point ROSEDALE	6 42-10-206-003-00			Fieldon, IL 62031	Plat of OtterCreek Block 01, Lot 01	Lot 01, Eaglet
43 Point ROSEDALE	6 42-10-206-004-00			Fieldon, IL 62031	Plat of OtterCreek Block 01, Lot 02	Lot 02, Eaglet
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Variance

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



Conditions for Variances

- For a piece of property; not person owning,
 i.e. addition requested for elderly person in a wheelchair so owner doesn't want to elevate
- 2. Is the minimum necessary to afford relief
- If within designated regulatory floodway, cannot cause increase in flood levels during base flood
- 4. No extraordinary public expense
- 5. No increase in flood heights



Conditions for Variances

- 6. No fraud or victimization of public
- 7. No conflict with existing local laws or ordinances
- 8. No increased threat to public safety or creation of nuisance





Key to Valid Variance

"Unnecessary hardships"

- Loss of all beneficial or productive use
- Deprivation of reasonable return on property
- Rendering property valueless
- Inability to develop property in compliance with the regulations
- Reasonable use cannot be made consistent with regulations



Insufficient Reasons

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



If a Variance is Issued A community must

Maintain a record of all variance actions, including those denied, along with the justifications (findings of fact).



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.





If full compliance isn't possible...

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



Last Resort: Section 1316

- All other means of enforcement exhausted
- Community officially declares the structure in violation with a notice to owner explaining prospective denial of flood insurance



- ✓ Declaration/request sent to FEMA
- Flood insurance denied until 1316 declaration rescinded by FEMA





Record Keeping

- Provides evidence of activity
- Supports decision-making
- Supports delivery of programs and services
- Demonstrates accountability of person and community



100+ community visits per year.

15+ workshops per year.

5,000 technical assistance per year.

Illinois <u>leads</u> <u>the nation</u> in communities on probation or suspended from the National Flood Insurance Program.

Compliance!



7 communities nationwide kicked out of NFIP. 5 are in Illinois! We (Paul) are serious!

Marilyn Community Visits and ELEV. CERT. START 1:00 - 1:45



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

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



National Flood Insurance Program (NFIP) Guidance for Conducting Community Assistance Contacts and Community Assistance Visits

FEMA F-776/April 2011



Community Assistance Visit Possible Violations

Examples of deficiencies and violations.....

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

WHO'S TO BLAME?

The developer?
The builder?
The owner?
The building official?
The realtor?
The prior administration?

WE DON'T CARE!!!!

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

Probation

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





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 your community has any Rep Loss properties...

There is 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!

Illinois is ranked #1 in the nation:

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



FEMA Elevation Certificate



The Elevation Certificate

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

(OMB No. 1660-0008 Expiration Date: November 30, 2018
ON CERTIFICATE	

ELEVATION CERTIFICATE Important: Follow the instructions on pages 1–9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agenticompany, and (3) building owner

	an other				-				
A.L. Dulldlan Overate Mar	SECTION	A - PROPERT	r inford	MATION				ORINSUR	ANCE COMPANY USE
A1. Building Owners Nar	e						- Ľ	Policy Nume	Jer.
A2. Building Street Addre Box No.	ss (Including	Apt., Unit, Sul	te, and/or	Bidg. No.) o	r P.O. F	Route and	•	Company N	AIC Number:
City				State			- 1	IP Code	
							•		
A3. Property Description	Lot and Bio	ck Numbers, Ta	ax Parcel	Number, Leg	al Des	cription, etc.	.)		
A4. Building Use (e.g., R	sidential, N	on-Residential,	Addition,	Accessory, e	tc.)				
A5. Latitude/Longitude:	.at.		Long.			Horizontal I	Datum	NAD 1	927 🔲 NAD 1983
A6. Attach at least 2 phot	ographs of t	he building if th	e Certifica	te is being u	sed to	obtain flood	Insura	nce.	
A7. Building Diagram Nur	iber 🔜	-							
A8. For a building with a	rawispace (or enclosure(s):							
 a) Square footage of 	crawispace	or enclosure(s)				sqft			
b) Number of permanent	ent flood op	enings in the cr	awispace	or enclosure	(s) wit	hin 1.0 foot a	above a	djacent gra	de
c) Total net area of fi	c) Total net area of flood openings in A8.b sq in								
d) Engineered flood	d) Engineered flood openings? Yes No								
A9. For a building with an	A9. For a building with an attached garage:								
 a) Square footage of 	attached ga	rage		sqft					
b) Number of perman	ent flood op	enings in the at	tached ga	arage within "	1.0 foot	above adja	cent gr	ade	
c) Total net area of fi	od opening	s in A9.b		50	In				
d) Engineered flood of	penings?	Yes 1	No						
	SECTIO	NB-FLOOD	INSURA	NCE RATE	MAP (FIRM) INFO	RMAT	ION	
B1. NFIP Community Nar	e & Comm	unity Number		B2. County	Name				B3. State
									•
B4. MapiPanel B5. 8 Number	uffix 86.	FIRM Index Date	B7. FIR Effe Rev	M Panel ctive/ ised Date	B8. Fi Zone(ood s)	89. Ba (Z)	se Flood El one AO, use	evation(s) e Base Flood Depth)
B10 Indicate the source	f the Bace	Flood Elevation	(BEE) de	ta or base fi	and dee	th entered k	n here	89-	
FIS Profile FIRM Community Determined Cther/Source:									
B11. Indicate elevation da	tum used fo	or BFE in Item B	99: 🔲 NK	3VD 1929	NA	/D 1988 [Oth	en/Source:	
B12. Is the building locat	d in a Coas	tal Barrier Resc	ources Sy	stem (CBRS) area (or Otherwise	Protec	ted Area (C	PA)? Yes No
Designation Date:			CBRS	OPA					
FEMA Form 086-0-33 (7/15)		F	Replaces a	ali previous e	ditions				Form Page 1 of 6

11/30/18 Expire Date

Now six pages long!!

At least 2 photos required if being used to obtain flood insurance.

Section A

- Attach a map to show building location if appropriate
- Identify whether the enclosure, crawlspace or garage has engineered flood openings.
- Carefully choose the correct Building Diagrams.
- 3 newer diagrams:
 - 1. Diagram 1B is for raised-slab-on-grade or slabon-stem-wall-with-fill buildings.

2. Diagram 2B shows a building with a basement that has an exterior entrance below ground level (sunken patio or stairway, not a true "walkout")

3. The new Diagram 9 is for all buildings (other than split-level) elevated on a below-grade crawlspace that is not a basement (not more than 2 feet below grade and not more than 5 feet below next floor).

Section A – Property Information

Important: Follow the instructions on pages 1-9.

Copy a	all pages of this Elevation Certificate and all attachments for (1) community official, (2) insural	nce agent/company, and (3) building owner.
	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	Company NAIC Number:
	Box No.	
	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 I	Datum: 🔲 NAD 1927 🔄 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) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot a	bove adjacent grade
	c) Total net area of flood openings in A8.b sq in	
	d) Engineered flood openings? Yes No	

Background information on the property....NOT you.

Section A- Property Information

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

	SECTION A – PROPERTY INFORMATION FOR INSURANCE COMPANY USE								
A1.	Building Owner's Name			Policy Numb	ber:				
A2.	Building Street Address (including Apt., Unit, Suite, and/or Bl Box No.	dg. No.) or P.O.	Route and	Company N	AIC Number:				
	City	State		ZIP Code		I			
			<u>•</u>		Architect wi	ill use ir	iterio	•	
A3.	Property Description (Lot and Block Numbers, Tax Parcel No	umber, Legal De	scription, etc.)		dimensions	s while E	:C red	quires	
					outside dim	nensions	s. May	y mea	na
A4.	Building Use (e.g., Residential, Non-Residential, Addition, Ad	ccessory, etc.)			shortage in	net are	a of c	penin	gs.
A5.	Latitude/Longitude: Lat. Long.		Horizontal Datur	n: 🚺 NAD 1	927 📃 NAD 1	1983			
A6.	Attach at least 2 photographs of the building if the Certificate	is being used to	o obtain flood insu	ance.					
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) Number of permanent flood openings in the crawlspace of	r enclosure(s) wi	thin 1.0 foot above	adjacent gra	de				
	c) Total net area of flood openings in A8.b	sq in							
	d) Engineered flood openings? Yes No								
I	1								
	If you ICC ES form from	Must subtra	ct any bars, lo	uvers or		McNICHOLS	S® Wire M	esh	
	If yes, ICC ES form from	grates. Prov	vide notes on			Square, (Galvanize	d, Pre-	Galvanized,
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						(2-3/4 Gaug	je) Wire	Diameter,	79% Open
						Area			

Section A – Property Information Building Diagrams (now 11)

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

	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 Box No.	and Company NAIC Number:
	City State	ZIP Code
		•
A3.	Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Descriptio	n, etc.)
A4.	Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)	
A5.	Latitude/Longitude: Lat. Long. Horiz	ontal Datum: 🔄 NAD 1927 🔄 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) Number 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? Yes No	

DIAGRAM 1A

All slab-on-grade single- and multiple-floor buildings (other than split-level) and high-rise buildings, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least 1 side.*



DIAGRAM 2A

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*



DIAGRAM 1B

All raised-slab-on-grade or slab-on-stem-wall-with-fill single- and multiple-floor buildings (other than splitlevel), either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least 1 side.*



DIAGRAM 2B

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides; most of the height of the walls is below ground level on all sides; and the door and area of egress are also below ground level on all sides."



* 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.

Building Diagrams

DIAGRAM 3

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

Distinguishing Feature – The bottom floor (excluding garage) is at or above ground level (grade) on at least 1 side.*



DIAGRAM 4

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

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*



DIAGRAM 5

All buildings elevated on piers, posts, piles, columns, or parallel shear walls. No obstructions below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is open, with no obstruction to flow of floodwaters (open lattice work and/or insect screening is permissible).



DIAGRAM 6

All buildings elevated on piers, posts, piles, columns, or parallel shear walls with full or partial enclosure below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A – Property Information.





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 1 side is at or above grade. The principal use of this building is located in the elevated floors of the building.

Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings^{**} present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A – Property Information.



DIAGRAM 8

All buildings elevated on a crawlspace with the floor of the crawlspace at or above grade on at least 1 side, with or without an attached garage.

Distinguishing Feature – For all zones, the area below the first floor is enclosed by solid or partial perimeter walls. In all A zones, the crawlspace is with or without openings³⁷ present in the walls of the crawlspace. Indicate information about crawlspace size and openings in Section A – Property Information.



DIAGRAM 9

All buildings (other than split-level) elevated on a subgrade crawlspace, with or without attached garage.

Distinguishing Feature – The bottom (crawlspace) floor is below ground level (grade) on all sides." (If the distance from the crawlspace floor to the top of the next higher floor is more than 5 feet, or the crawlspace floor is more than 2 feet below the grade [LAG] on all sides, use Diagram 2A or 2B.)





Diagram #1 and 1B – Slab or wall



Diagram # 7 - Fully enclosed lower area



Permanent Flow Thru openings are VERY important!

Diagram #8 and #9 – Crawlspaces (above grade crawl and below grade crawls)



Section A- Property Information-Crawlspaces or enclosures

A8. For a building with a crawls	pace or enclosure(s):								
a) Square footage of craw	space or enclosure(s)			sq ft					
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade									
c) Total net area of flood o	c) Total net area of flood openings in A8.b sq in								
d) Engineered flood openings? Yes No									
A9. For a building with an attached garage:									
a) Square footage of attached garagesq ft									
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade									
c) Total net area of flood o	penings in A9.b		sq	in					
d) Engineered flood openin	igs? 🗌 Yes 🗌 N	No							
SI	ECTION B - FLOOD	INSURA	NCE RATE	MAP (FIRM) INF	ORMATION				
B1. NFIP Community Name & (Community Number		B2. County	Name		B3. State			
						•			
B4. Map/Panel B5. Suffix Number	B6. FIRM Index Date	B7. FIR Effe Rev	RM Panel ective/ vised Date	B8. Flood Zone(s)	B9. Base Flood E (Zone AO, use	levation(s) e Base Flood Depth)			

Crawlspaces



Interior above grade? or Interior below grade?

If interior grade is used to comply with opening elevation must be noted in the Comment section as photos will not show compliance.



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

Section A – Property Information Openings

-	DEPARTMENT OF HOMELAND SE Federal Emergency Manageme ELEVATION CERTIFICA IMPORTANT: FOLLOW THE INSTRUCTIO	ECURITY nt Agency A TE DNS ON F	y PAGES 9-1	16 ^c	MB Control M	Number: 1660 biration: 11/30	-0008 0/2018
C	opy all pages of this Elevation Certificate and all attachments for (1) con SECTION A - PROPERTY INFORMATION	nmunity offic	ial, (2) insuran	ce agent/company	r, and (3) buil	ANY USE	
1	A1. Building Owner's Name			Policy Number:			
1	 Building Street Address (including Apt., Unit, Suite, and/or Bldg. I Box No. 	No.) or P.O.	Route and	Company NAIC Number:			
Ċ	City		State		Zip Code		
1	A3. Property Description (Lot and Block Numbers, Tax Parcel Number	er, Legal Des	scription, etc.)				
A	A4. Building Use (e.g., Residential, Non-Residential, Addition, Acces	sory, etc.)					
ļ	A5. Latitude/Longitude: Lat. Long.	Horizonta	al Datum:	NAD 1927	🔵 NAD 198	3	
ŀ	A6. Attach at least 2 photographs of the building if the Certificate is b	eing used to	obtain flood i	nsurance.			
1	A7. Building Di agram N umber						
ľ	 For a building with a crawlspace or enclosure(s): 	A9.	For a buildin	g with an attache	d garage:		
	a) Square footage of crawlspace or enclosure(s)	sq ft a)	Square footag	e of attached gar	age		sq ft
	b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade	b) i	Number of per in the attached above adjacer	rmanent flood ope d garage within 1. ht grade	enings 0 foot		
	c) Total net area of flood openings in A8.b	sq in c)	Total net area	of flood openings	in A9.b		sq in
	d) Engineered flood openings? Yes No	d)	Engineered fle	ood openings?	O Yes	No	



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



Technical Bulletin #1

www.FEMA.gov

Search window: Technical Bulletin 1

Any enclosed area <u>must</u> be flow thru and interior rooms must have openings, i.e. enclosed stairwell





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 B – Flood Insurance Rate Map (FIRM) Information

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: FIS Profile FIRM Community Determined Other/Source: B11. Indicate elevation datum used for BFE in Item B9: NGVD 1929 NAVD 1988 Other/Source: B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? Yes No Designation Date: CBRS OPA										
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: Image: Community Determined Other/Source: B11. Indicate elevation datum used for BFE in Item B9: NGVD 1929 NAVD 1988 Other/Source: B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? Yes No Designation Date: CBRS OPA	SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION									
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B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? Yes No Designation Date: CBRS OPA	B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9: FIS Profile FIRM Community Determined Other/Source: B11. Indicate elevation datum used for BEE in Item B9: NGVD 1929									
Designation Date:	B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)?									
EEMA Form 098 0 22 (7/15) Each and a fill provinus aditions	EMA Form 098 0 22 (7/15)		litope	Form Page 1 of 8						

Don't list map number for the community number

Section B

FEMA Map Service Center website

Map Index date could differ from panel date

NFIP MAP INDEX NATH FOUTANE FELOTOPHING ULA ANNE FAROTERAN FIRM FLOOD INSURANCE RATE MAP KANKAKEE COUNTY, ILLINOIS AND INCORPORATED AREAS (SEE LISTING OF COMMUNITIES TABLE) MAP INDEX PANELS PRINTED: 20, 40, 45, 65, 70, 90, 95, 115, 120, 160, 180, 185, 190, 191, 192, 193, 194, 202, 205, 210, 211, 212, 213, 214, 220, 230, 235, 237, 238, 239, 241, 242, 245, 255, 260, 265, 270, 357, 376, 377, 378, 379, 381, 382, 383, 384, 390, 395, 401, 410, 420, 430, 435, 450 MAP NUMBER: 17091CIND0B MAP REVISED EBRUARY 15, 2019 Federal Emergency Management Agency

NFIP	PANEL	0115E
TLOIDD IN KUIRWINKGE PROCERAIM	FIRM FLOOD INSURA KANKAKEE ILLINOIS AND INCORPOOL PANEL 115 OF 4 (SEE MAP INDEX FOR CONTANS COMMINITY GRANT PARK, VILLAGE OF KANKAKEE COUNTY	NCE RATE MAP COUNTY, RATED AREAS 85 FIRM PANEL LAYOUT) NUMBER PANEL SUFFIX 171167 0115 E 170336 0115 E
	Should be used on insurance appr	MAP NUMBER
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Product ID	Effective Date 🖨	LOMC	Size 🔶	Download	View
17091CIND0B	02/15/2019		OMB	DL	VIEW
17091C0020F	02/15/2019		18MB	₽ DL	VIEW
17091C0040F	02/15/2019	LOMC	44MB	DL	VIEW
17091C0045F	02/15/2019		47MB	DL	VIEW
17091C0065E	01/20/2010	LOMC	96MB	DL	VIEW
17091C0070E	01/20/2010	LOMC	33MB	DL	VIEW
17091C0090E	01/20/2010		33MB	₽ DL	VIEW



Section B – Base Flood Elevation Information Sources

	, ,								
		SE	ECTION B - FLOOD IN	SURA	NCE RATE MAP (FIRI	M) INF	ORMATION		
B1.	NFIP Community Na	ame & Comn	nunity Number		B2. County Name				D3. State
B4.	Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7.	FIRM Panel Effective/	B8.	Floor Zone(s)	B9. Base Fle	ood Elevation(s)
					Revised Date			(Zone A	O, use base flood
								depth	
B10	Indicate the source	of the Base I	Flood Elevation (BFE) o	lata o	r base flood depth ente	red in	Item BQ:		
	C FIS Profile C FI	RM 🔵 Com	munity Determined	Othe	r/Source:				
B11	. Indicate elevation da	atum used fo	or BFE in Item B9: 🛛 🗍	NGVE	0 1929 🔵 NAVD 1988	0	ther/Source:		
B12	. Is the building locate	ed in a Coas	tal Barrier Resources S	ysten	n (CBRS) area or Other	wise F	Protected Area (OPA)? 🔵 Y	res 🦳 No
Des	ignation Date:		CBRS (OP	A				

1. Flood Insurance Study Floodway data table Flood Profile

2. FIRM (least accurate)

Flood Insurance Rate Map (FIRM)



Base Flood Elevation (BFE)

Cross-Sections (Hexagon)

What is the BFE at the northwest corner of this house about a quarter of the way between BFE line 688 and 686?

From FIRM – about 686.5

Do you think the private drives might make a difference?

Flood Insurance Study (FIS)



Search Results for LISLE, VILLAGE OF

Click subscribe to receive email notifications when products are updated.

Please Note: Searching All Products by county displays all products for all communities within the county. You can refine your search results by specifying your specific jurisdiction location using the drop-down menus above.

📂 Effective Products (39) 🔞

- ▶ FIRM Panels (9) ♦ DL ALL
- ▼ FIS Reports (4) 🛛 🖓 DL ALL

Product ID	Effective Date	Size	Download
17043CV001A	12/16/2004	13MB	₽ DL
17043CV002A	12/16/2004	12MB	₽ DL
17043CV003A	12/16/2004	33MB	OL
17043CV004A	12/16/2004	33MB	₽ DL

LOMC (25)

NFHL Data-State (1)

NFHL Data-County (0

FIS Floodway Data Table

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)				
с	ROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
East No. 3	Branch Tributary (EBEB) EBEB0047 EBEB0048 EBEB0049 EBEB0050 EBEB0051 EBEB0052 EBEB0053	684 ¹ 1,013 ¹ 1,754 ¹ 1,890 ¹ 2,613 ¹ 3,263 ¹	164 ² 84 ² 57 57 125 119	239 97 273 126 62 264 198	1.4 3.4 <u>1.2</u> 2.6 5.2 1.2 1.1	670.2 674.9 686.0 686.1 686.5 699.1 713.7	670.2 674.9 686.0 686.1 686.5 699.1 713.7	670.2 674.9 686.1 686.2 686.5 699.2 713.7	0.0 0.1 0.1 0.0 0.1 0.0
¹ Ir 2 A	 In feet above confluence with East Branch DuPage River Actual floodway width cannot be shown on FIRM due to redelineation of floodplain 								
TABI	FEDERAL EMERGENCY MANAGEMENT AGENCY			FLOODWAY DATA					
AND INCORPORATED AREAS			EAST BRANCH TRIBUTARY NO. 3 (EBEB)						

FIS Flood Profile



BFEs in Unnumbered A Zones (unstudied floodplains)

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





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–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.						
	Benchmark Utilized: Vertical Datum:					
	Indicate elevation datum used for the elevations in items a) through h) below.					
	NGVD 1929 NAVD 1988 Other/Source:					
	Datum used for building elevations must be the same as that used for the BFE.					
	Check the measurement used.					
	a) Top of bottom floor (including basement, crawlspace, or enclosure floor)					
	b) Top of the next higher floor feet meters					
	c) Bottom of the lowest horizontal structural member (V Zones only)					
	d) Attached garage (top of slab)					
	e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)					
	f) Lowest adjacent (finished) grade next to building (LAG)					
	g) Highest adjacent (finished) grade next to building (HAG)					
	h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support feet meters					

If any item does not apply to the building, enter "N/A" for not applicable.

Deck elevation?

Section C(h) now captures the lowest adjacent grade at lowest elevation of deck or stairs, including structural support.

This information is required if the EC is being used to support a request for a LOMA or LOMR-F.

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

Section D – Surveyor Certification

SECTION D -	SURVEYOR, ENGI	NEER, OR A	RCHITECT CE	ERTIFICATION	
This certification is to be signed and sealed by a that the information on this Certificate represent punishable by fine or imprisonment under 18 U	a land surveyor, eng ts my best efforts to S Code, Section 10	ineer, or arch interpret the 201.	iitect authorized date available. I	ed by law to certify elevation information. <i>I certify</i> I understand that any false statement may be	
Check here if attachments.	Were latitude and longitude in Section A provided by a licensed land surveyor? Yes No				
Certifier's Name	License Number				
Title	Company Name			PLACE SEAL HERE	
Address	City	State	Zip Code		
Signature	Date	Teleph	one		
Copy both sides of this Elevation Certificate for	(1) community offici	al, (2) insurar	nce agent/comp	pany, and (3) building owner.	
Comments (including type of equipment and lo	cation , per C2(e), if	applicable)"			
Signature 💻				Date	

Only surveyors can do lat and long?
Section E – Building Information (Zone AO and A)

SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BEE)

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	he 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	meters	above or below the HAG.	
	b) Top of bottom floor (including basement, crawlspace, or enclosure) is		feet	meters	above or below the LAG.	
E2.	E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of Instruction the next higher floor (elevation C2 b in					
	the diagrams) of the building is		feet	meters	above or below the HAG.	
E3.	Attached garage (top of slab) is		feet	meters	above or below the HAG.	
E4.	Top of platform of machinery and/or equipment servicing the building is		feet	meters	above or below the HAG.	
E 5 .	Zone AO only: If no flood depth number is available, floodplain management ordinance? Yes	, is the top of the bottom No 🔲 Unknown. The	floor elev local offi	ated in accor cial must cer	dance with the community's tify this information in Section G.	

For insurance purposes or local ordinance compliance (zone AO) only: not for LOMA/LOMR-F purposes

Section F Property Owner's Agent

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 or Owner's Authorized Representative's Nam

Address	City	State	ZIP Code
Signature	Date	Telephone	
Comments			
			Check here if attachments.

Section G Community Authorization

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–G10. In Puerto Rico only, enter meters.					
G1. 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. A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.					
93. The following information (Items G4–G10) is provided for community floodplain management purposes.					
G4. Permit Number	G5. Date Permit Issued	G6. Date Certificance of Compliance/Occupancy Issued			
G7. This permit has been issued for: New Construction Substantial Improvement G8. Elevation of as-built lowest floor (including basement) of the building: feet meters					
G9. BFE or (in Zone AO) depth of flooding at	the building site:	feet meters Datum			
G10. Community's design flood elevation:		feet meters Datum			
Local Official's Name	Title				
Community Name	Telephone				
Signature	Date				
Comments (including type of equipment and lo	ocation, per C2(e), if applicable)				

Last Two Pages – Building Photos

BUILDING PHOTOGRAPHS See Instructions for Item A8. OMB No. 1660-0008 Expiration Date: November 30, 2018 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 ZIP Code Company NAIC Number

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to the instructions for Item A6. Identify all photographs with date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8. If submitting more photographs than will fit on this page, use the Continuation Page.

Photo One

Required for new insurance policies!!!

Elevation Certificates

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



Questions?

Part 4 Summary Review

Where did we confuse you in covering:

Duties of Floodplain Administrators

Variances

- Substantial damage/improvement
- Community Audits & Compliance
- Recordkeeping
- Elevation Certificates



Frank NFIP START 2:00 – 2:30







Flood Insurance



<text><text><text>

The National Flood Insurance Program is administered by the Federal Insurance Administration, part of the Federal Emergency Management Agency (FEMA)

Part 5 - Topics

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



Common Acronyms...

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



National Flood Insurance Program (NFIP)

Now covers 5.1
 million policies in
 23,000+ communities.

>\$1.3 trillion in risk exposure





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

How Does Flood Insurance Work?



Who Can Buy Flood Insurance?

- Anybody in a community participating in the NFIP.
- <u>Anywhere</u> within that community (all zones)
- Not all flood insurance is NFIP



To purchase an NFIP policy:

- Call a licensed insurance agent
- If you can't find an agent who sells flood insurance, call the NFIP helpline at 800-427-4661.
- http://www.floodsmart.gov



Coverage Amounts

Buildings

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

Contents

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

Less if community is in the Emergency phase of the program

NFIP Flood Insurance



Can be purchased for:

> a building under construction

> a finished structure



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



Limitations

Basements and enclosures beneath the lowest floor of elevated post-FIRM buildings – limited coverage



When It's Written



Waiting Period

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

Lenders

- > Must have determination on file
- May require insurance <u>even outside</u> <u>SFHA</u>

Who Writes Flood Insurance?

NFIP flood insurance



NATIONAL FLOOD INBURANCE PROGRAM

- FEMA's NFIP Servicing Agent
- Write Your Own (WYO) companies

Private flood insurance

- WYO Companies
- Other high-risk insurers, Lloyd's of London
- Growing interest in some parts of the country

Who MUST buy Flood Insurance?

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

- <u>Making</u>
- <u>I</u>ncreasing
- <u>**R**</u>enewing
- <u>*E*</u>xtending

a mortgage, home equity, improvement, construction, commercial or farm credit loan secured by the building

<u>**OR</u>**, when lender becomes aware a building in the SFHA securing the loan is not insured</u>



Who <u>MUST</u> 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?

Lender's Responsibility Insurance is required when:

- A lender makes, renews, extends, or increases a loan.
- That loan is from a federally regulated lender
- The loan collateral is a building insurable under the NFIP's standard policy.
- The building is or will be located in an SFHA.
- The community participates in the NFIP.
- Insurance is also required when a lender learns that such a building is not insured (such as when a lender is notified by its flood hazard determination vendor of a <u>map revision</u>)

How Much Coverage is Required?

 Outstanding principal balance

<u>or</u>

Maximum available through the NFIP

<u>or</u>

- Insurable value of building
- Whichever is less



When do flood insurance policies become effective?

30-Day Waiting Period

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

Good morning... I'd like to find out about flood insurance.



Lenders Documentation

Lender must complete (or have a vendor complete) a Standard Flood Hazard Determination Form and maintain it in the loan file for the life of the loan.

Lender must notify borrower of the results and maintain documentation that the borrower received the notification.

Do lenders HAVE to hire a third-party determination company?

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 ?
- Some perform 10,000+ determinations per day (mostly automated)

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



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.

STRUCTURE [D] LOCATED IN SFHA, NOT ELEVATED.

INSURANCE IS REQUIRED.

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 <u>Pre-FIRM</u> House ("subsidized" rates)



Comparison cost of Flood Insurance



Risk-Rating Redesign

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

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
"Newly mapped" (formerly the PRP Extension)

Rating for "newly mapped" properties added to the SFHA by a subsequent Flood Insurance Rate Map start at a low price, which gradually increases each year.

"Newly mapped":



Grandfathering

If homeowner:

maintains continuous coverage or

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

"Old Maps" Rule

Keep old maps!!!

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



Many, but not all, old maps are there.

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



Options & Actions

Property Owners (and insurance agents)

- Identify what full-risk rate is; get an Elevation Cert.
- Look into map change (LOMA or LOMR)
- Look into effect of higher deductibles
- Look into rate-reducing mitigation actions



Options & Actions

Communities

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



FLOODPLAIN MANAGEMENT & ITS EFFECTS ON FLOOD INSURANCE



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

What is Increase Cost of Compliance (ICC)??

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



ICC Details

ICC Claim Filed if Structure was:

- Damaged by <u>flood</u>.
- Substantially or repetitively damaged





ICC opens the Window of



How to Qualify for ICC??

Three conditions must be met to claim the ICC coverage:

- E Building must be insured under the NFIP and have a paid claim for flood damage.
- E Building must be substantially damaged by a flood or meet the definition of "repetitive loss" due to flood damage.
- The community must determine that the building is substantially damaged by flood and is required by the community's ordinance to be elevated or removed from the SFHA (and *notify* the owner of this).





When ICC is Approved

The insurance company MAY release up to ½ of the estimated amount to begin construction.

The company will pay all (or the remaining portion) 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





Ron CRS START





Community Rating System (CRS)



> Another way to reduce the cost of a flood policy!

Community goes above-and-beyond NFIP minimums.

Must pass a "clean" CAV first.



Community Rating System in IL 69 Active Communities

Adams County

8

6

7

6

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7

- Addison
- Aurora
- Bartlett
- **Calumet City**
- Carpentersville
- Champaign
- Country Club Hills 8
- **Crystal Lake**
- Deerfield
- **DeKalb City**
- **Des Plaines**
- **Downers Grove** 6
- **DuPage County** 6
- Flossmoor
- Glen Ellyn
- Glendale Heights -7
- Glenview
- Gurnee
- Hampshire
- Highland Park
- Hoffman Estates 6
- Huntley
- Jersey County
- Lake County

- Lake Forest
- Lake in the Hills

7

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- Lansing
- LaSalle County
- Libertyville
- Lincolnshire
- Lisle
- McHenry County
- Melrose Park
- Metropolis
- Midlothian
- Moline
- Montgomery
- Mount Prospect
- Niles
- Northbrook
- Northfield
- Oak Brook
- Ogle County
- Orland Hills
- Ottawa
- Palatine
- Peoria County
- Prospect Heights
- River Forest

- Riverwoods 8 Rock Island Co 7 Roxana 8 Sangamon County 7 South Elgin 5 South Holland 5 St. Charles 5 St. Clair County 6 Sugar Grove 6 Swansea 7 Sycamore 7 • Tinley Park 7 Westchester 8 Wheaton 6 Wheeling 6 Whiteside County 8
- Willowbrook

6

6

- Winnetka
- Wood Dale



(As of Feb 2019)

CRS in Illinois

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

Incentive



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

CRS Activity Examples

Activity 300 - Elevation certificates, Outreach projects

Activity 400 - Higher standards, Open space preservation, Stormwater management

Activity 500 - Acquisition and relocation, Drainage system maintenance

Activity 600 - Flood warning program, levee safety, dam safety

<u>CRS Activities</u>

> 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





> 600 Flood Preparedness Activities

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



CRS Premium Discounts

<u>Points</u>

- □ 500-999
- □ 1000-1499
- □ 1500-1999
- □ 2000-2499
- □ 2500-2999
- □ 3000-3499
- □ 3500-3999
- □ 4000-4499
 - □ 4500+

Discount

□ 5%

□ 10%

□ 15%

□ 20%

□ 25%

□ 30%

□ 35%

□ 40%

□ 45%

CRS Representative for Illinois

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



Part 5 – Summary Review

Where did we confuse you in covering:

- NFIP Insurance Requirements
- Types of flood insurance and policies
- Increased Cost of Compliance (ICC)
- Community Rating System (CRS)
- Grandfathering



Part 6 Mitigation and Post-Disaster Assistance





RON D. MITIGATION START





You are NOT Supermen and Superwomen



Put a barricade in front of the cave entrance.

Small things can make a big difference



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 Count	y 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

Mitigation Works! 5,000 Buyouts



NI NA I U	00
Knox Count	ty 17
LaSalle Cou	unty 14
Lake Count	y 53
Madison Co	bunty 47
Marion	46
Mason Cou	nty 28
McHenry C	ounty 1
Montgomer	y 39
Monroe Co	unty 1,400
Oquawka	32
Ottawa	57
Palos Hills	3
Pawnee	3
Pearl	4
Peoria	14
Peoria Cou	nty 100
Peoria Heig	hts 23
Petersburg	42
Pike County	/ 33
Pontoosuc	20
Randolph C	ounty 24
Riverside	10
Riverton	6
Rock Island	County 63
Rockwood	11
Rocky Run	12
Sangamon	County 61
Shorewood	47
Sidney	10
St. Clair Co	bunty 270
Thebes	
Valmeyer	244
Villa Grove	15
Warsaw	5
West Frank	fort 31
Whiteside C	County 8

Kirkland

65

Grafton, Illinois... Flood? What flood?











City of Ottawa



1982. The Ottawa "flats". Under water.



2008. The same Ottawa "flats" After buyouts.
Mitigation Grant Programs

FEMA currently has 3 mitigation grant programs:

- Hazards Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA)
- Pre-Disaster Mitigation (PDM)

Other sources:

- IDNR/OWR
- DCEO (HUD funds)
- Metropolitan Water Reclamation District
- Counties and municipalities

Mitigation Funds will NOT Solve all of your Problems

- Limited amount of funds
- Some projects too big
- Some projects too small
- Some don't qualify under the rules

IDNR Funds

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

Presidential Declaration

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

Hazard Mitigation Grant Program (HMGP)

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



Flood Mitigation Assistance (FMA)

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

Pre-Disaster Mitigation Program (PDM)

- > Annual nationwide competitive program.
- Funds projects for all natural hazards
- Flood insurance is not a prerequisite
- Mitigation plan is a prerequisite
- Can fund plans
- Changing emphasis can now fund floodwalls, green infrastructure, floodplain and stream restoration
- Potential for a LOT more money



Repetitive Loss Structure

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

Severe Repetitive Loss Structure

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



Rep Loss in Illinois

- 3,814 rep loss properties (9.5% of 40,000 policies)
- \$198.5 million in total losses (31% of our total claims)
- > At least one property is located in 381 Illinois communities
- 1993 #5 on the national list!
- > 2007- #15 on the national list!

Every state has frequently flooded properties, but 21 have a 1,000 or more.



Number of repeatedly flooded properties



Repeatedly Flooded Properties Cost Billions, The PEW Charitable Trust, Oct 2016

Source: Federal Emergency Management Agency, "Repetitive Loss State/ Community Drilldown—Non-Mitigated Records Only," Jan. 31, 2016

Mitigation Planning

- States and local communities are required to have plans
- States must use local plans is estimating losses and for establishing priorities for planning and project grants
- Communities must have mitigation plans to be eligible for federal mitigation funds (DMA 2000). HMGP, FMA, and PDM.
- Most plans are now done on a county-wide basis and a community must show participation

2015 Bureau, LaSalle, Marshall, Putnam, and Stark Counties Natural Hazards Mitigation Plan

Prepared by: North Central Illinois Council of Governme Ottawa, Illinois

2018 Illinois Natural Hazard Mitigation Plan



Bruce Rauner GOVERNOR

October 2018



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

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

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





Illinois Comprehensive Hazard Mitigation Plan Report (as of 8/1/18)

Post Disaster Assistance

Depending on the declaration, federal assistance can include:

- Assistance to state and local governments to help pay for disaster response or damages to public infrastructure
- Money for relief agencies like Red Cross
- Grants and loans to individuals and households for temporary living or personal property damages
- Small Business Administration loans
- Federal tax relief via IRS



Public Assistance Program and Policy Guide FP 104-009-2 / April 2018

See Fema



Public Assistance Program

States, territories, tribal, and local governments, as well as private nonprofits, can get reimbursed for emergency response activities. It is critical that organizations set up accounting systems in advance of a disaster to increase rates of reimbursement.

The list of activities is extensive and includes:

- Repairs to public infrastructure, i.e. water treatment plants, roadways, public buildings, etc.
- Police and public works overtime pay
- Flood and fire fighting activities
- Supplies and equipment
- Meals for emergency workers
- Evacuation and sheltering operations





FEMA

Public Assistance Program

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

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

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



Public Assistance Program and Policy Guide FP 104-009-2 / April 2018



Individual and Household Assistance Program

Following a presidential disaster declaration, FEMA will set up disaster centers in the area and set up a disaster number for people to use when requesting assistance.

Two options for residents and businesses, regardless of flood insurance coverage are:

- Small Business Administration low interest loans
- FEMA's Individual and Household Assistance Program
 - > Housing
 - Personal property
 - Real property

If federal assistance is received, flood insurance will be required in the future for the property, regardless of owner.



Part 6 – Summary Review

- Where did we confuse you in covering:
- HMGP
- FMA
- PDM
- Mitigation Planning
- Post Disaster Assistance



MITIGATION

IEMA Point of Contact:

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

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



Frank Shockey Natural Hazard Specialist 536 South Clark Street Chicago, IL 60605

312-408-5321

Frank.shockey@fema.dhs.gov

IDNR/OWR Contacts:

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

Ron Davis Downstate Floodplain Manager (217) 524-7200 Ron.Davis@Illinois.gov



THANK YOU

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



Marilyn EXERCISE SLIDES



- New Residential Development
- Site Description
- What is the Base Flood Elevation on Map
- What is the Base Flood Elevation on Study Profile

Mapping Example First step Select Correct FIRM Panel



Find General Location



Identify Specific Location



Identify Specific Lot



Is the Site in the Floodplain?



Is the Site in the Regulatory Floodway?



Determine BFE Using FIRM



Determine BFE Using FIS Flood Profile



Determine Distance to closest Landmark



Determine BFE



> Additional Freeboard Requirements




<u>Floodplain</u> <u>Exercise</u>

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 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?



<u>Floodplain</u> <u>Exercise</u>

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?
- 5. Floodproofing?



Floodplain Exercise

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?



<u>Floodplain</u> <u>Exercise</u>

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

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



<u>Floodplain</u> <u>Exercise</u>

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?

Coastal Regs





Coastal Floodplains

Definitions.....

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

Coastal Floodplains

Definitions.....

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

Coastal transect



Coastal Floodplain





Coastal Floodplain Map



Levels of Detail in Floodplain Delineations



UNDEVELOPED COASTAL BARRIERS



Identified 1983

Identified Otherwise 1990 Protected Areas

In undeveloped Coastal Barrier Resource Areas (COBRA), NFIP insurance is not available for new or substantially improved structures built after November 16, 1990.

Coastal Floodplain Map

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

 Areas subject to certain flood coverage restrictions. The NFIP is prohibited from writing flood insurance policies on new or substantially improved buildings in these areas.

• There are no CBRS or OPA areas in Illinois.

Mean High Tide: All new construction in V Zones must be located landward of the reach of mean high tide.

 Modification of Dunes: Prohibit man-made alteration of sand dunes in V Zones.

Methods to Elevate Buildings in a V Zone

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

Bottom of the lowest horizontal structural member supporting the lowest floor



For New Construction, Substantial Improvements, and The repair Special Rood Hazard Area(2001)	nce Certificate	
Building OwnerRood	hourance Policy #	
Mailing Address		
CityState	ZIp Code	
Building Location	25	
Lai Lide Longi kide County		
0 her Legal Description	5	L
Rubin Gaz Lanas Y_(N_(198	
Section 1: Bood Insurance Rate Man	(EIR III) data	
NOTE THIS CERTICALE BINOT AS CESTICE FOR AN EL	eleno cerricae.	
Community NameCommunity ID Number	FIRM Panel Number	
Panel Suffx FRUI Zone Date of FIRUI Panel	Date of index	
Section 2: Beystion Informat Second surviver. Auto-analisation (1450)	ion Managel	
1. Bauatan of he bolian of the Loves i Horizantal Stuctural Memb	er <u> </u>	
2. Base Flood Beusion (BFE)	tel	
3. Beuzien of Lowes (AdiazoniGrade (LAG)		
Foundation Desotation:		
·····		
5. Approximate deplihor's counterasion used for foundation design	tel	
6. Embedmenidep hiorplings or roundation below LAG	<u> </u>	
7. Dalum used: NG0(0.29 / NA)(0.55 / Other		

Section 3: V Zone Cartif;ing Statement

I carify that it have deusloped or reviewed the structural design, plans, and specifications for construction and that he proposed design and methods of core function are in accordance with accepted standards of practice formeeting the following providence:

- 3 The boliom of he lowes thorizontal shuctural member of he lowest foor (including piles and columns) is elevated to above the BFE; and
- The pile or column foundation and sinch as alledned, here bits andhored to rest if detailion, obligate, and lateral mournen intue to the effects of what and water loads acting simultaneously on all building components. Water loading actuses used are hose as could be base food. Wind loading using used are hose required by the applicable Glate or local building code. The potential for scour and encioned the foundation has been anticipated for conditions as obtained with the base food, including water action.

Gignalure			
Phore Number	BUAL		
Representing			
Address			
CIM	State	ZpCode	



Coastal High Hazard Areas or V Zones

Structural Fill is prohibited to support buildings.

 Nonstructural fill, such as might be used for landscaping, should be placed so that it does not divert waves and surging floodwaters onto other structures. Coastal Construction Manual – Principles and Practices of Planning, Siting, Designing, Constructing, and Maintaining Residential Buildings in Coastal Areas

Third Edition

FEMA Publication No. 55

This three-volume manual is intended for architects. engineers, building professionals, and community officials who need technical guidance concerning the proper methods of planning, siting, designing, constructing, and maintaining residential buildings in coastal areas subject to flood, wind, and seismic hazards. The manual includes a summary of past coastal hazard events, such as hurricanes, northeasters, and tsunamis; a discussion of coastal hazards and regulatory

requirements that affect coastal construction; and detailed design guidance, including formulas and example problems.



Connecting the Load Path in the V Zone

Continuous path from roof to wall to foundationMaterials that resist deterioration







VZone/Breakaway Wall Certificate

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







Altering Sand Dunes

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

COBRA

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

Permit Issuance (continued)

