

Floodplain Basics

Development Requirements, Flood Maps, Flood Insurance

Onondaga County Planning Federation March 2, 2017

DEC Floodplain Coordinators

Central Office

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Western New York Flood Hub: Assists in Regions 6-9

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Floods and Floodplains



Major Categories of Floods

Riverine Flooding

- Overbank Flooding
- Flash Flooding
- Riverine Erosion
- Ice Jam Flooding
- Coastal Flooding
- Coastal Storms
- Coastal Erosion
- Tsunamis
- Lake Flooding

Shallow Flooding

- Sheet Flow
- Ponding
- Urban Drainage





Overbank Flooding

Half of Flooded Businesses Never Re-Open





Flash Flooding

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Riverine Erosion



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A Floodplain Is:

- a. River or stream channel up to natural banks
- b. Low-lying area along a river, stream, or coast subject to flooding
- c. Area along a river, stream, or coast subject to flooding by the 1% chance (100-year) flood
- d. Area along a river, stream, or coast that is developed and subject to flooding

Which of these definitions apply?



Why Are People in Floodplains?

- First settlers faced a wilderness without roads.
- Coasts and rivers provided harbors, transportation routes, and fishing/water sources.
- Now people enjoy living near water for recreation and pleasant surroundings.
- Unintended consequence: Flood losses.
 - Development Increases Runoff
 - Development Encroaches on Floodplains



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Your Place in the Watershed





Central NY Watersheds



What Do Floodplains Do for Us?

- Naturally store and convey floodwaters.
- Maintain water quality.
- Recharge groundwater aquifers and naturally regulate flows into rivers and lakes.
- Support large and diverse populations of plants and animals.
- Provide historical, scientific, recreational, and economic benefits to communities.





Altering Natural Floodplains

- Damages or destroys fish and wildlife breeding, nursery, and feeding grounds.
- Robs downstream habitats of nutrients.
- Threatens a significant percentage of endangered species.
- Increases Peak Flow
- Decreases Groundwater Storage
- Decreases Base Flow

Only 20-30% of U.S. floodplains remain undisturbed.





What Can We Do?

- Regulate to avoid or minimize the impact of new development.
- Use land acquisitions and easements to preserve and restore natural functions.
- Control development through growth and development policies.
- Use tax incentives, public education, and other means to build public support.
- Make sure that new development is Reasonably Safe from Flooding.







3 ft. of standing water can collapse walls





Basement Walls and Floors are Particularly Vulnerable











Hydrodynamic Forces

Water moving at 4 mph has same force as a 100 mph wind.



Debris Impact Forces





Debris Impact Forces











Breakstones

KRAFT









Premise of the NFIP Standards

Build it Up Build it Back Protect It Remember: It's not a question of IF, it's WHEN will there be a flood.



Key Concepts in Elevation Determinations Lowest Floor











Basements

Basement or Cellar is that portion of a building having its floor subgrade (below ground level) <u>on all sides</u>.

The basement floor is <u>always</u> the lowest floor for flood insurance rating purposes regardless of the use, design, or contents.

New or Substantially Improved / Substantially Damaged Structures: No Basement!





Elevation and Design Requirements


Minimum Standards for NFIP Building Requirements

AE Zone Building Requirements (Base Flood Elevation (BFE) Available)

- The lowest enclosed area, <u>including the basement</u>, must be at or above the BFE Plus Two Feet
- Non-residential buildings may be flood proofed
 - Require Flood Proofing Certificate from PE or Architect
- No development in the regulatory floodway that would raise BFE
- FEMA and the State encourage Local Communities to adopt higher standards

Residential Building Code: R322.2.1 Building Code Section 1612.4: Refers to ASCE 24 2016 New York State Uniform Code Supplement



Construction Standards: Elevated Foundations



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Requirements in the Floodway

No new development, including fill, in designated floodways that would increase flood heights.

- Developer must submit a hydraulic analysis which determines no rise in flood heights.
- If there is any rise, project must be reconfigured or maps revised.
- No variances for development in floodway.

IRC R301.2.4: Buildings and Structures Located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE-24; Development in Floodways Also Subject to FEMA Regs, 44CFR60.3d – **NOT JUST BUILDINGS!**



Floodway Schematic





Elevation Requirements: Zone A- NO Base Flood Elevation Data

- All new construction or substantial improvement, shall have the lowest floor, including basement, elevated at least three feet above the highest adjacent grade. (DEC Model Local Law; NYS Residential Building Code, R324.1.3.2)
- For subdivisions or other developments over 50 lots or 5 acres, applicant must provide flood elevation data and build accordingly. (FEMA Regulations: 44CFR60.3(b)(3))



Elevation Requirements: Zone A- NO Base Flood Elevation Data

- If there is a Base Flood Elevation from a reputable source, then use it.
- NYS DEC
- Corps of Engineers
- NRCS
- Historic Flood Data
- Other engineering study, including for development of over 5 acres or over 50 lots



Openings in Crawl Spaces

Standards

- No fewer than two openings
- Lowest point no higher than one foot above the higher of the inside or outside grade
- Minimum total size of openings: one square inch per square foot of enclosed space
- Louvers, valves or screens allowed, provided the permit automatic entry and exit of floodwaters





Flood Insurance Studies and Maps



Use the FIRM to

- Identify Special Flood Hazard Areas
- Identify the location of specific property
- Estimate BFE at a specific site
- Determine flood insurance zone at a specific site
- Determine the location of the regulatory floodway







Level of Detail

- A Zone, No BFE--delineates "100-year" floodplain boundaries; does not determine base flood elevations or depths
- **Detailed study**--determines base flood elevations (BFEs) or depths to be displayed on FIRM



Some Map Features











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LISTING OF COMMUNITIES

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Historic Map Dates

COMMUNITY NAME	INITIAL NFIP MAP DATE	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	INITIAL FIRM DATE	FIRM REVISIONS DATE
Baldwinsville, Village of	March 15, 1974	September 12, 1975	August 16, 1982	March 1, 1984
Camillus, Town of	September 6, 1974	June 4, 1976 January 21, 1977	June 15, 1981	May 18, 1999
Camillus, Village of	July 30, 1976	None	August 3, 1981	May 18, 1999
Cicero, Town of	November 1, 1974	July 16, 1976 December 31, 1976	April 4, 1983	September 15, 1994
Clay, Town of	July 1, 1977	None	April 1, 1980	April 17, 1989 March 16, 1992
DeWitt, Town of	March 22, 1974	June 4, 1976	March 1, 1979	
East Syracuse, Village of	April 12, 1974	October 24, 1975	August 3, 1981	
Elbridge, Town of	May 31, 1974	May 28, 1976	August 16, 1982	
Elbridge, Village of	May 31, 1974	June 11, 1976	August 16, 1982	
Fabius, Town of	August 16, 1974	June 25, 1976	April 30, 1986	
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NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

TABLE 5 - SUMMARY OF DISCHARGES - (continued)

			PEAK DISCH	ARGES (cfs)	
FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	10-percent chance	2-percent chance	1-percent chance	0.2 percent chance
LIMESTONE CREEK					
At confluence with Chittenango Creek	180.83	8,360	12,210	13,870	18,330
Downstream of confluence with Butternut Creek	169.09	7,850	11,480	13,040	17,250
Upstream of NYS Thruway	100.26	6,470	9,670	11,230	15,010
Upstream of NYS Thruway	99.39	6,420	9,610	11,170	14,950
Upstream of Minoa Road at corner of Minoa	98.05	6,250	9,380	10,910	14,620
Erie Canal	94.34	5,740	8,660	10,070	13,510
At USGS Gage 04245000	86.56	5,080	7,760	9,010	12,090
At Village of Fayetteville upstream of corporate limits	86.21	5,060	7,720	8,970	12,030
At Downstream Village of Manlius Limit	f 83.13	4,920	7,460	8,670	11,630



(Al	LL JURISD		S)					
FEDERAL E	MERGENCY MA		AGENCY		FLOO	DWAY DA	ATA	
Feet above conflue	ence with Chitten	ango Creek						
Z	34,674	2,230	8,737	1.3	412.8	412.8	413.7	0.9
Y	34,179	1,978	11,015	1.0	412.4	412.4	413.3	0.9
х	33,346	1,963	13,064	0.8	412.2	412.2	413.1	0.9
W	31,792	2,037	12,508	0.9	412.0	412.0	412.9	0.9
v	30,284	2,525	12,557	0.9	411.8	411.8	412.5	0.7
Ů	29,539	2,932	17.701	0.6	411.8	411.8	412.5	0.7
т	28,935	3.027	14,752	0.7	411.7	411.7	412.4	0.7
S	27,384	3,218	18,094	0.6	411.3	411.3	412.1	0.8
P	22,011	2 610	15.858	0.7	410.2	410.2	411.1	0.9
P	20,821	305	3,38/	3.3	409.0	409.6	410.4	0.8
U D	19,593	365	5,436	2.1	409.3	409.3	410.2	0.9
N	19,029	3/5	3,182	3.5	400.3	400.3	407.2	0.9
M	18,413	810	8,315	1.3	400.1	400.1	400.9	0.8
L	10,028	674	6,230	1.8	405.5	405.5	406.3	0.8
K	15,970	1,417	6,343	1.8	404.8	404.8	405.7	0.9
J	13,742	2,258	14,259	0.8	403.8	403.8	404.7	0.9
1	12,542	1,560	12,740	0.9	403.4	403.4	404.3	0.9
н	10,610	1,840	13,830	0.9	401.4	401.4	402.0	0.6
G	10,181	1,5/5	11,111	1.2	401.2	401.2	401.9	0.7
F	8,683	1,896	14,533	1.0	400.1	400.1	401.0	0.9
E	6,187	1,333	12,172	1.1	399.6	399.6	400.4	0.8
D	4,770	1,166	10,914	1.3	398.7	398.7	399.5	0.8
C	3,888	1,333	9,861	1.4	398.2	398.2	399.0	0.8
В	2,882	966	8,195	1.7	397.7	397.7	398.5	0.8
Α	1,892	1,226	10,889	1.3	397.6	397.6	398.2	0.6
Creek								
Limestone		(FEET)	(SQUARE FEET)	PER SECOND)		FLOODWAT	FLOODWAT	
ROSS SECTION	DISTANCE1	WIDTH		MEAN VELOCITY (FEET	REGULATORY	WITHOUT		INCREASE
					in the second seco			AVD00)

Flood Profile Example





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Let's Look up Manlius Town Hall





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36067CIND2A	11/04/2016		OMB	@DL	VIEW	
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	11/04/2016		22MB	4DL	VIEW	
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Conservation



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NEW YORK STATE OF OPPORTUNITY CONSERVATION Challenging Flood Determinations



Flood Determinations

Required by Federally Regulated Lenders as a Condition of a Mortgage

Flood Insurance Required by lender if <u>Structure</u> is Fully or Partially in Special Flood Hazard Area (SFHA)

Flood Insurance May Be required by lender for any structure

Closing Fee Pays for Determination



Flood Determinations: Map Revisions

Determination Companies do Life of Loan Tracking Results of 2012 Survey: 9 Determination Companies (Source: National Flood Determination Association survey)

Number of Life of Loan Certificates Impacted by Map Revision	15,646,475
Number of Life of Loan Certificates that Experienced Status Change as a Result of Map Revision	336,232
Life of Loan Certificate Revisions with Status Change from OUT to IN SFHA	222,179
Life of Loan Certificate Revisions with Status Change from IN to OUT of SFHA	111,587
Life of Loan Certificate Revisions with No Change in Status, Remaining OUT of SFHA	10,565,329
Life of Loan Certificate Revisions with No Change in Status, Remaining IN a SFHA	485,687


6/30/2008 Preliminary vs. Effective FIRMs				
Parcels	Added	Removed	Total Added	
City of Syracuse	976	233	743	
Town of Camillus	69	106	-37	
Town of Cicero	136	419	-283	
Town of Clay	60	159	-99	
Town of Dewitt	51	73	-22	
Town of Elbridge	56	56	0	
Town of Fabius	65	50	15	
Town of Geddes	22	27	-5	
Town of Lafayette	49	23	26	
Town of Lysander	183	190	-7	
Town of Manlius	227	582	-355	
Town of Marcellus	13	44	-31	
Town of Onondaga	60	66	-6	
Town of Otisco	2	63	-61	
Town of Pompey	36	20	16	
Town of Salina	80	88	-8	
Town of Skaneateles	11	40	-29	
Town of Spafford	13	77	-64	
Town of Tully	21	35	-14	
Town of Van Buren	74	8	66	
Village of Baldwinsville	27	16	11	
Village of Camillus	4	25	-21	
Village of East Syracuse	59	39	20	
Village of Elbridge	1	5	-4	
Village of Fabius	0	0	0	
Village of Fayetteville	7	5	2	
Village of Jordan	11	52	-41	
Village of Liverpool	9	1	8	
Village of Manlius	19	72	-53	
Village of Marcellus	3	13	-10	
Village of Minoa	1	81	-80	
Village of North Syracuse	3	0	3	
Village of Skaneateles	11	4	7	
Village of Solvay	8	0	8	
Village of Tully	16	6	10	
Total Onondaga County	2,383	2,678	-295	

Onondaga County Parcel Centroid Counts - Comparing



Mapping Discrepancies or Conflicts

- Flood Map Limitations
- Properties on Edge of Flood Zone
- Survey and Map may have Different Result
- Development and Natural Process Change Flood Zone
- Map Features can be Incorrectly Located



Property Owner Disputes

Contact Lender Provide Documentation Lender can request determination company to review



Property Owner Disputes: Next Step

Request Flood Hazard Determination Review from FEMA

- Joint Lender/Property Owner Request
- FEMA will Make Determination within 45 Days of Receipt of Necessary Data

Policy Refund Available if No Claim has been Made

Review only Considers Location on Map; Not Elevations



What to Submit

Copy of Completed Flood Hazard Determination Form from Lender Notification from Lender that Property is in SFHA Annotated FIRM panel Materials Used by Lender for Determination Letter to FEMA Requesting Review \$80 Fee



Timing

Must Submit within 45 Days of Notification by Lender

Mail to

LOMC Clearinghouse 847 South Pickett St., Alexandria, VA 12304-4645 FEMA Will Respond within 45 Days Questions: 1-877-336-2627 LOMA May be Better Path



Letters of Map Change

For Elevation Based Determinations To Fine Tune the Determination To Show Changes to the Floodplain or Flood Elevation



Types of Letters of Map Change

Letter of Map Amendment: LOMA

Letter of Map Revision: LOMR

Letter of Map Revision Based on Fill: LOMR-F

Conditional LOMA's, LOMR's and LOMR-F's

Physical Map Revision (Revised Map)



Amendments

Used to exclude individual structures and legally described parcels of undeveloped land inadvertently included in the SFHA Based on conditions prior to map date Does NOT require review and approval of community Does NOT require update of Maps or Regulations



Revisions

Changes to Maps to reflect better flood and non-flood information Changes in floodplain conditions Increased/Decreased flood heights Longer period of record Development pressures Requires Community review and approval May require update of maps and regulations



LOMA Form MT-EZ Single Residential Lot or Structure

Community and Property Information Date and Type of Construction Recorders Stamped Subdivision Plat/Deed FIRM & Cover with Site & Structures Plotted Elevation Certificate or Elevation Information Form



LOMA's

Based on Natural Ground Elevations

File with FEMA; Address on Form

No Charge for LOMA Review

If Approximate A zone, fill out Lowest Adjacent Grade but leave BFE blank.

- In some cases DEC can help determine an approximate BFE
- FEMA <u>may</u> compute one based on best available topographic data. This is a desktop, computer analysis.



LOMA – Out as Shown

Use MT-EZ Form Items to Include

- Deed
- Map of Property and Structure with SFHA Boundaries Shown
 - Check with Municipal or County GIS or with DEC
- FIRMette

DEC has Detailed Guidance





Flood Insurance Issues



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Flood Insurance Finances

	NYS, 11/10	NYS 8/12	NYS, 2/17	U.S., 2/17
Policies	162,965	167,455	184,435	5.0 million (300K fewer than 10/14)
Premiums	\$147 Million	\$157 Million	\$205 million	\$3.5 billion
Claim Payments	\$631 Million	\$1.2 Billion	\$5.3 Billion	\$56.0 billion
National NFIP Program Debt	\$18.8 billion before Sandy. \$25 billion now.			

- Prior to 2005, Program was largely self supporting.
 Policy structure not set up to handle catastrophic losses.
- •Fund was never capitalized.
- •1% of policies represent 1/3 of all claims.
- •Congress wants program to be on a sounder financial footing.
- •It will take years to pay off debt (if ever).



Insurance Costs: Where you Live and Construction Type: 2016 Costs

Inside Special Flood Hazard Area				
April, 2016 Rates	Pre-FIRM with Basement (Subsidized)	Built to Code (Base Flood Elevation + 2')		
A-Zone	\$1469 - \$3772	\$461 - \$628		
Outside of Special Flood Hazard Area				
	Basement	No Basement		
X-Zone	\$1151 - \$1924	\$999 - \$1556		
Preferred Risk Policy	\$410-\$524	\$374-\$475		

Assumptions: Minimum Deductible Flood Insurance Ranges from \$100,000 to \$250,000 Residential Coverage. No contents coverage except for Preferred Risk Policies. Preferred Risk Policy: •B, C, or X Zone. •New "Newly Mapped Procedure" •No more than one flood insurance payment or flood relief payment of over \$1000 in 10 years.

Pre-FIRM Actuarial Costs Could be Up To \$9000 or more!

NEW YORK STATE OF

Department of Environmental Conservation

Flood Insurance: What's Going On?

Biggert-Waters Flood Insurance Reform Act of 2012

- Phase Out of Many Subsidies
- Attempt to Address NFIP Debt
- Significant Push-Back
- 2014 Reform of the Reform
- Eliminates or Slows Down Some Rate Increases
- Creates Surcharge to Pay for Subsidized Rates



Actuarial Flood Insurance Rates



Current Annual Pre-FIRM Rates: Residential, Older than Flood Insurance Program (@1980)				
Amount of Coverage				
\$100,000	\$150,000	\$250,000		
\$1469	\$2194	\$3772		

These Rates will go up About 15% to 18% Per Year until Actuarial Rate is Reached



Flood Insurance Guidance

Situation	What to Do
A Zone, Pre-FIRM	Use Pre-FIRM Policy; Rates are Going Up. Get Elevation Certificate to Determine Best Rate and/or Mitigation Options
A Zone, Post-FIRM	Actuarial Rate; If structure is Compliant, rates are reasonable. If not, rates can be very expensive. Consider bringing structure into compliance
A Zone, Newly Mapped	Eligible for Newly Mapped Procedure if covered within 12 months of effective date of new map: Map Date was 11/4/16
X Zone	No Mandatory Insurance Purchase Requirement. Banks <u>MAY</u> require flood insurance. Low cost "preferred risk policy" if no more than one claim in any ten year period.



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Newly Mapped Procedure

- Must Meet Loss Criteria: No more than one claim over any 10 year period
- Must maintain continuous coverage
- Policy is transferable upon sale of property
- Must show evidence of current AND previous flood zone
 - Use Historic Map from Map Service Center, marked to show location of structure
 - Additional documentation may be required if property was close to flood zone on previous map
 - May require letter signed by Local Community Official



Newly Mapped Procedure

- Initial rating will be same as Preferred Risk Policy: about \$400 to \$500
- Structures that are not the primary residence of the owner pay an additional \$225
- Policies will go up about 15% per year until "X" zone rating is reached at about \$1200 to \$2000 per year under current rates, not counting contents



What about the Future?

- Congress changed Flood Insurance Laws in 2012 and 2014.
- Each change was significant and resulted in rates going up rapidly to address program debt and ability to cover claims
- NFIP expires in 2017. Congress will either make changes or pass a temporary renewal.
- Affordability is a major issue, as is the program debt
- Stay tuned; We don't know what will come out of the next change.



Thank You

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