



FEMA

National Flood Insurance Program

A Discussion in Three Parts:

- The Nature of Flood Risk
- An Overview of the NFIP
- Impact of Recent Legislation (BW-12 & HFIAA-14)



Nature of Flood Risk



“FLOODS ARE AN ACT OF GOD; FLOOD DAMAGES RESULT FROM ACTS OF MEN.”

H.D. 465

Nature of Flood Risk



1920-1959

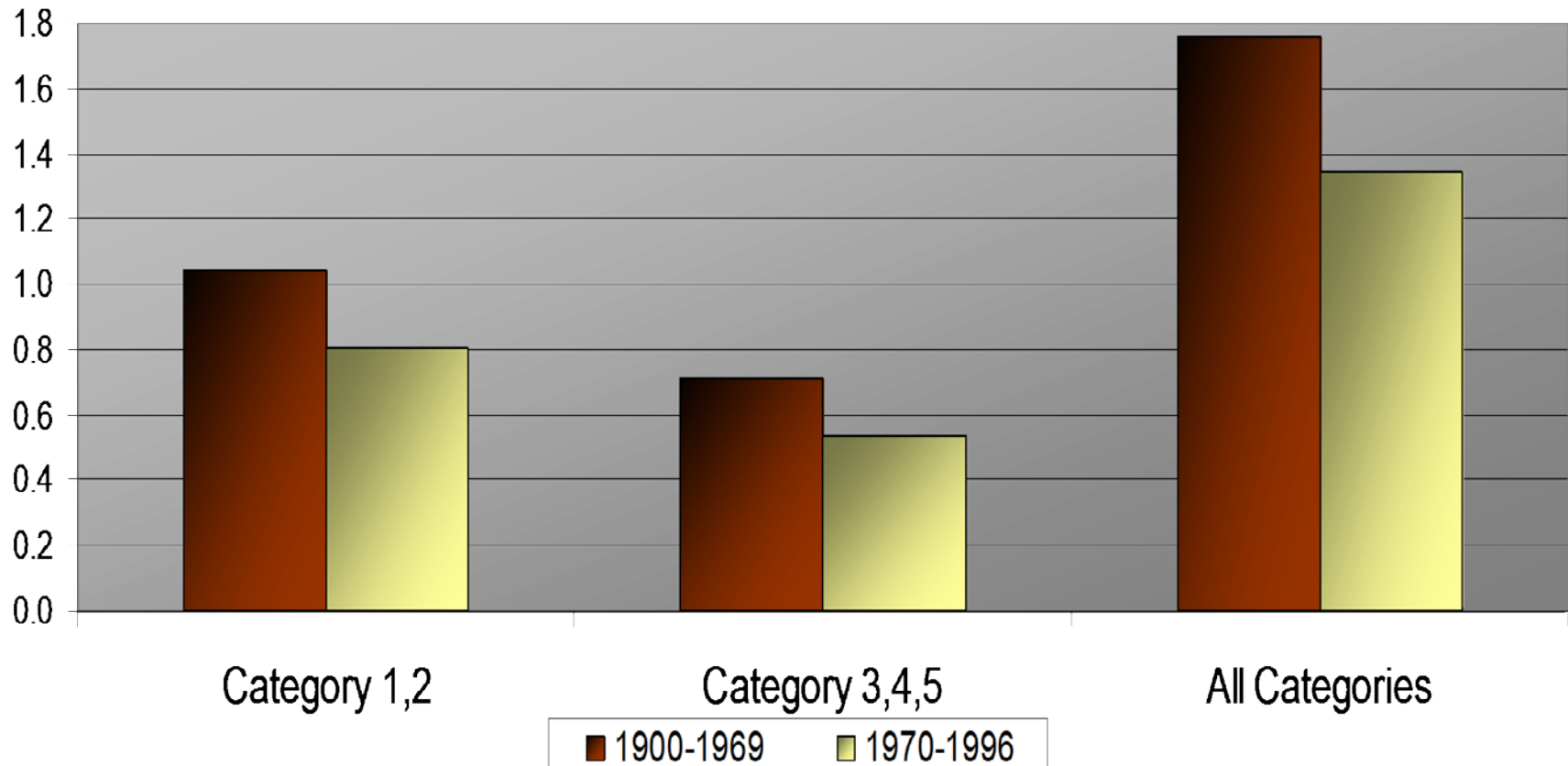
Source: <http://www.hurricane.csc.noaa.gov/hurricanes/index.htm>



1960-1999

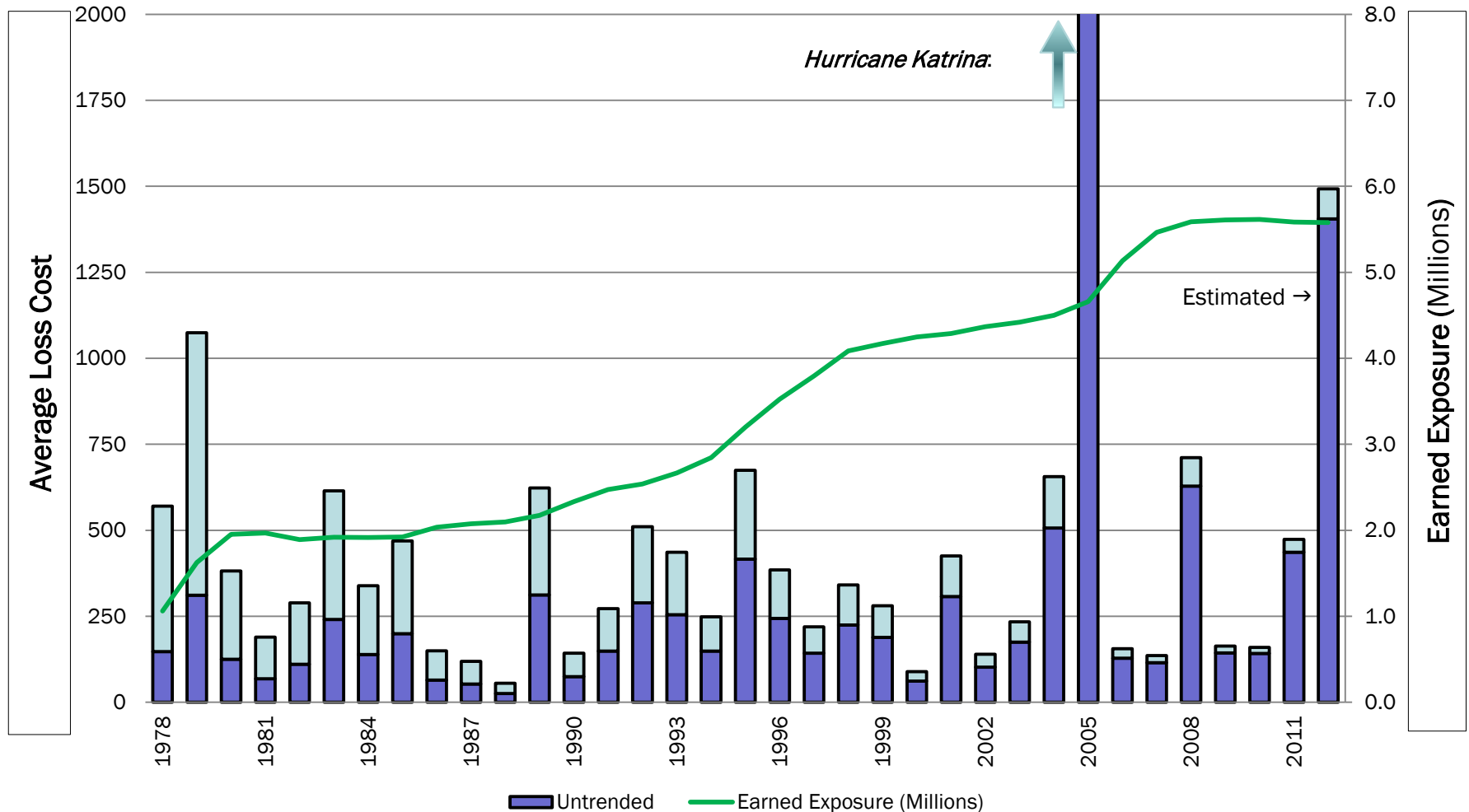
Nature of Flood Risk

US Mainland Hurricane Strikes Average per Year by Category



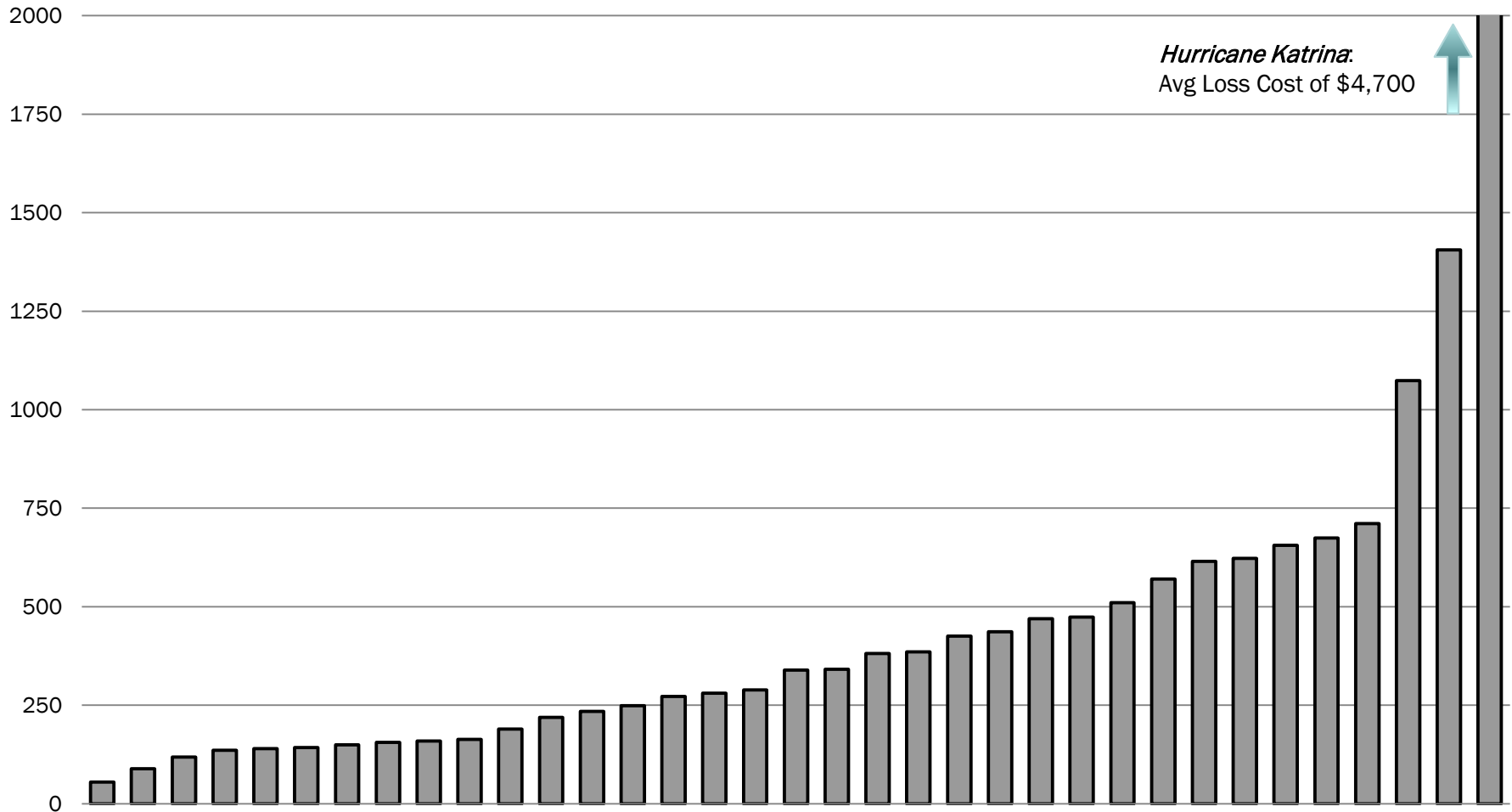
Nature of Flood Risk

Average Loss Cost* Per Policy (Trended to 2015)



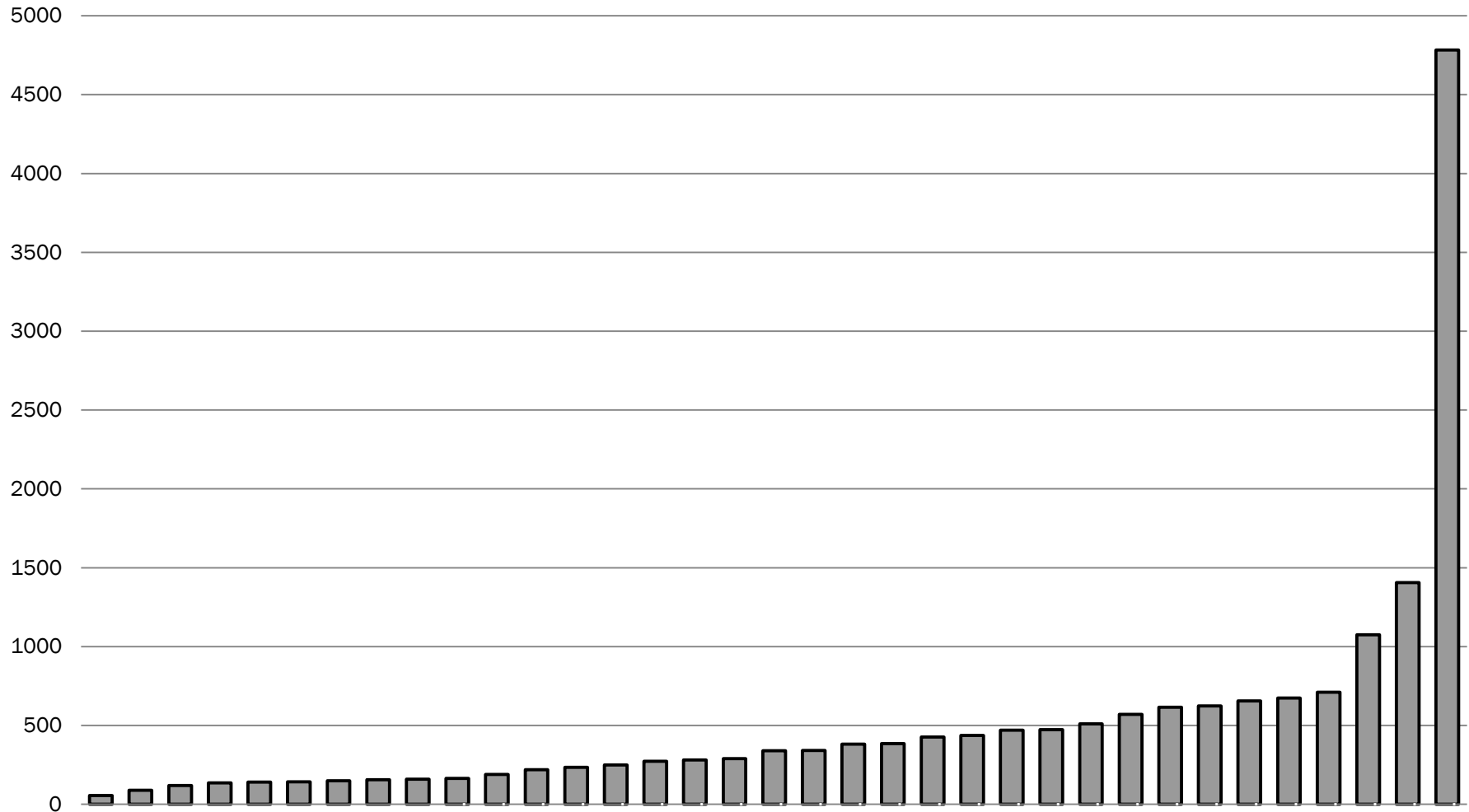
Nature of Flood Risk

Average Loss Cost* Per Policy (Trended to 2015)



Nature of Flood Risk

Average Loss Cost* Per Policy (Trended to 2015)



NFIP Overview – Rate Model

A Probabilistic Hydrologic Model

$$\text{RATE} = \left[\sum_{i=\text{Min}}^{\text{Max}} (PELV_i \times DELV_i) \right] \times \frac{LADJ \times DED \times UINS}{EXLOSS}$$

- PELV is the probability that flood waters reach a certain depth (frequency)
- DELV is the ratio of the flood damage to the value of the insurable properties (severity)
- LADJ, DED, UINS Loss adjustment expenses, underinsurance, and deductible
- EXLOSS is the loading for expenses and contingency

NFIP Overview - Flood Depth

Probabilities of Water Depth in a Structure that is 8 Feet below BFE

Rating Example - Frequency (Probability) of Flooding												
Depth relative to BFE (ft)			Depth in Structure (ft)			Return Period (yrs)			Probability range		Probability in range	
4.5	and	up	12.5	and	up	501.3	and	up	0.2%	and	less	0.2%
4.0	to	4.5	12.0	to	12.5	399.9	to	501.3	0.3%	to	0.2%	0.1%
3.0	to	4.0	11.0	to	12.0	266.8	to	399.9	0.4%	to	0.3%	0.1%
2.0	to	3.0	10.0	to	11.0	187.6	to	266.8	0.5%	to	0.4%	0.2%
1.0	to	2.0	9.0	to	10.0	137.4	to	187.6	0.7%	to	0.5%	0.2%
0.0	to	1.0	8.0	to	9.0	99.3	to	137.4	1.0%	to	0.7%	0.3%
-1.0	to	0.0	7.0	to	8.0	76.8	to	99.3	1.3%	to	1.0%	0.3%
-2.0	to	-1.0	6.0	to	7.0	60.2	to	76.8	1.7%	to	1.3%	0.4%
-3.0	to	-2.0	5.0	to	6.0	47.6	to	60.2	2.1%	to	1.7%	0.4%
-4.0	to	-3.0	4.0	to	5.0	36.2	to	47.6	2.8%	to	2.1%	0.7%
-5.0	to	-4.0	3.0	to	4.0	28.5	to	36.2	3.5%	to	2.8%	0.7%
-6.0	to	-5.0	2.0	to	3.0	22.4	to	28.5	4.5%	to	3.5%	1.0%
-7.0	to	-6.0	1.0	to	2.0	17.5	to	22.4	5.7%	to	4.5%	1.2%
-8.0	to	-7.0	0.0	to	1.0	13.1	to	17.5	7.6%	to	5.7%	1.9%
-8.5	to	-8.0	-0.5	to	0.0	11.5	to	13.1	8.7%	to	7.6%	1.0%
-8.5	and	below	-0.5	and	below	12.0	and	under	100.0%	to	8.7%	91.3%

NFIP Overview – Damage Curves

DELV (damage by elevation): Severity

- Damage varies by depth of water in structure
- Also varies by structure type and contents location
- Based on credibility weighted historical data of damage associated with different water depths in structure
 - Where NFIP data is credible, use NFIP data
 - Where NFIP data is absent, use USACE (Army Corps) data
 - Where NFIP data is available but not fully credible, use blend
- Weighted average of 2005 results (long standing water) with ex-2005 data

DELV Example

	Class	2	4
	Type	One Story	Two Stories
	Basement Code	No Basement 1N	No Basement 2N
-8	-	-	-
-7	-	-	-
-6	-	-	-
-5	-	-	-
-4	-	-	-
-3	-	-	-
-2	-	-	-
-1	-	-	-
-0.5	3.50	2.50	
0	18.55	13.81	
1	19.38	14.43	
2	27.17	19.95	
3	31.14	25.15	
4	38.00	30.50	
5	47.50	35.77	
6	51.40	39.71	
7	59.50	44.57	
8	61.44	47.96	
9	67.82	51.96	
10	69.22	55.57	
11	73.52	58.34	
12	71.32	60.24	
13	76.78	63.48	
14	76.96	65.36	
15	78.59	67.30	
16	78.43	68.76	
17	79.40	68.94	

NFIP Overview - Severity

Expected Damages for a \$250,000 Structure that is 8 Feet below BFE

Rating Example - Severity (Damage), Paid Loss, and Adjustment Expenses								
Depth in Structure (ft)	Percent Damage	Damage Amount	Less Deductible	ALAE	ULAE and SALAE	Paid Loss and LAE		
12.5 and up	78.4%	\$ 230,701.57	\$ 229,701.57	\$ 5,972.24	\$ 3,904.93	\$ 239,578.74		
12.0 to 12.5	73.8%	\$ 217,073.69	\$ 216,073.69	\$ 5,617.92	\$ 3,673.25	\$ 225,364.86		
11.0 to 12.0	73.1%	\$ 215,103.73	\$ 214,103.73	\$ 5,566.70	\$ 3,639.76	\$ 223,310.19		
10.0 to 11.0	70.5%	\$ 207,347.61	\$ 206,347.61	\$ 5,365.04	\$ 3,507.91	\$ 215,220.56		
9.0 to 10.0	68.0%	\$ 199,856.35	\$ 198,856.35	\$ 5,170.27	\$ 3,380.56	\$ 207,407.18		
8.0 to 9.0	63.5%	\$ 186,841.53	\$ 185,841.53	\$ 4,831.88	\$ 3,159.31	\$ 193,832.71		
7.0 to 8.0	59.6%	\$ 175,328.49	\$ 174,328.49	\$ 4,532.54	\$ 2,963.58	\$ 181,824.61		
6.0 to 7.0	54.2%	\$ 159,315.80	\$ 158,315.80	\$ 4,116.21	\$ 2,691.37	\$ 165,123.38		
5.0 to 6.0	48.9%	\$ 143,936.04	\$ 142,936.04	\$ 3,716.34	\$ 2,429.91	\$ 149,082.29		
4.0 to 5.0	41.9%	\$ 123,200.58	\$ 122,200.58	\$ 3,400.00	\$ 2,077.41	\$ 127,677.99		
3.0 to 4.0	33.2%	\$ 97,648.74	\$ 96,648.74	\$ 3,286.06	\$ 1,643.03	\$ 101,577.83		
2.0 to 3.0	28.6%	\$ 83,979.90	\$ 82,979.90	\$ 2,821.32	\$ 1,410.66	\$ 87,211.87		
1.0 to 2.0	23.3%	\$ 68,505.15	\$ 67,505.15	\$ 2,295.18	\$ 1,147.59	\$ 70,947.91		
0.0 to 1.0	16.6%	\$ 48,966.01	\$ 47,966.01	\$ 1,640.00	\$ 815.42	\$ 50,421.43		
-0.5 to 0.0	3.5%	\$ 10,294.12	\$ 9,294.12	\$ 970.00	\$ 158.00	\$ 10,422.12		
-0.5 and below	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -		

NFIP Overview – Frequency x Severity

Expected Paid Loss & LAE for \$250K Structure at -8 BFE

Rating Example - Probability Weighted Expected Paid Loss						
Depth in Structure			Probability in range	Paid Loss and LAE	Expected NFIF Loss	with Contingency Load
12.5	and	up	0.2%	\$239,578.74	\$ 477.92	\$ 573.50
12.0	to	12.5	0.1%	\$225,364.86	\$ 113.98	\$ 136.78
11.0	to	12.0	0.1%	\$223,310.19	\$ 278.57	\$ 334.29
10.0	to	11.0	0.2%	\$215,220.56	\$ 340.65	\$ 408.78
9.0	to	10.0	0.2%	\$207,407.18	\$ 403.90	\$ 484.68
8.0	to	9.0	0.3%	\$193,832.71	\$ 542.10	\$ 650.52
7.0	to	8.0	0.3%	\$181,824.61	\$ 534.85	\$ 641.81
6.0	to	7.0	0.4%	\$165,123.38	\$ 591.91	\$ 710.29
5.0	to	6.0	0.4%	\$149,082.29	\$ 660.29	\$ 792.35
4.0	to	5.0	0.7%	\$127,677.99	\$ 845.47	\$ 1,014.57
3.0	to	4.0	0.7%	\$101,577.83	\$ 750.23	\$ 900.27
2.0	to	3.0	1.0%	\$ 87,211.87	\$ 832.23	\$ 998.68
1.0	to	2.0	1.2%	\$ 70,947.91	\$ 881.15	\$ 1,057.38
0.0	to	1.0	1.9%	\$ 50,421.43	\$ 974.96	\$ 1,169.96
-0.5	to	0.0	1.0%	\$ 10,422.12	\$ 107.10	\$ 128.52
-0.5	and	below	91.3%	\$ -	\$ -	\$ -
Total			100.0%		\$ 8,335.32	\$ 10,002.38

NFIP Overview – Premium Comparison

Actual Premium can significantly vary by the elevation of the structure relative to the flood risk

**PREMIUM AT 4 FEET BELOW
BASE FLOOD ELEVATION**

\$9,500/year
\$95,000/10 years



BFE

**PREMIUM AT
BASE FLOOD ELEVATION**

\$1,410/year
\$14,100/10 years



BFE

**PREMIUM AT 3 FEET ABOVE
BASE FLOOD ELEVATION**

\$427/year
\$4,270/10 years



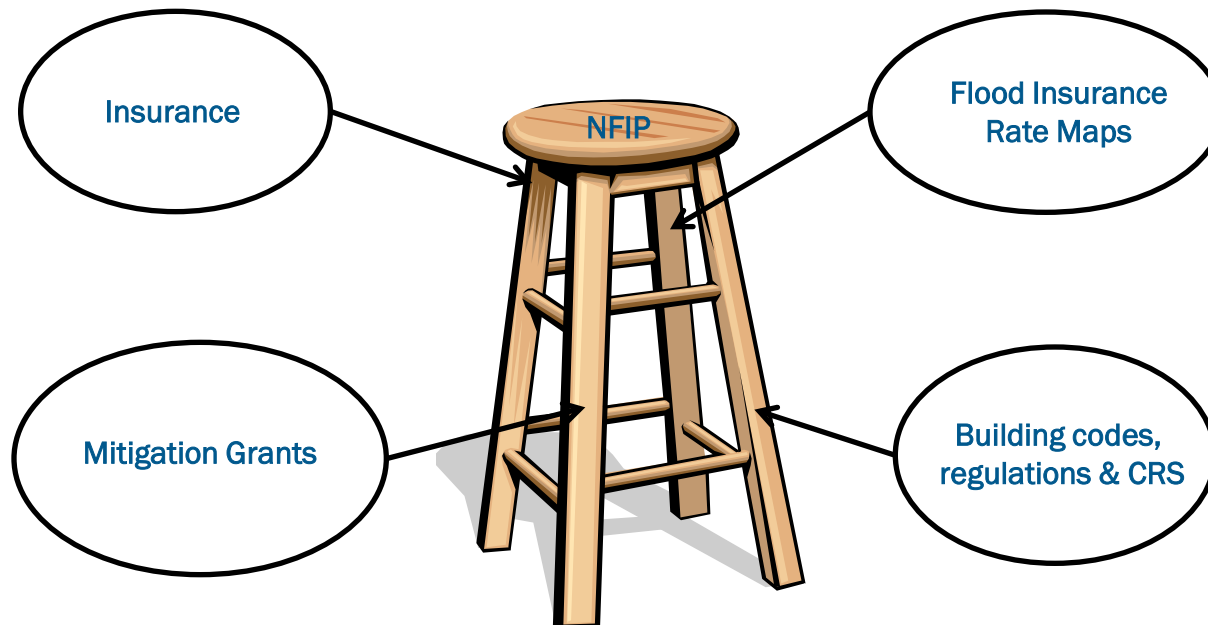
BFE

*\$250,000 building coverage only (does not include contents), AB (high to moderate risk) zone, single-family, one-story structure without a basement at: 4 feet below Base Flood Elevation (BFE); at BFE; and at 3 feet above BFE. (Rating per FEMA flood insurance manual, October 1, 2012). The illustration above is based on a standard National Flood Insurance Program (NFIP) deductible.

NFIP Overview

The NFIP – more than insurance

The NFIP is a voluntary Federal program enabling property owners in participating communities to purchase insurance against flood losses in exchange for adopting and enforcing regulations that reduce future flood damages. A participating community's floodplain management regulations, must meet or exceed the NFIP minimum requirements.



NFIP Overview

Comparison of Insurance and Disaster Assistance

- Individual Disaster Assistance
 - \$31,900 limit
 - \$5,767 average*
- NFIP Maximum Residential Limits
 - \$250,000 building
 - \$100,000 contents
- Without Flood Insurance, individuals are often left to rebuild using loans or personal savings



*For the 20 currently open disasters receiving Individual Assistance.

NFIP Overview

- **Policies are sold either through**
 - Participating WYO companies, or
 - Through the Direct Program by insurance agents

- **Major Groupings of Policies**
 - Residential
 - Residential Condominium Building Association Policy (RCBAP)
 - Preferred Risk (PRP) for structures outside the floodplain
 - All other residential
 - Non-Residential
 - PRP Non-residential
 - All other non-residential

- **Two types of policies**
 - Full-risk premiums
 - Subsidized premiums



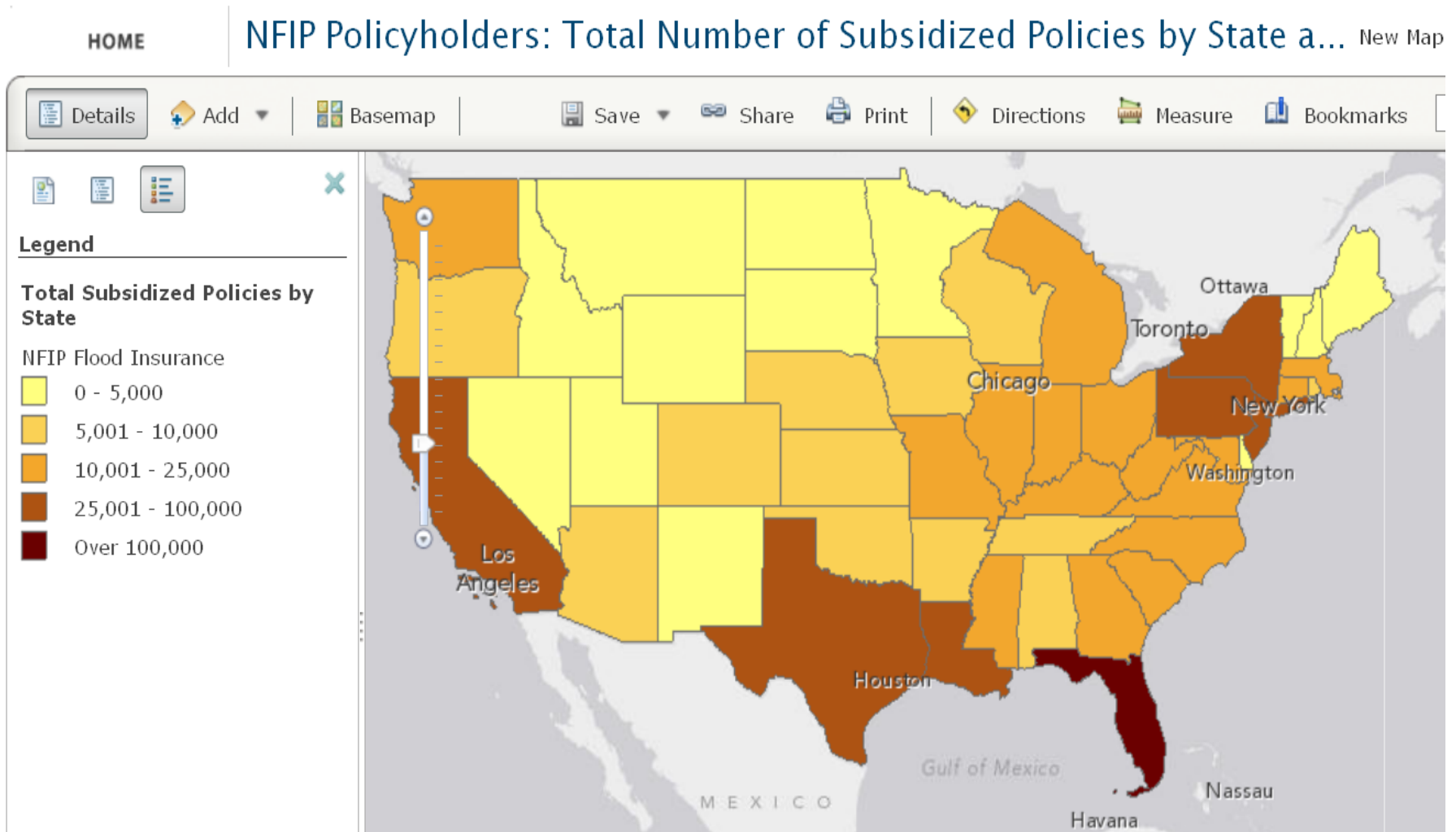
NFIP Overview

Subsidized Policies

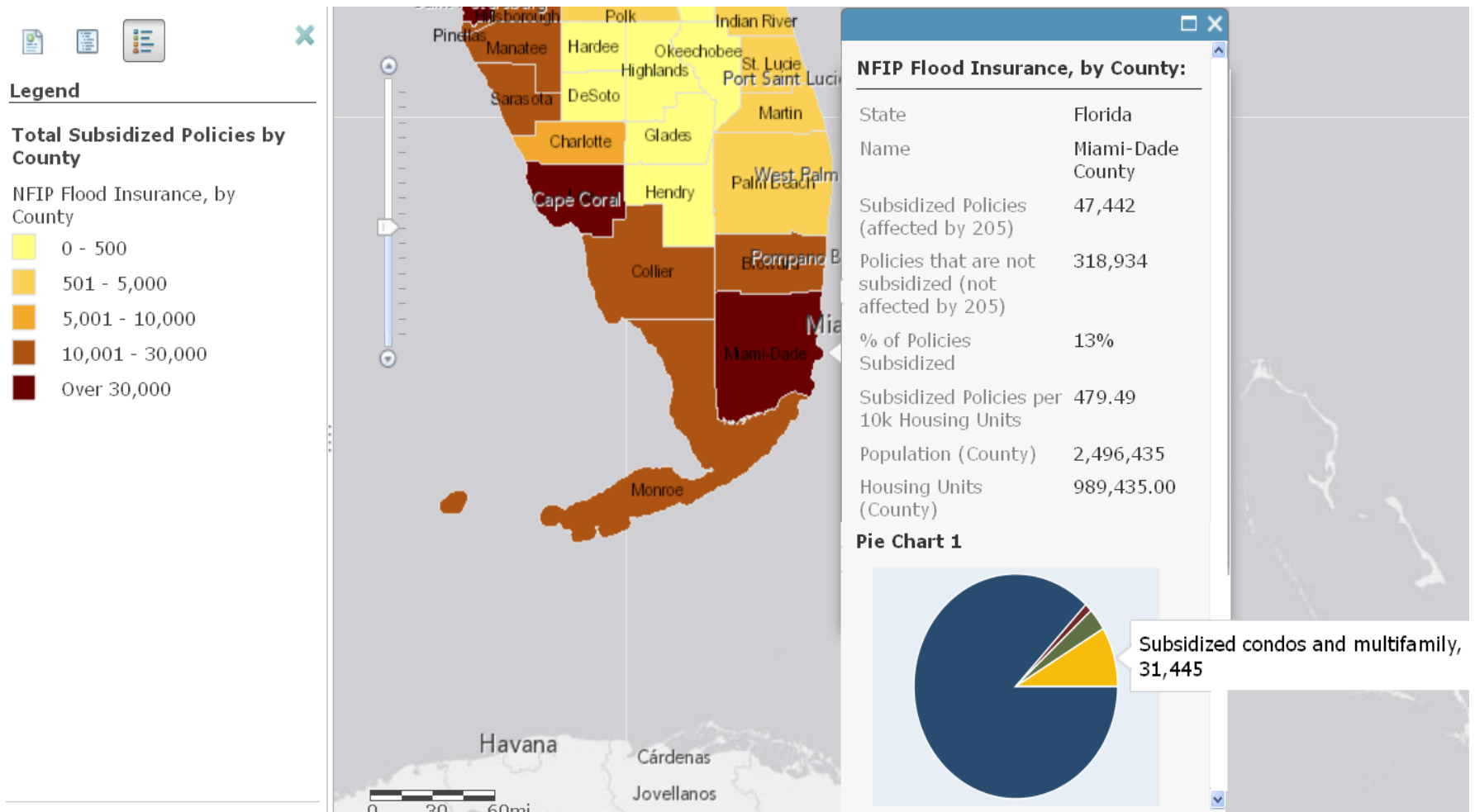
- Emergency Program – Communities newly entering the NFIP
- Pre-FIRM Subsidized – older structures built before their community's initial Flood Insurance Rate Map (FIRM) was developed.
- Levees in the course of construction (A99 Zone) or reconstruction (AR Zone)
- Pre-1981 VE Zone structures
- Group Flood Insurance Policies (GFIP) for recipients of Individual Assistance



NIFP Overview: Policyholder Subsidies



NFIP Overview: Policyholder Subsidies



NFIP – Impact of Recent Legislation

History of Legislation

- ❖ NFIP Created by National Flood Insurance Act of 1968
 - Findings noted (§ 4001(d)) that purpose of Act was to
 - “authorize a flood insurance program ...”
 - that would be based on “workable methods of ... distributing burdens equitably among **those who will be protected by flood insurance and the general public**”
 - Allowed for three methods of operating the NFIP
 - Industry flood insurance pool (1968-1978) with Federal financial assistance
 - Government program (1978-1983) with industry assistance
 - Serviced by insurance industry—that is, WYO companies (1983 to present) via contracts, agreements or other arrangements.

NFIP – Impact of Recent Legislation

History of Legislation (cont'd)

❖ Other significant legislation

- 1973 Act – introduced mandatory purchase for properties in flood-plain that has a federally backed mortgage
- 1977 Act – increased residential program limits to \$185K
- 1994 Act
 - Increased residential program limits to current \$250K
 - Added Increased Cost of Compliance (ICC) coverage
 - Strengthened Mandatory Purchase requirements
- 2004 Act
 - Introduced Pilot Severe Rep Loss Mitigation Program
 - Had several “consumer-friendly” provisions

NFIP – Impact of Recent Legislation

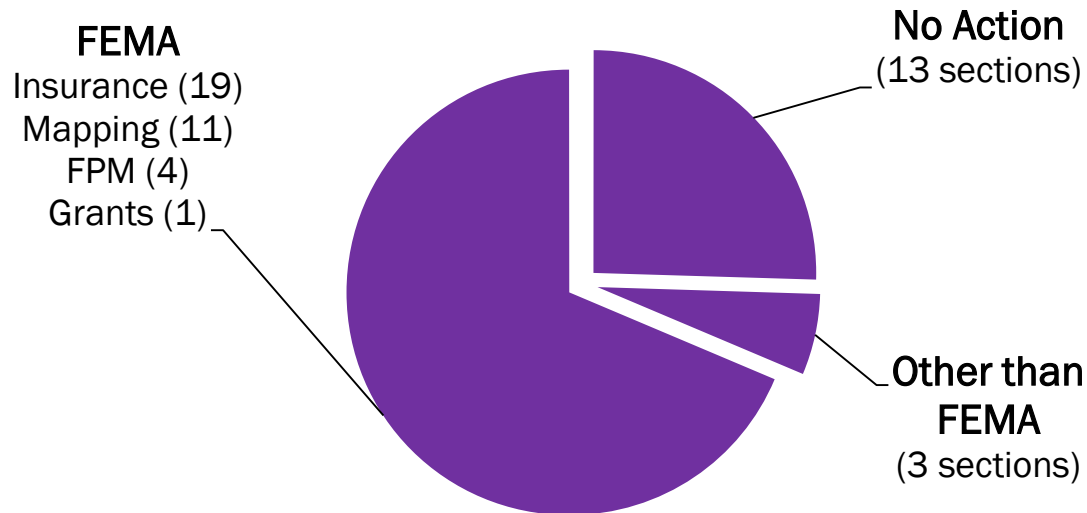
Recent Legislation

- ❖ P.L. 112-123 – 60-day Extension of NFIP
(25% rate hikes for non-primary subsidized policies)
- ❖ P.L. 112-141, Division F, Title II –
Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12) and ***COASTAL Act of 2012***
- ❖ P.L. 113-89 – ***Homeowner Flood Insurance Affordability Act of 2014*** (HFIAA)

NFIP – Impact of Recent Legislation

Biggert-Waters 2012

Agency Responsibility by Section



NFIP – Impact of Recent Legislation

Biggert-Waters 2012 – NON-INSURANCE PROVISIONS

- Technical Mapping Advisory Council
- Flood Protection Structure Accreditation Task Force
- Scientific Resolution Panel
- Consolidation/Revisions to Mitigation Grants Programs
- FIO to study catastrophe insurance (among other things)

NFIP – Impact of Recent Legislation

Biggert-Waters 2012 – INSURANCE PROVISIONS

- Affects all areas of insurance
 - Claims
 - Underwriting
 - Actuarial
 - Consumer Friendly Provisions

NFIP – Impact of Recent Legislation

Biggert-Waters 2012 – INSURANCE PROVISIONS

- Section 205: Addresses Subsidized Policies
 - No new subsidized policies – new owners of properties, new policies and lapsed policies were no longer eligible for subsidies
 - Many existing policies will receive 25% annual premium increases until subsidy is eliminated; mainly are non-primary residences, small business, and repetitive loss properties
 - Most primary residential properties maintain subsidy
- This section was greatly revised by HFIAA

NFIP – Impact of Recent Legislation

Biggert-Waters 2012 – INSURANCE PROVISIONS

- Section 207: Addresses “Grandfathered” Policies
 - Prior to BW12 NFIP had two types of grandfathering
 - Zone Grandfathering – can continue to use previous zone, but not necessarily the same rate
 - Elevation Grandfathering
 - Some policies can get both forms (e.g., Post-FIRM structures remapped from an A-zone to a V-zone)
 - 207 required moving to a more property-specific rate
 - Never implemented by FEMA
- Repealed by HFIAA, but a new provision was introduced for structures newly mapped into the SFHA

NFIP – Impact of Recent Legislation

Biggert-Waters 2012 – INSURANCE PROVISIONS

- Section 236: Affordability Study
 - National Academy of Sciences designated to perform the economic cost/benefit analysis
 - Due in 270 days
 - \$750,000 authorized for the study
- Also addressed by HFIAA

NFIP – Impact of Recent Legislation

Biggert-Waters 2012 – INSURANCE PROVISIONS

- Section 212: Reserve Fund
 - Target of 1% of total exposure (\$12B to \$13B)
 - Collect 7.5% of that total every year
- Section 213: Repayment Plan
- Section 233: GAO to study possibility of adding Business Interruption and/or Additional Living Expenses coverage

NFIP – Impact of Recent Legislation

Biggert-Waters 2012 – INSURANCE PROVISIONS

- Section 232: Reinsurance
 - (a) Privatization Study – GAO and FEMA to perform separate, independent studies
 - (c) Reinsurance Assessment
 - Assess capacity of reinsurance/financial markets
 - Request proposals to transfer portions of the NFIP risk
 - Perform cost/benefit analysis of potential reinsurance
 - (e) Claims Paying Ability – and how any reinsurance purchased affects that
- FEMA has contracted the services of Guy Carpenter to research these; their work will inform FEMA's response

NFIP – Impact of Recent Legislation

Homeowner Flood Insurance Affordability Act

- Section 3: Restores eligibility for subsidized premiums
 - extends to new policies, including new property owners
 - eligibility is retroactive and requires premium refunds
- Section 4: Restores grandfathered rates
- Section 5: 15% cap on average increase for risk classes
 - 18% limitation for any individual policyholder
 - minimum 5% increase for Pre-FIRM subsidized policies
- Section 6: Rates for properties newly mapped into SFHA
- Section 10: Risk Transfer (Reinsurance)
- Section 16: Affordability – increases funding to \$2.5M, refocuses study, and establishes 18 month deadline

NFIP – Impact of Recent Legislation

Homeowner Flood Insurance Affordability Act of 2014

- For more information and updates as they become available, visit: <http://www.fema.gov/flood-insurance-reform>.



FEMA