Flood Risk and Climate Adaptation:

Policy Reforms and Lessons (Being) Learned from Hurricane Sandy

Adaptive Planning For Coastal Change: Legal Issues For Local Government

Briefing Overview

- Background: Federal Flood Policy
- Early Lessons from Hurricane Sandy
- Federal Policy Changes

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Association of State Floodplain Managers

Mission: Mitigate the losses, costs, and human suffering caused by flooding.

and

Protect the natural and beneficial functions of floodplains.

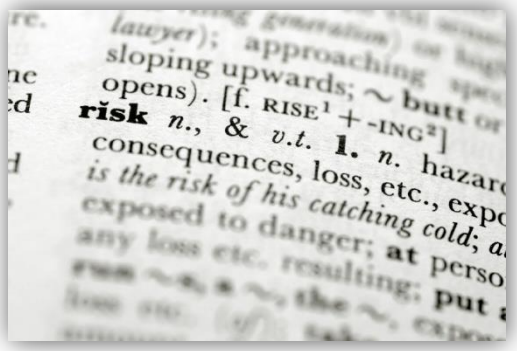
Floods, Disasters & Risk

"Floods are an act of God, but flood losses are largely an act of man."

- **Gilbert F. White, *Human Adjustments to Floods*, 1945**

Risk = Probability x Consequences

Floodplain Managers are Flood Risk Managers



Floodplain Management: Roles

- So, who manages flood risk, anyway?
- Federal Role
  - FEMA, USACE; NOAA, USGS; NRCS, BOR
  - HUD, DOT, EPA, Interior, DHHS
- State Role
- Local Role
- Private Sector
- Personal Role

Federal Interagency Floodplain Management Task Force Work Plan

Updated 24 January 2013

Floodplain Management: Roles

- So, who manages flood risk, anyway?
- Federal Role
- State Role
  - State Floodplain Managers & Hazard Mitigation Officers
  - State Land Use & Resource Programs & I
  - State Emergency Management
  - Cooperating Technical Partners
- Local Role
- Private Sector
- Personal Role

Floodplain Management: Roles

- So, who manages flood risk, anyway?
- Federal Role
- State Role
- Local Role
  - Development Standards & Review
  - Permitting & Codes Enforcement
  - Local Emergency Management Programs
  - Community Rating System
- Private Sector
- Personal Role

Floodplain Management: Roles

- So, who manages flood risk, anyway?
- Federal Role
- State Role
- Local Role
- Private Sector
  - Raise awareness
  - Plan for business continuity and resilient workforce
  - Partner, participate, contribute
- Personal Role

Floodplain Management: Roles

- So, who manages flood risk, anyway?
- Federal Role
- State Role
- Local Role
- Private Sector
- Personal Role
  - Risks & Decisions
  - Information & Preparation
  - Responsibility & Expectations

Briefing Overview

- Background: Federal Flood Policy
- **Early Lessons from Hurricane Sandy**
- Federal Policy Changes

Policies Contribute to Risk

Federal Policies

- NFIP & the 100-Year Standard
- Emphasis on structural approaches
- Disaster relief environment

States & Communities

- Control land use for short-term benefits
- Perceive flooding to be a federal problem
- Externalize the costs & consequences

Public

- Unaware of – or unwilling to accept - residual risk
- Misplaced concern about having to obtain flood insurance

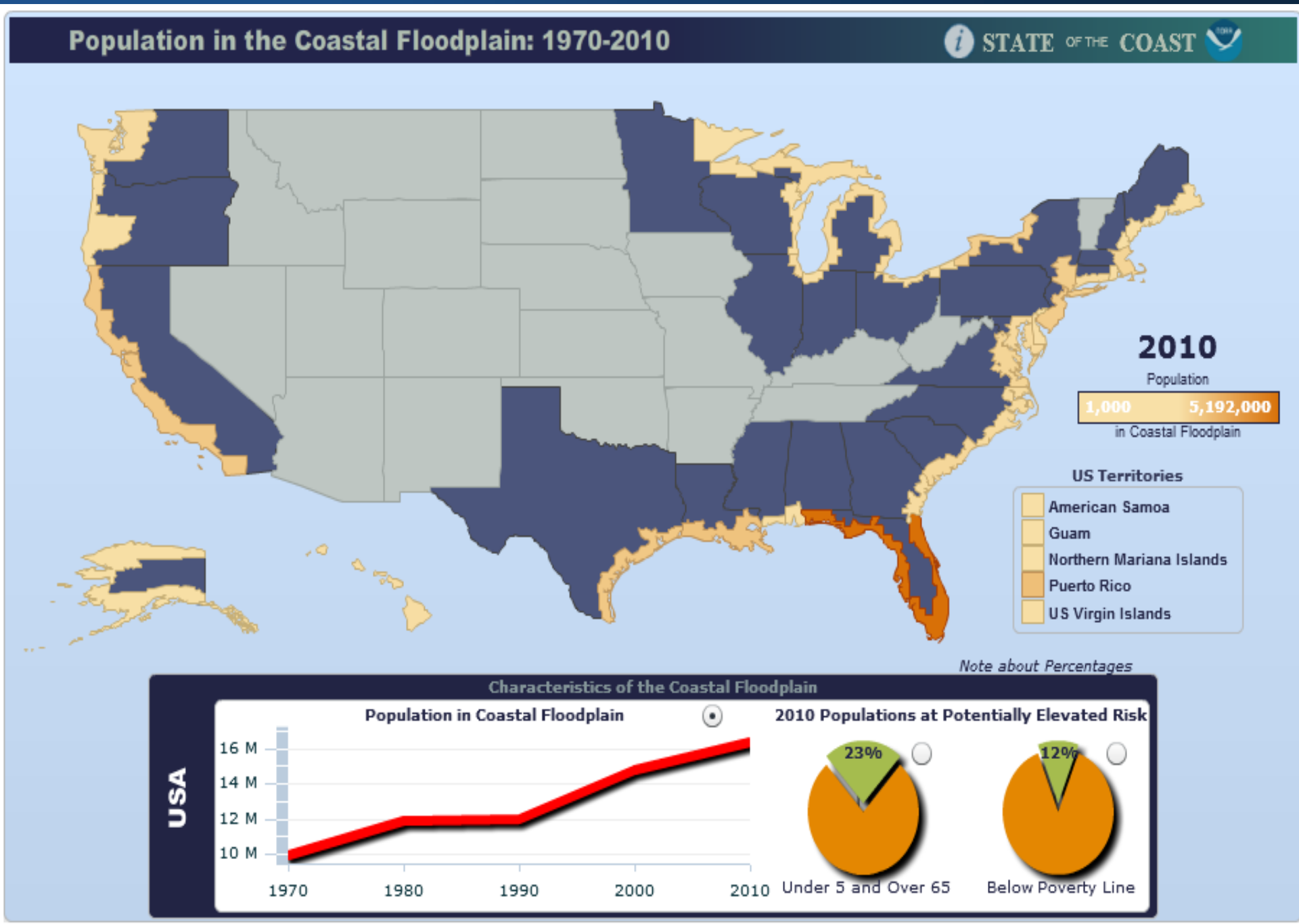
Flood Losses 2000-2011 (in millions)

Katrina: 1/3 of losses insured

Sandy: < 1/10 of losses insured*

2011	$8,480
2010	$5,331
2009	$1,087
2008	$7,827
2007	$3,049
2006	$4,497
2005	$128,000
2004	$18,277
2003	$3,451
2002	$1,725
2001	$10,726
2000	$2,003
TOTAL	$194,453

Source: NOAA, NCDC; FEMA



http://stateofthecoast.noaa.gov/

Sidebar: Executive Order 11988 on Floodplain Management

President's Statement Accompanying Executive Order 11988

- *Despite substantial efforts by the Federal Government to reduce flood hazards and protect floodplains, annual losses from floods and adverse alteration of floodplains continue to increase. The problem arises mainly from unwise land use practices.*
- *Because unwise floodplain development can lead to the loss of human and other natural resources, it is simply a bad Federal investment and should be avoided.*

- May 24, 1977

Sidebar: Executive Order 11988 on Floodplain Management

Executive Order 11988

Each agency shall provide leadership and shall take action

- *to reduce the risk of flood loss,*
- *to minimize the impact of floods on human safety, health and welfare, and*
- *to restore and preserve the natural and beneficial values served by floodplains…*

Agencies, such as DOT, HUD, etc., implemented the EO through revised regulations with guidance from CEQ, WRC, GSA

- 43 FR 22308 (Feb. 10, 1978)
- GSA Administrative Order 1095.2 (July 23, 1979)

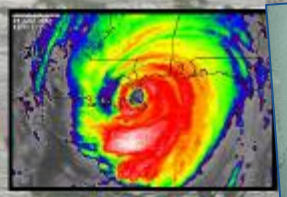
US Army Corps of Engineers

Performance Evaluation Plan and Interim Status, Report 1 of a Series

Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System

by Interagency Performance Evaluation Task Force

10 January 2006



FINAL DRAFT

American Institutes for Research

Assessing the Adequacy of the National Flood Insurance Program's 1 Percent Flood Standard

Gerald E. Galloway, Gregory B. Baecher, Douglas Plasencia, Kevin G. Coulton, Jerry Louthain, Mohamed Bayha

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DRAFT:

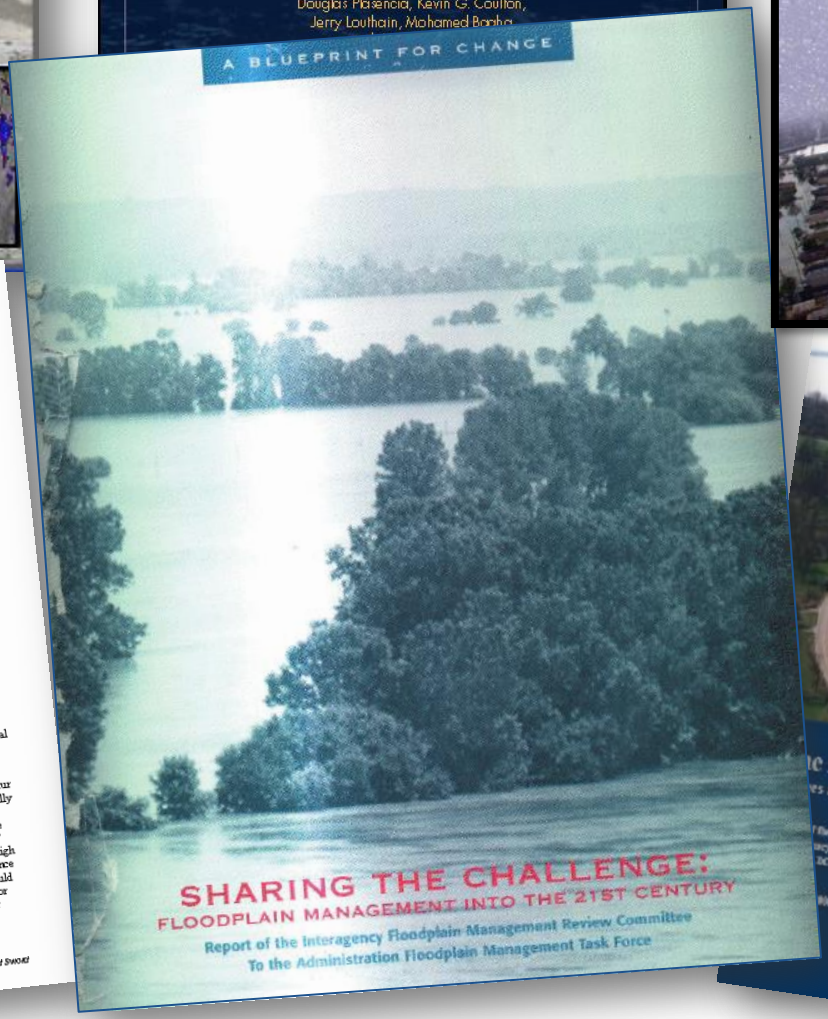
RECOMMENDATIONS FOR A NATIONAL LEVEE SAFETY PROGRAM

A Report to Congress from the National Committee on Levee Safety

An Involved Public and Reliable Levee Systems

January 15, 2009

A BLUEPRINT FOR CHANGE



SHARING THE CHALLENGE:

FLOODPLAIN MANAGEMENT INTO THE 21ST CENTURY

Report of the Interagency Floodplain Management Review Committee

To the Administration Floodplain Management Task Force

Association of State FloodPlain Managers
2809 Fish Hatchery Road, Madison, WI 53713
Phone: 608-274-0123 Fax: 274-0696
Website: www.floods.org Email: asfpm@floods.org

National Flood Policy Challenges
Levees: The Double-edged Sword

This is a position paper prepared by the Association of State Floodplain Managers, (ASFPM), a non-profit professional organization dedicated to the reduction of flood losses in the United States.

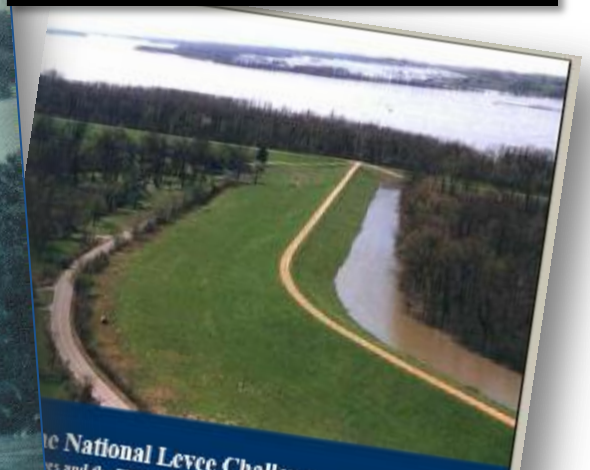
Introduction

It has long been recognized that flood protection provided by levees is a double-edged sword. On one hand, levee systems have provided flood protection. On the other hand, given enough time levees either will be overtopped or will fail—leading to severe flood impacts on an unsuspecting population. Unlike a natural flood, levee failure flooding is often rapid, forceful, extremely damaging, and occurs with little or no warning.

New Orleans is only one example of a community that has felt both edges of the "sword." Many floods were repelled by the levees around the city over the years, but catastrophic flood damage occurred in 2005 as a result of levee failures and overtopping. Subsequent efforts to properly reflect the location of and true protection provided by levees on flood maps in the nation has heightened the awareness of policy makers and citizens about the enormous risk the nation faces in levee-protected areas.

An additional concern is that levees are often placed so that they encroach substantially on river systems. This creates adverse impacts both on flood frequency and severity as well as on the natural functions of the river system.

Because of the nature of levee failure flooding, the ASFPM believes that levees are not a wise community choice and should never be used to protect undeveloped land so development can occur in the flood risk area behind the levee. However, many levees already exist in the nation, especially in communities that were built right on the river or coast, usually at a time when the nation was convinced it could engineer its way out of flooding. Where levees already exist, or where a levee appears to be the best option after careful analysis of all alternatives to mitigate the incidence of flooding to existing development, the ASFPM advocates that levees (1) must be designed to a high protection standard; (2) must be frequently and adequately inspected, with all needed maintenance funded and performed (if this does not occur, the levee must be treated as nonexistent); (3) should be used only as a method of last resort for providing a LIMITED means of flood risk reduction for existing development; and (4) are inappropriate as a means of protecting undeveloped land for proposed development.



e National Levee Challenge

es and the FEMA Flood Map Modernization Initiative

cy Levee Policy Review Committee

Key Recommendations of Reports: 1970s - present

- “100-year” standard inadequate for flood damage reduction structures, especially for urbanized areas.
- Structures, such as levees, floodwalls, and dikes alone will not reduce risk – nonstructural measures must be integrated.
- Federal policies may present barriers to nonstructural approaches and local initiative for management of flood-prone lands.
- Climate impacts threaten coastal communities and economies. Some states and local governments are working to prepare for these impacts by adopting modern standards and long-term strategies to allow more room for rivers, beaches, and coastal ecosystems.
- Although floodplain and land use management is a state and local responsibility, the federal government plays a critical role in providing standards, funding, and technical assistance.

Damage Drivers

Current Federal Policies:

- **Allow intensification in hazardous areas**
- **Ignore changing conditions**
- **Ignore adverse impacts to existing properties**
- **Undervalue natural floodplain services**

But, changes are already underway…

Briefing Overview

Background: Federal Flood Policy

Early Lessons from Hurricane Sandy

Federal Policy Changes

Federal Policy Responses

- NFIP Reform
- Supplemental Appropriations for Sandy
- Water Resources Development Act of 2013
- Principles and Guidelines
- Executive Orders 11988, 13514
- Federal Sandy Rebuilding Task Force

BW-12 and Insurance Affordability

- Philosophy behind Biggert-Waters
  - Passed in summer of 2012
  - Majority of reforms focused on financial solvency of the program
    - Those living at risk should pay more
    - Truly pricing risk may equal better mitigation decisions
  - Major recognition of need for mapping through establishment of the National Flood Mapping Program

BW-12 and Insurance Affordability

- **Insurance affordability, especially for those that cannot afford it #1 issue**!
  - Provision to charge actuarial rates on sale of home particularly impactful
  - BW-12 barely dealt with issue
  - Lots of good ideas out there on how to do this
- Probably be some sort of “mini” reform of the NFIP in the next few years as actuarial rates kick in
  - **Will effort lead to bad or good outcome from a resiliency and sustainability perspective?**

A Mitigation Based Approach

- Uses many existing tools in the toolbox
- Requires participation and changes at Fed, State, Local levels
- Some items can be implemented now, some items need new/altered rules, regulations, programs


Tyvek
HomeWrap

Approach #1: Update Floodplain Regulations

- Focus on higher standards that save people money in the long run!
- Freeboard
- V-zone standards in Coastal A-Zones
- Adopt ABFEs whenever provided
- Subdivision standards require mapping of all areas conveying water

Approach #2: Participate in CRS

- Community Rating System should be considered by every community
- Many state activities count for CRS credits
  - Some states do enough activities to lower you one CRS class
  - Adopting ABFE maps and V-Zone standards in Coastal A Zones earn enough points to move you a CRS class
- New studies show that CRS has far more value than just insurance discount

Approach #3: Strengthen State Participation in Mitigation

- There is going to be a significant demand for technical assistance driven by flood insurance rate increases.
  - Needs to be ample funding for State FPM office and Mitigation Office
- States can set up a funding or cost-sharing mechanism to match Federal funds
  - 24% of states surveyed by ASFPM in 2010 have programs

Approach #4: Strengthen ICC

- Under 2004 NFIP Reform, ICC can be triggered by an offer of mitigation. How can this "door" be more widely used.
  - FEMA piloted this over the past few years
  - Lessons learned should be incorporated and it be allowed on a nationwide basis
- Increase limits on ICC
  - Currently capped at 30K
  - Elevations in Sandy affected areas 40-90K
- Increase eligible items under ICC
  - Full benefit for acquisition projects

Approach #5: Strengthen Mitigation Grant Programs

- Affordability issues should drive demand for mitigation programs, especially pre-disaster programs
- PDM needs to be restored
- Funding monitored and increased for new FMA program
- Mitigation project procedures need streamlined to make process more efficient

Approach #6: Create new Affordability Mechanisms

- Community based flood insurance
- Need based vouchers – outside of the NFIP
- Refined rating of policies
  - Discounts for doing partial mitigation
- Other actions

The Sandy Connection

- Then there was Sandy
  - 200,000+ structures affected
  - Projected flood claims to be $7-10 billion
  - By January 2013, NFIP in process on over 130,000 flood claims
  - Projected to be second biggest claims event in history of NFIP behind Katrina
  - Could push NFIP debt to nearly $29 billion total
  - Congress approved $60.4 billion in supplemental funding ($33 billion for long term recovery and rebuilding)

Need to Build Higher!

Under the Flood Insurance Reform Act of 2012, You Could Save More than $90,000 over 10 Years if You Build 3 Feet above Base Flood Elevation*

PREMIUM AT 4 FEET BELOW BASE FLOOD ELEVATION	PREMIUM AT BASE FLOOD ELEVATION	PREMIUM AT 3 FEET ABOVE BASE FLOOD ELEVATION
$9,500/year	$1,410/year	$427/year
$95,000/10 years	**$14,100/10 years**	**$4,270/10 years**

Federal Policy Responses

- NFIP Reform
- Supplemental Appropriations for Sandy
- Water Resources Development Act of 2013
- Principles and Guidelines
- Executive Orders 11988, 13514
- Federal Sandy Rebuilding Task Force

Uniform Flood Risk Reduction Standard:
Best-available-data for elevation plus 1' freeboard

http://portal.hud.gov/hudportal/HUD?src=/sandyrebuilding/FRRS

Federal Policy Responses to Hurricane Sandy

Uniform Flood Risk Reduction Standard:

The specific steps that these types of structures will need to take include:

- Elevating – the standard would require structures to elevate their bottom floor one foot higher than the most recent flood risk guidance provided by FEMA; and/or
- Flood-proofing – in situations where elevation is not possible, the standard will require structures to prepare for flooding a foot higher than the most recent flood risk guidance provided by FEMA – for example, by relocating or sealing boilers or other utilities located below the standard elevation

http://portal.hud.gov/hudportal/HUD?src=/sandyrebuilding/FRRS

Federal Policy Responses to Hurricane Sandy

Uniform Flood Risk Reduction Standard:

Only those that have funding for construction agencies in the Sandy supplemental (Public Law 113-2) are involved. This includes:

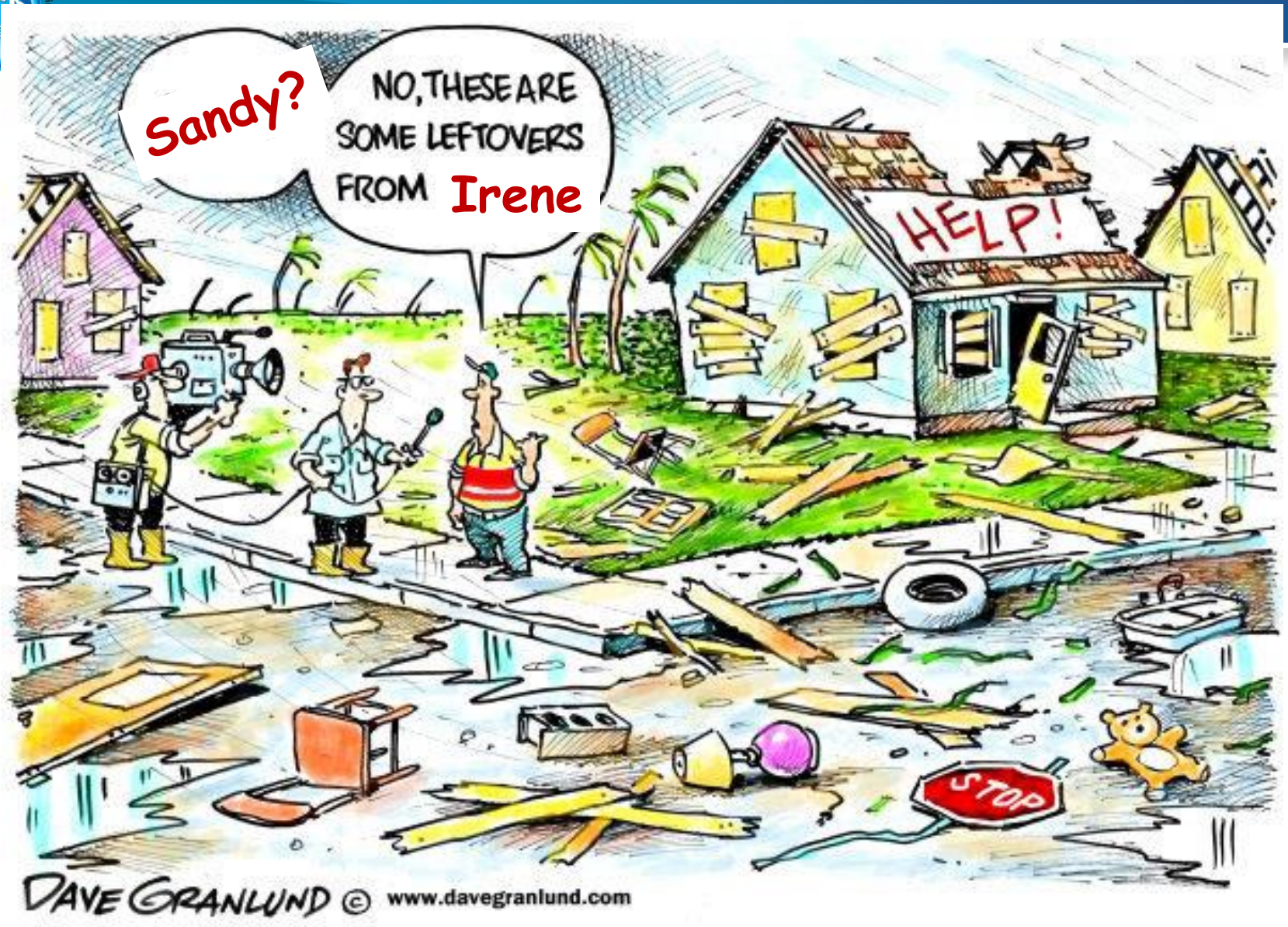
- DOT FHWA Emergency Relief Program; FTA Public Transportation Emergency Relief Program
- HUD CDBG-DR
- USACE Construction; Operations & Maintenance
- FEMA Disaster Relief Fund
- EPA State and Tribal Assistance Programs; SRFs
- DHHS Social Services Block Grants

http://portal.hud.gov/hudportal/HUD?src=/sandyrebuilding/FRRS

Summary & Conclusion

- Federal policies increase emphasis on state and local leadership in managing flood risk and adapting to climate change.
- Project and program finance changes will require new approaches.
- States and communities are leading the way.

Thank you!


Sandy?
NO, THESE ARE SOME LEFTOVERS FROM Irene
HELP!
STOP
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