



**Association of State  
Floodplain Managers**



# **INTEGRATING CLIMATE CHANGE INTO HAZARD MITIGATION PLANNING**

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***[www.floods.org](http://www.floods.org)***



# ASFPM'S MISSION

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

*and...*



Protect the natural and beneficial functions of floodplains.



# What is our national flood policy?

**Gilbert F. White—in 1939 said:**

**U.S. National Flood Policy is essentially one of:**

- **Protecting the occupants of the floodplain against floods;**
  - **Aiding them when they suffer flood losses, and**
  - **To encourage more intensive use of floodplains**
- 
- **Has it changed in 70 years?? Is it working?**



# Average Annual Flood Damages

- Nearly \$10 billion annually by early 2000
- Three-fold increase from early 1900s
- And then there was 2004,05,08,10,11,12,14, 16,17,18
- Disaster relief now costs the federal taxpayer over \$20 Billion/year—85% is flooding
- We are not resilient



# Why are we not resilient?

## Federal Policies

- NFIP 100-Year Standard/maps/regs
- Emphasis on structural approaches
- Disaster relief rewards bad behavior?

## States & Communities

- Control land use for short-term benefits
- Perceive flooding to be a federal problem
- Can externalize the costs/consequences

## Public

- Unaware of – or unwilling to accept - residual risk from known hazards
- Misplaced concern about having to buy flood insurance



# Flood Risk Management: Roles & Responsibilities

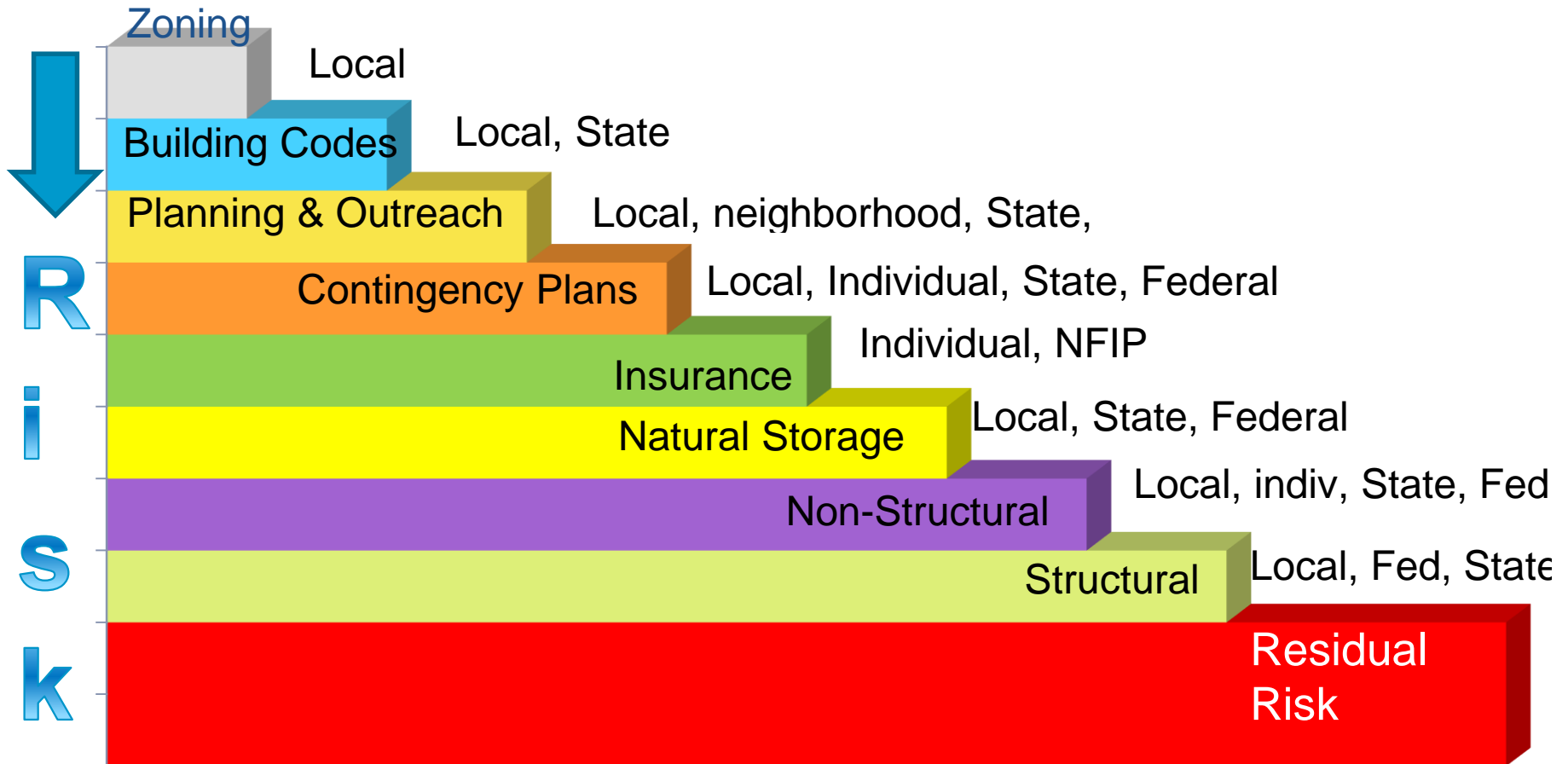
- So, who manages flood risk, anyway?
- Federal Role
- State Role
- Local Role
- Personal Role





# Shared Flood Risk Management: Buying Down Risk

## Initial Risk



Risk Reduction Tools (Cumulative)

All stakeholders contribute to reducing risk!



# What Locals/States can do

- Avoid development of high risk areas
  - Through planning and wise land use
- Better/smarter Regulations & Land Use
  - Map future floods, not Yesterday's flood
  - Avoid cumulative flood rise—no floodway development
  - Integrate climate change into all local Plans
  - Critical Facilities—must be accessible and operable during the 500 year flood event





# Community planning

- Communities role is to reduce risk to:
  - A. Existing development
  - B. Future development
- Land use and hazard mitigation planning
  - A. Retreat from highest risk areas, elevate or adapt in lower risk areas---PARA
  - B. Use high risk areas for open space--can pay for itself with increased adjacent land value



# Being resilient in changing climate

- Use Natural systems to reduce flooding, and manage on watershed basis
- Incentives for locals who reduce flood risk
  - sliding cost share for disaster relief
  - E.G. if they include CC in HM plans
- Effective Community actions that are
  - Not just Resilient, but Sustainable e.g.

**NO ADVERSE IMPACT (NAI)**



# NAI Benefits

- Ensures the actions of any community or property owner do not adversely impact others, ecosystem resources/functions
  - Think levees? Big upstream subdivision
- Incorporates resilient principles and watershed planning principles



# Haz Mit Plans and CI Change

- Include Future conditions
  - NFIP Maps do not—use 500 yr or freeboard
- Focus on #1 hazard in your community
- Look on watershed/Regional basis
- Look at impact on investment from CC
  - Because banks are starting to do that
  - Will assessed values go down due to CC?



# What is Resilient/Sustainable?

- Development plans and hazard mitigation plans and approaches must be integrated

- **SMART GROWTH IN DUMB PLACES IS THE OPPOSITE OF SUSTAINABILITY\***

\* Lisa Dun, law prof at Utah who studied New Orleans

- Hazard mitigation plans can be smart



# Thank you

**“Floods are Acts of Nature; But Flood Losses Are Largely Acts of Man”**



**Dr. Gilbert White**

See ASFPM web site for more info

[www.floods.org](http://www.floods.org)