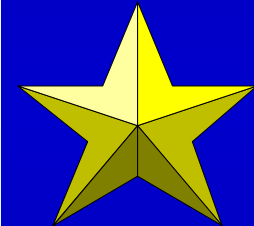


**US Army Corps Of Engineers**



**National Nonstructural / Flood  
Proofing Committee**





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## **FMA**

### **Our Mission**

**The purposes of the Floodplain Management Association are to:**

- Promote awareness on the part of the public and public officials of the nature and extent of flood problems and encourage the wise use and management of floodplains through protection and enhancement of natural floodplain values.**
- Support and encourage research, continuing education, distribution and exchange of pertinent information, and other activities to enhance the capability of members to plan, evaluate and carry out effective floodplain management programs.**
- Encourage actions that advance effective floodplain management by State Legislature, U.S. Congress, state and federal agencies, and other appropriate bodies and organizations.**
- Assist in educating and describing new, innovative, and improved measures or techniques in floodplain management.**

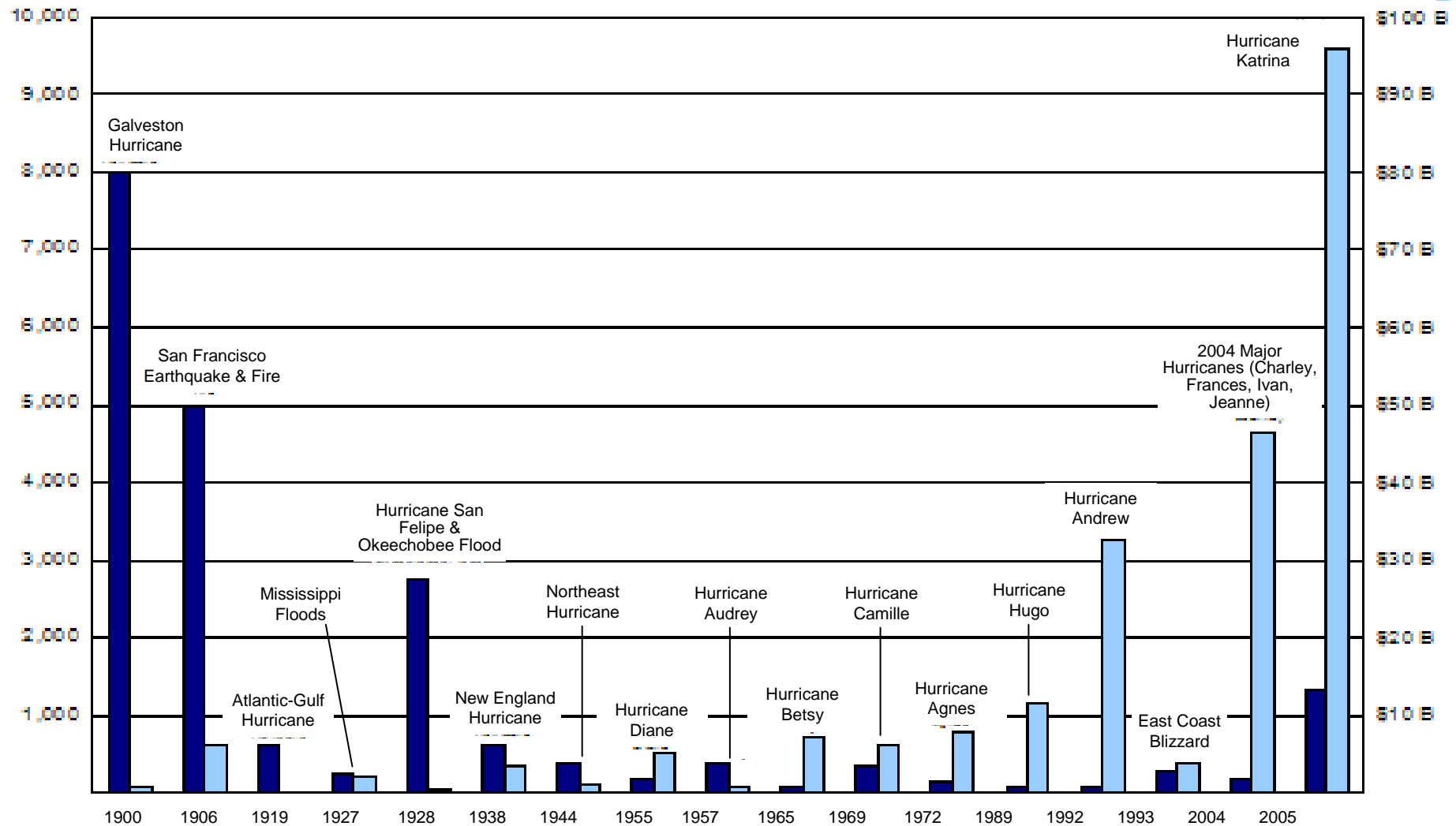
How much more of this in the future??



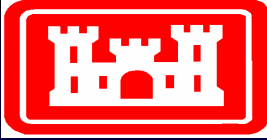
# U.S. Natural Disasters that Caused the Most Death and Damage to Property

Deaths

Damage



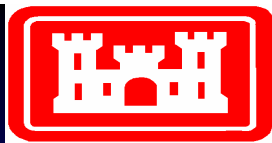
Note: (1) From The Federal Response to Hurricane Katrina: Lessons Learned, February 2006 (2) Dollars adjusted to third quarter 2005 dollars



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# *Transfer of Flood Risk Burden to the American Taxpayer*

- **NFIP**
- **Recovery**
- **Rebuild**
- **Do it again**

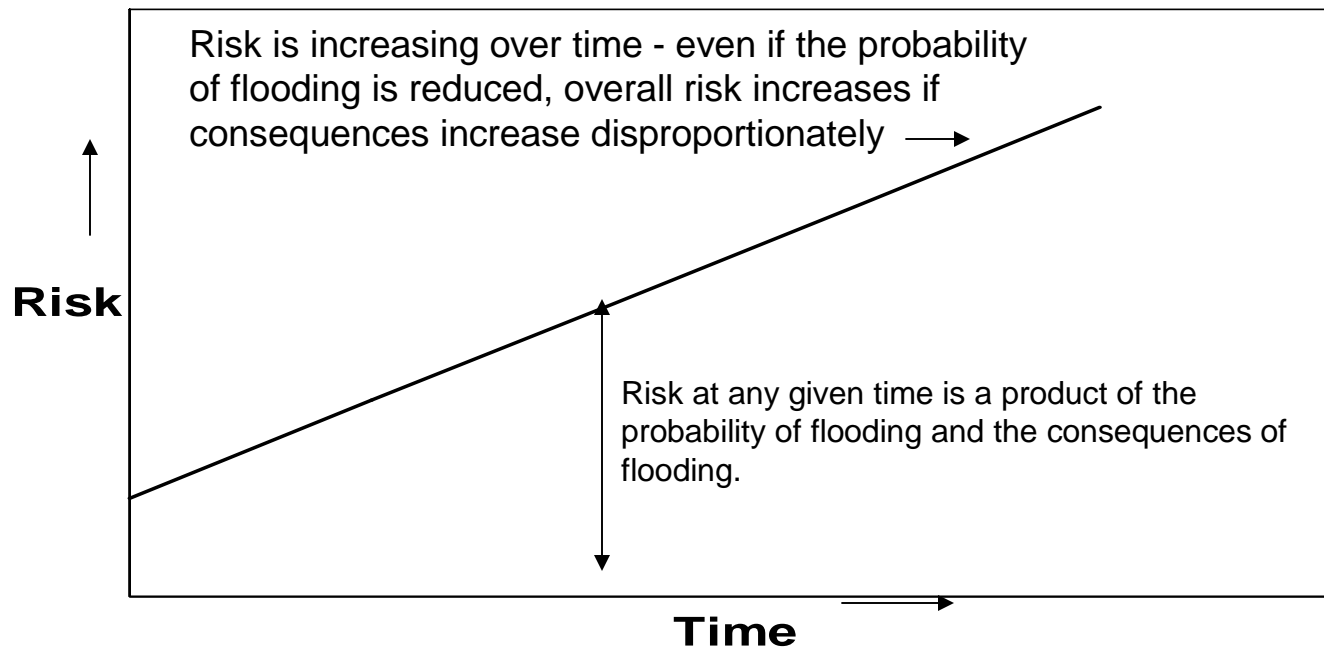


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## **Some Stubborn Facts about FRM in the USA:**

- **Flood Risk is a function of flood probability , flood consequences...**
- **Flooding is not a modern phenomenon. It is a natural phenomenon**
- **Flood damages and related human misery is a human choice**
- **Flood Damages continue to increase significantly despite significant investments in flood infrastructure**
- **A larger percentage of population and property are concentrated in the 5% of USA flood prone lands.**
- **Growing disconnect between who makes land use decisions and who provides the resources and funding for flood response, recovery, rebuild**
- **Loss of personal and local responsibility when it comes to FRM**
- **Politics Drives Flood Risk Decisions; Short Term Economic/Political Gain vs Long Term Economic/Political Loss**
- **Certain types of human occupation of the floodplain are important and economically efficient.**
- **80% of annual flood losses accrue to only 20% of properties**
- **US education system and cultural values tend to promote only the technical solutions to flood type problems**

To **reduce** Flood Risk, the consequences of flooding can not increase faster than the probability of flooding is lessened.



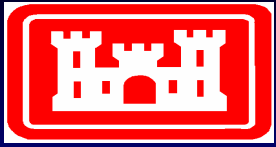
$$\text{Risk} = \text{Probability of flooding} \times \text{Consequences of flooding}$$

- Probability of flooding is a function of aging infrastructure, new infrastructure, O&M, weather, etc.  
**Reducing the probability of flooding requires major funds to build or rebuild facilities**
- Consequence of flooding is a function of land use, building design, etc.  
**Reducing the consequences of flooding is primarily a policy issue and has minor funding requirements**

**SO, HOW DO WE ACHIEVE A  
21<sup>st</sup> CENTURY WITH:**

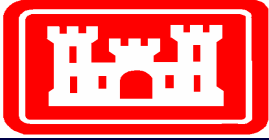
**“NO FLOOD RISK“ ??**





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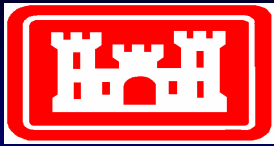
**NATIONAL OBJECTIVE**  
**STATE OBJECTIVE**  
**PLANNING OBJECTIVE**



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## **PLANNING PROCESSES:**

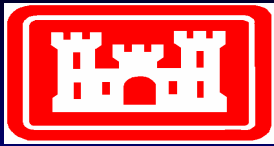
- Follow the scientific problem solving process**
- Adopt strategies for developing solutions to flood risk problems that are based upon preferred hierarchy of avoid, minimize and mitigate.**
- sustainability must be included in all of the various planning objectives.**



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# Policy considerations

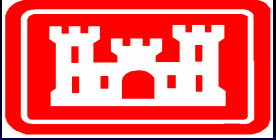
- **Get The Adverse Politics Out Of Flood Risk Management**
- **Look long term versus short term**
- **Transfer the true flood risk from the taxpayer to those who develop in flood plains and to those who live in flood plains**
- **Communicate The True Flood Risk; ie, consequence and probability**
- **Risk Based Insurance**
  - **Adopt High, Medium, Low Risk**
  - **Insurance Required At All Risk Levels**
  - **Some Areas Are Too Hazardous To Insure**
- **Flood Plain Management**
  - **Federal Level For Rebuilding**
  - **500-year (EO11988 criteria)**



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# More Policy considerations

- **Focus on sustainable flood risk reduction projects**
- **Stop building 100-year levees**
- **Use All The Tools**
- **Stop The “This Area Is Safe For Development” Policy**
- **Use Future Conditions**
- **Coastal Should Have A “No Build” Zone Like Floodways In Riverine**
- **Redundancy and resiliency in Flood Risk Management**
- **No Adverse Impacts**
- **Communicate Residual Risk In All Projects**
  - **Signage In Flood Plain Areas**



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# *Flood Risk*

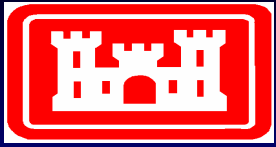
## *Communicating/Educating*

# What We Have Communicated

- **Areas behind levees are safe**
- **Areas behind levees are not in a flood plain;**
  - **No Insurance**
  - **No Flood Plain Management**
  - **Get Out of Flood Plain**
- **Hidden the risk**
- **The less you do, the more your get**

# CAUTION

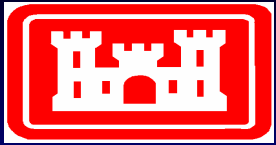
- **This Area Is A Flood Plain**
- **This Area Is Protected By Levees**
- **These Levees May Fail Or Be Overtopped**
- **A Potential Flood Depth Here Is 8 Feet**



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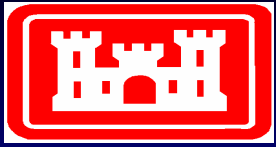
- **We May Think We Have Done A Lot In Terms Of Flood Risk Management But, Flood Damages Are Beating Us Because We Build In The Wrong Places, We Build Too Low, And We Do Not Communicate The Risk.**





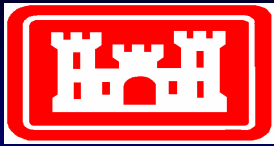
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- **Sound Flood Risk Management Is More Difficult To Attain Than It Should Be Because Of The Bias Toward Decisions That Reflect Short Term Economic/Political Gain And put aside the Long Term Economic/Political Cost.**



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- **To Achieve Sound Flood Risk Management We Must Use All The Tools in the “Tool Box”**

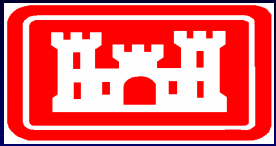


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## ***FOCUS GROUPS***

**M  
E  
D  
I  
A**

- **Those at flood risk**
- **Technocrats**
- **Those who make the local land use decisions**
- **Those who make the policy and laws**
- **Those that "pay the bills"**



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## **More focus on Flood Forensics**

**What were the flood damages?**

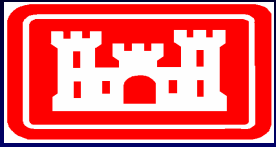
**What was the loss of life?**

**What was the cost-response, recovery, rebuild?**

**Who paid the cost - response, recovery, rebuild?**

**How much did they pay by groups?**

**What was the impact of land use decisions on the flood damages?**



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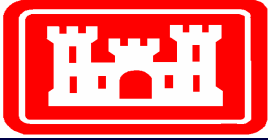
# Flood Forensics (continued)

**What were the affects (positive and negative of  
Consequence management (nonstructural)  
measures?**

**Probability management (structural )  
measures?**

**What did the affected community get in Federal  
and State funds?**

**What did the individuals get in Federal and State  
funds?**



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## **IDEAS for FMA?**

- FMA membership Annual Floodplain Report to the Governor and DWR on how well California, Nevada, etc., is doing in floodplain management?** (FMA Version of ASCE Infrastructure assessment report)
- Quantum Floodplain Management**
- Statewide Floodplain benefits celebration day led by FMA members**
- FMA offer communities incentives and awards (FMA contest?) for how well they execute their annual exercise in flood response and evacuation**
- FMA sponsor contest to develop an icon for no flood risk**



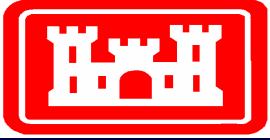
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# No Flood Risk

Focus

Priority

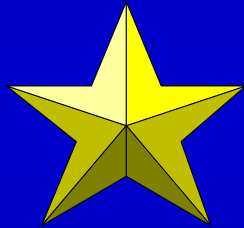
Objective



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# *Communication/Education/Action*





**US Army Corps Of Engineers**



*Nonstructural -  
Flood Proofing*

**National Nonstructural / Flood  
Proofing Committee**

The central logo is contained within a white-bordered rounded rectangle. It features a house outline with a chimney, set against a background that transitions from blue at the top to green in the middle and brown at the bottom. The text 'Nonstructural - Flood Proofing' is written in a stylized, italicized font across the house. Below the house, there are white wavy lines representing water. The text 'US Army Corps Of Engineers' is at the top, and 'National Nonstructural / Flood Proofing Committee' is at the bottom.