

Colorado Association of Stormwater and Floodplain Managers

Social Hour and Discussion
May 16, 2018

Welcome!

Social Hour Discussion

David Mallory PE, CFM NHMA Treasurer

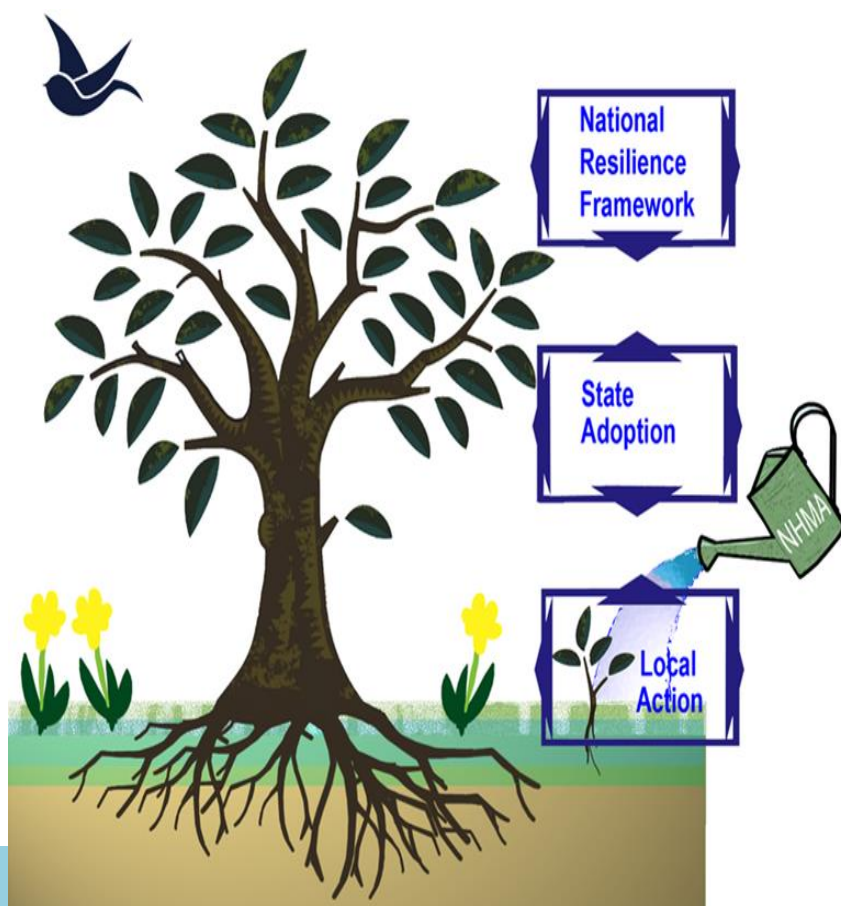
**Edward A. Thomas, Esq.
ASFPM Senior NAI Advisor &**

President, Natural Hazard Mitigation Association

NHMA

Natural Hazard Mitigation Association

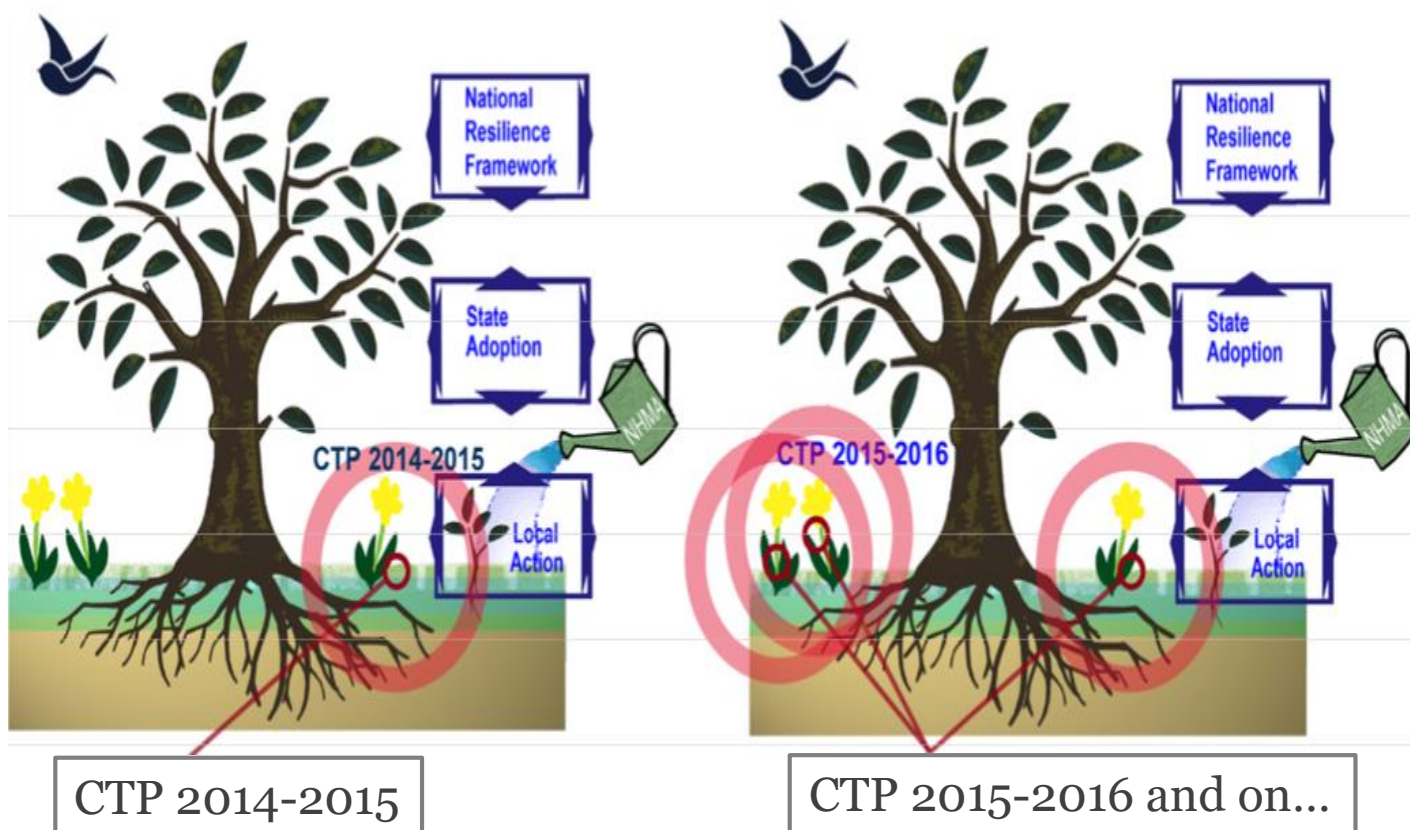
Natural Hazard Mitigation Association (NHMA)



Created in 2008 to bring together individuals and organizations interested in

- **Hazard Mitigation**
- **Climate Adaptation**

NHMA is a Cooperating Technical Partner (CTP) with FEMA & All Hazards “Little Sister” of ASFPM



NHMA Local Initiative: Resilient Neighbors Network (RNN)

- Cornerstone of the NHMA
- Encourages peer-to-peer networking
- RNN website:
www.resilientneighbors.com



NHMA Local Initiative: Disaster Risk Reduction (DRR) Ambassador Curriculum

- Focuses on supporting community leaders from the private and public sector to engage and lead community-level DRR dialogue by providing:
 - Educational resources
 - Self-study curricula
 - Training workshops
 - Webinars



Important Considerations as We Move Forward Together



Community development decision makers need to know where to start and how to proceed

- Provide **clear, consistent information** from multiple, various sources, distributed by diverse media sources frequently and over time
- Provide **specific, action-oriented information** on what to do before, during, and after a disaster
- Support and encourage **information sharing**

Hide from the Wind: Tornado Safe Rooms in Central Oklahoma (NHMA Report) and Dr. Dennis Mileti

Important Considerations as We Move Forward Together



Assessing needs, accessing help, and identifying funding sources require creativity, vision, leadership, and time

Citizens can be:

- The leaders to create a **community leadership** in disaster risk reduction
- Crucial **support for elected, appointed leaders** that address disaster risk reduction

Important Considerations as We Move Forward Together



Any time is the best time to **change development practices** from developing in a manner which will cause harm to individuals, businesses, the economy, and the environment

- To implement a “**Do No Harm**” or “**No Adverse Impact**” approach, which emphasizes the need for **safe development** and a **sustainable future**

Don Watson, FAIA, author of *Design for Flooding*

Important Considerations as We Move Forward Together



- The best time to develop safely and properly is **before natural processes** cause devastation, which could have been **avoided with proper planning**
- As a community picks up the pieces after a disaster and begins to rebuild, there is a **window of opportunity**

Part II:

Overcoming Impediments: Paths Forward

Promoting solutions to rise in flood losses

Understanding how much morality, the law, and equity support safe development

Understanding the need for current, actionable, understandable information on risk

Educating on true risk

Influencing transformative behavior change through higher standards of care, litigation, and inspiration

Our Main Message:

Even if We Perfectly Implement Current Standards, Damages Will Increase


“Following only the minimum standards of the Flood Insurance Program guarantees worse future flood disasters”

*~ David Mallory PE, CFM,
NHMA Board*

“The National Flood Insurance Program is the most cost effective program of Disaster Risk Reduction in the history of the United States.”

*~ Ed Thomas, NHMA
President*

Adapting to Increasing Climate Impacts

- 
- **Stop** making things worse as investments and populations inevitably increase
 - **Participate** in opportunities to change legislation
 - **Remove** perverse incentives
 - **Reward** good planning, safe building, and safe reconstruction

Saving Money on Flood Insurance

FEMA has programs to help owners reduce their risk and save money on flood insurance



FEMA

- Community-wide discounts through the **Community Rating System (CRS)**
- FEMA grant programs support rebuilding and relocating
- Use of higher deductibles to lower premium costs

The smartest way to save is to build higher!
However, higher building has severe limitations, especially in mountainous areas

Webinar on Floodplain Management & Development in Terrain with Steep Slopes

Preventing Flood Disasters from Becoming Disastrous

- Brian Varrella, Chair, Colorado Association of Stormwater and Floodplain Managers



[click to access webinar]



New York Federal Reserve Study: *How Will We Pay for Superstorm Sandy?*

“With this expansion of federal disaster assistance, payments from private insurance companies and the federal government exceeded the total economic cost of events since Katrina by about 25 percent.”



Liberty Street Economics

« The Impact of Superstorm Sandy on New York City School Closures and Attendance | Main | The Path of Economic Recovery from Superstorm Sandy »

DECEMBER 20, 2012

How Will We Pay For Superstorm Sandy?

Jaison R. Abel, Jason Bram, Richard Deitz, and James Orr

While the full extent of the harm caused by superstorm Sandy is still unknown, it's clear that the region sustained significant damage and disruption, particularly along the coastal areas of New York, New Jersey, and Connecticut. As we describe earlier in this series, the **economic costs** associated with natural disasters are generally thought to arise from the damage and destruction of physical assets and the loss of economic activity. These costs can be substantial, running into the tens of billions, and impose significant stress on the affected communities. In this post, we assess who will ultimately pay the economic costs imposed by the storm. Based on data from recent hurricane events, it is likely that the federal government and private insurance companies will more than cover the aggregate costs. In the short run, though, there may be strains on state and local governments as well as on individuals and businesses as they await reimbursement.



[click to view article]

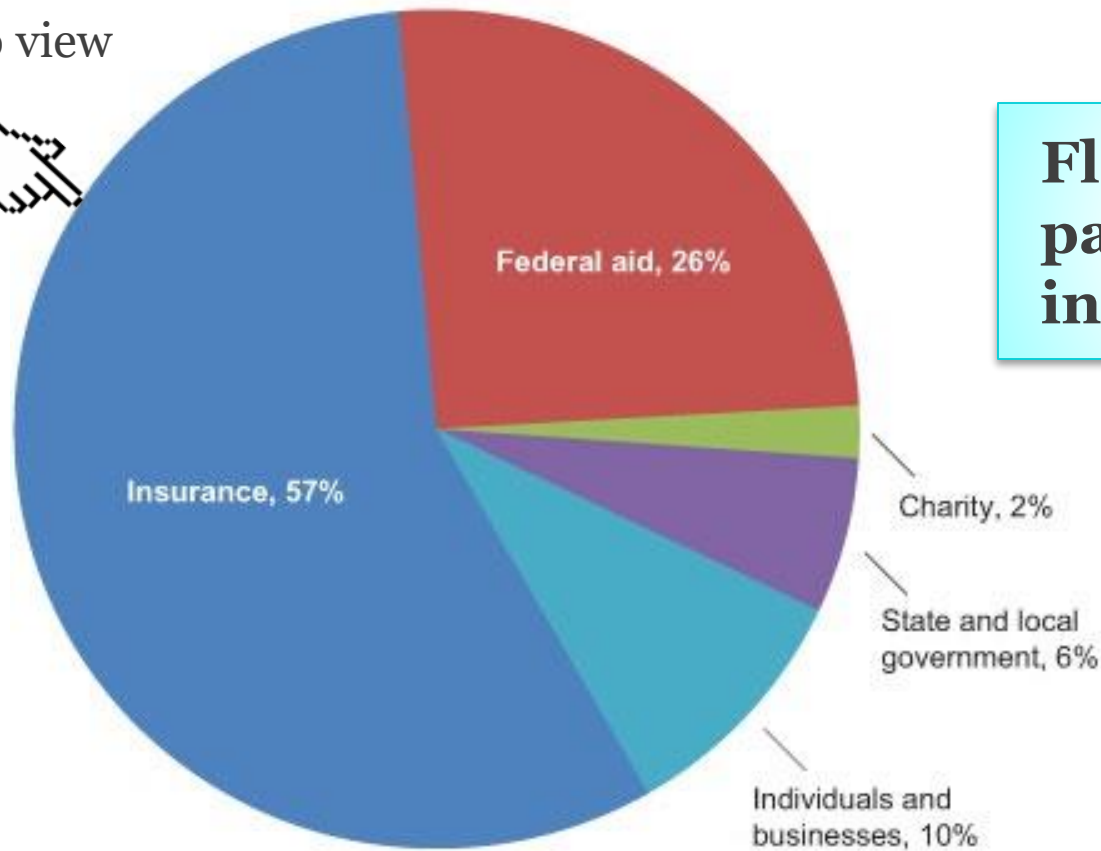
[How Will We Pay for Superstorm Sandy?](#)

By Jaison R. Abel, Jason Bram, Richard Deitz, and James Orr

System of Disaster Relief

Share of Costs Paid for Major U.S. Hurricane Events, 1989-2004

[click to view
article]

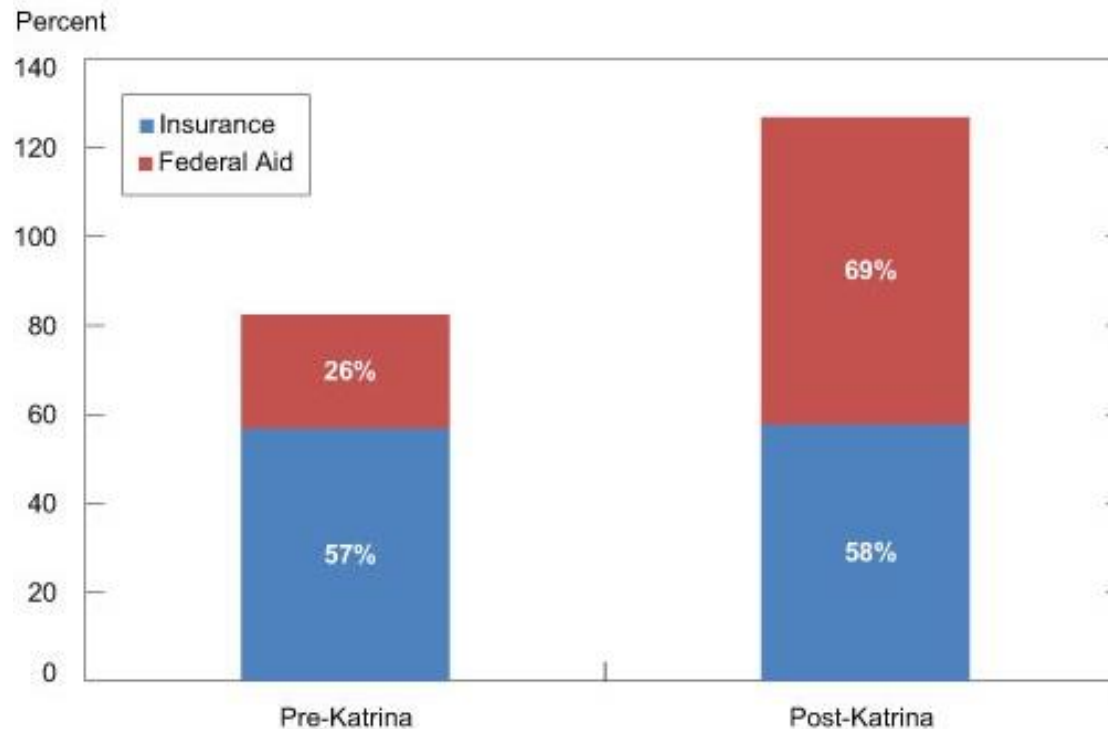


**Flood insurance
payments not
included**

From a Study by the Federal Reserve Bank of New York

Assistance Not Including Flood Insurance Payments

Share of Costs Paid by Insurance and Federal Aid for Major Hurricane Events Before and After Katrina



From a Study by the Federal Reserve Bank of New York

How Can We Accomplish Disaster Risk Reduction?

***“Well begun is
half done”***

~ Aristotle

Seizing the Opportunity to Build a Safer Future



“More than half of the built environment of the United States we will see in 2050 does not exist today.”

~ Dr. Arthur “Chris” Nelson,
FAICP at Rocky Mountain
Land Use Institute

Colorado Demographics

- Second Fastest Growing State in USA
- “Colorado's population is expected to nearly double by 2050.
- In 2008, approximately 5 million people resided in the state.
- By 2050, Colorado's population is projected to be between 8.7 and 10.3 million people, with the majority residing in the Arkansas, South Platte and Metro Basins.

Where is the Floodplain?



Other Limitations of Current NFIP Mapping

[click to view article]

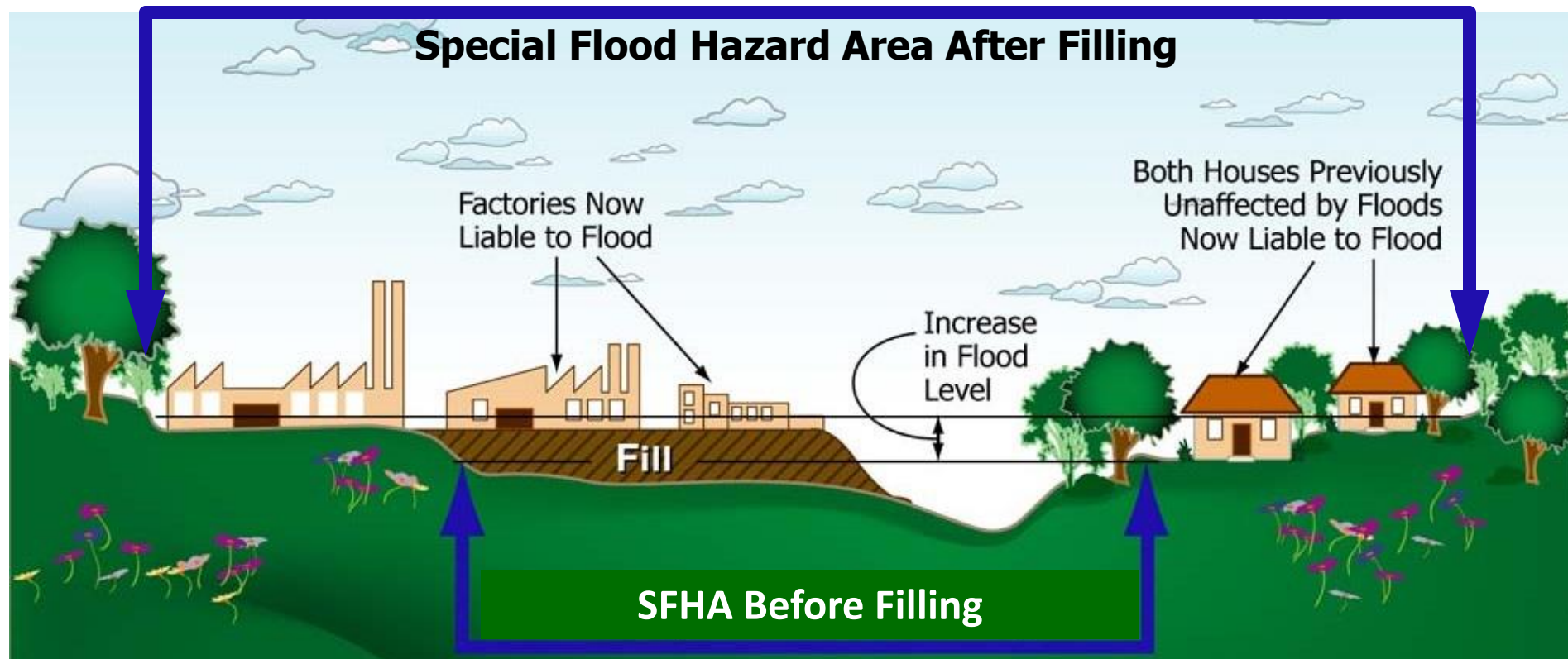


- 50% of all maps are **not recently validated** with even recent old data
- All maps are **based on past history** – not the future
- May **ignore stormwater management issues** (will ignore less than one square mile drainage areas)

[A Three-legged Stool on Two Legs: Recent Federal Law Related to Local Climate Resilience Planning And Zoning](#)

By Sarah J. Adams-Schoen and Edward A. Thomas, *The Urban Lawyer*, 47 URB. LAW. No. 3 (2015)

Today's Special Flood Hazard Area (SFHA) is Not Necessarily Tomorrow's Floodplain



If large areas of the SFHA are filled, then there will be an increase in the land area needed to store flood waters

This means your home or business may be impacted

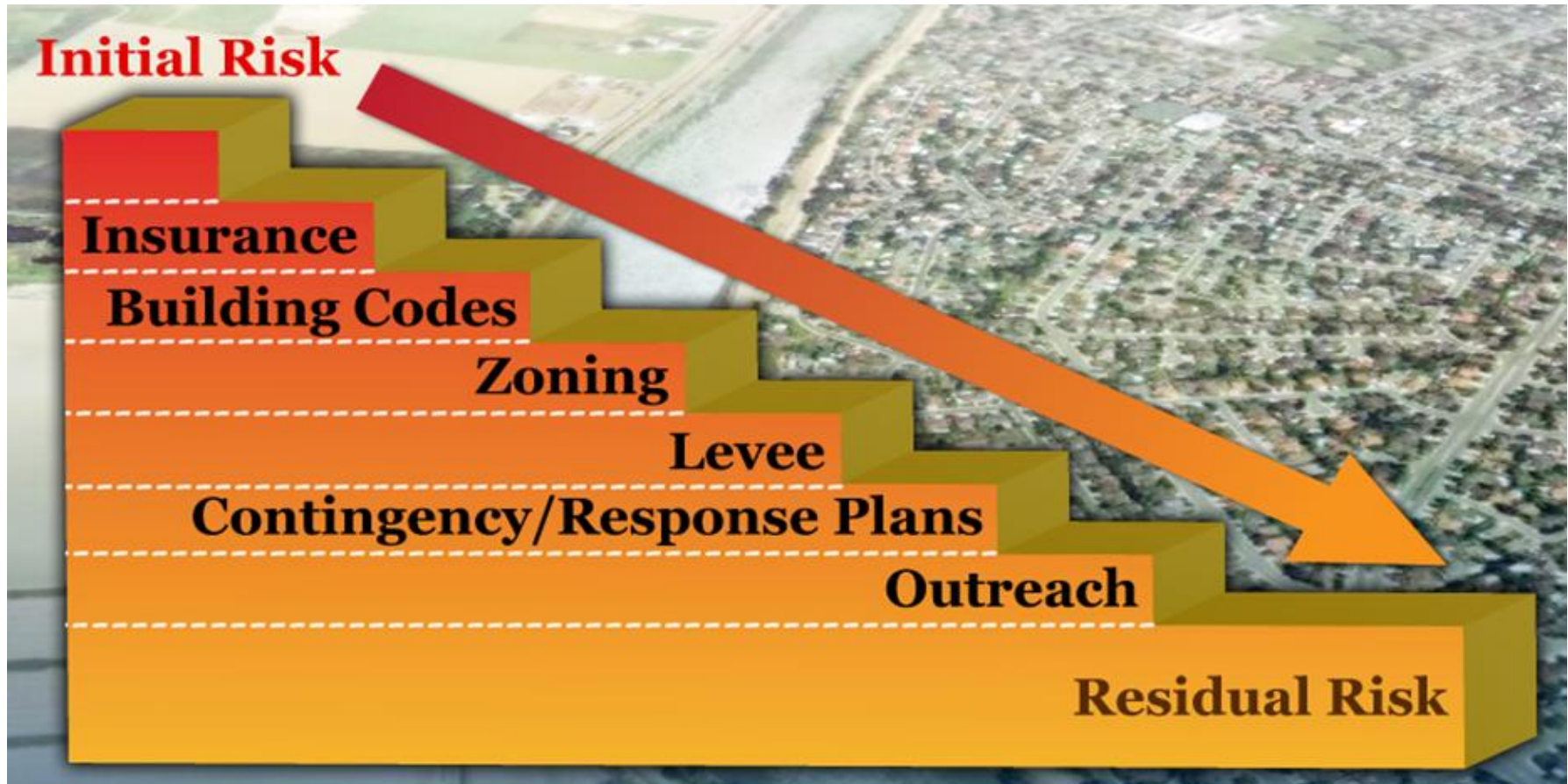
With Full Build-Out, Flood Heights May Increase Dramatically

No Adverse Impact: New Direction in Floodplain Management Policy

- Larry Larson PE, CFM and Doug Plasencia PE, CFM
- Published in Natural Hazards Review Nov. 2001, IAAN 1527-6988

All Stakeholders Can Contribute to DRR

Risk Reduction Actions (Cumulative)



USACE graphic, courtesy of Pete Rabbon

Initial Risk

Stakeholders May Also Contribute to Increased Risk!

No or Inadequate Warning/Evacuation Plan

Sea Level Rise and Upstream Development
Increases Flood Heights

Lack of Awareness of Flood Hazard, Absence of
Flood, Business Interruption, and DIC Insurance

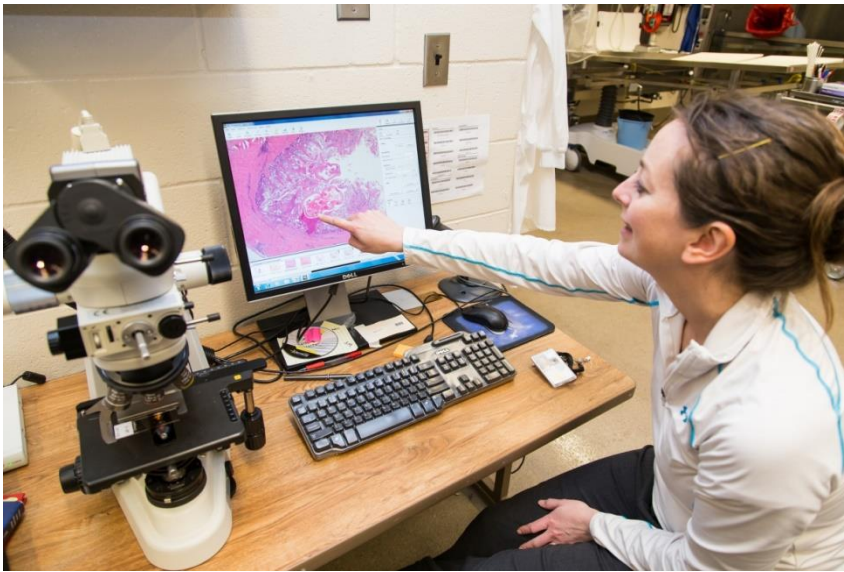
Critical Facilities Not Properly Protected
From Flooding

Increased Development: more people
and more costly development

Buildings & Infrastructure Not
Properly Designed or Maintained

Vastly Increased Residual Risk

Litigation for Claimed Harm is Easier Now than in Times Past



- Forensic hydrologists
- Forensic hydraulic engineers
- Forensic wildfire
- Other experts

New Trend in the Law

Increasingly, states are allowing lawsuits against communities for alleged “goofs” in permitting construction **OR** in conducting inspection

GOVERNMENT LIABILITY FOR FLOOD HAZARDS



By
Jon A. Kusler, Esq., Ph.D.
Association of State Wetland Managers

April 2017

Three Ways to Support Reconstruction Following Disaster Damage

Self Help

- Loans
- Savings
- Charity
- Neighbors

Insurance Disaster Relief

- A combination of social insurance and self help

Litigation

The preferred alternative is to have NO DAMAGE due to safe land use and hazard mitigation

The Good News

- The Supreme Court seems to agree with safe development based planning
- Justice Alito wrote in the majority opinion:

"Insisting that landowners internalize the negative externalities of their conduct is a hallmark of responsible land-use policy, and we have long sustained such regulations against constitutional attack.

See. KOONTZ v. ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, (2013)

No. 11-1447



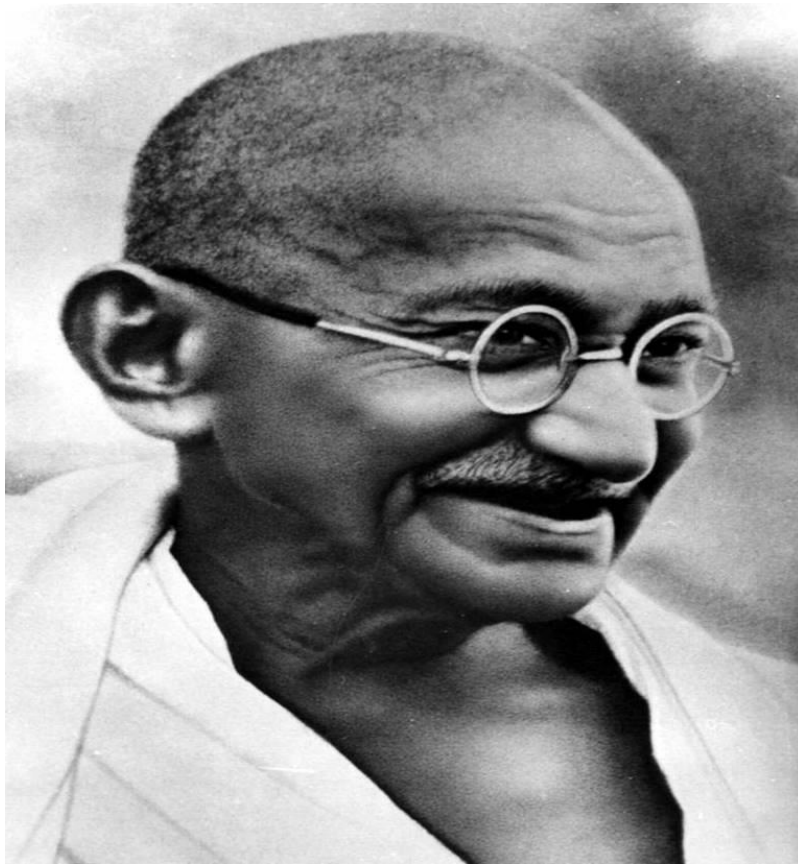
A Conservative, Property Rights View

The Cato Institute indicates that...

Compensation is not due when:

*“... regulation prohibits wrongful
uses, no compensation is required.”*

Equity and Morality Support Safe Development



According to Gandhi's Writings

“Sic Utere Tuo Ut Alienum Non Laedas”

Use your property so you do not harm others is

*“A grand doctrine of life and the basis of (harmonious relationships)
between neighbors”*

Avoiding a Taking

- Avoid interfering with the owner's right to **exclude others**
- Avoid denial of all **economic use**
- In highly regulated areas, consider **transferable development rights** or similar residual right so the land has appropriate value
- **Clearly relate regulation to preventing a hazard**
See, Different result in Koontz-what harm was being prevented?
- Establish a fair **variance procedure**



A closer look

Speaking of Variances...

- Colorado Statue: C.R.S. **31-23-307**

“... the board of adjustment has the power, in passing upon appeals, to vary or modify the application of the regulations or provisions of such ordinance relating to the use, construction, or alteration of buildings or structures, or the use of land, so that the **spirit of the ordinance is observed, public safety and welfare secured**, and substantial justice done.”

Variances

Virtually ALL State Zoning Enabling Statutes are specific that no variance can ever be granted when such variance would:

- Have a negative impact on public health or welfare; or
- Result in increased costs to public

Examples:

- Handicapped person wants to build below BFE or ease of access- Hardship-Yes? OK?
- Building must be built 20 feet above ground; height restriction in area is 20 feet? Hardship?

Resilience and Disaster Risk Reduction

Resilience and climate adaptation are moving targets due to:

- Climate
- Population
- Type of development
- Other factors



Think of the arrows being shot at the target as development resources

Need a Common DRR Message Delivered by Many People



- Enroll in the Community Rating System (CRS) Program
- Build with higher freeboard, generally 4 feet or more above Base Flood Elevation (BFE), in areas subject to floods
- Understand the limitations of flood frequency projections based on the past, which include many unrealistic assumptions

Common Message to Professionals

- Public Safety First Legally-Morally-Ethically
- The first Fundamental Canon of the American Society of Civil Engineer's (ASCE) Code of Ethics states that:

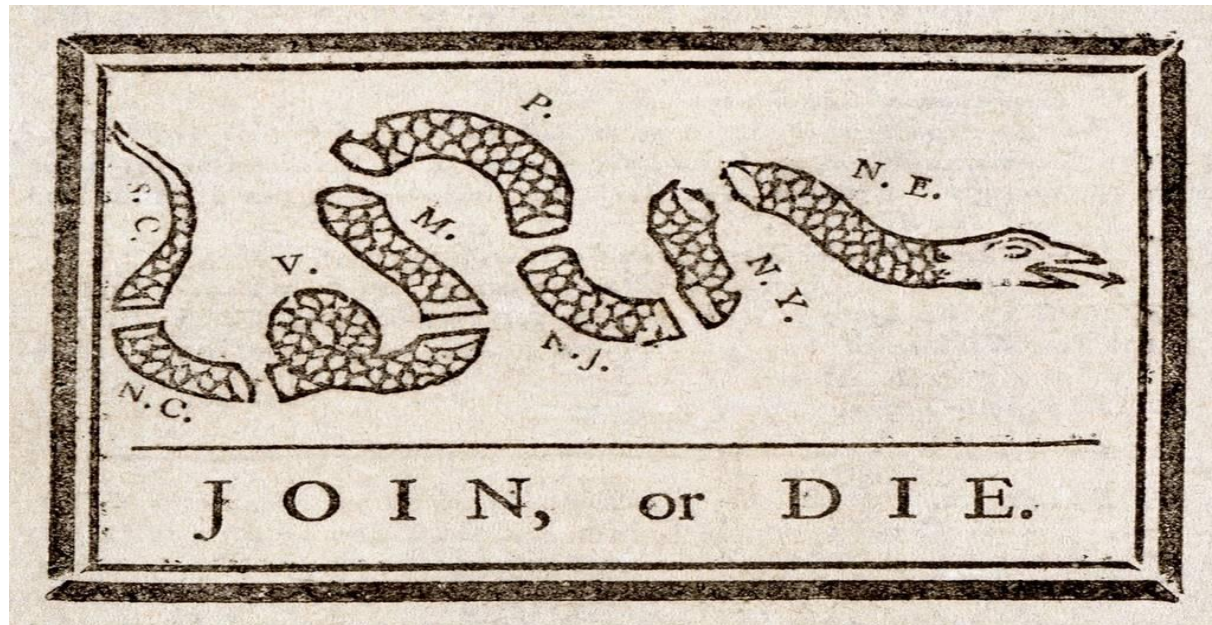
“Engineers shall hold paramount the safety, health, and welfare of the public....”

This canon must be the guiding principle for rebuilding the hurricane protection system in New Orleans.

And it must be applied with equal rigor to every aspect of an engineer's work – in New Orleans, in America, and throughout the world.”

Final Thought: Courtesy of Ben Franklin

**All of US Who Care About a Safer, Better Future
Need To Work Together**



Thank You!



DISASTER
RISK REDUCTION
Ambassador Curriculum

- **Questions and/or comments**
- **Contact information**

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