Engaging Your Local Elected Official in Coastal and Floodplain Management

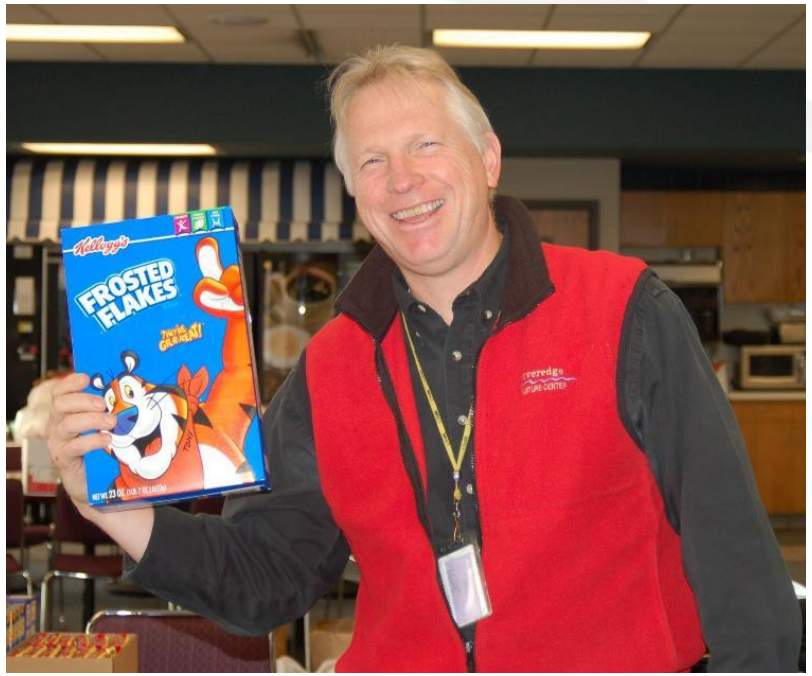
August 18, 2020

Stronger Counties. **Stronger America.**

Moderator

David Fowler, CFM
Senior Project Manager, ASFPM
dave@floods.org

Dave spent 36 years with the Milwaukee Metropolitan Sewerage District working on water resource and flood management issues before retiring in 2016. Dave is currently working for the Association of State Floodplain Managers (ASFPM) as a Senior Project Manager. He has been active with ASFPM for over 20 years in numerous leadership positions, and in 2016 he was awarded the Louthain Award for Distinguished Service to ASFPM.



Support Team

Jeff Stone, GISP, CFM
Research Manager, ASFPM
jeff@floods.org

As part ASFPM's Flood Science Center, Jeff manages research and outreach projects that focus on informing flood policy through science. Projects include, but are not limited to developing and evaluating tools, websites and software; researching the legal, practical and technological issues related to flood management policy and practices; and communicating effective use of GIS tools and applications aimed at floodplain management.

Reminders and Tips

- This webinar is being recorded and will be made available online to view later or review at www.naco.org/webinars.

- The questions box and buttons are on the right side of the webinar window. Type your question into the “Questions” box at any time during the presentation, and the moderator will read the question on your behalf during the Q&A session.

- The question box can collapse so that you can better view the presentation. To unhide the box, click the arrows on the top left corner of the panel.

- If you are having technical difficulties, please send us a message via the questions box on your right. Our organizer will reply to you privately and help resolve the issue.

Today's Agenda

- Overview
- Risk Communication
- Community Liability
- Approaches to Funding
- Wrap-up & Closing Remarks

Local Government Guide to Coastal Resilience

A web-based guide created to build the capacity of coastal managers in the Gulf of Mexico Region to educate and work with their local elected officials on coastal hazards and to effectively utilize the high-level coastal management resources available to them.

www.naco.org/resources/local-government-guide-coastal-resilience

Elected Officials Guide to Floodplain Management

A three-part web-based guide including essential information and success stories to help elected officials understand and address their flood risks. The Guide includes interviews with elected officials from around the country.

no.floods.org/ElectedOfficialsGuide

Risk Communication

Guest Speaker

Jessica Ludy, CFM

Jessica Ludy is the Flood Risk Program Manager for the US Army Corps of Engineers in the San Francisco District. She is also the co-chair of ASFPM's Flood Risk Communication and Outreach Committee. Jessica has 14 years of experience working with communities in the private and public sector around risk assessment, management, and communication. She spent two years in the Netherlands as a Fulbright Scholar teaching and researching Dutch approaches to flood risk management. When not working, Jessica loves racing sailboats on San Francisco Bay, backpacking, bad jokes, and her toddler, Lucia.

LIVE POLL

What is your community's greatest challenge in regard to risk communication?

Type your response in the "Questions" box.

Communicating risk: Why bother and how to do it

Jessica Ludy

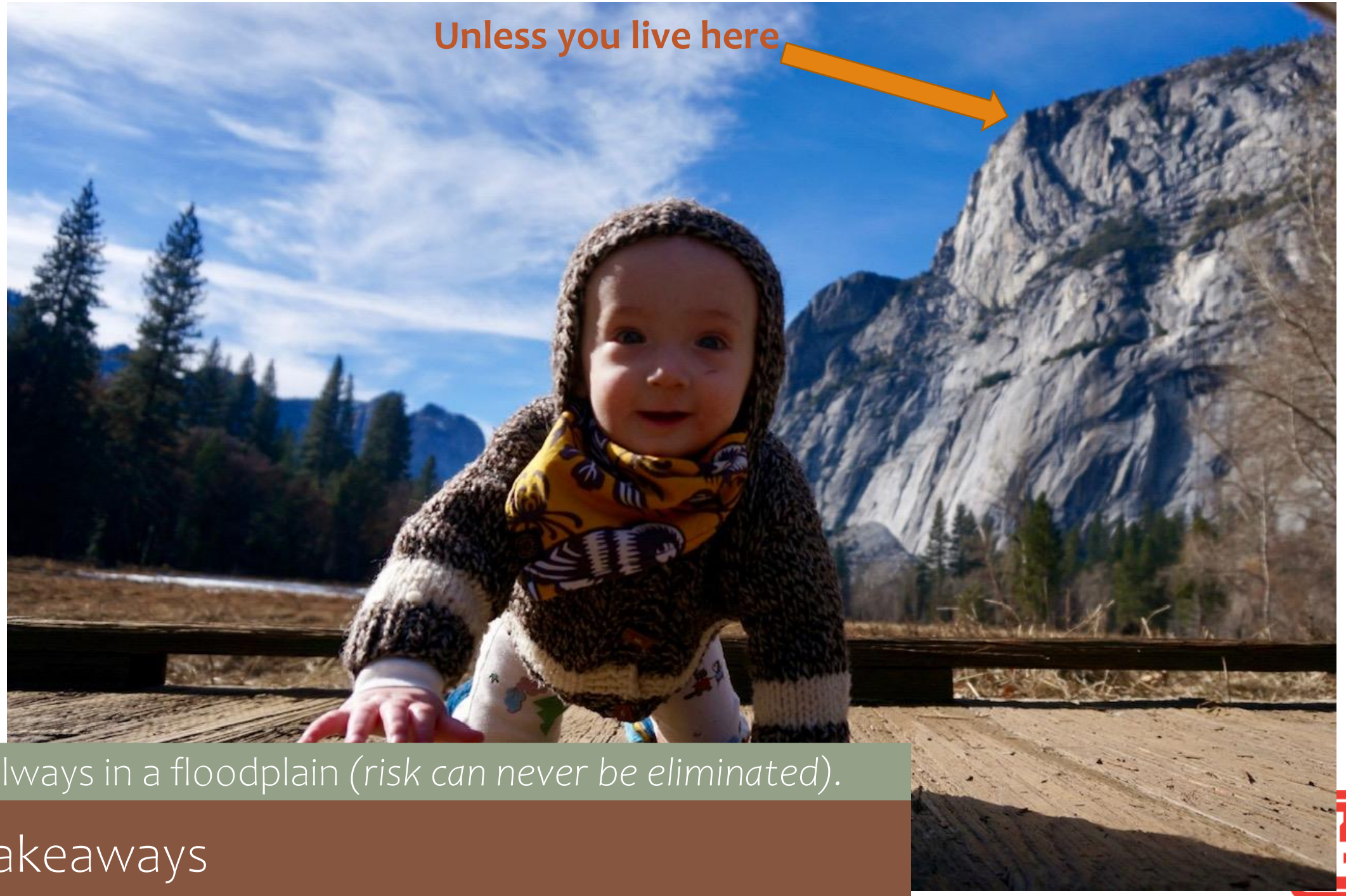
Flood Risk Program Manager

US Army Corps of Engineers, San Francisco District

- Two takeaways
- Three actions
- Risk communication resources

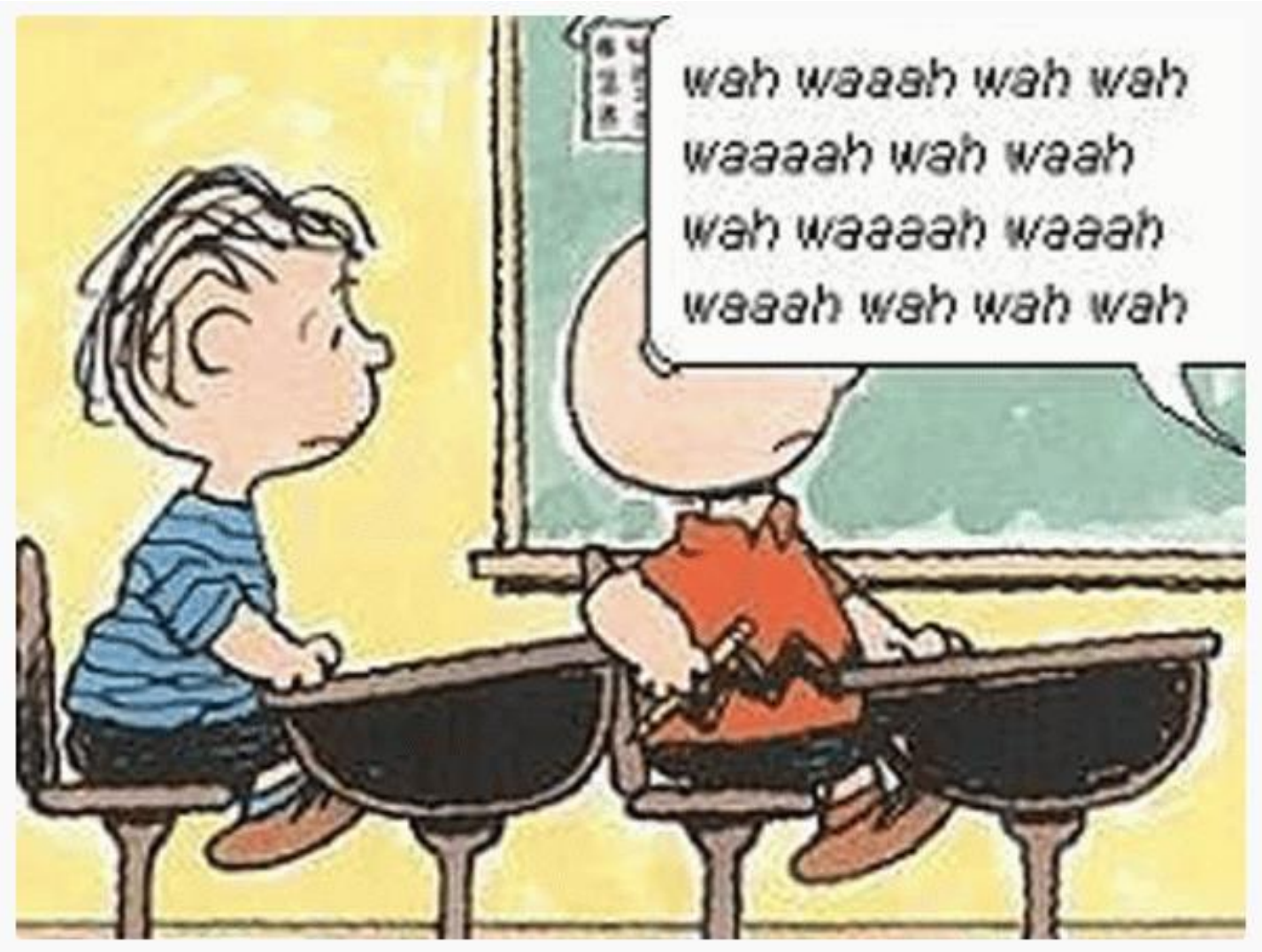
Overview

Two takeaways



You're always in a floodplain (*risk can never be eliminated*).

Two takeaways



People generally underestimate their flood risk
(and we are terrible at talking about it)

Two takeaways

Three actions

https://sshc.co.nz/outbreak-information/hv-covid-19-risk-o-meter/

Understand your community's flood risk and risk tolerance

Three actions to take

CA DWR. Public meeting during Oroville Dam Spillway Incident

Communicate flood risk to those most affected

Three actions to take

The guidance document is available at http://www.floodmanagement.info/guidance-document/

Manage flood risk by considering it in all related decisions

Three actions to take

California Delta

Houston, Texas, May 2015

What do we mean by risk?

Flood Source
(river, sea, rain, backup)

Image adapted from Anna Serra Llobet and HR Wallingford

What is the hazard or source of flooding?

probability
(hazard)

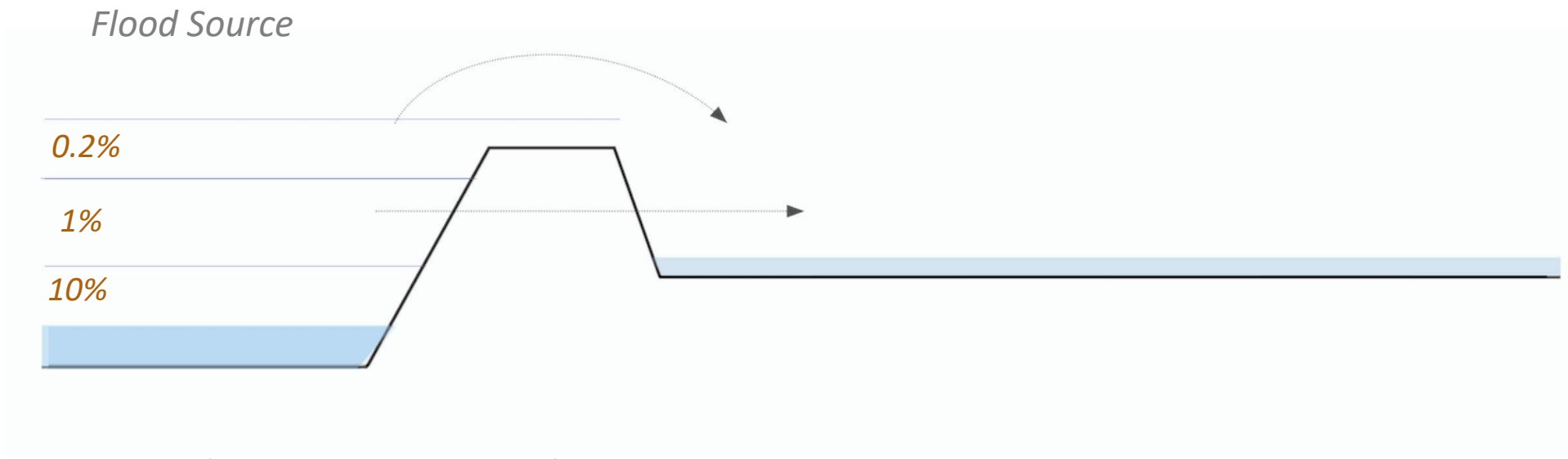


Image adapted from Anna Serra Llobet and HR Wallingford

How likely is the hazard to occur?

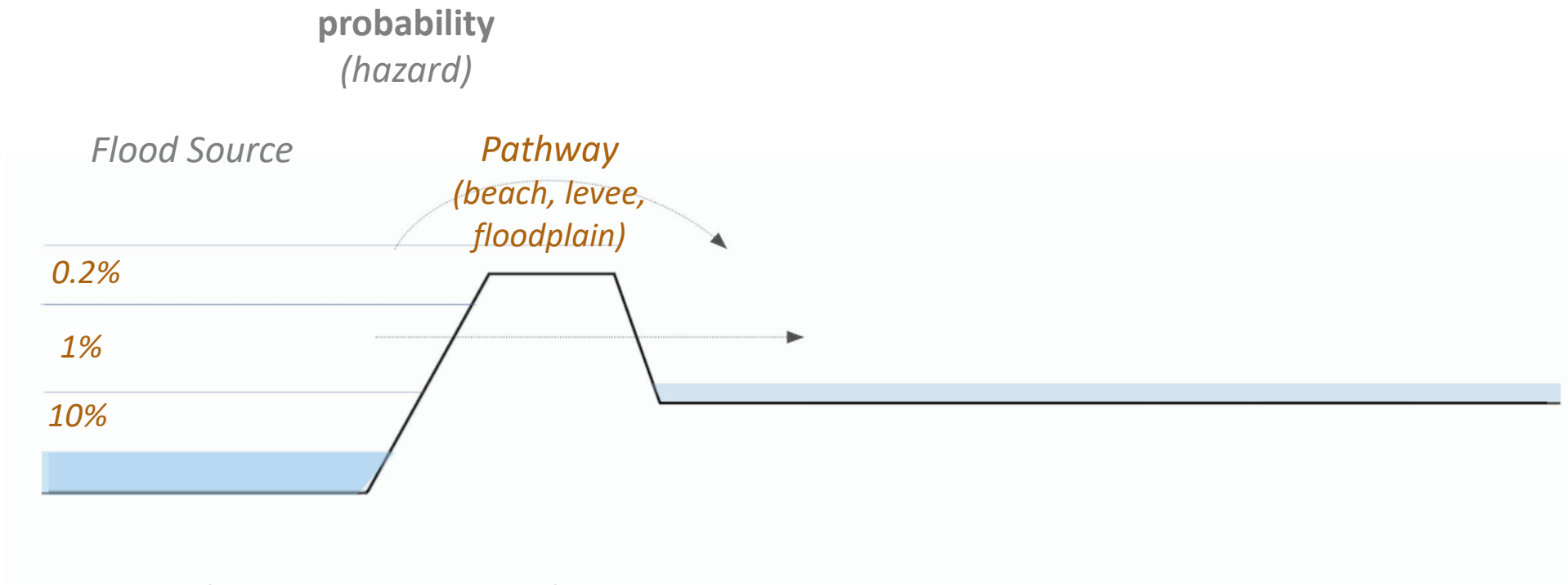


Image adapted from Anna Serra Llobet and HR Wallingford

What is the pathway that water takes to get to the floodplain?

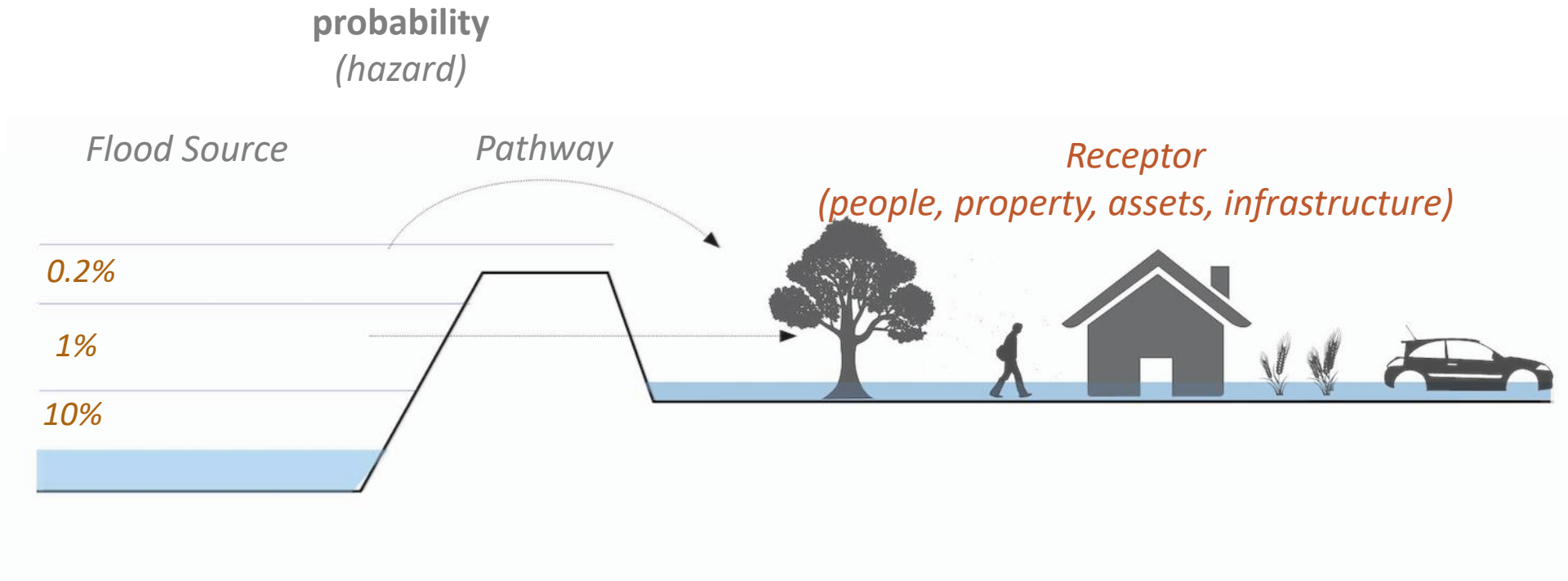


Image adapted from Anna Serra Llobet and HR Wallingford

Who and what are in harm's way?

probability **consequences**

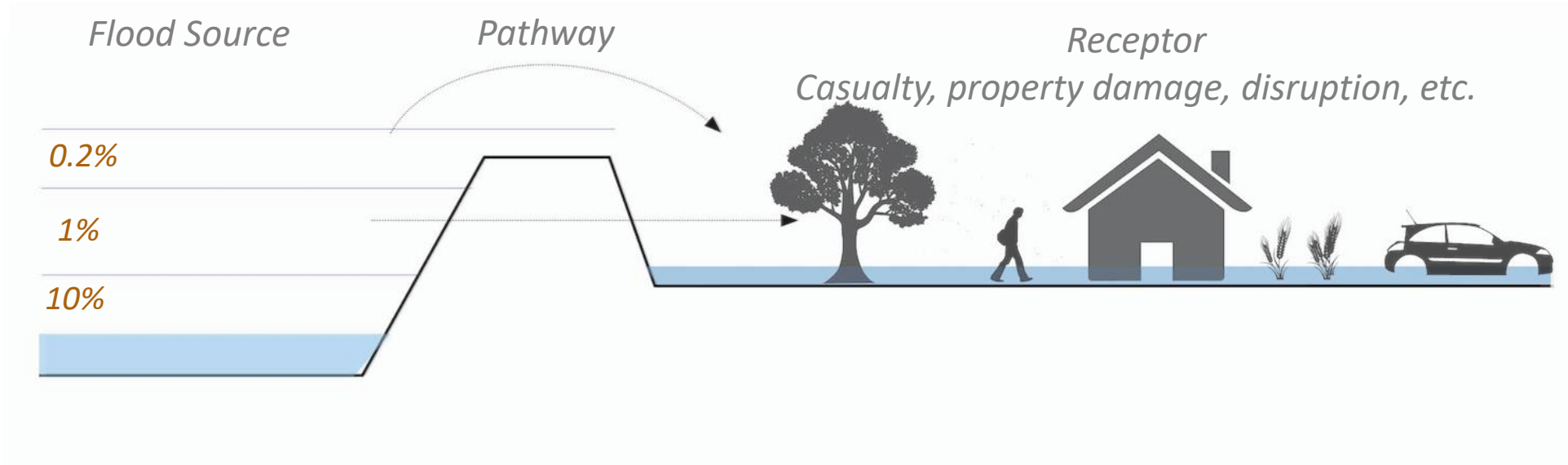


Image adapted from Anna Serra Llobet and HR Wallingford

How much harm will be caused?

Risk

probability ✕ **consequences**

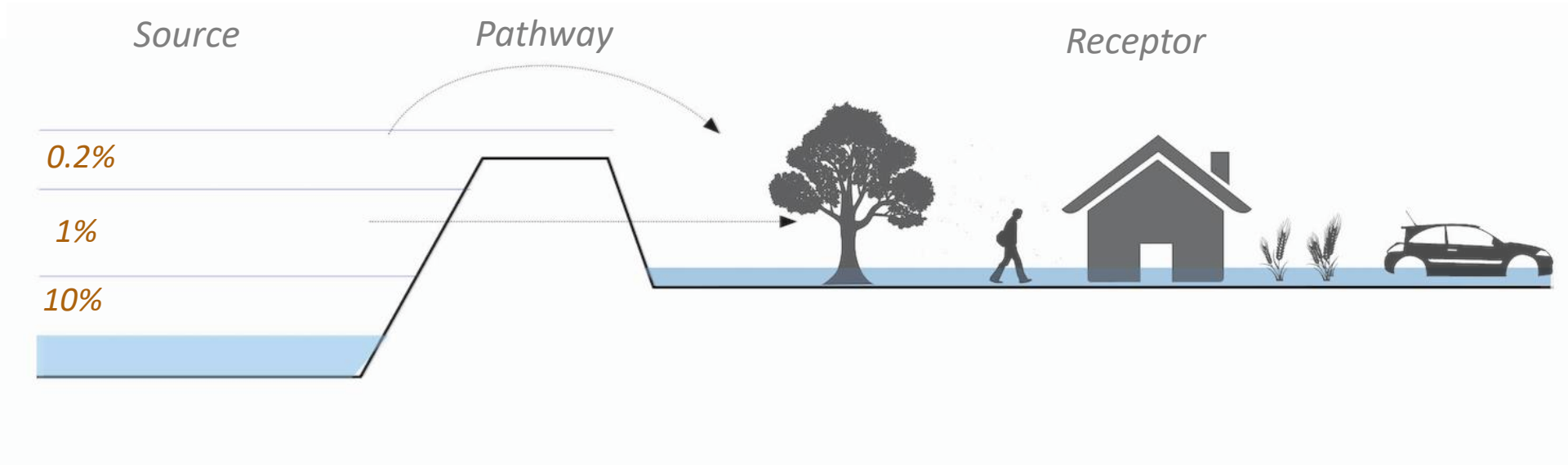


Image adapted from Anna Serra Llobet and HR Wallingford

Risk = probability x consequences

Behavior in an emergency is connected to **perception of risk**

Flood losses are **larger** when people are unaware of risks

People cannot make decisions to **reduce their risk** if they are unaware of their risk

Why we communicate risk

Where should I live and is it safe?

Evacuate or shelter in place?

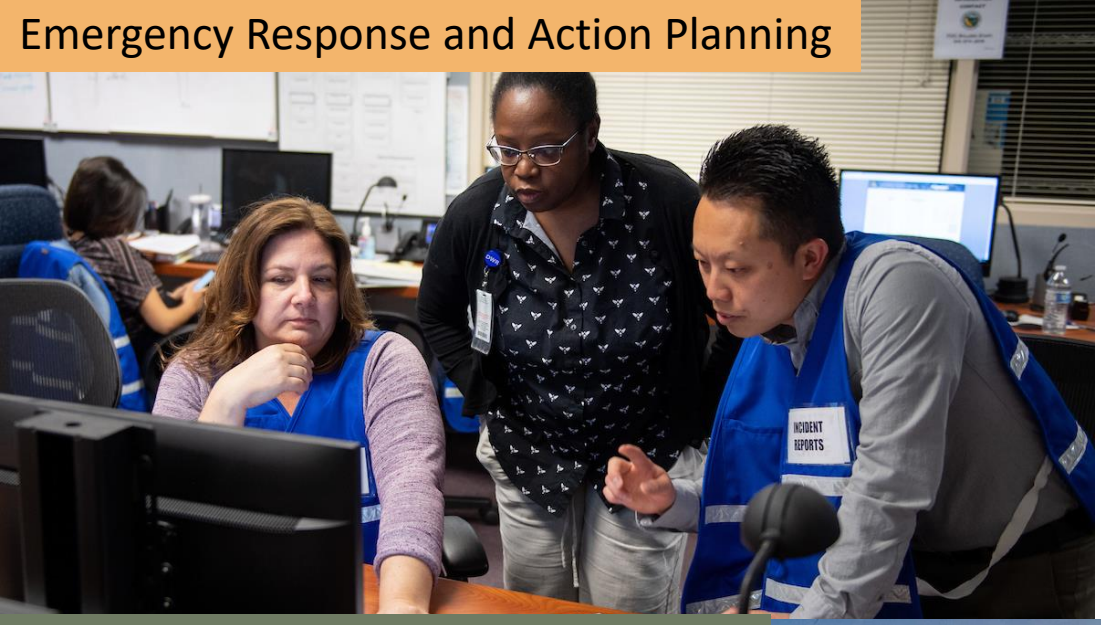
Should I elevate my property?

Should I buy flood insurance?

Am I prepared? Do I have special needs?

Personal decisions that affect flood risk

Emergency Response and Action Planning



Preparedness and training

Appropriate development and land use

Infrastructure investments, maintenance

City-led decisions that affect flood risk

FEMA Flood Zone Map Revisited; South San Francisco and San Bruno Now in Flood Zone

by Kamala • July 27, 2018

South San Francisco, CA July 27, 2018

EDITORS NOTE: San Bruno resident and Community Leader, Robert Reichel, has contacted us with important information regarding the newly redrawn FEMA Flood Zone Map which indicates areas of both San Bruno and South San Francisco having neighborhoods within the flood zone. Mr. Reichel, who is also the Patch Mayor of San Bruno, is following up on this issue and has asked we also make our residents aware of this situation. Properties within the FEMA Flood Zone will have to purchase flood insurance which can be quite costly unless there are resolutions to this potential problem.

###

DATE: July 27 2018

You're always in a floodplain

FEMA Flood Zone Map Revisited; South San Francisco and San Bruno Now in Flood Zone

by Kamala • July 27, 2018

South San Francisco, CA July 27, 2018

EDITORS NOTE: San Bruno resident and Community Leader, Robert Reich[illegible]
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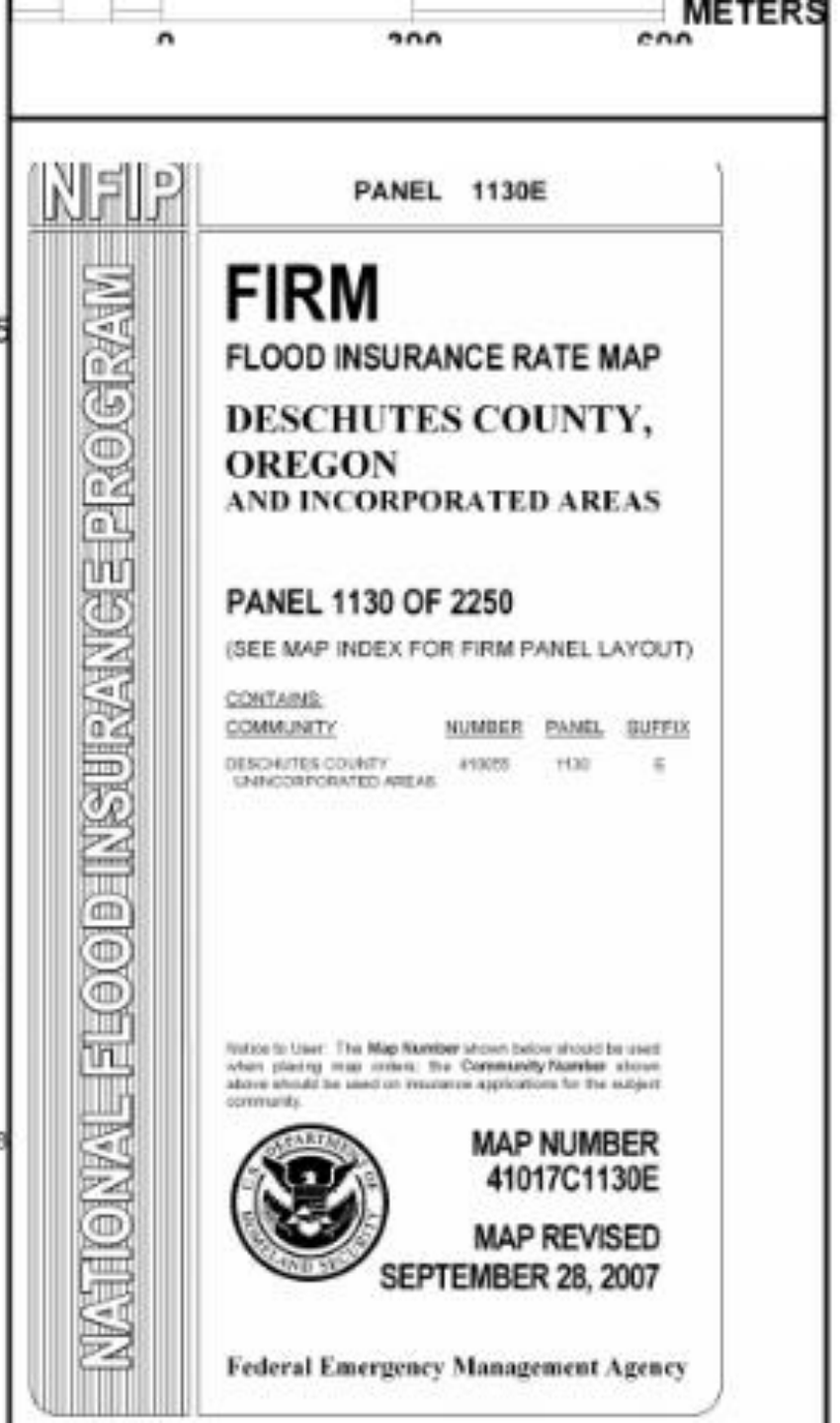
DATE: July 27 2018

They've always been in a floodplain. We now just have a map that shows it.

You're always in a floodplain

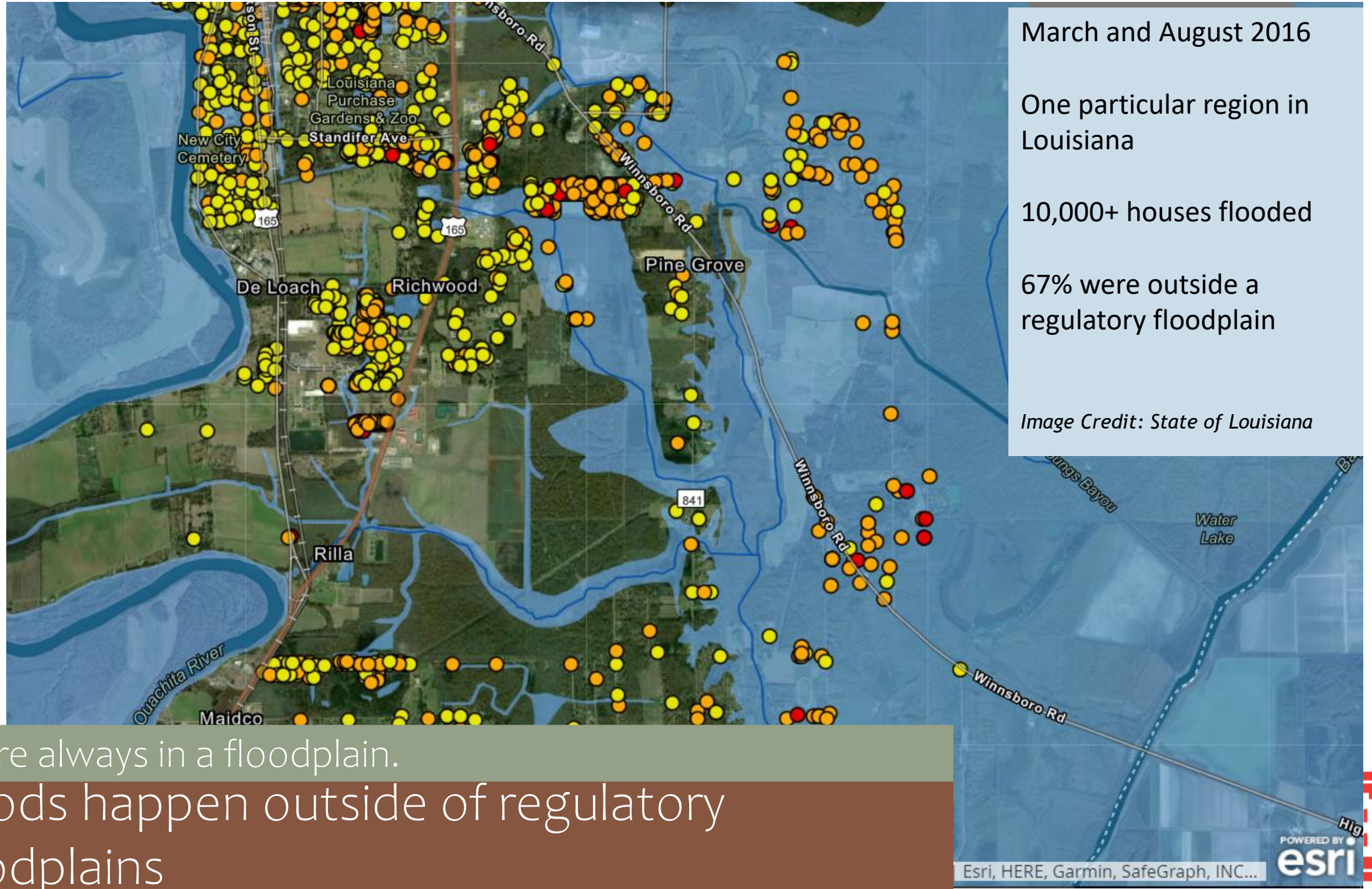
I mean it. You're always in a floodplain.



You're always in a floodplain

This is a flood insurance rate map.

Not a floodplain map.



March and August 2016

One particular region in Louisiana

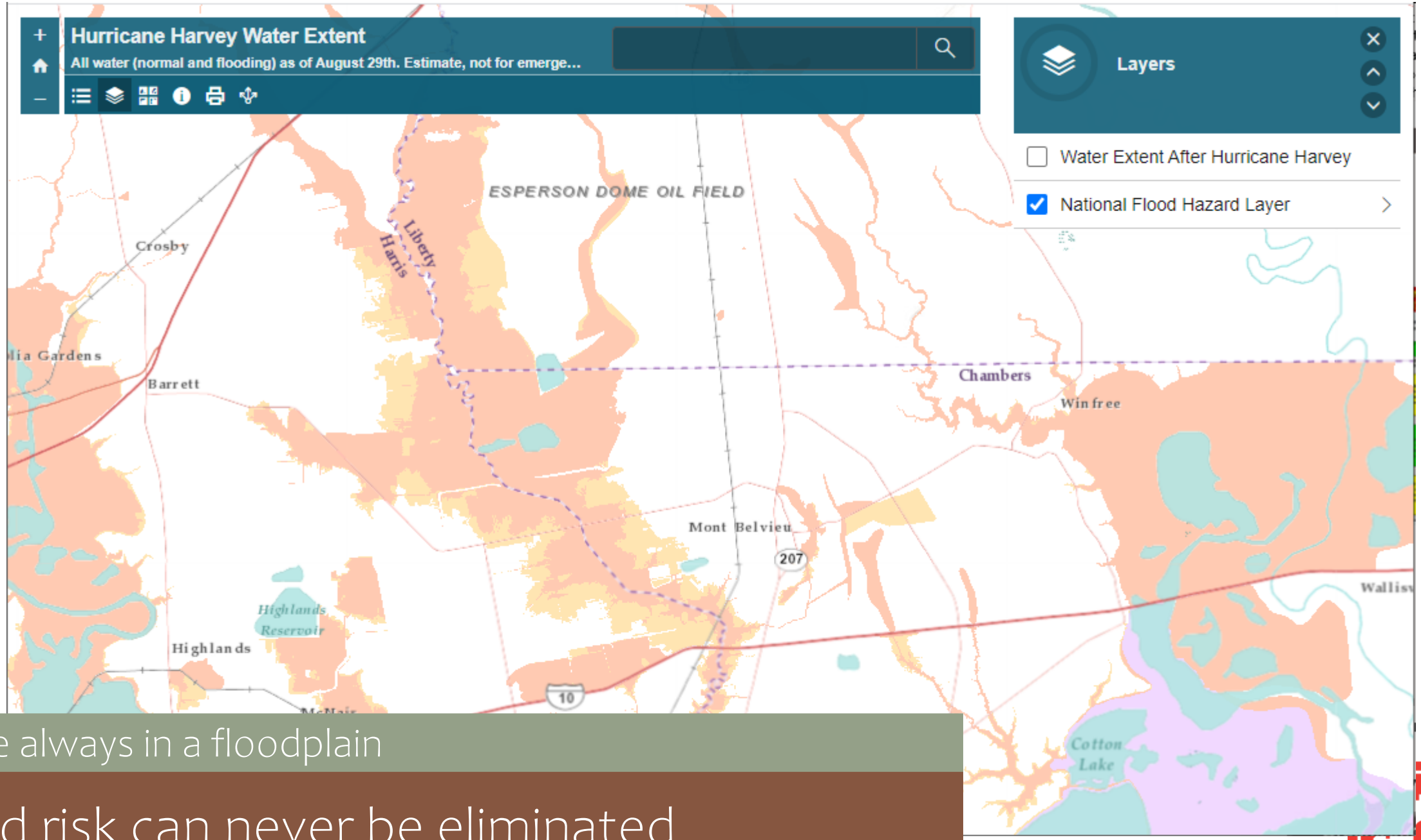
10,000+ houses flooded

67% were outside a regulatory floodplain

Image Credit: State of Louisiana

You're always in a floodplain.

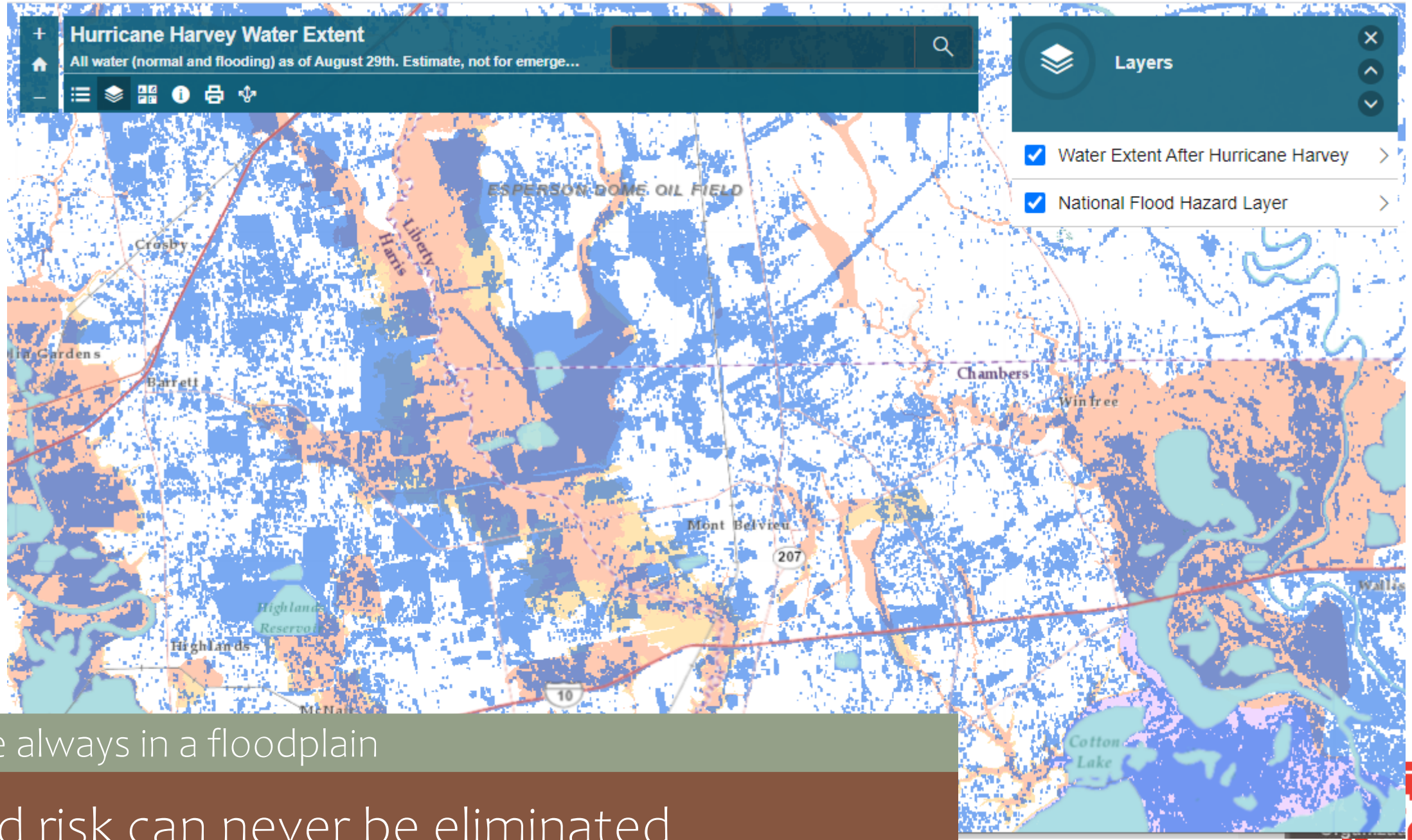
Floods happen outside of regulatory floodplains



You're always in a floodplain

Flood risk can never be eliminated

Image Credit: UC Davis



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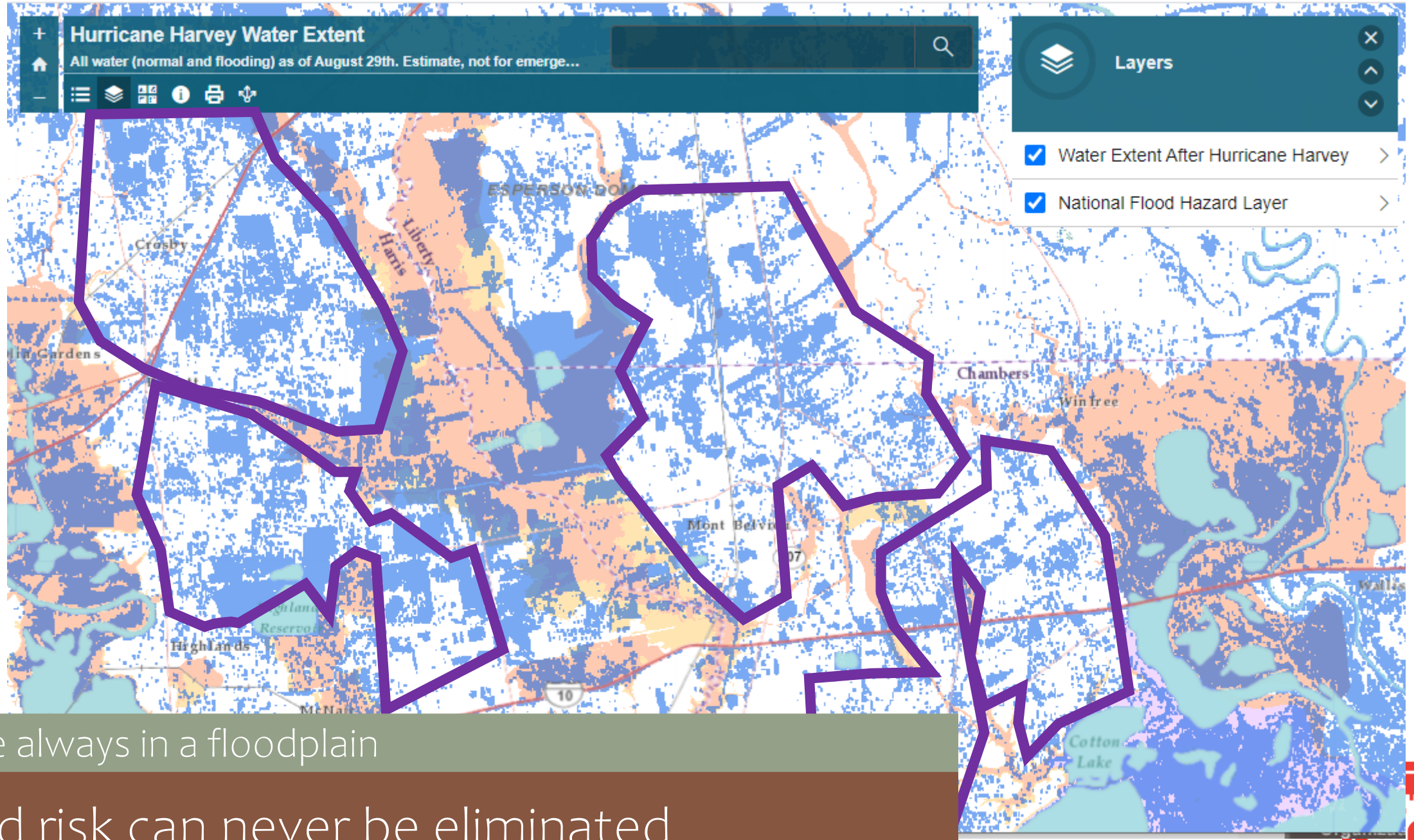


You're always in a floodplain

Flood risk can never be eliminated

Image Credit: UC Davis

People generally underestimate flood risk

Despite that we use risk information every day.

Misunderstand the ‘100’ year flood’, other technical jargon

Focus on ‘in or out’, insurance required or not

(That takes the discussion away from safety or risk tolerance)

Political challenges and competing priorities keep risks quiet

Denial

People generally underestimate flood risk

We are pretty bad at talking about flood risk.

Risk

probability ✖ consequences

People. Property. Commutes. Jobs. Schools. Health. Business. Recreation. Tourism.

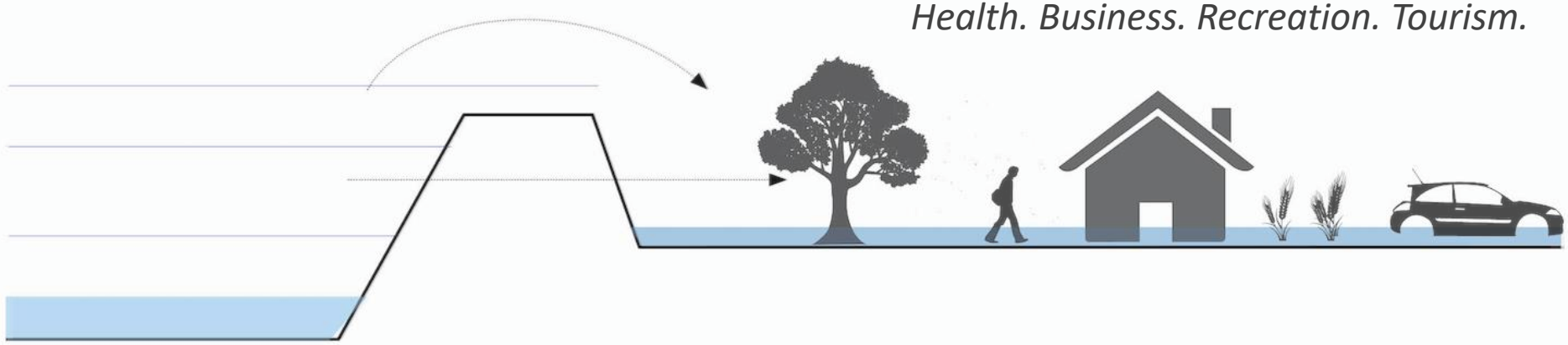
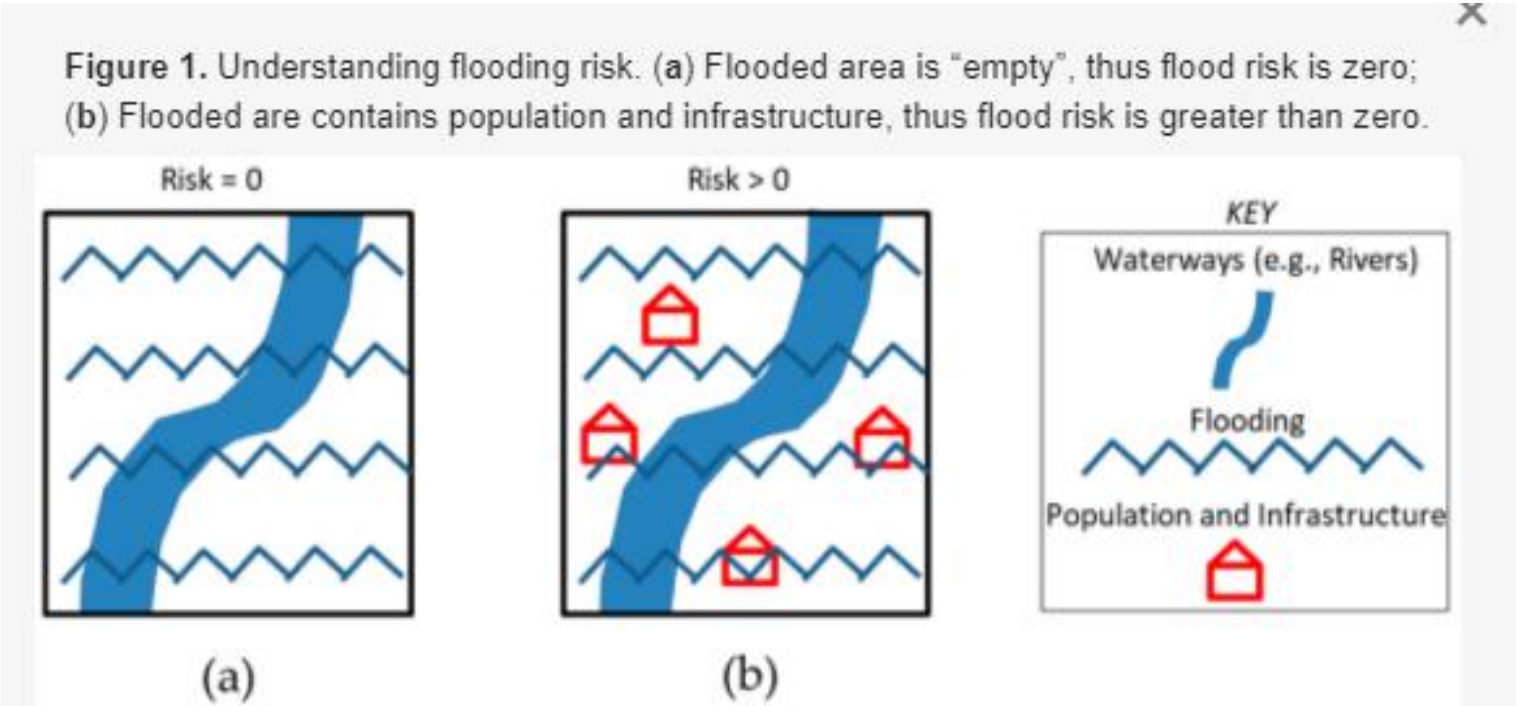


Image adapted from Anna Serra Llobet and HR Wallingford

People generally underestimate flood risk

Discussions often miss the consequences

So now what do we do?



https://www.mdpi.com/2076-3263/7/4/123/htm

Armenakis et al 2017.

https://www.cleansafeservices.co.uk/types-of-flooding-in-the-uk/

Understand your community's flood risk and risk tolerance

Work with your FPMs (and others)

Higher Ground Flood Survivor Network

CA Dept. of Water Resources

Communicate your community's flood risk

Engage those most affected by the flood risk

Your resources are limited (so are your constituents), be strategic

What are your communication objectives?

Who is your target audience? Who are your most vulnerable?

Tailor your message and deliver it through a trusted messenger

Don’t spend time doing what doesn’t work

Avoid technical jargon

LISTEN

Communicate your community’s flood risk

Considerations in risk communications

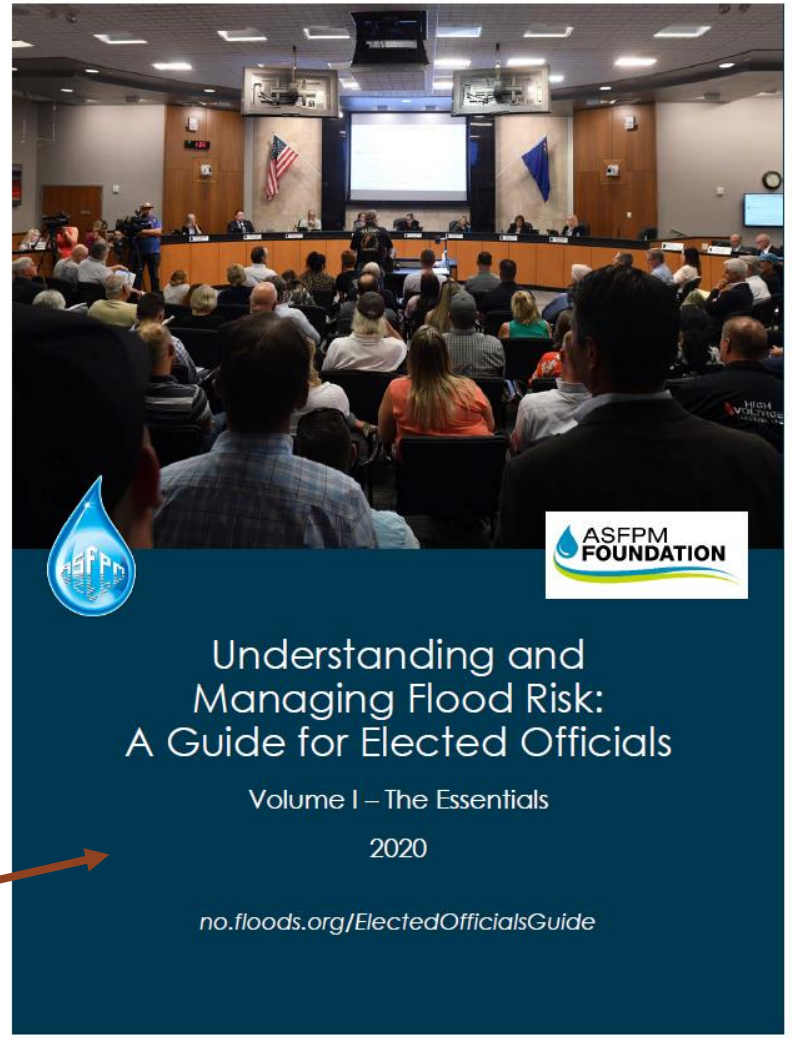
Manage your community's flood risk

Consider flood risk in all of your decisions

Resources to help communicate risk

- ASFPM Risk Communications & Outreach Committee
- ASFPM Elected Officials Guide
- Silver Jackets Teams
- Programs for Public Information (CRS)
- USACE Communications Plan Template
- IWR Flood Risk Communication Toolbox

Section on communicating with your public



- Floodplain delineation
- Flood hazard evaluation
- Hurricane evacuation
- Flood warning / preparedness
- Comprehensive floodplain management
- Flood risk reduction
- Urbanization impacts
- Storm water management
- Flood proofing
- Inventory of flood-prone structures
- Workshops
- Guides and Pamphlets / Risk Communication
- Tabletop exercises
- Emergency Action Plan / Floodplain Management Plan
- Assessment tools and processes

State Silver Jackets Activities and Products

- State Hazard Mitigation Officers
- NFIP Coordinators
- CTP, Emergency Managers, Water Boards, Transportation Dept.,
- Environmental Protection, GIS Analysts

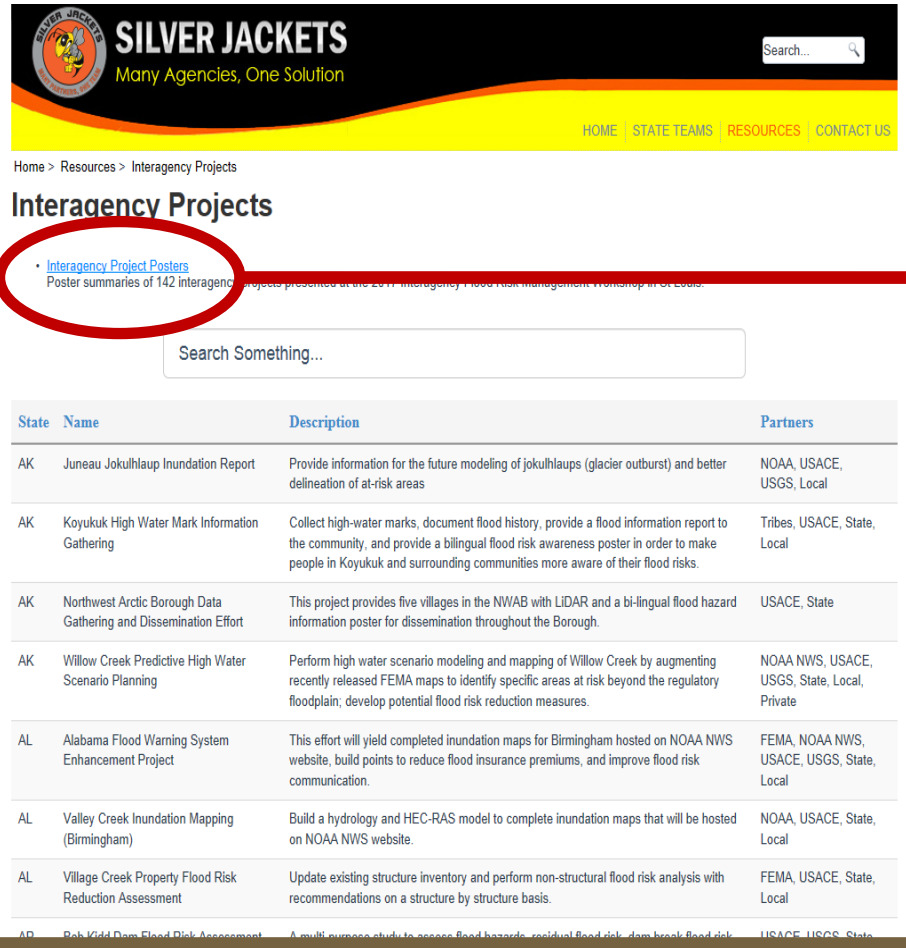
- FEMA, NOAA NWS, USGS, USACE
- EPA, DOT, HUD, NRCS, NOAA OCM
- BLM, USFS, USFWS, USBR, NPS

- Tribes, local governments, NGOs, universities, and/or private

State Silver Jackets Teams and Participation

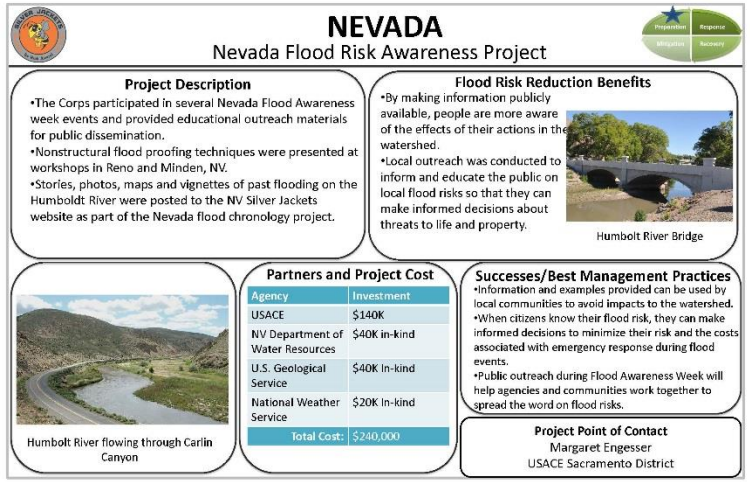
Searchable Interagency effort table

http://silverjackets.nfrmp.us/Resources/Interagency-Projects



State	Name	Description	Partners
AK	Juneau Jokulhlaup Inundation Report	Provide information for the future modeling of jokulhlaups (glacier outburst) and better delineation of at-risk areas	NOAA, USACE, USGS, Local
AK	Koyukuk High Water Mark Information Gathering	Collect high-water marks, document flood history, provide a flood information report to the community, and provide a bilingual flood risk awareness poster in order to make people in Koyukuk and surrounding communities more aware of their flood risks.	Tribes, USACE, State, Local
AK	Northwest Arctic Borough Data Gathering and Dissemination Effort	This project provides five villages in the NWAB with LiDAR and a bi-lingual flood hazard information poster for dissemination throughout the Borough.	USACE, State
AK	Willow Creek Predictive High Water Scenario Planning	Perform high water scenario modeling and mapping of Willow Creek by augmenting recently released FEMA maps to identify specific areas at risk beyond the regulatory floodplain; develop potential flood risk reduction measures.	NOAA NWS, USACE, USGS, State, Local, Private
AL	Alabama Flood Warning System Enhancement Project	This effort will yield completed inundation maps for Birmingham hosted on NOAA NWS website, build points to reduce flood insurance premiums, and improve flood risk communication.	FEMA, NOAA NWS, USACE, USGS, State, Local
AL	Valley Creek Inundation Mapping (Birmingham)	Build a hydrology and HEC-RAS model to complete inundation maps that will be hosted on NOAA NWS website.	NOAA, USACE, State, Local
AL	Village Creek Property Flood Risk Reduction Assessment	Update existing structure inventory and perform non-structural flood risk analysis with recommendations on a structure by structure basis.	FEMA, USACE, State, Local
AR	Bob Kidd Dam Flood Risk Assessment	A multi-purpose study to assess flood hazards, residual flood risk, dam break flood risk	USACE, USGS, State

Example Project Summary Poster



State Silver Jackets Activities and Products

Thank you

Imagine Water Works
Watershed Science and Design
ASFPM Board and Committee Members
Higher Ground Flood Survivor Network
Arcadis

And…Lots of total strangers

My Contact information:
Jessica.J.Ludy@usace.army.mil

Q&A

Type your question into the “Questions” box and the moderator will read the question on your behalf.

Community Liability

Guest Speakers

Jerry Murphy, JD, AICP, CFM

Jerry is a Faculty Consultant with the Program for Resource Efficient Communities (PREC) at the University of Florida. Jerry is a certified floodplain manager, certified urban and regional planner, and legal scholar. His work and research involve land use planning and control law, community-based planning, code and regulation drafting, floodplain management, growth and infrastructure finance, post-disaster redevelopment planning, community resiliency/sustainability. He currently works with local governments through UF to assemble teams of expert faculty, researchers, and student assistants to craft planning approaches and strategies to climate change, extreme weather, sea-level rise and the other challenges facing local governments in the 21st Century.

Thomas Ruppert, Esq.

Thomas is a Coastal Planning Specialist at the Florida Sea Grant College Program and is a licensed attorney developing legal and policy analysis for local governments on aspects of adaptive planning for sea-level rise and community resilience. Some areas of expertise include beach and coastal policy in Florida, Florida's coastal construction control line, comprehensive planning law, sea turtle habitat protection, Florida's statutory property protections, and U.S. Constitutional property protections. Mr. Ruppert has authored and co-authored numerous legal articles and frequently serves as an invited presenter at events in Florida and in other coastal states. He has worked with over a dozen partners to organize and host legal workshops on coastal issues and flood insurance around the state. Mr. Ruppert is currently involved with initiatives within Florida communities planning for sea-level rise and maintains a website of original resources at www.flseagrant.org/climatechange/coastalplanning/

LIVE POLL

What is your community's greatest challenge related to community liability?

Type your response in the chat box.

UF IFAS
UNIVERSITY of FLORIDA

COMMON LAW FLOODING CONSIDERATIONS FOR COUNTIES

NACO VIRTUAL WORKSHOP

AUGUST 18, 2020

FOR THE #GATORGOOD

Jerry Murphy, JD, AICP, CFM
Faculty Consultant

University of Florida | Institute of Food and Agricultural Sciences Extension:
Program for Resource Efficient Communities

jerry@murphyplanning.com (239) 322-8510

Disclaimer:

This presentation is neither intended to be, nor may it be taken as legal advice. For legal advice, consult with an attorney licensed to practice in your jurisdiction and demonstrating expertise in applicable subject matter.

Statements of fact and opinions expressed are those of the presenters individually and, unless expressly stated to the contrary, are not the opinion or position of the National Association of Counties, the Association of State Floodplain Managers, or the University of Florida.

What Keeps You Up at Night?

- Are you afraid of being sued for a taking?
- **Are you worried about liability for enforcing or not enforcing regulations and standards?**
- Do you think you have adequate legal bases for an enforcement action?
- **Are your standards good enough?**
- Do citizens complain about flooding in areas that were properly permitted?


THERE'S THE FLOODPLAIN. NOW WHERE DO WE GO FROM HERE?

KEY POINTS

You may be as likely to be sued for permitting risky development as you are for preventing it.

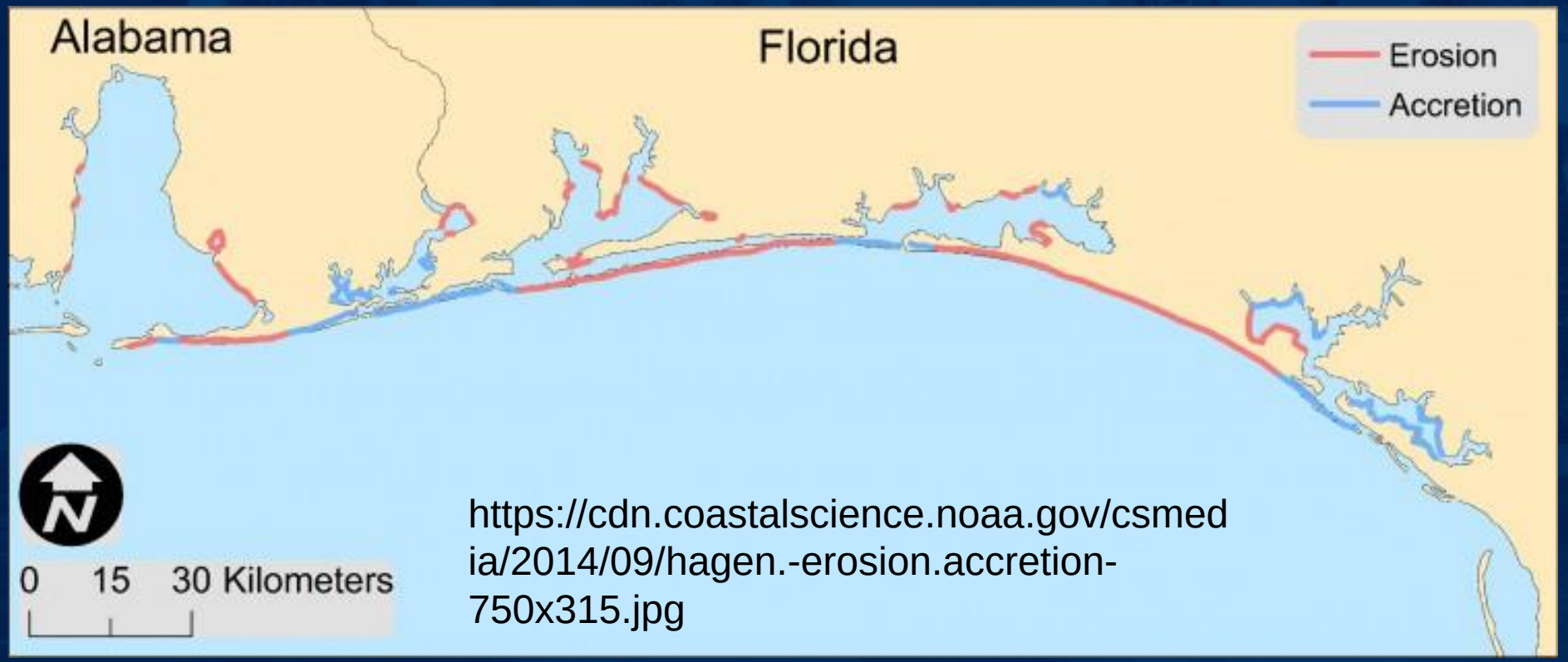
You are your community's first and last line of defense against tomorrow's flood disaster.

City, county face lawsuit by Farmers Insurance for April 2013 flooding

Posted: Apr 21, 2014 5:55 PM CDT
Updated: Apr 26, 2014 5:55 PM CDT

By Larry Yellen, FOX 32 News Legal Analyst - bio | email

Four distinct common law rules deal with the dynamic nature of the shoreline. These terms are referred to in the legal community as:
accretion,
avulsion,
erosion, and
reliction.

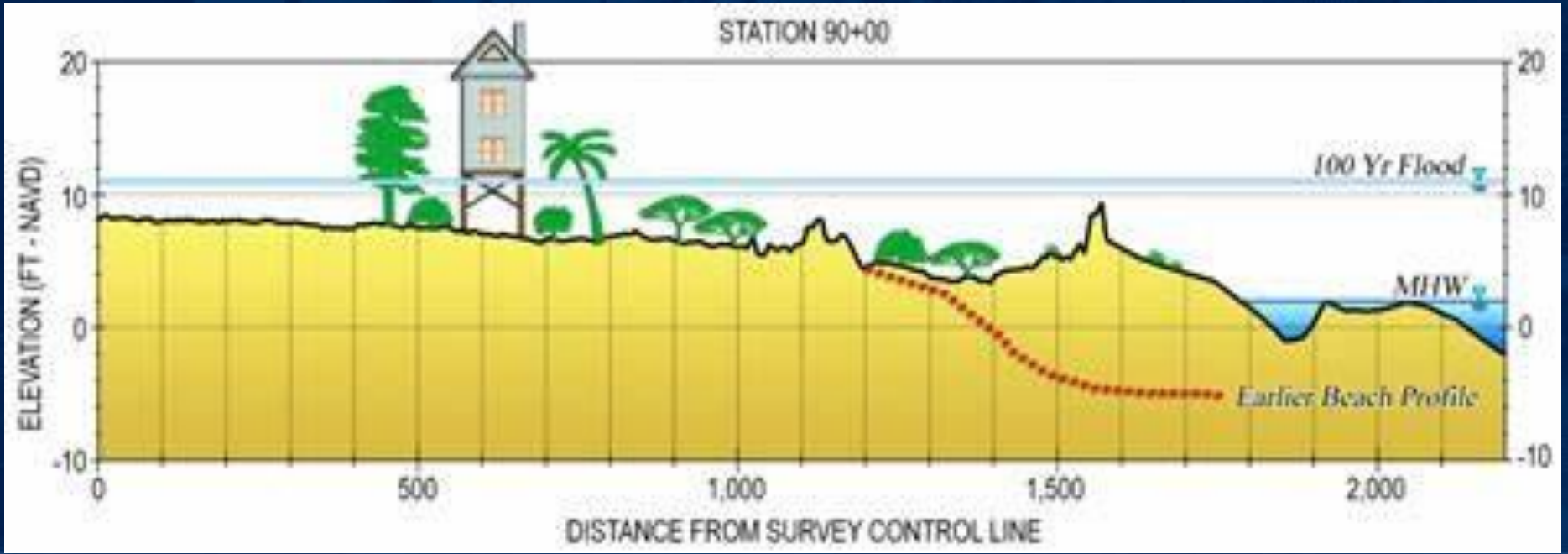


https://cdn.coastalscience.noaa.gov/csmedia/2014/09/hagen.-erosion.accretion-750x315.jpg

ACCRETION

Process whereby the action of water causes the gradual and imperceptible deposit of sand so the sand becomes fast, dry land.

Accretion: is the gradual increase or acquisition of land by the action of natural forces washing up sand, soil, or silt from a watercourse or coast.



AVULSION

Process whereby the action of water causes a sudden and often very perceptible addition or loss or land.

Hurricanes, nor'easters and other storms are typically credited with causing avulsion.

AVULSION – Cont.

Unlike accretion and erosion, land lost by avulsion, remains the property of the land owner as if the water's edge had not been moved. Thus, the landowner has the right to reclaim and replenish this newly created underwater area without suffering the loss of title.

AVULSION – Cont.

However, when land is created by avulsion, the landowner does not obtain any rights to the newly created land.

Shoreline boundaries increased by a beach re-nourishing project have been found to be a form of avulsion and, therefore, the additional beach area created does not become the property of the adjacent property owner.

Beach Nourishment Activities

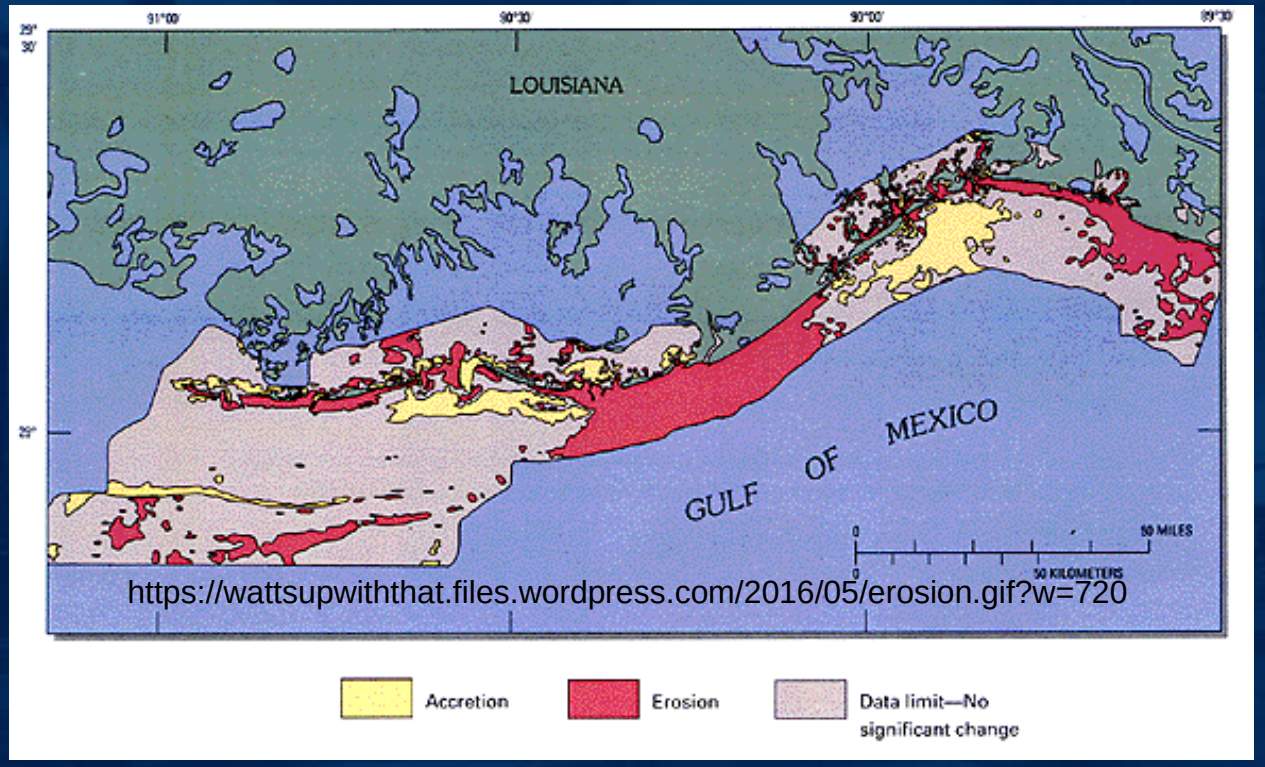
Folly Beach, South Carolina

https://scelp.org/files/projects/follypre-renourishment.jpg

EROSION

Process whereby land is lost gradually and imperceptibly by the encroachment of water or other natural elements.

The opposite of accretion, “erosion” is the gradual washing away of land along the shoreline.



https://wattsupwiththat.files.wordpress.com/2016/05/erosion.gif?w=720

When land is increased by accretion, that “new” land becomes the property of the riparian land owner, while the waterfront owner loses any removal of land due to the gradual effects of erosion or sea-level rise.

RELICTION (or “dereliction”):

Process whereby the gradual and imperceptible receding of water results in the emergence of fast, dry land.

COMMON LAW LIABILITY

Under common law, no landowner—public or private—has the right to use his/her land in a way that substantially increases flood or erosion damages on adjacent lands.

Liability lawsuits are commonly based upon one of four causes of action:

- Negligence
- Nuisance
- Trespass
- Law of Surface Water

COMMON LAW LIABILITY - NEGLIGENCE

Negligence

What is the “standard of care” for reasonable conduct? Evolving from a FPM perspective, the standard of conduct is that of a reasonable person in the circumstances.

This is the primary legal basis for public liability for:

- Improper design of flood control structures
- Improperly prepared or issued warnings
- Inadequate processing of permits

The Walkerton Tragedy

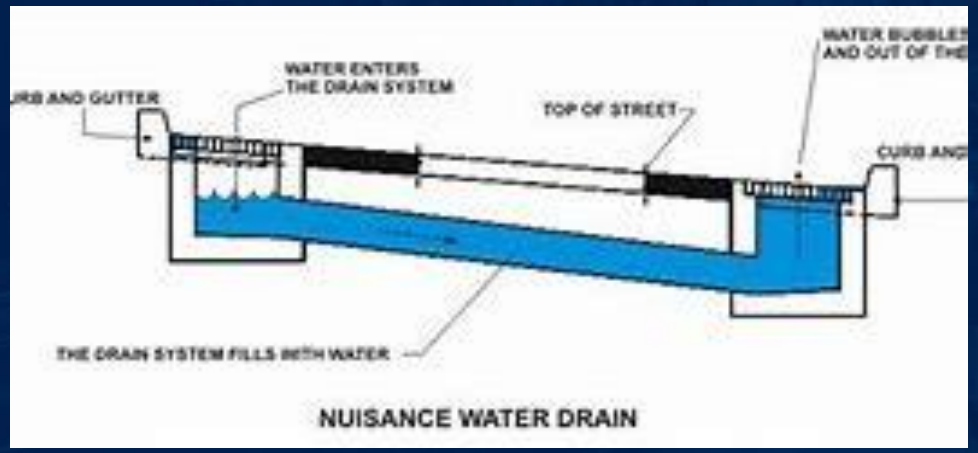
- In May 2000, the Walkerton water supply became contaminated with E. coli: 2321 people became ill due to contamination (1346 people were treated, and 7 died from their illness)
- Leading up to the tragedy:
  - Regulatory shortcomings
  - Technology deficits
  - Insufficient training and knowledge
  - Privatization of water testing
  - Budget cuts to Ontario Ministry of the Environment
  - Human negligence

https://www.slideshare.net/mukhammadievbr/drinking-source-water-protection-in-ontario-june-2014

COMMON LAW LIABILITY - NUISANCE

No landowner, public or private, has a right to use his/her land in a manner that substantially interferes, in a physical sense, with the use of adjacent lands.

http://floodlist.com/wp-content/uploads/2015/09/nuisance-flooding.jpg



NUISANCE WATER DRAIN

https://www.palmspringsca.gov/government/departments/public-works-engineering/waste-water-treatment-plant/west-nile-virus-and-nuisance-water-drains

"Reasonable conduct" is usually no defense against a nuisance suit.

COMMON LAW LIABILITY - TRESPASS

Landowners can file trespass suits for certain types of public and private actions that result in physical invasion of private property such as increased flooding or drainage.

COMMON LAW LIABILITY - LAW OF SURFACE WATER

In most states,
landowners cannot lawfully substantially damage other landowners by:

- blocking the flow of diffused surface waters,
- increasing that flow, or channeling that flow to a point other than the point of natural discharge.

Landowners are liable for damages caused by their interference with the natural flow of surface water when their actions are ‘unreasonable’.

Legal Research Findings

Most successful suits against communities result from actions such as inadequate construction or maintenance of public infrastructure (dams, levees, roads, and bridges) that increase flood damages on private lands.

"Act of God" defense is less and less convincing. Even rare floods are predictable. As are residual risks from levees and dams.

If a community permits development that meets local code standards, but results in an adverse impact, there may be liability. Prohibiting reasonable development may be a regulatory "taking." Negotiating development in the absence of standards may be "arbitrary and capricious."

What about the NFIP?

Under the minimum NFIP standards, properly permitted development does not avert:

- **Floodwaters being diverted onto other properties**
- **Channel and conveyance areas being reduced**
- **Valley storage being filled**
- **Changes in water velocities**

In general, beyond the minimum NFIP standards, if the permitted development results in an adverse impact, your community may be liable!

WHAT CONSTITUTES A TAKING?

- Physical occupation of private land
- Regulation that “goes too far”
- Permit condition lacks a rational connection or “essential nexus” with a valid public purpose
- No “rough proportionality” between permit condition and impact of development
- Total deprivation of economic use
- Interference with “reasonable investment-backed expectations”
- Compensable taking may occur even when restriction is temporary, i.e., “temporary taking”

Legal Research Findings

No cases found where a landowner prevailed in a regulatory takings suit against a community's denial of use, where the proposed use would have had substantial offsite impacts or threatened public safety.

Courts have broadly supported restrictive regulations for high risk flood areas based upon public safety, nuisance prevention, public trust, and other common law concerns.

NO ADVERSE IMPACTS (NAI) APPROACH

NAI involves local floodplain managers, planners, public works officials, zoning officials, development officials, regulatory (review) agencies, stormwater professionals, wetland managers, environmental engineers and environmentalists, emergency responders, disaster preparedness coordinators, hazard mitigation specialists, design professionals and design engineers, architects, landscape professionals, local officials, governing bodies, politicians and the public at large – the "whole community" - all have a role.

Beverly Bank v. Illinois Department of Transportation 579 N.E.2d 815 (1991)

Illinois Supreme Court upheld state regulation **prohibiting** residential structures in 100-year floodway

State argument focused on protecting health and welfare including:

- Risk to first responders
- Risk to stranded property owners
- Increased expenditure of general ad valorem public funds

KEY POINTS:

- You may be more likely to be sued for permitting risky development than you are for preventing it.

- Take a “No Adverse Impact” approach to flooding issues – reduce liability and minimize successful takings claims.

- You are your community’s first and last line of defense against tomorrow’s flood disaster!

Resources

no.floods.org/Legal

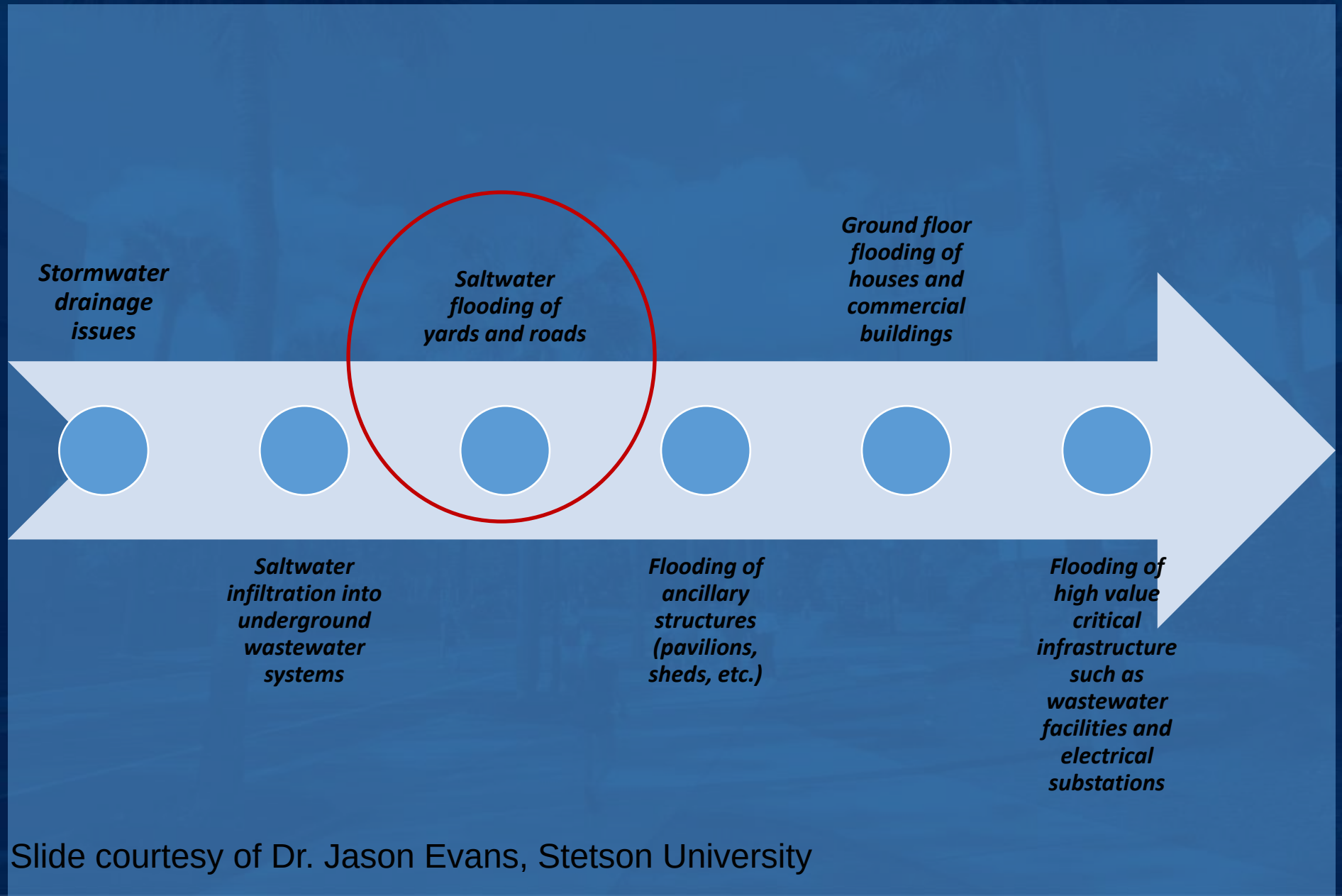
Credit given to the Natural Hazards Observer and Rob Pudim for all illustrations in this presentation

Infrastructure and Local Government Liability: Challenges for the Future

Thomas Ruppert, Esq.
Coastal Planning Specialist
Florida Sea Grant College Program
truppert@ufl.edu
www.flseagrant.org/coastalplanning

Infrastructure Liability: Drainage and Roads

General Timeline of Sea Level Rise Impacts on the Built Environment



Slide courtesy of Dr. Jason Evans, Stetson University

Drainage & Local Gov't

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November, 2013 Volume 87, No. 9

Drowning in Place: Local Government Costs and Liabilities for Flooding Due to Sea-level Rise

by Thomas Ruppert and Carly Grimm

- No duty of local gov't to provide drainage
  - As with many services, *authority* or *power* to provide, but not duty (fire, police, etc.)
- However, if provided, duty to maintain arises
  - Maintenance must be done with reasonable care
  - Liability for failure to maintain

Maintenance vs. Upgrade

Why the difference?

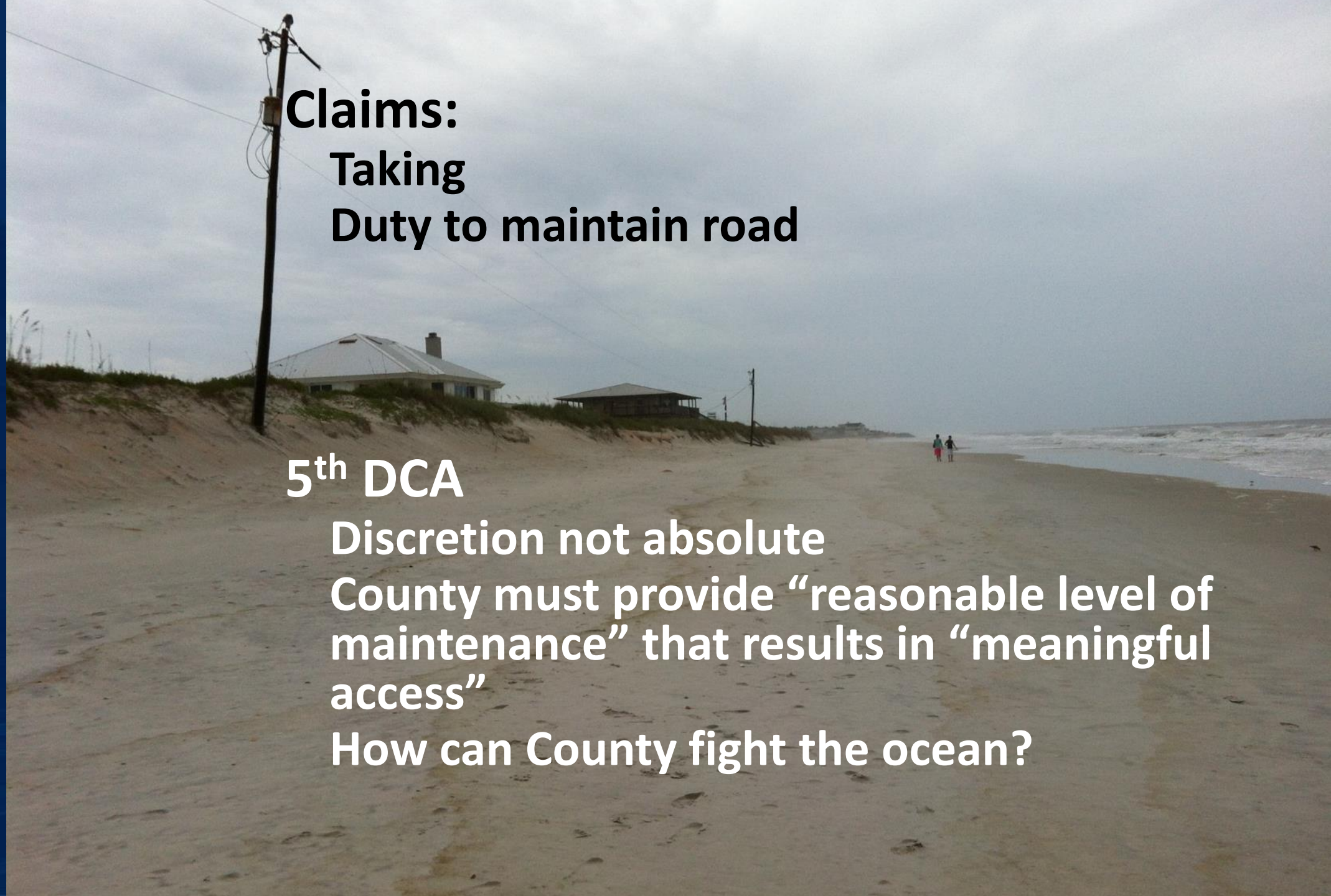
- For existing, people now depend on it
- No right to depend on what hasn't been built
- Separation of gov't powers
- Need to preserve the discretionary power of the legislative branch

Multi-billion-dollar question: What is maintenance vs. upgrade?!

Jordan et al. *v. St. Johns County*

Photo by Thomas Ruppert, Florida Sea Grant, 2018

Jordan *et al.* vs. St. Johns County



Claims:

- Taking
- Duty to maintain road

5th DCA

- Discretion not absolute
- County must provide “reasonable level of maintenance” that results in “meaningful access”
- How can County fight the ocean?

Thesis: Judicial interpretation of "maintenance" responsibilities for infrastructure may determine extent of local government discretion in how local governments address sea-level rise.

Available at: https://www.flseagrant.org/wp-content/uploads/Castles-and-Roads-In-the-Sand_2018_48_ELR_10914.pdf

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Volume 48 No. 10
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In the Agencies
EPA proposes replacement rule for Clean Power Plan

In the Congress
President signs extension of National Flood Insurance Program

In the Courts
D.C. Circuit vacates EPA delay of Chemical Disaster Rule

In the States
California moves to preserve current federal tailpipe standards

Articles

John C. Dernbach, Legal Pathways to Deep Decarbonization: Postscript

Daniel R. Mandelker, Practicable Alternatives for Wetlands Development Under the Clean Water Act

Thomas Ruppert, Castles—and Roads—in the Sand: Do All Roads Lead to a "Taking"?

Dialogue

John C. Cruden, John Elwood, and Richard Lazarus, The Impact of Justice Kennedy and the Effect of His Retirement

Take-home Messages

1. As local governments, you have both the authority and RESPONSIBILITY to act and plan proactively for a changing future. Failure to do so risks significant liability.
2. Case law views local efforts to protect health and safety from flooding favorably.
3. Not all local governments will respond the same. Some have more ability to raise capital and more in-house expertise available.
4. Large local governments:
   - Lots of examples of sophisticated technical analysis.
   - Examples of large-scale protective infrastructure projects (e.g. Miami Beach, New Orleans, etc.)

Take-home Messages

1. Small- to medium-sized local governments
   - Will confront financial limits of infrastructure creation and upgrades sooner
   - Need for policy innovation sooner
2. Technical analysis always useful, but not necessarily enough.
   - Ultimately, not everything can be protected everywhere from all the impacts we will see.
   - The difficult question: What do we spend lots of money to protect?
   - The truly agonizing question: What do we NOT do?

Take-home Messages

Final point:

Eventually policy decisions will not be just about avoiding any potential liability. Once there is not enough money to protect and satisfy everyone, the lawsuits start. Local governments need to keep in mind that the law will change and evolve in response to the impacts of climate change and sea-level rise. The best that local government can do is work with the community to use their values and input to design policies that provide the best possible legal argument to push the law in the directions that best serve the long-term interests of local governments and communities.

Sample Legal Resources and Links

Thomas Ruppert & Carly Grimm, *Drowning in Place: Local Government Costs and Liabilities for Flooding Due to Sea-Level Rise*, FLA. BAR J., Vol 87, No. 9 (2013): https://www.floridabar.org/the-florida-bar-journal/drowning-in-place-local-government-costs-and-liabilities-for-flooding-due-to-sea-level-rise/

Webpage with "Policy Tools" from Florida Sea Grant: https://www.flseagrant.org/climate-change/coastalplanning/resources/policy-tools/

Webpage with "Example Sea-Level Rise Language & Case Studies" from Florida Sea Grant: https://www.flseagrant.org/climate-change/coastalplanning/case-studies/

Shana Jones, Thomas Ruppert, Erin Deady, Heather Payne, Scott Pippin, Ling-Yee Huang, and Jason Evans, *Roads to Nowhere in Four Jurisdictions: States and Local Governments in the Southeast Facing Sea-Level Rise*, 44 COLUMB. J. ENVTL. L 67 (2019): https://www.flseagrant.org/wp-content/uploads/Jones-et-al_Roads-to-Nowhere_Vol.44.1.pdf

Thomas Ruppert, *Castles—and Roads—in the Sand: Do All Roads Lead to a "Taking"*?, 48 ENVT'L L. REPORTER 10914 (2018): https://www.flseagrant.org/wp-content/uploads/Castles-and-Roads-In-the-Sand_2018_48_ELR_10914.pdf

Q&A

Type your question into the “Questions” box and the moderator will read the question on your behalf.

Approaches to Funding

Guest Speakers

Eugene Henry, AICP, CFM

Eugene is a leader in unifying planning functions with disaster-mitigation processes. This includes the integration of all-hazards mitigation with comprehensive planning and regulatory development. He develops and provides oversight for community plans, land development, construction projects, and grants. Eugene developed an internationally recognized community post-disaster redevelopment strategy to target policy decisions and redevelopment practices following a disaster. He also implemented a floodplain management and flood-hazard program that protects greater than $10 billion. He modified codes to establish higher land-development and construction standards for the community to become more resilient. Lastly, he managed and assisted with a team along the Gulf coast following impacts from Hurricane Katrina.

Bill Nechamen, CFM

Bill was the New York State Floodplain Management Coordinator from 1996 until 2017. He is the past chair and a current Board member of ASFPM and serves as co-chair of the ASFPM Floodplain Regulations committee. He was a founding member and the first Chair of the New York State Floodplain and Stormwater Managers Association (NYSFSMA) and is their current treasurer and co-chair of the public policy committee. Through Nechamen Consulting, Bill provides floodplain management related services, including managing ASFPM's state-to-state mentoring program, developing and providing floodplain management related training, and providing subject matter expertise. He has provided expert written testimony for the New York State Office of Attorney General regarding the impact of the Waters of the U.S. rule on flood risk. He was appointed by the Governor to the Upstate (NY) Flood Mitigation Task Force.

LIVE POLL

What is your community's greatest challenge related to funding?

Type your response in the "Questions" box.

Engaging Your Local Elected Official in Coastal and Floodplain Management

Association of State Floodplain Managers and the National Association of Counties

Sub-topic: Mitigation Planning, Alternatives, Overcoming Barriers

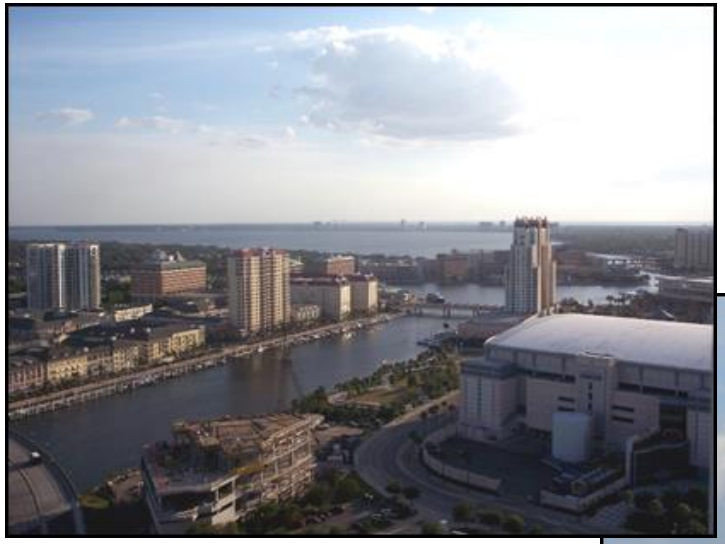
Eugene Henry, AICP, CFM

Director Planning Services (Part-Time), Applied Sciences Consulting

Retired, Hazard Mitigation Manager, Floodplain Administrator (May 2020), Hillsborough County, Fla.

Phone: 813.244.8859, leave a message! Mail: PO Box 2563, Brandon, Fla. 33509

Welcome – Our Community During Blue Sky Times!



Welcome – Our Community Vulnerabilities During Dark Sky Times!

Mitigation/Resiliency

In Planning and Emergency Management, **mitigation** are actions that we can take before a disaster or when we rebuild after a disaster, that **will reduce our risk of property damage or loss of life in the future.**

FEMA (44 CFR): "any **sustained action** taken to reduce or eliminate long-term risks to human life and property from hazards."

Resiliency: The ability of a community or its constituent parts to bounce back from harmful impacts of disasters (Hicks, Jaimie H., et al. **Planning for Community Resiliency, A Handbook for Reducing Vulnerability to Disasters**, Washington, Island Press, 2014).

Objectives for Today

Goal: Incorporate Mitigation and Disaster-Assistance Funding as a Community Tool.

Objectives:

"4" -- Funding alternatives, develop a prioritized project list,

1. Assist communities and businesses in understanding risks, vulnerabilities, and resilience,
2. Incorporate higher design standards into construction, development and redevelopment,
3. Incorporate mitigation with public assets (e.g. human needs, social services, and infrastructure).

Flood Mitigation and Resiliency

Recognizing What We Have:

- The community values (people), standard of living, and interactions,
- The design and vitality of the businesses and merchants,
- The environment and living with it, and
- The Interconnectivity and development and alignment for the present and future.

Knowing What is at Risks:

- The people, buildings, and the environment,

Knowing What is Sustainable and What is Vulnerable.

The Role – Keeping the Process

- Implementation conceptual framework includes the following guidelines:
  - ***Nurture an ongoing Stakeholder Structure***
    - *Local Mitigation Strategy (LMS) Working Group*
    - *Redevelopment Task Force*
  - ***Build upon processes*** *for transitioning from routine planning with mitigation to response to recovery*
  - ***Define inclusive lists of organizations*** *and resources*
  - ***Integrate policy initiatives*** *from local plans*
  - ***Capitalize on disaster mitigation and public assistance funds***
  - ***Incrementally prepare*** *the community*
  - ***Revisit*** *the assumptions and actions*

Let’s Start with Potential Pre- and Post-Disaster Funding Sources

Simple planning and knowing your community is first!

- **Pre-Disaster, Post-Disaster, Recovery, Blue Sky**
  - **Let’s take a look at some of the program names**

- **FEMA’s new** Building Resilient Infrastructure and Communities (BRIC)
  - You can incorporate Nature-Based Solutions such as No Adverse Impacts and use of Natural Beneficial Functions

Continuing with Potential Pre- and Post-Disaster Funding Sources, 1

Some of the funding alternatives I have worked with in the past 35 years

- **Department of Energy (Hazards Planning)**
- **Pre-Disaster Mitigation Assistance (PDM)**
- **Hazard Mitigation Assistance Program (HMA)**
  - **Flood Mitigation Assistance (FMA)**
  - **Sever Repetitive Loss (SRL)**

Continuing with Potential Pre- and Post-Disaster Funding Sources, 2

- Stafford Act
  - Hazard Mitigation Grant Program (you can include higher standards) (HMGP)
  - Public Assistance (PA)
    - With Mitigation
    - Higher Standards
  - Individual Family Assistance (IA)
- National Flood Insurance Program (NFIP/ICC)
  - Increased Cost of Compliance
  - Note: Community Rating System (CRS)
- Small Business Administration (SBA)

Continuing with Potential Pre- and Post-Disaster Funding Sources, 3

- Housing and Urban Development and Community Development Block Grants (HUD & CDBG)
  - Mitigation
  - Disaster Recovery
  - Entitlement
  - Small Cities
  - Others, e.g. Road to Home . . .
  - Sustainable Communities Regional Planning Grants
- State’s usually have weatherization or other similar programs

Continuing with Potential Pre- and Post-Disaster Funding Sources, 4

- National Oceanic & Atmospheric Administration (NOAA)
  - Coastal Resiliency Grants Program
  - Coastal and Marine Habitat Restoration Grants
- National Estuary Program
- U.S. Forestry Service
- (U.S. and State) Economic Opportunity Grants
- Foundations
- You get the picture, there are many resources!

How – First, Know Your Risks

Simple Planning and Knowing Your Community!

Risk Assessment: Natural Disasters

Hazard	Probability	Consequence	Frequency
Severe Storms	High	Major	2 to 3 Years
Hurricane, Minor	High	Moderate	2 years
Hurricane, Major	Moderate	Major	50 years
Wildfire	High	Minor	Multiple Annually
Flooding	Moderate	Minor to Moderate	5 to 10 Years
Sink Holes	Moderate	Minor	Multiple Annually
Drought	Low	Minor to Moderate	5 to 10 Years

Second, You Need Know Your Vulnerability

- **Understanding when to “chase” alternative mitigation funding.**
- Understanding threats to your community that hurt people and damages property.
- Understanding how to minimize threats shows the that a community knows their vulnerabilities.

Together: (Flood) Risks and Vulnerabilities, Your Community

Risks assessment (threats):

- **Flood-hazard boundaries**
- Stormsurge boundaries
- Wind isobars

Vulnerability analysis (damaged by threats):

- Number of people (CDC criteria)
- Number and age of structures
- Miles and age of Infrastructure

Examples and Samples

Stormwater Facilities

Facility Retrofits and Hardening

Repetitive Flood Loss Mitigation

Neighborhood Outreach Programs

Okay, There is More!
Other Forms of Mitigation

Land-Use Management

Zoning

Construction

Retrofitting Structures

Regulation & Standards

Public Outreach

Neighborhood Programs

Early Warning Systems

Floodproofing Structures

Critical Facilities

Help Yourself!
Establish Priority Areas -- Sustainable and Vulnerable

Flood Mitigation and Resiliency

- **Challenges to Mitigation and Resiliency**
  - Flooding and Repetitive Losses,
  - Age and Connectivity of Infrastructure and Lifelines,
  - Age of Construction,
  - Codes, and
  - Resources to Plan for Alternatives and Grants.

Flood Mitigation and Resiliency

Action Items for Consideration

- **Infrastructure**,
  - Integrating the use of “green” infrastructure that may include areas beyond the district (e.g. small open spaces, rain gardens – for smaller events, managing volume),
  - Exploring alternative support to designated lifelines (e.g. solar, communications . . .),
- **Study . . . drainage** conveyance to the bay and potential types of pumps: Market and Wharf Streets,
- **Living shoreline** adjacent to drainage outfalls and areas of erosion,
- **Structural flood mitigation** (floodproofing),
- **Structural wind mitigation** (consider partnering with the FLASH),
- **Working with industry** to work in closing the insurance gap,

What Are We Talking About Again, MITIGATION and Funding!

Mitigation: Any action taken to prevent or reduce damages (loss of life and property) associated with natural or manmade disasters

Forms of MITIGATION:

Land-Use Management
Zoning
Construction & Making your Building Stronger
Regulation and Standard Implementation within High Risk Areas
Working with Industry
Retrofitting Structures, Public Outreach and Education
Seeking Grants to Help!

Flood Mitigation and Resiliency

THANKS, VERY MUCH!

HAVE A VERY SAFE STORM SEASON AND THINK BLUE SKIES!

Local Coastal Resiliency

Funding and Planning

Nechamen
CONSULTING

What I'll try to Cover

- What New York did (for better and for worse)
- Some Funding Opportunities
- A Unique Local Approach
- Plan for Tomorrow

New York's Experience after Sandy (2012)

Governor Cuomo:

- "Anyone who says there's not a dramatic change in weather patterns, I think is denying reality."

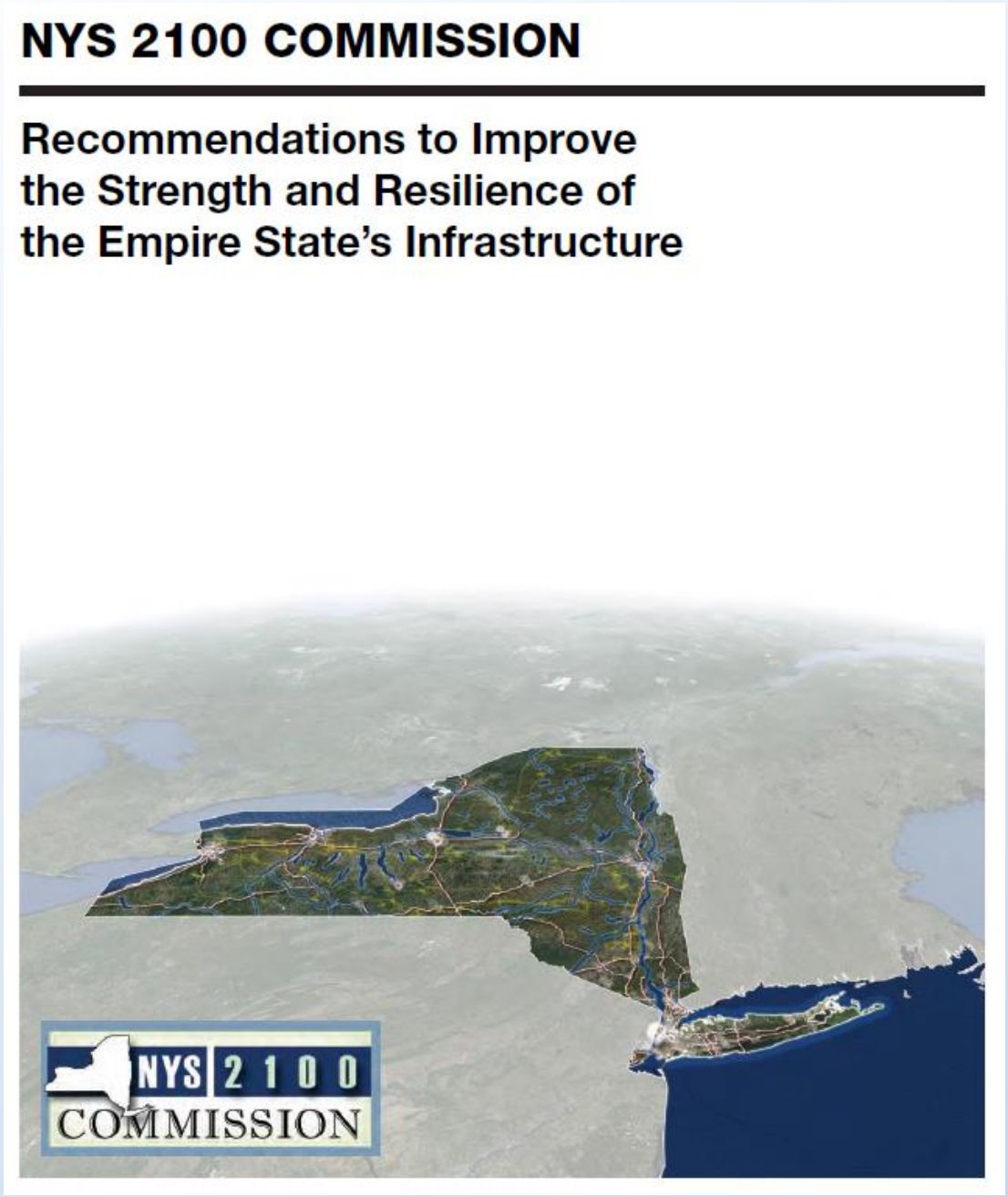
- "When you talk about rebuilding, there is certain real estate that Mother Nature owns. She may not visit often, but she owns it, and when she decides to visit, she is going to come and reclaim the property. "

Extreme Events Exceed FEMA maps

Estimated Damages within FEMA 100 Year Floodplain		
Location	Estimated Total Number of Damaged Structures	Structures that were Destroyed or Sustained Major Damage
New York City	14402	5341
Nassau	18248	4345
Suffolk	5266	1009
Westchester	35	0

Estimated Damages Within FEMA 500 year Floodplain (Outside 100 year Floodplain)		
Location	Estimated Total Number of Damaged Structures	Structures that were Destroyed or Sustained Major Damage
New York City	8441	430
Nassau	819	38
Suffolk	289	6
Westchester	7	0

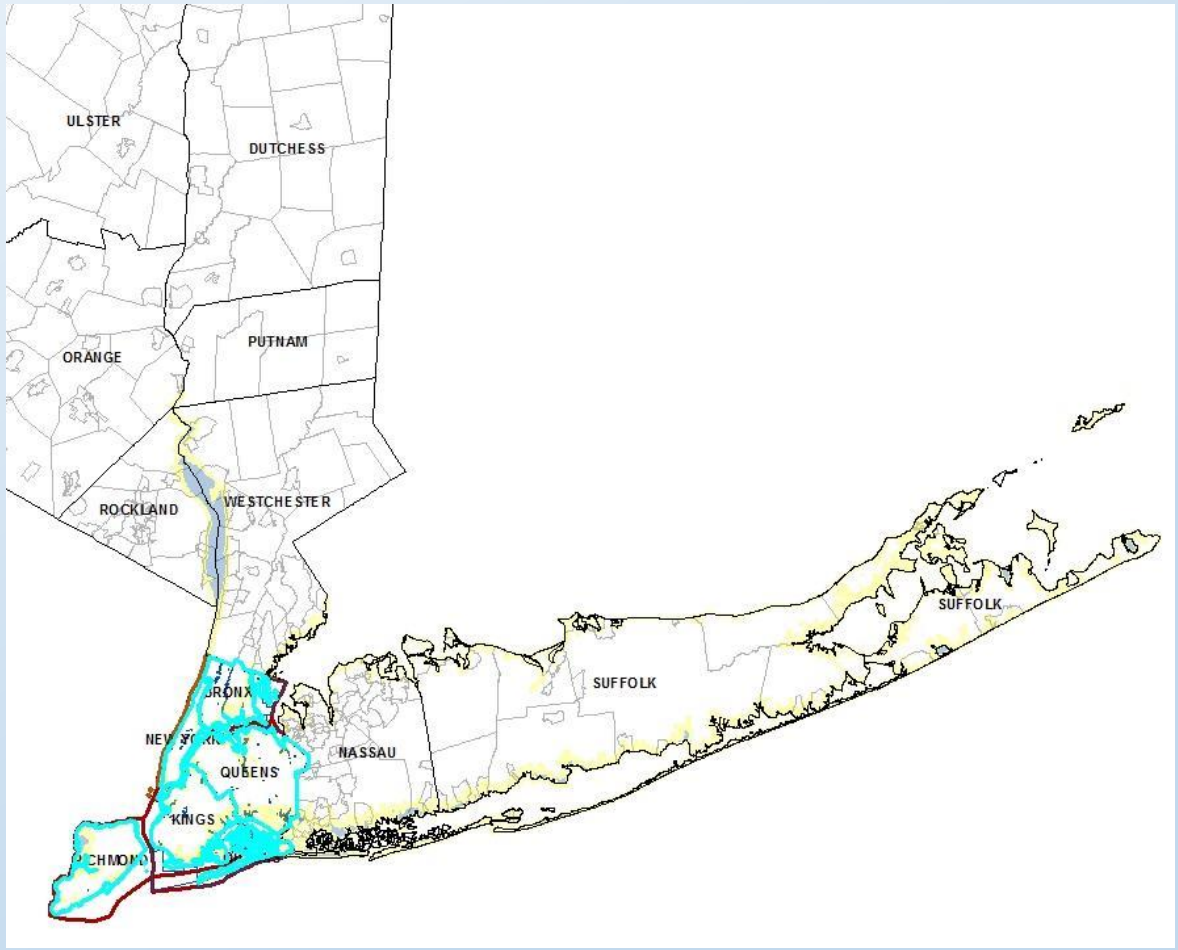
Estimated Damages Outside FEMA 100 year and 500 year Floodplains		
Location	Estimated Total Number of Damaged Structures	Structures that were Destroyed or Sustained Major Damage
New York City	8593	411
Nassau	1893	18
Suffolk	1927	14
Westchester	89	1



- Focus on Resilience and Strength of NYS Infrastructure
- Recognizes Future with Sea Level Rise and Increased Flood Levels
- More Resilient Standards Necessary for the State's Economy

Challenges: NY's Local Geography

- NYC:
  - One Community
  - 5 Counties
- Nassau:
  - 60 Communities
- Suffolk:
  - 42 Communities
- "Floodplain Administrator" is local Building or Zoning Official



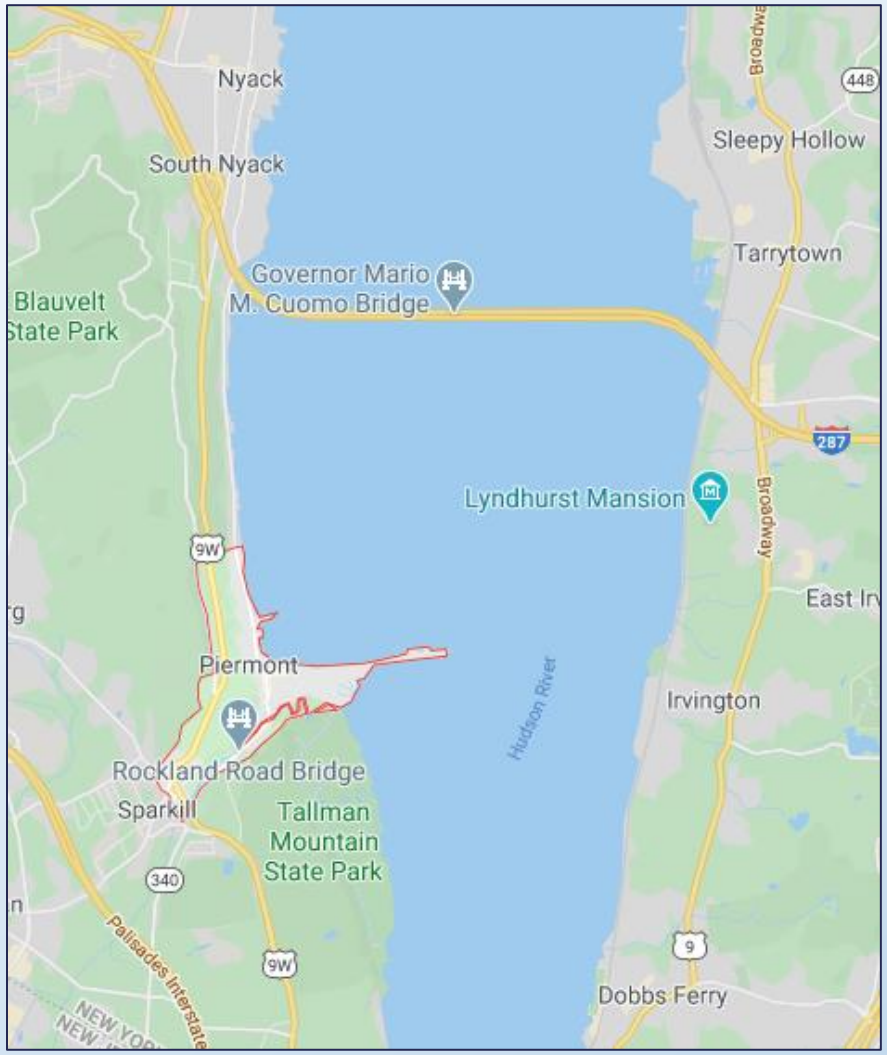
Other Challenges

- Post – Sandy Mitigation Approaches were Developed as a Bottom – Up Approach BUT Army of Consultants operated outside of Normal State Regulatory Process
- Lack of Sufficient Local Input
  - Floodplain Administrators and Emergency Managers often Left Out
- Building the Plane while In Flight

Can Federal Programs Help? Sort Of

Measure	FEMA - HMGP	FEMA - Flood Mitigation Assistance	FEMA - Increased Cost of Compliance	FEMA BRIC (Bldg Resilient Infrastructure & Communities	FHA Rehabilitation Loan	HUD Community Devp Block Grants - Disaster
Who is Applicant? →	Community	Community	Individual	Community	Individual	Community
Elevate Yard	No	No	No	No	No	No
Move Stored Materials	No	No	No	No	No	No
Elevate Mechanicals	No	No	No	No	No	No
Backflow Prevention	Yes (Comm.)	No	No	Yes (Comm.)	No	Yes (Comm.)
Street / Utility Protection/ Elevation	Yes (Comm.)	No	No	Yes (Comm.)	No	Yes (Comm.)
Floodproof Structure	Yes	Yes	Yes	Yes	Yes	Yes
Elevate Structure	Yes	Yes	Yes	Yes	Yes	Yes
Buyout and Demolish	Yes	Yes	Yes	Yes	No	Yes
Move Structure	Yes	Yes	Yes	Yes	No	Yes
Berm / Levee / Flood Wall	Maybe (Small Projects)	No	No	Maybe (Small Projects)	No	Maybe (Small Projects)

A New Local Approach Needed – Piermont NY

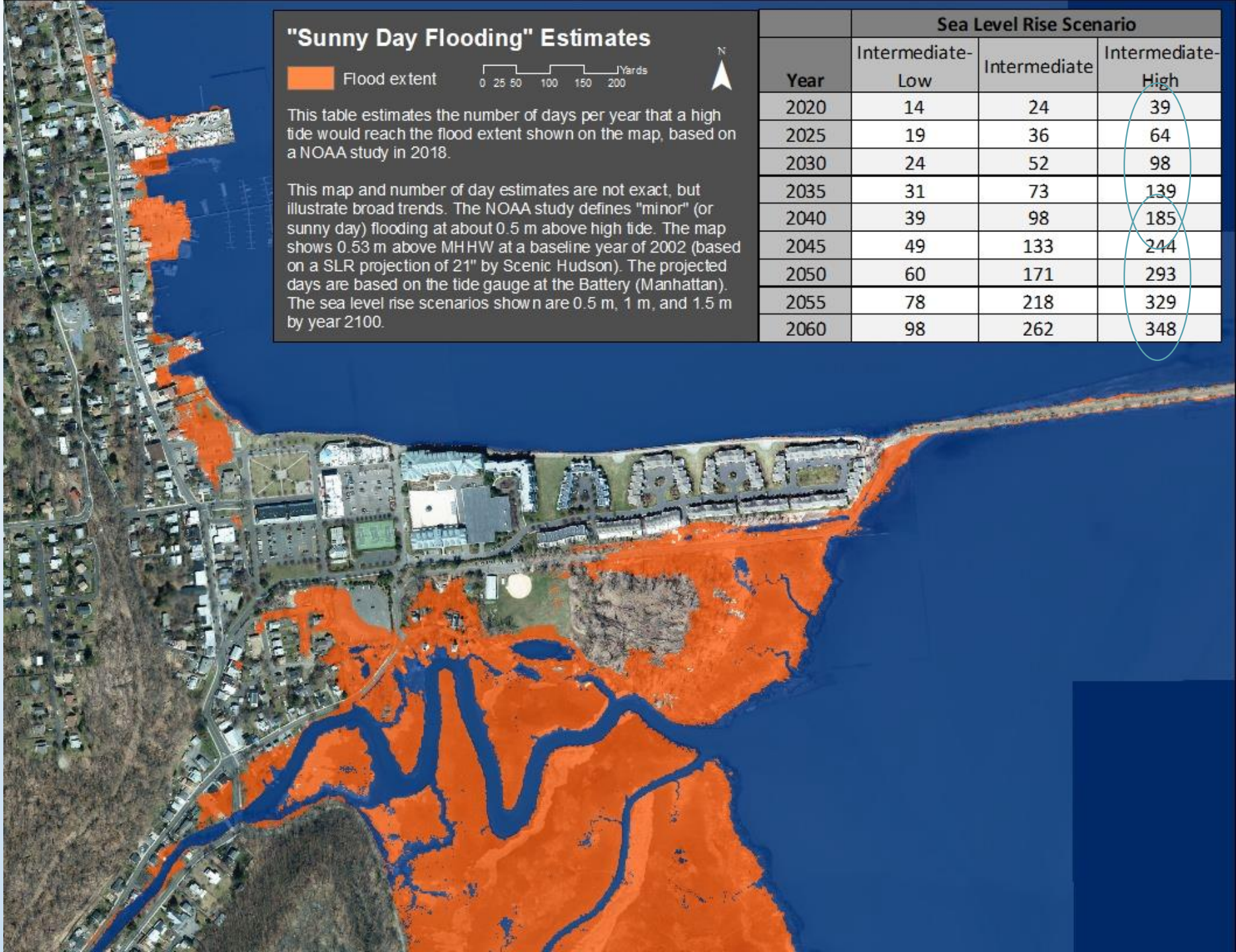


- Funded by American Arbitration Association
- Led by Consensus Building Institute
- Subject Matter Experts Advise
- Community Liaisons Lead

SEA LEVEL RISE: “Sunny day” flooding

Days flooded: Almost 100 by 2030

Almost 300 by 2050



	Sea Level Rise Scenario		
Year	Intermediate-Low	Intermediate	Intermediate-High
2020	14	24	39
2025	19	36	64
2030	24	52	98
2035	31	73	139
2040	39	98	185
2045	49	133	244
2050	60	171	293
2055	78	218	329
2060	98	262	348

SCENIC HUDSON
land ■ parks ■ advocacy

Consensus Building Institute Approach

- Community members can't get behind a resilience plan if they haven't first considered their own future
- More compelling to have neighbors share information with neighbors about the future than us
- Residents cannot plan without detailed information on personal flood risk and adaptation options
- Emotional & personal considerations often outweigh the practical

Approaches

- Provide Technical Information on Flooding
- Provide Information on Programs and Possible Funding
- Train Community Liaisons
- Build Relationships among Residents that Outlive the Project
- Allow Residents to Determine when Flood Risk is Significant Enough to Need Action

Some Results

- Residents Continue to Meet and Discuss
- Village Officials seeking Innovative Funding Ideas
  - Resilience Bonds?
- Understanding that planning is key but
  - No Silver Bullet
- Increased Line of Communication with Local Gov’t
- Understanding of the need for mitigation priorities in All Hazards Mitigation Plan

Take Away's

- Don't Depend on Federal Bailouts
  - Though Federal programs can be a big help
- Need always exceeds funding
- Real bottom up planning needed
  - Community Commitment
  - Local Experts: Include FPA and Emergency Managers
- Take All-Hazards Mitigation Planning Process Seriously!
  - Articulating Mitigation Needs in Advance Helps when Funds are Available

Q&A

Type your question into the “Questions” box and the moderator will read the question on your behalf.

LIVE POLL

What additional training or resources can we provide on this topic?

Type your response in the “Questions” box.

Where to learn more:

Local Government Guide to Coastal Resilience

NACo | HOME | WHAT ARE COASTAL HAZARDS? | THE PROCESS | FUNDING | RISK COMMUNICATION | CASE STUDIES | RESOURCES | CONTACT US

Community Rating System Green Guide

The Community Rating System (CRS) Green Guide is an online resource designed to help communities identify which nature-based elements from the CRS Coordinator's Manual they want to pursue. It includes best practices and success stories from CRS communities earning top credits.

NOAA Sea Level Rise Viewer

NOAA's Sea Level Rise Viewer visualizes potential community-level impacts from coastal flooding or sea level rise (up to 10 feet above average high tides) through maps and photos.

ASFPM No Adverse Impact Resources

No Adverse Impact floodplain management takes place when the actions of one property owner are not allowed to adversely affect the rights of other property owners. Adverse effects or impacts might include increased flood peaks, increased flood stages, higher flood velocities or increased erosion and sedimentation.

www.naco.org/resources/local-government-guide-coastal-resilience

Where to learn more:

Elected Officials Guide to Floodplain Management

Elected Officials' Flood Guide | Introduction | Volume I: The Essentials | Volume II: Moving Beyond the Essentials | Volume III: Success Stories | Resources | About

Home > Products > Elected Officials' Flood Guide > Success Stories

Success Stories

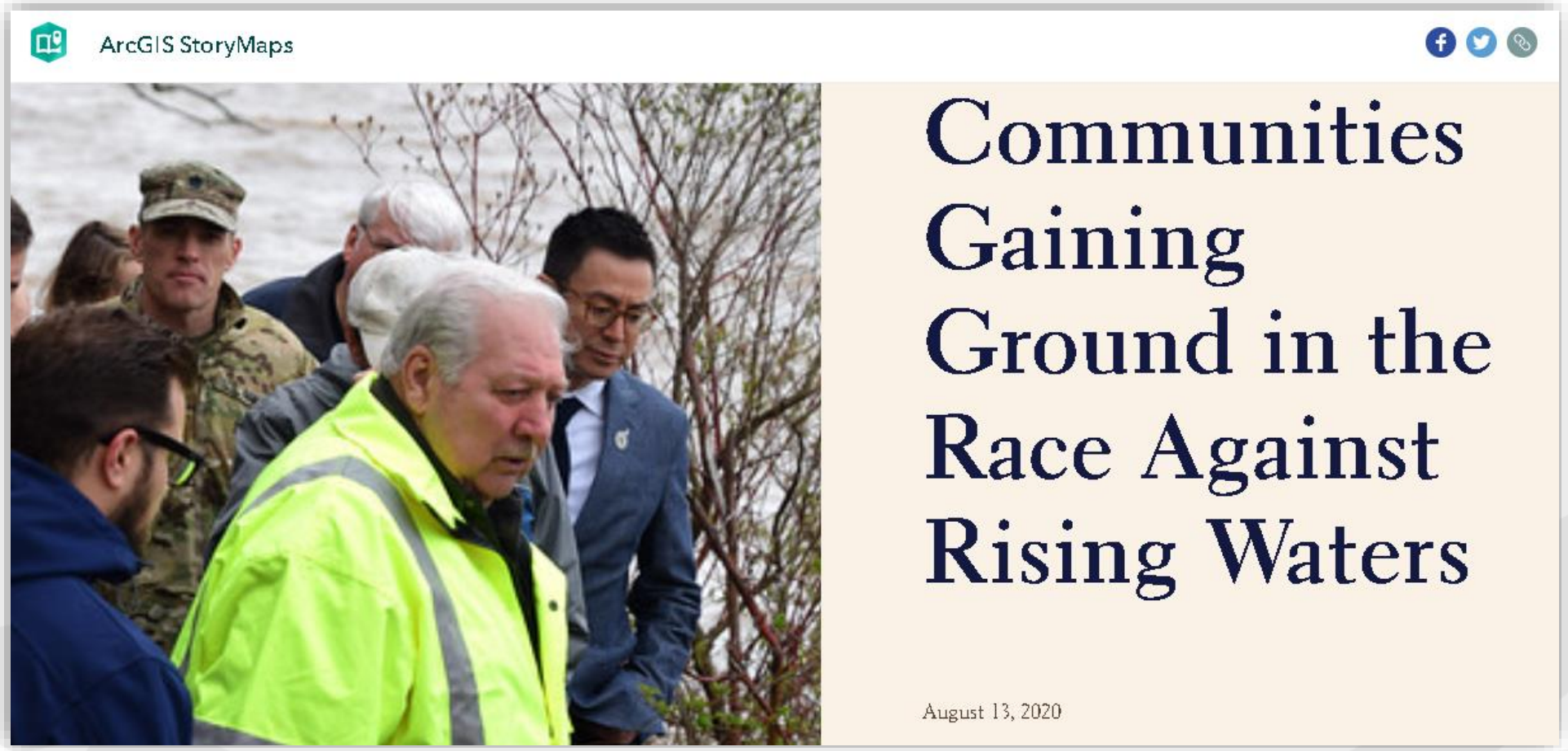
These success stories for the Elected Officials' Flood Guide give you case studies from several communities nationwide that successfully tackled flood mitigation. The communities chosen represent a cross-section of the U.S. – from coastal to inland areas, and small towns to large cities. The case studies include interviews with elected officials. We hope that their stories encourage you to develop your own personal and legislative approach to managing flood risk and improving public safety and property protection in your community.

Center: Iowa City, Iowa current Mayor Jim Throgmorton (left) and former Mayor Matthew Hayek.

no.floods.org/ electedOfficialsGuide

Where to learn more:

Elected Officials Guide: Success Stories – Story Map



no.floods.org/EOGuide-StoryMap

$(P^1P^2 + R^1R^2) + (P^3P^4R^3) =$ Resilience

P^1=(Prevention): Prevent the disaster. We cannot prevent the event, but we can mitigate or reduce the impact. Minimizing the impact is the goal. The event is not the disaster – the impact on lives, property and the community is the disaster. Prevention can help reduce these impacts.

P^2=(Preparation): Preparing for the disaster is important. Events will occur, and you need to know the risk and be prepared. Public announcements, pre-staged trained personnel, adequate resources and a plan are the critical components of preparation.

P^3=(Policies): Government and the private sector need to have policies in place to support P^1, P^2, R^1, and R^2**.** Policies on resiliency need to be throughout the community at all levels of government and business.

P^4=(Prioritize): Policies need to be important to the elected officials and the community. They need to be supported with money and people. They need to be kept up-to-date to meet changing conditions. Need to correct potential issues before the event by learning from past mistakes.

R^1=(Response): Response to the event is critical. Following a well thought out plan is important, but the plan needs have flexibility to adjust to the unpredictability of each event. The key is to have trained dedicated staff that are empowered to make clear decisions in position “on the ground” during the event. Organizing responders geographically to meet critical needs.

R^2=(Recovery): The most difficult portion of an event is recovery. Real recovery comes when lives and communities are back to normal and steps are being taken by all levels of government and the private sector to mitigate and prepare for the next event. Recovery make take years to complete, especially for the most vulnerable portions of the community.

R^3=(Resources): Funds and staff need to be available to implement the policies, get training and have time for preparation. This means coordinating with the private sector as well. It also means support for implementation of mitigation projects before and after the event.

“Resilience Equation” after Hurricane Harvey
Presented by Judge Edward Emmett, Harris County, Texas
at the 2018 ASFPM Annual National Conference in Phoenix

THANK YOU!

Additional questions or feedback?

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