

Understanding FEMA's New Policy Guidelines Before Disasters Hit

Shannon Burke

Manager, Hazards Planning Center, APA

<https://www.planning.org/nationalcenters/hazards/>

National Association of Counties, 2019 Legislative Conference, March 4, 2019



American Planning Association
Making Great Communities Happen

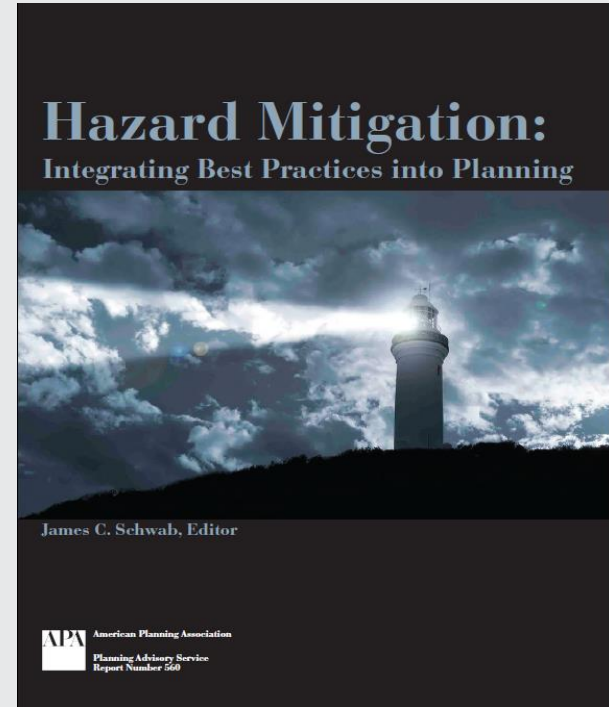
Understanding FEMA's New Policy Guidelines Before Disasters Hit

Five Strategic Points of Intervention

- Long-range Community Planning and Goal Setting
- Plan Making
 - Comprehensive Plan
 - Land Use Plan
 - Hazard Mitigation Plan
- Standards, Policies, Incentives
- Development Work
- Public Investment

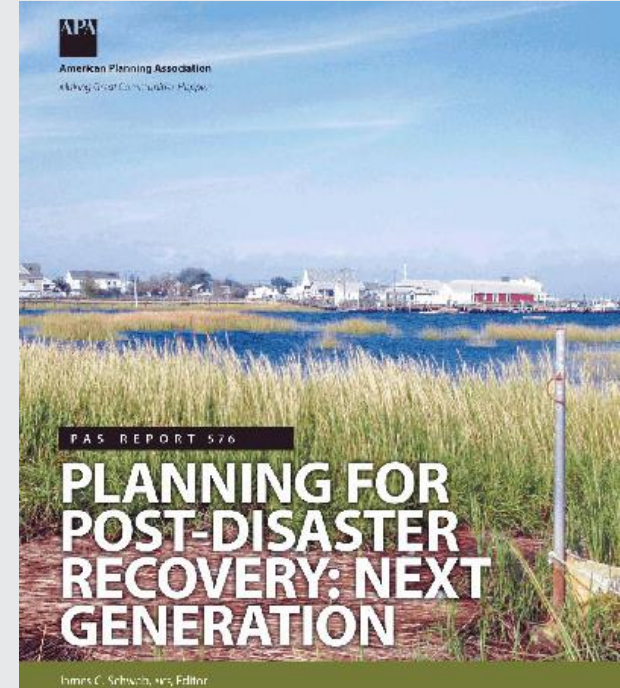


Understanding FEMA's New Policy Guidelines Before Disasters Hit Planning Advisory Service Reports



Understanding FEMA's New Policy Guidelines Before Disasters Hit. Planning for Post Disaster Recovery

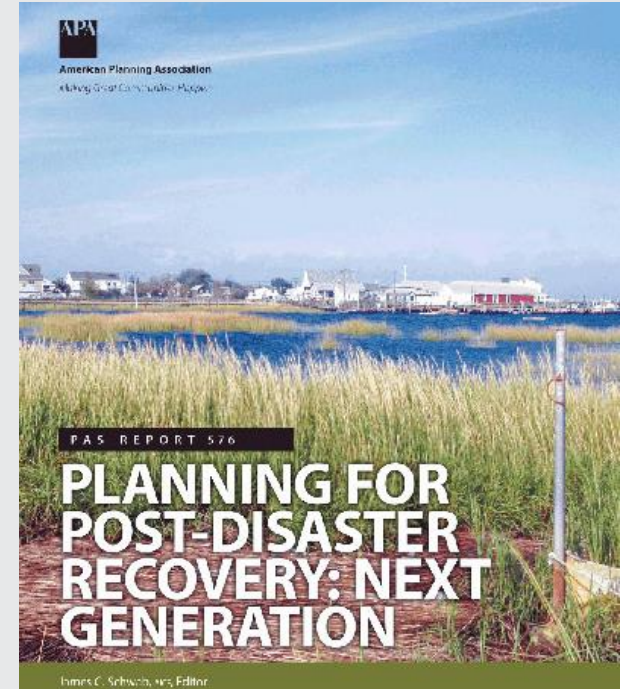
- Roles
- Federal framework for recovery
- Disaster Recovery Planning—Integration!
- Plan Implementation—
 - Pre- and post-disaster recovery planning
 - Managing Recovery
 - Legal Considerations—
 - Non-conforming uses, property relocation and other mitigation actions, like building elevation.



Understanding FEMA's New Policy Guidelines Before Disasters Hit. Planning for Post Disaster Recovery

Model Pre-Event Recovery Ordinance

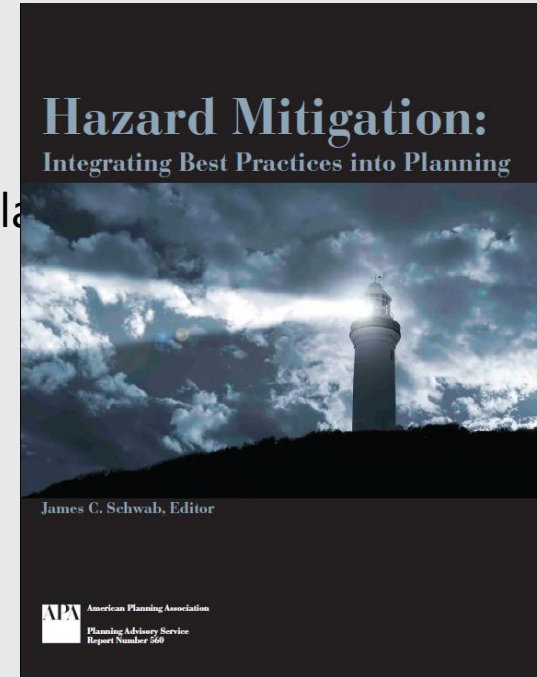
- Focuses on actions found necessary to facilitate recovery
- Provides a structured format for capturing essential recovery requirements
- Offers prototypical language adaptable to unique local circumstances



Understanding FEMA's New Policy Guidelines Before Disasters Hit

Hazard Mitigation: Integrating Best Practices into Planning

- Published in 2010
- FEMA Mitigation Plans and Plan Linkages
- Integration of the Hazard Mitigation Plan (HMP) into other plans
- Implementation Tools
- Case studies

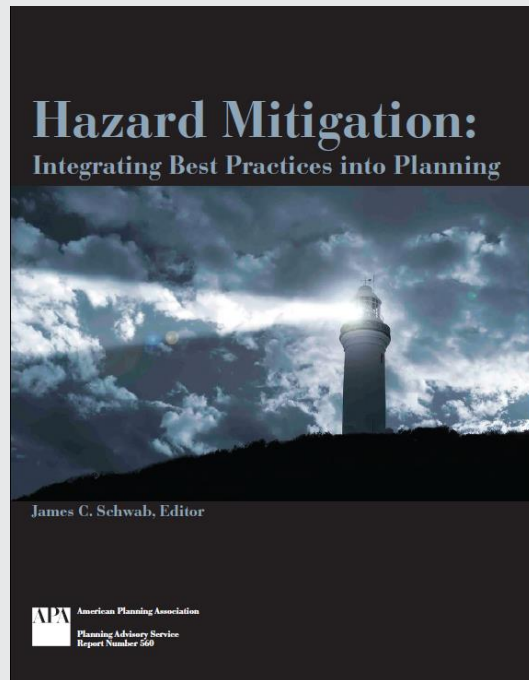


The Planners' Role in Disaster Risk Reduction

Hazard Mitigation: Integrating Best Practices in to Planning

TABLE 3.2. POTENTIAL RELEVANCE OF DISASTER TYPES TO MITIGATION PROVISIONS IN COMPREHENSIVE PLAN ELEMENTS

Type of Plan Element	Flood	Coastal Hazards (includes tsunami)	Seismic	Wildfire	Tornado	Landslide	Volcano
Hazards	x	x	x	x	x	x	x
Land Use	x	x					
Conservation	x	x		x		x	x
Public Facilities	x	x	x	x	x	x	x
Transport	x	x	x	x		x	x
Capital Improvements	x	x	x	x	x	x	x
Housing	x	x	x	x	x	x	
Historic Preservation	x	x	x	x		x	
Economic Development	x	x	x	x		x	
Recreation and Open Space	x	x	x (near fault lines)	x		x	x
Environment	x	x	x	x		x	x
Implementation	x	x	x	x	x	x	x





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FEMA

HMA
Hazard Mitigation
Assistance

MITIGATION DIRECTORATE

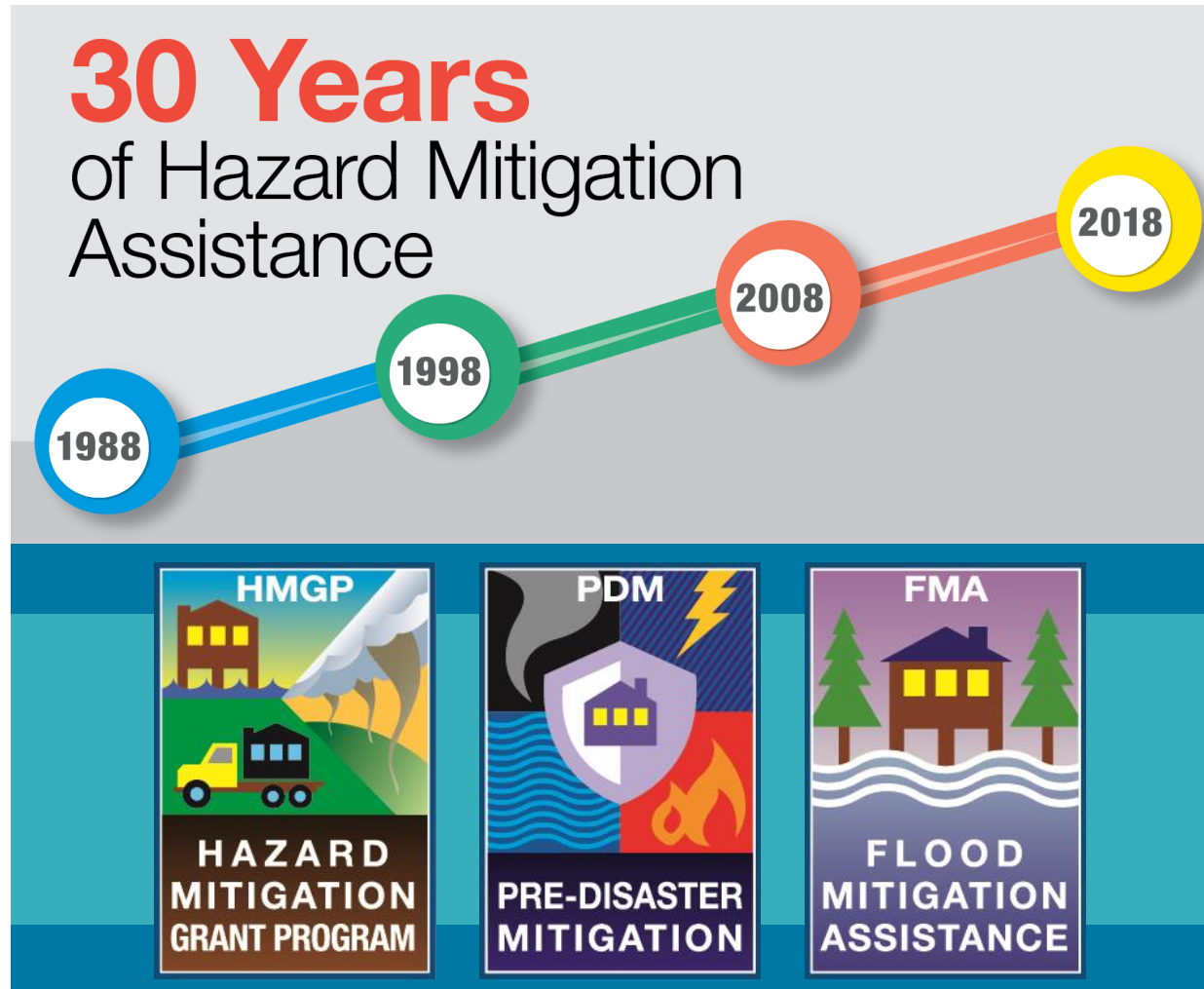
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March 4, 2019

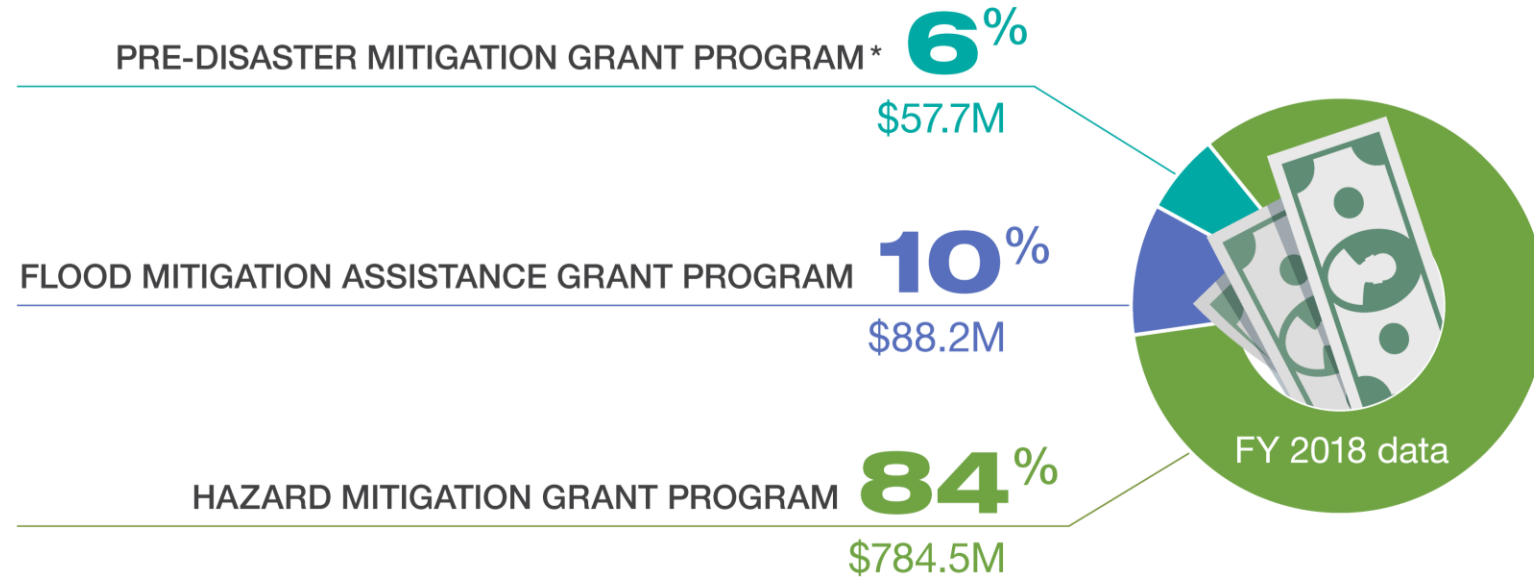
Katherine B. Fox

Assistant Administrator, Mitigation Directorate | Federal Insurance and Mitigation Administration

Hazard Mitigation Assistance Program

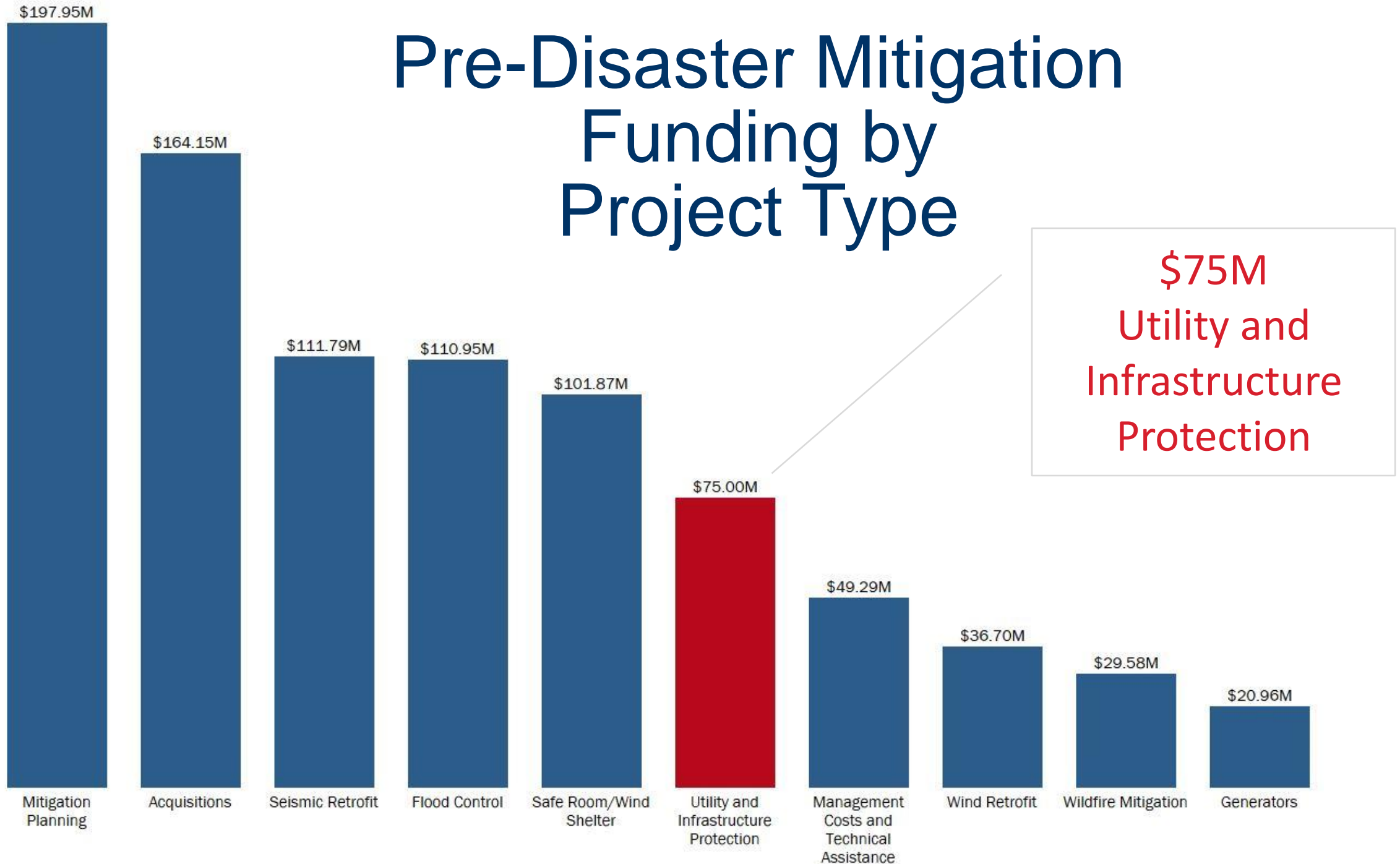


In FY 2018 more than **\$930M** in pre- and post-disaster **Hazard Mitigation Assistance Grants** was delivered to states, tribes, and territories, resulting in mitigation actions that will **reduce risk**



* This figure includes legacy PDM program funding

Pre-Disaster Mitigation Funding by Project Type



Strategic Plan

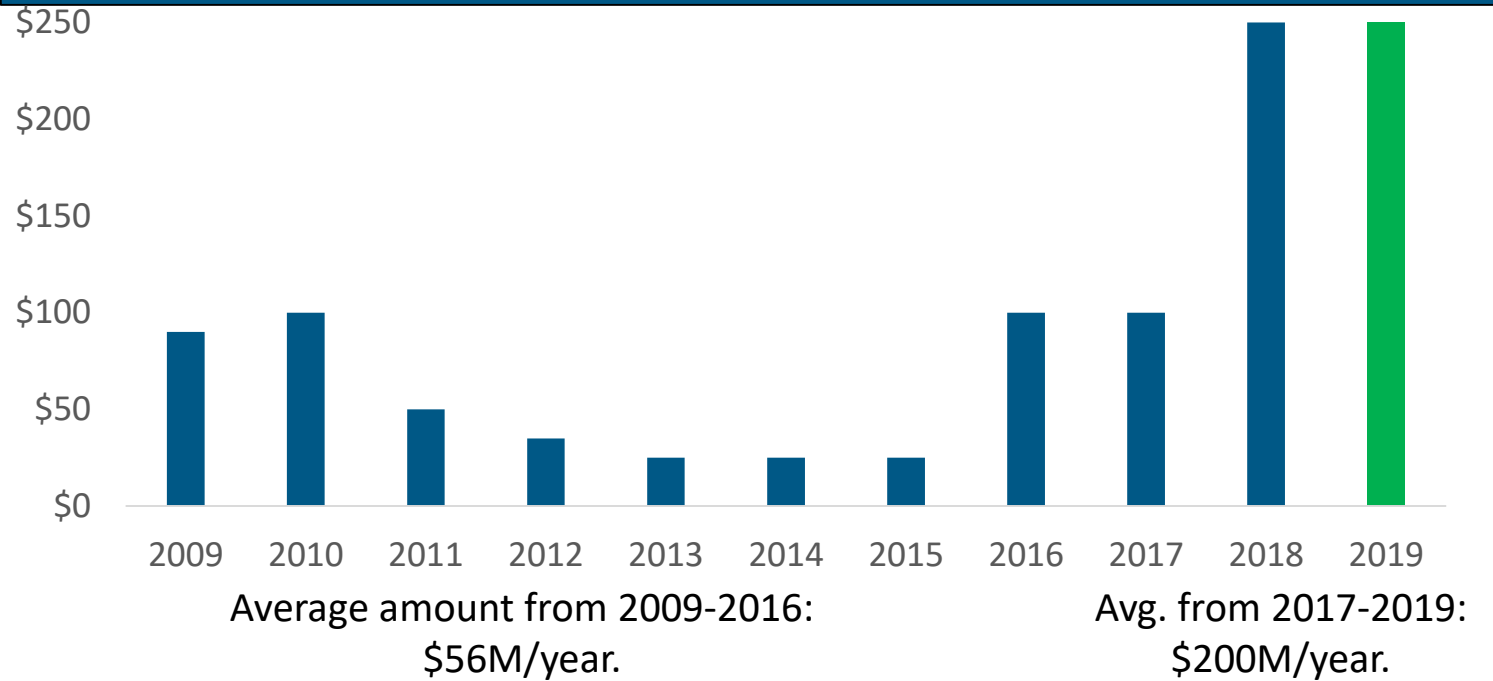
FEMA Strategic Objective 1: Build a Culture of Preparedness



DRRA Section 1234

- ✓ Leverage 6% set-aside funding mechanism
- ✓ Encourage community-wide mitigation of critical lifelines
- ✓ Prioritize resilient infrastructure projects
- ✓ Competitive, risk informed projects
- ✓ Build capacity and capability

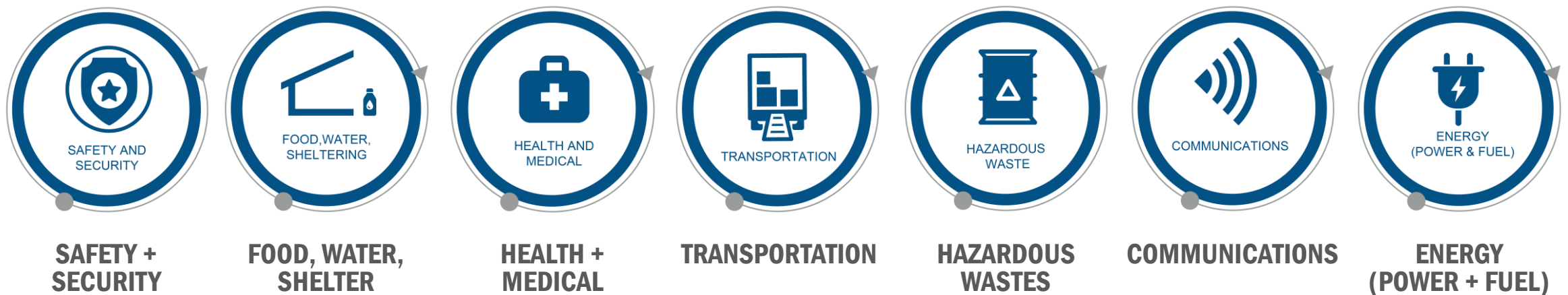
Since 2009, FEMA has received approximately \$1 billion in Pre Disaster Mitigation grant appropriations, of which 48% has been in the last 2 years.



BRIC funds will vary based on disasters. FIMA estimates that annual funds will average \$300-500M per year, with significantly greater amounts following years with catastrophic disasters.

Program Design: Building Resilient Lifelines

Lifeline-focused mitigation projects
could involve a wide variety of public,
private, and non-profit organizations



Building Resilient Lifelines - Example

NYU Langone Medical Center



- 590 million in 406 HM (428)
- Holistic campus wide mitigation
- Integral flood barrier protects all campus buildings



Future Engagement

- ✓ Ideascale for inputs
- ✓ Conference Strategy
- ✓ Federal Register – formal comment





FEMA

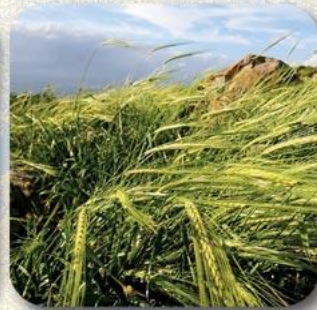
HMA
Hazard Mitigation
Assistance

THANK YOU

Katherine B. Fox

Assistant Administrator, Mitigation Directorate | Federal Insurance and Mitigation Administration

Boulder County Land Use Department



NACo's 2019 Legislative Conference

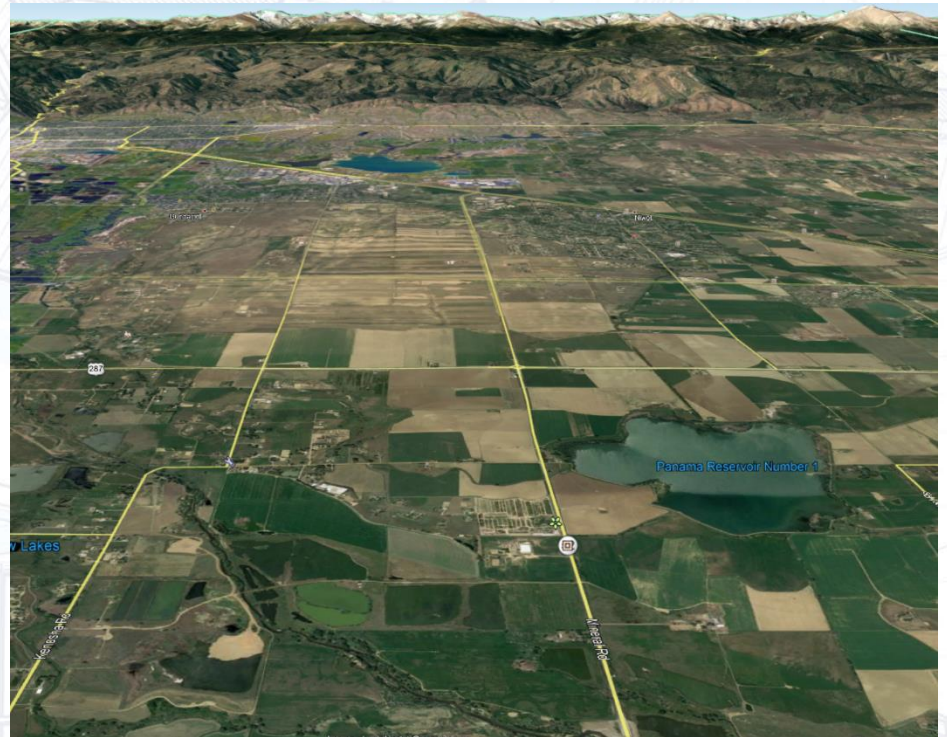
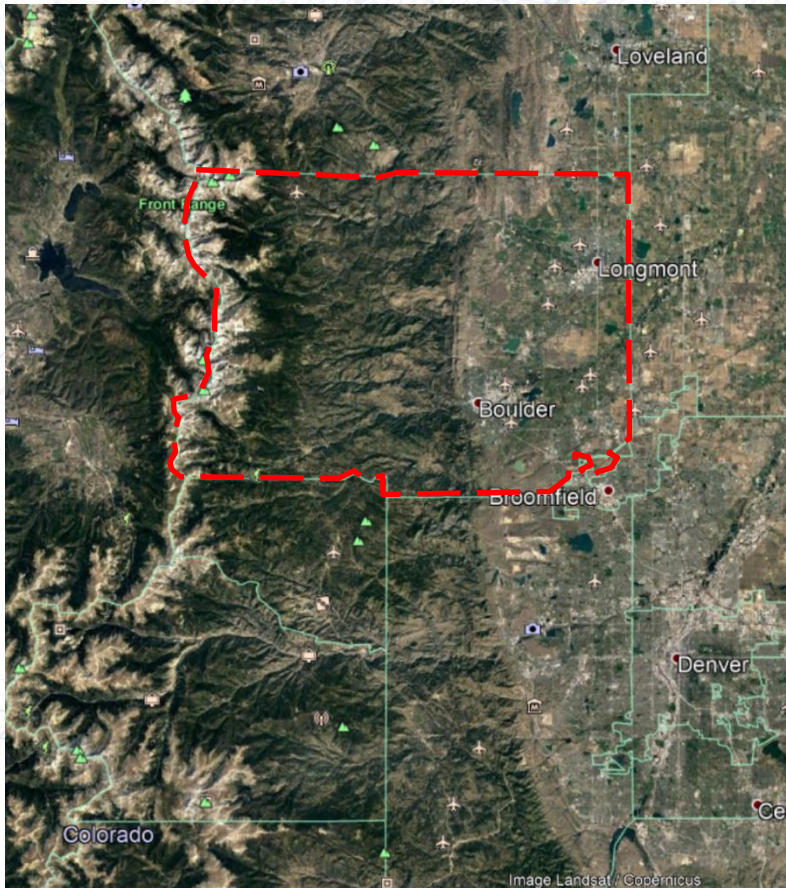
Understanding FEMA's New Policy Guidelines Before Disasters Hit

Monday March 4, 2019

A few disasters and their impact on planning and land use in
Boulder County: program, policies and dreams.

Dale Case, AICP
dcase@bouldercounty.org

Boulder County



Boulder County



“Floods are acts of Nature; but flood losses are largely acts of man.”

-- Dr. Gilbert White



The principal waterway in Boulder is Boulder Creek and its principal function, from which there is no escaping, is to carry off the storm-water which runs into it from the territory which it drains. If, lulled by the security of a few seasons of small storms, the community permits the channel to be encroached upon, it will inevitably pay the price in destructive floods. Again and again, this little piece of history has repeated itself on stream after stream, in town after town.



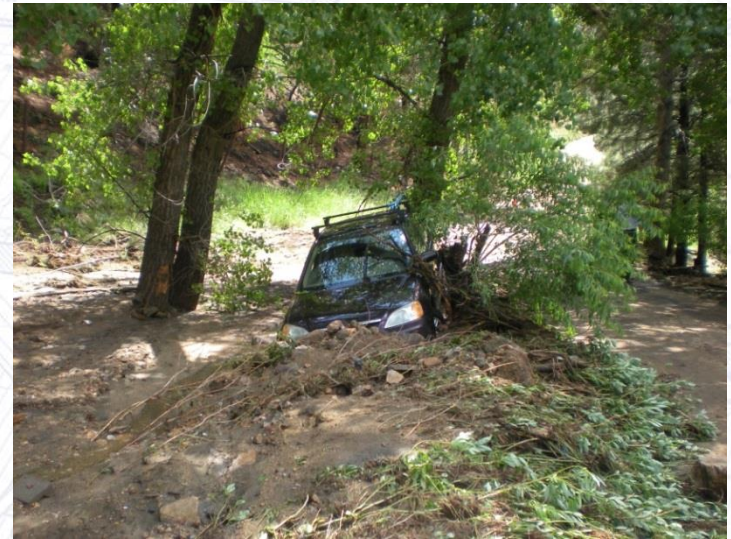
Frederick Law Olmstead
Harvard Regional Planner in
The Improvement of Boulder,
Colorado, 1910

AICP Code of Ethics – Principal to which we Aspire

“We shall have special concern for the long-range consequences of present actions.”

Boulder County





Boulder County



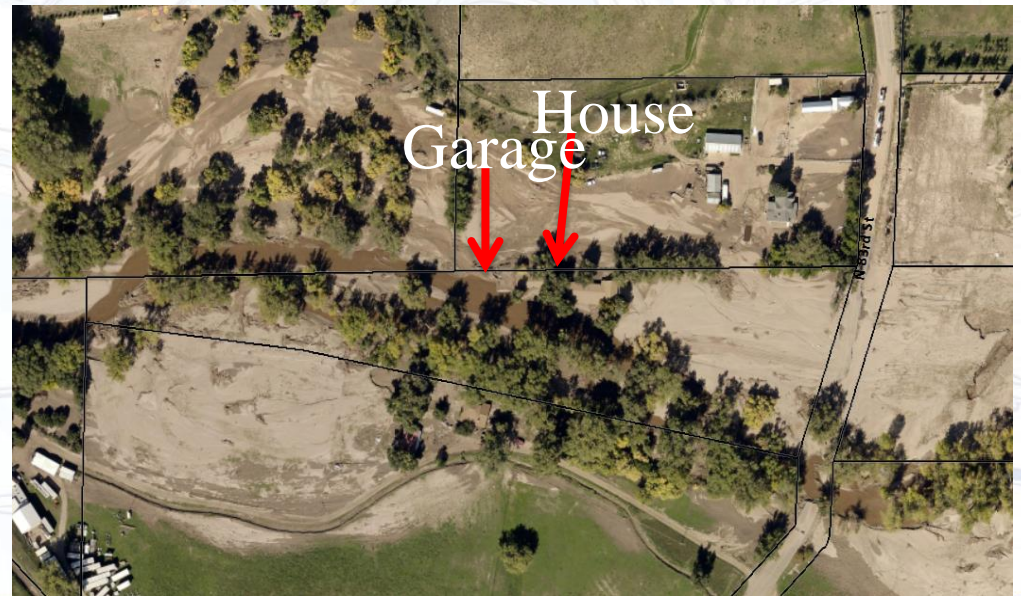
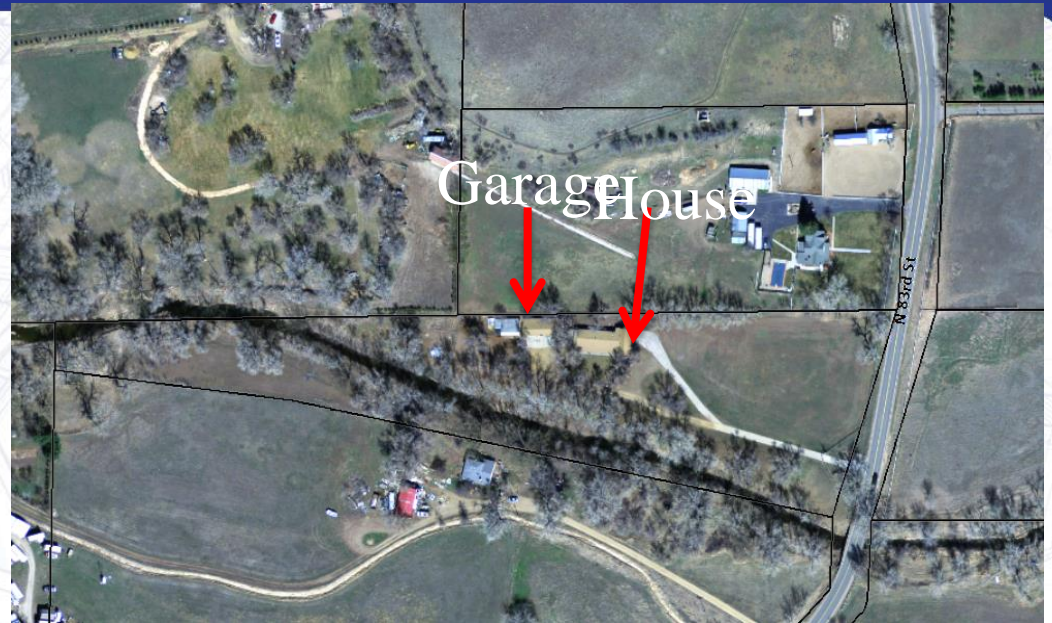


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“Bought home eight years ago...Looking back now Boulder County should have never let anyone build there.”

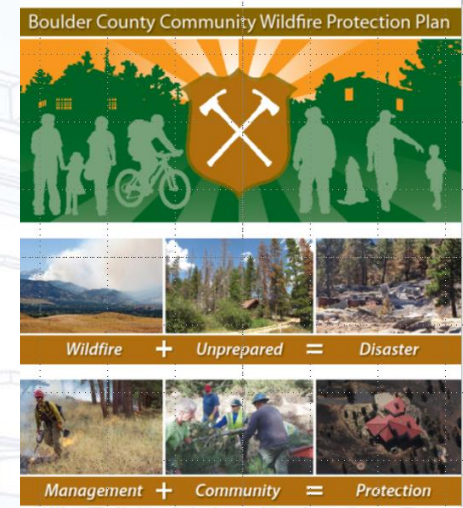
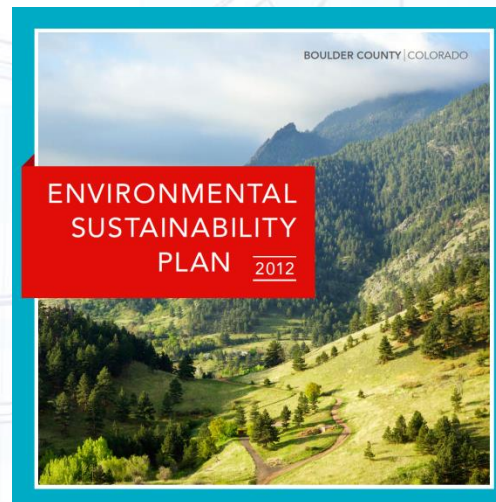
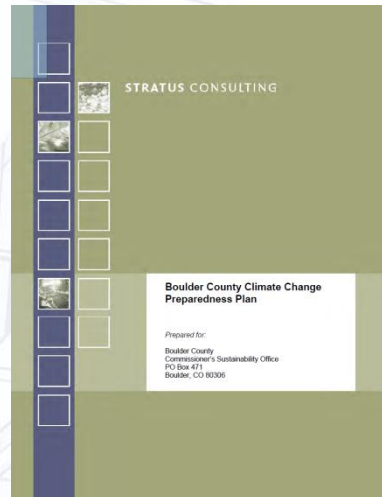
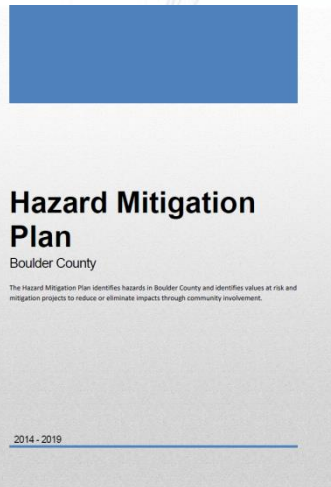
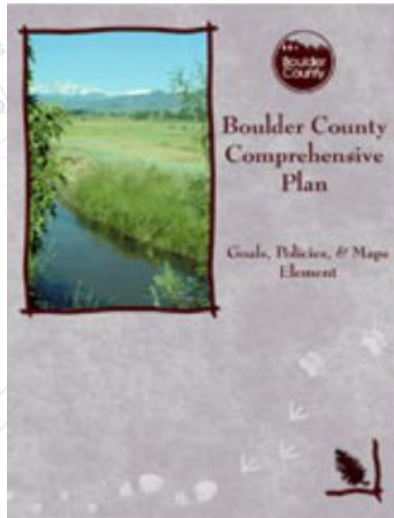
Phil Gatt testimony
to Boulder County
Planning
Commission
10/16/2013



Boulder County



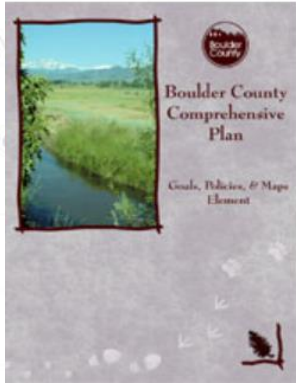
It takes coordination



Boulder County



Boulder County Comprehensive Plan



Goals – Natural Hazards

L.1 Inappropriate development in natural hazard areas should be reduced as much as possible or eliminated in order to minimize potential harm to life, health and property.



L.2 Efforts to mitigate existing areas at risk to the impacts of natural hazards and disasters should be made to minimize the potential for harm to life, health, and property.

Boulder County



BCCP – A couple of general policies

NH 1.03 The county should ensure to the extent possible that land use activities do not aggravate, accelerate, or increase the level of risk from natural hazards.

NH 1.04 The level of risk from natural hazards should be reduced through positive county action such as guiding development away from areas prone to natural disturbances, mitigating existing development from hazards, and considering the impact on ability to provide emergency services.



Plans – Hazard Specific Land Use Policies

- Erosion
- Flooding
- Wildfire
- Radiation
- Seismicity
- Extreme Weather Conditions

Erosion

- NH 3.01 Erosion from development and other land use activities should be minimized, and disturbed or exposed areas should be promptly restored to a stable, natural, and/or vegetated condition using native plants and natural materials.
- NH 3.02 Drainage from development or any alterations to historic drainage patterns shall not increase erosion either on site or on adjacent properties.

Flooding

- NH 4.01 The county should strongly discourage and strictly control land use development from locating in designated floodplains, as identified in the *Boulder County Zoning Maps*.
- NH 4.02 The county should strongly discourage and strictly control land use development from locating in areas below dams, spillways, and levees that would require the State Engineer to upgrade the classification of these structures.

- NH 4.05 The county should continue to develop and refine the county-wide Pre-Disaster Flood Mitigation Plan.

- NH 4.06 The county will continue to participate and implement the Community Rating System program as part of the National Flood Insurance Program (NFIP).

Wildfire

- NH 5.01 The county recognizes the wildland urban interface as an area particularly at risk to wildland fires or wildfires.
- NH 5.02 Fire should be recognized as a natural and/or human-caused occurrence with certain benefits to the ecosystem. The county should strive towards balancing the natural processes of the ecosystem with development concerns so that residents may co-exist in a fire-dependent ecosystem.
- NH. 5.03 Development/site plan reviews in areas identified to be at risk of wildfires should address site location, building construction and design, landscaping/defensible space/fuel management, access and water availability.

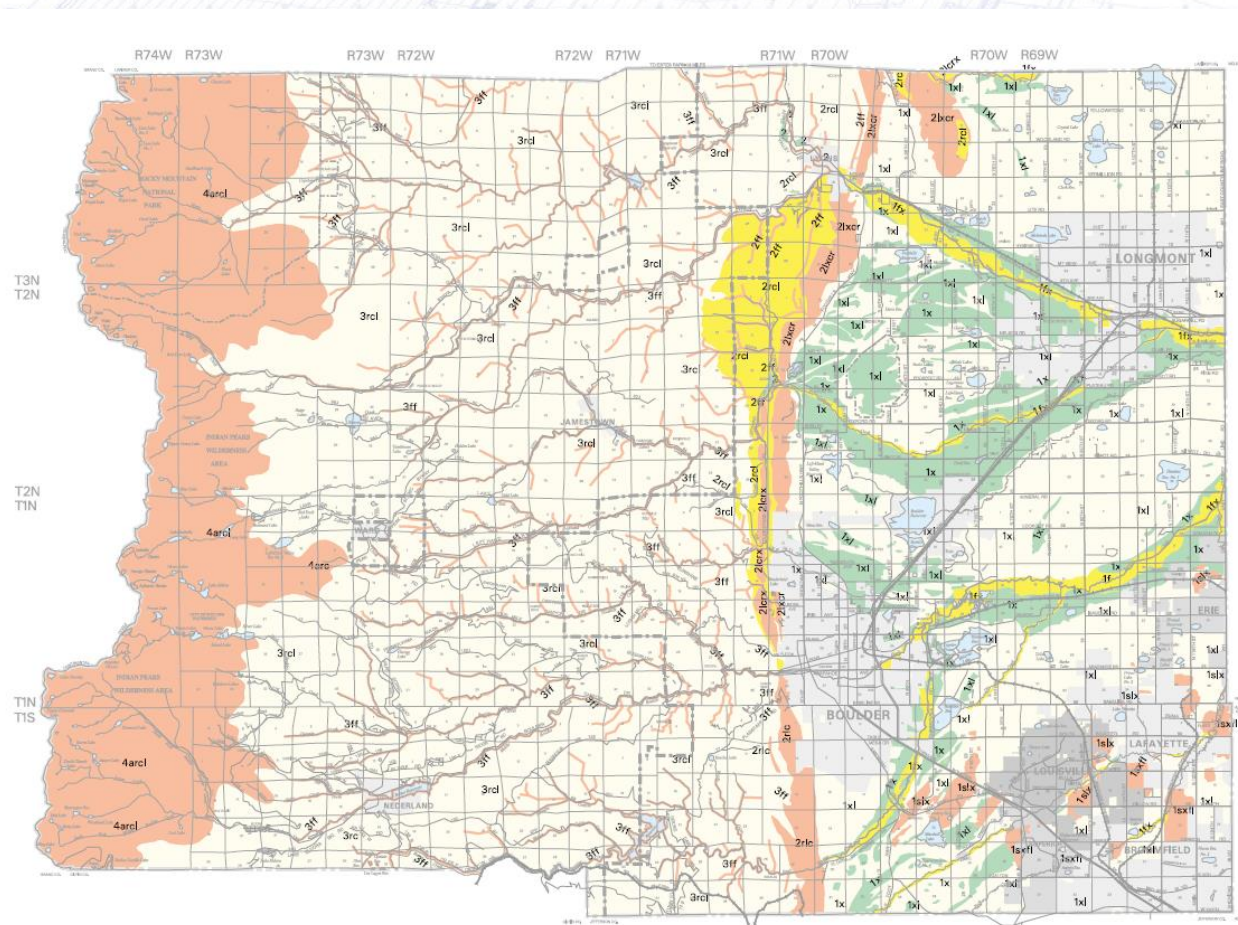
County policies & regulations strongly discourage development in designated floodplains.



BCCP Goals – indirect but just as important to outcome.

- Unique or critical environmental resources identified pursuant to Goals B.1, B.3, B.4 and B.5 shall be conserved and preserved in a manner which assures their protection from adverse impacts, with the private sector, non-county agencies and other governmental jurisdictions being encouraged to participate.
- Environmental Conservation Areas (ECAs) should be conserved and preserved in order to perpetuate those species, biological communities, and ecological processes that function over large geographic areas and require a high degree of naturalness.
- Riparian ecosystems, which are important plant communities, wildlife habitat and movement corridors, shall be protected.
- Future urban development should be located within or adjacent to existing urban areas in order to eliminate sprawl and strip development, to assure the provision of adequate urban services, to preserve agriculture, forestry and open space land uses, and to maximize the utility of funds invested in public facilities and services.





Geologic Hazard & Constraint Areas Geology

Legend

RELATIVE GEOTECHNICAL RATING: GEOLOGIC HAZARD AREAS

- Major**
Extensive Problems
High Risk
- Moderate**
Significant Problems
Provisional Risk
- Minor**
Few Problems
Nominal Risk
- Incorporated Areas**
(As of April 20, 1999)

GEOLOGIC CONSTRAINT AREAS

- Moderate**
Significant Problems
Provisional Risk
- Minor**
Few Problems
Nominal Risk
- Incorporated Areas**
(As of April 20, 1999)

MAP SYMBOL DEFINITIONS

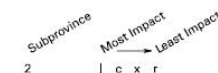
First Number Indicates Subprovince

- 1 Piedmont
- 2 Foothills
- 3 Montane
- 4 Alpine

Subsequent Placed Letters Indicate Geologic Hazard or Constraint In Order of Impact
(See Example Given)

- a Snow Avalanche
- c Soil Creep
- f Flooding
- ff Flash Flooding Corridors and Associated alluvial (Debris) Fans
- l Landslides, Mudslides, Mudfalls, Debris Fans
- r Rockfalls, Rock Avalanches
- s Subsidence (Abandoned Coal Mines)
- x Expansive Soil or Claystone

EXAMPLE:



Notes

Refer to the Colorado Inactive Mine Reclamation Plan completed in February, 1982 by the State of Colorado Department of Natural Resources, Mine Land Reclamation Division, for additional information on sites of environmental hazards resulting from past metal and coal mining activity. (Planning Commission - November 10, 1982, Board of County Commissioners - December 20, 1982).

Map scale and reproduction method (B-1) provided in physical features and boundary line.

PRINTED - APRIL 22, 1999

Revisions

Adopted - Planning Commission - March 22, 1978

Approved - County Commissioners - April 6, 1978



**COMPREHENSIVE
PLAN MAP**



Geologic Hazard & Constraint Areas

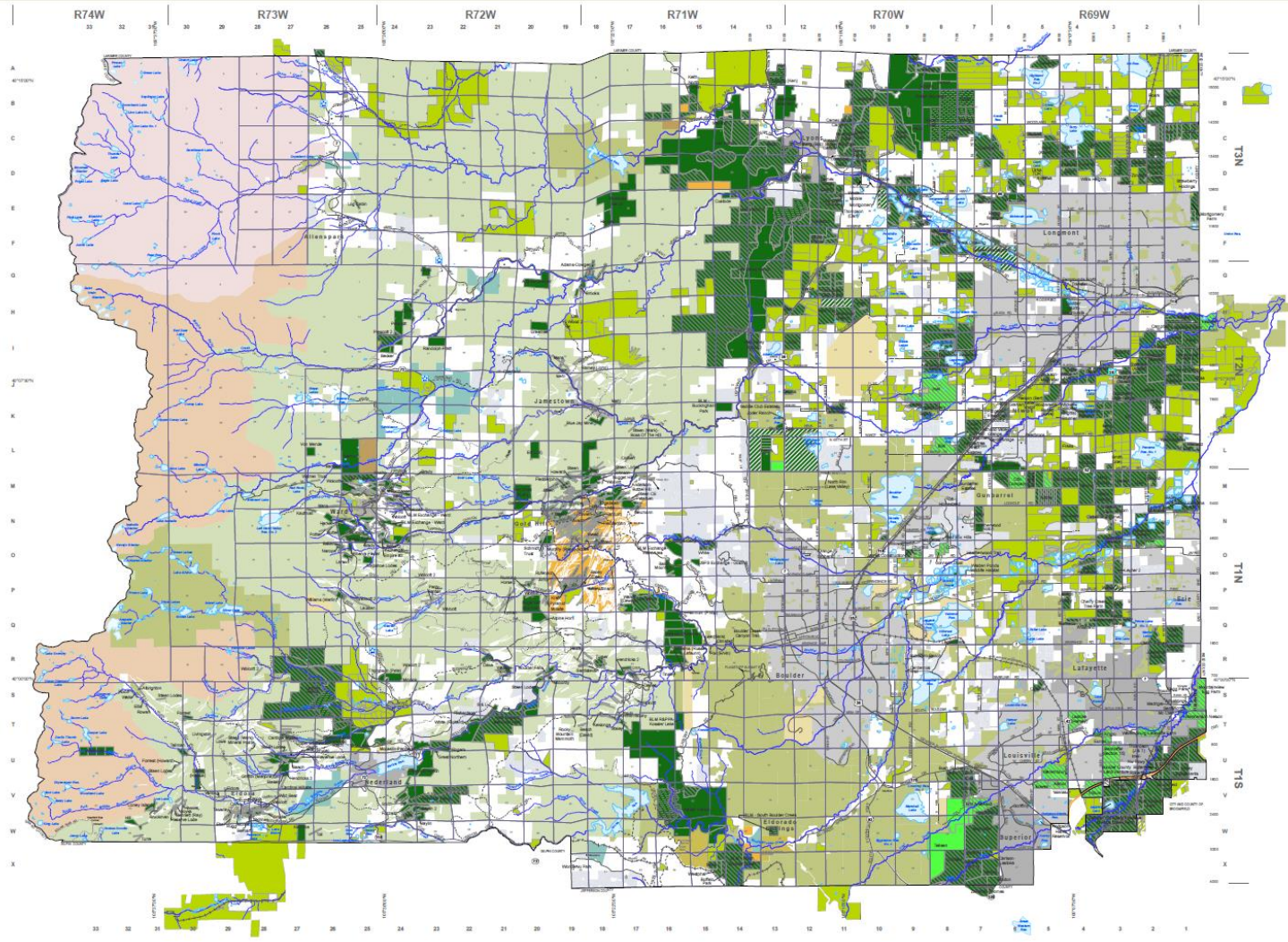
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Open Space in Boulder County



Parks & Open Space



October 2016

- County Open Space
- County Conservation Easement
- Joint County/City Open Space
- County Option Parcels
- County Closed Areas
- County Seasonal and Temporary Closure Areas*

- City Parks and Open Space
- State Land Board
- State Parks
- Indian Peaks Wilderness
- USFS Land
- BLM Land
- Rocky Mountain National Park
- Other Public Lands
- Private Conservation Easements
- Subdivisions or Platted Area
- Incorporated Area

- U.S. / State Highway
- Northwest Parkway
- Collector
- Local Access
- Jeep Trail
- Scenic Byways

*For detailed property names and use details contact Boulder County Parks and Open Space (303.441.4200) or go to www.bouldercounty.gov/parks/open-space



©2016 Boulder County. This map is for informational purposes only and does not constitute a warranty of accuracy. Boulder County Parks and Open Space is not responsible for any errors or omissions. Users are advised to verify all information before using it for any purpose. The map is provided as a service to the public and is not intended to be used for any other purpose.

Boulder County



Tools and Integration

- Plans - Comprehensive Plan, Hazard Mitigation Plan, Watershed Master Plans, CIP, etc.....
- Regulations – Applies to new and upgrades/changes to existing
 - Zoning
 - Subdivision
 - Floodplain
 - Building Code
- Programmatic – Can apply retrospectively to existing development
 - **Wildfire Partners**
 - BOCO Strong
 - **Acquisition Program – Room For the River**
 - Housing
 - Data – Floodplain, debris flow, erosion hazard area
 - Form relationships/ identify grants – State Agencies, FEMA, CDBG-DR, etc.



Plan Implementation – **Regulations** (AKA Hammer)



- Flood Plain Regulations and remapping
- Site Plan Review
- Building Code
- Transfer of Development Credits
- “Article 19” - Post Disaster Regulations



Site Plan Review



1993 – Site Plan Review created. Review & approval of wildfire mitigation plans & inspection of defensible space became part of daily plan review and inspection routine.

Specific Code Criteria-

“The use will not result in unreasonable risk of harm to people or property – both onsite and in the surrounding area – from natural hazards. Development or activity associated with the use must avoid natural hazards, including those on the subject property and those originating off-site with a reasonable likelihood of affecting the subject property. Natural hazards include, without limitation..... all as identified in the Comprehensive Plan Geologic Hazard and Constraint Areas Map or through the Special Review or Limited Impact Special Review process using the best available information. Best available information includes, without limitation, updated topographic or geologic data, Colorado Geologic Survey landslide or earth/debris flow data, interim floodplain mapping data, and creek planning studies.”

Boulder County



Building Code -

1989 – Amended building code to require Class A roofs in Fire Zone 1

2015 – Amended code using portions of the International Wildland-Urban Interface Code (IWUIC), mostly in the area of ignition-resistant construction, without actually adopting the IWUIC

Long term impacts –

- Green /Sustainable Building Code –
- Impacts of Climate Change
- How to be more resilient



Boulder County



Pre Disaster for Post Disaster/ Plan your disaster/ be ready

Article 19



■ ■ ■ Procedures Following Disasters

<https://assets.bouldercounty.org/wp-content/uploads/2017/02/land-use-code-article-19.pdf>

- Moratorium – time to make decisions/enact specific rebuilding regulations
- Temporary Emergency Uses – debris yards, temporary housing, critical response facilities
- Temporary Emergency Repairs temporary emergency repairs” includes temporary roof repairs to prevent further water damage, temporary stabilization to shore up structures, temporary stabilization involving earthwork to avoid imminent collapse of structures or property, and temporary restoration of public recreational facilities such as trails and trailhead parking areas.
- Deconstruction/Demolition – make take immediate action but still need a permit
- Hazard Mitigation Review

Boulder County





Providing Value to Homeowners

- Comprehensive home assessment
- Customized report & “To Do List”
- Phone Advising
- Financial Assistance
- Transferrable Certificate & Recognition



Boulder County





A Public-Private Partnership

- 40+ organizations
- Individual home certification insurers and realtors need
- Local, state and federal government funding
- Spreading in Colorado



Boulder County





Building and
Land Use
Codes

Financial
Assistance

Scientific Standards,
Verification &
Insurability

Significant Risk
Reduction

Raising
Awareness

Taking
Action

Changing
Behavior

Connecting
Neighbors

Creating
Resilient
Communities

On-site
Technical
Assistance

A Customized
Plan for Every
Home

Long-term
Commitment

New Social
Norms and
Homeowner
Ethic

Wildfire Partners is a comprehensive approach to mitigation and community empowerment.

Boulder County



Jim Webster, Wildfire Partners Program Coordinator

jbwebster@bouldercounty.org

[Program Website: www.WildfirePartners.org](http://www.WildfirePartners.org)



Boulder County



Room for the River

Mitigations Strategies

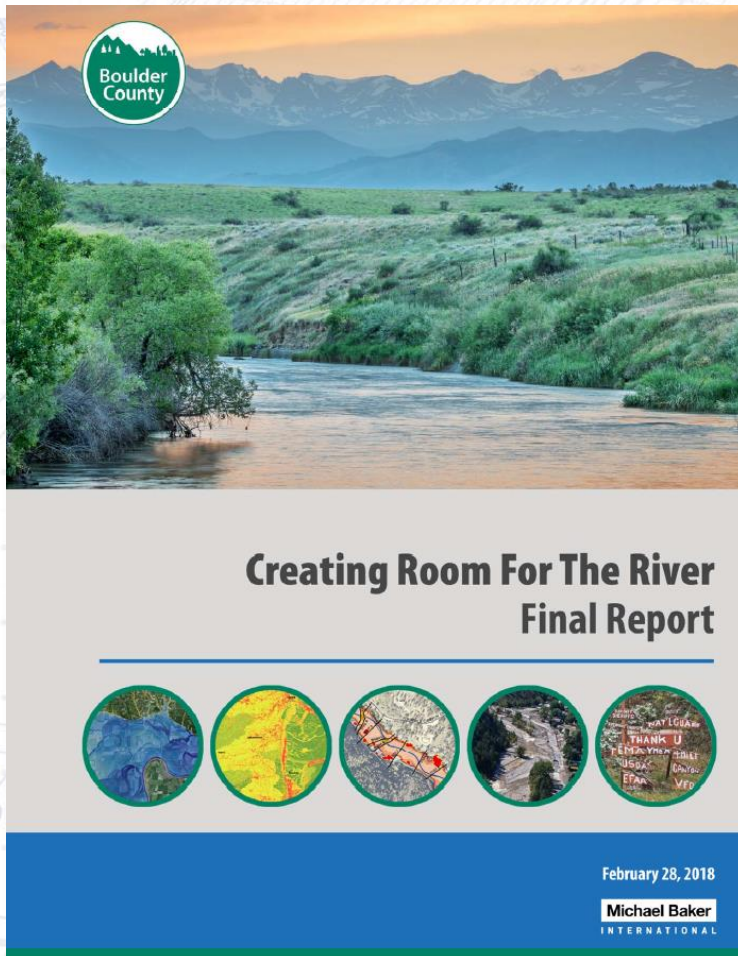
Strategy 1: Minor and infrastructure-related flood mitigation projects

Strategy 2: Structure Elevation/Relocation/Mitigation Reconstruction

Strategy 3: Deed Restrictions/Conservation Easement

Strategy 4: Property Acquisition

Strategy 5: Integrating river-related hazard mitigation with existing plans and policies.



Boulder County



Room for the River

3,000+

Number of existing
structures in known flood-
prone areas throughout
the county

900+

Number of structure
footprints within the
county's Regulatory
Floodway

Parcels with at least 1 structure impacted by
5+ hazards: 4+ hazards: 3+ hazards:

6

61

361

Structures in the Floodway with
room to relocate:

106

Structures outside of Floodway
that could elevate:

1,212

Boulder County





PLANNING FOR HAZARDS

Land Use Solutions for Colorado

Boulder County



CONTENT:

- Introduction and Summary
- Planning Framework
- Hazard Identification and Risk Assessment
- Planning Tools and Strategies
 - **Model Code Language**
- Moving Forward
- Appendix – Hazards in Colorado

www.PlanningforHazards.com



PLANNING FOR HAZARDS
Land Use Solutions for Colorado

MARCH 2016

Boulder County



With the history of disasters this should all be easy?

“...a great disparity temporal disparity between the pace at which the mountains behave and the way people think. Debris flows do not occur every possible season... Exceptional flows are frequent, in other words, but not frequent enough to deter people from building pantiled mansions in the war zone, dingbats in the line of fire.”

p. 203 The Control of Nature by John McPhee, 1989

It's a fantastic place to be in a storm...You hear a sound like castanets— boulders clicking together. They're not pebbles. And there is a scent which is absolutely heavenly, of the crushed chaparral plants. It's so fragrant and beautiful it's eerie to have it associated with something so terrifying. And, God knows it is terrifying.” -- so why do you live here?

“Freedom”

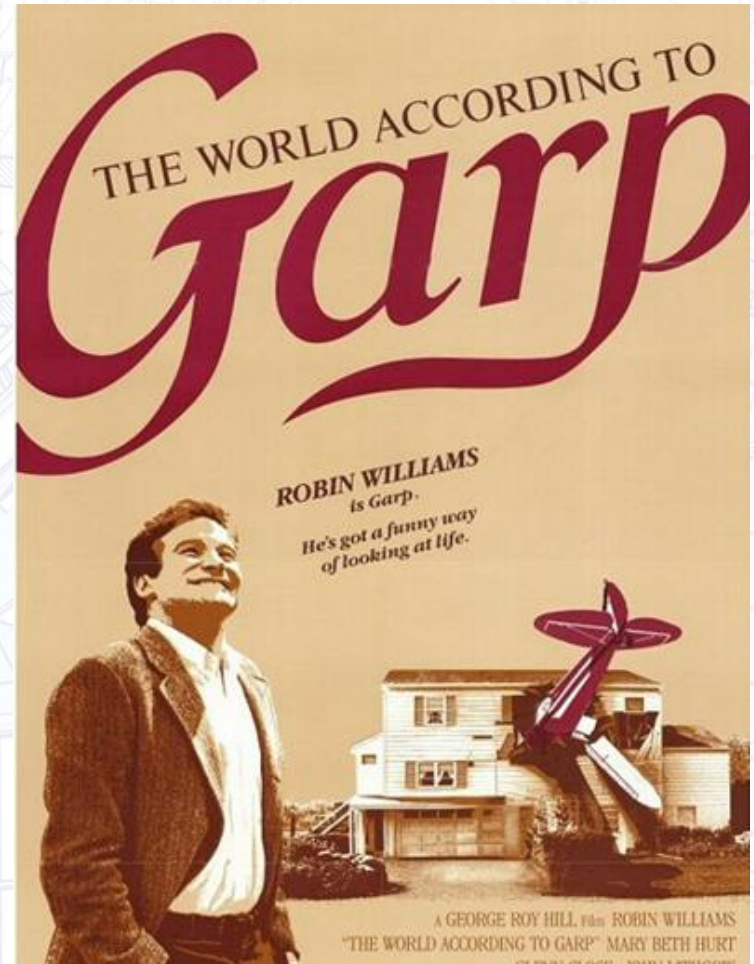
p. 237 The Control of Nature by John McPhee, 1989

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Garp Mentality

“will take it.... The odds of this happening again are astronomical. She’s been pre-disastered, we will be safe here”



Boulder County





Counties Role in Flood Risk Reduction

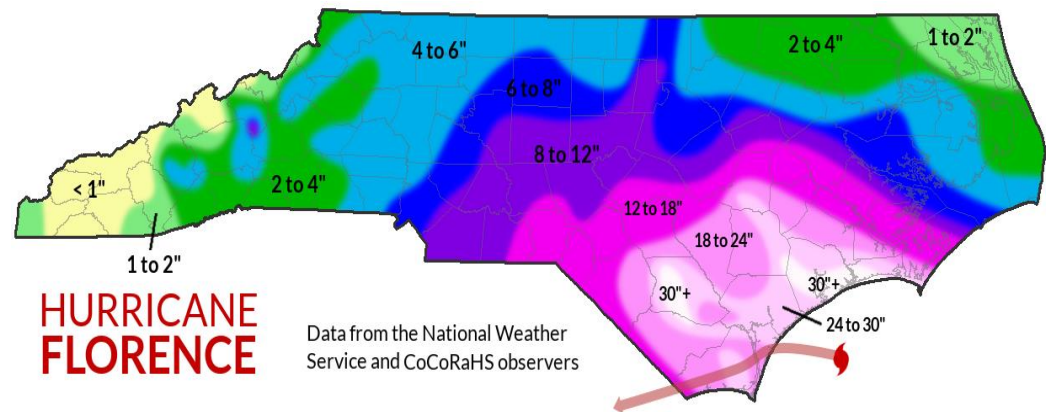


March 4, 2019

Flood Disasters



- Cost of flooding: In 2019 alone?
- US: 3 costliest worldwide
- Federal investment?
- Your County after an huge storm/rainfall?



Flood Resiliency



FLOOD RISK MANAGEMENT Buying Down Risk

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

Initial Risk

Insurance

Building Codes

Zoning

Levee

Contingency/Response Plans

Outreach

Residual Risk

**Risk Reduction Actions
(Cumulative)**

The ability to overcome a situation of crisis
No singular action will eliminate Flood Risk!

Leading the way



Partnerships in Resiliency



**Local Governments & Community
drive risk  or **

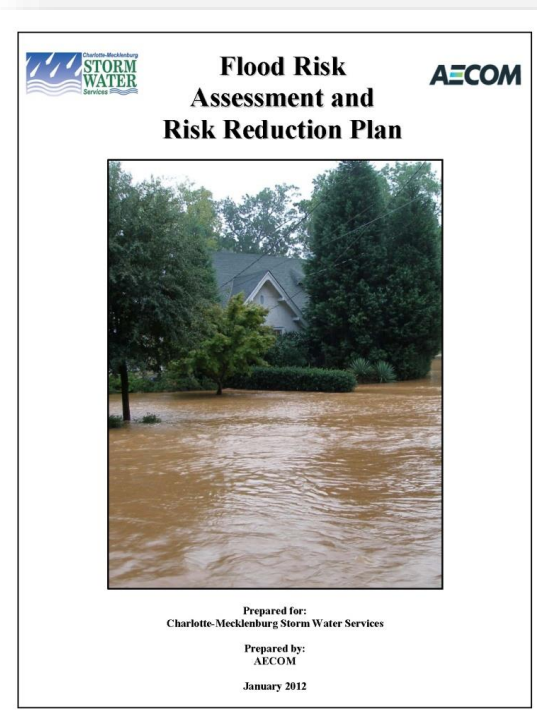
- Guide land use
- Visioning & Planning
- Regulations
- Infrastructure



PARTNERSHIPS

Planning for Hazards

1. Communication & stakeholders involvement
2. Floodplain vision
3. Quality datasets
4. Gaining conscientious on important problems





Floodplain Maps & Data

- Pioneered Future Floodplains

- Purpose:

Provide an accurate prediction that protects property owners, infrastructure and the environment; providing confidence that building above or outside the floodplain is reasonably safe from future flooding.

- Reduce YOUR Future Hazards



Flood Mitigation



20 Year Journey

- Get em' up or get em' out!
- 40% of flood risk reduced



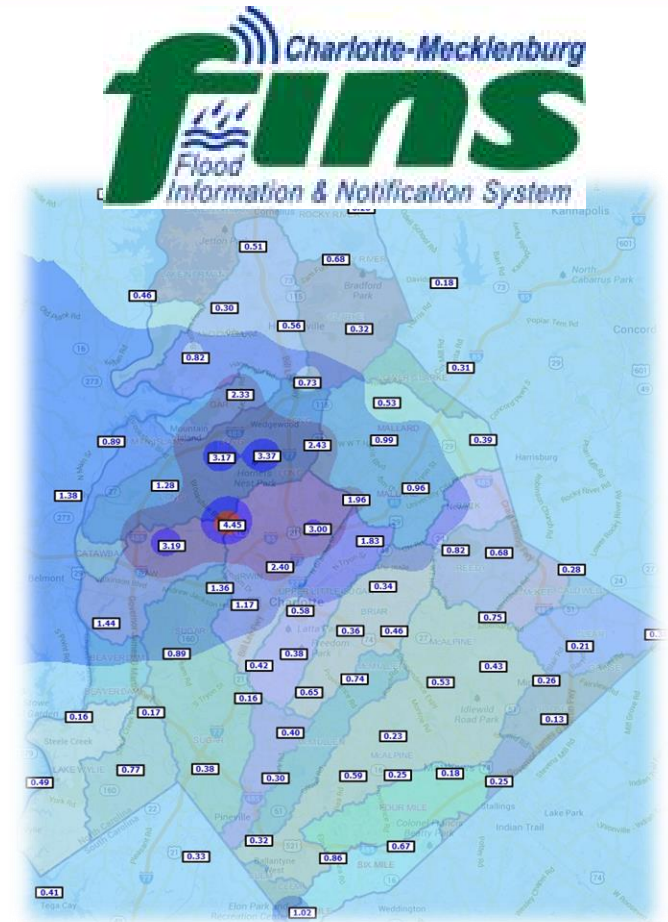
Apartments



Flood Sensors



- Char-Meck story
- Smoke Detectors in Creeks
- 911 vs Advance Notification
- Partnerships (USGS, Charlotte Fire, DHS)





What Can YOU Do Differently to Make Your County Safer?

- 1. Have a vision**
- 2. Build higher and smarter**
- 3. Invest in information/data**
- 4. Look to the FUTURE**