



Best Practice for Transformative Mitigation Projects

Webinar

20 November 3:00 - 4:30 EST

Presenters

HUD

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Enterprise Community Partners

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Senior Advisor, Resilience
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Transformative Mitigation Webinar Agenda

- Transformative Mitigation Webinar Objectives
- The Concept of Transformative Mitigation
- How Mitigation can be Transformative in CDBG-MIT
- Planning Elements
- Government Mitigation Planning Mechanisms
- Collateral Benefits through Partnerships
- Putting it All Together: Cases of Mitigation Best Practice
- Additional Resources



Transformative Mitigation Webinar Objectives

- What characterizes transformative mitigation planning
- Mitigation planning elements, including government mechanisms
- How partnerships magnify mitigation benefits
- How to practice mitigation and the means to drive transformation
- Approaches and resources for protecting LMI and vulnerable populations through mitigation planning and implementation
- Useful resources for mitigation implementation

“Instead of repeated damage and continual demands for federal disaster assistance, resilient communities proactively protect themselves against hazards, build self-sufficiency, and become more sustainable.” (Godschalk et al., 2009)



How Mitigation Can Be Transformative & Relation to CDBG-MIT



What is Mitigation?

- For the purposes of CDBG-MIT, mitigation activities are defined as those activities that increase resilience to disasters and:
 - reduce or eliminate the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship
 - by lessening the impact of future disasters



HUD's Goals with CDBG-MIT

- Support data-informed investments
- Build capacity
- Support the adoption of policies that have long-lasting effects on community risk reduction
- Maximize the impact of funds by encouraging partnerships and coordination



Transformative Mitigation Concept

Mitigation supports these goals as it:

- Saves money by investing in resilience and preparation
- Saves trauma, reducing risks to communities and thus saving lives and improving livelihoods
- Contributes to transforming American communities to be stronger, safer, more secure



All CDBG-MIT Activities MUST

1. Meet the definition of mitigation;
2. Address current and future risks identified in the Mitigation Needs Assessment of MID areas;
3. Be CDBG-eligible activities; and
4. Meet a national objective, including additional criteria for mitigation activities and Covered Projects.

Grantees must describe how funded programs satisfy these requirements.



In Context: CDBG-MIT Requirements

Criteria to Meet a National Objective

- Demonstrate the ability to operate for the useful life of the project.
- Be consistent with other mitigation activities.

Mitigation Needs Assessment developed through the Community Lifelines

- Safety and Security
- Communications
- Food, Water, Sheltering
- Transportation
- Health and Medical
- Hazardous Material (Management)
- Energy (Power & Fuel)



Planning Elements



What Characterizes Mitigation Planning?

- Identifies Cost-Effective Actions for Risk Reduction
- Focuses Resources on the Greatest Risks and Vulnerabilities (LMI)
- Adjusts to Changing Risks
- Aligns Risk Reduction with Other Community Objectives
- Improves with Partnerships



Compared to Business as Usual, Mitigation Avoids Costs

National Benefit-Cost Ratio Per Peril <small>*BCR numbers in this study have been rounded</small>		Exceed common code requirements	Meet common code requirements	Utilities and transportation	Federally funded
Overall Hazard Benefit-Cost Ratio		4:1	11:1	4:1	6:1
 Riverine Flood		5:1	6:1	8:1	7:1
 Hurricane Surge		7:1	Not applicable	Not applicable	Too few grants
 Wind		5:1	10:1	7:1	5:1
 Earthquake		4:1	12:1	3:1	3:1
 Wildland-Urban Interface Fire		4:1	Not applicable	Not applicable	3:1

- Overall Hazard Benefit Cost Ratio as High as 11:1

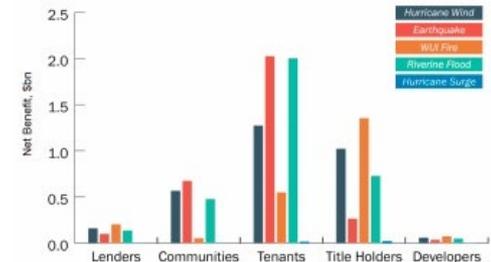


Figure 1. Stakeholder net benefits resulting from one year of constructing all new buildings to exceed select 2015 IBC and IRC requirements or to comply with 2015 IWUIC.



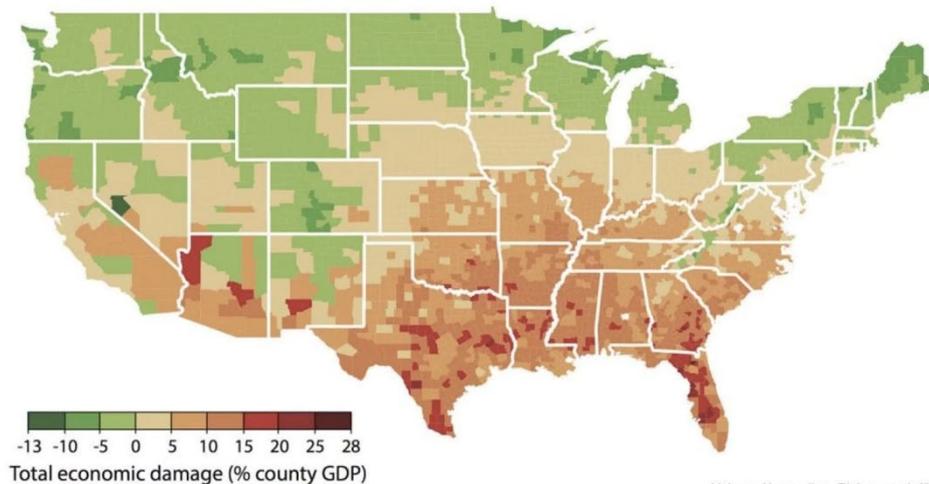
FEMA Benefit Cost Assessment Toolkit

- Covered Project Requirement
- Demonstrate Long-Term Efficacy and Fiscal Sustainability
- Benefits: Avoided Future Costs or Losses
- Secondary Benefit NOT included in FEMA BCA (economic development; social/community benefit)
- Require Risk Investigation and Forward Projections for Useful Life
- Measure Benefits Against Cost of Project = Ratio Greater than 1



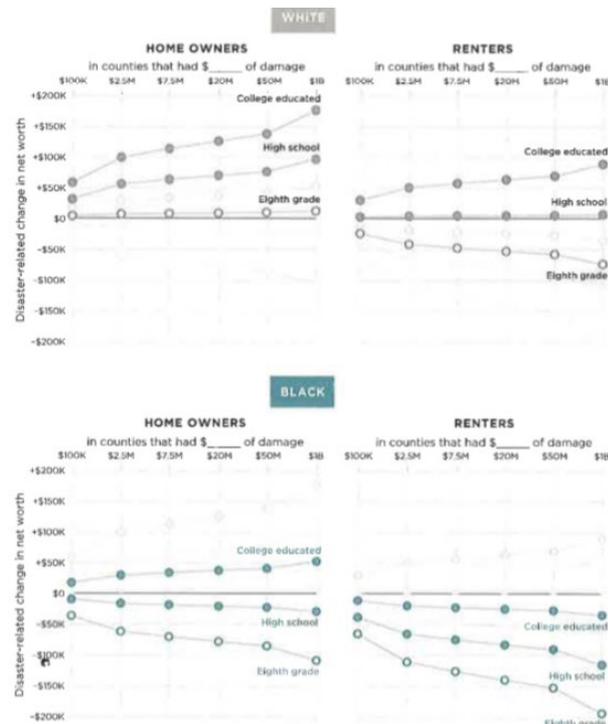
Given Disproportionate Impacts, Mitigation Considers Most Vulnerable

- Preserve and protect most vulnerable populations
- Each consideration must include LMI livelihoods
- Resettlement is a local issue that must be balanced with preserving affordable housing
- Poorest 1/3 of U.S. counties sustain greater economic hardship from hurricanes, rising sea levels & high temperatures



Currently, Rich Richer, Poor Poorer Post Disaster

- As Disaster Costs Rise, so Does Inequity
<https://journals.sagepub.com/doi/abs/10.1177/2378023118816795>
- Target Mitigation on Communities Disproportionately Impacted
- *"When a Covered Project serves LMI persons or other persons that are less able to mitigate risks or respond to and recover from disasters, CDBG-MIT grantees may demonstrate that benefits outweigh costs if the grantee completes a BCA (which may be less than one), IF they can also include a qualitative description of benefits."*



SOURCE: "AS DISASTER COSTS RISE, SO DOES INEQUALITY," SOCIUS (2018)



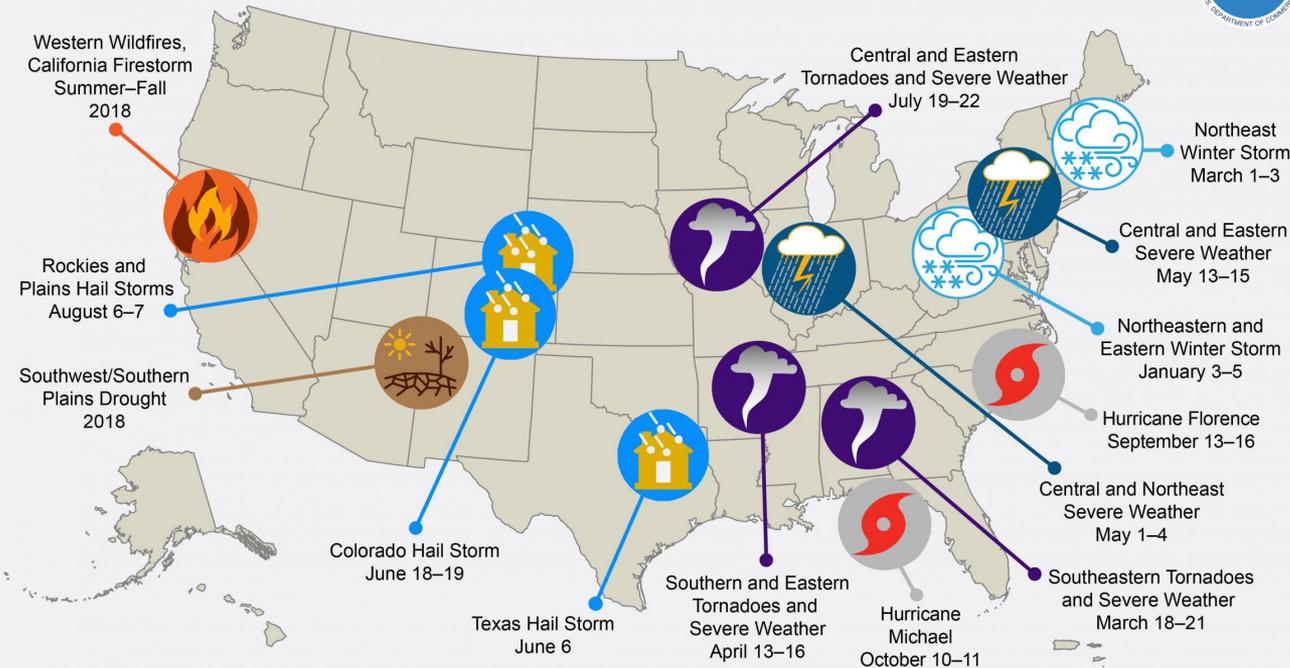
Given Changing Risks, Mitigation is Flexible



- Green Infrastructure is Designed to Change Over Time
- Nature Based Solutions
- Prioritize Communities, Water and Air Quality, Resilience, Habitats
- Mix Concrete and Steel “Grey” Solutions with Green Solutions



U.S. 2018 Billion-Dollar Weather and Climate Disasters



This map denotes the approximate location for each of the 14 separate billion-dollar weather and climate disasters that impacted the United States during 2018.

- Hail
- Wildfire
- River Flood
- Coastal Flood
- Wind
- Hurricane
- Tornado
- Severe Weather
- Winter Storm
- Drought
- Heat
- Earthquake



To Maximize Impact, Mitigation Aligns with Community Priorities



- Integrative Design Builds Resilience
- Economic development, Open Space, Public Safety, Civic Engagement
- Grasstops and Grassroots Converge in Best Case Mitigation
- Community participation
- Citizen Advisory Groups
- Building Community Resilience Webinar



Government Mitigation Planning Mechanisms



How Do We Practice Mitigation

- Land use & urban planning
- Licensing & regulation
- Leadership & awareness
- Community engagement & service delivery
- Operations & workforce



What are the Drivers?

You could seek help with:

- Assessing risks
- Facilitating meetings and outreach strategies
- Creating plan documents
- Understanding legal frameworks

You could seek help from:

- Regional planning agencies
- Universities
- State or FEMA Region



Encourage Implementation of Additional Resilience

- Technical Coordinating Committee
 - Interagency body to coordinate federal, state, and local regulatory agencies and other decisionmakers
- Partnerships that magnify collateral benefits (see following slides)



Collateral Benefits through Partnerships



How do Partnerships Magnify MIT Benefits?

- Improve communication/coordination
- Enable comprehensive mitigation approaches
- Maximize economies of scale
- Avoid duplication of efforts
- Provide supportive organizational structure
- Achieve related goals e.g. stronger infrastructure, equitable, employment, economic development
- Accomplish near term and long-term goals



Create Recipient Department Collaboration



- Revenue generating local government departments and agencies share mitigation goals and can complement and serve CDBG-MIT goals
- Agencies that focus on each of the CDBG-MIT categories can be considered as a source for additional resources



Create Public Private Partnerships

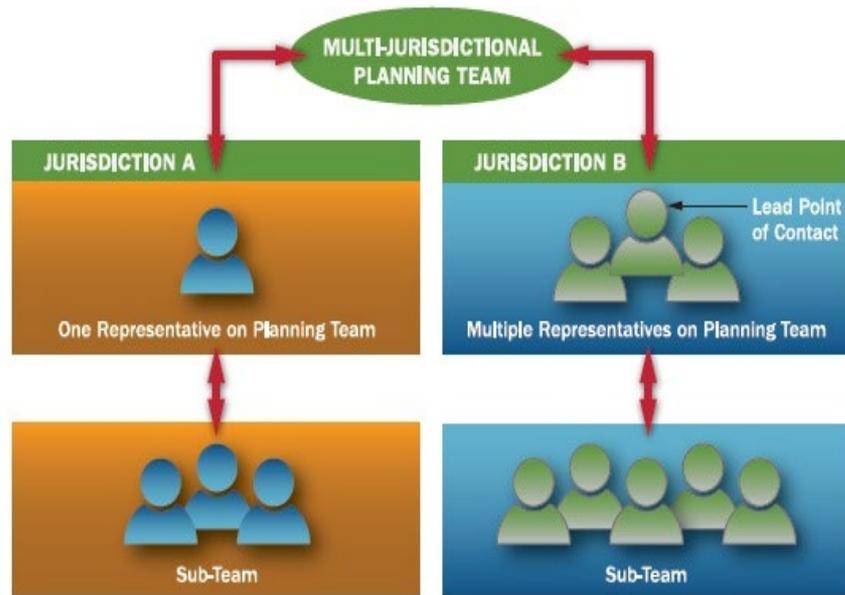


- Public private partnerships solve multiple challenges
- The award-winning National Resilient Disaster Competition illustrated the power of federal/philanthropic/nonprofit/private partnerships



Contribute to Regional Cooperation

- Achieve shared goals
- Drive efficiencies
- Address cross-jurisdictional hazards
- Serve regional housing/employment needs



Putting it All Together: Cases of Mitigation Best Practice

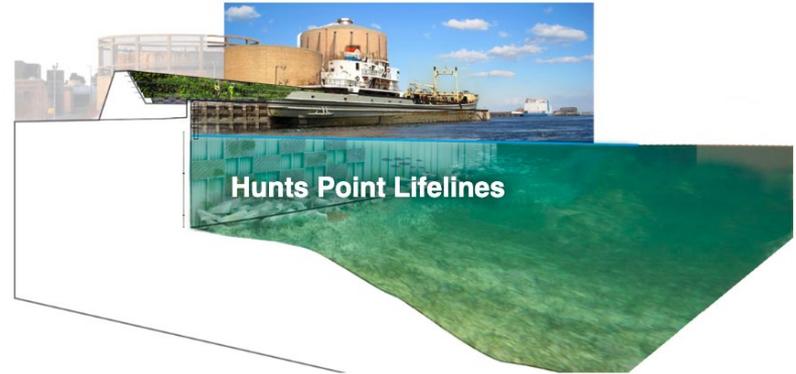


New York City Rebuild by Design for Working Waterfront

- NYC Mayor's Office of Recovery and Resiliency, Economic Development Corporation in partnership with designers
- *Flood Protection "Levee Lab"*: keeps a modernizing food hub integrated with a waterfront greenway for recreation, bringing access to waterfront
- *Livelihoods*: New techniques for construction, maintenance, and research through resident jobs
- *Maritime Emergency Supply Lines*: New pier infrastructure on the site of a marine transfer station for modal shift to marine from roadway.
- *Cleanways*: A tri-generation plant could create cooling and a micro-grid island in an emergency when the City's main grid goes down

<http://www.rebuildbydesign.org/our-work/all-proposals/winning-projects/hunts-point-lifelines>

REBUILD BY DESIGN



Iowa – Flood Resilient Infrastructure & Housing

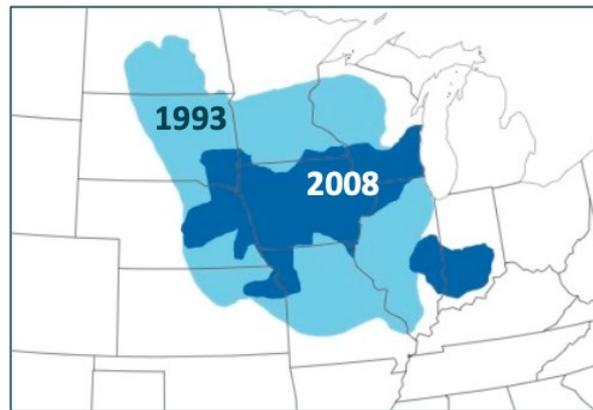
1993

- \$38.7 million CDBG-DR to State
- \$15.8 million direct to 8 Entitlement Cities
- Restore and replace damaged facilities

2008

- \$890.8 million
- Buyouts, Infrastructure Improvements, Housing

<https://files.hudexchange.info/resources/documents/CDBG-DR-Mitigation-Resilience-Slides-2018.pdf> [files.hudexchange.info]



Community Needs & Housing Recovery Solutions

What lowans said they needed post-flood:

- **Buyout programs** for flooded neighborhoods
- **Green space** in floodplains
- **Affordable housing** replacement
- **Green development** infiltrates rainwater
- **Job retention** business recovery, growth



Housing Recovery Solutions

- New housing production
- Repair & rehabilitation
- Rental rehabilitation
- Homebuyer assistance
- Interim mortgage assistance
- Lead Paint Abatement Training
- Historic Preservation Planning Grants

<https://files.hudexchange.info/resources/documents/CDBG-DR-Mitigation-Resilience-Slides-2018.pdf> [files.hudexchange.info]



Iowa Infrastructure Recovery and Mitigation+

HUD Funds for Recovery

- 94% funded projects that FEMA did not
- 81% funded storm and sanitary sewers and flood drainage -levees, stormwater detention, pumping stations



CDBG Funded these Additional Mitigation activities

- **Floodplain mapping** land use plans; flood insurance
- **Floodplain education** land use decision-making
- **Planning grants** reduce development
- **Flood insurance promotion** reduce uninsured
- **Sustainable building training** resilient new construction
- **Watershed Planning** management systems
- **Iowa Watershed Project** 150 small projects

<https://files.hudexchange.info/resources/documents/CDBG-DR-Mitigation-Resilience-Slides-2018.pdf> [files.hudexchange.info]



Norfolk Public Housing/Sea Level Rise Mitigation

- The Coastal Community of the Future
- Opportunity Zones, USACE, HUD, Private
- Combine Coastal Sea Level Rise and Public Housing
- Create economic opportunity by advancing efforts to grow existing and new industry sectors
- Advance initiatives to connect communities, deconcentrate poverty, and strengthen neighborhoods



New Jersey Transit Microgrid

- Provide a resilient energy supply for reliable power during storms.
- Incorporate distributed energy, renewable energy, to provide resilient power to key NJ TRANSIT stations, maintenance facilities, bus garages, and other buildings.
- Partnership between NJ Transit, the New Jersey Board of Public Utilities, the U.S. Department of Energy, Federal Transit Administration

<https://njtransitresilienceprogram.com/nj-transitgrid-overview/>



Anchorage Seismic Resilient Highrise

- 20 floors constructed to move around steel core
- Outside walls supported by concrete and steel columns
- Built to withstand 9.0 magnitude earthquake
- Natural gas valve shut off via shake sensor
- FEMA grant funded

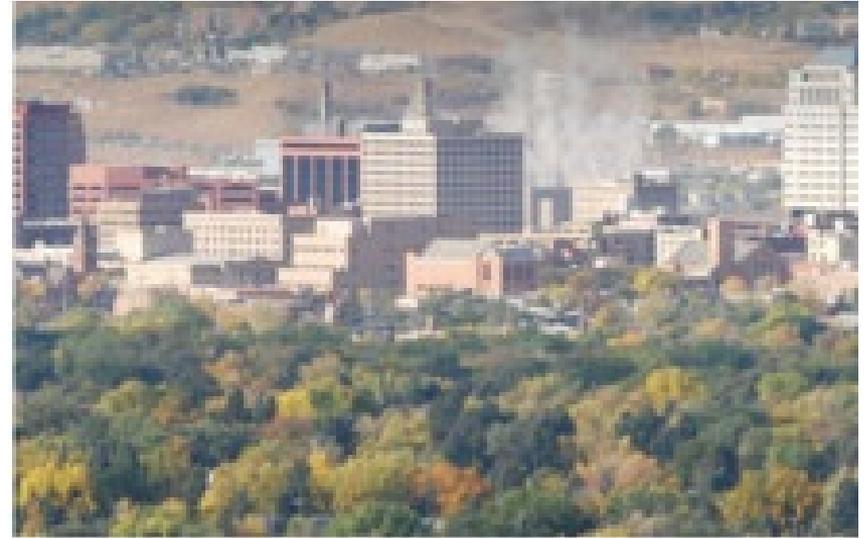


<https://www.facebook.com/readygov/videos/earthquake-mitigation-successes-the-atwood-building/2279666575695388/>



Colorado Springs Wildfire Mitigation

- Stronger building and fire codes
- Community engagement
- Shared responsibility for ignition resistant structures
- Wildfire mitigation plan
- City, Fire Department, Housing Association Partnerships



<https://www.youtube.com/watch?v=liyA-PEIzVI> [lnks.gd].



Alaskan Coastal Community Relocation

- \$3.2M Hazard Mitigation Grant Support
- Gravel building pads
- Home acquisition and demolition
- Partners US Military, Bureau of Indian Affairs, Denali Commission fund new townsite, new roads, new homes

https://www.youtube.com/watch?v=gcTus97OTp4&feature=youtu.be&fbclid=IwAR0ZIKeMGE9ynBR7MM00xYQ5_D1_-4wWO-9vG4QtDRi9-Uzg5DC6z2KbW6w



LASAFE Community Engagement Creates Mitigation Shift: Levees to Mental Health Facility

Shift in Community Priorities:

From

- Physical barriers to river and ocean water

To

- Boats Safe Harbor
- Mental Health Facility



New Orleans: Resilience District Stormwater Mitigation & Cultural Amenity

- Formed through the City of New Orleans' application to HUD's National Disaster Resilience Competition
- NOLA awarded \$141 million to create the district and invest in projects that increase social well-being, build better infrastructure, and support neighborhood cultural initiatives
- Collateral benefits: 25-acre site of a former convent to store up to 10 million gallons of stormwater while also serving as a space for recreation and environmental learning



Illustrative Building Retrofit Flood Mitigation Tactics



- Elevation
- Wet Flood Proofing
- Perimeter Flood Proofing
- Elevation of Mechanicals



Market Sees Resilience Trade offs

- *“But even these more prosperous cities may face questions of equity when deciding how to allocate limited resources. For example, should cities invest to **strengthen flood defenses in their business districts**, or should they **upgrade public housing in flood-prone areas**?”*
- *“Over both the medium and long term, people and economic activity may **move to better-positioned cities** where higher population densities and greater economic activity make climate defense more feasible.*
- *This can create a vicious cycle for the “sending” cities: as **populations shrink and economic activity declines**, financing climate-change defenses may become all the more difficult, **accelerating the decline of these more vulnerable areas**. And while the “receiving” cities could stand to benefit from greater economic activity, **inward migration brings its own political, economic and social challenges.**”*



Additional Resources

- American Planning Association Hazard Mitigation: Integrating Best Practice into Planning, https://www.fema.gov/media-library-data/20130726-1739-25045-4373/pas_560_final.pdf
- Enterprise Keep Safe, <https://www.enterprisecommunity.org/solutions-and-innovation/disaster-recovery-and-rebuilding/keepsafe>
- Enterprise Resilient Community Hubs
https://www.enterprisecommunity.org/sites/default/files/media-library/solutions-and-innovation/recovery-rebuilding/Resilient-Community-Hubs-Guide_ENGLISH.pdf
- Enterprise, Safer and Stronger Cities: Strategies for Advocating for Federal Resilience Policy
<https://www.enterprisecommunity.org/resources/safer-and-stronger-cities-strategies-advocating-federal-resilience-policy-6436>
- Enterprise Strategies for Multifamily Building Resilience,
<https://www.enterprisecommunity.org/resources/ready-respond-strategies-multifamily-building-resilience-13356>



Additional Resources

- EPA Green Infrastructure Website: <https://www.epa.gov/green-infrastructure>
- FEMA BCA webpage: <https://www.fema.gov/benefit-cost-analysis>
- Goldman Sachs, Taking the Heat, Making Cities Resilient to Climate Change, <http://www.goldmansachs.com/insights/pages/making-cities-resilient-to-climate-change.html>
- HUD: Iowa and other Mitigation best practice: <https://files.hudexchange.info/resources/documents/CDBG-DR-Mitigation-Resilience-Slides-2018.pdf> [files.hudexchange.info]
- Innovation Network For Communities: How Cities are Paying for Climate Resilience: <http://lifeaftercarbon.net/2019/07/new-inc-report-playbook-1-0-how-cities-are-paying-for-climate-resilience/>
- National Hazard Mitigation Association Best Practice <http://nhma.info/resources/best-practices/>
- New York City Climate Resiliency Design Guidelines, https://www1.nyc.gov/assets/orr/pdf/NYC_Climate_Resiliency_Design_Guidelines_v3-0.pdf
- Rebuild by Design Rebuilding with Resilience <https://www.georgetownclimate.org/reports/rebuilding-with-resilience-lessons-from-the-rebuild-by-design-competition-after-hurricane-sandy.html>
- Southeast Florida Regional Climate Compact: <http://southeastfloridaclimatecompact.org/>



CDBG-MIT Webinar Series

Past Webinars:

- CDBG-MIT Federal Register Notice (September 3, 2019)
<https://www.hudexchange.info/trainings/courses/cdbg-mit-federal-register-notice-webinar/>
- Conducting a Mitigation Needs Assessment for CDBG-MIT (October 10, 2019)
<https://www.hudexchange.info/trainings/courses/conducting-a-mitigation-needs-assessment-for-cdbg-mit-webinar/>
- Public Participation & Citizen Action Group - Requirements & Best Practices (October 30, 2019)
<https://www.hudexchange.info/trainings/courses/cdbg-mit-webinar-public-participation-citizen-action-group-requirements-best-practices/>
- Buyout Program Guidance and Best Practices (November 7, 2019)
Materials being posted shortly
- Using FEMA's Benefit Cost Analysis (BCA) Toolkit (November 14, 2019)
Materials being posted shortly



Questions?

