Climate Resilient Mitigation Activities & Mitigation Planning

EPA Partners Meeting
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Hazard Mitigation Assistance

- **Hazard mitigation is any sustained action taken to reduce or eliminate long-term risk to human life and property from natural hazards.**

- **Examples of mitigation actions**
  - Soil stabilization
  - Seismic Retrofit
  - Minor Localized Flood Reduction
  - Tornado Safe Rooms
  - Floodproofing
  - Structure Elevation
  - Acquisition/Demolition
  - Acquisition/Relocation
  - Ignition Resistant Construction

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Hazard Mitigation Assistance

- **Hazard Mitigation Grant Program**
  - Post-disaster funding to provide opportunities to incorporate mitigation actions during recovery
  - HMGP funds mitigation projects and plans that address all natural hazards
  - Funds available following a Presidential major disaster declaration

- **Pre-Disaster Mitigation**
  - National competitive grant program to reduce overall risk to people and property from future hazard events
  - PDM funds mitigation projects and plans that address all natural hazards
  - Funded by annual appropriation

- **Flood Mitigation Assistance**
  - To reduce or eliminate claims made under the NFIP through mitigation or planning for flood hazard
  - Can only be used for flood mitigation or flood portion of hazard mitigation plan
  - Funded out of the National Flood Insurance Fund by annual congressional appropriation

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Climate Resilient Mitigation Activities for HMA

- In September 2015, FEMA announced the Climate Resilient Mitigation Activities (CRMA) eligible for HMA funding. These actions leverage flood risk reduction measures and address water resource quantity and quality to provide drought mitigation benefits. The three project types are:

  - Aquifer Storage & Recovery

  - Floodwater Diversion, Storage, & Recovery

  - Floodplain & Stream Restoration

- Provides guidance on drought mitigation as well as sustainable actions to mitigate natural hazards (e.g. flood, erosion)

- FEMA is also developing technical guidance for:

  - Green Infrastructure methods for sustainable natural resource management, especially storm/flood water

  - Ecosystem Service Benefits are being expanded so more service values are available and they may be used for more project types

FEMA

Aquifer Storage and Recovery

- Subsurface storage of surface water runoff and groundwater in natural aquifer

  - Takes advantage of seasonal variations in surface water runoff and periods of high precipitation leading to more surface and ground water availability

  - Storage underground protects water from pollutants, evaporation, and extreme weather events

- Mitigation benefits for:

  - Drought

  - Salt water intrusion

  - Capture of floodwater for groundwater recharge

Flood Diversion and Storage

- Diverting storm or floodwaters into lakes, channels, floodplains, irrigation canals, wetlands, or other natural or manmade green infrastructure surface storage (e.g. bio-swales, bio-retention, bio-detention basins)

- Floodwater is detained and released slowly to facilitate ground infiltration/seepage

- Benefits include:
  - Flood risk reduction and/or management
  - Harvest excess storm/surface water for later use in dry periods (e.g. drought)
  - Green infrastructure/potential ecosystem services

Floodplain and Stream Restoration

- Restore original function of floodplains and associated wetlands of flood prone river and stream systems to pre-development conditions
  - Restore or increase connectivity and storage capacity
  - Restore or increase the physical stability, hydrology, and biological functions of impaired stream and river banks to restore a natural stable riparian system
- Can take advantage of seasonal variations in water supply
  - Capture spring rain or snowmelt to recharge both surface water and groundwater supplies
- Provide erosion mitigation to stabilize banks, avoid bank collapse
- Projects lend themselves readily to green infrastructure methods maximizing ecosystem service benefits

Ecosystem Services

- All HMA projects must demonstrate they reduce risk and are cost effective
  - FEMA BCA Toolkit can be used to calculate the project's cost effectiveness
- As of June 2013, ecosystem services could be included in acquisition/open space projects
  - Beneficial goods and services provided by nature for people
  - 75% of benefits must derive from risk reduction
  - Benefits from ecosystem services may be 25% of project
  - Ecosystem services are available for CRMA projects
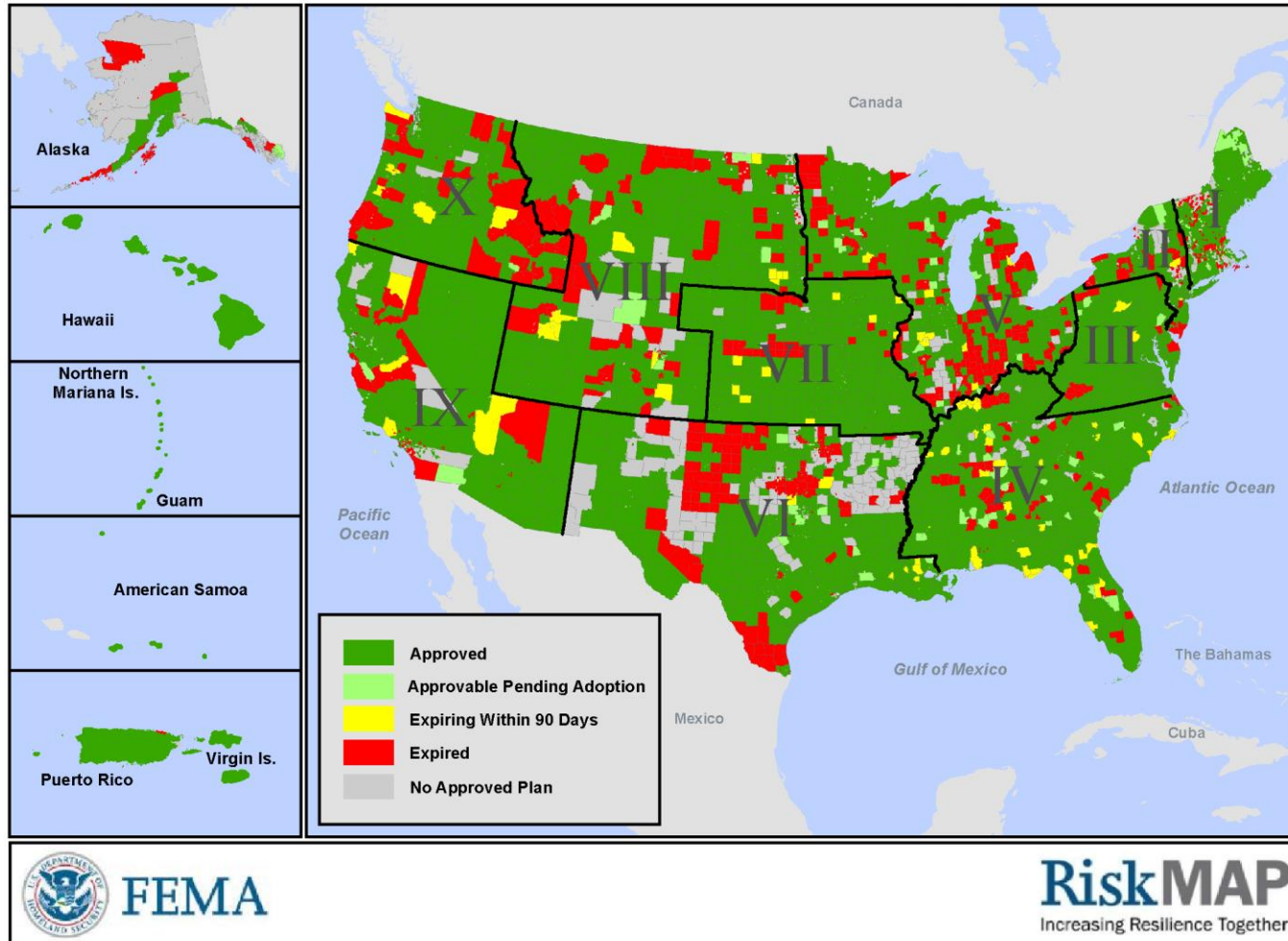- Updating BCA Tool values to include more values and types of ecosystem services

FEMA's Mitigation Planning Program

1. Organize Resources
2. Assess Risks
3. Develop a Mitigation Plan
4. Implement Plan and Monitor Progress

Local Mitigation Plan Status

Local Hazard Mitigation Plan Status as of January 15, 2016

Resources

- **Climate Resilient Mitigation Activities (CRMA) website:** https://www.fema.gov/climate-resilient-mitigation-activities-hazard-mitigation-assistance. Additional materials will continue to be loaded to this site so check back for additional resources and information.

- **FEMA mitigation planning website:** https://www.fema.gov/multi-hazard-mitigation-planning

  - Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards: https://www.fema.gov/media-library/assets/documents/30627

  - Local Mitigation Planning Handbook (FP 302-094-1): https://www.fema.gov/media-library/assets/documents/31598

  - Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials: https://www.fema.gov/media-library/assets/documents/31372

- **Planning Information Exchange (PIE) – American Planning Association (APA) and Association of State Floodplain Managers (ASFPM)**

  - Next free webinar is May 6 at 2pm ET on dam risk

  - https://www.planning.org/nationalcenters/hazards/planninginformationexchange/