

HAZARD MITIGATION

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What is Mitigation?

- Mitigation is any action taken to eliminate or reduce the long-term risk to human life and property from natural and technological hazards



Break the Cycle

- Mitigation is one of the phases of emergency management (preparedness, response and recovery)
- Can occur in any phase
- Only phase that breaks the cycle
 - Damage, repair, damage



Mitigation Examples



- Structural (dams, retention ponds, levees)
- Land-use planning
- Stronger building codes
- Removing persons out of harms way

More Examples

- Raise appliances and utilities
- Install back-flow valves
- Proper landscaping
- Retrofit for wind resistance
- Construct a safe room
- Mobile Home Tie-Downs
- NOAA Weather Radios
- Education and Public Awareness
- INSURANCE (flood and sewer)

Why Mitigation?

- \$140 Billion in the last 25 years in responding to disasters
- \$10 Billion per year in flood damages
- Costs continue to rise
- People continue to build and live in high-risk areas



2011

- 10 weather disasters costing more than \$1 billion each
- 5 tornado outbreaks
- 2 major river flood events in the upper Midwest
- Drought in the SW
- Blizzard in Midwest and Northeast
- 98 natural disasters in the first 6 months (double the avg. in 1990s)
- More than 700 deaths
- Top \$35 billion not counting Hurricane Irene

Here in Wisconsin

- \$3 billion in Disaster-related damages last 3 decades
- 12 Federal Disaster Declarations in the 90's compared to 6 in the 80's
- 2000, 2001, two in 2002, 2004, 2007, 2008 two in 2010, plus 2 snow emergencies

For every dollar spent on mitigation, \$4 is saved in future damages.

(Per the National Institute of Building Sciences -2005)



MITIGATION - WEM

- Over **\$110 million** in last 21 years through HMGP/FMA/PDM
- 636 properties acquired (200 + in process)
- 84 properties floodproofed (2 in process)
- 2 structures relocated
- Wind Retrofit
- Storm Shelters
- Education
- Structural (detention ponds, stormwater management, etc.)
- All Hazard Mitigation Plans

DMA2K

- Disaster Mitigation Act of 2000
- PL 106-390 signed into law 10/30/00
- Establish a national disaster hazard mitigation program
 - Section 203 – Pre-Disaster Mitigation Program
 - Section 322 – Mitigation Planning Requirement

Vision

- To reduce disaster losses thru pre-disaster mitigation planning by pre-identifying, cost-effective mitigation.
- Mitigation planning would then streamline and speed up the recovery process

Mitigation Planning



- Describe actions to mitigate hazards, risks, and vulnerabilities
- Establish strategy to implement those actions
- Pre-identify projects to ensure comprehensive, integrated approach to hazard reduction

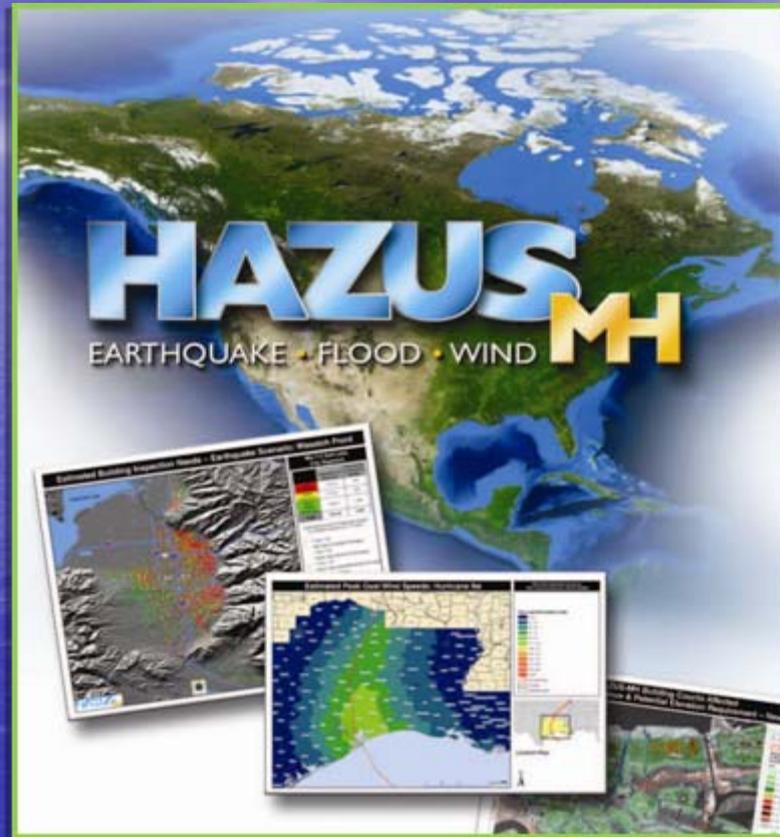
Local Planning Options

- Stand alone plan
- Countywide, multi-jurisdictional, watershed, regional
- Integrate into other planning –
Comprehensive
Planning (Smart
Growth)



Local/Tribal Mitigation Plan Criteria

- Local Planning – 44 CFR Part 201.6
- Tribal Planning – 44 CFR Part 201.7
- Components
 - Planning Process
 - Risk Assessment
 - Mitigation Strategy
 - Plan Maintenance Process
 - Plan Adoption
 - Plan Review



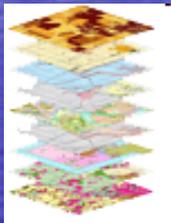
HAZards US – Multi-Hazard

- Federal Emergency Management Agency (FEMA) disaster loss estimation and mitigation planning tool
- Geographic Information System (GIS) based
 - Spatial Analysis tool required
 - Expensive to purchase and to maintain the licenses
 - Census Data

- Methodology for Floods, Hurricanes, and Earthquakes
 - Physical damage
 - Economic Loss
 - Social Impacts

Wisconsin HAZUS-MH Risk Assessment

- FFY 07 Pre-Disaster Mitigation Grant
- Coordination with Land Information and Computer Graphics Facility (LICGF) at UW – Madison and The Polis Center at Indiana University – Purdue University at Indianapolis (IUPUI)
- State wide riverine runs for all 72 counties and coastal runs for counties along Lake Superior and Lake Michigan
- Uses Digital Elevation Maps (DEM)
 - DFIRMs where available
 - Better the data, better the ending product



Land Information
& Computer Graphics Facility



Risk Assessment Cont'd

- Results were a 100-year flood analysis for each county
- Data estimates are derived from census data incorporated into HAZUS

General Occupancy	Estimated Total Buildings	Total Damaged Buildings	Total Building Exposure X 1000	Total Economic Loss X 1000	Building Loss X 1000
Agricultural	9	0	\$222,488	\$10,306	\$2,506
Commercial	1,778	34	\$6,950,225	\$158,492	\$38,671
Education	34	0	\$757,459	\$7,856	\$1,665
Government	157	3	\$470,664	\$8,638	\$932
Industrial	269	0	\$2,024,873	\$73,478	\$19,549
Religious/Non-Profit	74	0	\$627,954	\$13,646	\$1,851
Residential	117,741	551	\$26,888,748	\$188,061	\$115,171
Total	120,062	588	\$37,942,411	\$460,477	\$180,345

COUNTY	POPULATION	ESTIMATED TOTAL BUILDINGS	TOTAL DAMAGED BUILDINGS	TOTAL BUILDING EXPOSURE (\$1,000)	TOTAL ECONOMIC LOSS (\$1,000)	BUILDING LOSS (\$1,000)	SHORT TERM SHELTER
Columbia	52,468	19,485	474	\$4,419,256	\$242,423	\$130,669	1,903
Crawford	17,243	7,696	84	\$1,184,381	\$47,946	\$22,504	586
Dane	426,526	120,062	588	\$37,942,411	\$460,477	\$180,345	8,107
Grant	49,597	17,179	17	\$3,344,675	\$43,584	\$20,006	309
Iowa	23,000	8,595	14	\$1,816,053	\$23,216	\$10,320	230
Richland	17,924	7,221	49	\$1,329,972	\$47,598	\$19,157	335
Sauk	55,225	20,828	163	\$4,709,308	\$134,539	\$53,249	1,696
Totals	641,983	201,066	1389	\$54,746,056	\$999,783	\$436,250	13,166

PLANNING DEADLINES

- Must have an approved All Hazards Mitigation Plan to receive PDM, HMGP, FMA, SRL (exception RFC)
- Local Plans have to be reviewed, updated, and re-approved every 5 years

Plan Status

- Crawford
 - Original plan expired on August 17, 2010
 - Update draft was reviewed on June 24, 2010
 - Waiting for final plan
- Columbia
 - Plan approved on September 29, 2008
 - Updating Plan
- Dane
 - Updated plan approved on May 12, 2010

- Grant
 - Plan approved on October 31, 2007
 - Updating plan
- Iowa
 - Draft submitted for state review
- Richland
 - Plan approved October 9, 2009
- Sauk
 - Updated plan has been forwarded to FEMA for approval

PUBLIC ASSISTANCE PROGRAM

Section 406: Incorporate cost-effective mitigation measures when repairing damaged public facilities.

UNIFIED HAZARD MITIGATION ASSISTANCE PROGRAM

- Hazard Mitigation Grant Program
- Pre-Disaster Mitigation Program
- Flood Mitigation Assistance Program (flood hazard only)
- Repetitive Flood Claims Program (flood hazard only)
- Severe Repetitive Loss Program (flood hazard only)

MITIGATION PROGRAMS

- Project and Planning Grants
- 75/25% cost share
 - HMGP – State provides 12.5% of the local match
 - PDM – 90/10% for small, impoverished
 - RFC – 100% funding
 - SRL – 90/10% with strategy in State Plan
- State, local, and tribal organizations eligible applicants
 - HMGP – certain eligible private, non-profits
- Local Plan required for project funding
 - Exception is RFC Program

FUNDING AVAILABILITY

- HMGP
 - Post-Disaster
 - 15% (20% with Enhanced Plan) of the total federal funds allocated for Public and Individual Assistance Programs for each disaster

FUNDING AVAILABILITY (cont.)

- FMA
 - Annual allocation (approx. \$250,000)
 - # of flood insurance policies and repetitive loss properties in the state
 - Flood Mitigation only
 - Mitigation to NFIP insured structures

Funding Availability (cont.)

- PDM
 - State base amount of \$575,000
 - Annual, national competition
 - Subgrants projects capped at \$3 million federal share; Planning \$800,000 million for new plan, \$400,000 plan update
 - Program reauthorized through 9/30/13

Funding Availability (cont.)

- RFC
 - Mitigation to NFIP insured structures
 - At least one paid flood insurance claim
 - Flood Mitigation Only
 - No plan requirement
 - Inability to manage subgrant or lack of 25% match
 - National Competition

Funding Availability (cont.)

- SRL
 - Mitigation to NFIP insured structures
 - Flood mitigation only
 - At least 4 NFIP claim payments over \$5,000 each, and cumulative exceeds \$20,000; or 2 payments exceeds the value of the structure
 - Allocations for target states; otherwise competition
 - 11 properties (4 validated) in WI
 - 3 mitigated
 - 1 included in a pending application
 - 1 cannot locate

ELIGIBLE PROJECTS

- Either on public or private property
- Acquisition/Demolition of structures
- Relocate structures
- Elevation of structures
- Retrofit Structures
- Community Shelters
- Residential Safe Rooms
- Development of standards
- Structural hazard control, i.e., debris basins, floodwalls
- Development/updates of All Hazards Mitigation Plans

Eligible Projects (cont.)

- FMA, RFC, SRL
 - Mitigation to NFIP insured structures
 - Flood mitigation only

Acquisition/Demolition



Elevation



Floodwall



Storm Shelter



Stormwater



Columbia County

- HMGP: \$85,393
 - Planning: \$45,000 and \$21,043(update)
 - Project: \$19,350 (pending – river gauges)

Crawford County: \$3,499,328

- HMGP: \$3,441,995
 - Plan: \$40,000 (update)
 - \$589,503 County Highway Shop
 - \$110,839 Village of Ferryville
 - \$2,527,872 Village of Gays Mills
 - \$173,781 Village of Soldiers Grove
- PDM: \$40,000 (plan)
- FMA: \$17,333 (flood plan)

Dane County

- HMGP: \$580,315
 - Plan: \$40,000
 - \$2,180 City of Sun Prairie (Plan)
 - \$37,000 Village of Cross Plains
 - \$202,034 Village of DeForest
 - \$160,511 City of Sun Prairie
 - \$32,670 Dane County EM
 - \$105,920 Village of Oregon

- PDM: \$1,002,203
 - \$195,331 (Plan Update)
 - \$47,560 City of Monona (Plan information)
 - \$91,600 City of Monona
 - \$17,212 City of Middleton
 - \$650,500 Town of Dunn
- FMA: \$152,748
 - \$18,400 Dane County (flood mitigation plan)
 - \$134,348 City of Monona

Grant County

- HMGP: \$1,246,794
 - \$57,440 (Plan)
 - \$51,972 (Plan Update)
 - \$1,137,382

Iowa County

- HMGP: \$76,920
 - \$48,360 (Plan)
 - \$28,560 Avoca (Plan)

Richland County

- HMGP: \$203,736
 - \$36,000 (Plan)
 - \$84,390 Dept. of Natural Resources
 - \$83,346 City of Richland Center

Sauk County

- HMGP: \$9,067,989
 - \$19,245 (Plan Update)
 - \$16,792 City of Baraboo (Plan)
 - \$136,254 City of Baraboo
 - \$96,922 Town of Excelsoir
 - \$2,602,770 City of Reedsburg
 - \$1,376,192 Village of Rock Springs
 - \$4,819,814 Town of Spring Green
- PDM: \$12,750 (Plan)

REQUIREMENTS

- Participating in the NFIP and in good standing
- Cost-Beneficial
- Environmentally Sound
- Considered other alternatives
- Best alternative
- Solve the problem
- Plan requirement (except RFC)

Mitigation eGrants

- HMA applications (PDM, FMA, RFC, and SRL) have to be submitted via FEMA's eGrants system

Mitigation Program Priorities

- Substantially Damaged Properties
- Severe Repetitive Loss and Repetitive Loss Properties
- Approximately 467 RL properties identified in Wisconsin among 97 communities
- 4 validated SRL properties
- Mitigated approximately 112 repetitive loss properties and 1 SRL



PROCESS

- Mitigation Planning is the tool to identify feasible and cost-effective mitigation measures
- Identify mitigation early in process, i.e., beginning with the PDA
- Work with State Mitigation Staff
- Work with DNR Floodplain Management staff on NFIP compliance
- Identify any environmental or historical issues or concerns that could delay or impact the project

PROCESS (cont.)

- Gather data for project development and for the benefit-cost analysis
- Work with property owners
- Document alternatives
- Attend State briefings
- Review and follow federal and state guidance

PROCESS (cont.)

- Adhere to deadlines for submitting applications
- The sooner WEM gets the application, the sooner they can process it

Questions?

