Why Plan?

Roxanne Gray
State Hazard Mitigation Officer

Milwaukee River Watershed Discovery
May 16, 2013
What is Mitigation?

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

Preparedness

Disaster

Response

Recovery
Why Do We Mitigate?

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
Over **$110 million** in last 21 years through HMGP/FMA/PDM
- Acquisition and Demolition
- Floodproofing and elevation
- Relocation
- Wind Retrofit
- Safe Rooms
- River Gauges
- NOAA Weather Radios
- Mitigation of utilities
- Education
- Structural (detention ponds, stormwater management, etc.)
- All Hazard Mitigation Plans
- 698 property acquisitions
- 43 structures floodproofed and/or retrofit
- 25 structures elevated
- 1 structure relocated

WEM Grants Management by Activity (1990-2012)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Amount of Grant Funding (Million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition/Demolition/Elevation</td>
<td>$75,869,541</td>
</tr>
<tr>
<td>All Other Activities</td>
<td>$20,308,992</td>
</tr>
</tbody>
</table>
For every $1 spent on mitigation, $4 is saved in future damages. (Per the National Institute of Building Sciences -2005)
Evaluating Losses Avoided through Acquisition Projects, October 2010

- City of Wauwatosa
  - Actual event data and losses avoided
  - Project Cost: $716,837
  - Losses Avoided: $1,059,101
  - ROI: 148%
City of Milwaukee, Villages of Oak Creek and Brown Deer

- HAZUS modeling and are based on a one-time, 100-year flood event
- Project Costs: $2,237,562
- Losses Avoided: $1,096,412
- ROI: 49%
- ROI will increase with subsequent events
Examples of Mitigation
Acquisition/Demolition

Communities acquire land, demolish structures and keep the land in open space designation

Images from Darlington, WI
Elevation raises a structure out of the floodplain. Wisconsin has specific regulations to follow with elevation projects. See DNR for more information.

Image from Soldiers Grove, WI
Floodwalls can prevent water from inundating structures that cannot be elevated, relocated, or demolished.

Image from Darlington, WI
Community Safe Rooms built to FEMA-361 standards can withstand winds up to 250 MPH

Image from Town of Dunn, WI
Detention ponds can store storm water runoff, decreasing flash flooding in urban areas.

Image from MMSD Stormwater Detention Project (Wauwatosa, WI)
Stormwater

Stream restoration allows watersheds to better manage flooding

Image from Thiensville, WI
River warning systems installed on conservation dams to warn county officials about expected dam breaching.

Images from Vernon County
Other Projects

- Raise appliances and utilities
- Install back-flow valves
- Retrofit for wind resistance
- Education and Public Awareness
- INSURANCE (flood and sewer)
- Land use planning

Other Projects

- NOAA Weather Radios
- Mobile Home Tie-Downs
- Wind Retrofit Guide for Residential Buildings
- Proper Landscaping
- FEMA
Benefits of Mitigation

- Protect the health/safety of citizens
- Preserve or expand tax base
- Attract or retain business/industry
- Revitalize a depressed area
Benefits of Mitigation

- Enhance recreation and tourism
  - Parks
  - Trails
- Increase Community Pride & improve quality of life
- Save Tax Dollars
Disaster Mitigation Act of 2000

- Public Law 106-390 signed into law 10/30/00
- Establishes a national disaster hazard mitigation program
  - Section 203: Pre-Disaster Mitigation Program
  - Section 322: Mitigation Planning Requirement
• 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/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
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
Hazard Mitigation Planning in WI

April 2013

Single Jurisdiction Plans:
- Village of Avoca, Iowa County - Approved
- City of Crandon, Forest County - Approved
- City of Darlington, Lafayette County - Approved, Updating
- City of Eau Claire, Eau Claire County - Approved
- City of Milwaukee, Milwaukee County - Approved
- City of Sheboygan, Sheboygan County - Approved
- City of Superior, Douglas County - Approved

Tribal Plans:
- Forest County Potawatomi - Approved
- Ho Chunk - Approved, Updating
- Menominee Nation - Expired, Updating
- Oneida - Approved
- Red Cliff Band Chippewa - New Plan
- Stockbridge-Munsee - Approved

University Plans:
- University of Wisconsin-Madison - New Plan
- University of Wisconsin-River Falls - Approved, Updating

Legend
- Counties With Approved Plans
- Counties With No Approved Plan
- Counties With No Plan, Not Active in Planning Process
- Counties With an Expired Plan
- Counties Active in Planning or Updating Process
- Counties with Plans that Meet Requirements
• Dodge County: Plan expired 3/7/12; update in process
• Fond du Lac County: Plan expires 6/22/15
• Milwaukee County: Plan expires 6/11/17
• Ozaukee County: Plan expires 3/18/14; update at FEMA for approval
• Sheboygan County: Plan expires 11/7/13; update in process
• Washington: Has no plan
• Waukesha County: Plan expires 3/15/16
• City of Milwaukee: Plan expires 6/11/17
• City of Sheboygan: Plan expires 8/30/17
Mitigation actions identified through RiskMAP process need to be coordinated with the county hazard mitigation planning process.
HAZUS-MH

- FEMA’s standardized risk assessment methodology to estimate potential losses from flood, wind, and earthquake hazards
- GIS-based software
  - Interfaces with ESRI
- Free to download
  - Updated damage/loss functions
  - Hazard-specific data updated
Wisconsin HAZUS 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
Results were a 100-year flood analysis for each county

Data estimates are derived from census data incorporated into HAZUS
<table>
<thead>
<tr>
<th>Occupancy</th>
<th>Estimated Total Buildings</th>
<th>Total Damaged Buildings</th>
<th>Total Building Exposure X 1000</th>
<th>Total Economic Loss X 1000</th>
<th>Building Loss X 1000</th>
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<td><strong>Total</strong></td>
<td><strong>120,062</strong></td>
<td><strong>588</strong></td>
<td><strong>$37,942,411</strong></td>
<td><strong>$460,477</strong></td>
<td><strong>$180,345</strong></td>
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Public Assistance Program

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

Repetitive Flood Claims Program

Severe Repetitive Loss Program
## Eligible Sub-Applicants

<table>
<thead>
<tr>
<th>Entity</th>
<th>HAZARD MITIGATION GRANT PROGRAM</th>
<th>PRE-DISASTER MITIGATION</th>
<th>FLOOD MITIGATION ASSISTANCE</th>
<th>REPEETITIVE FLOOD CLAIMS</th>
<th>SEVERE REPETITIVE LOSS</th>
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<td>Programs</td>
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<td>Management Costs (Percent of Federal/Non-Federal Share)</td>
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<td>75/25</td>
<td>90/10</td>
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<td>SRL – with Repetitive Loss Strategy</td>
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<td>90/10</td>
<td>90/10</td>
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Requirements

- Participating in the NFIP and in good standing
- Cost-Beneficial
- Environmentally Sound
- Considered other alternatives
- Best alternative
- **Independently solve the problem**
- Plan requirement (except RFC)
Mitigation Program Priorities

- Substantially Damaged Properties
- Severe Repetitive Loss and Repetitive Loss Properties
• Dodge County: None
• Fond du Lac County: 5 RLP
• Milwaukee County: 251 RLP
• Ozaukee County: 25 RLP
• Sheboygan County: 1 RLP
• Washington County: 4 RLP and 2 SRL
• Waukesha County: 27 RLP
HMGP:
- Dodge County: $34,508 NOAA Weather Radios
- Dodge County: $19,894 Planning

PDM:
- Dodge County: $22,976 Planning

TOTAL: $77,378
Fond du Lac County

• HMGP
  – Oakfield School: $202,216 reinforced walls in new school
  – Village of N. Fond du Lac: $228,063 acquisition/demolition
  – City of Fond du Lac: $1,342,410 acq/demo

• FMA
  – Village of N. Fond du Lac: $119,132 acq/demo
  – Village of N. Fond du Lac: $12,743 Planning
• PDM
  – Fond du Lac County: $73,154 Planning
  – Fond du Lac County: $42,324 Planning
• TOTAL: $2,020,042
• HMGP
  - City of Milwaukee: $1,545,412 acq/demo & floodproofing
  - Milwaukee County: $70,117 education/outreach
  - City of Oak Creek: $112,182 acq/demo
  - City of Wauwatosa: $2,168,097 acq/demo
  - City of Milwaukee: $91,630 acq/demo
  - Village of Brown Deer: $1,018,831 acq/demo
  - Milwaukee County: $11,510 Planning
  - City of Glendale: $930,686 acq/demo
  - Village of Whitefish Bay: $4,191,375 stormwater
Milwaukee County

- **FMA**
  - City of Milwaukee: $5,000 Planning
  - City of Oak Creek: $5,000 Planning

- **PDM**
  - City of Milwaukee: $23,000 Planning
  - Milwaukee County: $27,927 Planning
  - City of Milwaukee: $40,000 Planning

- **TOTAL**: $10,240,767
Ozaukee County

- **HMGP**
  - Village of Thiensville: $123,047 Detention Pond

- **FMA**
  - Ozaukee County: $9,733 Planning

- **PDM**
  - Village of Thiensville: $2,308,620 stormwater improvements
  - Ozaukee County: $50,000 Planning
  - Ozaukee County: $32,800 Planning

- **TOTAL**: $2,524,200
Sheboygan County

- **HMGP**
  - City of Sheboygan: $1,873,000 acq/demo

- **PDM**
  - City of Sheboygan: $30,156 Planning
  - Sheboygan County: $53,000 Planning

- **TOTAL:** $1,956,156
Waukesha County

- HMGP
  - City of Brookfield: $139,203 acq/demo
  - City of Brookfield: $140,060 acq/demo
  - Village of Elm Grove: $921,601 acq/demo
  - Village of Elm Grove: $721,319 acq/demo
  - Village of Elm Grove: $281,351 acq/demo
  - Village of Menomonee Falls: $1,969,799 acq/demo
  - Village of Menomonee Falls: $397,396
  - Village of New Berlin: $93,947 acq/demo
FMA

- City of Brookfield: $10,000 planning
- City of Brookfield: $46,267 acq/demo
- City of Brookfield: $140,219 acq/demo

PDM

- Waukesha County: $63,976 planning
- Village of Elm Grove: $4,369 planning
- TOTAL: $4,929,507
Community Rating System

- New Berlin (7), Elm Grove (5-awesome!) and Ozaukee County (8) participating
- Discounts for property owners on flood insurance policies
- Levels 10 – 1
- Discounts in 5% increments depending on level
- Points for public information, mapping and regulations, flood damage reduction, flood preparation
Questions?

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