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# Hazard Mitigation Overview

Yahara Lakes Advisory Group

April 28, 2011



**EMERGENCY  
MANAGEMENT**

# Discussion Topics

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- Recent flood losses and damages
- Hazard mitigation programs
- Project opportunities



# Recent Flood Losses\*

Date	Damage Assessment (Initial Estimates)	Federal Assistance
<b>May 2000</b>		
Private Losses:	\$5.0 million	\$1.25 million (Individual Assistance)
Agricultural:	\$3.2 million	Not Available
Public Losses:	\$1.1 million	\$940,000 (Public Assistance)
<b>August 2007</b>		
Private Losses:	\$3.27 million	\$585,000 (Individual and Household Program)
Agricultural:	Not Available	Not Available
Public Losses:	\$1.76 million	Not Declared for Public Assistance
<b>June 2008</b>		
Private Losses:	\$7.45 million	\$3.51 million (Individual and Household Program)
Agricultural:	\$64.4 million	Not Available
Public Losses:	\$6.07 million	\$1.53 million (Public Assistance)



## \* Flood Loss Footnotes

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- Source is FEMA and DCEM Records
- Countywide totals
  - Compiled by Dane County Emergency Mgmt
  - Assessed by local units of government
  - Private sector losses are typically self reported
  - Not able to distinguish lake-level related losses
- Assessed for significant flood events only



# Damage Assessment Categories

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- Affected
- Minor Damage
- Major Damage
- Destroyed



# Flood Damage Categories

*Affected:* some damage to the structure and contents, but still habitable (standing water in the basement).



# Flood Damage Categories

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*Minor Damage:* damaged and uninhabitable, but may be made habitable in short period of time with repairs (significant amount of water in the basement, damage to household utilities).



# Flood Damage Categories

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*Major Damage:* substantial failure to structural elements of residence (e.g., walls, floors, foundation), or damage that will take more than 30 days to repair (water over the 1<sup>st</sup> floor).



(This is not in  
Dane County)





# Flood Damage Categories

*Destroyed:* total loss of structure, structure is not economically feasible to repair, or complete failure to major structural components (e.g., collapse of basement walls/foundation, walls or roof).

(This is not in  
Dane County)



# 2008 Flood Event

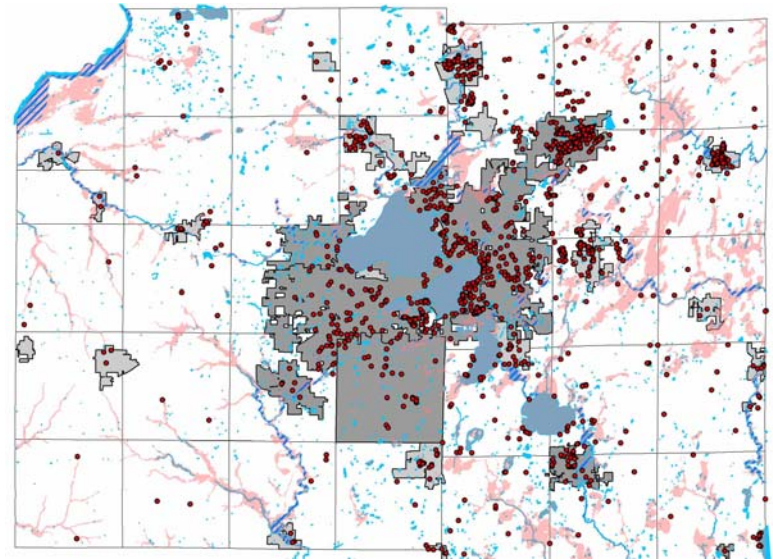
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- Residential units: 2,380
  - 2,020 affected
  - 248 minor damage
  - 109 major damage
  - 3 destroyed
- Businesses: 155
  - 152 minor damage
  - 3 major damage



# 2008 Flood Event

- Federal Individual and Household Claims
  - Not all claims were paid, not all costs were eligible
  - 1,740 paid claims (\$3.51 million total/~\$2,000 avg)
  - 34 in “100-yr flood” zone
  - 46 in “500-year flood” zone
  - 158 in hydric soil areas
  - 1603 outside of mapped flood hazard areas
    - Stormwater drainage issues
    - High groundwater



# What can be done to reduce losses?

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Flood mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to life and property from flooding. – The “Prevention” stage of the emergency management cycle.



# Flood Mitigation Examples

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- Structural (control structures)
  - Levees/floodwalls/berms
  - Channel modifications
  - Retention/detention
  - Not preferred



(This is not in Dane County)



# Flood Mitigation Examples

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- Non-Structural
  - Land use management/regulation
  - Natural resource protection
  - Flood proofing
  - Acquisition/relocation



Elevated Home



# Mitigation Funding Sources

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- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Repetitive Flood Claims (RFC)
- Severe Repetitive Loss (SRL)
- Community Development Block Grants
- State Programs



# National (and State) Priorities

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- Reduce reliance on future Federal disaster assistance
- Projects that address NFIP repetitive loss properties:
  - Acquisition and demolition or relocation of flood damaged properties
  - Retrofitting existing buildings
    - Flood proofing, elevation
  - Small structural hazard control projects





# Project Requirements

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- Substantially reduce risk of future damage
- Be in conformance with FEMA approved hazard mitigation plan
- Be in conformance with environmental and historic preservation regulations
- Be technically, politically, and economically feasible
- Solve the problem (the least amount of on-going maintenance/operation the better)
- Projects on private property must be voluntary
- Demonstrate ability to meet cost-sharing requirements
- **Be cost effective (BCA ratio > 1)**



# Benefit Cost Analysis (BCA)

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- Direct benefits must be greater than project costs:
  - Avoided damages to buildings and contents (rule of thumb - equates to first floor flooding or greater)
  - Avoided economic impacts of loss of building function
  - Avoided economic impact of loss of function of infrastructure
  - Avoided death and injury
- Benefits must be documented



# The Reality

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- Past damages in Dane County have been significant, and widespread, but not “substantial”
- Future losses are likely, but not many structures in Dane County are considered high priority by FEMA standards
- Funding amounts are significant, but are not enough to address even the high priority properties
- Projects on the Yahara Lakes tend to rank low in priority and low on the Benefit-Cost ratio



# The Reality – Funding Priorities/BCA

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↙ This is a priority over this ↘



# Bottom Line for the Yahara System

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- Are there hazard mitigation project opportunities on the Yahara Lakes?
  - Yes
- Are there big opportunities to solve all of the property damage problems?
  - No
- Opportunities that do exist are site and project specific



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Questions?

