Discovery Meeting: Upper Fox Watershed

November 13, 2012
Introductions

- Risk MAP Project Team
- Local partners and officials
- State partners and officials
- Other Federal Agency partner representatives
- Private-sector entity representatives
Agenda

- Risk MAP Program Overview
- Why We’re Here
- Communities in the Upper Fox Watershed
- Discovery Overview & Discussion
- Next Steps
- Flood Risk Assessment Products Overview
- Mitigation Planning and Communication
- Questions to Consider
Risk MAP Program and Project Overview
Program Overview

- **Risk MAP**
  - Mapping – Flood hazard and risk identification
  - Assessment – HAZUS and other risk assessment tools
  - Planning – Hazard mitigation planning and HMA grants

- **Risk MAP Vision**
  - Deliver quality data
  - Increase public awareness of flood risk
  - Encourage local/regional actions that reduce risk
Risk MAP Project Benefits

- **Flood risk products and flood hazard maps that are:**
  - Developed by FEMA in accordance with communities
  - Based on the best available data from the community and latest technologies
  - Conducted by watershed
  - Strengthened by partnerships

- **Risk MAP tools and data can be used to:**
  - Create or improve your Hazard Mitigation Plans
  - Make informed decisions about development, ordinances, and flood mitigation projects
  - Communicate with citizens about flood risk
Risk MAP Project Timeline

Discovery Meeting  | Proposed Map Changes and Impacts  | Flood Study Review*  | Preliminary Map Release & Open House  | Due Process and Path Forward  | Resilience Meeting & Risk Awareness

3-5 Year Process

*Flood Study Review and subsequent steps will only occur if a Risk MAP project is conducted.
Why We’re Here

- Start a dialogue about your flood risk
- Understand your needs and priorities
- Communicate available resources
- Offer partnerships and answer questions
- Give you a complete, current picture of your flood hazards and risks to help you better:
  - Plan for the risk
  - Take action to protect your communities
  - Communicate the risk to your citizens
## Why We’re Here

<table>
<thead>
<tr>
<th>County</th>
<th>FIRM Status</th>
<th>Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenosha</td>
<td>Effective</td>
<td>June 19, 2012</td>
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<tr>
<td>Racine</td>
<td>Effective</td>
<td>May 2, 2012</td>
</tr>
<tr>
<td>Walworth</td>
<td>Effective</td>
<td>October 2, 2009</td>
</tr>
<tr>
<td>Waukesha</td>
<td>Effective</td>
<td>November 19, 2008</td>
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</tbody>
</table>
Communities in Watershed

Upper Fox Watershed
- Counties: Kenosha, Racine, Walworth, Waukesha
- 660 miles of mapped streams/rivers

Focus Area:
- Studied streams with outdated methodologies
- Unstudied streams with development pressure or other issues
Discovery Process

- **Data Collection**
  - Collect information about the communities in the watershed
  - Develop draft Discovery Report and Map

- **Discovery Meeting**
  - Present potential flood risk products and get feedback
  - Discuss and prioritize areas needing flood risk study
  - Discuss local planning and communication assistance

- **Outcome**
  - Finalize Discovery Report and Map
  - Develop a scope of work and budget for Risk MAP project
Floodplain Mapping

- Field Survey
  - Summer/Fall 2013

- Hydrologic & Hydraulic Engineering
  - Fall/Winter 2013-2014

- FIRM Mapping & Non-Regulatory Products
  - Based upon availability of grants
Floodplain Mapping

- **Physical Map Revision (PMR)**
  - Revised Panels only for new studies

- **Revised Map Panels & FIS Report**
  - Adopted by affected communities
Next Steps

- Based on today’s discussion and WDNR 5-level ranking system, project scope is developed (areas to be studied)

  1. Streams currently mapped as Zone AE where the study has been deemed "Invalid“ (CNMS).
  2. Gaps between detailed studies that are either currently mapped as Zone A or not mapped at all.
  3. Streams currently mapped as Zone A where a community request was made to study the reach in detail.
  4. Streams currently mapped as Zone A that will be engineered, but remain mapped as Zone A.
  5. Streams that are not currently mapped where a community request was made to study the reach in detail.
Next Steps

- **After Discovery Meeting:**
  - Compile comments, update Discovery Map with community concerns
  - Results posted on WDNR Floodplain Mapping website
  - 2-week comment period for additional/missed issues
  - Update Discovery Report and map with results of the meeting and finalized scope of work
Flood Risk Products
Program Product Comparisons

Traditional Regulatory Products

DFIRM Database

Subject to statutory due-process requirements

Non-Regulatory Products

Flood Risk Database

Not subject to statutory due-process requirements
Flood Risk Products

- Changes Since Last FIRM
- Depth and Analysis Maps
- Flood Risk Assessment (HAZUS)
- Areas of Mitigation Interest (if available)
Changes Since Last FIRM
Flood Depth & Analysis
Grids
Percent Annual Chance Grid
Flood Risk Assessment

- **HAZUS = GIS-based hazard loss estimation software**
- **Quantifies flood risk in dollars:**
  - Potential damage severity for different flood frequencies
  - Identify locations with possible cost effective mitigation options
- **Identifies areas of relative flood risk:**
  - Floodprone areas (census block)
  - Vulnerable people and property
- **Helps estimate potential losses due to flood risk:**
  - Losses from Average Annualized Loss (AAL) Study
  - Refined losses from new flood study depth grids, local building data
1% Chance Risk (100-yr)

$1.3 Million

$2.4 Million
Areas of Mitigation Interest (AOMI)

- **Opportunity for flood risk reduction:**
  - Community identified hot spots
  - Previous clusters of claims
  - Riverine and coastal flood control structures (dams, levees, berms)
  - Floodplain “pinch points” (undersized culverts and bridge openings)
  - Significant proposed and recent floodplain development
  - Locations of successful mitigation projects
Flood Risk Map

- Visually Promotes Risk Awareness
  - Contains results of Risk MAP project non-regulatory datasets
  - Promotes additional flood risk data not shown but located within the Flood Risk Database
Flood Risk Report

- **Background**
  - Purpose, Methods
  - Risk Reduction Practices

- **Project Results**
  - Changes Since Last FIRM
  - Depth & Analysis Grids
  - Flood Risk Assessment
  - Enhanced Analyses

- **Summarized by Locations**
  - Communities and Watersheds

For project areas including: Watershed USA, Village of Coastland, Village of Drytown, City of Floodville, Town of Waterloo, County A*, County B*, and County C*

*Spans more than one watershed. This report covers only the area within the studied watershed.

Report Number 001

MM/DD/YYYY
Mitigation Planning and Communication
Moving Beyond Floodplain Maps

1. Identify Risk
2. Assess Risk
3. Communicate Risk
4. Mitigate Risk

Risk MAP: Reduce Loss of Life and Property
- Map Risk Data
- Assess Present and Future Risks
- Goal—Measure Quantifiable Risk Reduction
- Plan for Risk
- Transfer Risk
- Reduce Risk
Flood Risk Data and Discovery Maps
Data Collection

- From the communities we look for:
  - Infrastructure information for levees and new bridges, dams, culverts, and road improvements
  - Building footprints or parcel data
  - Boundary, hydrography, and transportation layers
  - Elevation data
Elevation Data/LiDAR Status

- Kenosha – 2012 LiDAR available
- Racine – 2012 LiDAR needs processing
- Walworth – 2005 Photogrammetric
- Waukesha – 2012 LiDAR available 12/12
<table>
<thead>
<tr>
<th>Data Types</th>
<th>Description</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>Average Annualized Loss</td>
<td>FEMA’s Level 1 HAZUS Average Annualized Loss Analysis</td>
<td>FEMA</td>
</tr>
<tr>
<td>Community Boundaries</td>
<td>Location of municipal boundaries</td>
<td>Wisconsin Department of Transportation</td>
</tr>
<tr>
<td>Coordinated Needs Management Strategy (CNMS)</td>
<td>Engineering study needs as defined by Phase 3 CNMS data</td>
<td>Region V CNMS inventory</td>
</tr>
<tr>
<td>County Boundaries</td>
<td>Location of county boundaries</td>
<td>USGS Topographic Maps</td>
</tr>
<tr>
<td>Dams</td>
<td>Location of dams</td>
<td>WDNR Inventory</td>
</tr>
<tr>
<td>Streams and Rivers</td>
<td>Stream centerlines based on USGS topo quads</td>
<td>USGS Topographic Maps</td>
</tr>
<tr>
<td>HUC-8 Watershed</td>
<td>Watershed boundary</td>
<td>USGS Watershed Boundary Dataset</td>
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<tr>
<td>Ice Jams</td>
<td>Location of ice jams</td>
<td>U.S. Army Corps of Engineers - Ice Jam Database</td>
</tr>
<tr>
<td>Letters of Map Change</td>
<td>Locations of letters of map change</td>
<td>FEMA National Flood Hazard Layer</td>
</tr>
<tr>
<td>Major Roads</td>
<td>Location of interstates and major highways</td>
<td>Wisconsin Department of Transportation</td>
</tr>
<tr>
<td>Special Flood Hazard Areas</td>
<td>Location of FEMA flood hazard areas</td>
<td>FEMA Digital Flood Insurance Rate Maps</td>
</tr>
<tr>
<td>Stream Gages</td>
<td>Location of stream gages operated by multiple agencies</td>
<td>USGS National Hydrography Dataset</td>
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<td>Watershed Boundaries</td>
<td>Hydrologic Unit Code-8, watershed boundaries</td>
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<td>Wetland</td>
<td>Wetland delineations digitized from 24K USGS topo quads</td>
<td>Wisconsin DNR</td>
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Discovery Map

Project Area:
Upper Fox River Watershed
HUC-8 07120006

Legend:
- Very High
- High
- Medium
- Low

Miscellaneous Features:
- Community Boundary
- County Boundary
- State Boundary
- Watershed Boundary

CMRS Source Validity:
- High
- Medium
- Low
- Unknown

Roads:
- Interstate
- U.S. Highway
- State Highway

Wisconsin
Illinois
Discovery Map

**Miscellaneous Features**
- Stream Gage
- Letter of Map Change (LOMC)
- Community Boundary
- County Boundary
- State Boundary
- Watershed Boundary
- WDNR Wetland Inventory

**Special Flood Hazard Areas**
- Approximate (Zone A)
- Detailed (Zone AE)
- Ponding (Zone AH)
- Shallow Flooding (Zone AO)

**CNMS Stream Validity**
- Valid
- Unverified
- Unknown
- Invalid

**Average Annualized Loss**
- (Losses by Census Blocks)
  - Very High
  - High
  - Medium
  - Very Low

**Areas of Mitigation Interest**
- Dams
- Individual Assistance or Public Assistance
- Stream Flow Constrictions

**Roads**
- Interstate
- U.S. Hwy
- State Hwy
Break Out Session
Questions to Consider

- Do you have flood hazard data used for planning/management that are not reflected on the FIRM?
- Are there inaccuracies in the FIRMs for your community? Where?
- Are there new road crossings that are not reflected on the FIRM?
- Are there areas of high population (or population growth) where a Zone A exists on the FIRM?
- Are there areas of future development pressure where a mapped floodplain would be helpful to identify risk?
- Where are problem flooding areas?
- Where are areas of concern for emergency response, i.e., evacuation routing, critical facilities, other vulnerabilities?
- Do you agree with the identified requests and needs currently shown on FEMA’s Discovery Map?
- How would you prioritize these issues and needs?