

Des Moines Flood Outreach Meeting

Flood Plain Mapping in Polk County

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Local Flood Plain Programs

Iowa Department of Natural Resources
Leading Iowans in caring for our natural resources



Flooding is the most predictable hazard, yet communities continue to suffer economic losses due to flooding



Accurately mapping where flooding is likely to occur is the first step towards reducing economic and personal losses

Des Moines Flood Map Chronology

Original Map

- Flood Hazard Boundary Map
- Published – Aug 29, 1975

Original FIRM & Detailed Study

- Published – Feb 2, 1981

Current Effective FIRM

- Published – July 15, 1988



Polk County Flood Map Chronology

Original Map

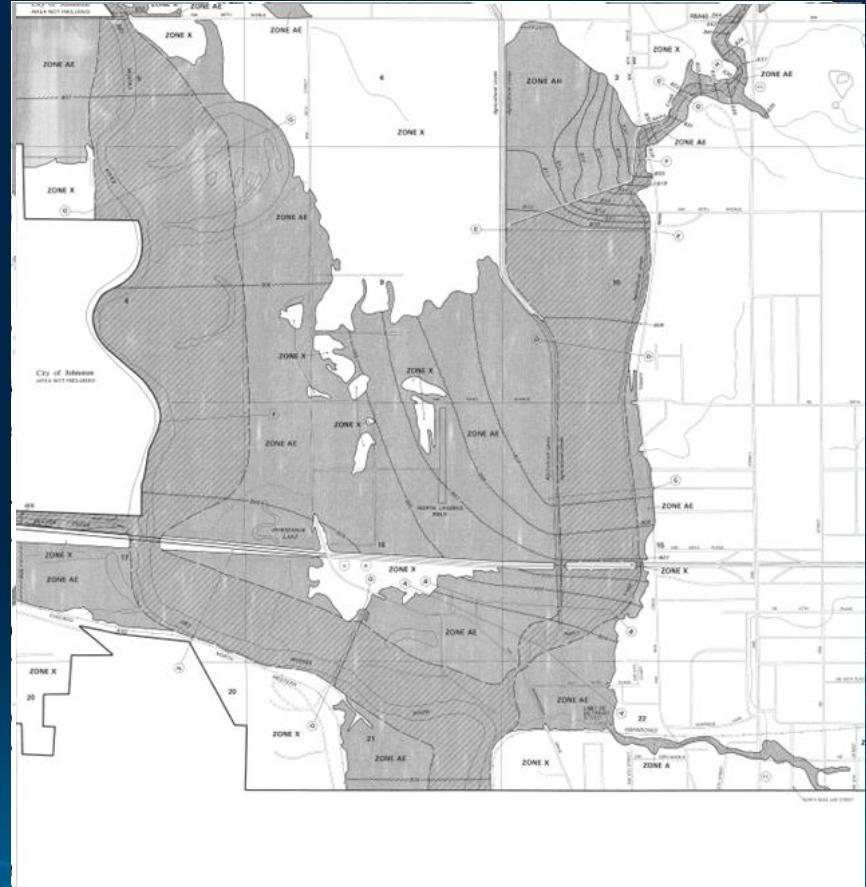
- Flood Hazard Boundary Map
- Published – Aug 23, 1977

Original FIRM & Detailed Studies

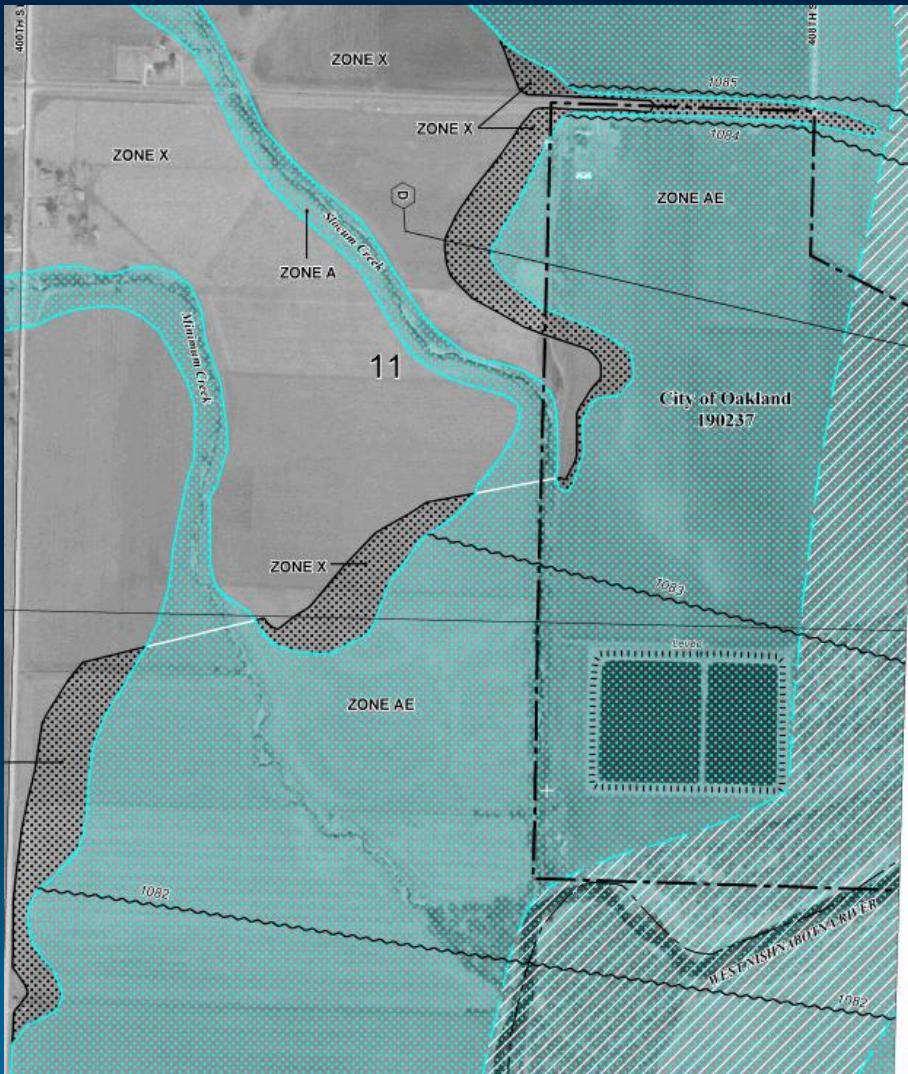
- March 1, 1984

Current Effective FIRM

- Published – July 1, 2000



FEMA's Flood Map Modernization



- Use aerial photos as base map
 - IDNR Aerial Photography – 2002
- Mapping county-wide instead of community based
- Can use maps and data with own local digital information

Polk County DFIRM

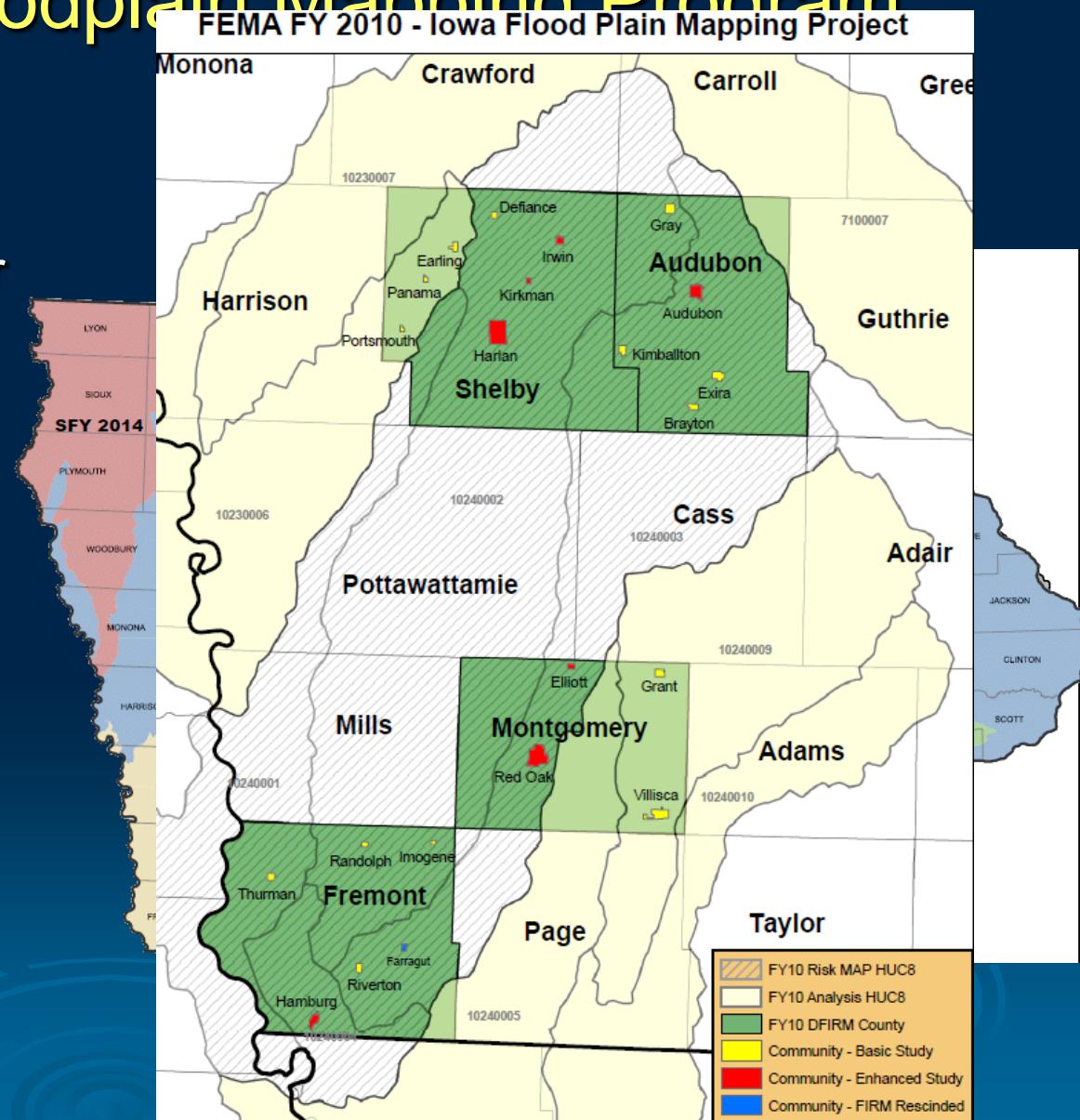
- Initiated in FY2005
- Levee certification
- Provisionally Accredited Levee (PAL) agreement
- Was scheduled to become effective in December 2011
- FEMA Levee Analysis Policy
 - Birdland
 - Central Place
 - Corps tieback levee near Pleasant Hill.

Polk County DFIRM (cont.)

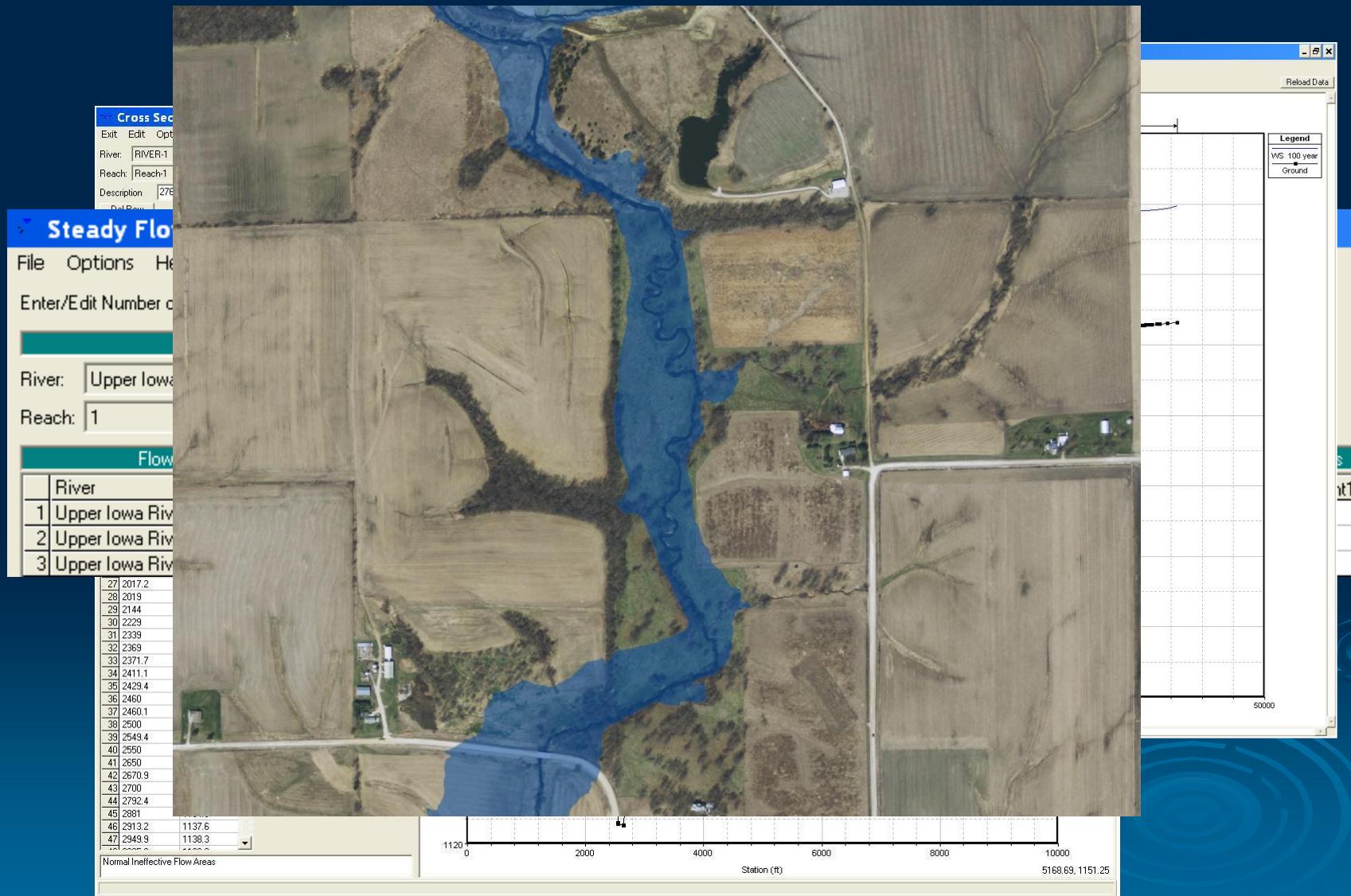
- Corps' 2010 Regulated Frequency Study, Saylorville Dam
 - Higher flood discharges
 - Require re-analysis of levees
- FEMA to re-study using new frequency analysis
 - Will provide study to community to use for levee certification purposes.
 - Not funded or scheduled

Iowa DNR Floodplain Mapping Program

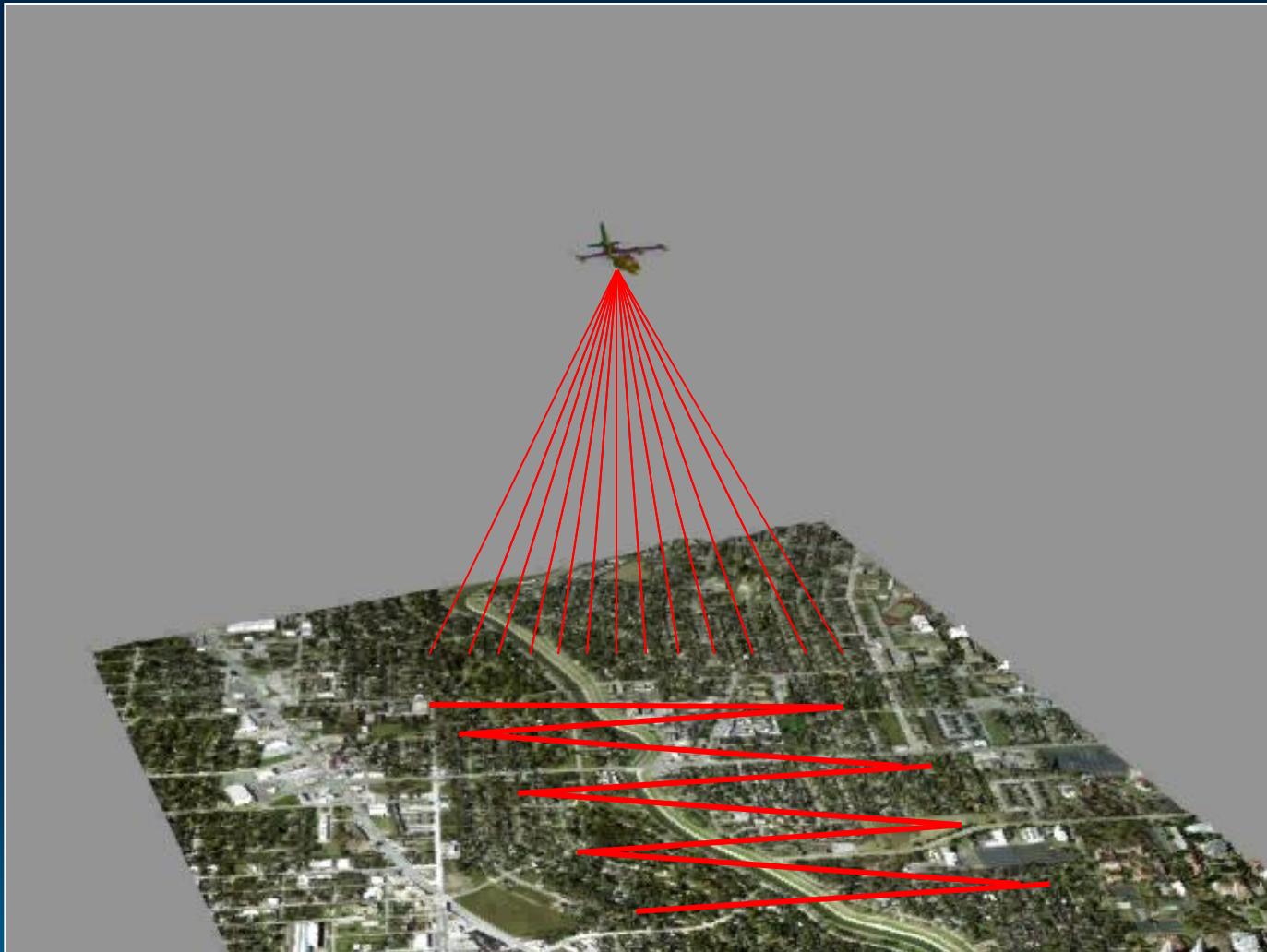
- Mapping in 85 counties declared federal disaster areas
 - 4-year project
 - \$15M HUD Grant
- Collaborative Effort
- Using better terrain data
 - LiDAR
- Producing Work Maps



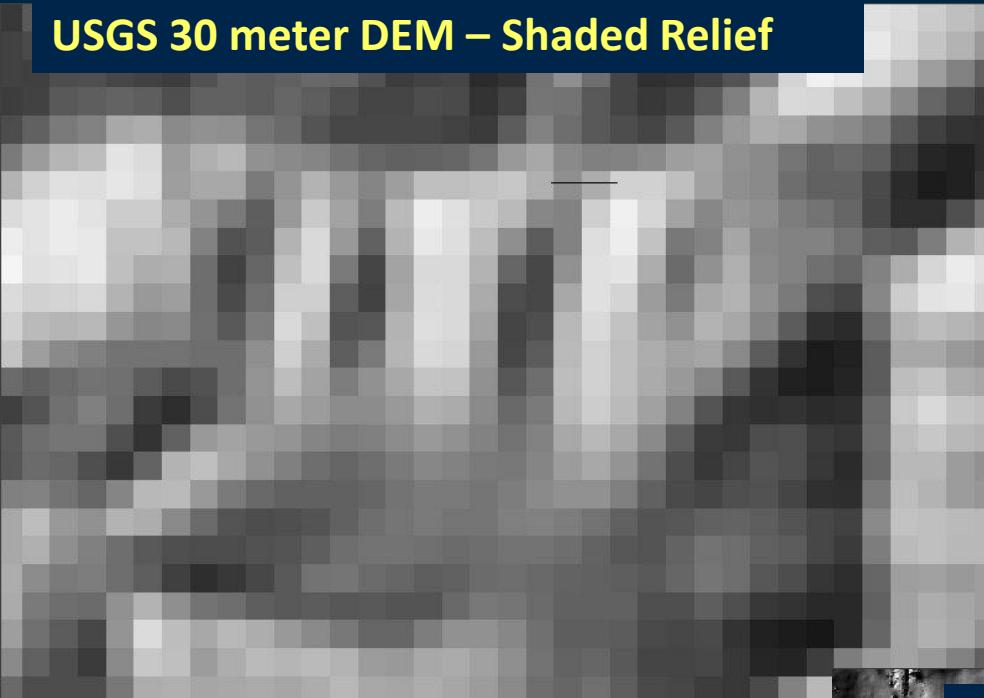
Creating DFIRM's



Scanning LiDAR



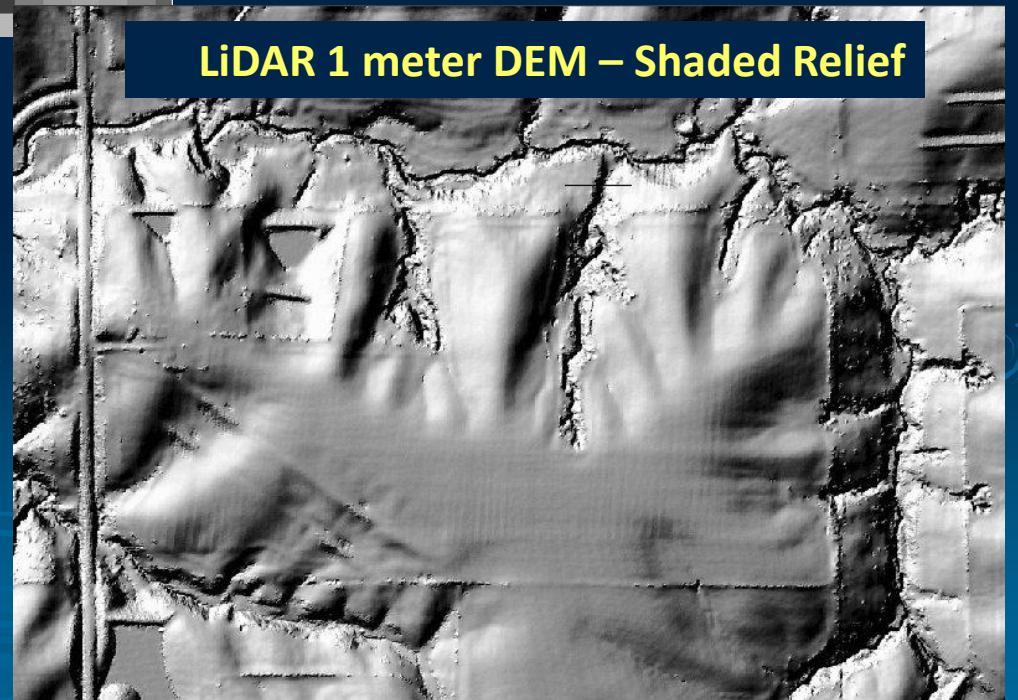
USGS 30 meter DEM – Shaded Relief



FEMA mostly uses 30-meter DEM in their map production process

DNR will utilize 1-meter DEM to accurately depict stream channel and floodplain features measured by LiDAR

LiDAR 1 meter DEM – Shaded Relief



Flood Insurance Rate Map vs. Work Map

➤ **Flood Insurance Rate Map**

- Official FEMA Map
- Illustrates flood hazard areas and risk premium zones
- Used by:
 - Lending Institutions
 - Insurance Agents
 - Federal, State & Local Government Agencies
 - Flood Zone Determination Companies

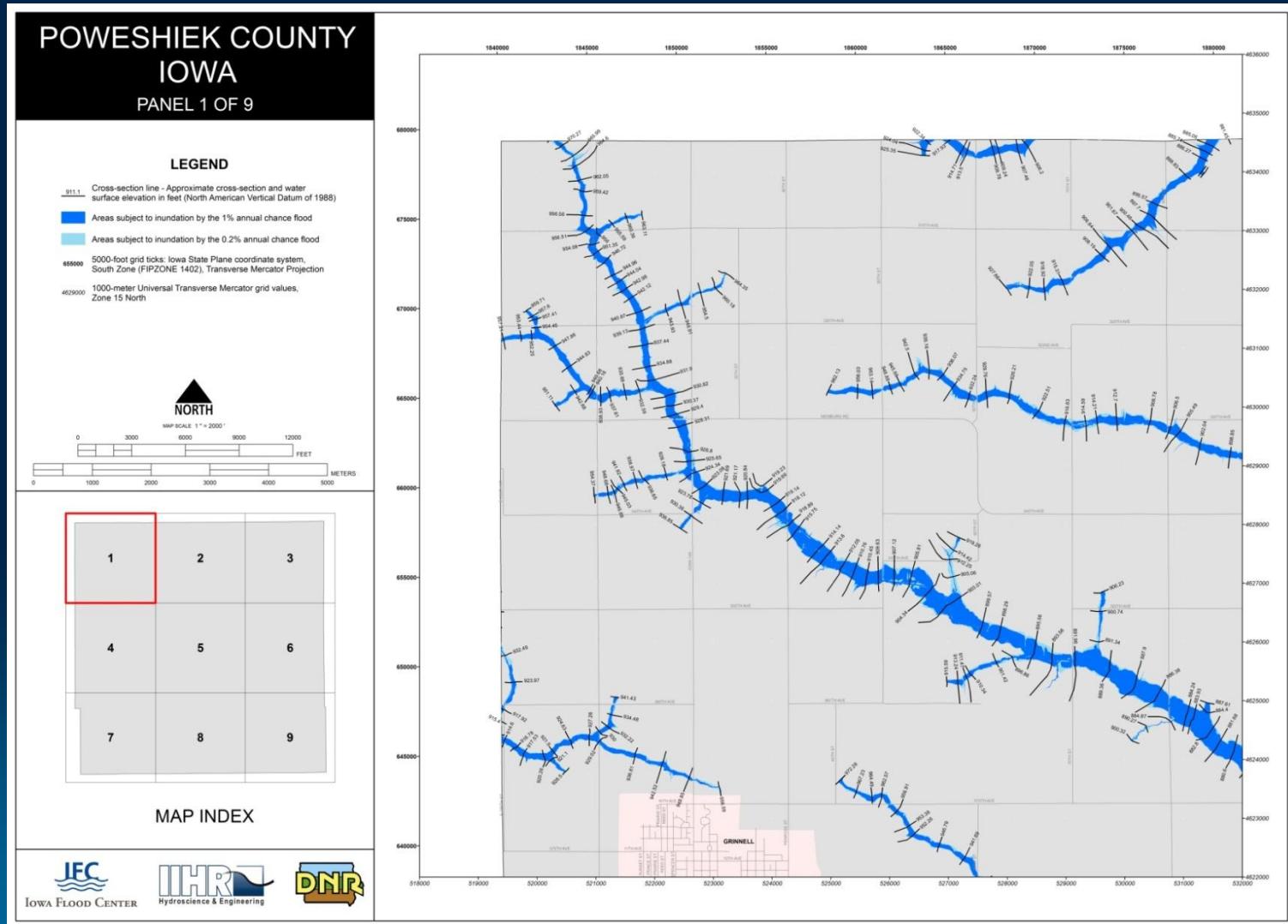
➤ **Work Map**

- Reflects the results of a study showing flooded areas for various flood events:
 - 1% and 0.2% annual chance floods (i.e. 100-Yr. and 500-Yr.)
- Provides foundation for a Flood Insurance Rate Map
- Contain disclaimers regarding use

Uses For Work Maps

- Land Use Planning in flood-prone areas
- Ability to anticipate implementation of Floodplain Development Regulations (NFIP)
- Reduces ambiguity in floodplain permitting process
- Disaster Response and emergency planning

Work Map Example



Flood Plain Development Program

<http://floodplain.iowadnr.gov>

Contact Information

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