

# Council Bluffs Flood Outreach Meeting

## Flood Plain Mapping in Pottawattamie County

Ken Bouma  
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

# Council Bluffs Flood Map Chronology

# Original Map

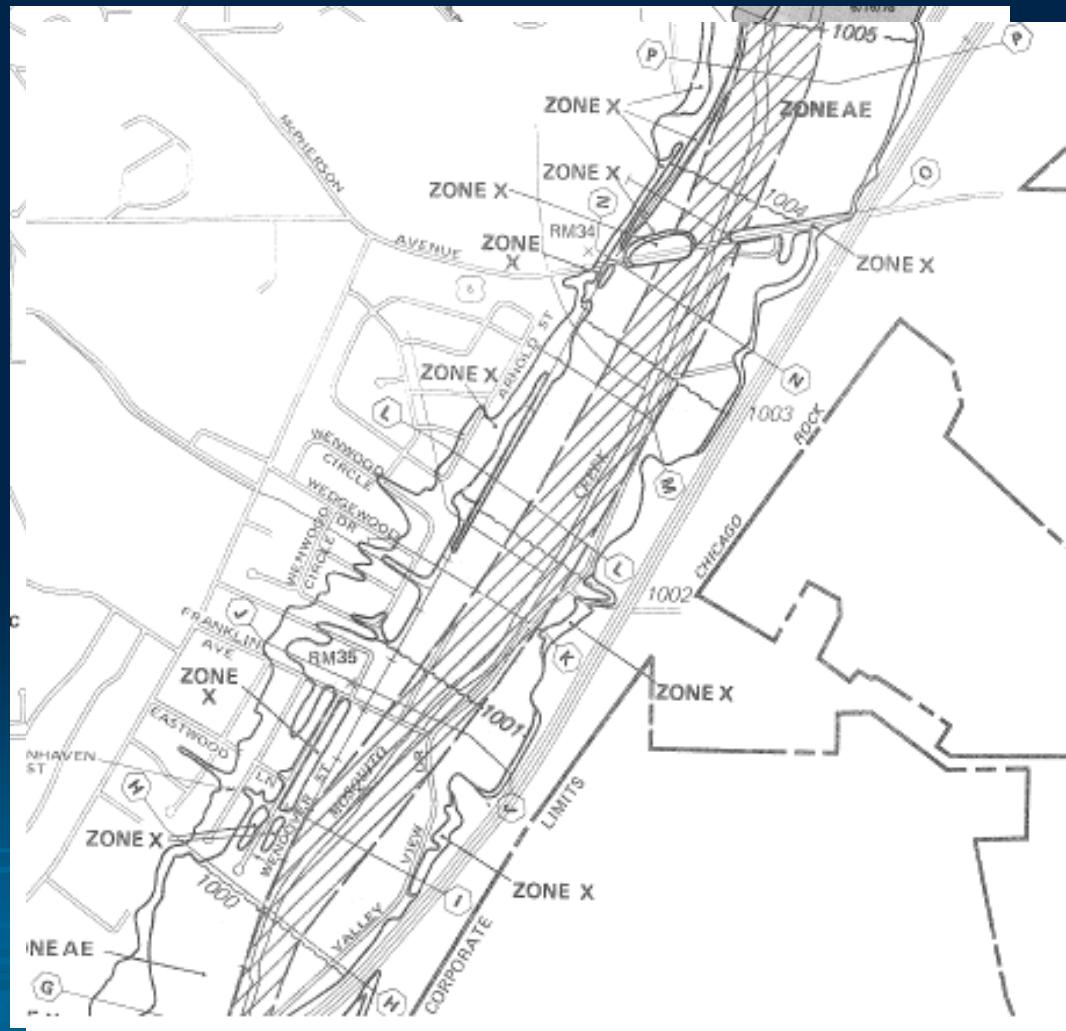
- Flood Hazard Boundary Map
  - Published – July 23, 1976

# Map Revision & Detailed Study

- Published – June 15, 1978
  - Converted to FIRM

# Revised Flood Insurance Rate Map (FIRM)

- Published – Apr. 2, 2002



# Council Bluffs Current Effective Map

## Digital Flood Insurance Rate Map (DFIRM)

- Published Feb. 4, 2005
- Part of the Pottawattamie County DFIRM



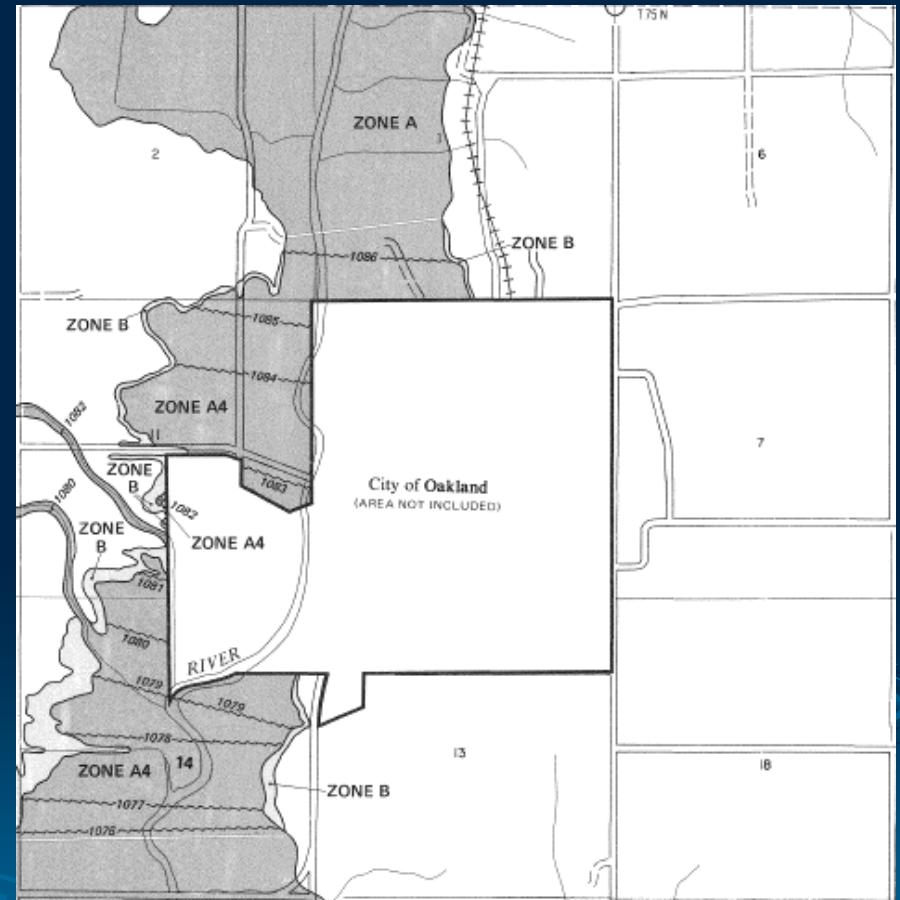
# Pottawattamie County Flood Map Chronology

## Original Map

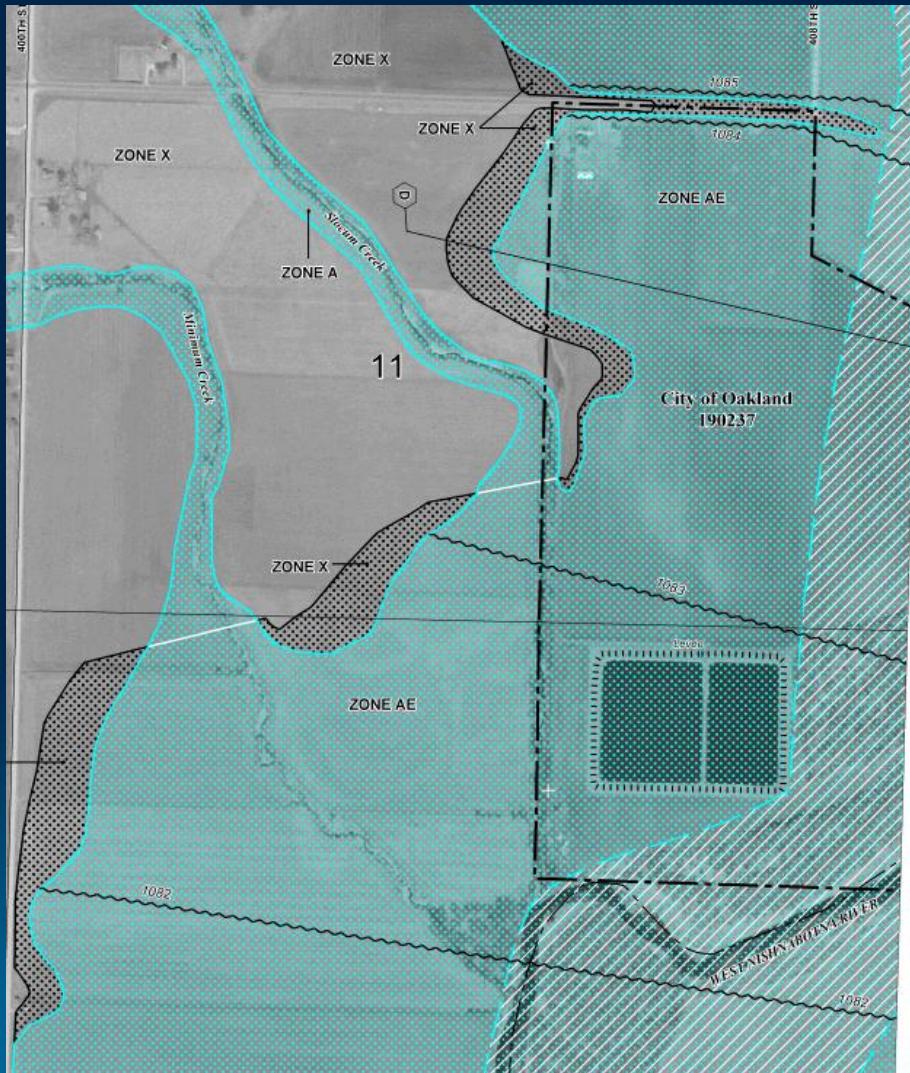
- Flood Hazard Boundary Map
- Published – Dec. 6, 1977

## Flood Insurance Rate Map w/ Detailed Studies

- April 4, 1983



# FEMA's Flood Map Modernization

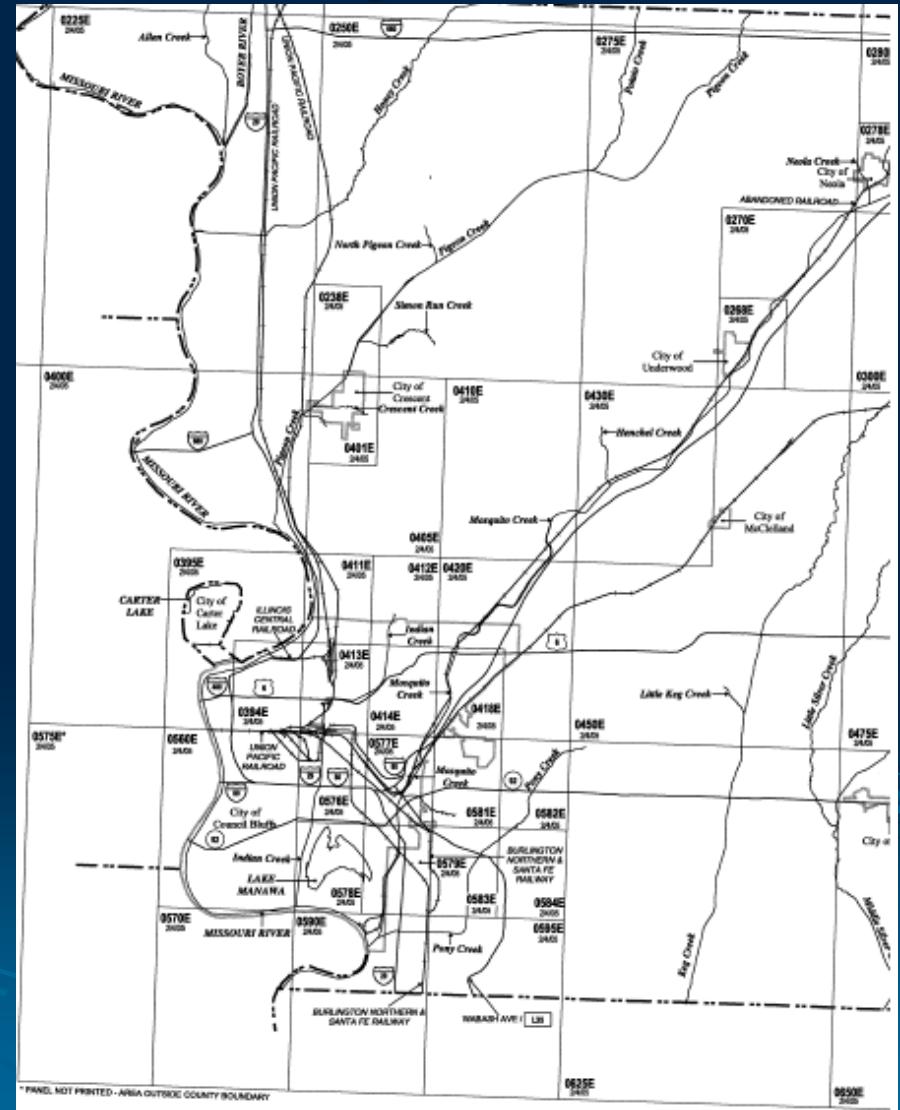


- Use aerial photos as base map
  - IDNR Aerial Photography – 2002
- Mapping county-wide instead of community based
- Can use maps and data with own local digital information

# Pottawattamie County Maps

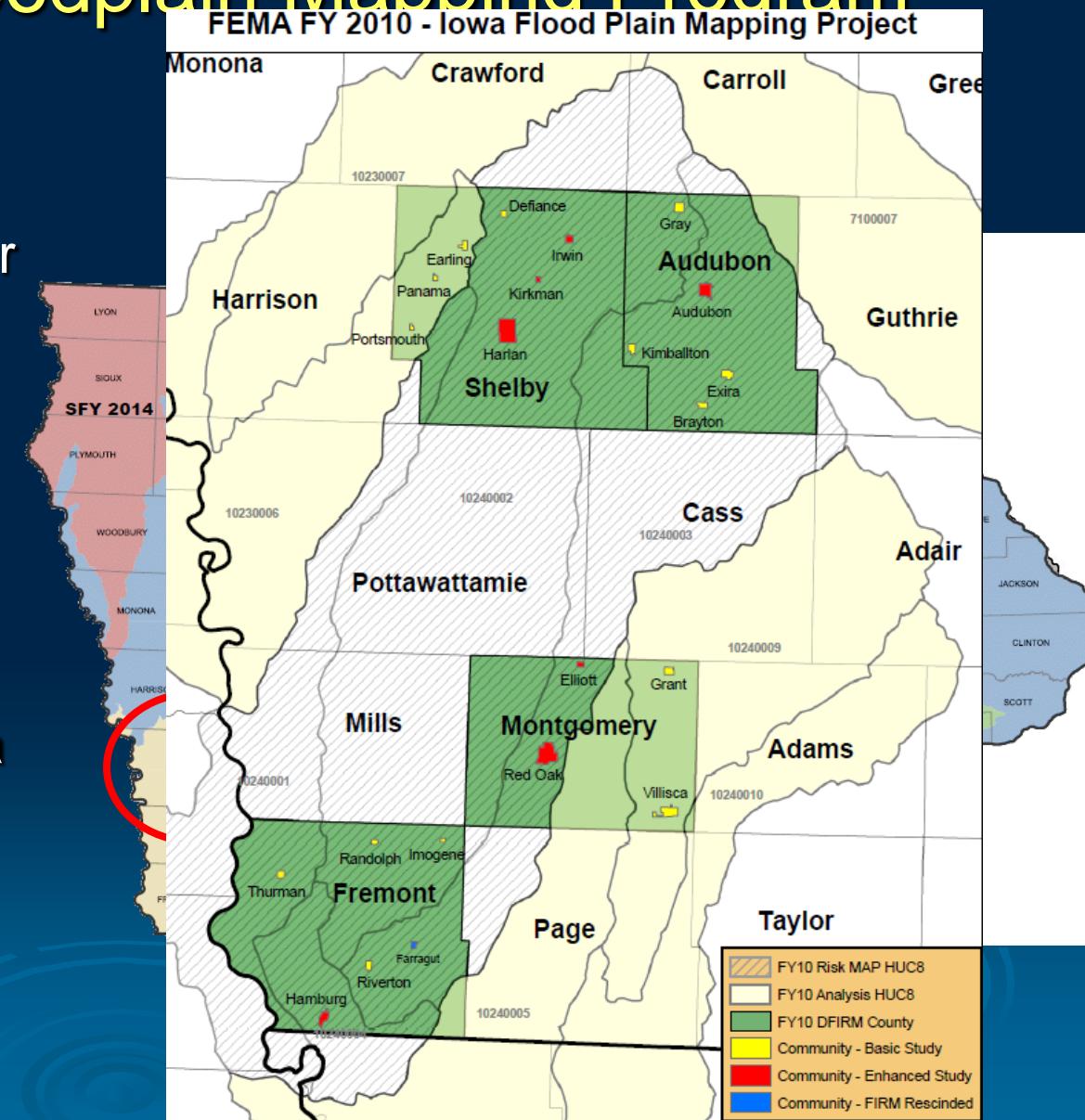
## Current Effective Maps

- Digital Flood Insurance Rate Map
  - Published on Feb. 4, 2005
- 67 map panels covering the entire county.
- Flood plains delineated using 2-, 4-, and 10-ft contour intervals.



# Iowa DNR Floodplain Mapping Program

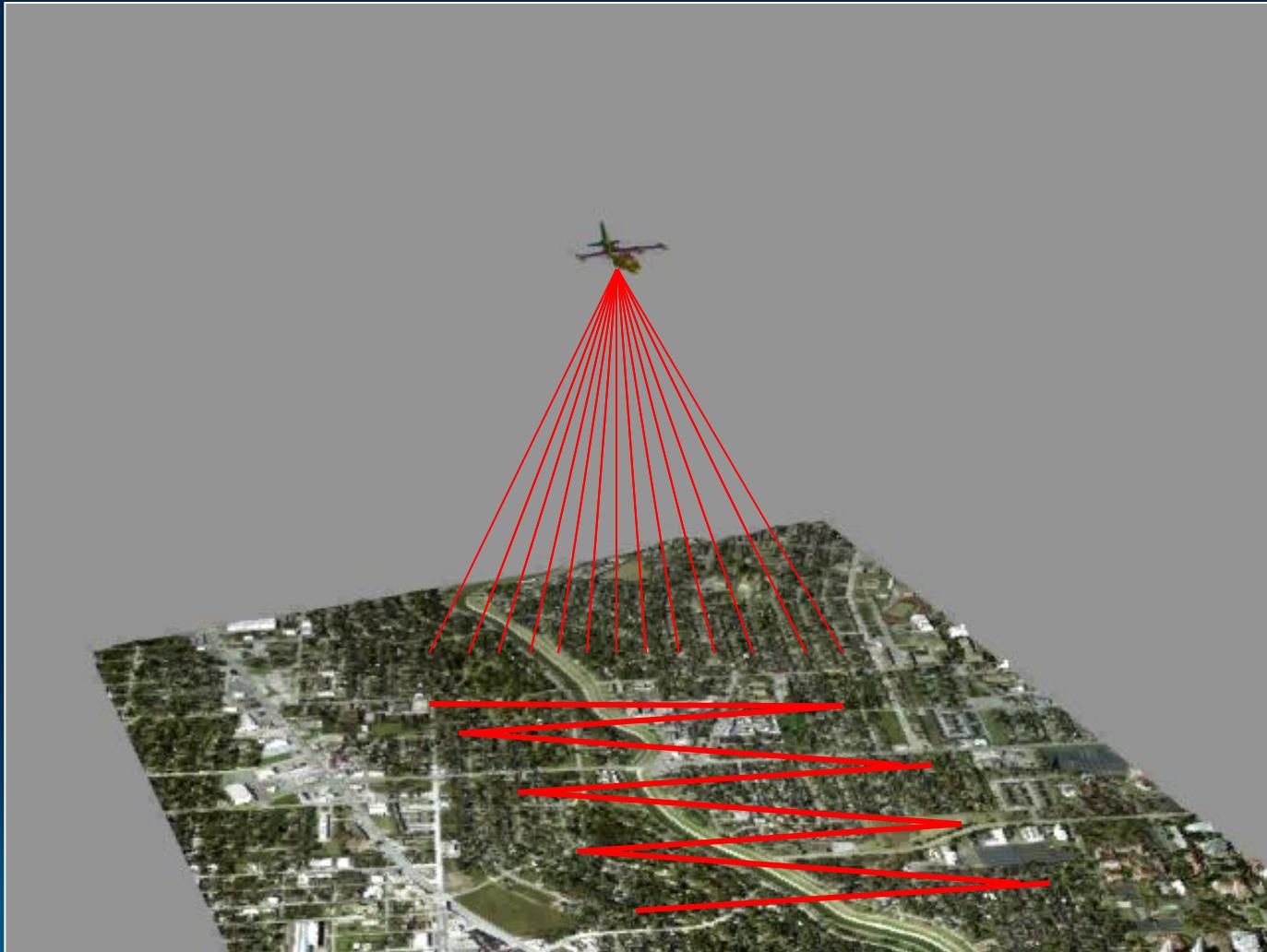
- Mapping in 85 counties declared federal disaster areas
  - 4-year project
  - \$15M HUD Grant
- Collaborative Effort
- Using better terrain data
  - LiDAR
- Producing Work Maps



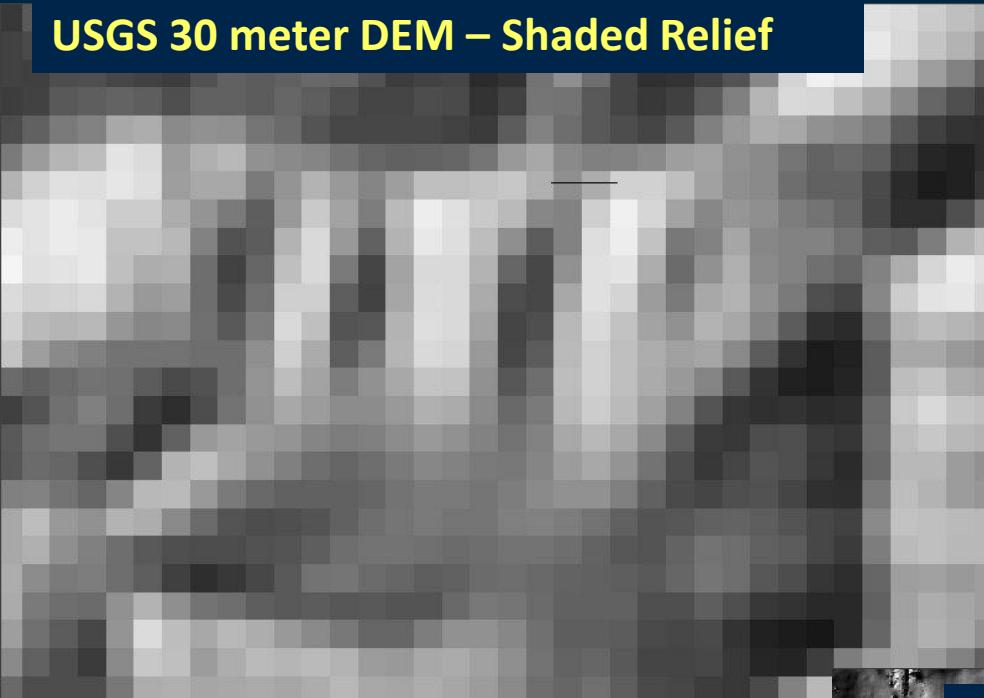
# Creating DFIRM's



# Scanning LiDAR



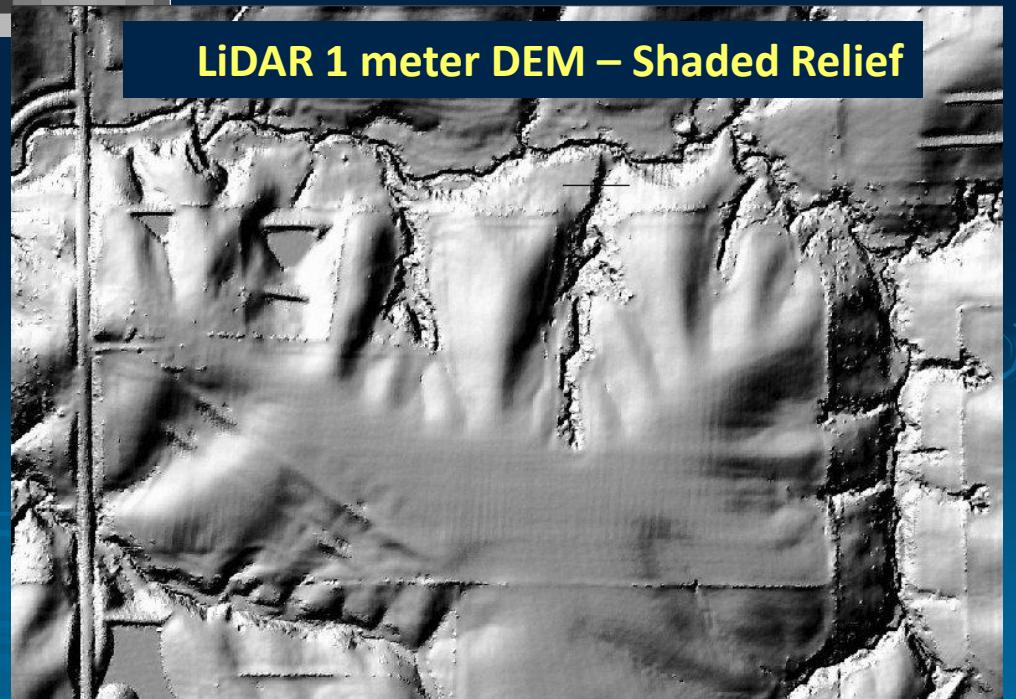
## USGS 30 meter DEM – Shaded Relief



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

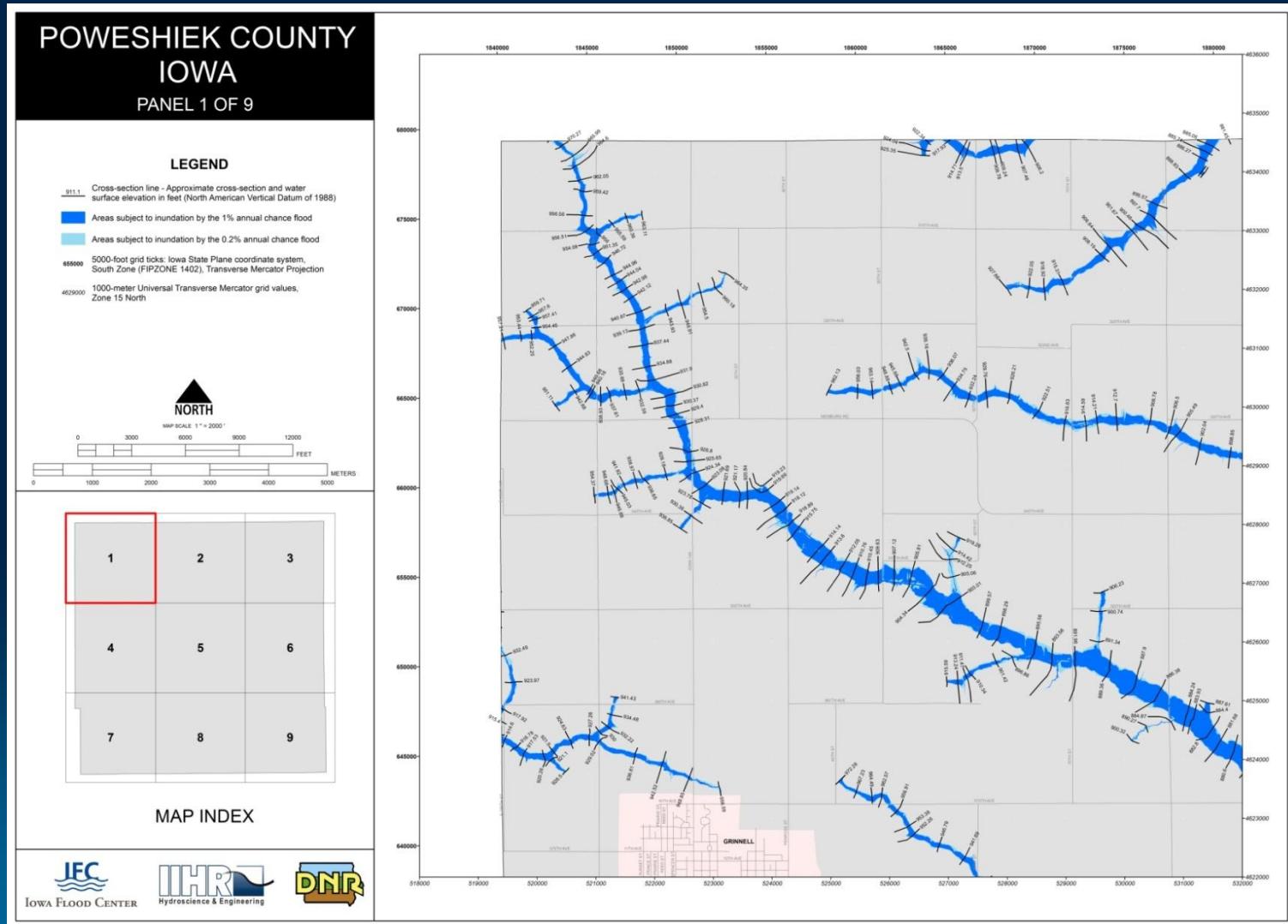
## ➤ **Work Map**

- 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

Ken Bouma  
(515) 281-6907  
[ken.bouma@dnr.state.gov](mailto:ken.bouma@dnr.state.gov)