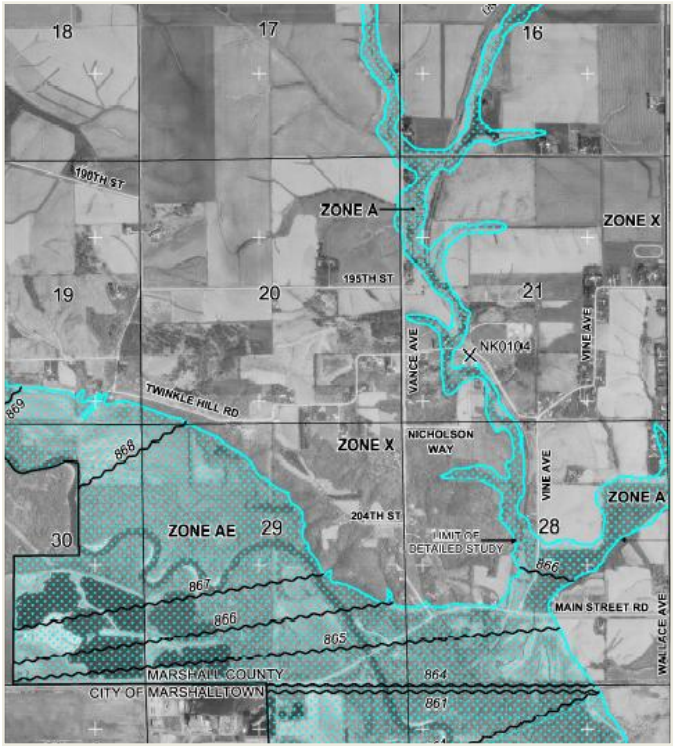
IOWA STATEWIDE FLOODPLAIN MAPPING PROGRAM

November 28, 2014



FEMA

IFC Iowa Flood Center

IOWA DNR Natural Resources

Scott Ralston, P.E., CFM

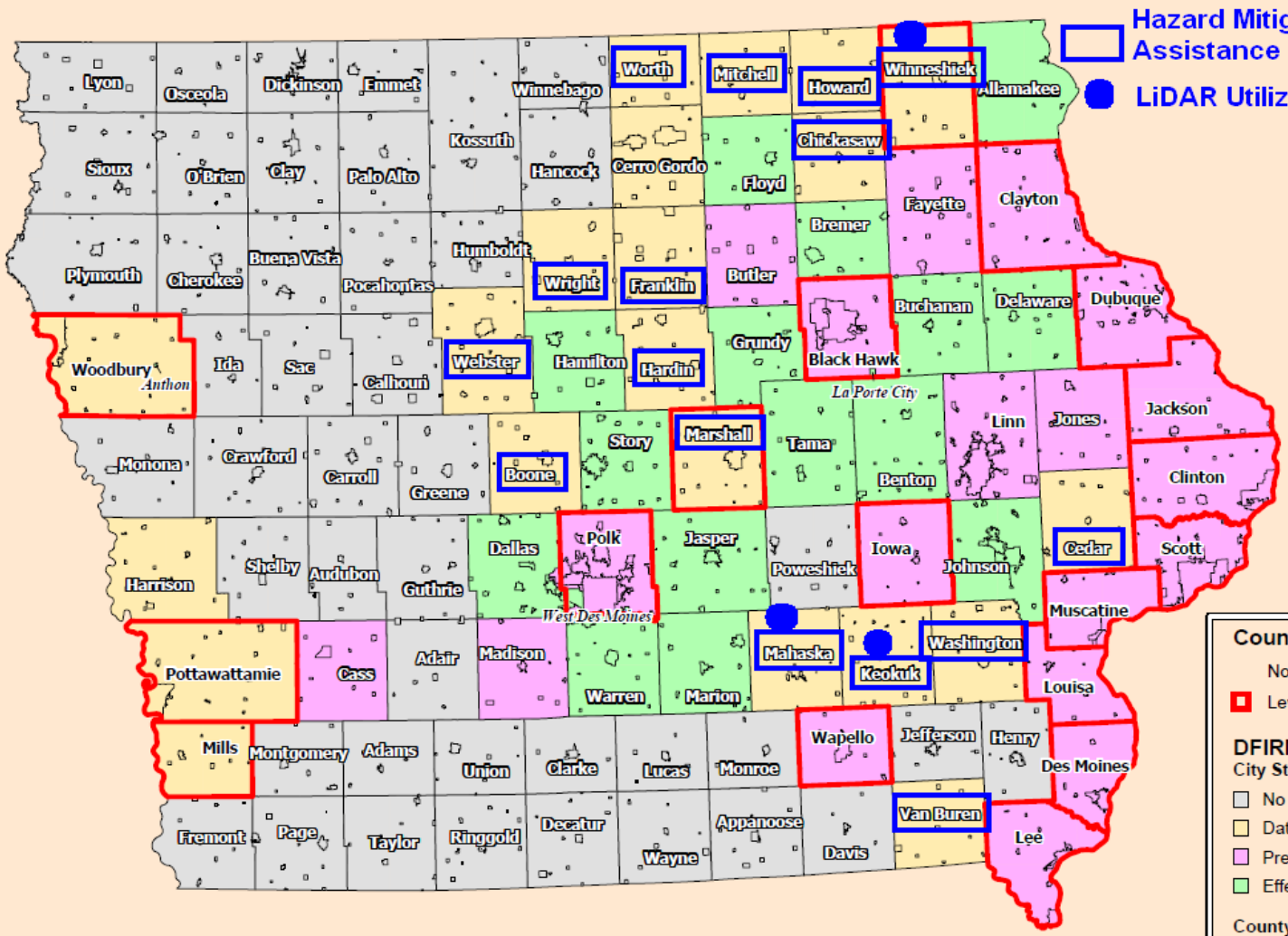
Christopher Kahle, GIS Specialist

Topics To Be Covered

- Iowa's Current Floodplain Mapping Status

- Iowa's Floodplain Mapping Program

December 2009: IOWA - FLOODPLAIN MAP STATUS



County with Levee

- Not (Levee)
- Levee(s) subject to PM43

DFIRM Production Status

City Status

No Activity	(367)
Data Development	(205)
Preliminary FIS/FIRM	(213)
Effective FIS/FIRM	(164)

County Status

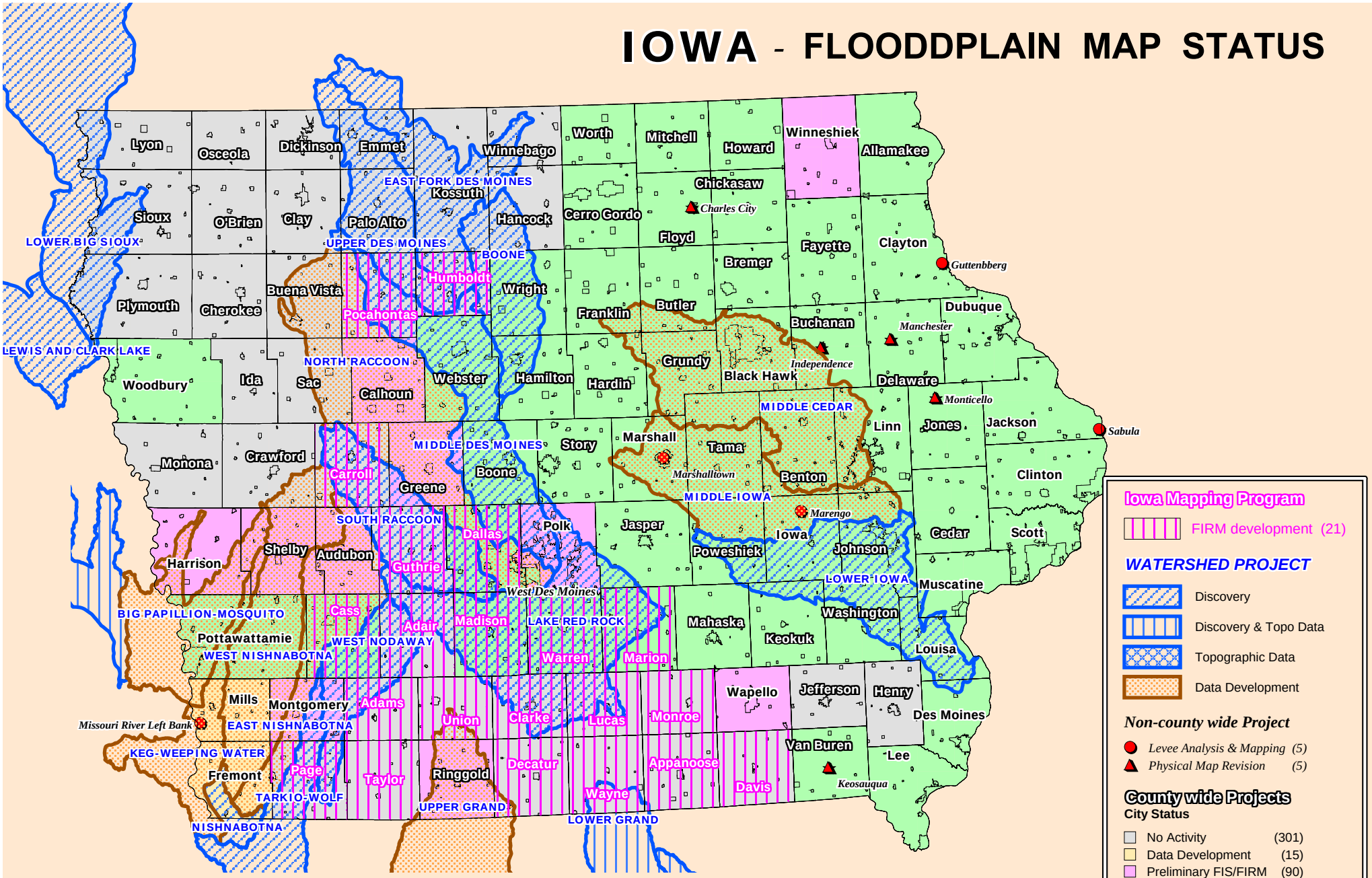
No Activity	(44)
Data Development	(21)
Preliminary FIS/FIRM	(19)

FEMA

U.S. Dept. of Homeland Security
FEMA - Region VII
MapMod all states status.wor
December 1, 2009

No Activity - FEMA does not have a DFIRM planned for the county/community.
Scoping - FEMA is developing a Statement of Work to fund a project in the current fiscal year.
Data Development - FEMA has contracted for approximate and detailed analysis, redelineation and digital conversion (where needed), and DFIRM production.
Preliminary FIS/DFIRM - A preliminary FIS/DFIRM is available for community and public comment. May be in 90-day appeal or 6-month compliance period.
Effective FIS/DFIRM - FIS and DFIRM are effective and available from Map Service Center.
Levee Note - Per proceedure memo 34 and 43, the level of protection of accredited levees is required to be verfied before a new FIRM may be released. In some cases, a community and levee owner will be allowed a 24 month period to provide certification documents.

IOWA - FLOODDPLAIN MAP STATUS



Iowa Mapping Program

FIRM development (21)

WATERSHED PROJECT

- Discovery
- Discovery & Topo Data
- Topographic Data
- Data Development

Non-county wide Project

- *Levee Analysis & Mapping (5)*
- *Physical Map Revision (5)*

County wide Projects

City Status

No Activity	(301)
Data Development	(15)
Preliminary FIS/FIRM	(90)
Effective FIS/FIRM	(542)

County Status

No Activity	(36)
Data Development	(2)
Preliminary FIS/FIRM	(10)
Effective FIS/FIRM	(51)

FEMA

U.S. Dept. of Homeland Security
FEMA - Region VII
MapMod all states status.wor
November 20, 2014

No Activity - FEMA does not have a DFIRM planned for the county/community.
Discovery - FEMA is developing a Statement of Work for a future Risk MAP project.
Data Development - FEMA has contracted for basic and enhanced analysis, redelineation and digital conversion (where needed), DFIRM production, and Risk MAP products.
Preliminary FIS/DFIRM - A preliminary FIS/DFIRM is available for community and public comment.
Notice of Final Determination - Effective date determined, communities have 6 months to adopt revised FIS/DFIRM.
Effective FIS/DFIRM - FIS and DFIRM are effective and available from Map Service Center.

Levee Note - Per proceedure memo 34 and 43, the level of protection of accredited levees is required to be verfied before a new FIRM may be released. In some cases, a community and levee owner will be allowed a 24 month period to provide certification documents.

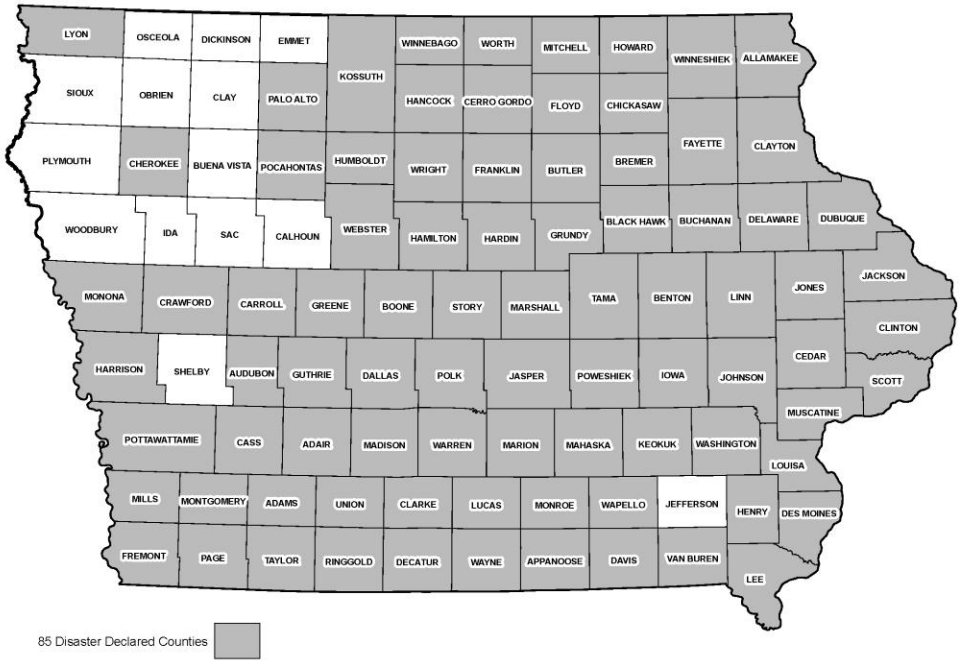
Brief History

- 1993 Floods
  - Major flooding in Midwest
- Statewide LiDAR Project: 2005-2010
  - Floodplain mapping was not primary impetus for project
- 2008 Floods
  - Only 15 years since last widespread flood event (1993)
  - Flood of record in many parts of state
  - Flood risk awareness rose significantly
- State Response
  - Rebuild Iowa Advisory Commission
  - $640 Million Statewide Disaster Relief CDBG Grant
- Federal and State Mapping Investment
  - $4.3 Million for LiDAR (State & Federal Agencies)
  - $15 Million in CDBG Funds ($150k / County)
  - $2.2 Million in ACOE Section 22 Planning Assistance to States (PAS) Funding
  - Portion of $2 Million Floodplain Management (SFY 2010, 2011, 2012)
- Iowa Flood Center (U of I)

Floodplain Mapping Program Background

- $15M HUD CDBG grant
- Administered by Iowa DED and DNR
- Supports floodplain mapping in the 85 counties declared federal disaster areas
- "…to produce floodplain maps that meet FEMA technical standards and can be published as Digital Flood Insurance Rate Maps (DFIRMs)."

Figure 1 - Federal Disaster Declaration (FEMA-1763-DR)

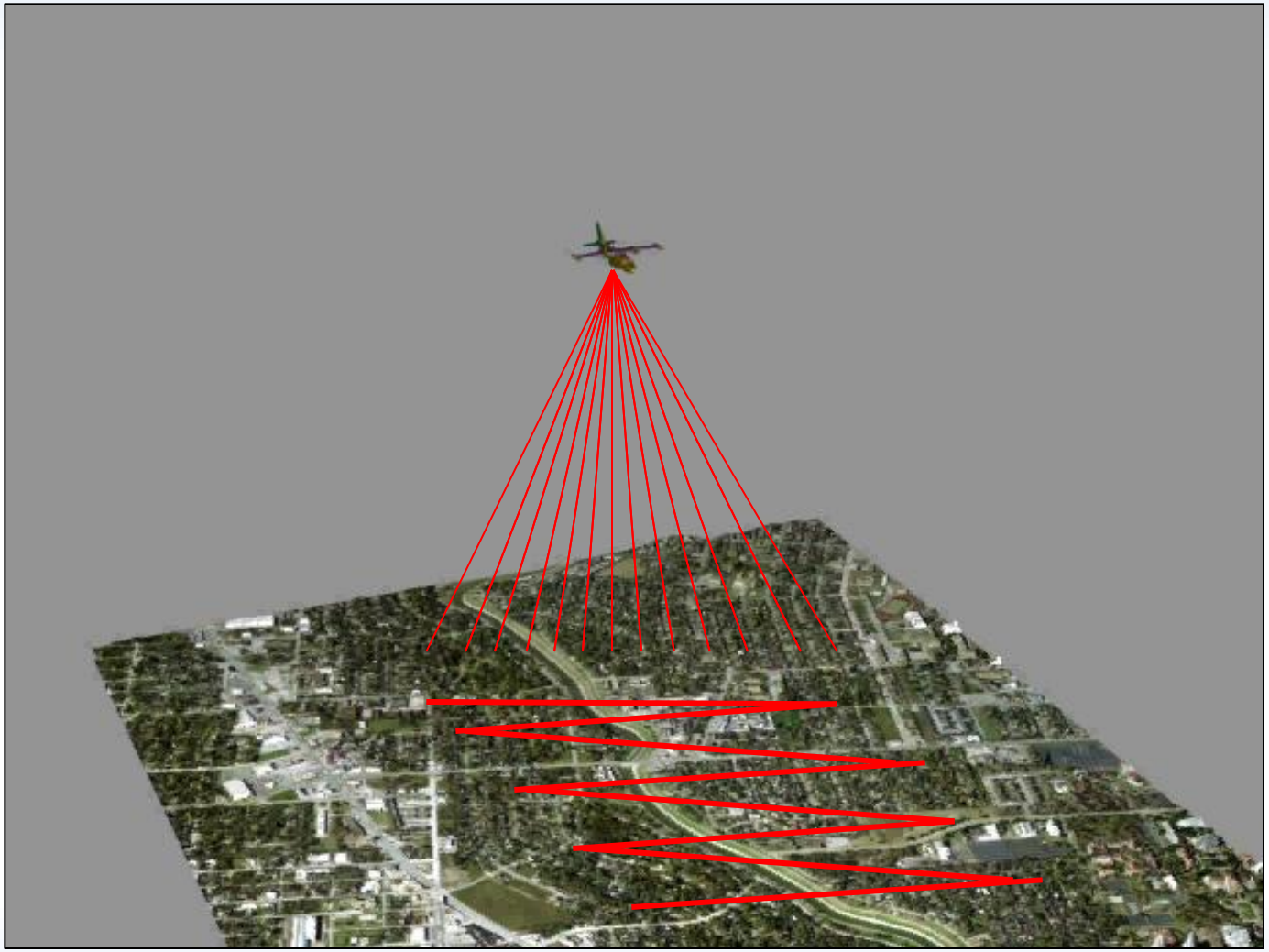


LiDAR Components

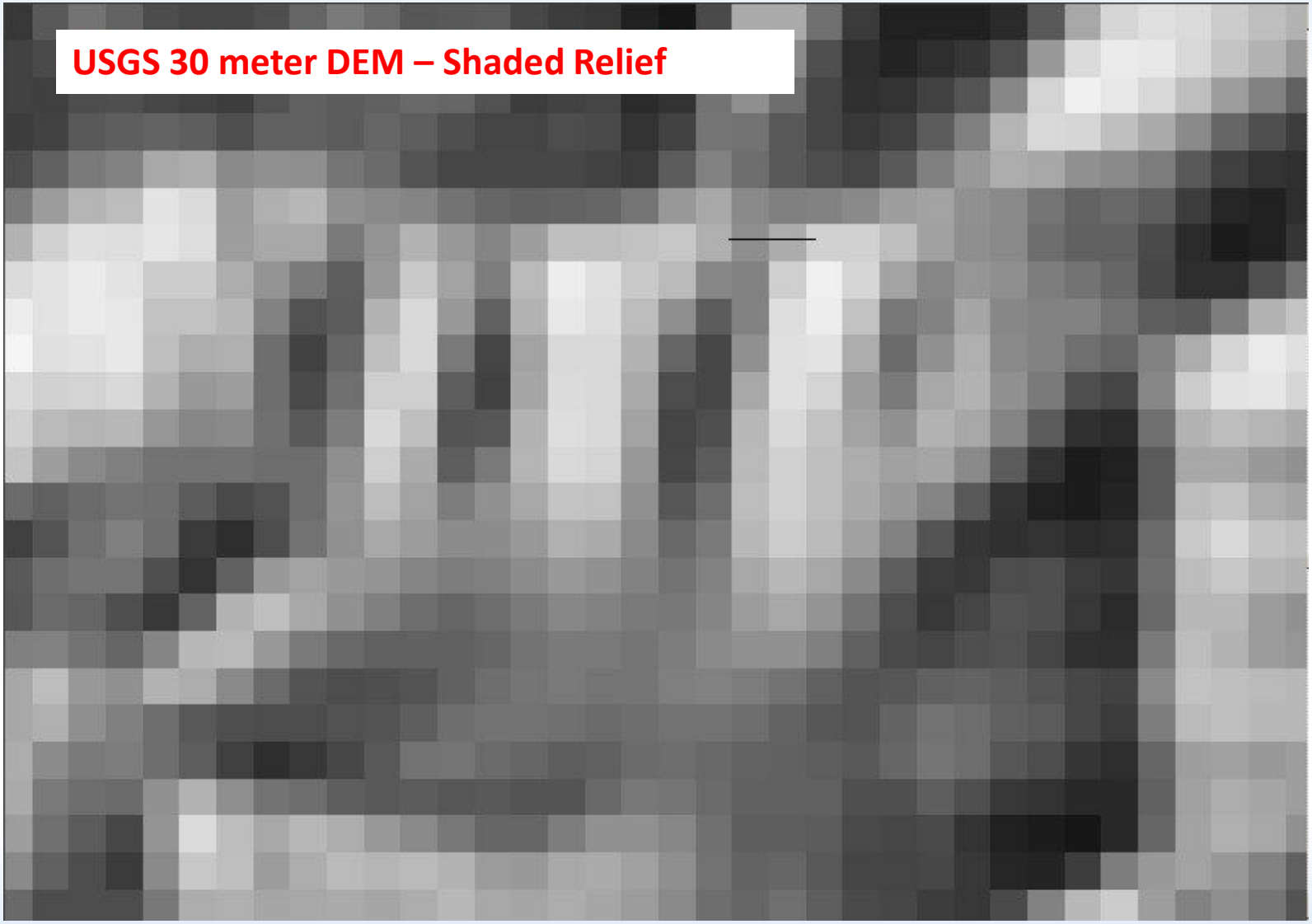
Light Detection and Ranging

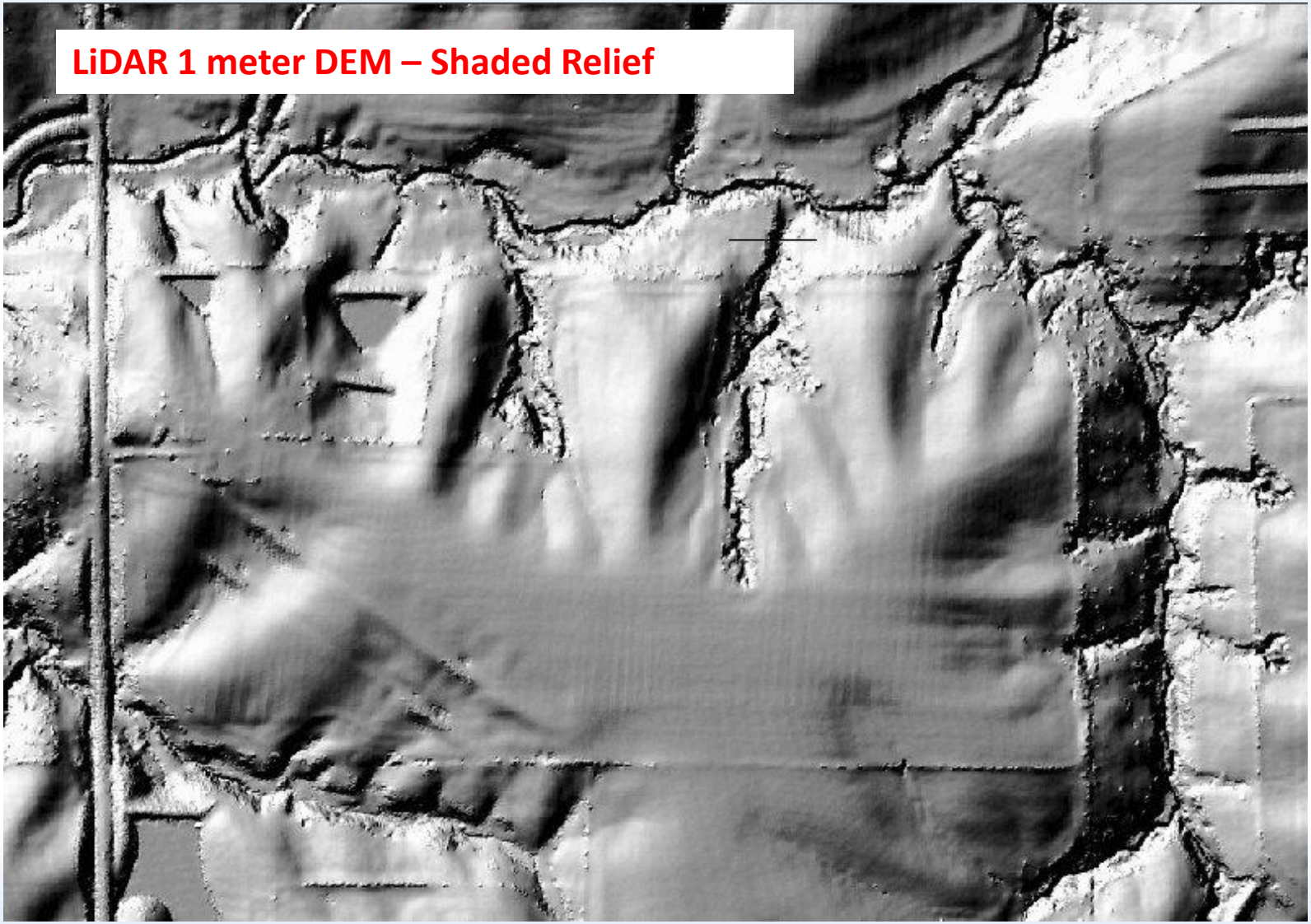
- Laser Rangefinder
- IMU (INS)
- GPS
- On board computer

Scanning LiDAR

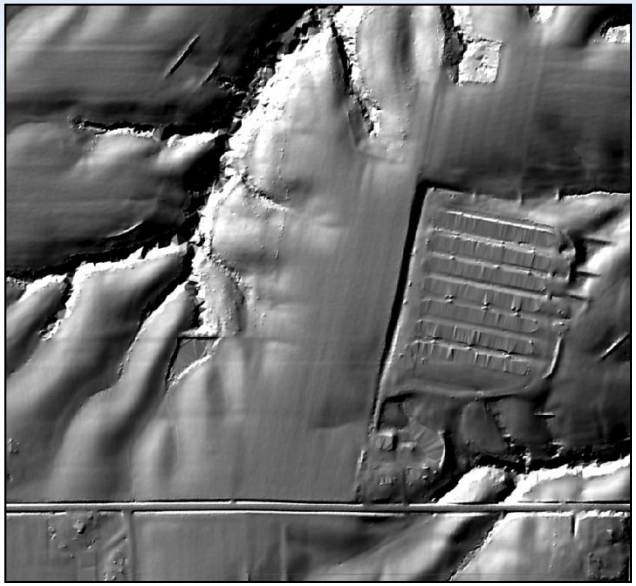


USGS 30 meter DEM – Shaded Relief

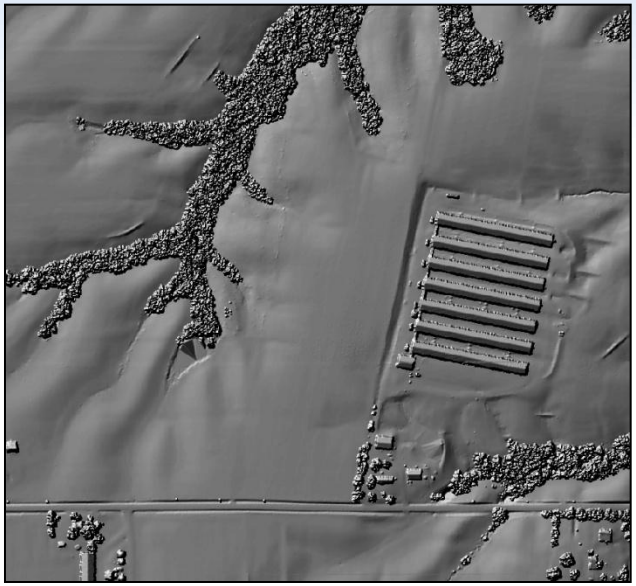



LiDAR 1 meter DEM – Shaded Relief

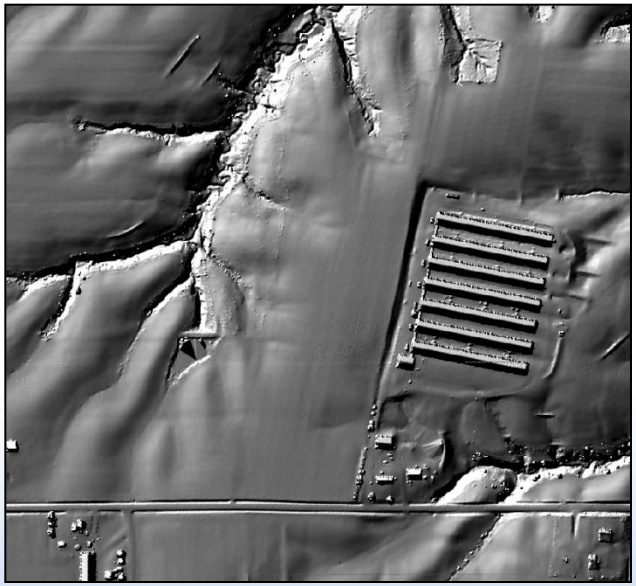
Bare Earth



First Return



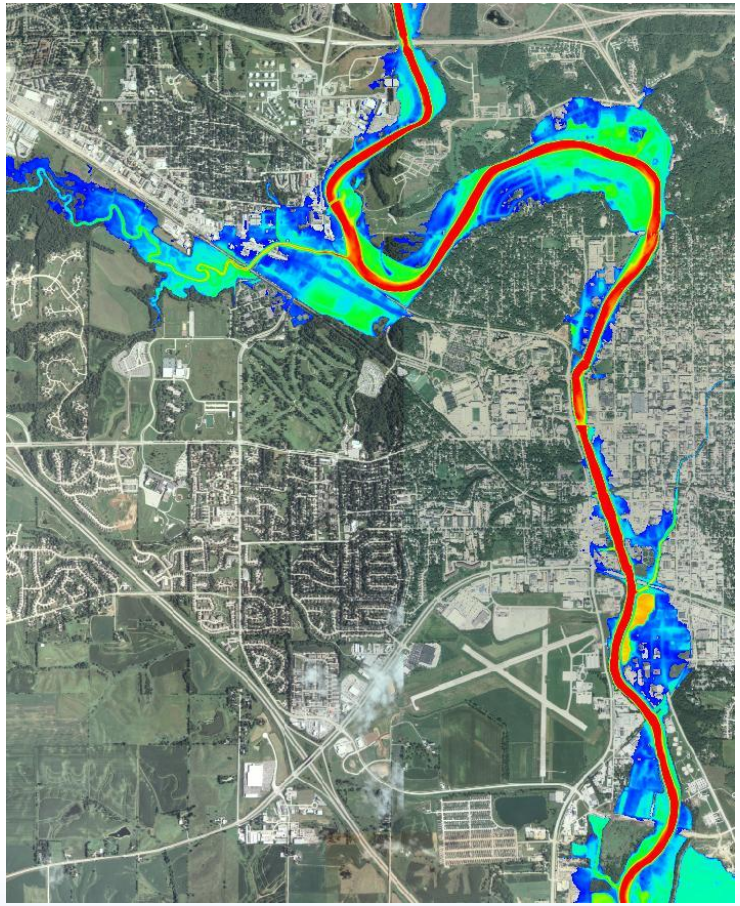
Last Return



Intensity

Iowa Flood Center

- Created by State legislation following the 2008 flood
  - A technical and educational resource for Iowans
  - Coordinates closely with IDNR and other state and federal agencies operating within Iowa
- Housed at IIHR – Hydroscience & Engineering, the University of Iowa
  - 90-year history
  - Expertise in river hydraulics, hydrology, and fluid mechanics
- Activities
  - Inundation mapping
  - Flood forecasting
  - Flood frequency estimation
  - Flood monitoring
  - Training



2008 Flood in Iowa City

Risk MAP

1
Identify Risk
Map Risk Data
2
Assess Risk
Access Present and Future Risks
Goal—Measure Quantifiable Risk Reduction
3
Communicate Risk
Plan for Risk
4
Mitigate Risk
Transfer Risk
Reduce Risk
Risk MAP
Reduce Loss of Life and Property

Risk Mapping, Assessment, and Planning (Risk MAP) Multi-Year Plan: Fiscal Years 2010-2014

Risk MAP Goals	Risk MAP Measures
Goal 1: Data Gaps Address gaps in flood hazard data	• Ensure 80 percent of the Nation's flood hazards are current by 2014 – the flood hazard data are new, have been updated, or deemed still valid through Risk MAP review and update process
Goal 2: Awareness & Understanding Measurable increase of public awareness & understanding	• Increase State, local, and Tribal officials' level of understanding of flood risk
Goal 3: Mitigation Planning Lead effective engagement in Mitigation Planning	• Ensure 80 percent of the U.S. population (excluding territories) is covered by a Local or Tribal hazard mitigation plan that is approved or approvable pending adoption
Goal 4: Digital Platform Provide an enhanced digital platform	• Percent of Local hazard mitigation plans approved using quality Risk MAP data or better
Goal 5: Synergize Programs Align Risk Analysis programs and develop synergies	• Establish a culture of continuous improvement and executing projects aimed at reducing process cycle time and improving the quality of Risk MAP products and services

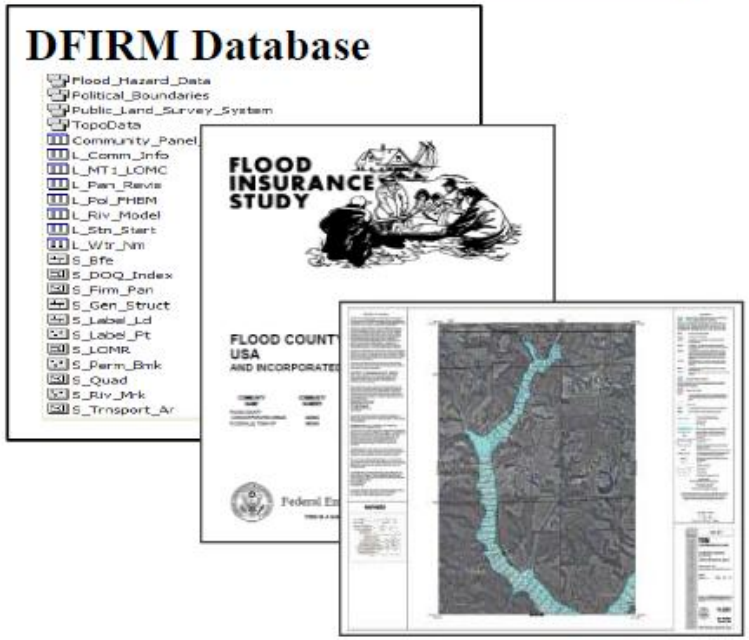
Vision

Risk MAP will deliver quality data that increases public awareness and leads to action that reduces risk to life and property

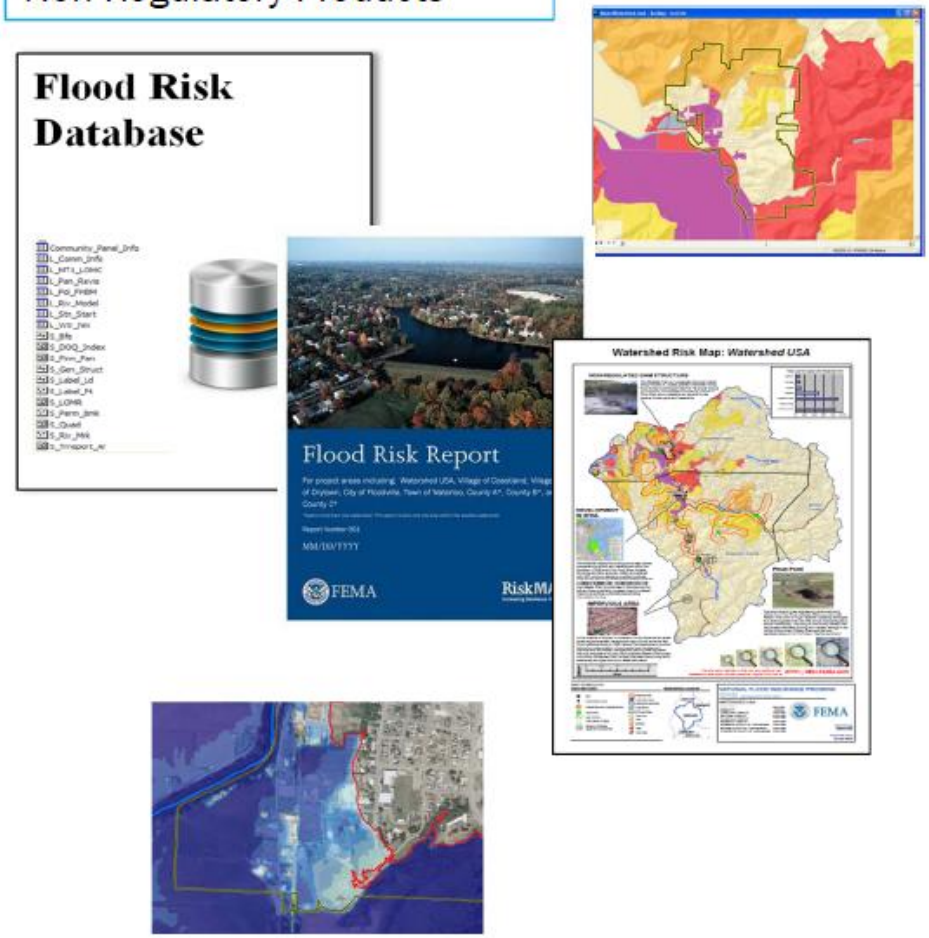
RiskMAP

Increasing Resilience Together

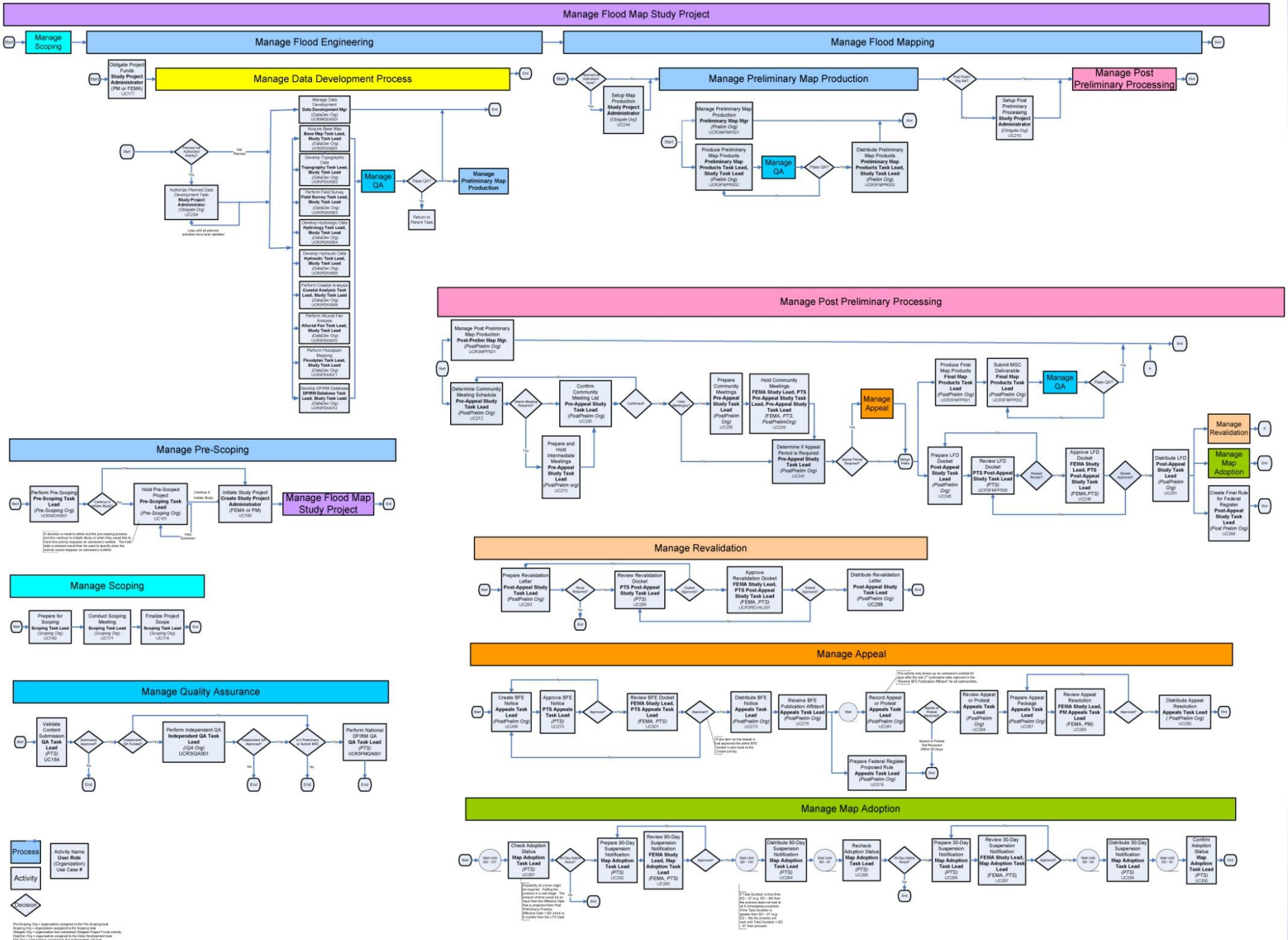
Traditional Regulatory Products



Non-Regulatory Products



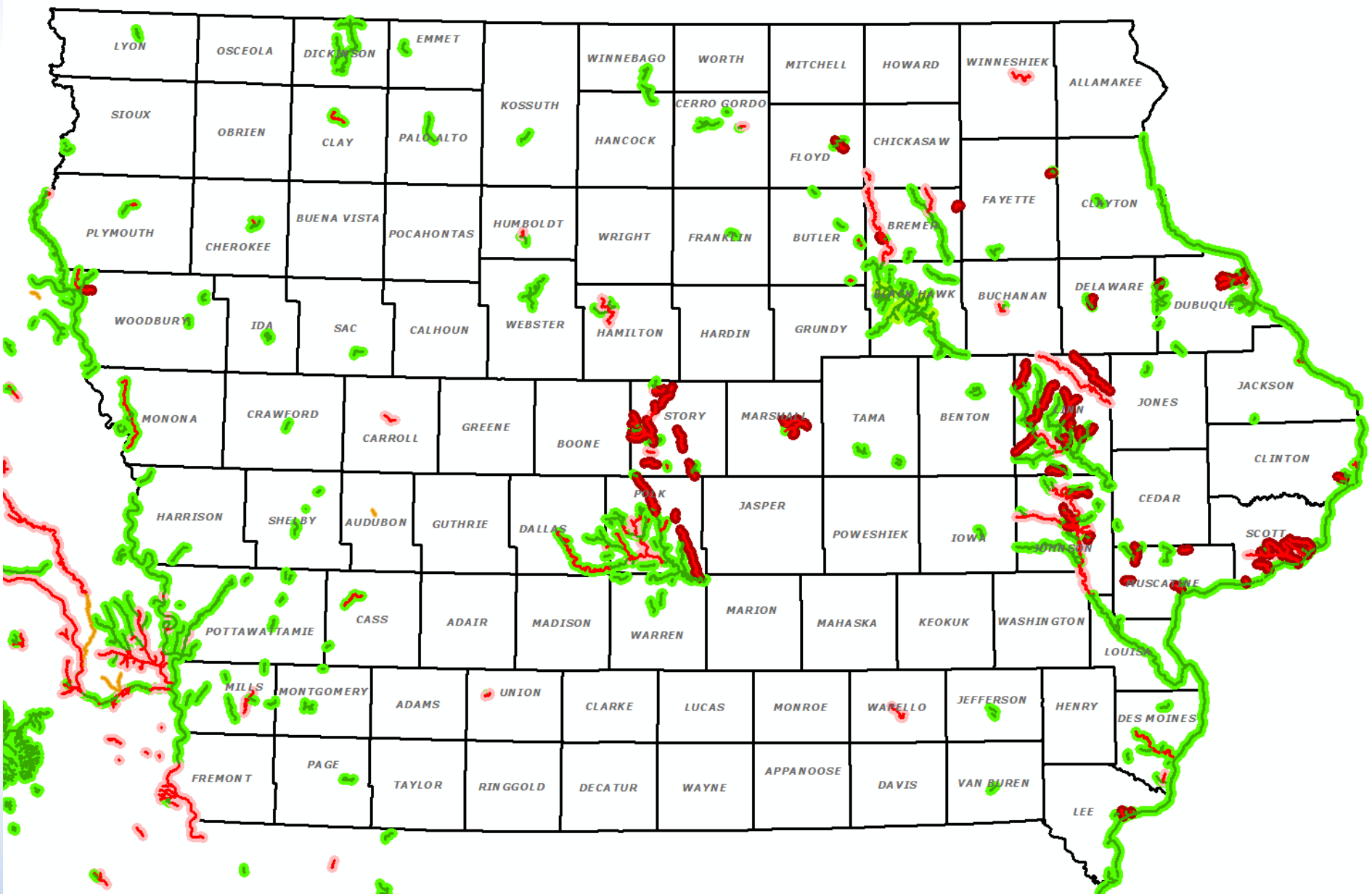
Business Process Definition Diagram
9/18/2009



CNMS PHASE III - Data Model: State of Iowa

March 2013

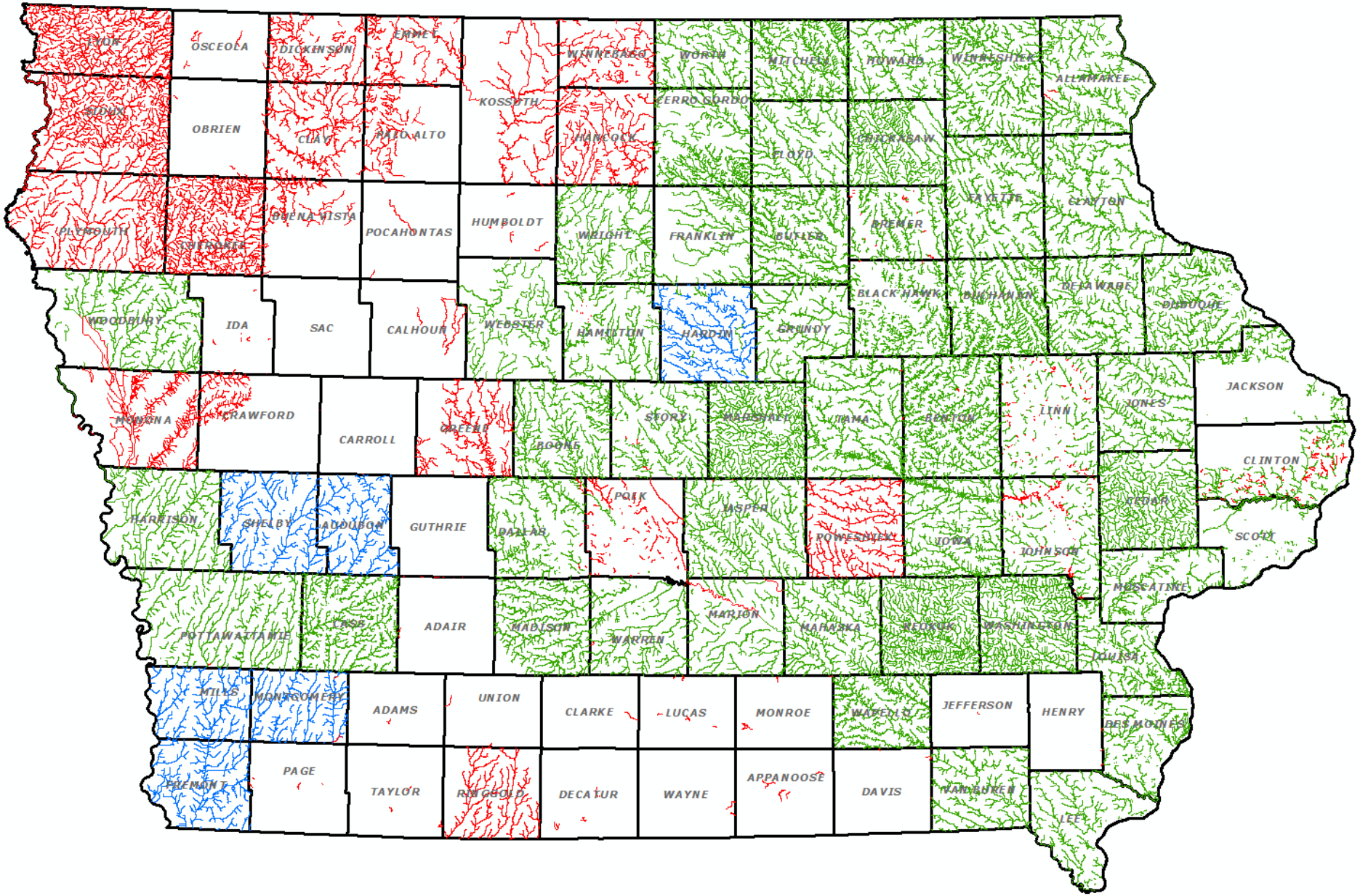
Enhanced Stream Reaches (Green = Valid; Red = Unverified)



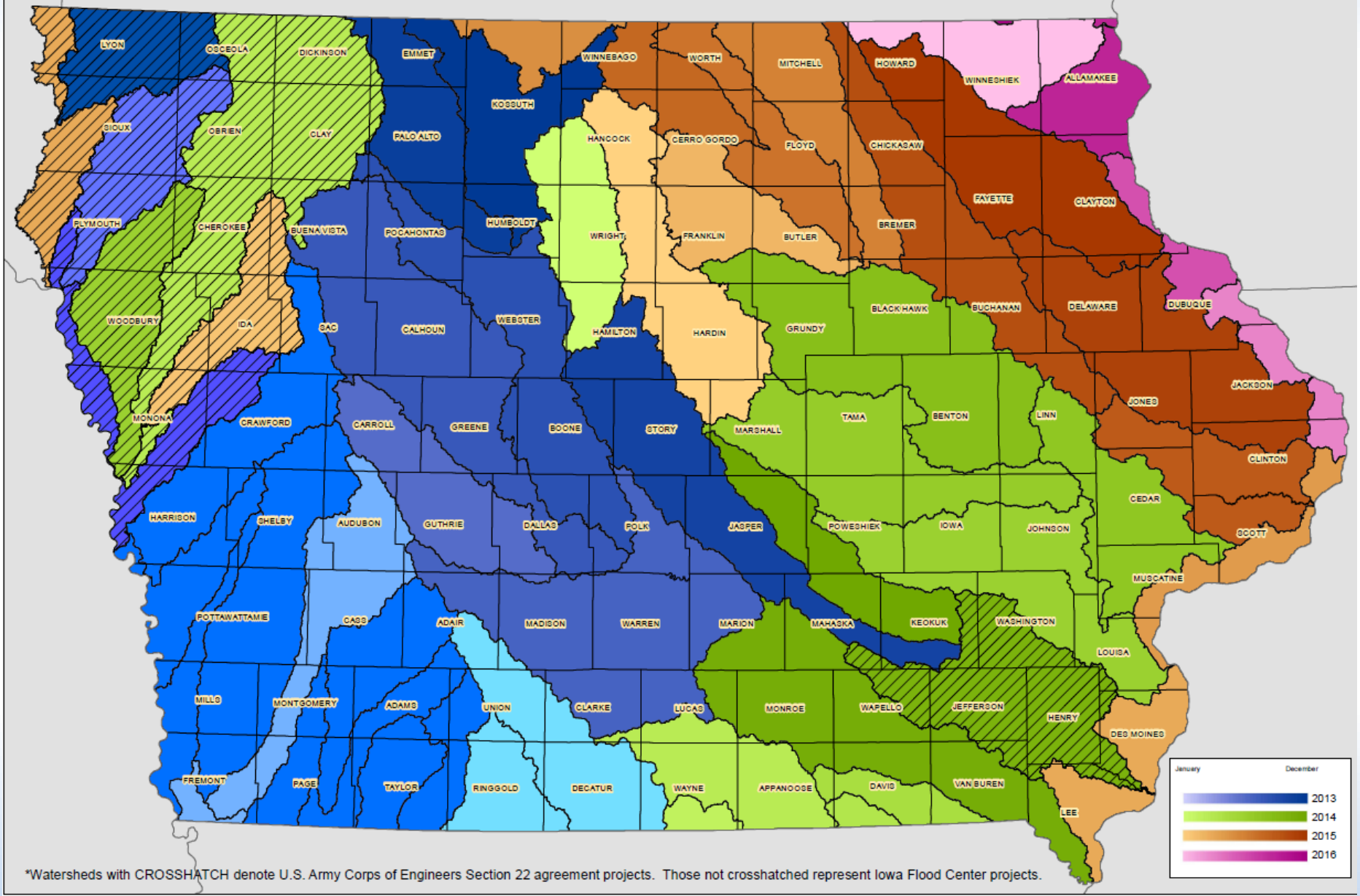
CNMS PHASE III - Data Model: State of Iowa

March 2013

Base Level Stream Reaches (Green = Valid; Red = Unverified; Blue = Assessed)

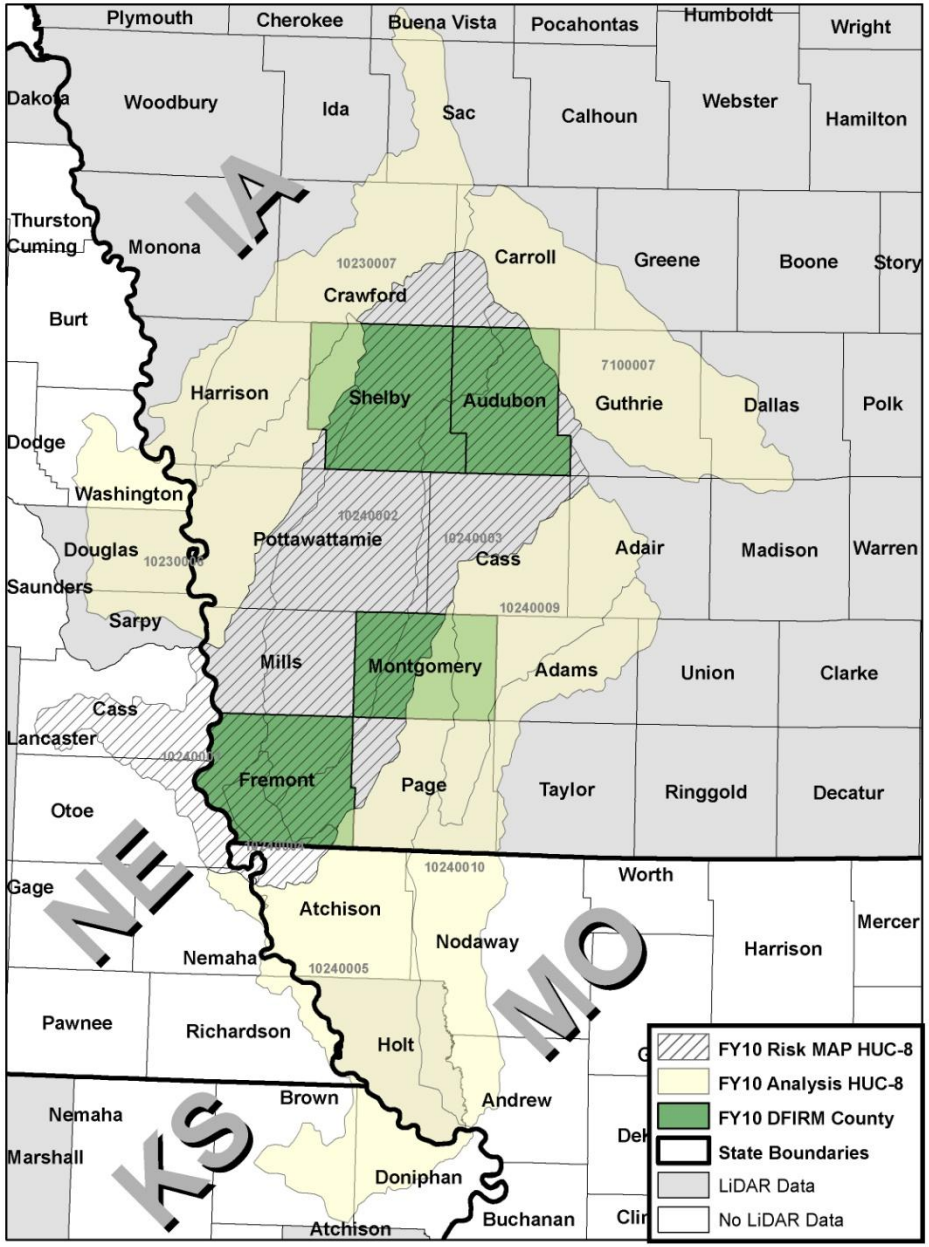


Iowa Floodplain Mapping Sequence
Schedule For Delivery of Iowa Draft Flood Hazard Products
January 2013

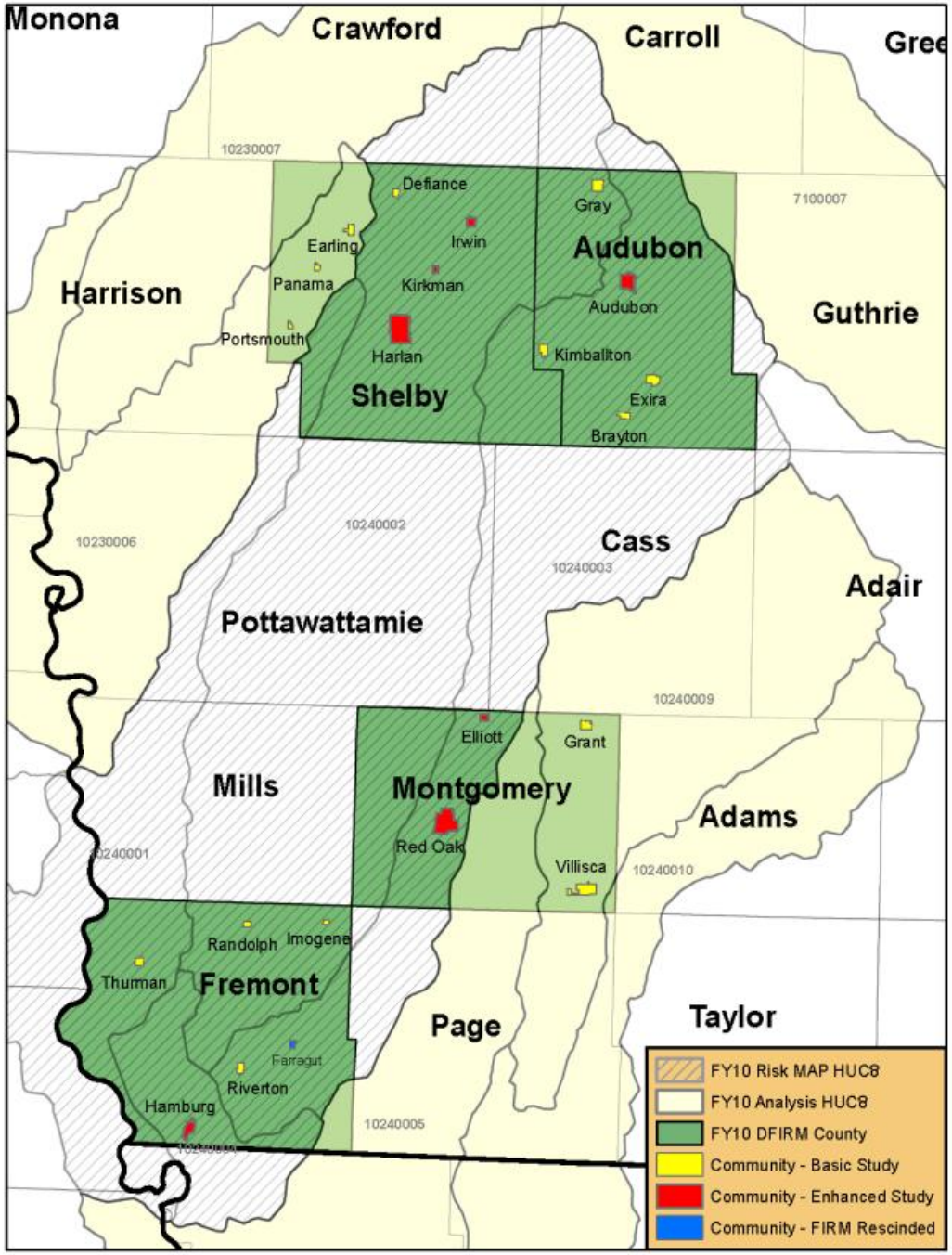


*Watersheds with CROSSHATCH denote U.S. Army Corps of Engineers Section 22 agreement projects. Those not crosshatched represent Iowa Flood Center projects.

Risk MAP - FY 2010 Iowa Floodplain Mapping Project

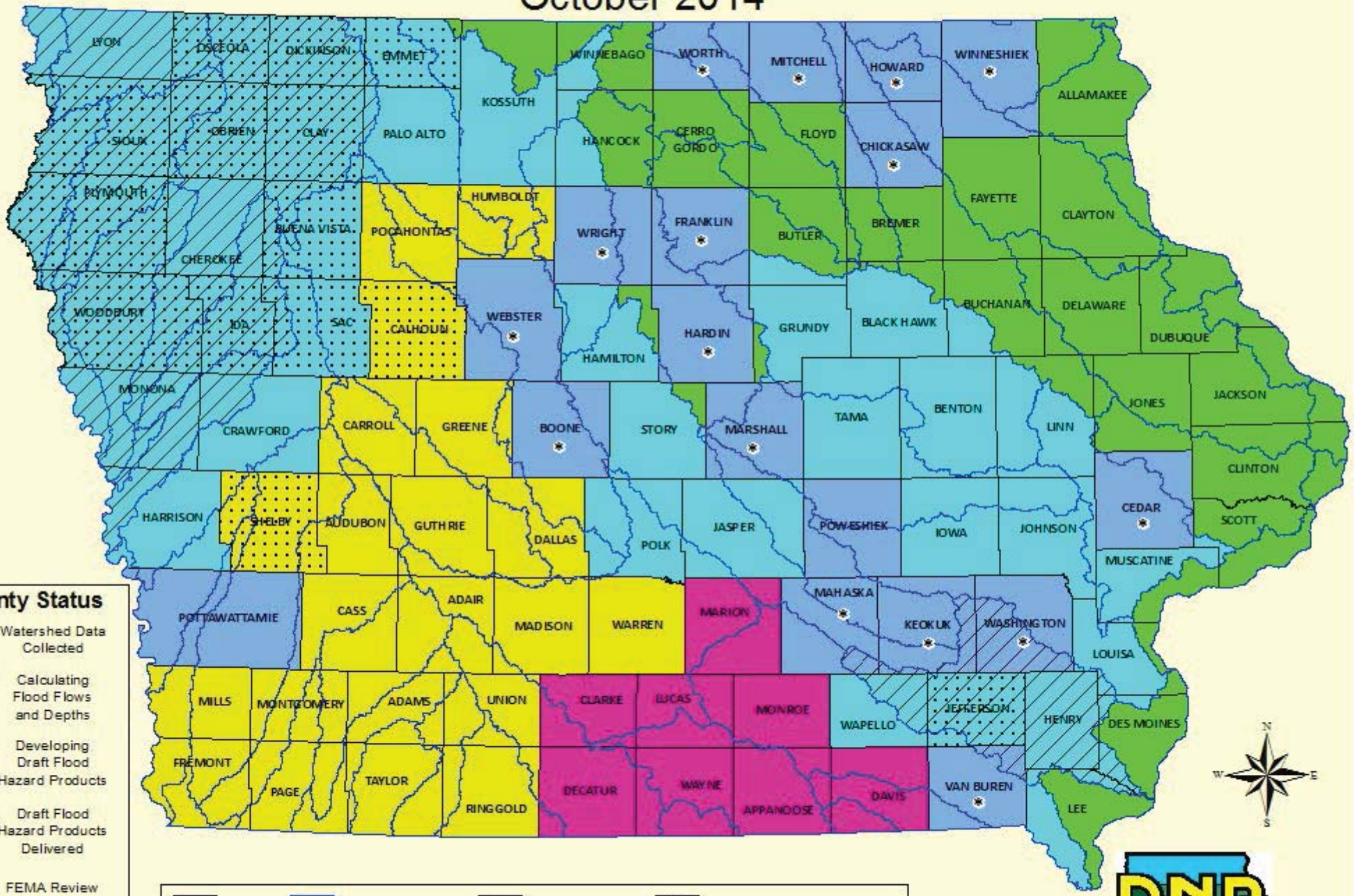


FEMA FY 2010 - Iowa Flood Plain Mapping Project



Floodplain Mapping Status

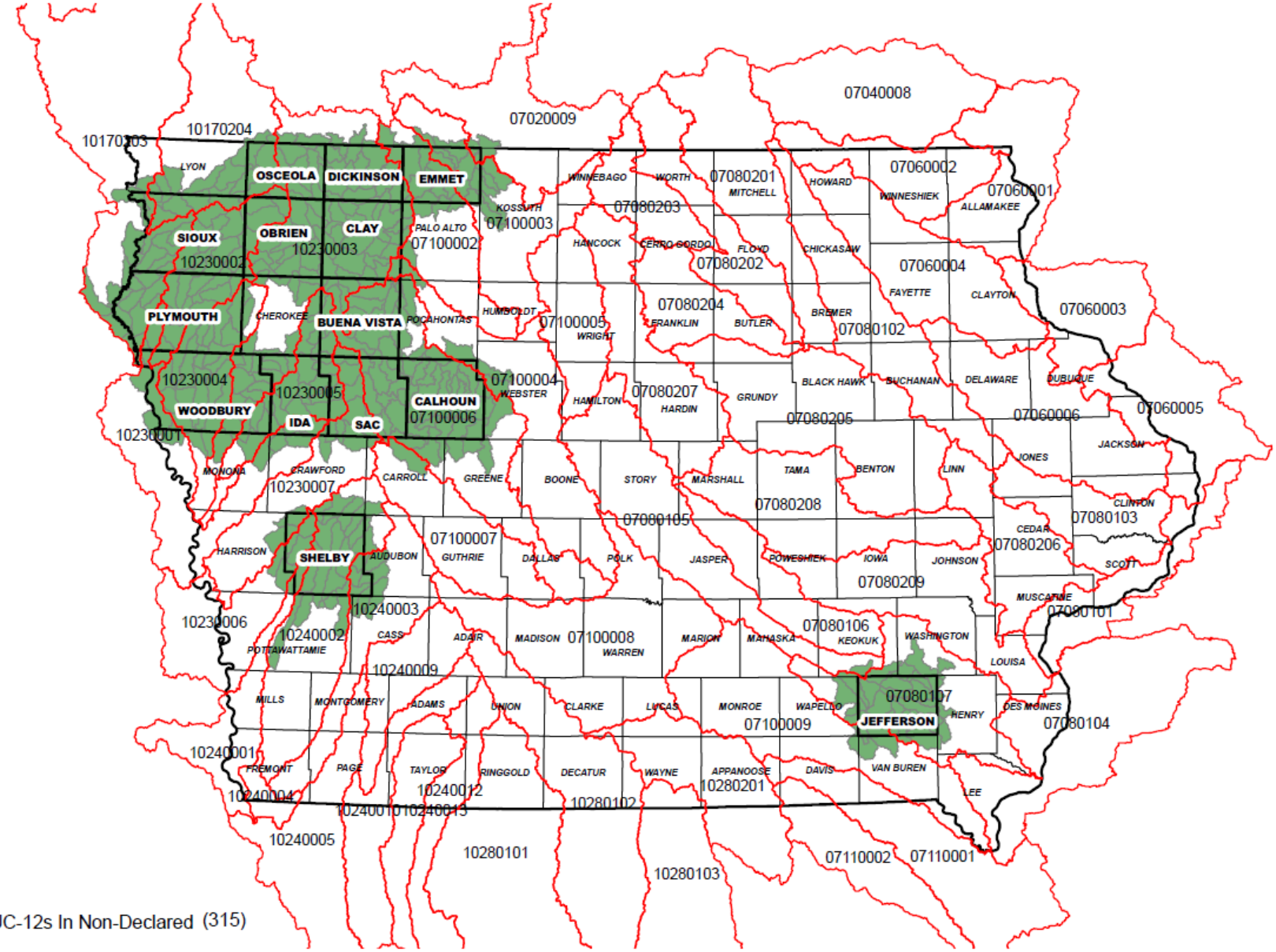
October 2014

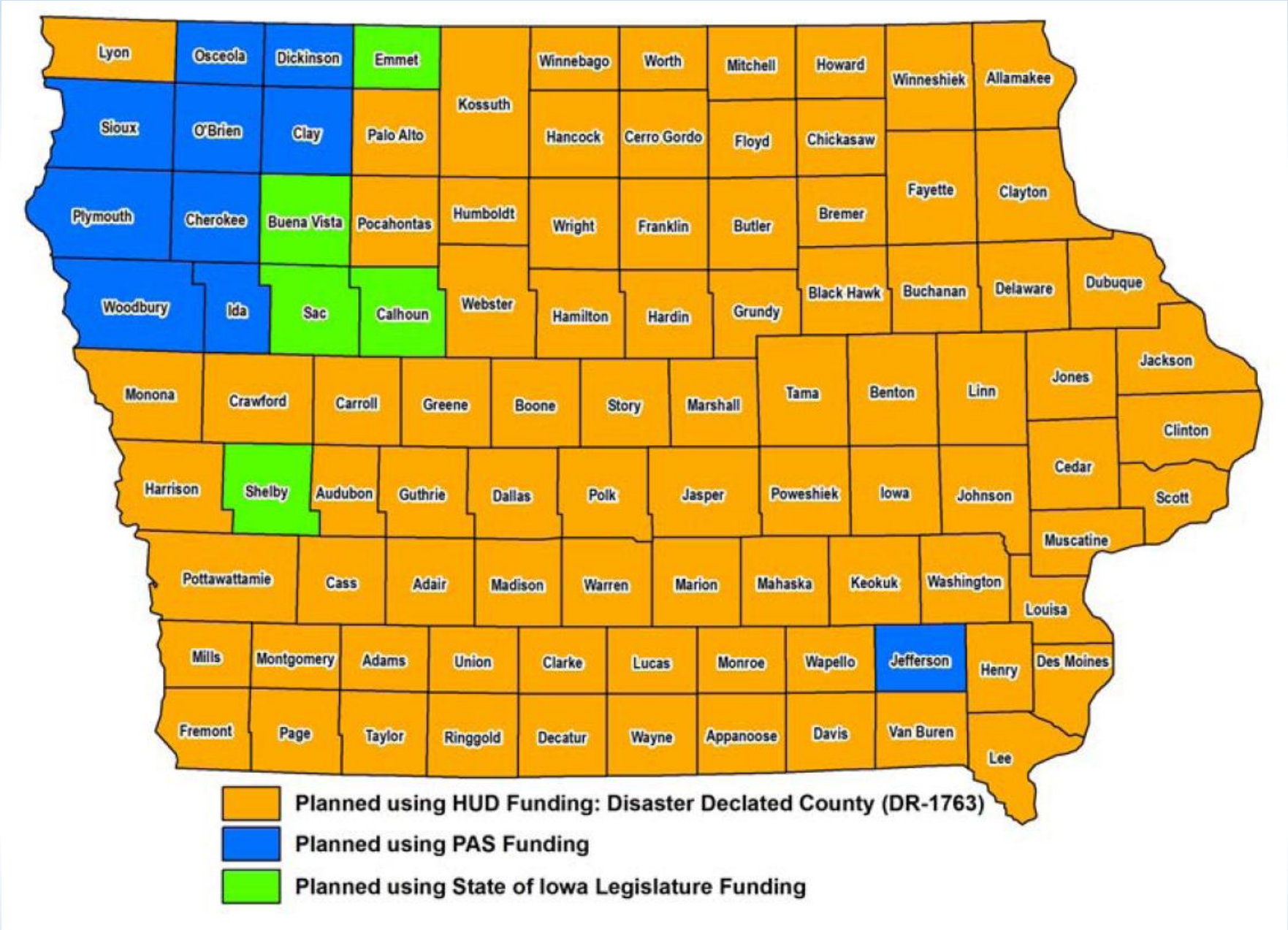


* Denotes counties with Effective HMTAP FIRMs that used LiDAR

Iowa Department of Natural Resources

Section 22 (PAS) - Watersheds In Non Disaster-Declared Counties

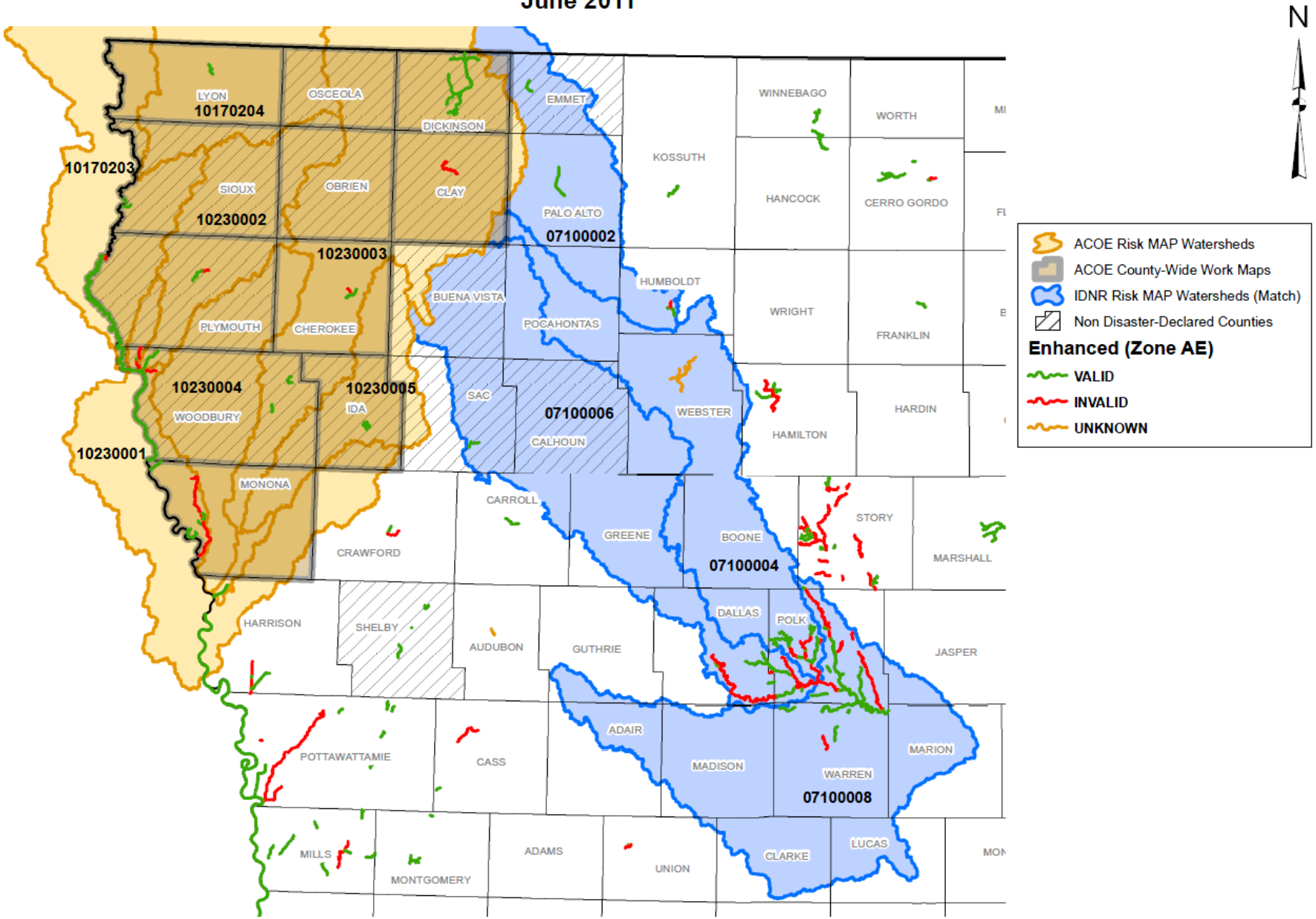




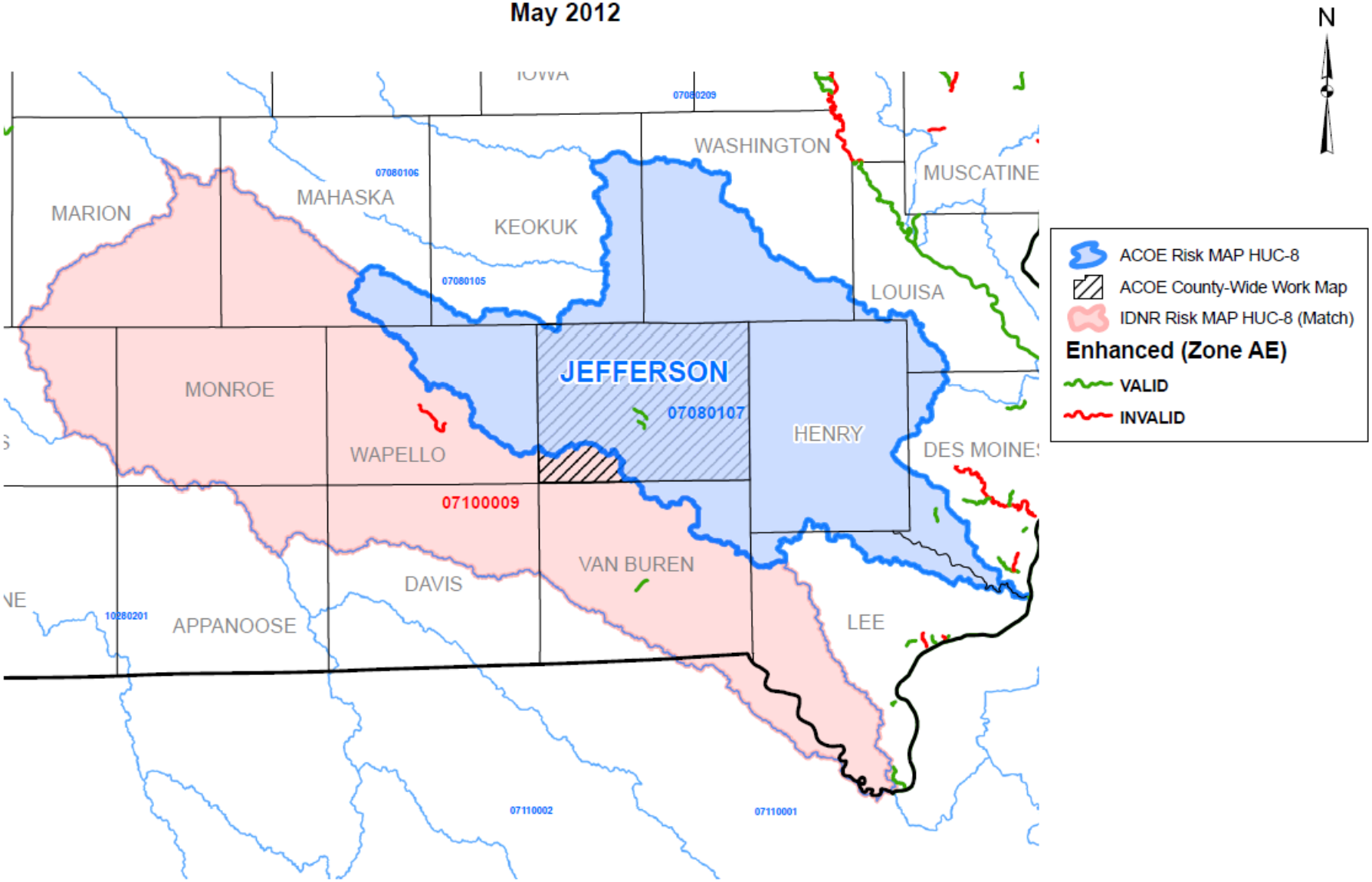
Potential Funding Eligibility by County in Iowa

APPENDIX C
Section 22 - PAS: Army Corps of Engineers & IDNR

June 2011



APPENDIX C
Section 22 - PAS: Army Corps of Engineers & IDNR
May 2012



Thank You

http://www.iowadnr.gov/InsideDNR/RegulatoryLand/FloodPlainManagement/FloodPlainMapping.aspx

http://www.iowafloodcenter.org/maps/

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