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RiskMAPing the Rock River Watershed

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Presentation Overview

- Project introduction
- What “RiskMAP” means in the Rock River watershed
- Details on the Rock River RiskMAP products being developed

Rock River Watershed Study

FEMA

Multi-year, Multi-organization Effort

US Army Corps of Engineers
Rock Island District

Hydraulics

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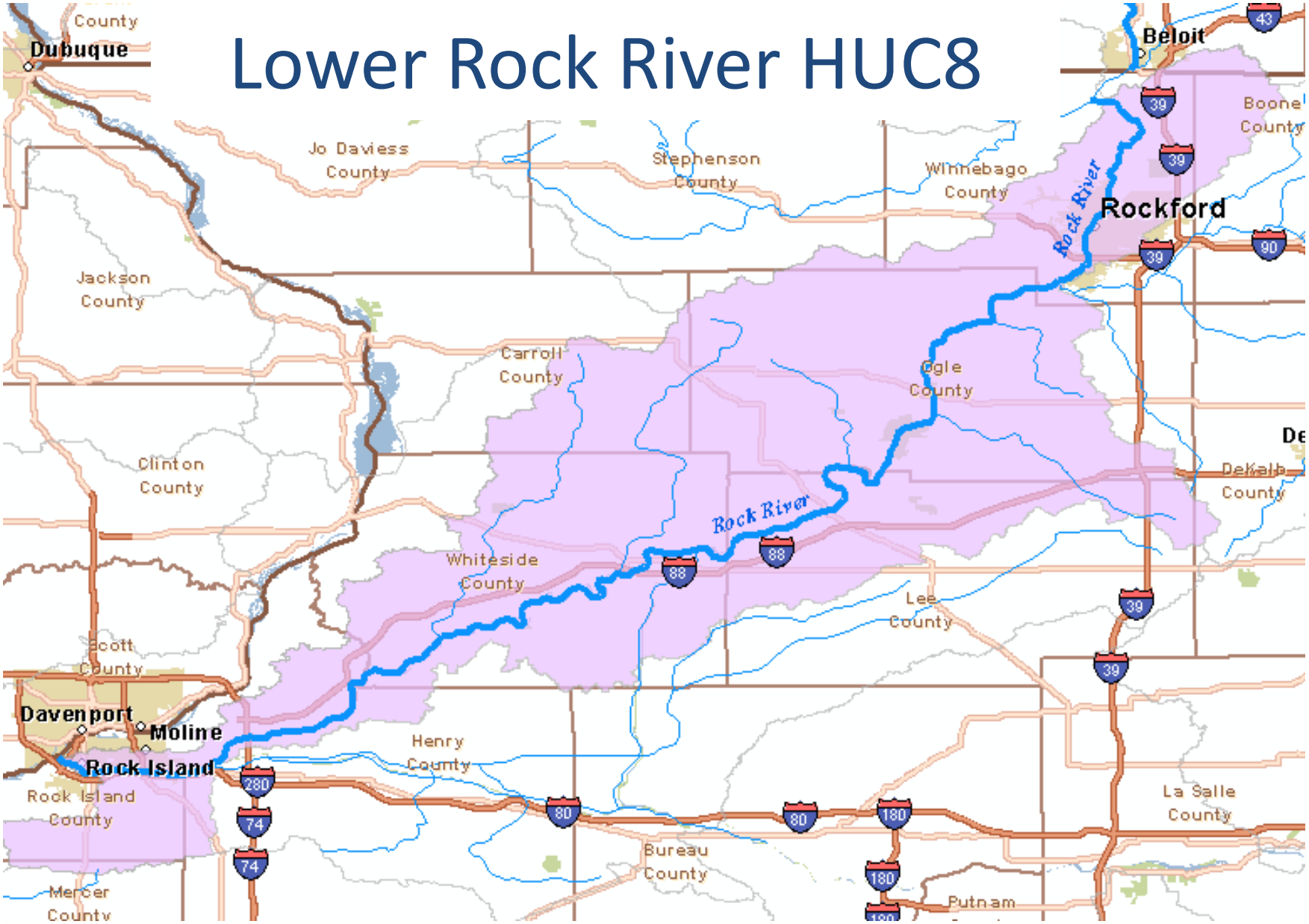
Hydrology,

Regulatory and non-regulatory FEMA products

Lower Rock River HUC8



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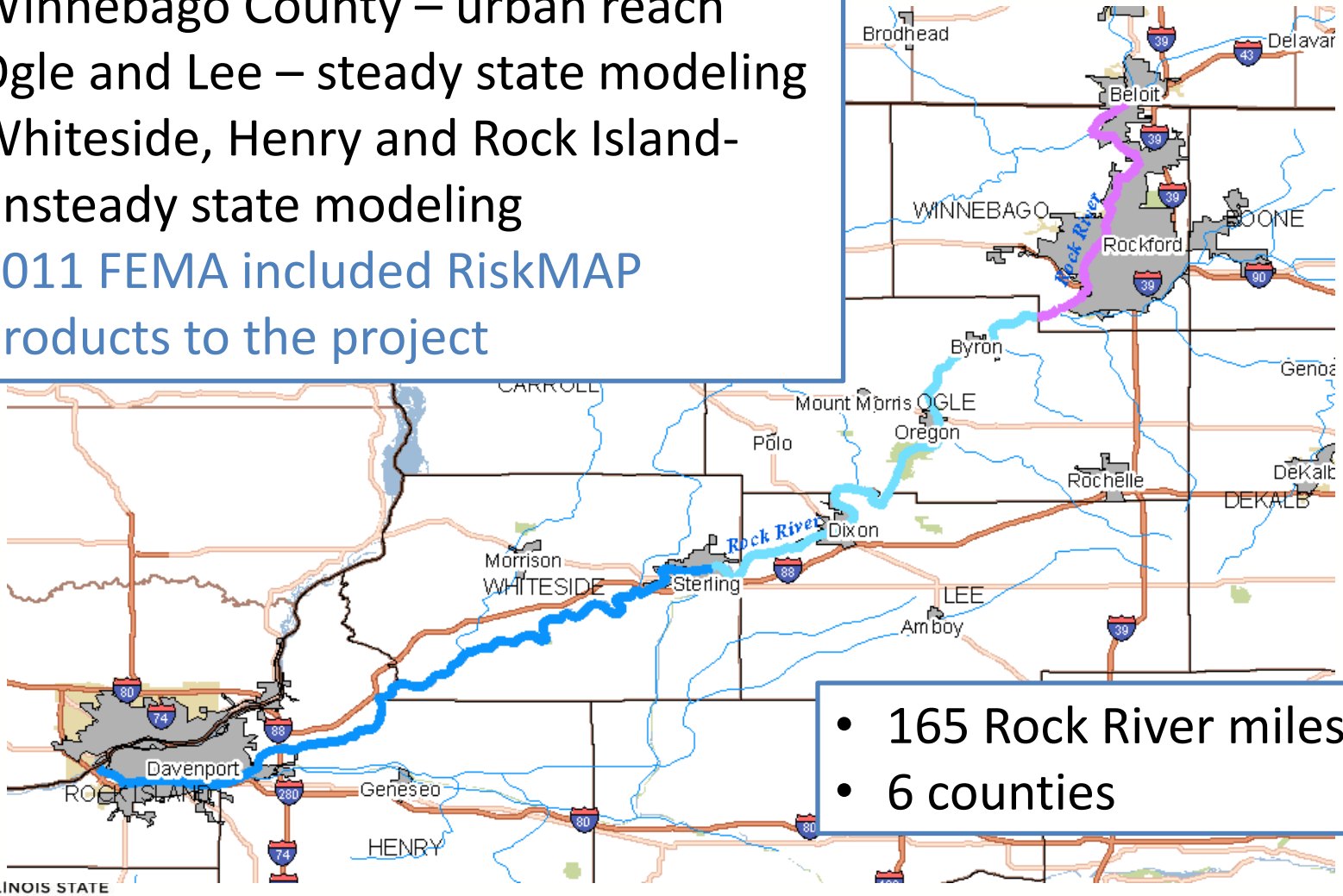
Lower Rock River Project Reaches

- Winnebago County – urban reach
- Ogle and Lee – steady state modeling
- Whiteside, Henry and Rock Island- unsteady state modeling
- 2011 FEMA included RiskMAP products to the project



- 165 Rock River miles
- 6 counties

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FEMA's Risk MAP (Mapping, Assessment, and Planning)

Objective: deliver quality data that increases public awareness and leads to action that reduces risk to life and property.

Aspects of a “RiskMAP” project

- Method of prioritizing projects- *watershed based*, FEMA has identified key elements for RiskMAP projects,
- Process- more communication with communities throughout project
- Products- additional non-regulatory products that will be tools to encourage action to reduce risk on a local level

PRIORITIZING ROCK RIVER AS A RISKMAP PROJECT

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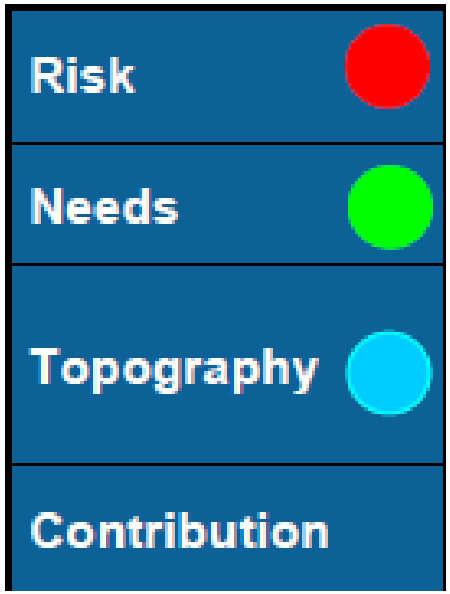
Rock River Adapted to Risk MAP

WATERSHED BASED



Risk to be addressed– 164 stream miles through Rockford and Moline Rock Island areas.

Need for more accurate data– County to county discrepancies, old studies with outdated methodology

High resolution Topography and contribution–
Lidar data available from Illinois Height Modernization project

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ROCK RIVER RISKMAP PROJECT APPROACH

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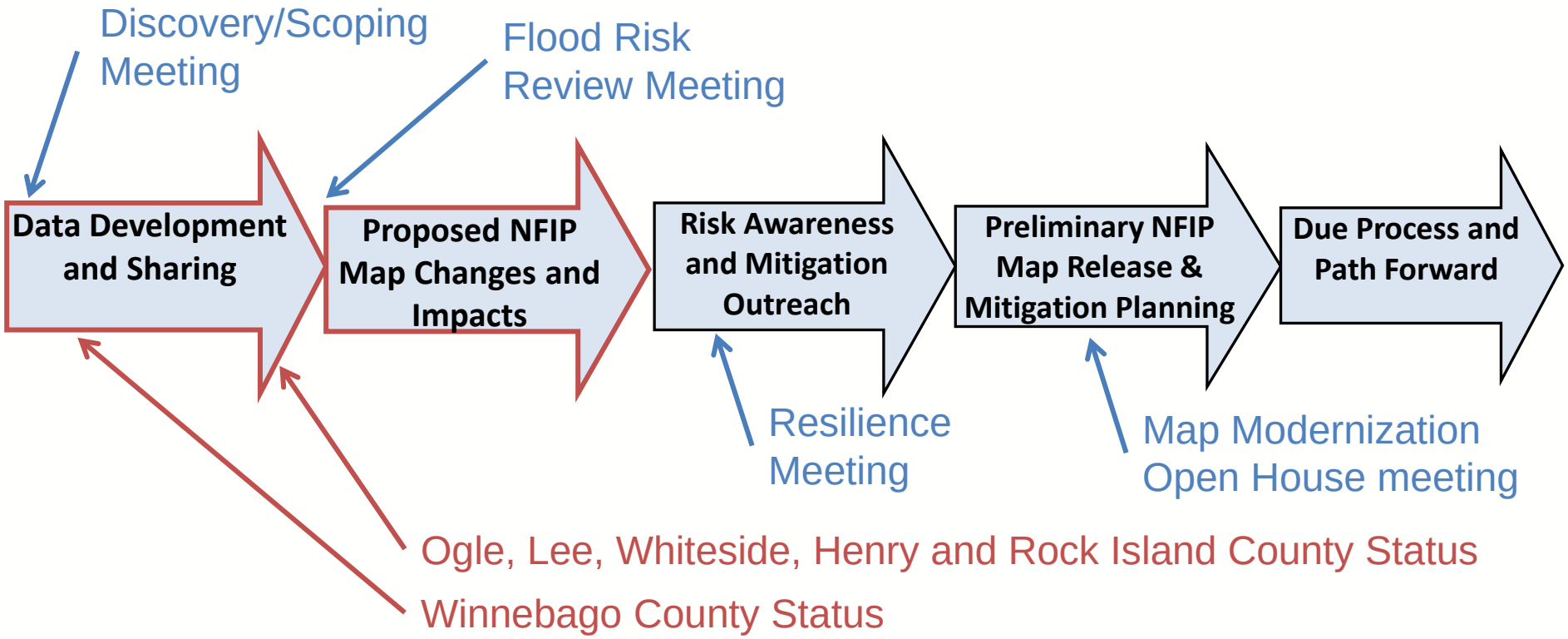
Rock River RiskMAP Approach



- Multiple opportunities for discussions during data development
- Multiple opportunities for discussions concerning mitigation planning

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6 Rock River meetings to date

- Discovery Meeting in Winnabago County
  - April 2011
  - Collected information on recent bridge construction and mitigation projects
- Flood Risk Review meeting in Ogle, Lee, Whiteside, Henry and Rock Island.
  - April and December 2011
  - Review DRAFT results, Changes Since Last FIRM, workmaps, profiles

How did we do?

We'll go take another look at that issue.

Future RiskMAP meetings

- An additional stakeholder meeting with topics to be determined based on project needs

- CCO Meeting/ Public Open House
  - Similar to MapMod open house meetings

ROCK RIVER RISKMAP
NEW NON-REGULATORY PRODUCTS

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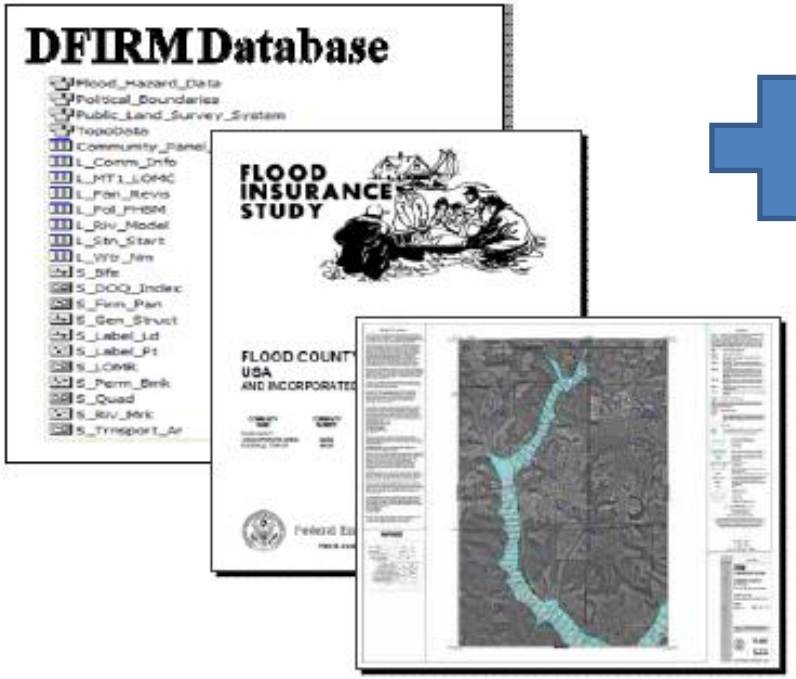
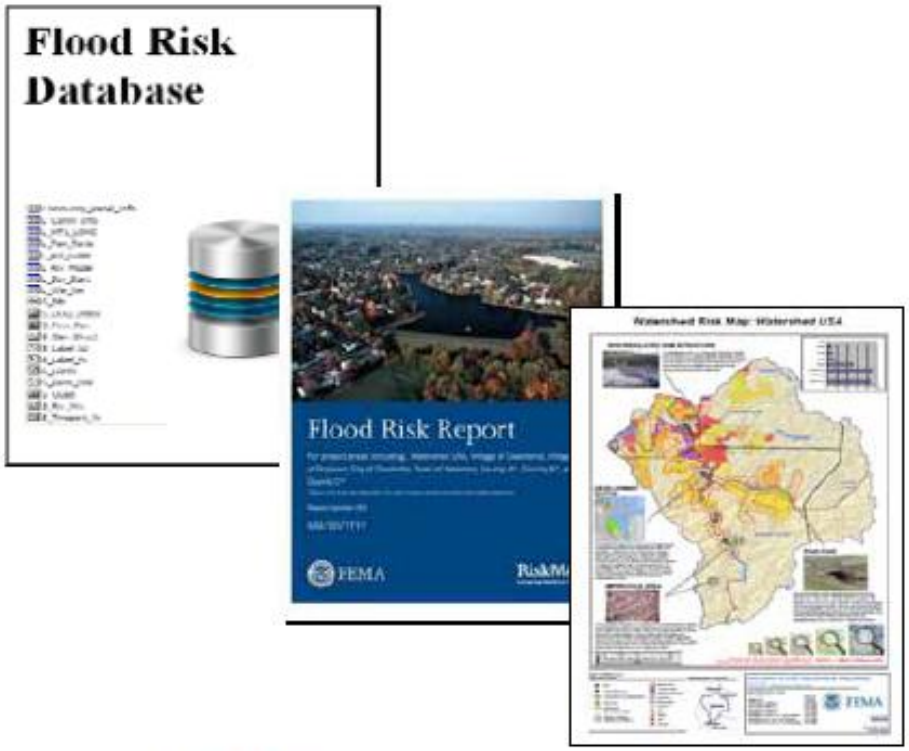
RiskMAP Datasets/Products

Traditional Regulatory Products



Non-Regulatory Products



Traditional products are regulatory and subject to statutory due-process requirements

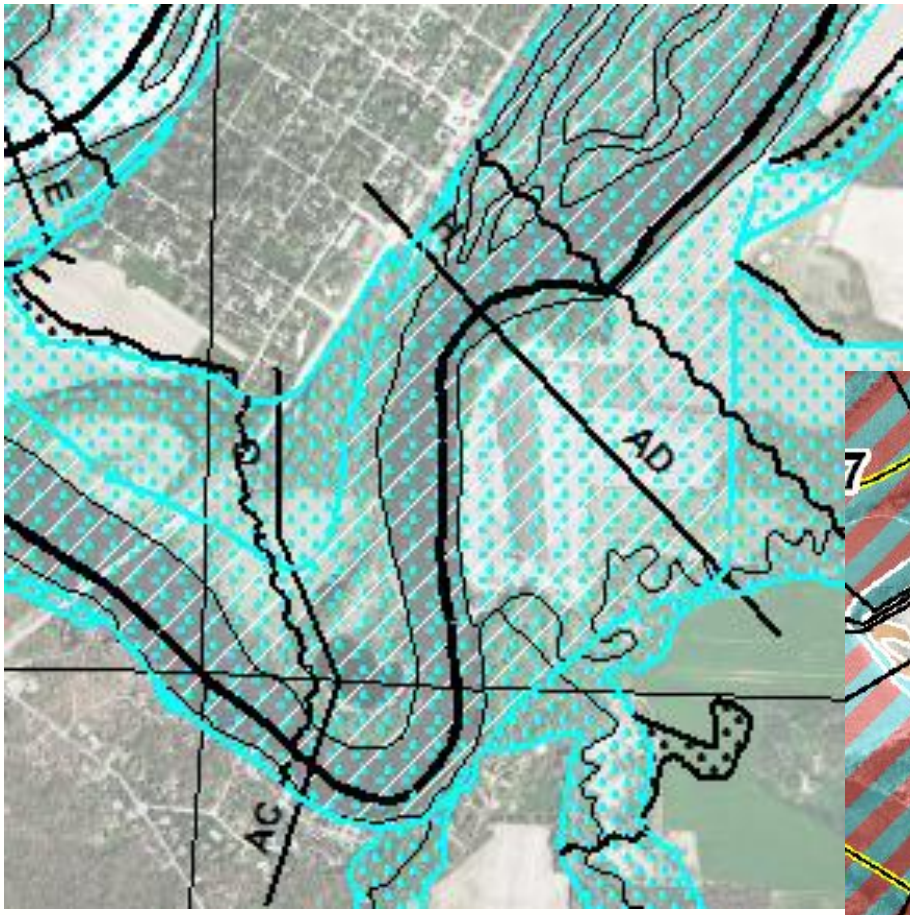
Risk MAP products are non-regulatory and are not subject to statutory due-process requirements

FEMA's operating Guidance No. 6-11

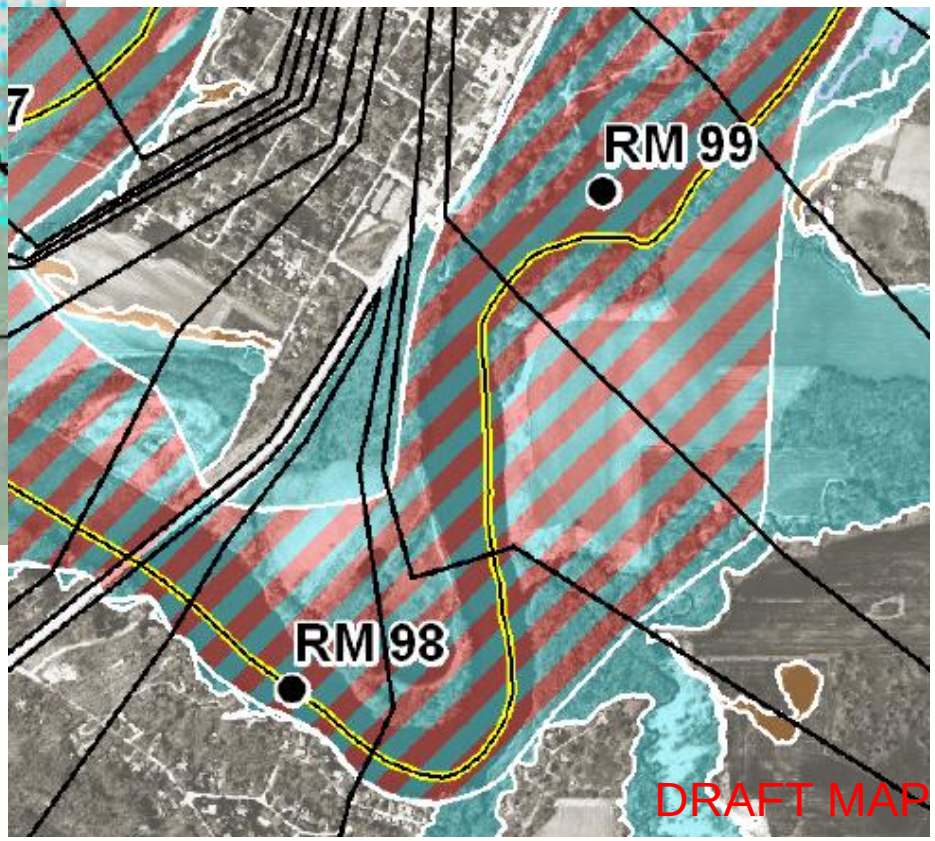
"The power and value of RiskMAP is in the ability to visualize and analyze a wide variety of flood risk information"

- User Guidance for Flood Risk Datasets and Products

Effective FIRM vs Proposed



No more Spot the Difference puzzles!



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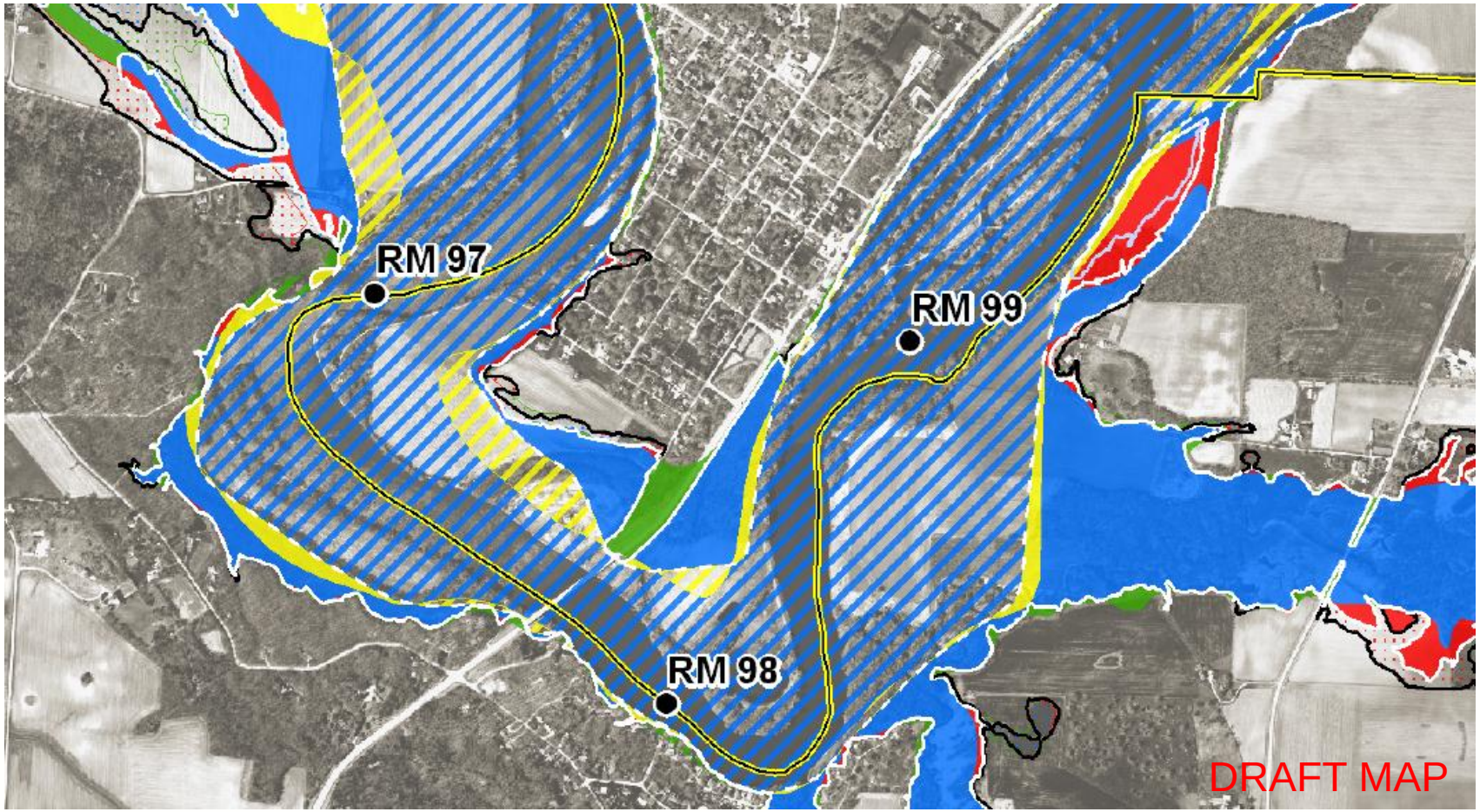
DRAFT Rock River Changes Since Last FIRM



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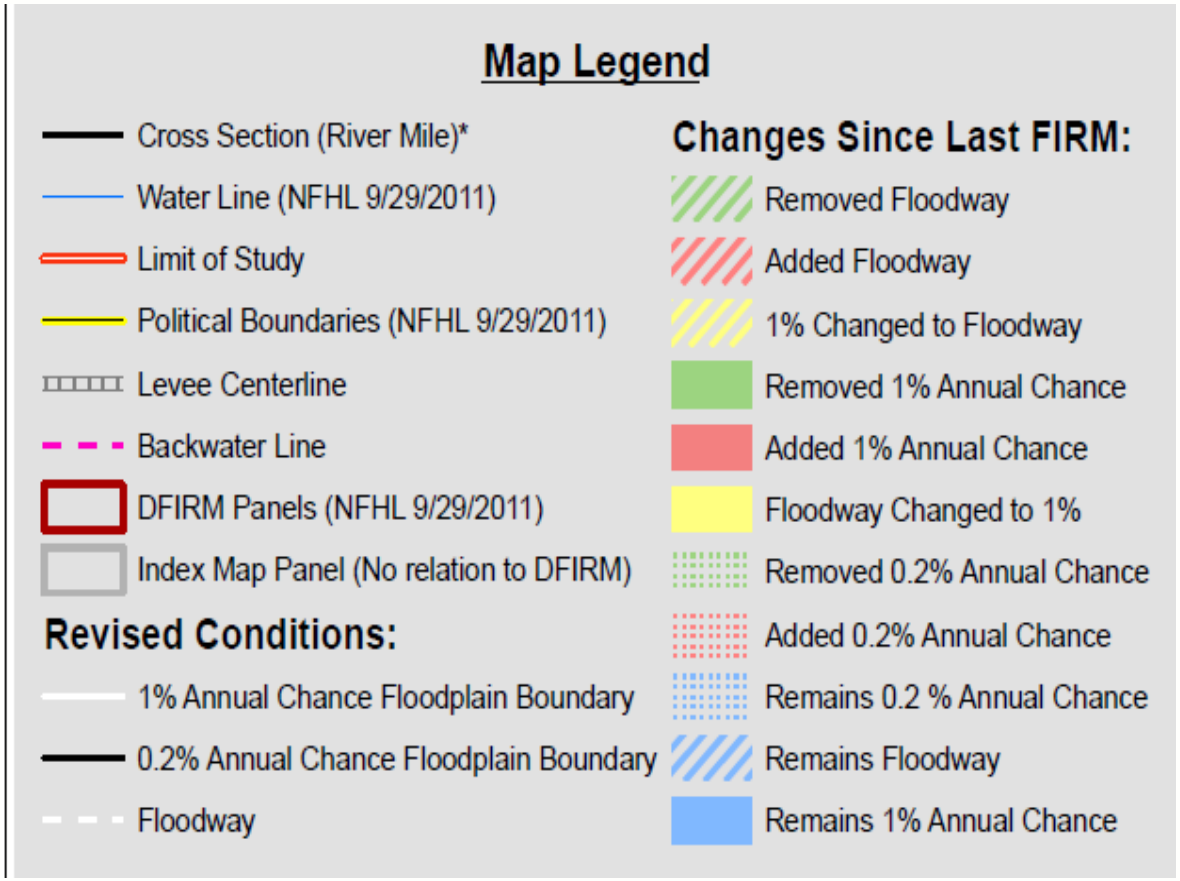

TIP:

GREEN - removed area

RED - added area

YELLOW- zone change area

BLUE – no change

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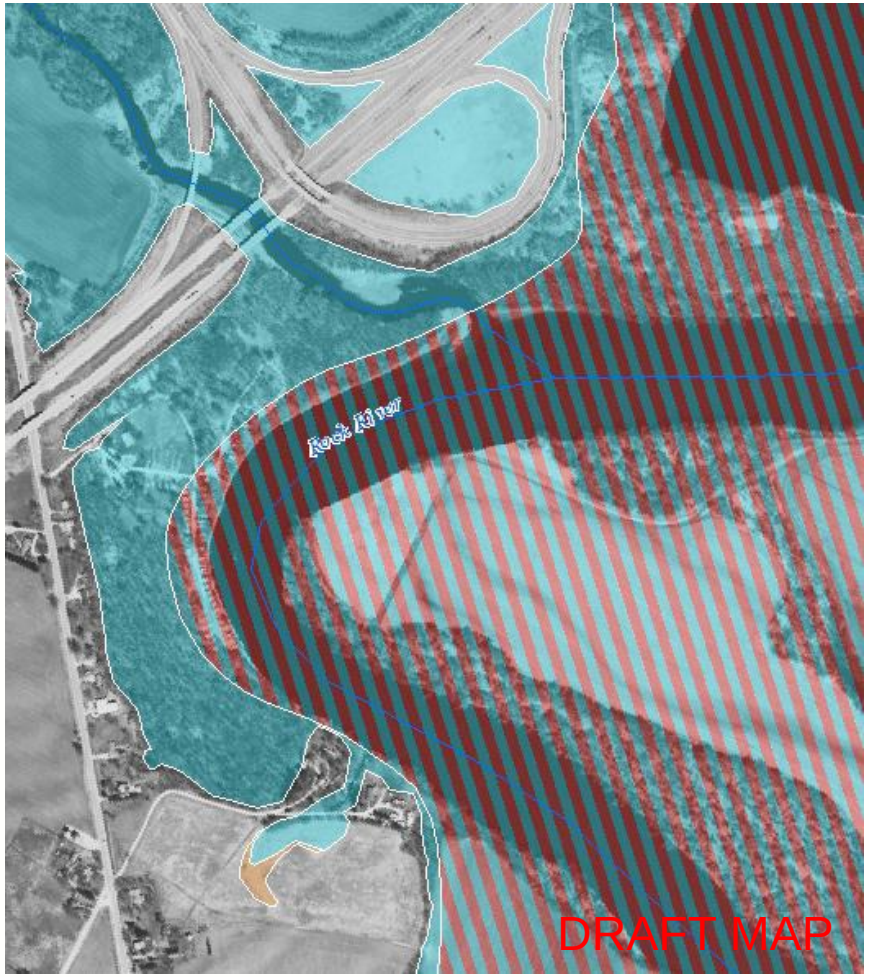
DRAFT Rock River Changes Since Last FIRM

- During the project:
  - More efficiently review the maps and communicate your concerns before they go “preliminary”
  - Summary included in Flood Risk Report
- Potential community uses: (*requires additional GIS analysis)
  - Revise old evacuation plans.
  - *Use with community parcel data to estimate the total number of structures added to floodplain/ removed from floodplain
  - *Combine with GIS parcel data to identify all newly added structures- mail them invites to the open house where they can gather more information.

In or Out?



How Deep?

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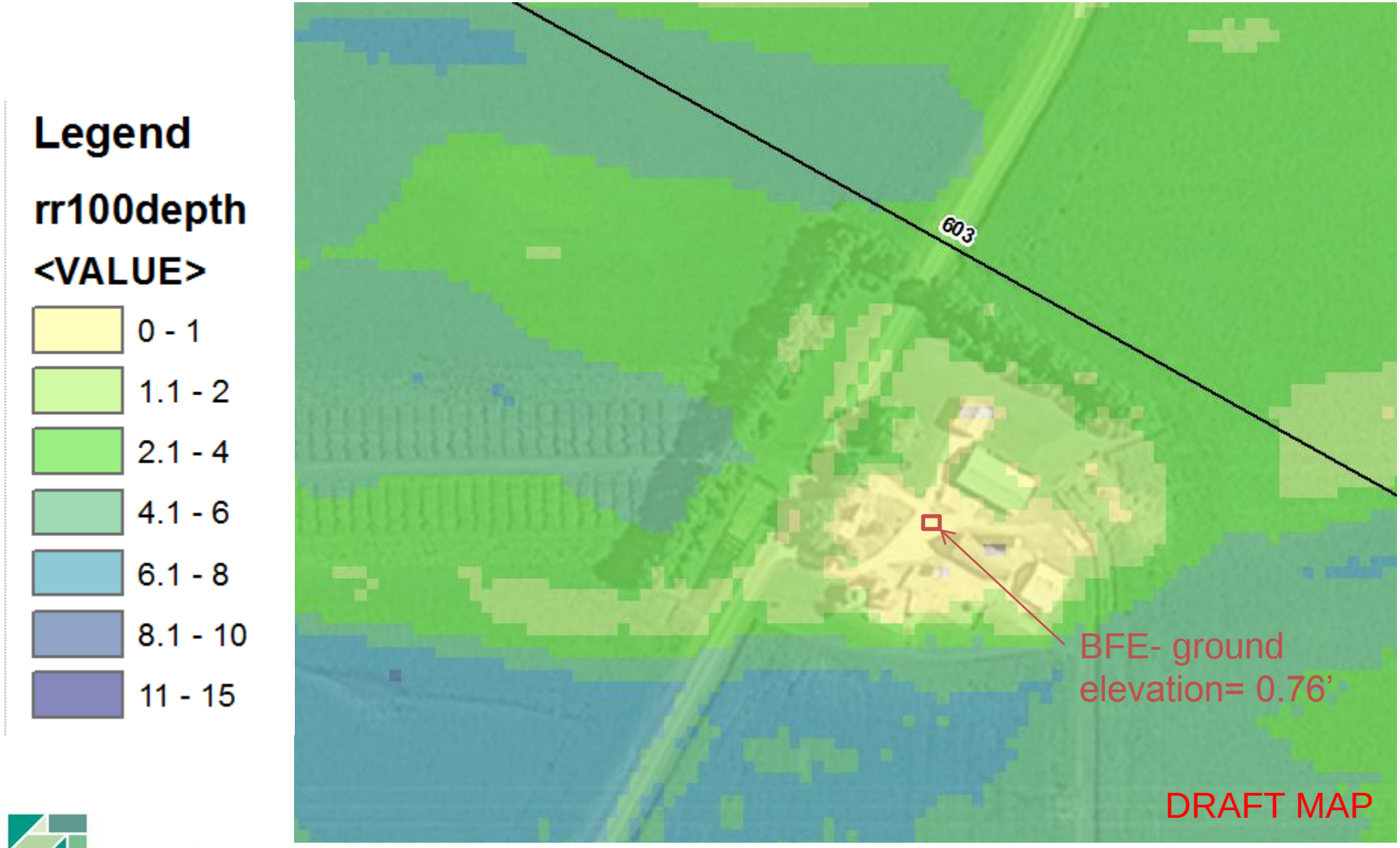
DRAFT Rock River Depth Grids



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DRAFT Rock River Depth Grids

- During the project:
  - Review and communicate study results
  - identify areas flood risk
  - Use for Flood Risk Assessment
- Potential uses:
  - Publicize to residence for CRS credit
  - or use map depth and depth/damage curves to estimate dollar damages to specific properties (even without parcel data or HAZUS)
  - Emergency planning uses: road closures, prioritizing structures of concern

Coming Soon: Flood Risk Assessment

United States Census Bureau

HAZUS MH
EARTHQUAKE • WIND • FLOOD

Example

			Estimated Potential Losses for Flood Event Scenarios	
	Total Inventory		1% (100-yr)	
	Estimated Value	% of Total	Dollar Losses	Loss Ratio
Residential Building/Contents	$10,000,000	75%	$7,500,000	20%
Commercial Building/Contents	$15,000,000	15%	$5,000,000	29%
Other Building/Contents	$15,000,000	10%	$5,000,000	28%
Total Building/Contents	$150,000,000	100%	$30,000,000	22%
Business Disruption	N/A	N/A	2,000,000	N/A
TOTAL	$122,695,000	N/A	$50,000,000	N/A

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Coming Soon: Flood Risk Assessment

			Estimated Potential Losses for Flood Event Scenarios	
	Total Inventory		1% (100-yr)	
	Estimated Value	% of Total	Dollar Losses	Loss Ratio
Residential Building/Contents	$100,000,000	75%	$20,000,000	20%
Commercial Building/Contents	$20,000,000	15%	$6,000,000	30%
Other Building/Contents	$20,000,000	10%	$6,000,000	30%
Total Building/Contents	$140,000,000	100%	$28,000,000	20%
Business Disruption	N/A	N/A	2,000,000	N/A
TOTAL	$190,000,000	N/A	$62,000,000	N/A

Example

Coming Soon: Flood Risk Assessment

- During the project:
  - Use for mitigation discussions at the resilience meeting with the community.
  - Summary of results are included in the Flood Risk Report.
- Potential community uses: (*requires additional GIS analysis)
  - Quantify potential future losses and use to prioritize mitigation priorities.
  - Supports mitigation plan updates or creation of county mitigation plans.
  - *Use community parcel data rather than, census block data, and further refined the risk assessment.

RiskMAP Datasets

Term Datasets includes the GIS/digital information- CSLM, Depth Grids, and HAZUS data

Better GIS layers can earn you CRS credits

These additional tools for visualization and analysis can be used by the community to engage a wide user base.

- Realtors
- Home owners
- Planners
- Local permit and construction inspection officials
- Elected officials

Coming Soon: Flood Risk Database

Includes all the digital GIS input and output when creating the Rock River RiskMAP products.

Coming Soon: Flood Risk Report

- Like the FIS to a DFIRM
- Non-Regulatory
- Non-technical terms
- Pictures & Notes in right margin

may have occurred since the last FIRM was published for the subject area. Communities can use this information to update their mitigation plans, specifically quantifying "what is at risk" and identifying possible mitigation activities.

The CSLF dataset identifies changes in the Special Flood Hazard Area (SFHA) and floodway boundary changes since the previous FIRM was developed. These datasets quantify land area increases and decreases to the SFHA and floodway, as well as areas where the flood zone designation has changed (e.g., Zone A to AE, AE to VE, shaded Zone X protected by levee to AE for de-accredited levees).

The CSLF dataset is created in areas that were previously mapped using digital FIRMs. The CSLF dataset for this project area includes:

- Floodplain and/or Floodway Boundary Changes: Any changes to the existing floodplain or floodway boundaries are depicted in this dataset
- Floodplain Designation Changes: This includes changed floodplain designations (e.g., Zone A to Zone AE).
- CSLF Information: Within this dataset additional information is provided to help explain the floodplain and floodway boundary changes shown on the FIRM. This information is stored as digital attributes within the CSLF polygons and may include some or all of the following:
  - Changes in peak discharges
  - Changes to the modeling methodology (e.g., tide gage analysis)
  - New flood control structures (e.g., dams, levees, etc.)
  - Changes to hydraulic structures (e.g., bridges, culverts, etc.)
  - Sedimentation and/or Erosion
  - Man-made changes to a watercourse (e.g., realignment or improvement)

Floodplain maps have evolved considerably from the older paper-based FIRMs to the latest digital products and datasets.

It should be noted that reasons for the floodplain and floodway changes (also known as Contributing Engineering Factors) are intended to give the user a general sense of what caused the change, as opposed to providing a reason for each and every area of change.

- ***Count of Affected Structures: The total estimated count of affected buildings within the area of change. The data are only made available because the local jurisdiction was able to provide accurate building footprint data indicating the location of structures in and adjacent to the identified floodplains).***
- ***Count of Affected Population: The total estimated affected population within the area of change. The data are only made***

SLF data can be used to communicate changes in the local flood hazard area (size, ion) as part of the release of WMS. It can also be used in development or update of azard mitigation plans to cribe changes in hazard as art of the hazard profile.

data are shown in the FRR, underlying data are stored in the FRD.

Flood Risk Report

Project Name, Watershed Number

County(s)

Community Names

State(s)

If community names do not fit on this front cover, please use the optional following page. If they do fit, then delete the following page.

Delete this text box when complete.

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

Report Number 0#

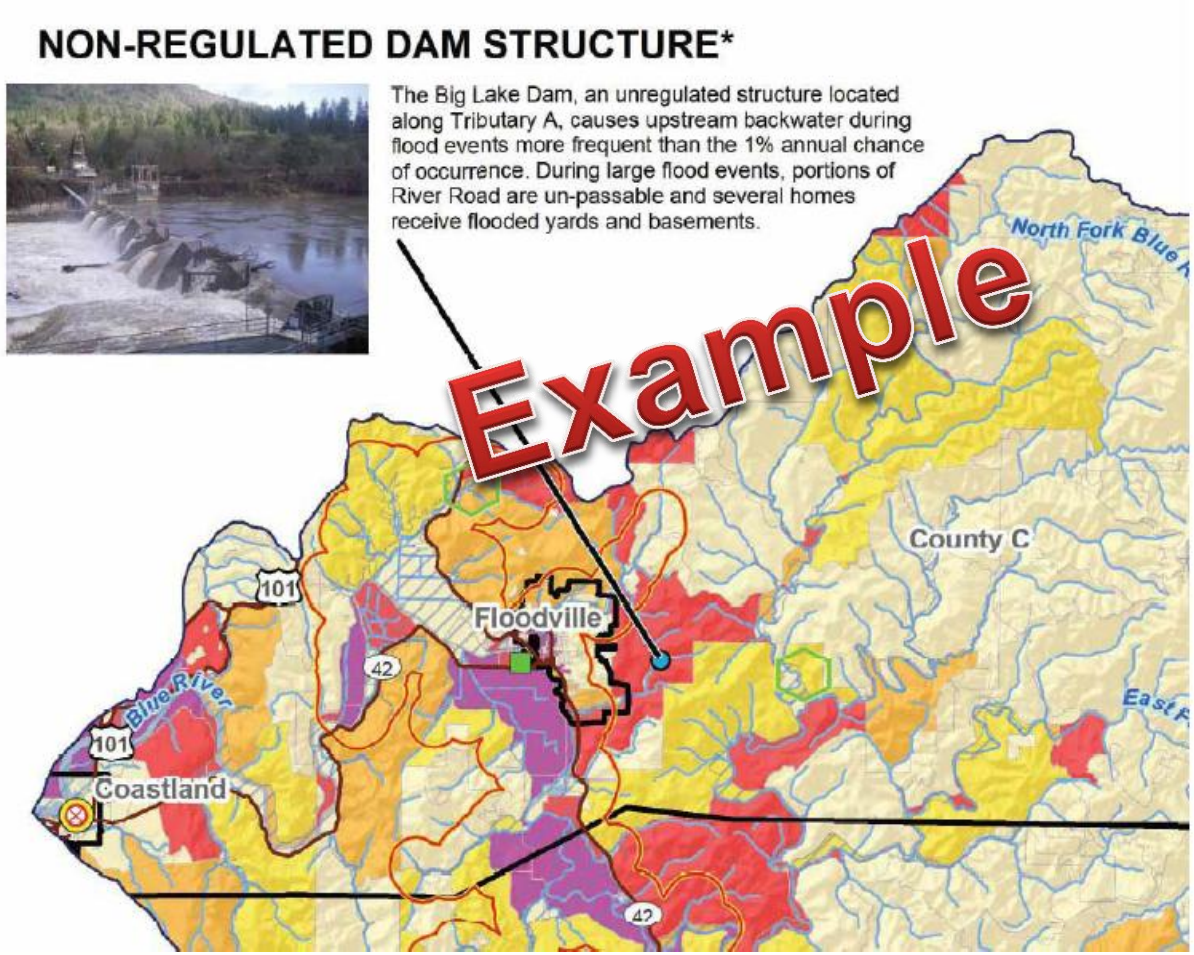
MM/DD/YYYY

FEMA

RiskMAP
Increasing Resilience Together

Coming Soon: Flood Risk Map

- Base Data
- HAZUS DATA
- Area of Mitigation Interest



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Summary

Rock River watershed is now a RiskMAP project

RiskMAP impacts the selection, process and products of a floodplain study

Goal is to provide tools that communities will use to reduce risk

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