



ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE



Bureau County

FEMA Risk MAP

Project Initiation Coordination Call

May 18, 2021

I ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE



FEMA



Bureau County Floodplain Mapping

Project Initiation Community Coordination Meeting/Call

Agenda

- Rollcall
- Project Objectives and Goals
- National Flood Insurance Program / Mitigation
- Project Scope and Streams to be Studied
- Communication
- Schedule
- Community Participation



Rollcall

- Village of Arlington
- Village of Buda*
- Village of Bureau Junction*
- Village of Cherry*
- Village of Dalzell*
- Village of DePue*
- Village of Dover*
- Village off Hollowayville*
- Village of Ladd*
- Village of LaMoille*
- Village of Malden
- Village of Manlius
- Village of Mineral
- Village of Manlius
- Village of Mineral
- Village of Neponset*
- Village of New Bedford
- City of Princeton*
- Village of Seatonville*
- Village of Sheffield*
- City of Spring Valley*
- Village of Tiskilwa*
- Village of Walnut
- Village of Wyanet*
- Village of Ohio*
- Bureau County*
- City of Amboy+
- Lee County+
- City of Geneseo
- Henry County
- Village of Deer Grove++
- Whiteside County++
- IDNR/OWR
- FEMA
- IEMA
- Anyone else?

- * Participating in the 2020 Bureau County NHMP
- + Participating in 2021 Lee County Multi- Jurisdictional All Hazards Mitigation Plan
- ++ Participating in 2015 Whiteside County Multi- Jurisdictional All Hazards Mitigation Plan

Introduction

- The Illinois State Water Survey (**ISWS**) is a division of the Prairie Research Institute (**PRI**) at the University of Illinois.
- The Coordinated Hazard Assessment and Mapping Program (**CHAMP**) is a section within ISWS.



The staff of the Coordinated Hazard Assessment and Mapping Program which includes 18 Certified Floodplain Managers (CFM), seven Professional Engineers (PE), and seven Geographic Information Systems Professionals (GISP)

<https://www.isws.illinois.edu/champ>

<https://www.illinoisfloodmaps.org/>



Introduction

- ISWS is a Cooperating Technical Partner (**CTP**) with the Federal Emergency Management Agency (**FEMA**). CHAMP staff perform floodplain studies, mapping, mitigation planning, and related activities for Illinois communities through this partnership.
- ISWS also partners with the Illinois Department of Natural Resources-Office of Water Resources (**IDNR-OWR**) to help prioritize Illinois floodplain studies and mapping projects.
- Risk Mapping, Assessment, and Planning (**Risk MAP**) is the FEMA process used to implement National Flood Insurance Program (**NFIP**) floodplain studies and mapping projects.

Special Flood Hazard Area

The FEMA Special Flood Hazard Area (**SFHA**) zone type designation is related to the method and level of hydraulic analysis performed.

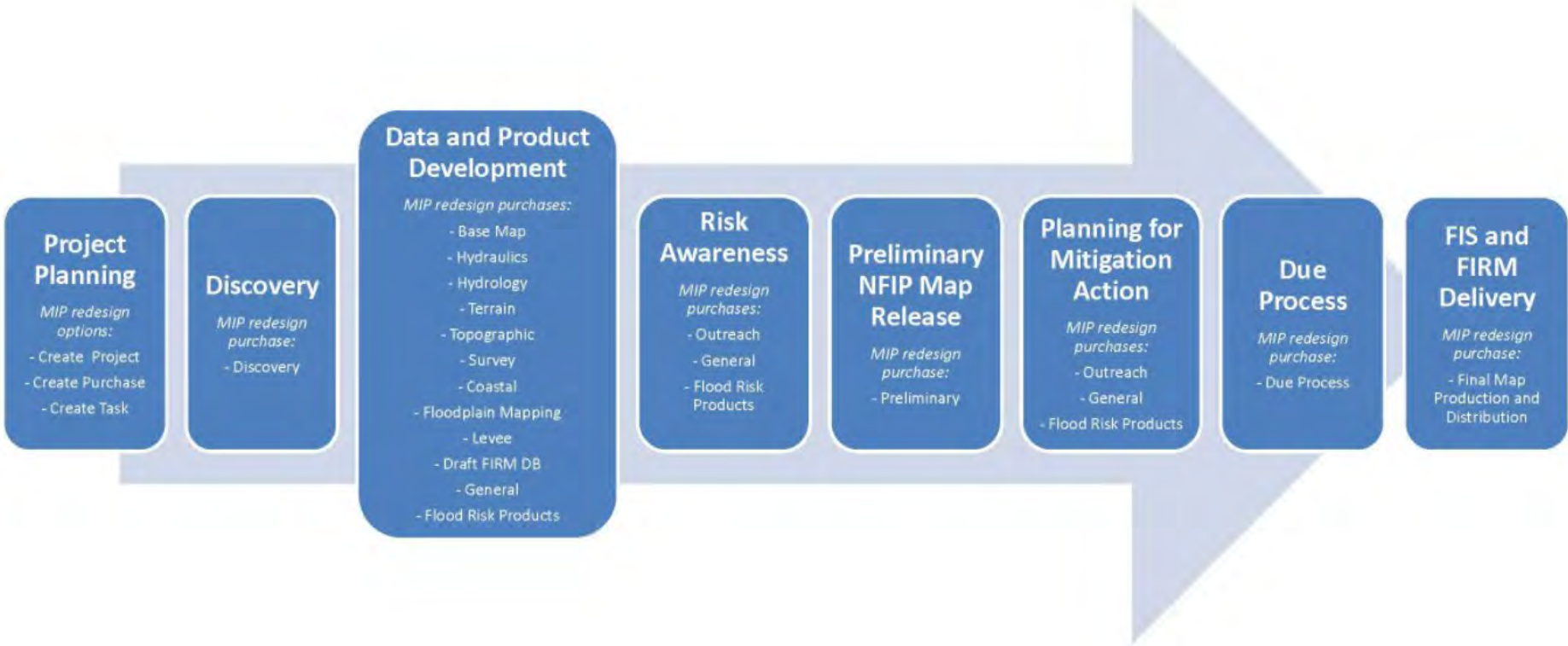
Riverine hydraulic analysis typically results in SFHA designation as **Zone A** or **Zone AE**, based on the analysis level deemed appropriate for the study area.

Zone A	Areas subject to inundation by the 1-percent-annual-chance flood event. NO Base Flood Elevations are shown.
Zone AE	Areas subject to inundation by the 1-percent-annual-chance flood event. Base Flood Elevations ARE shown.

The Base Flood Elevation (**BFE**) is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year.

Project Objectives and Goals

FEMA National Objectives





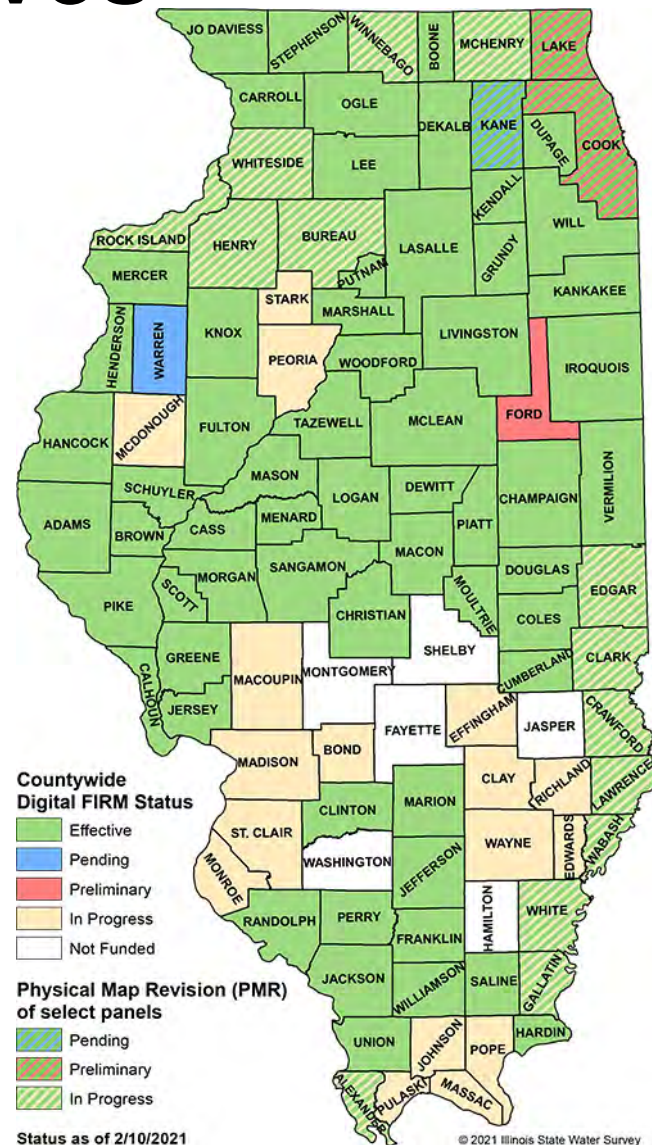
Bureau County Project Objectives

- Develop new floodplain studies for Bureau County and portions of the Green River.
- Incorporate the study results into a Hydrologic and Hydraulic report.

For the next phase, to incorporate resulting floodplain delineations into a countywide digital Flood Insurance Rate Map (FIRM).

Project Objectives

- Update Hydrologic and Hydraulic Analyses of Flood Risk for Select Streams
- Update Digital Floodplain Maps Bureau County
 - Current FIRMs August 2011
 - Incorporate Green River In Whiteside, Henry and Lee Counties;
 - Incorporate Hennepin Canal



National Flood Insurance Program (NFIP)



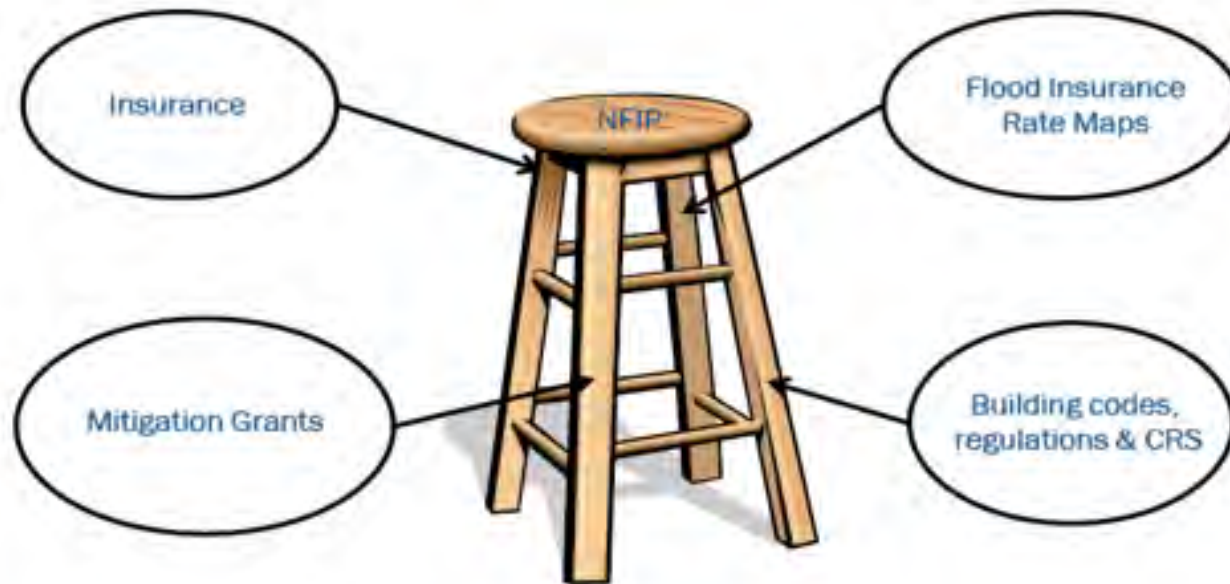
The National Flood Insurance Program (NFIP)

- A voluntary program based on a mutual agreement between the Federal government and a community.
- In exchange for **adopting** and **enforcing** a floodplain management ordinance, Federally-backed flood insurance is made available to property owners throughout the community.

Marilyn Sucoe IDNR Acting NFIP State Coordinator

Marilyn.Sucoe@Illinois.gov 847-608-3181 or 217-782-4428

National Flood Insurance Program Three +1 Related Program Areas





NFIP Participating Communities Bureau County, Illinois

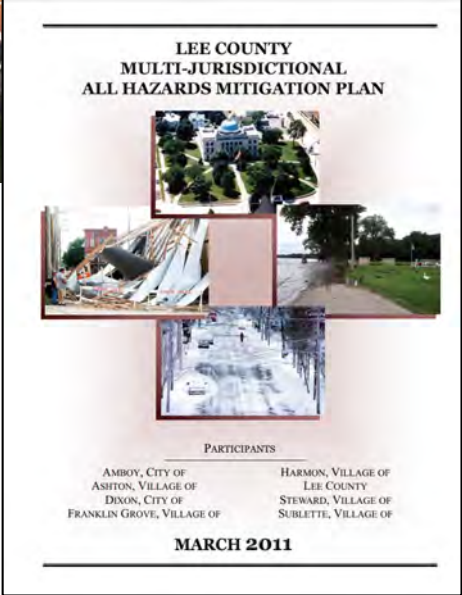
<https://www.fema.gov/cis/IL.pdf> downloaded 2/12/2021

Community	CAV Date	CAC Date	No. Flood Policies	Total Coverage, \$	Total No. Claims Since 1978	Total Paid Since 1978, \$	No. Rep Loss Structures	Total Rep Loss, \$
Village of Buda	NA	NA	NA	NA	NA	NA	NA	NA
Village of Cherry	NA	08/13/1998	3	750,000	10	19,290	2	10,131
Village of Dalzell	NA	NA	NA	NA	NA	NA	0	0.00
Village of Du Pue	NA	05/24/2010	18	1,569,500	26	104,021	3	37,404
Village of Ladd	NA	07/30/1996	0	0	1	1,710	0	0.00
Village of Manlius	NA	NA	5	329,800	0	0	0	0.00
City of Princeton	NA	NA	3	511,100	11	48,870	0	0.00
City of Spring Valley	NA	05/24/2010	3	625,000	10	22,137	0	0.00
Village of Tiskilwa	NA	05/25/1993	1	146,200	1	2,908	0	0.00
Village of Walnut	05/22/1995	05/25/1993	9	1,886,100	4	1,636	0	0.00
Bureau County	05/17/1995	03/30/2011	61	2,455,500	12	44,100	4	20,289
City of Amboy (Lee County)	12/17/14	NA	10	889,200	8	37,490	5	32,814
City of Geneseo (Henry County)	02/18/15	01/23/20	23	6,357,800	17	577,470	0	0.00
Deer Grove (Whiteside Co)	NA	NA	NA	NA	NA	NA	0	0.00

Hazard Mitigation

Natural Hazards priorities

- Thunderstorms (including lightening, hail and tornadoes)
- Winter Storms
- **Floods**
- Earthquakes
- Drought
- Extreme temperatures (Heat and Cold)
- Landslides
- Wildfires



	ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
Overall Benefit-Cost Ratio	11:1	4:1	4:1	4:1	6:1
Cost (\$ billion)	\$1/year	\$4/year	\$520	\$0.6	\$27
Benefit (\$ billion)	\$13/year	\$16/year	\$2200	\$2.5	\$160
Riverine Flood	6:1	5:1	6:1	8:1	7:1
Hurricane Surge	not applicable	7:1	not applicable	not applicable	not applicable
Wind	10:1	5:1	6:1	7:1	5:1
Earthquake	12:1	4:1	13:1	3:1	3:1
Wildland-Urban Interface Fire	not applicable	4:1	2:1	not applicable	3:1

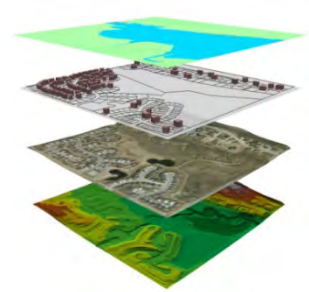
Copyright © 2019 The National Institute of Building Sciences.



Project Scope Data Development Phase

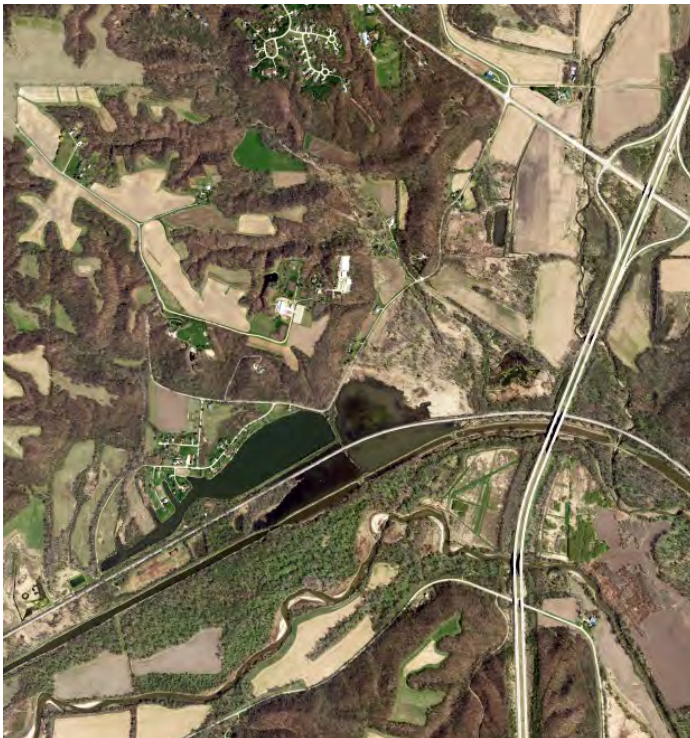


Proposed Data



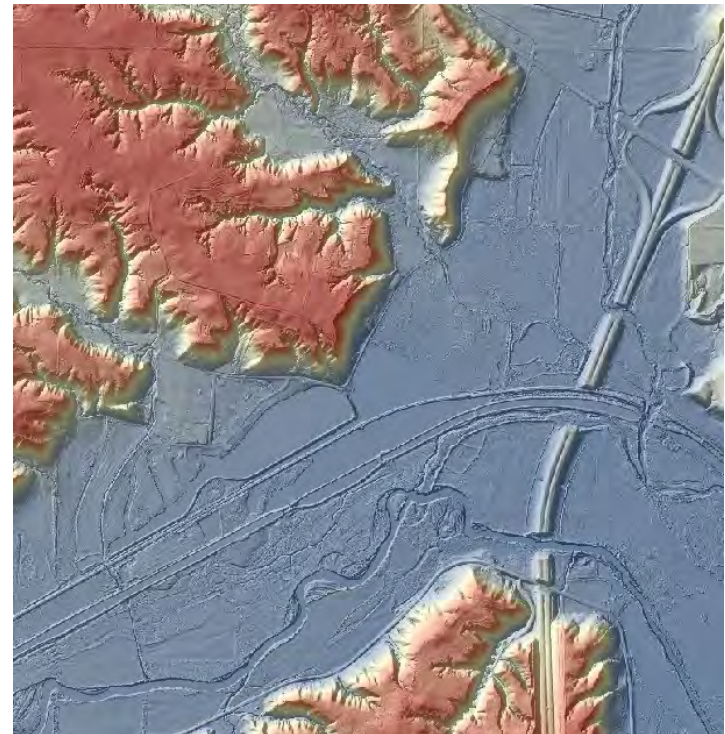
Orthophoto:

- Workmaps
 - IDOT Orthophoto
- Final Regulatory Map Updates
 - USGS National Map Orthophoto



Topographic Data:

- 2015 Bureau County LiDAR
- 2021 LiDAR for Green River outside Bureau County (Pending)



Floodplain Studies Overview- Proposed Studies



Project Scope

- Develop New Floodplain Studies
 - 521 miles of Effective Zone A streams to be restudied
 - 98 miles new Zone A studies in unmapped areas
 - 8 miles new Zone AE studies
 - 18 miles of mapped Zone AE streams to be redelineated using detailed methods
- Develop Draft Floodplain Mapping
- Community Outreach and Engagement

Complete Digital Flood Insurance Rate Maps (Later Phase)



Proposed Engineering Methods

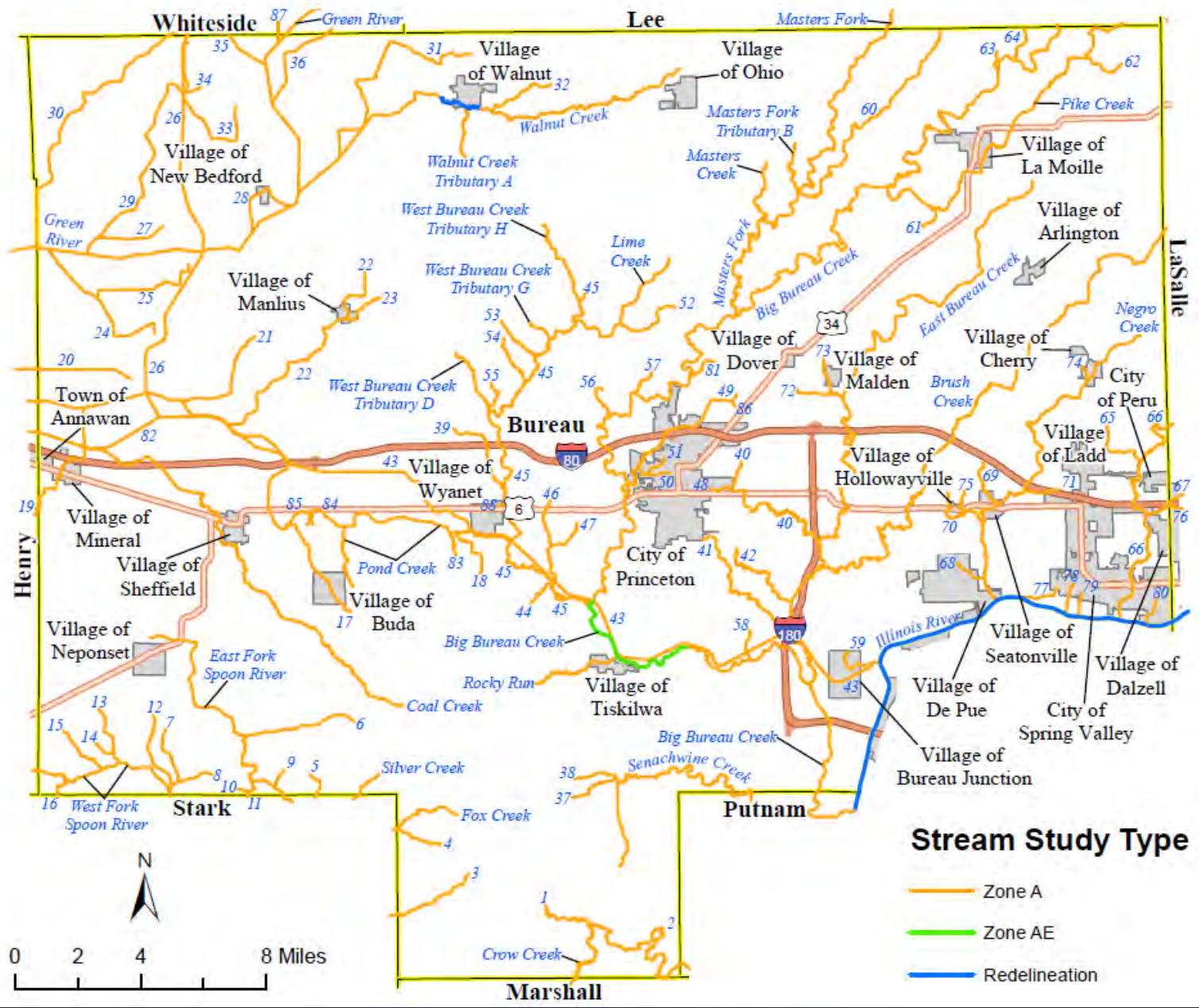
Hydrology – Determine 1% Annual Chance (100-Year) stream **flows**

- USGS Regression Equations
- USGS Bulletin 17C Gage Analysis
- HEC-HMS Rainfall Runoff Modeling

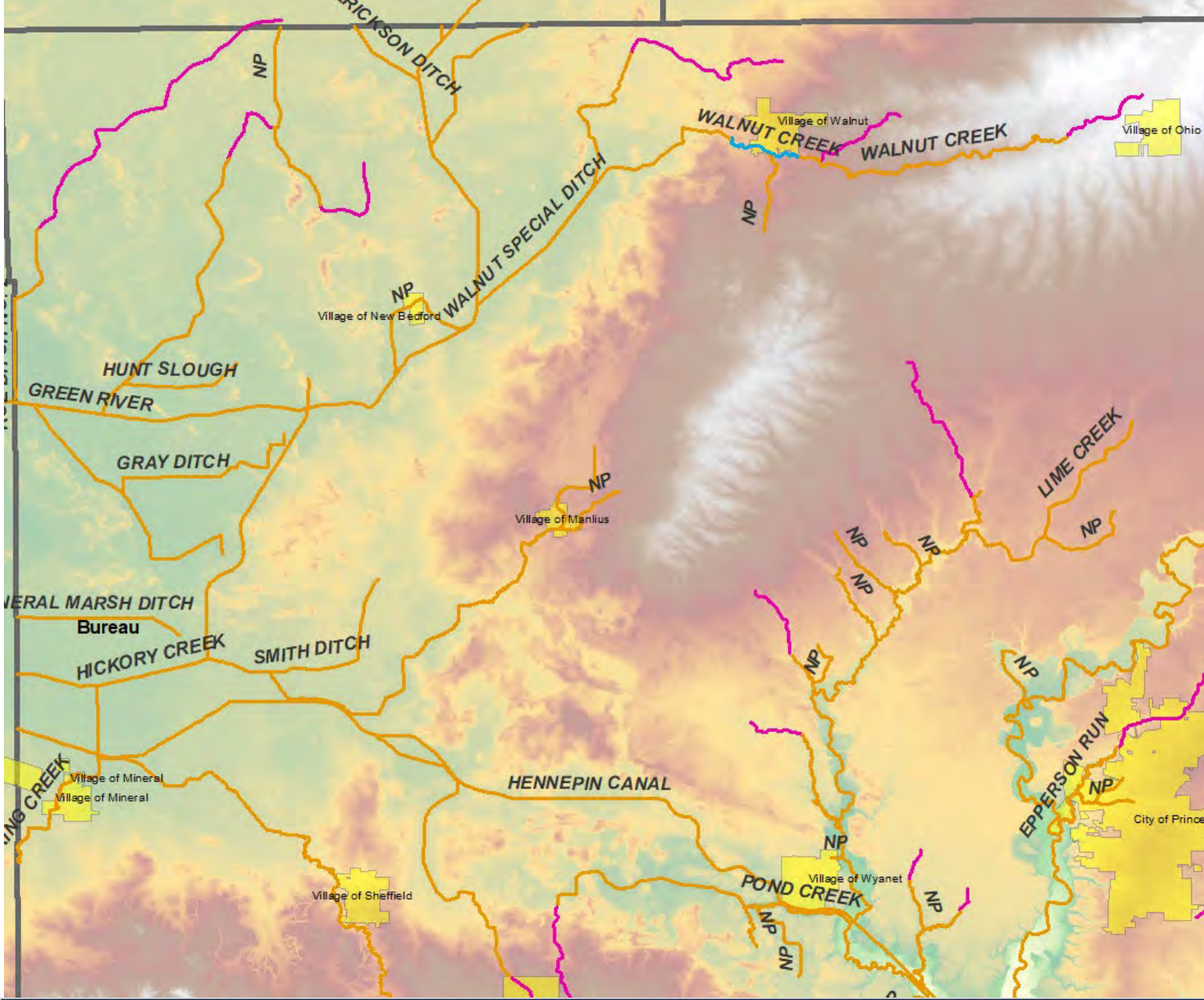
Hydraulics – Determines 1% Annual Chance (100-Year) flood **elevations**

- Zone AE: HEC-RAS Hydraulic Models
- Zone A: HEC-RAS Hydraulic Models

BUREAU COUNTY PROPOSED STREAM STUDIES MAP



BUREAU COUNTY STREAM STUDY MAP - NORTHWEST WATERSHEDS



LEGEND

- Revised Zone A — orange line
- New Zone A — magenta line
- New Zone AE — green line
- Redelineation — blue line

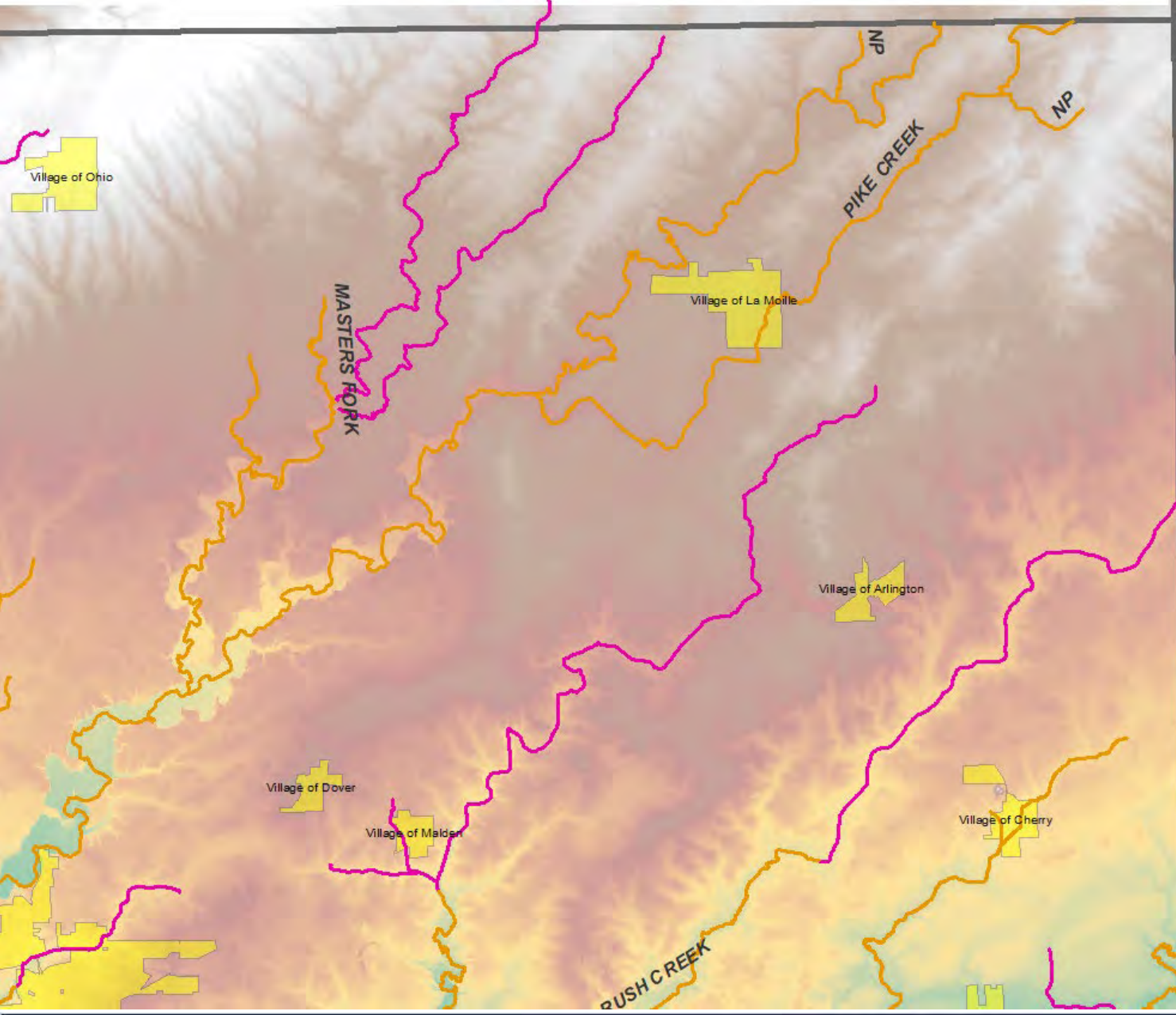
Digital Terrain Model

Value

High : 991.464

Low : 287.391

BUREAU COUNTY STREAM STUDY MAP - NORTHEAST WATERSHEDS



LEGEND

- Revised Zone A
- New Zone A
- New Zone AE
- Redelineation

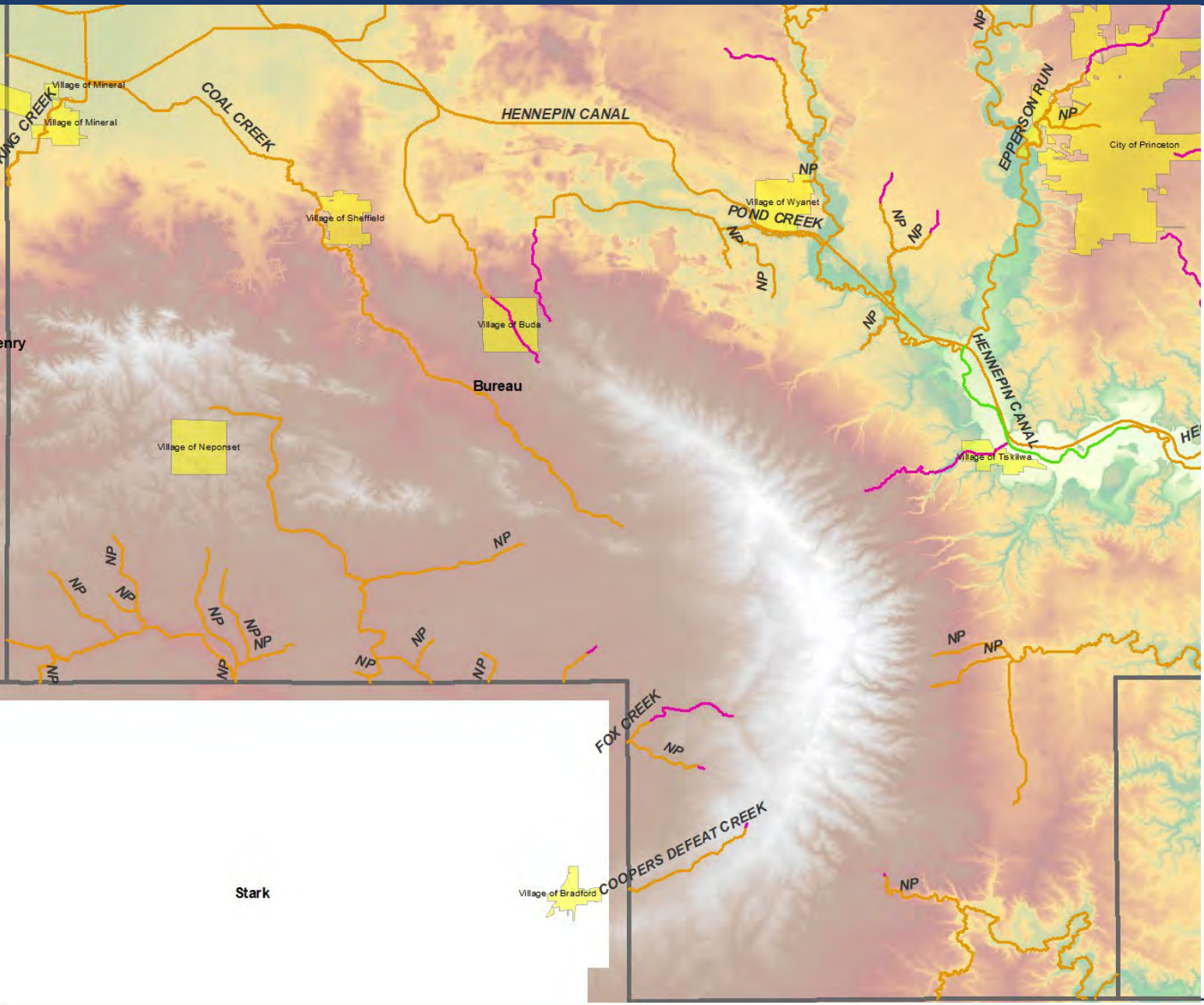
Digital Terrain Model

Value

High : 991.464

Low : 287.391

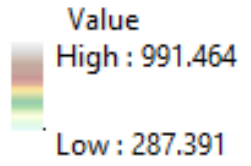
BUREAU COUNTY STREAM STUDY MAP - SOUTHWEST WATERSHEDS



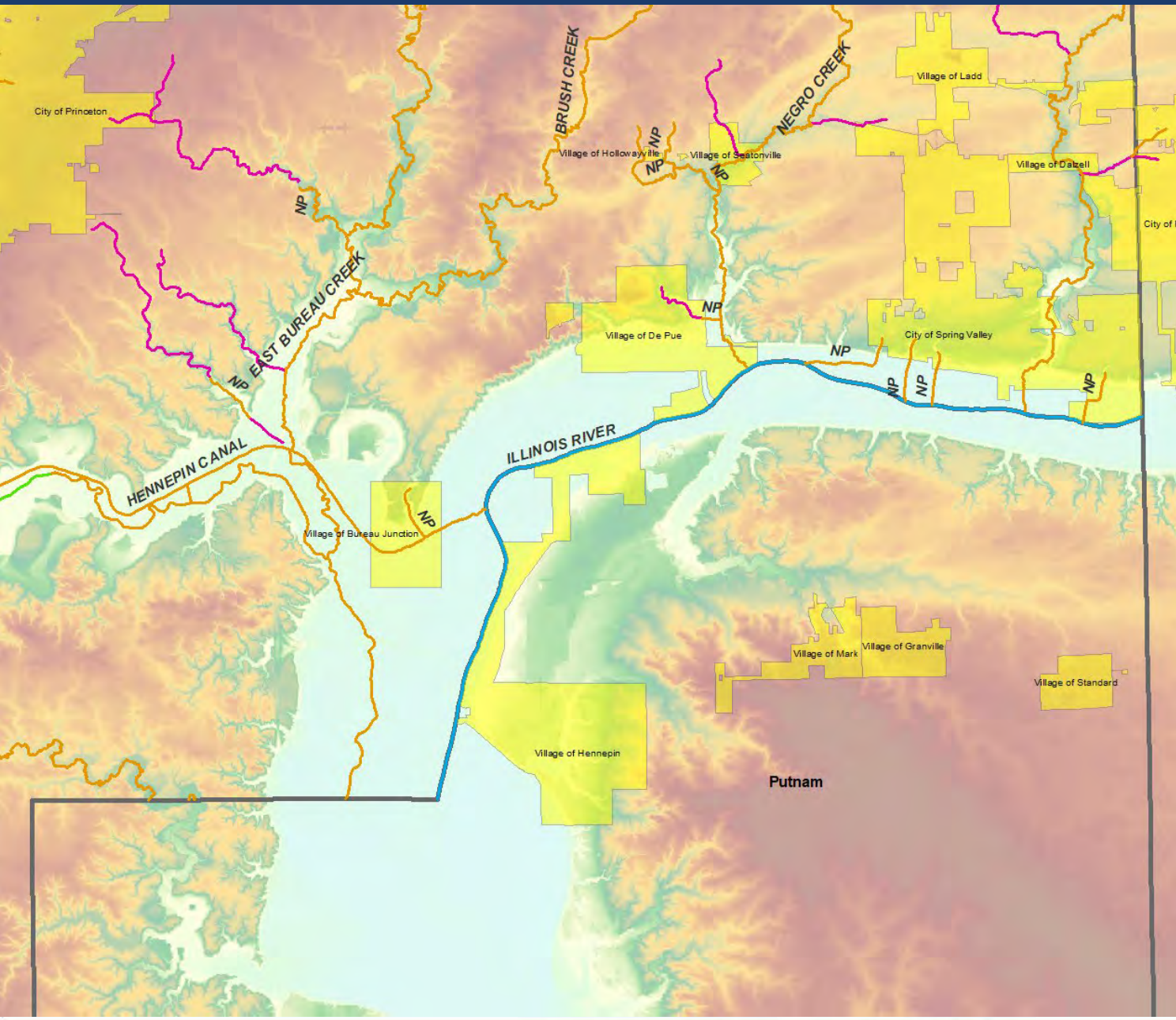
LEGEND

- Revised Zone A —
- New Zone A —
- New Zone AE —
- Redelineation —

Digital Terrain Model



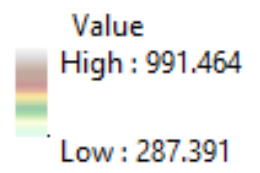
BUREAU COUNTY STREAM STUDY MAP - SOUTHEAST WATERSHEDS



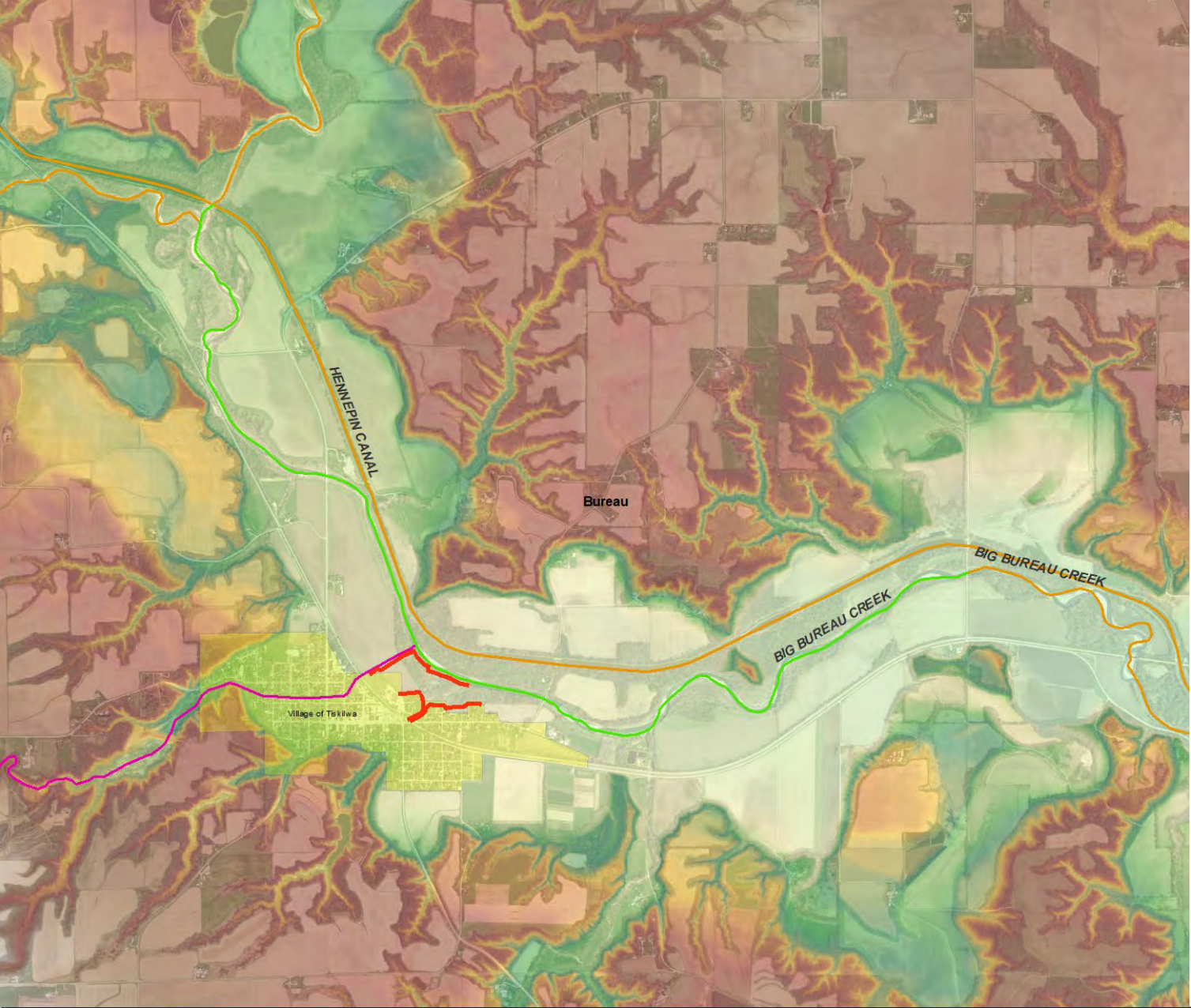
LEGEND

- Revised Zone A —
- New Zone A —
- New Zone AE —
- Redelineation —

Digital Terrain Model



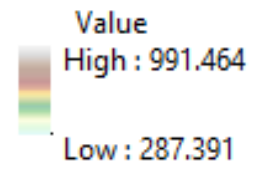
BUREAU COUNTY PROPOSED STREAM STUDY MAP - BIG BUREAU CREEK



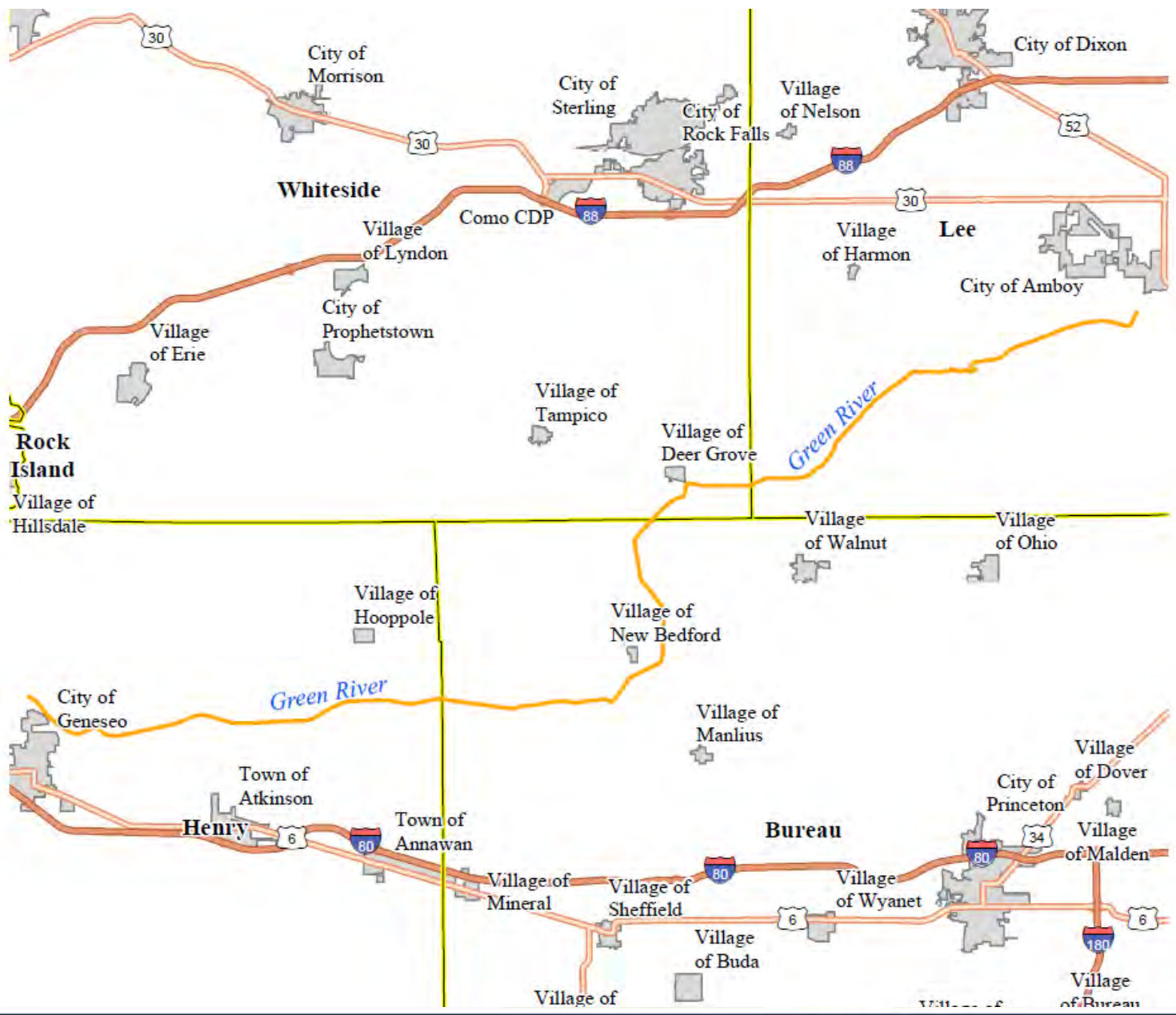
LEGEND

- Revised Zone A 
- New Zone A 
- New Zone AE 
- Redelineation 
- Levee System 

Digital Terrain Model




BUREAU COUNTY PROPOSED STREAM STUDIES MAP – GREEN RIVER



Green River through Lee, Whiteside, Bureau and Henry Counties

LEGEND

Zone A - 

Project Communication Data Development Phase



Communication Plan

- Project Initiation Coordination Call (today)
- Proposed Engineering Methods Notification Letter
 - 30-Day Comment Period
- Flood Risk Review Meeting
 - 30-Day Comment Period
- Data Submission Notification Letter
 - 30-Day Comment Period

Please reach out to Mary Richardson at mjr@Illinois.edu



Proposed Engineering Methods Letter FEMA Standard ID 620

- Mailed to community CEOs, Floodplain Administrator, Community Engineer
- Details the streams to be studied in community and proposed engineering methods used to study each stream
- Informs community about 30-day period to provide comments on the proposed engineering methods for the study stream



Flood Risk Review Meeting

- A technical meeting to review *draft* workmaps with community officials, engineers, and floodplain managers. Public meetings will be held later in the project.
- The meeting initiates a 30-day comment period for communities to provide feedback on the *draft* floodplain mapping.



Data Submission Notification

FEMA Standard ID 621

- Mailed to community CEOs, Floodplain Administrator, Community Engineer
- Makes community aware the data collection and analysis phase of the project is concluding, and Flood Insurance Rate Map (FIRM) database is being validated by FEMA
- Gives communities 30 days to comment on the data in the FIRM database



Project Schedule

Data Development Phase



Estimated Schedule

- Engineering Notification Letters to communities likely by
 - ***Beginning of June 2021***
- ISWS/IDNR-OWR to begin field survey work by
 - ***End of May 2021***
- ISWS to finish Zone A & AE floodplain studies by
 - ***4th Quarter 2022***
- Flood Risk Review Meeting likely
 - ***2nd Quarter 2023***
- Submit Flood Studies to IDNR for State review
- Complete draft FIRM database to conclude data development phase of project by
 - ***3rd Quarter 2024***

Digital Flood Insurance Rate Map Project to follow pending conclusion of data development



Data

Data Development Phase



Data Development Community Participation

- Do you have data or information that we can use for the floodplain studies?
 - Flood prone areas
 - Flood photos/Drone video
 - Historic highwater marks
 - Local floodplain studies and survey data
 - Any other data or information
- Stay engaged in the process...
 - Attend meetings
 - Ask questions
 - Inform others
 - Update contact Information

Community Participation

Bureau County Comments

Find address or place

New Comment

- Click Add Comment button (*below*)
- Click on map to draw polygon
 - Single-click to start/continue
 - Double-click to finish

Add Comment

Or

Edit Comment

- Single-click a Comment to view or edit it.

Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA

<https://www.illinoisfloodmaps.org/commentmap/bureau.htm>

log in: watershed
password: illinoisfloods!123



Summary

- Local Partners are critical to the project
 - Best understand their community needs
 - Can provide critical information to enhance the studies with local knowledge
- Our goal is to make managing and mitigating flood risk easier for our local partners
 - Use the latest data to update the understanding of flood risk in Bureau County and along Green River
 - Update the tools and mapping available to assist communities in administering the NFIP locally
- Please ask questions and share your concerns
 - Communicating early and often ensures the flood risk products capitalize on local knowledge and best address local needs



ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE

- Project Manager: Greg Byard, P.E., CFM
byard@illinois.edu
- Project Engineer: Dawn Cosentino, P.E., CFM
dawncos@illinois.edu
- Outreach: Mary Richardson, CFM
mjr@illinois.edu
- Mitigation Planning: Rebecca Leitschuh, AICP
rleits@Illinois.edu

www.illinoisfloodmaps.org