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Division of Water Resources

FEMA

wood.

Pottawatomie County

Floodplain Mapping Project
Data Development Kickoff Meeting

June 16, 2022

While we are waiting, please enter your name and community in the chat box!

Your engagement in this process is important to the success of this project, so thank you for taking the time to be here today!

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Introductions

Kansas Department of Agriculture

Tara Lanzrath, CFM
Floodplain Mapping Coordinator

Joanna Rohlf, CFM
Floodplain Mapping Specialist

William Pace, CFM
Floodplain Mapping Specialist

Steve Samuelson, CFM
State NFIP Coordinator

Cheyenne Sun Eagle
NFIP Specialist

FEMA – Region VII

Dawn Livingston
Regional Project Officer

Wood Environment & Infrastructure Solutions

Alfred Benesch & Company

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Today's Goals

Share details on the mapping project

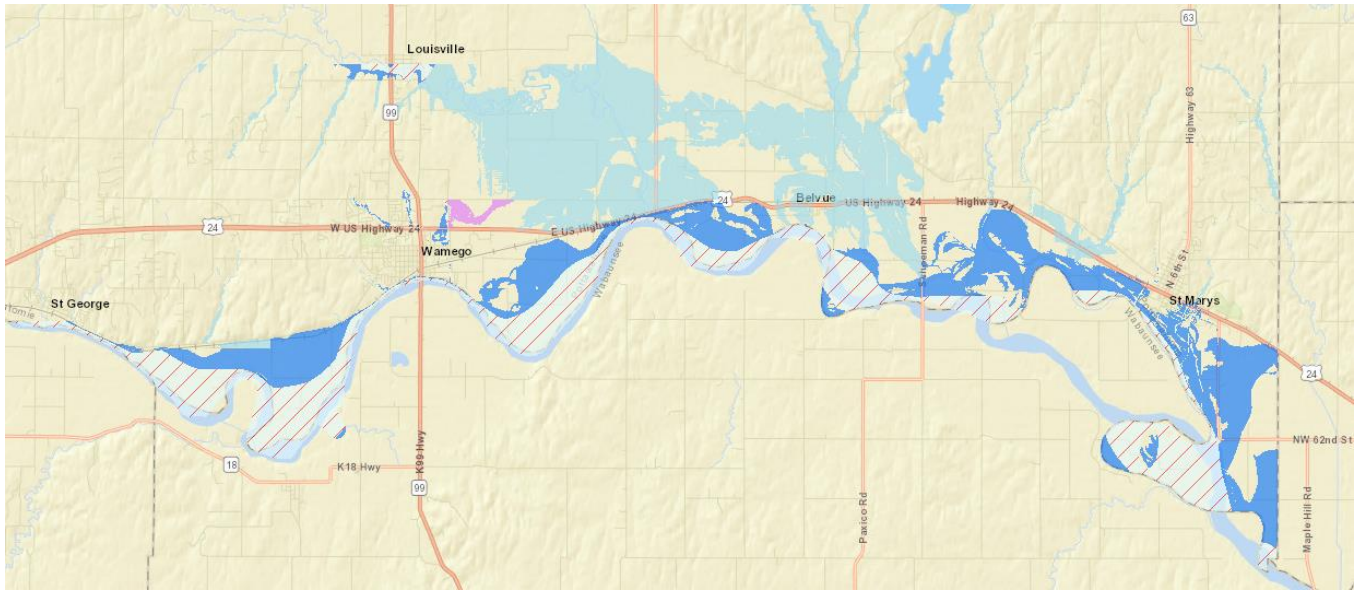
Get initial feedback on modeling methods

Review future steps

Background

Background

- Recent Physical Map Revision (PMR) Project for Pottawatomie County focused on the areas that were excluded from the 2012 Pottawatomie County FIRM Update
  - Middle Kansas Update Phase 1: streams in Wamego
  - Middle Kansas Update Phase 2: Kansas River, streams in St. Marys and Belvue and remaining streams in seclusion area
  - Revised Preliminary Mapping Products dated June 2021
  - PMR is scheduled to be effective November 2022



Background

- Blue Custom Watershed BLE Project
  - *Kick-off Meeting: November 2020*
  - *Discovery Meeting and BLE Review: February 2021*
- Upper Kansas Custom Watershed BLE Project
  - *Kick-off Meeting: February 2021*
  - *Discovery Meeting: September 2021*

Discovery Report

Upper Kansas Custom Watershed

HUCS 10270101, 10270102, 10270205

Cities of Alma, Alta Vista, Belvue, Delia, Emmett, Fort Riley, Grandview Plaza, Grantville, Havensville, Hoyt, Louisville, Manhattan, Maple Hill, Mayetta, McFarland, Meriden, Ogden, Onaga, Paxico, Riley, Rossville, Silver Lake, Soldier, St. George, St. Marys, Topeka, Wamego, Westmoreland, Wheaton, Willard

Douglas, Geary, Jackson, Jefferson, Pottawatomie, Riley, Shawnee, Wabaunsee Counties

Prairie Band Potawatomi Nation

Report Number 01

DRAFT

FEMA

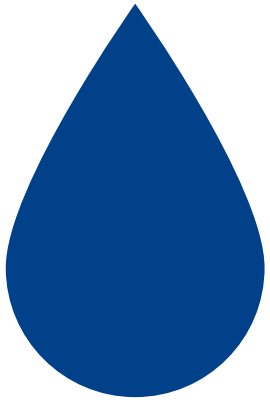
Background

- Current Effective Mapping for Pottawatomie County is dated December 2012 and March 2015.

- Through Discovery and conversations with County stakeholders, it was determined that updated modeling and mapping for the remainder of Pottawatomie County (not included in the previous PMR), using newer Lidar and 2D modeling techniques, would be beneficial.
  - It was also determined that the use of 2D modeling would be beneficial for the accuracy of the floodplains near the Belvue area.

Review of the Work Ahead and How We Propose Doing It

Definitions



Hydrology

How Much Water?

Hydraulics

How High Will Water Get?

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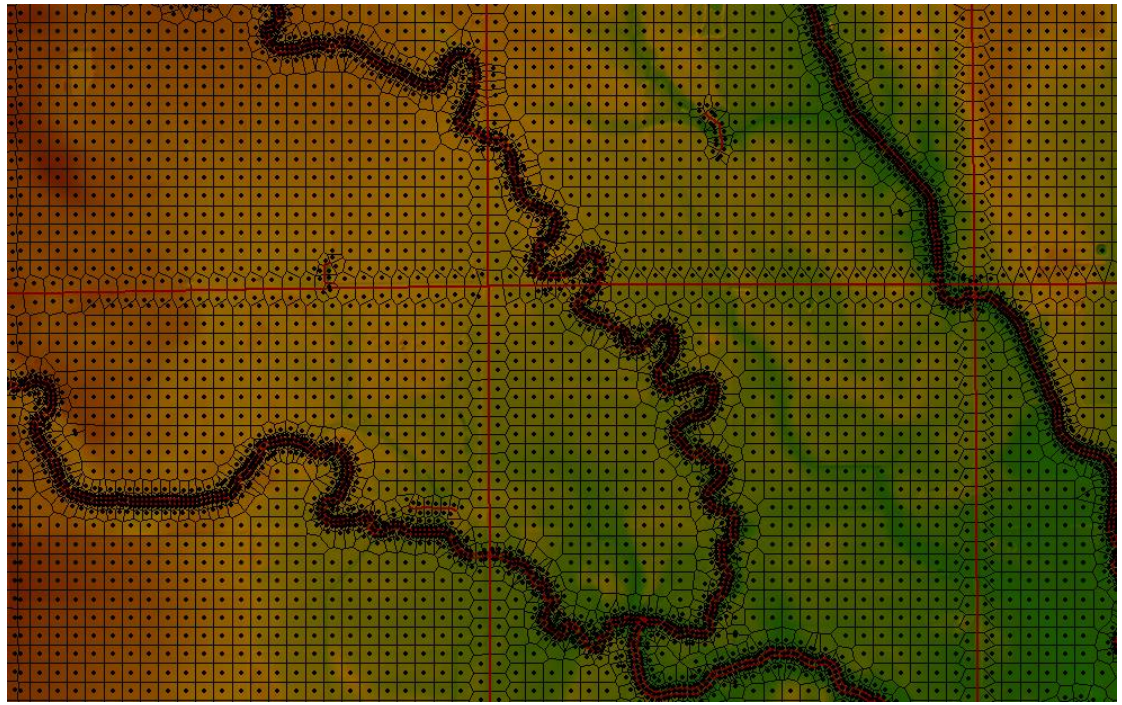
2D Modeling is being used



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Model Enhancements

- Enhancements will be made to the BLE modeling that was performed.
  - New Lidar, flown in 2018, will be incorporated.
  - Comments made and additional information gathered during the Discovery phase will be used to enhance the modeling.
  - Additional review/refinement of mesh will be done to improve accuracy of modeling.
  - Enhanced Zone A and Zone AE streams will include field measured structure data, as-built survey plan and additional landuse refinements.

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Model Enhancements

- The hydrology is built into the RAS modeling platform using excess rainfall-on-grid methodology.
  - This will be calibrated to statistical gage analysis and HEC-HMS (rainfall-runoff) model flows, developed as part of this project

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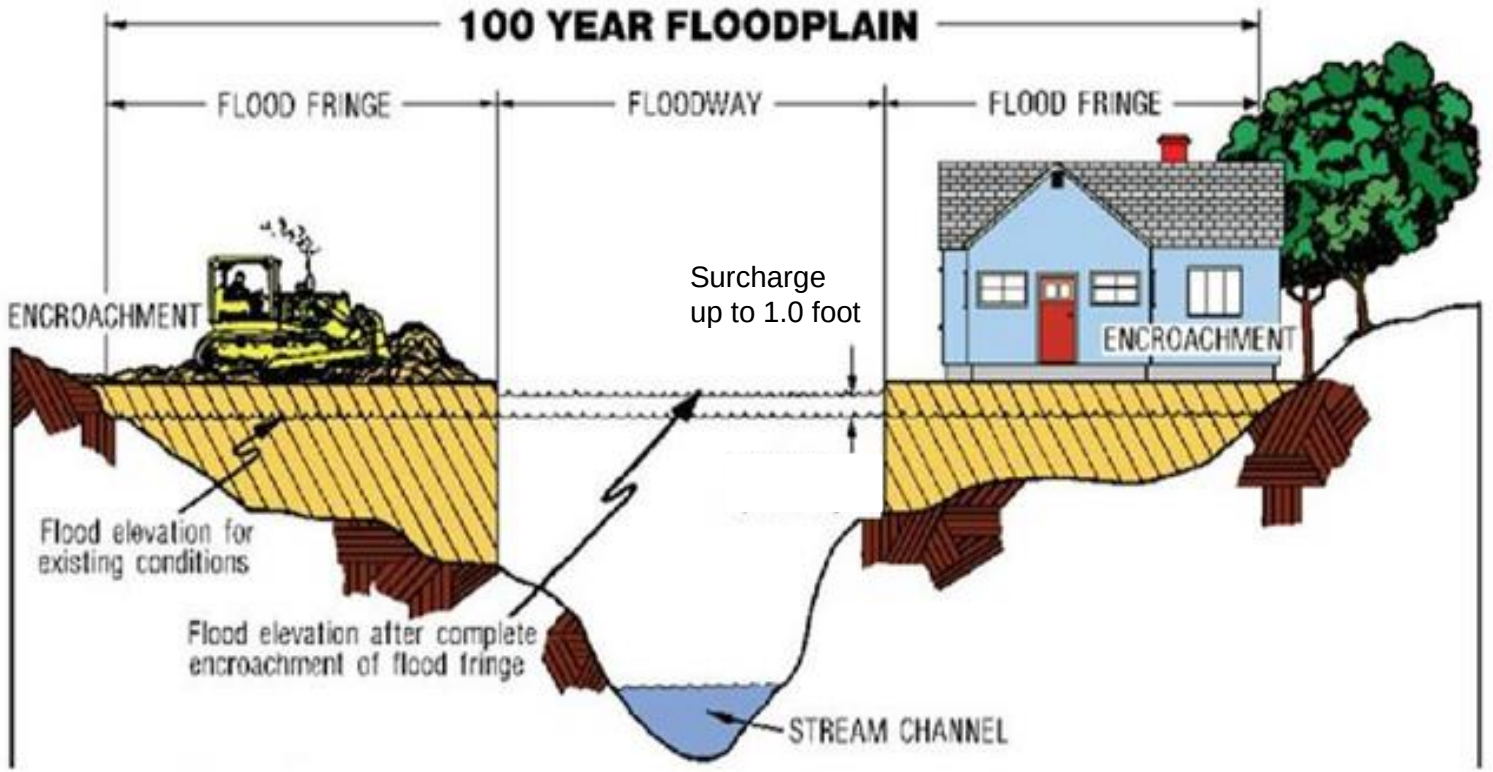
A portion of the Zone AE modeling includes the development of a floodway

A Floodway is the area within the floodplain that must be reserved in order to discharge the base flood without cumulatively increasing the WSE by more than 1.0 foot.



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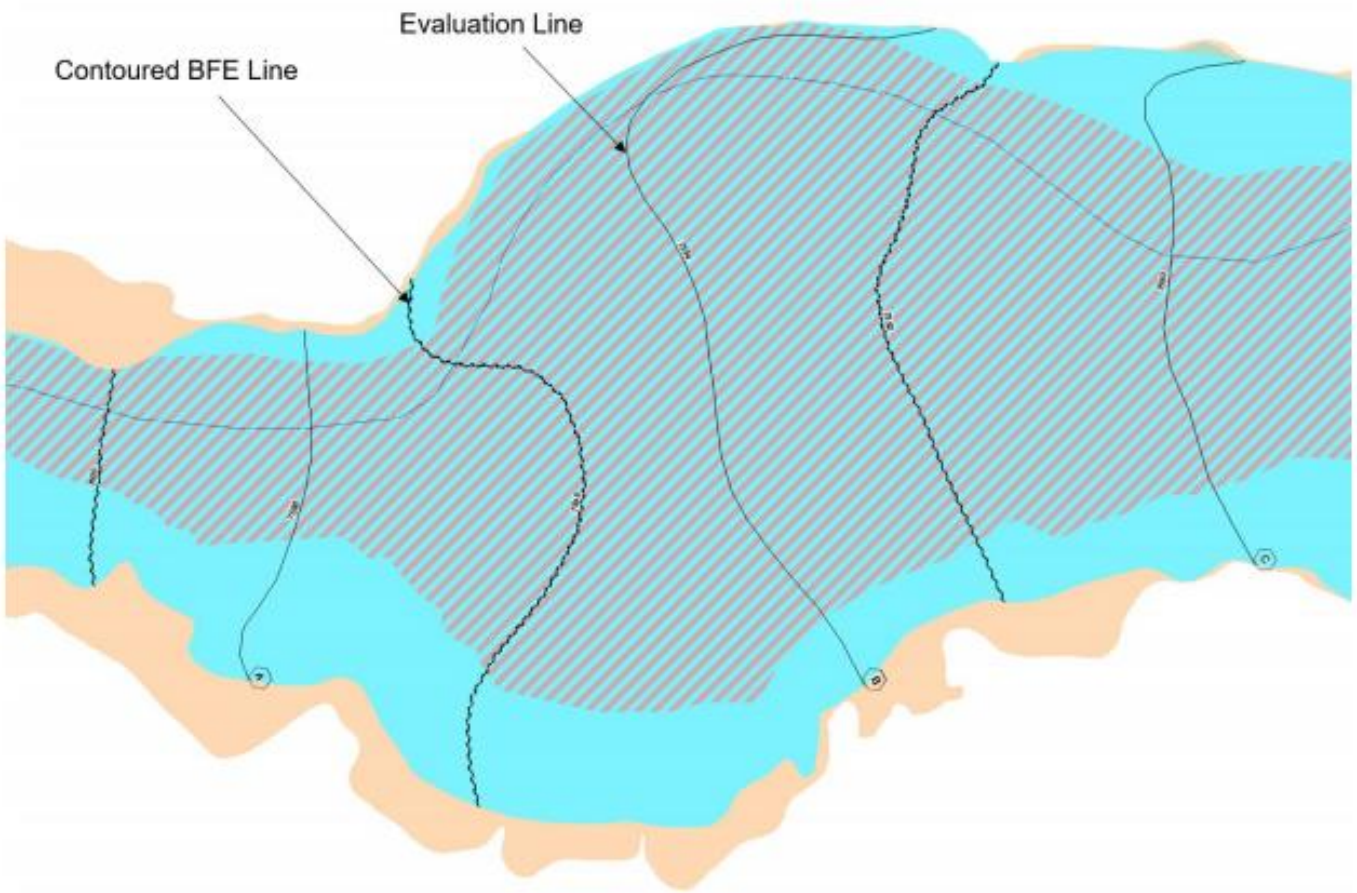
2D Floodways will be developed



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Levees

There are six non-accredited levees in the project area. These levees will be considered hydraulically insignificant.

Data Development Scope

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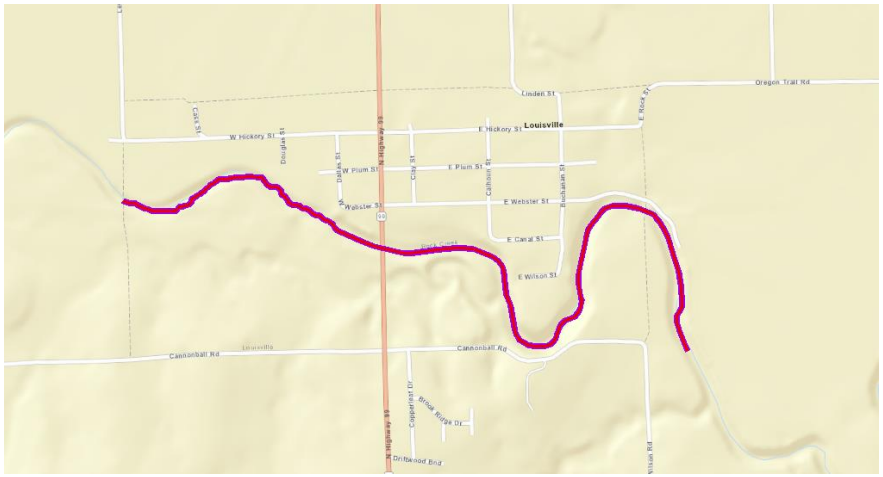
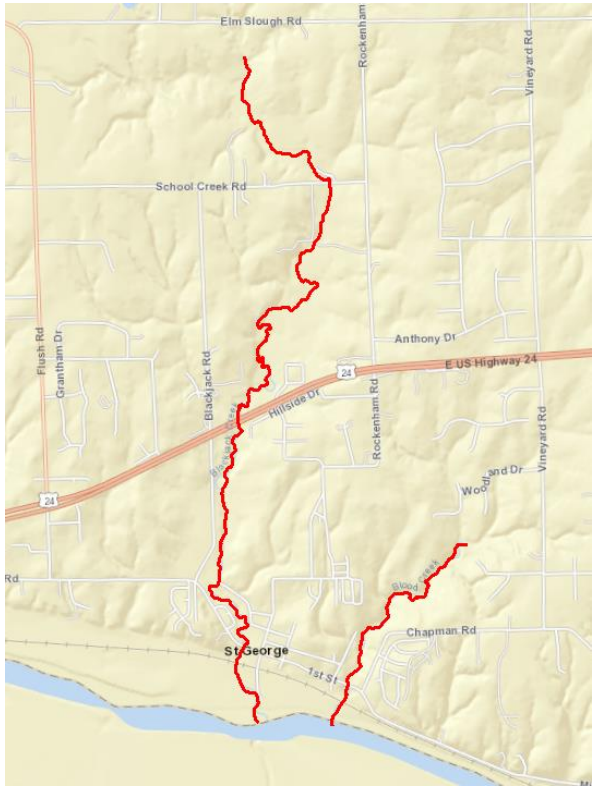
New Zone AE with Floodway

- Louisville:
  - Rock Creek



- St. George:
  - Blackjack Creek
  - Blood Creek



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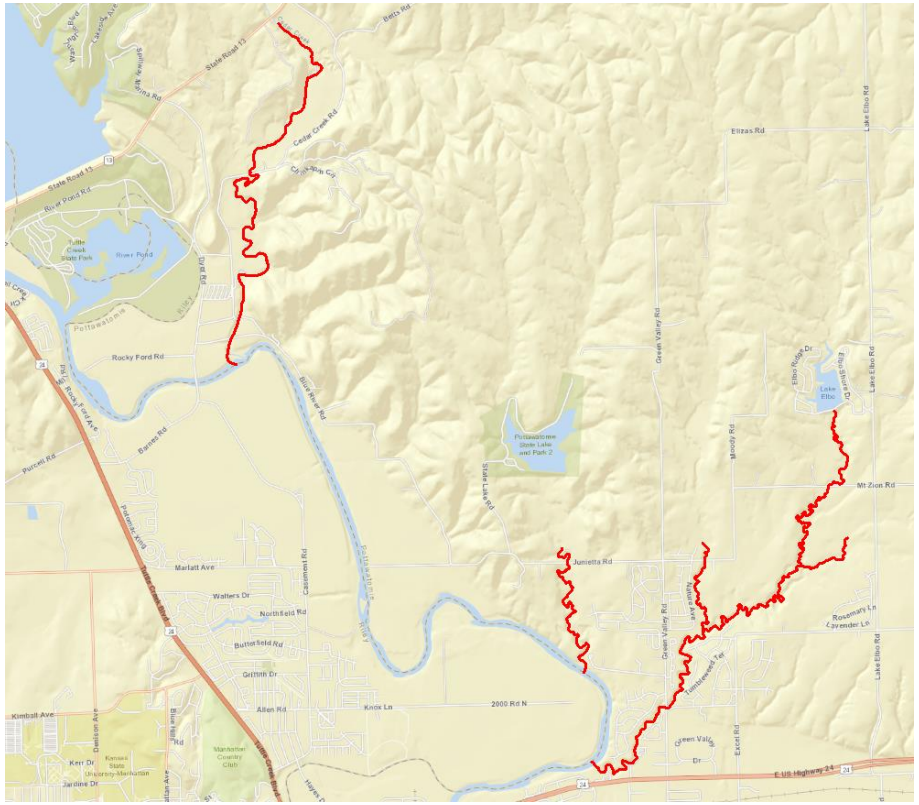
New Zone AE with Floodway

- East of Manhattan:
  - Cedar Creek
  - Big Blue River Tributary
  - Elbo Creek and one Tributary
  - School Creek



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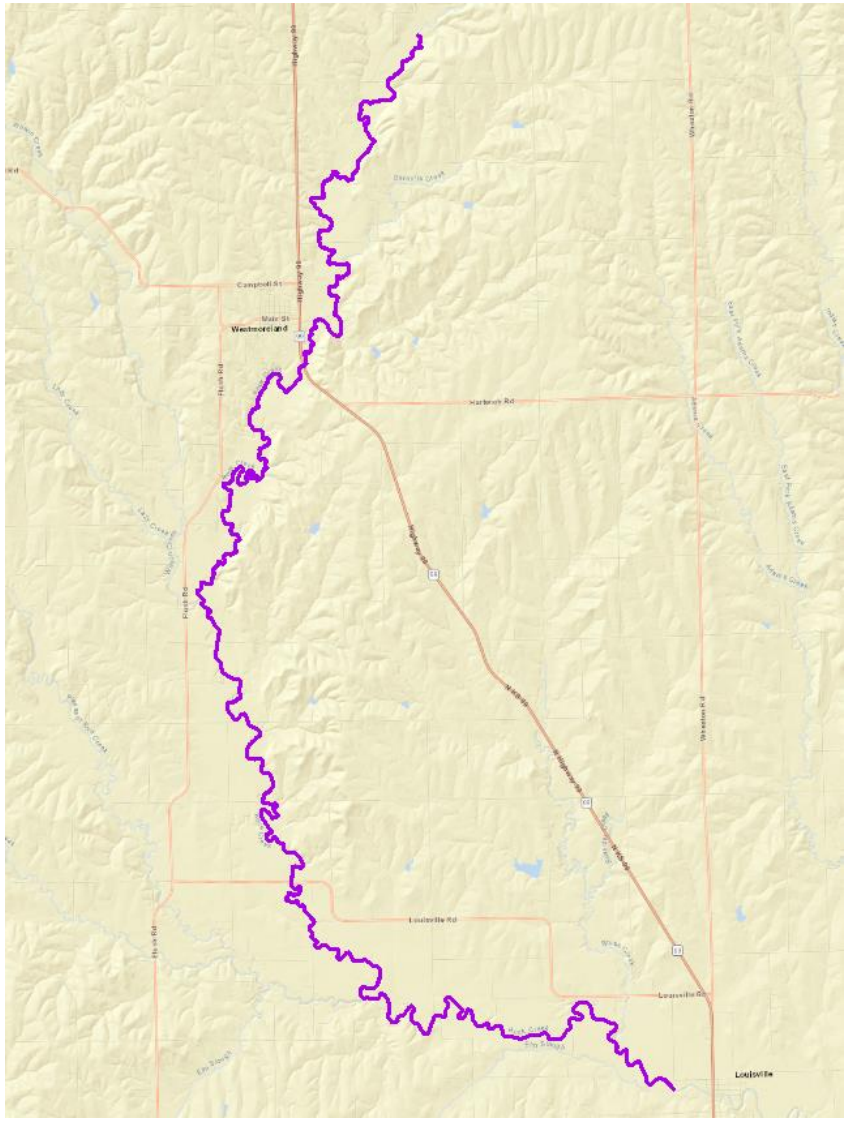
New Zone AE without Floodway

- Rock Creek- extending from north of Westmoreland to Louisville



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New Static AE

- Lake Elbo

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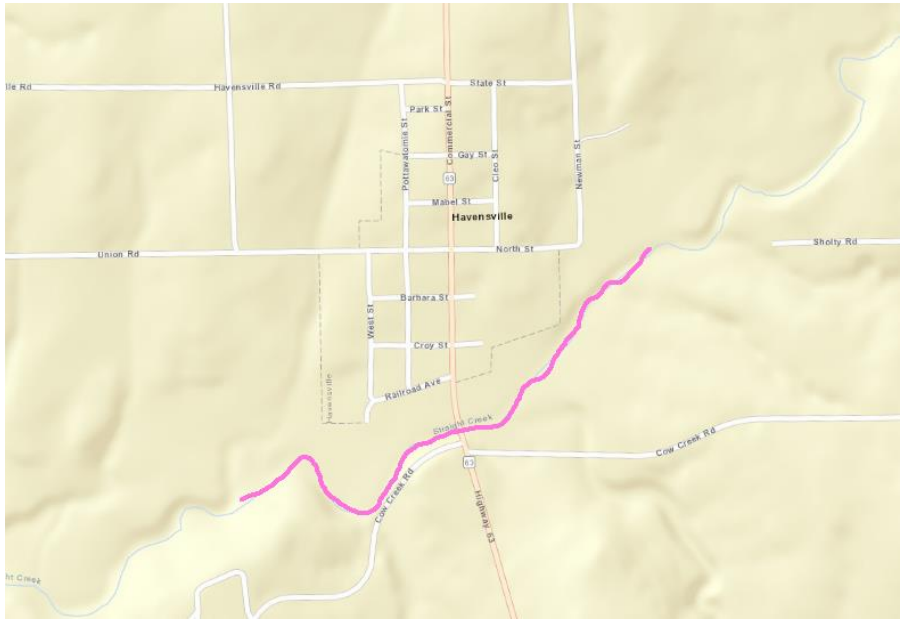
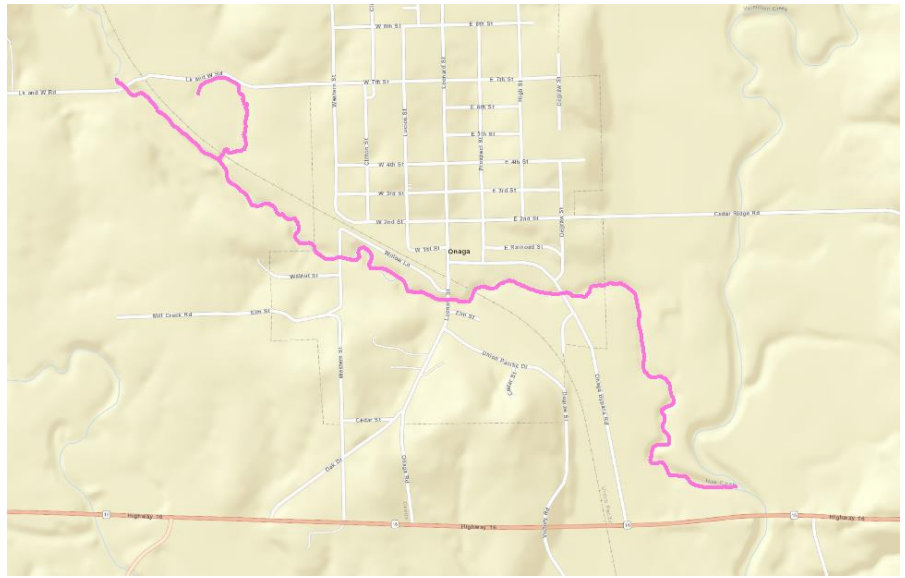
New Enhanced Zone A

- Havensville:
  - Straight Creek



- Onaga:
  - Hike Creek and one Tributary



Pottawatomie County 2022 Proposed Mapping Updates

Scoped Studies

New Zone A - Excess Rainfall on Grid

New Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics.

New Zone A - Gage Analysis

New Zone A studies will be developed for these streams using 2D Hec-Ras hydraulics and hydrology calibrated to gage analysis flows.

New Zone AE with Floodway - HEC-HMS

New Zone AE studies will be developed for these streams using 2D Hec-Ras hydraulics and hydrology calibrated to HEC-HMS model flows. Floodways will be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.

New Zone AE with Floodway - Gage Analysis

New Zone AE studies will be developed for these streams using 2D Hec-Ras hydraulics and hydrology calibrated to gage analysis flows. Floodways will be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.

New Zone AE without Floodway - Gage Analysis

New Zone AE studies will be developed for these streams using 2D Hec-Ras hydralics and hydrology calibrated to gage analysis Flows. Floodways will not be developed. Field measured structure data will be incorporated into the modeling.BFEs will be shown on the maps.

New Static AE - HEC-HMS

New Static Zone AE studies will be developed for these streams using a HEC-HMS model to determine static water surface elevations.

New Enhanced Zone A - Excess Rainfall on Grid

New Enhanced Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics. Field measured structure data will be incorporated into the modeling.

Redelineation

Effective water surface elevations for these streams/areas will be re-mapped on newer LiDAR topography, creating updated boundaries for the Special Flood Hazard Area.

Incorporation of Recent Mapping Updates for the Middle Kansas Watershed project.

0 2 4 8 Miles

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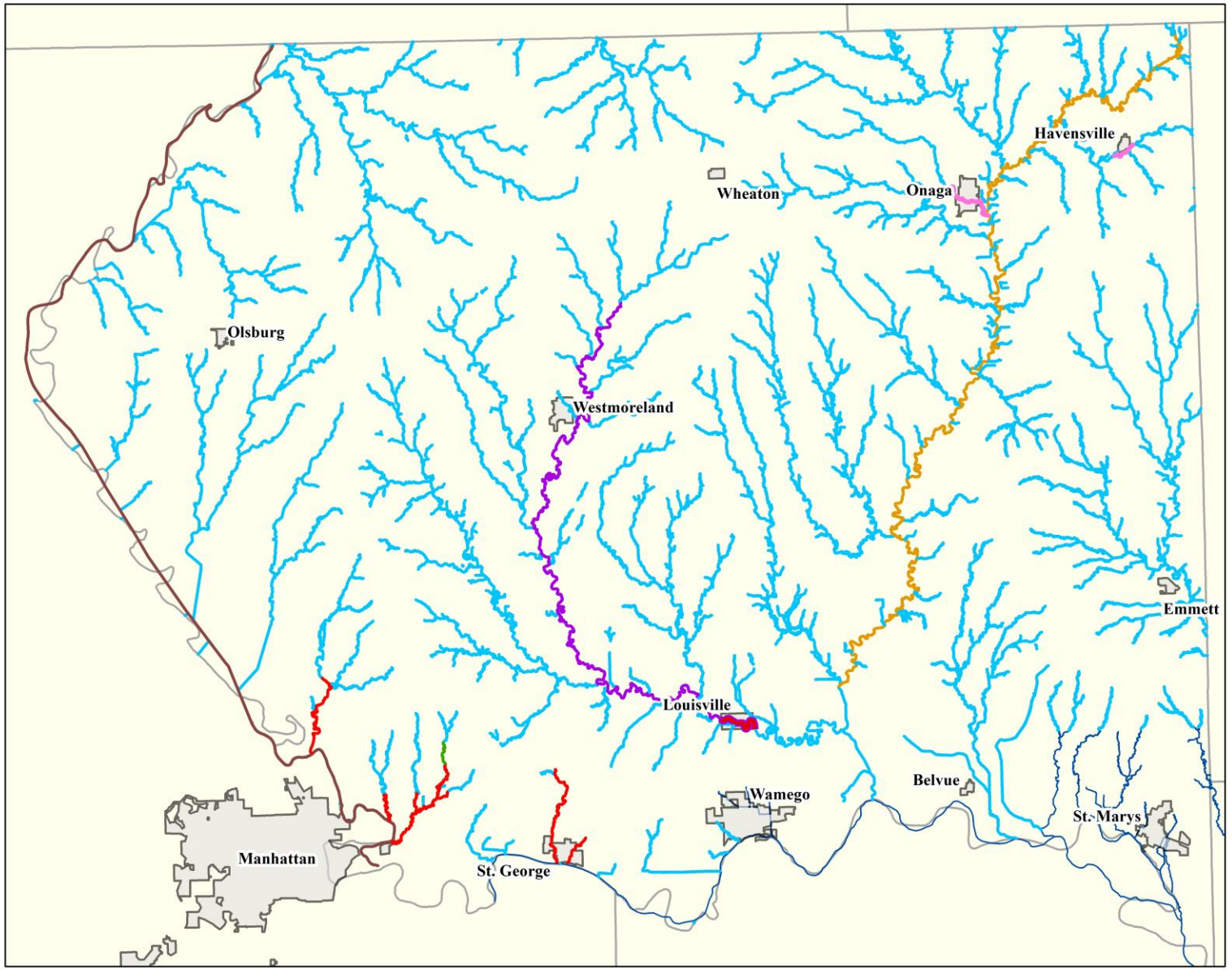
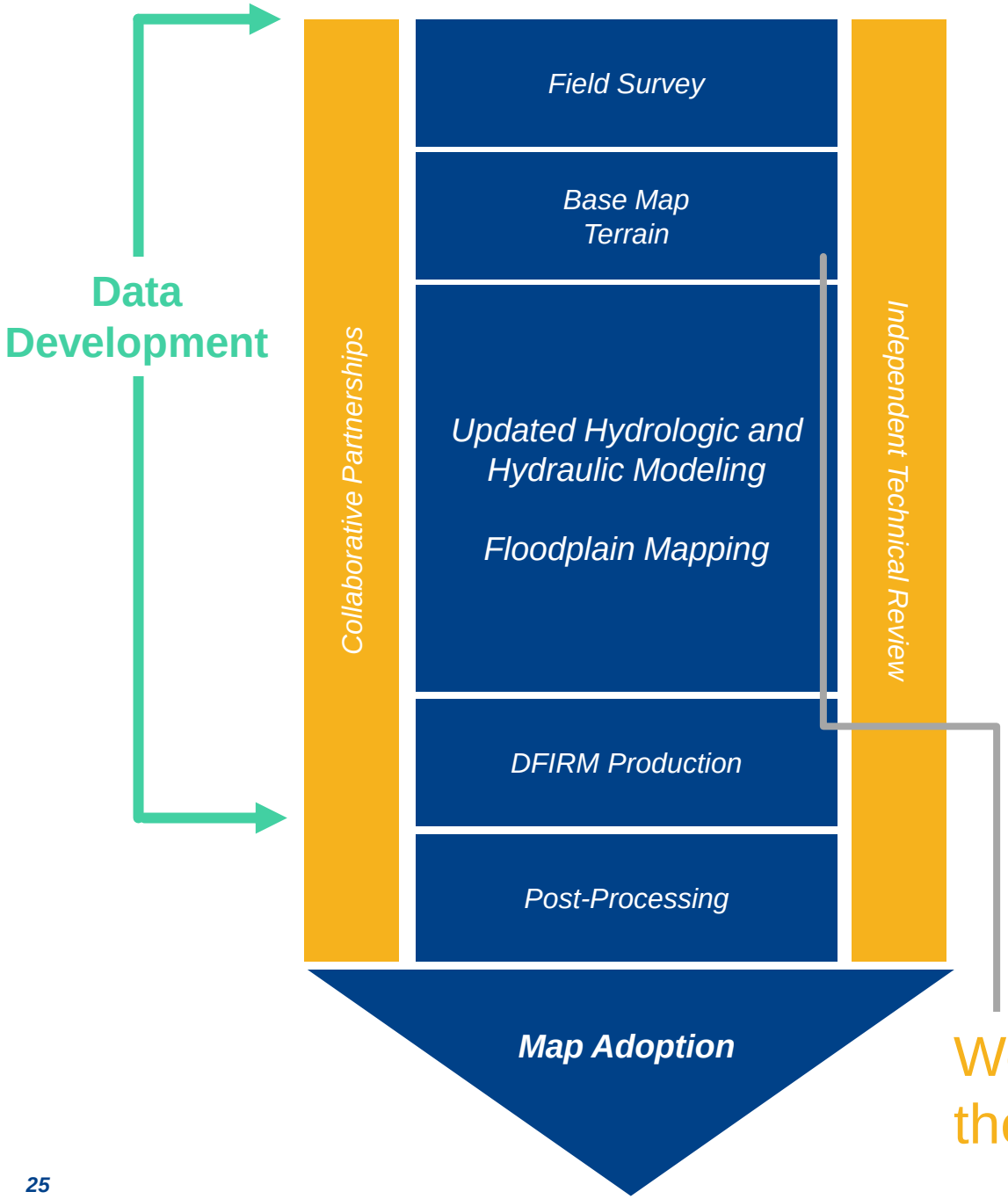


Next Steps



Project Tasks

1. Field Survey
2. Base Map and Topography Preparation
3. Hydrologic and Hydraulic Modeling
4. Floodplain Mapping
5. DFIRM and FIS Production
6. Post-Preliminary

We are about to begin the modeling task

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Our Next Steps:

- We will complete the engineering analysis previously described.
- Several rounds of reviews will be completed.
- We will develop your draft regulatory floodplain maps.
  - Also known as your Flood Insurance Rate Map (FIRM)
- We will develop your draft Flood Insurance Study (FIS).
- We will have a community review period and a public review period

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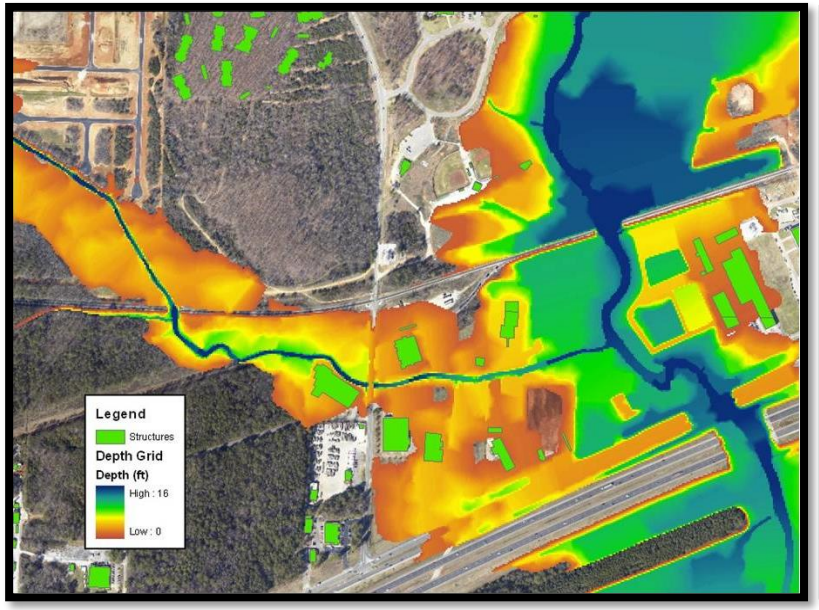
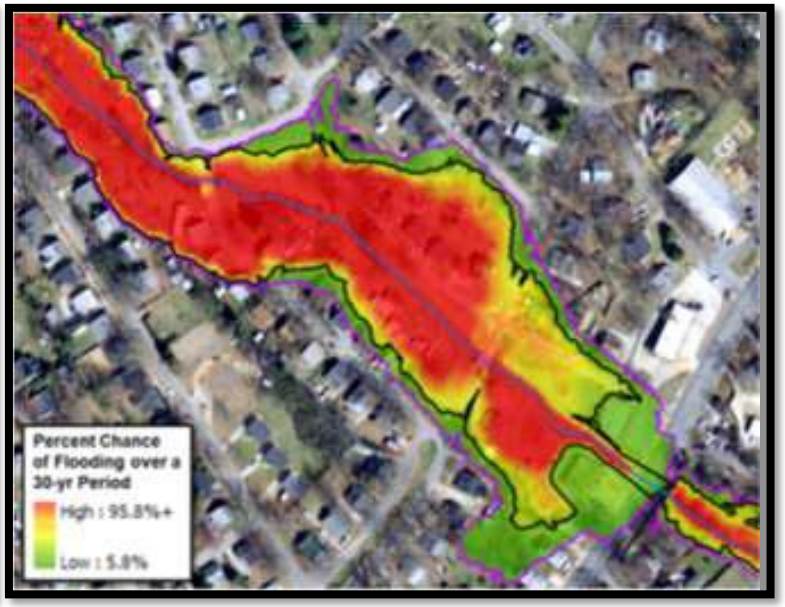
Our Next Steps:

- We will also be developing flood risk products for newly studies areas in Pottawatomie County as part of this project.





Project Timeline

Kick-off Meeting and Initial Community Feedback:
[TODAY!]

Data Development Work:
[Now until the end of 2022]

- *Base Map*
- *Topographic Data*
- *Field Survey*
- *Develop Hydrologic and Hydraulic Models*
- *Floodplain Mapping*

Flood Risk Review Meeting:

[~January 2023]

- *Your **review** and **feedback** on the draft maps*

Project Timeline, continued

Community **comments** will be **addressed**

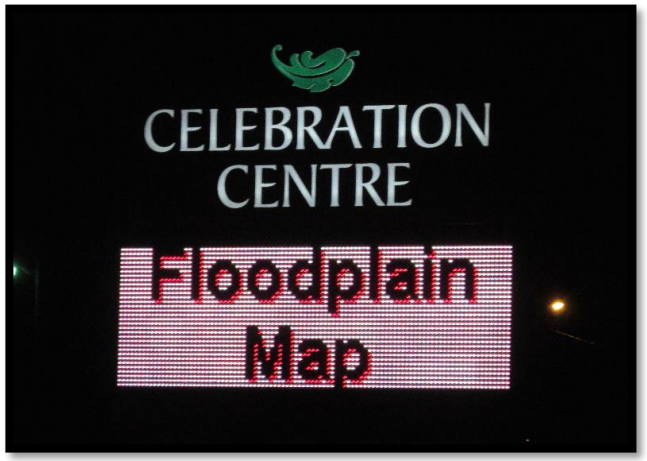
Public review of the draft maps

- *Includes Public Open House*

Preliminary Map Products

- *Preliminary DFIRM Community Coordination Meeting*

Post-Preliminary Processing



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Key Takeaways

Floodplain Mapping Projects take time

Your involvement in this process will result in better flood information for your community

DON'T HESITATE TO CALL, WE ARE HERE TO HELP

Resources

Online Project Information

Project Website

- Scoping Maps, Project Timeline, Meeting Presentations, Newsletters, Technical Reports, Web Review Map
- https://agriculture.ks.gov/divisions-programs/dwr/floodplain/mapping/mapping-projects/
- **Web Review Map**
- Provide comments on areas impacted by past floods, community needs, etc.
- Review of floodplain data

Story Maps

- Project Info
- “Floodplain Current”: Mapping Process ‘Nuts and Bolts’


Any Questions?