Kansas Department of Agriculture
Division of Water Resources

FEMA

wood.

Douglas County

Floodplain Mapping Project
Data Development Kickoff Meeting

April 28, 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

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Sr. GIS Analyst

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Today's Goals

Share details on the mapping project

Get initial feedback on modeling methods

Review future steps

Background

Background

- Lower Kansas Custom Watershed BLE Project
  - *Kick-off Meeting and BLE Review: May 26, 2021*
  - *Discovery Meeting: September 15, 2021*

Discovery Report

Lower Kansas Custom Watershed

HUCS 10270102, 10270103, 10270104

Cities of Atchison, Auburn, Baldwin, Basehor, Bonner Springs, Carbondale, Circleville, Denison, Easton, Effingham, Eudora, Holton, Huron, Lancaster, Lawrence, Lecompton, Linwood, Mayetta, McLouth, Meriden, Muscotah, Netawaka, Nortonville, Oskaloosa, Overbrook, Ozawkie, Perry, Tonganoxie, Topeka, Valley Falls, Wakarusa, Whiting, Winchester

Atchison, Douglas, Jackson, Jefferson, Leavenworth, Osage, Shawnee, and Wabaunsee Counties

Prairie Band Potawatomi Nation

Report Number 01

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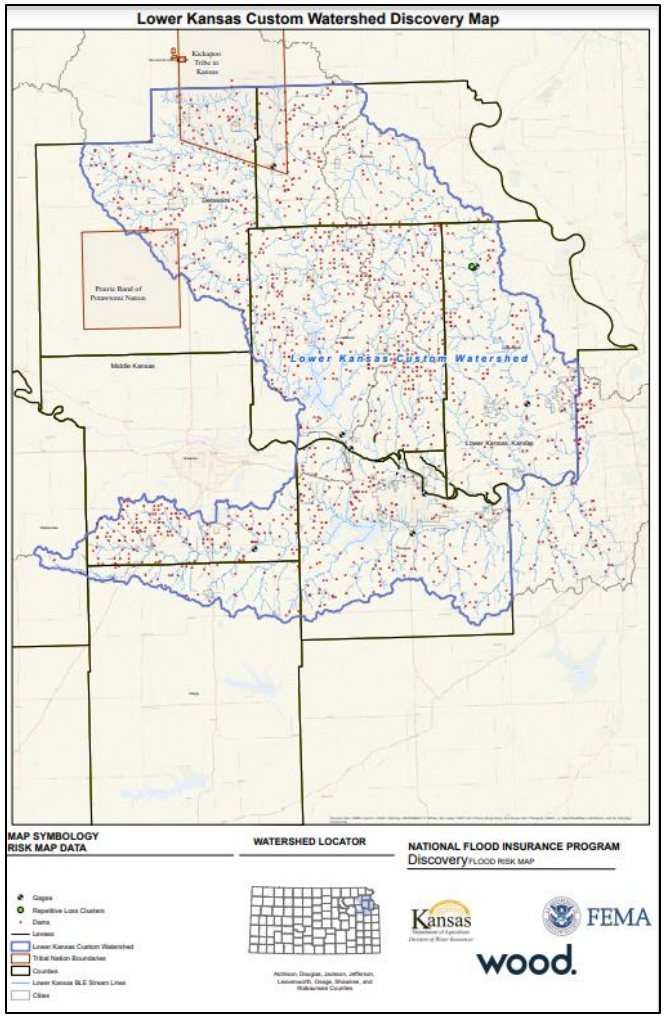


Background

- First countywide DFIRM for Douglas County went effective 8/5/2010.
- In 2015, a physical map revision (PMR) updated portions of the county and City of Lawrence.
- In 2022, a physical map revision (PMR) will update portions of the county and Baldwin City in the Upper Marais des Cygnes watershed.
- Through Discovery and conversations with County stakeholders, it was determined that Douglas County had interest in updating remaining portions of the county using newer LIDAR and 2D modeling techniques.

Review of the Work Ahead and How We Propose Doing It

Douglas County 2021 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 AE with Floodway - HEC-HMS

New Zone AE studies will be developed for these streams using 1D or 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 1D or 2D Hec-Ras hydralics 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 with Floodway - Excess Rainfall on Grid

New Zone AE studies will be developed for these streams using 1D or 2D Hec-Ras hydralics and excess rainfall-on grid hydrology. 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- 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 not be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.

New Static AE - Statistical Analysis

New Static Zone AE studies will be developed for these streams using a statistical analysis of USACE information to determine static water surface elevations.

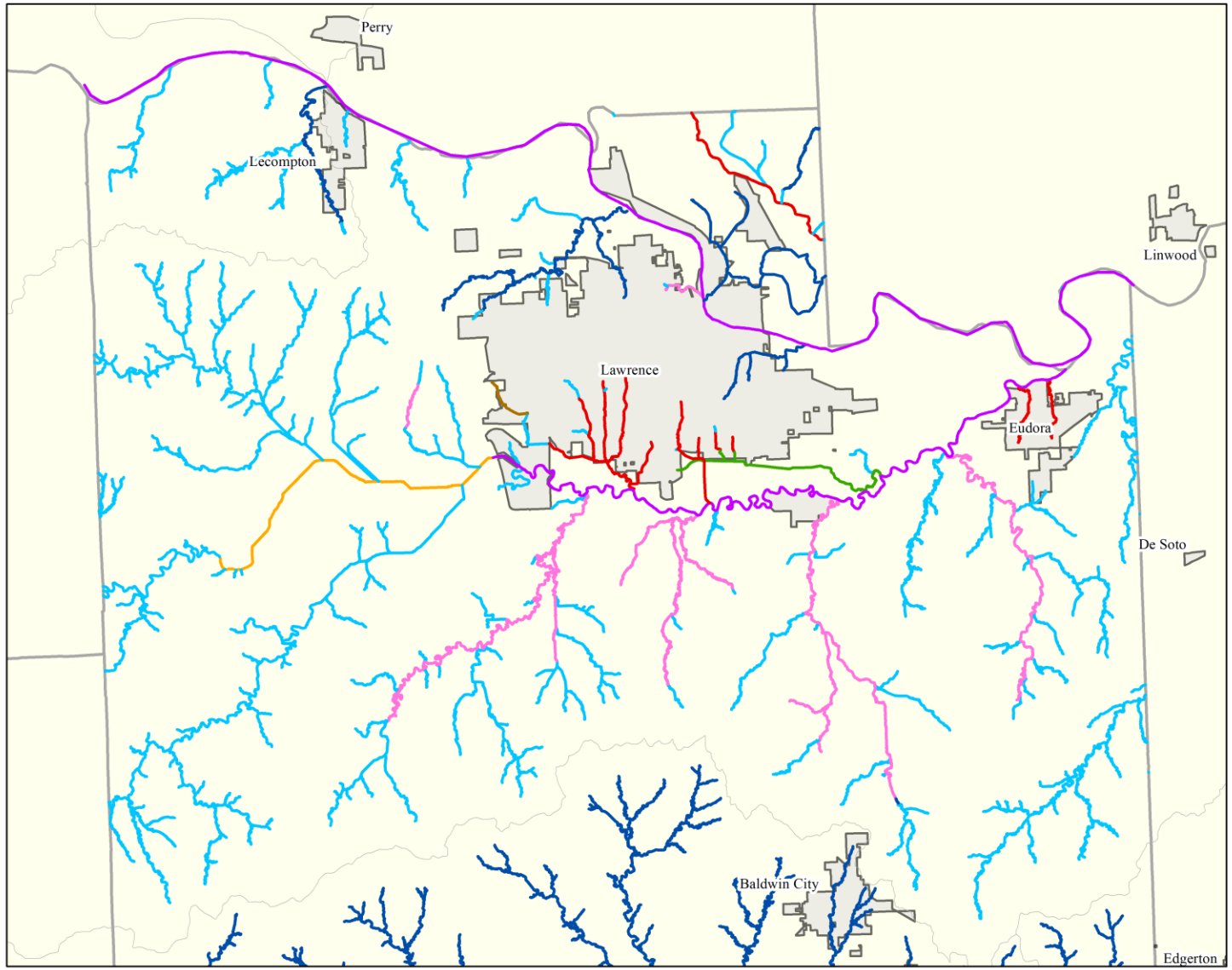
New Static AE - HEC-HMS

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

Incorporation of Existing Studies

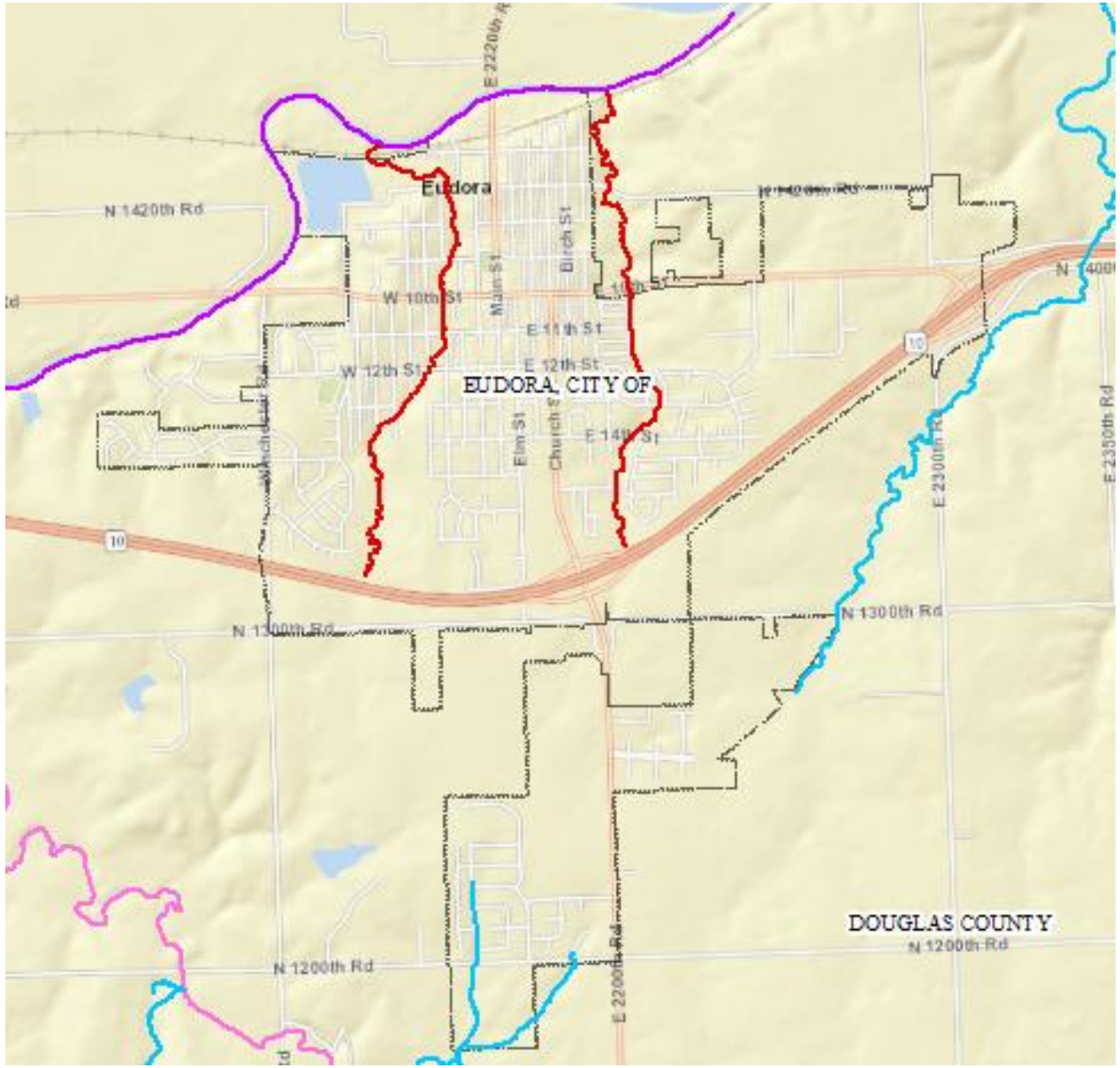
N

0 2.5 5 10 Miles



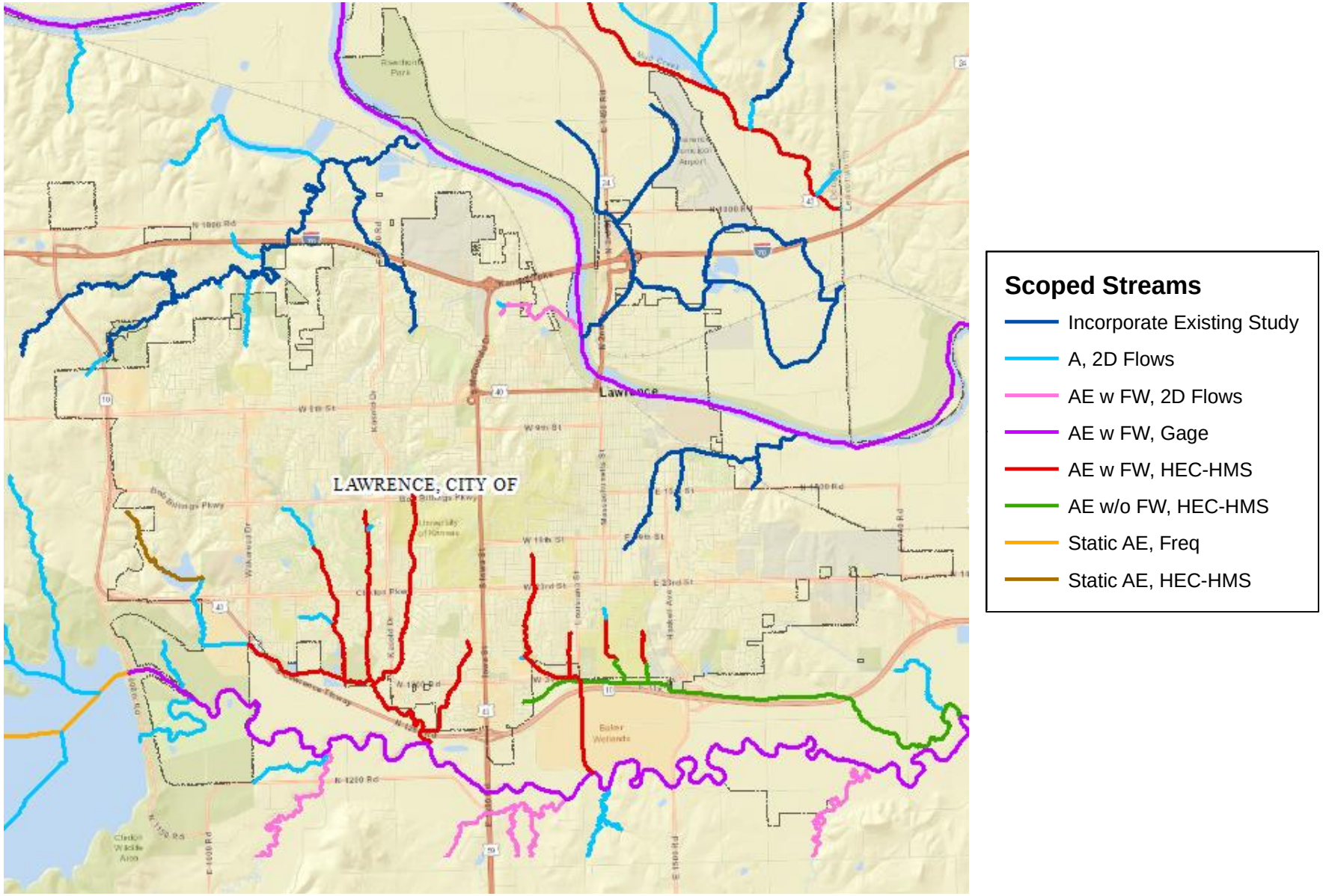
City of Eudora

- Zone AE w/ FW:
  - Eudora East Tributary
  - Eudora Middle Tributary
  - Wakarusa River
- Zone A



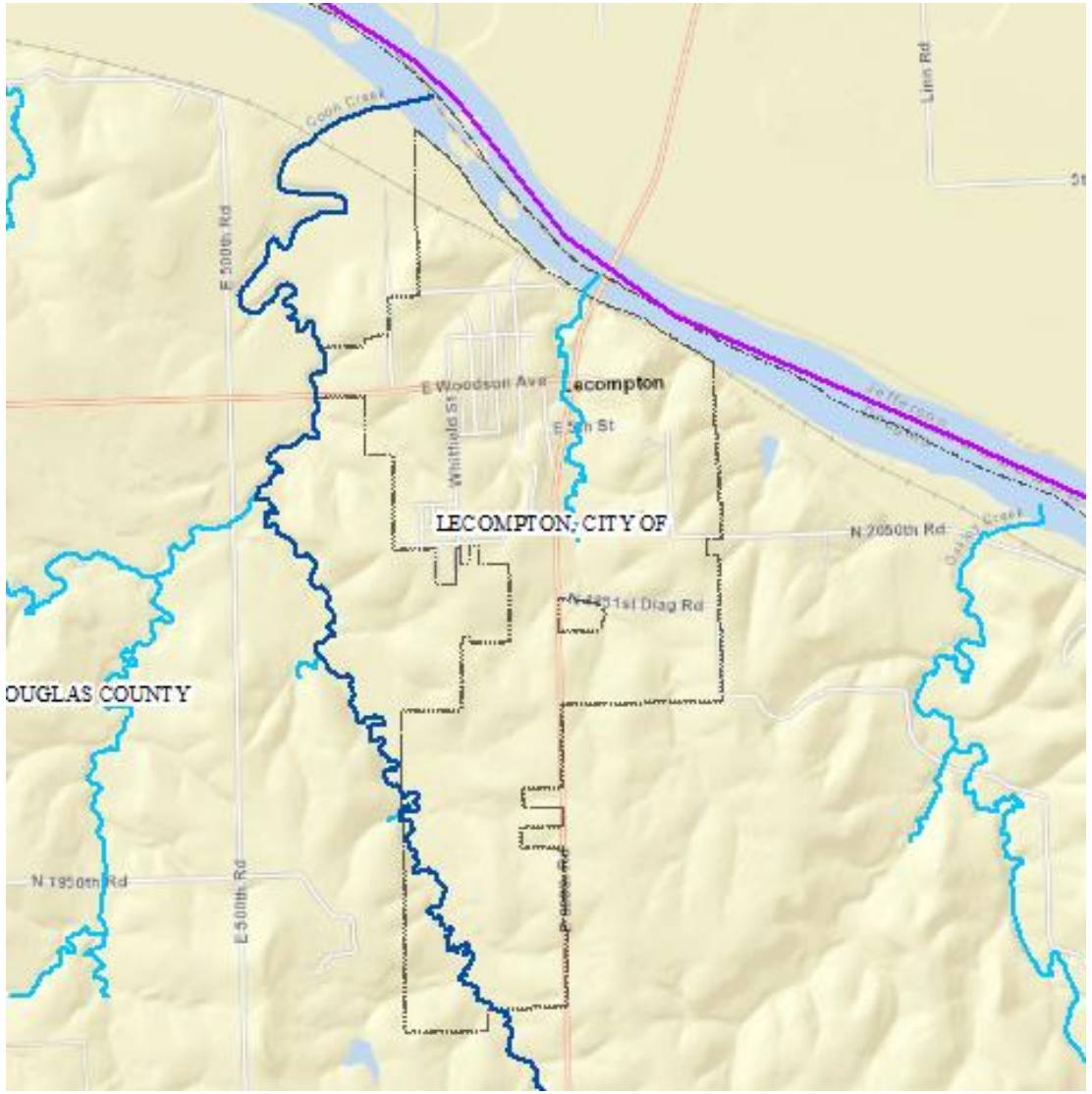
City of Lawrence

- Incorporating existing studies in North Lawrence
- AE w/ FW for most other streams
- Zone AE w/o for Wakarusa Tributary 1



City of Lecompton

- Incorporating existing study for Coon Creek 2



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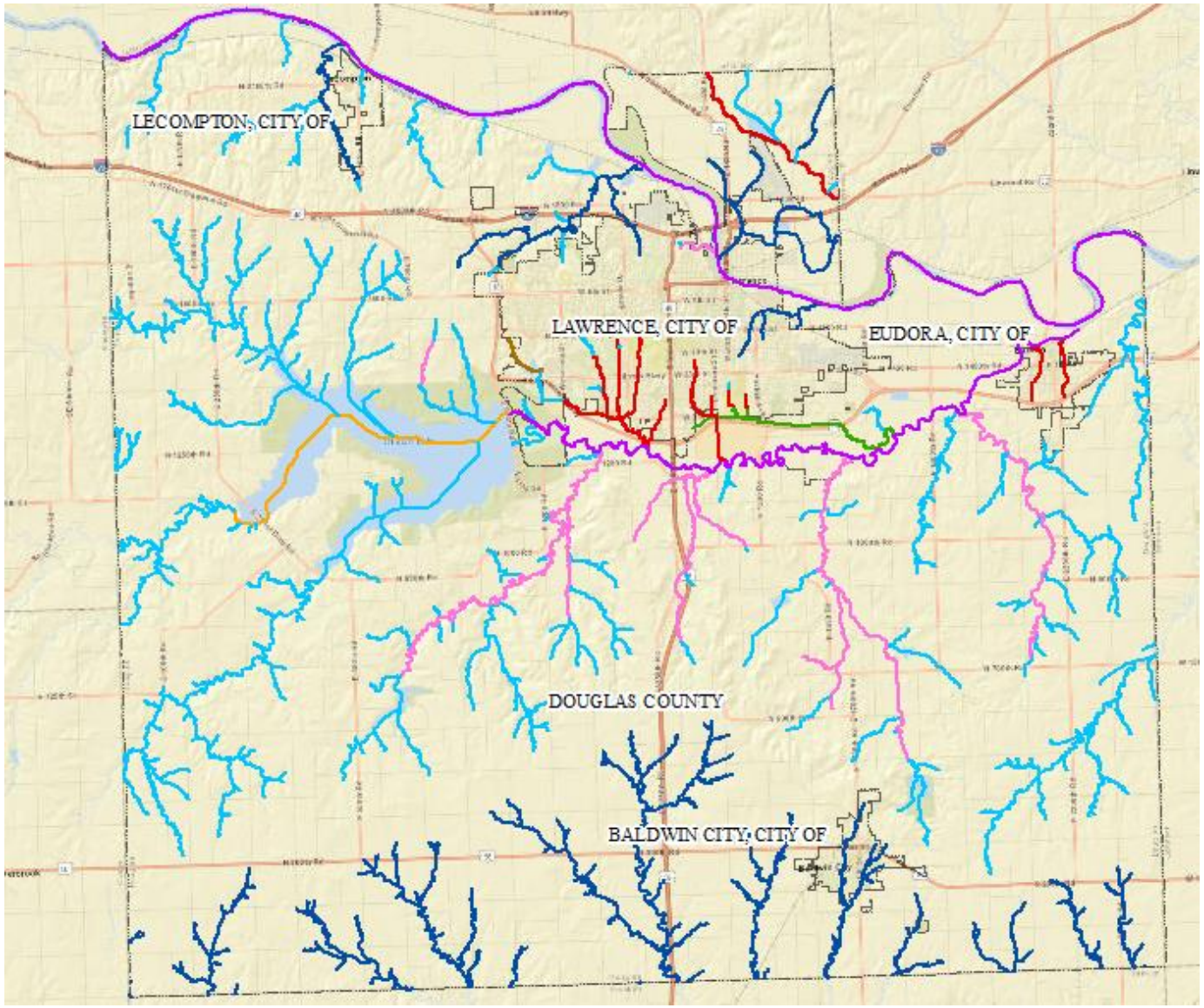
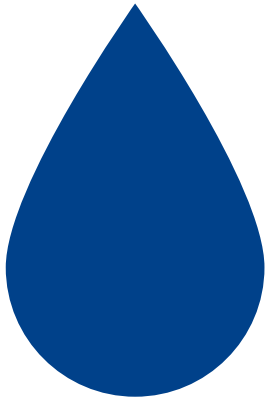
New Zone A

- Remainder of Streams in the County



Definitions



Hydrology

How Much Water?

Hydraulics

How High Will Water Get?

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2D Hydraulic Modeling will be used for all the streams in this study

- Enhancements will be made to the BLE modeling that was performed for the Zone A streams.
  - Comments made and additional information gathered during the Discovery phase will be used to enhance the modeling
- The hydrology is built into the RAS modeling platform using excess rainfall-on-grid methodology.
  - This will be calibrated to gage analysis flows where available

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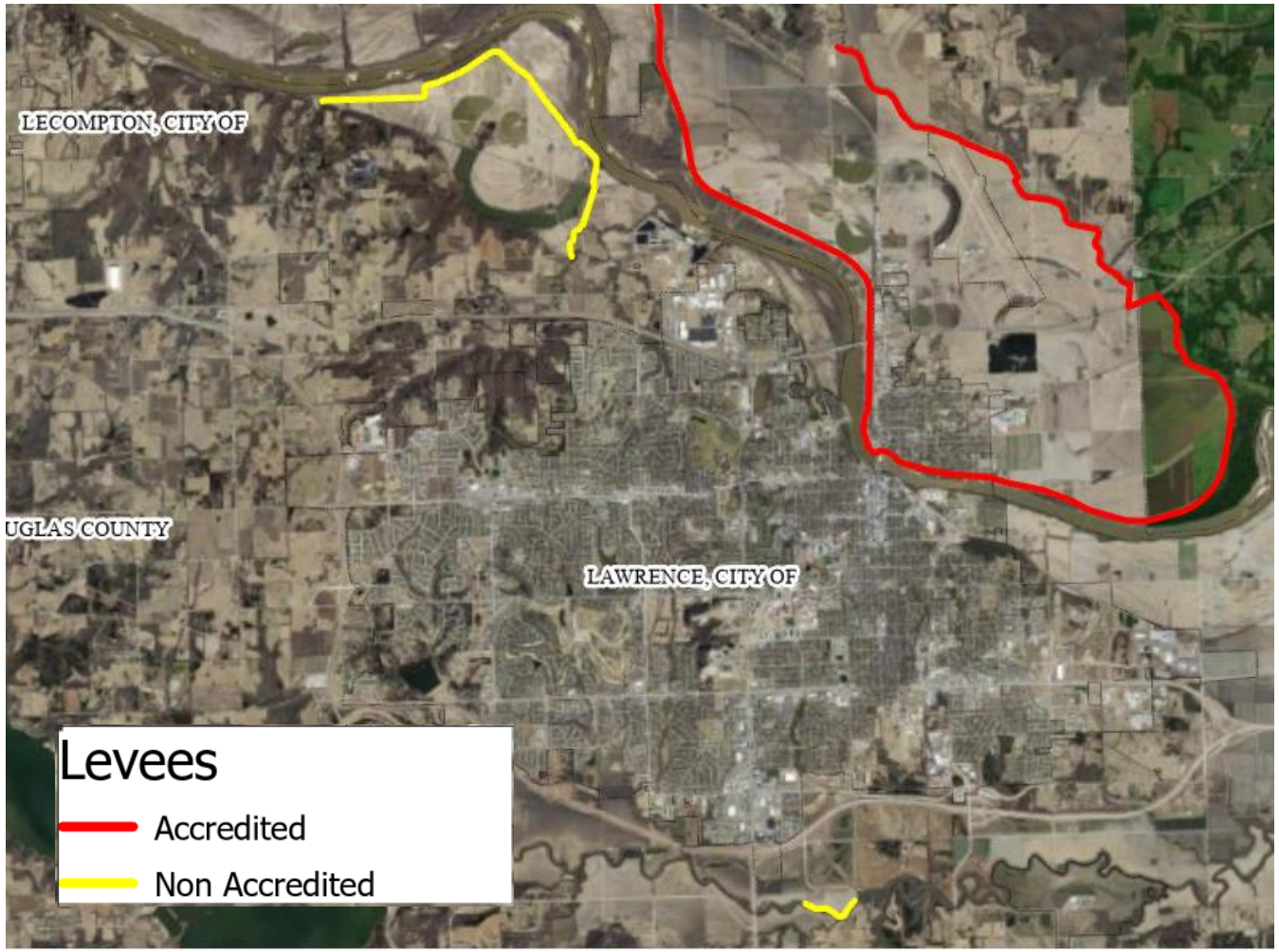
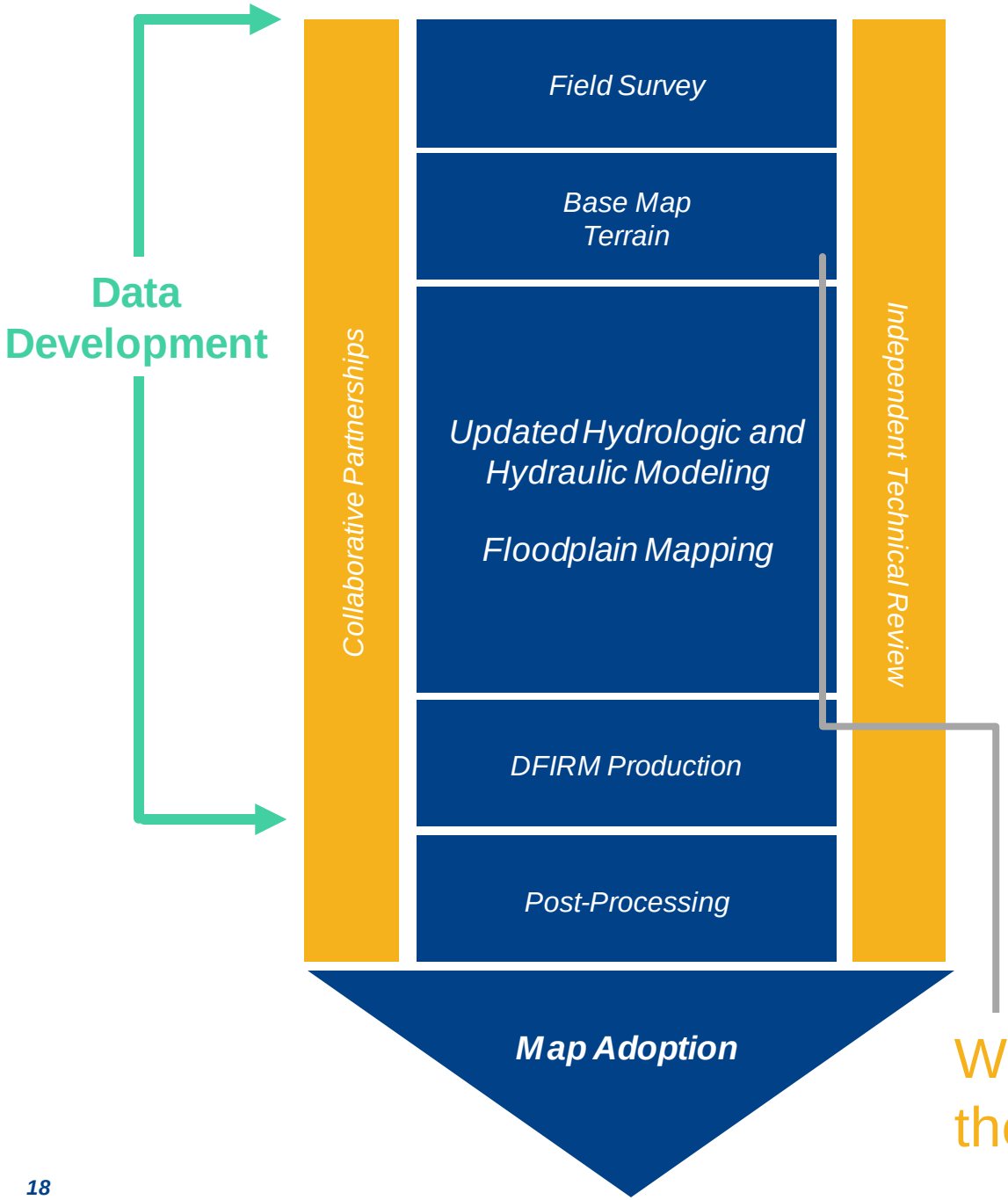
Levees

- Non-Accredited Ag Levees in the County are overtopped for the 1% annual chance storm and are considered hydraulically insignificant.



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
- 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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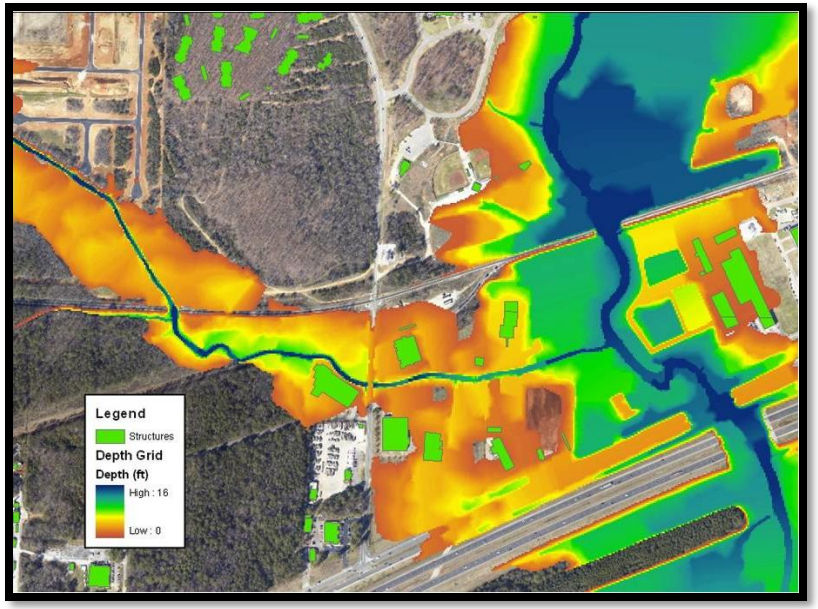
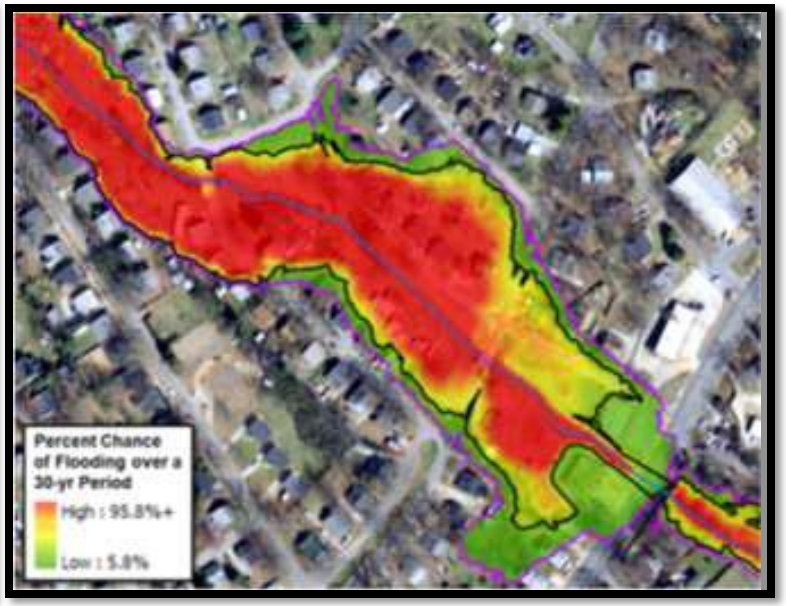
Our Next Steps:

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





Project Timeline

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

Data Development Work:
[Now until Spring 2023]

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

Flood Risk Review Meeting:

[~March 2023]

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

Project Timeline, continued

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

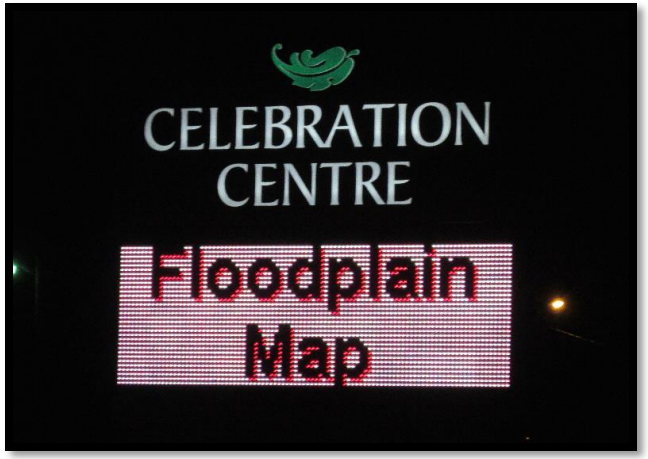
Public review of the draft maps

- *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?