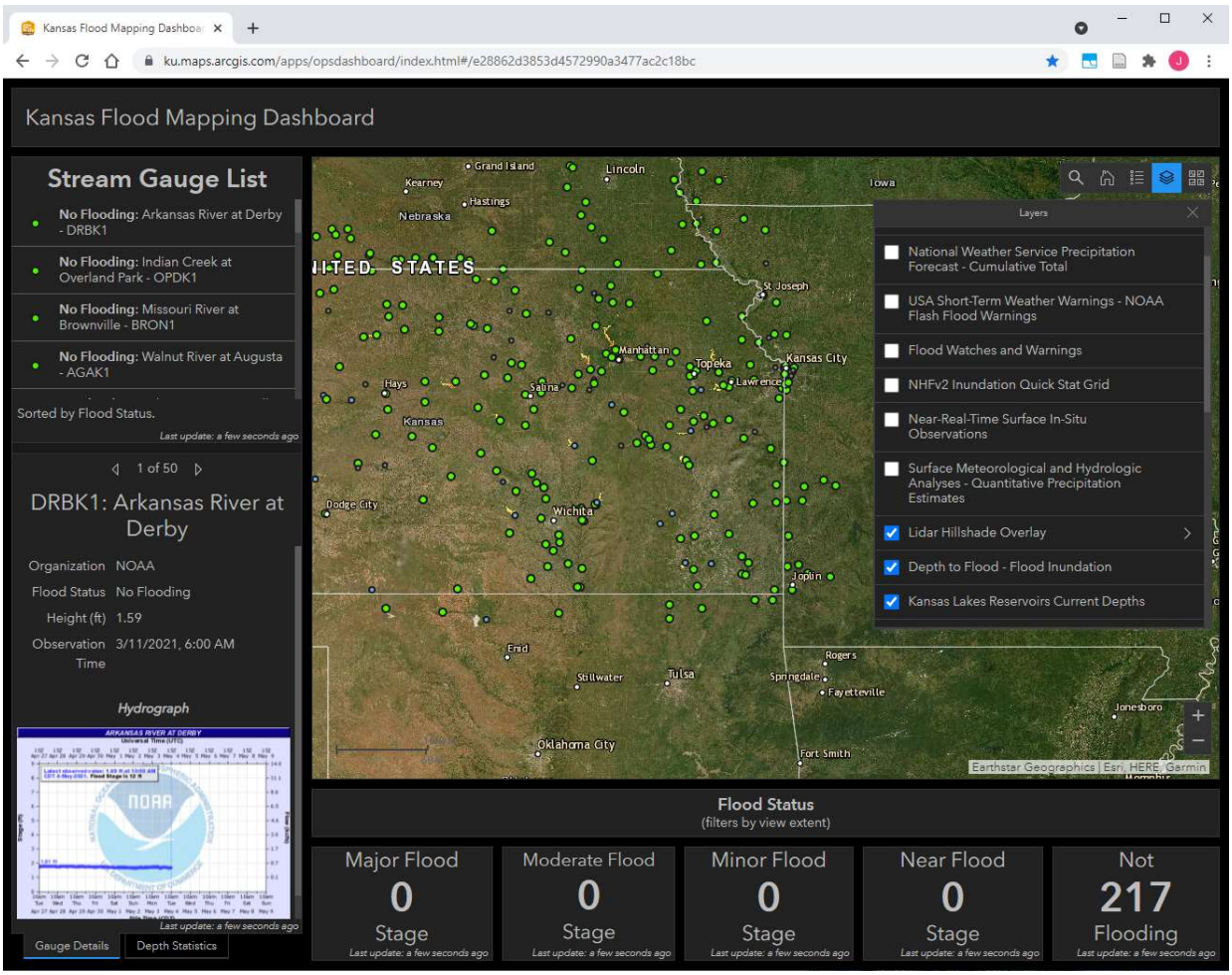
Kansas Real-Time Flood Mapping Tool Development: Progress/Project Update

Report Date: 4 May 2021

Funding Recipient: Kansas Biological Survey (PI: Jude Kastens)

Project 1 (1/1/2020-6/30/21):

- A functioning web mapping application & prototype AGOL dashboard tool has been developed. Along with multiple standard static layer and basemap options, several real-time updated layers are included, such as:
  - Kansas stream gage status
  - NOAA/NWS flood watches & warnings
  - Recent radar
  - Quantitative precipitation estimates
  - Multiple satellite imagery products, including SWIR and NDWI



Deliverable Status:

1. [Reporting] All quarterly reports were submitted & accepted.

2. [Inundation library ingestion] The KBS inundation library covering eastern Kansas has mostly been incorporated into the tool. During the coming weeks (but before the June 30 project end) we will finish this effort. Most of the remaining libraries are from the northeastern region.

3. [Standalone tool development] We are engaged with GIS folks (Mike D'Attilio & Luke Finley) at KDEM to iron out the details of the standalone tool transfer. We plan to complete this task by the June 30 project end date as well.

Complication of note:

- Lead programmer David Weekley left the project at the end of 2021Q1. We quickly identified his replacement (PhD candidate Jim Coll) and hired him onto the team. David left things in good shape & coordinated with Jim & Jude to facilitate the transition of his responsibilities to Jim.

Project 2 (1/1/2021-12/31/21):

Deliverable Status:

1. [Flood event scenario modeling] The design for this feature, though still flexible, has been determined & early operating details have been completed. We will lean on stakeholders for beta testing when the time comes. We are on track to complete this important product enhancement by the end of the year.

2. [Incorporate hydraulic information] We are in the process of obtaining 100-year water surface profiles developed for the National Flood Insurance Program for Kansas using LiDAR and incorporating them into the tool to improve map accuracy. An additional employee (graduate student Kenneth Ekpetere) has been hired for the coming summer to facilitate this effort. We are on track to complete this important product enhancement by the end of the year.

3. [Live reservoir mapping] Live federal reservoir extent & depth mapping was successfully developed as an independent image service & was added to the flood mapping tool. Lake level & map data are updated daily, but this interval could be shortened as needed for stakeholders, such as during times of faster-than-normal lake level change. Independent of the flood tool, this published image service will be available for others to incorporate into their own mapping efforts. This deliverable is complete.

Test-drive the dashboard here (if you have trouble, we may need to modify access permissions):

https://ku.maps.arcgis.com/apps/opsdashboard/index.html#/e28862d3853d4572990a3477ac2c18bc