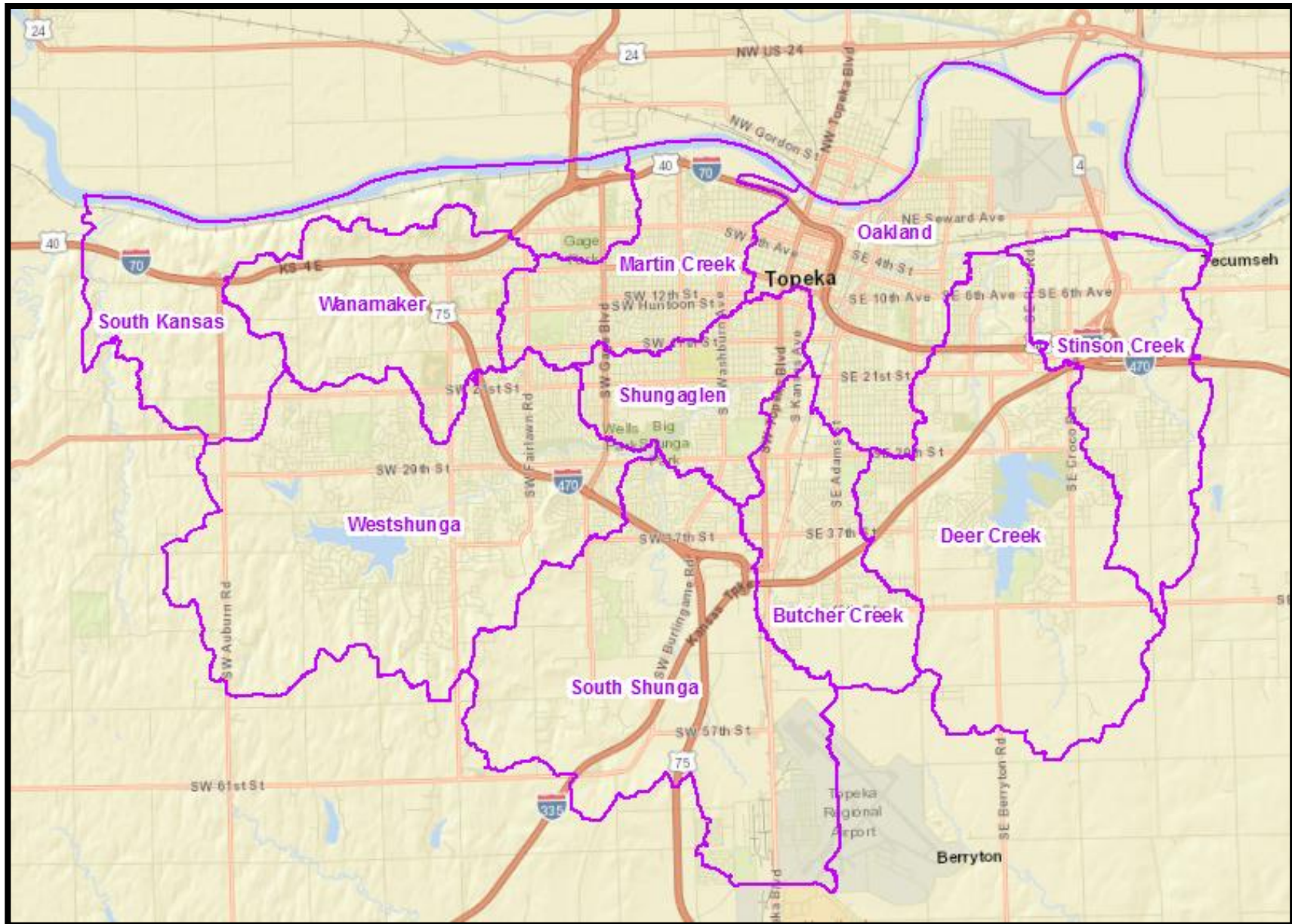


Topeka Technical Assistance Project



Kickoff Meeting 5/3/2018

Background

The Kansas Department of Agriculture (KDA) has received funding from FEMA to complete a technical assistance project for the City of Topeka, to help better understand and reduce flooding issues within the City of Topeka. There is no funding match requirement and no cost to the City of Topeka for this project. The intent of this project is to provide a product and assessment to the City, which can be expanded and built upon to help reduce future flood risk.

Scope of Work

KDA has contracted with Wood Environment and Infrastructure Solutions Inc. (Wood) to develop a HEC-RAS 2D flow model for the ten subbasins shown on the back of this sheet. The project area covers all the defined Topeka drainage basins located on the south side of the Kansas River. Hydrology for the project will be completed based on NRCS methodology, customized to rain on grid methodology. Hydrology will be calibrated to existing gage data; and if made available, the HMS unsteady flow model developed by the USACE. This will be gridded hydrology, so flows will be available for any drainage area within the coverage area, regardless of size. This will also provide the ability to run GIS-based analytics on the flows, or even develop specific design parameters for development.

Model hydraulics will be completed using HEC-RAS 5.0.4 2D flow modeling. All detention and storage areas will be captured in the modeling. Manning's n values will be customized for the City, based on available GIS data. Culverts and bridges will not be placed in the models, but they will be simulated based on an algorithm developed by Wood that creates an opening through the roadway embankment to a size that mimics culvert capacity; therefore, producing relatively accurate WSEL's upstream of roadway embankments, deemed sufficient for planning purposes. No underground or closed systems will be modeled in this software; although, tail water elevations will be set in the model based on the PC-SWMM levee modeling that was completed for the City of Topeka's levee certification project. It is assumed that the City will provide GIS storm water data, land use data, and any other relevant information for the project.

Deliverables:

1. HEC-RAS 2D flow models for all identified basins
2. For all modeled frequencies: WSEL Grids, Depth Grids, Velocity Grids, FAC Grids, Shear Stress Grids, and Stream Power Indexes; along with stream lines for drainage areas up to 1 sq mile, 160 acres, 40 acres, and 10 acres
3. Up to four sample alternative runs showing the benefits of a regional detention basin, green infrastructure, or some other type of alternative. Once the modeling is complete, we will work with the City to select the alternative areas to evaluate.
4. Report summarizing the modeling, discussing the alternatives selected and the benefits of those selected alternatives, and recommendations for future uses of the modeling
5. Up to three conference calls with project team to discuss status, data needs and to review results

Schedule: July 31, 2018 – Complete base modeling; August 31, 2018 – Complete Alternatives modeling; Sept 30, 2018 - deliver final report, models and GIS deliverables