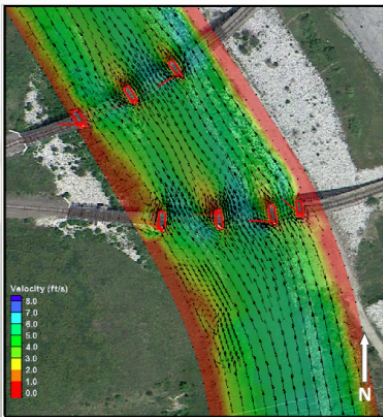




U.S. ARMY CORPS OF ENGINEERS

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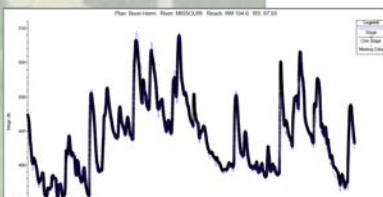
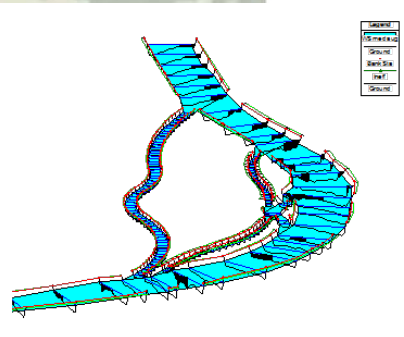


The U.S. Army Corps of Engineers is a significant steward of the nation's water resources. The demands on these resources are many and varied and the Corps must be capable of addressing these demands and associated impacts in a highly skilled and professional manner. The hydraulics and hydrologic disciplines form an integral and essential foundation for discharging our stewardship responsibility. Planning studies, design and construction, reservoir regulatory procedures, emergency management, navigation, operation and maintenance of existing projects and other studies that improve water resource analysis including both civil and military support, are built upon competent hydrologic and hydraulic analysis.

Kansas City District Hydrologic and Hydraulic Modeling Capabilities:

- Employs 18 Hydraulic Engineers and Hydrologists
- Provides hydrographic data collection capability and GIS data production
- Maintains experienced senior level staff to provide review, oversight and project management for complex modeling projects
- Provides real-time 2-D modeling support to inform evacuation planning of areas protected by levees during flood fights
- Develops 2-D modeling to conduct detailed investigations of flow velocities and water surface elevations, such as a flood flow model to investigate an erosion problem location on the Missouri River, and to design a debris deflector on a bridge over the Blue River
- Developed a calibrated mobile bed model of more than 150 miles of the Missouri River to evaluate potential solutions to Missouri River bed degradation
- Serves as a leader in producing flood risk inundation mapping
- Provides experience with split flow modeling, such as side channel design for shallow water habitat creation on the Missouri River, ensuring projects can create the desired habitat without impacting authorized purposes such as flood control and navigation

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MISSION STATEMENT: The Hydrologic Engineering Branch provides application of the appropriate hydrologic and hydraulic modeling needed to support management decisions, inform the public of risks, and aid development of contingency and emergency action plans.

Key Messages

- The Hydrologic Engineering Branch provides application of the appropriate hydrologic and hydraulic modeling needed to support management decisions, inform the public of risks, and aid development of contingency and emergency action plans.
- Maintains a highly motivated and capable staff at the cutting edge of available software packages including: HEC-RAS steady and unsteady flow modeling, HEC-RAS sediment modeling, ArcMap, GeoRAS, GeoHMS, HEC-DSS, HEC-ResSim, Unet, HEC-HMS, WMS, multi-dimensional codes such as AdH (Adaptive Hydraulics) and Flo2D, SMS, SWMM, BSTEM (Bank Stability and Toe Erosion Model), Bentley MicroStation Suite, CWMS, RiverWare and Channel Pro

U.S. ARMY CORPS OF ENGINEERS – Kansas City District, Northwestern Division

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- Provides expertise in unsteady modeling including multiple dam break models across the United States; Missouri River models coupled with reservoir simulation models, investigation of flood detention in Topeka, Kansas on Shunganunga Creek, and long-term flow frequency modeling on the Missouri and Kansas Rivers
- Provides expertise in conducting hydrologic analysis to determine timing and magnitude of flood runoff and producing water surface profiles to determine potential flood damages, levee height design, etc.
- Demonstrates capability to simulate historic flood events using hydrology models and radar rainfall data when stream gages and detailed rainfall gages are unavailable or insufficient