

# U.S. Army Corps of Engineers Winter Midwest Floods

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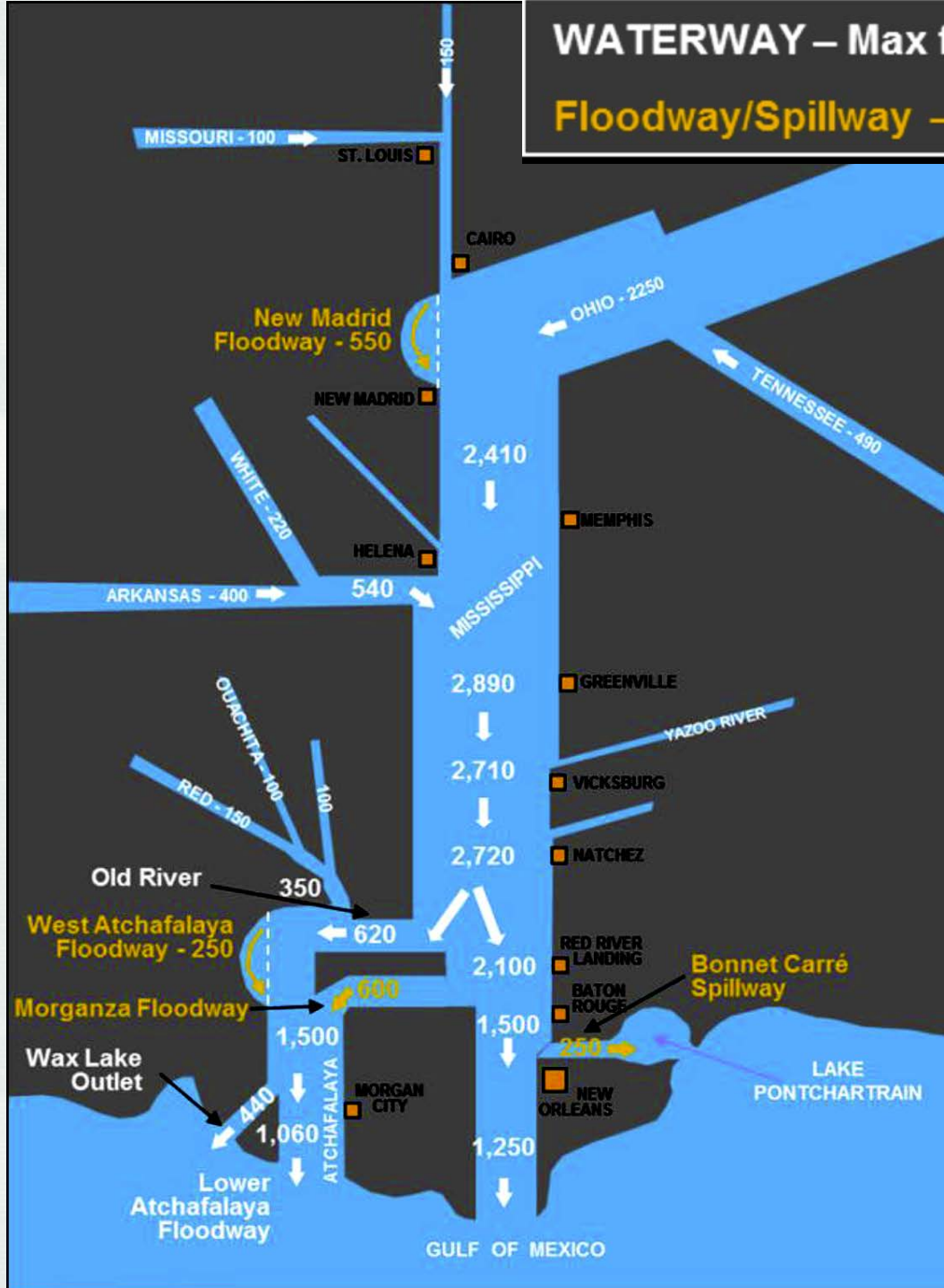


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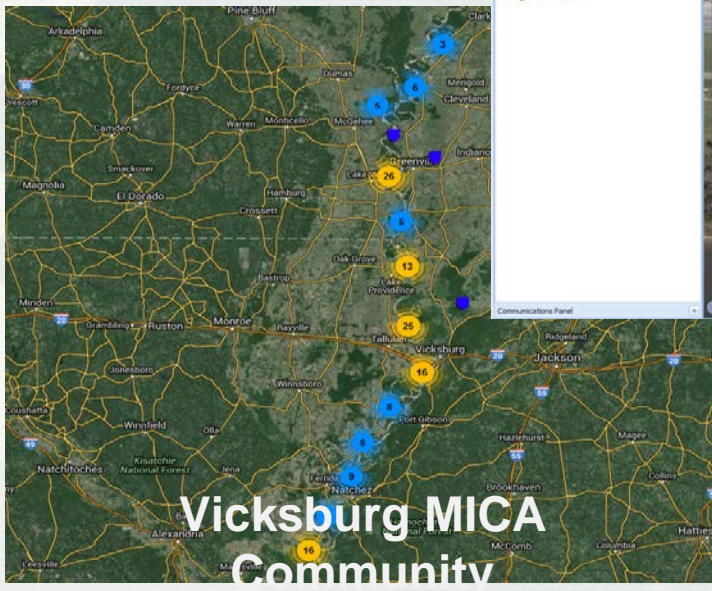
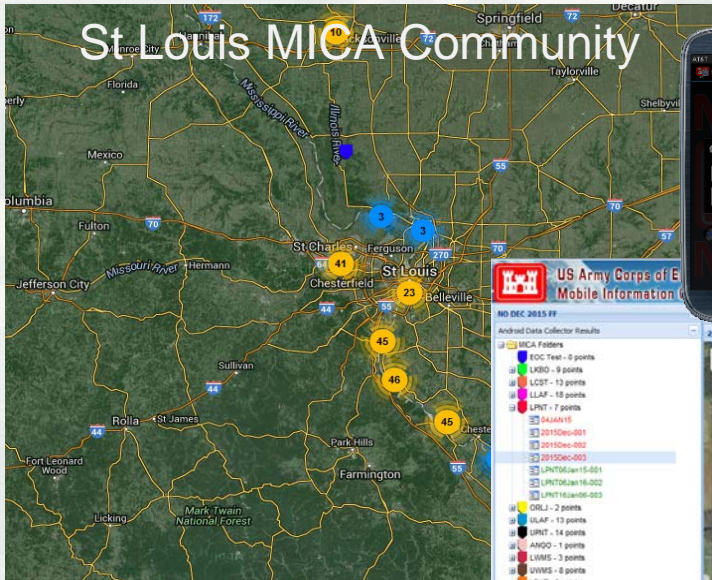
**WATERWAY – Max flow rate**

**Floodway/Spillway – max flow rate**



# Design Flood for Lower Mississippi River

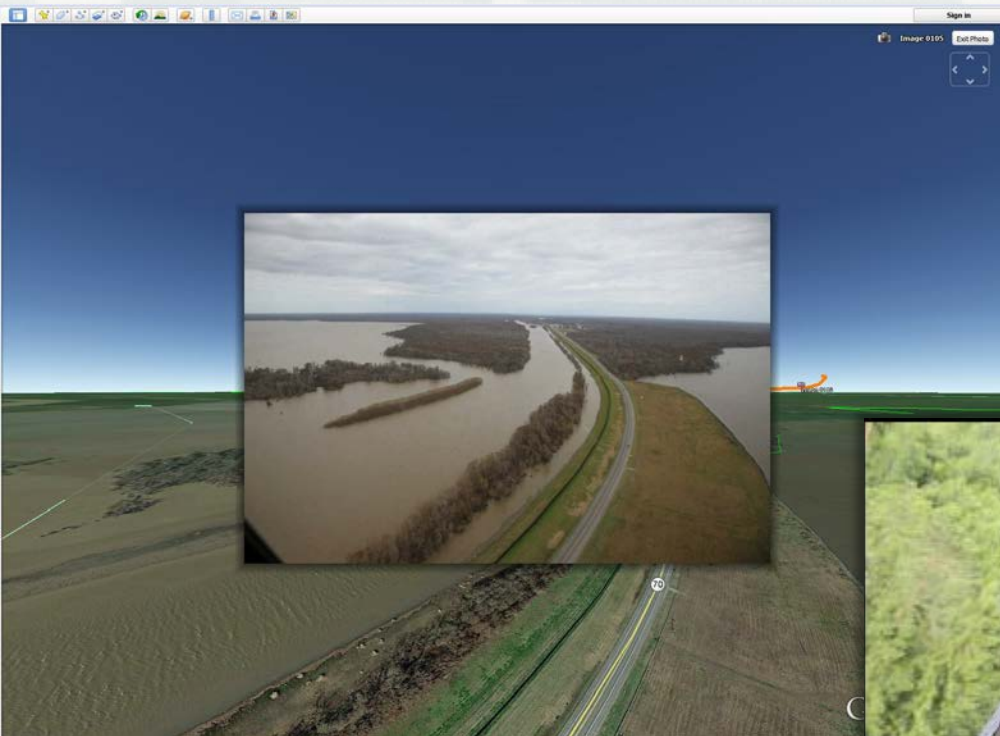
# MICA - Flood Fight 2016



# Automated Route Reconnaissance Kit (ARRK)

Simple-to-use GPS and inertial data collection system that enables a chronological picture replay of the route, a geo-referenced display of major features, and automated

determination of slopes and radius of curvatures for sharp curves along the route.



# Unmanned Aerial System Operations

*Small, fixed-wing aircraft that fly pre-programmed routes and collect high-resolution imagery*

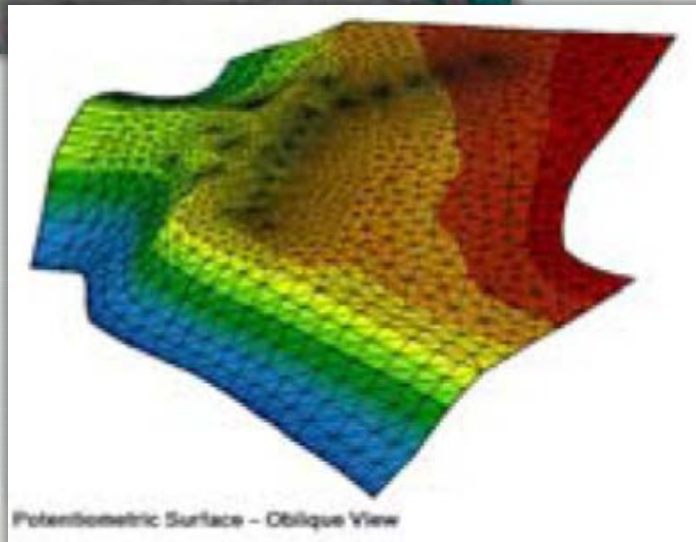
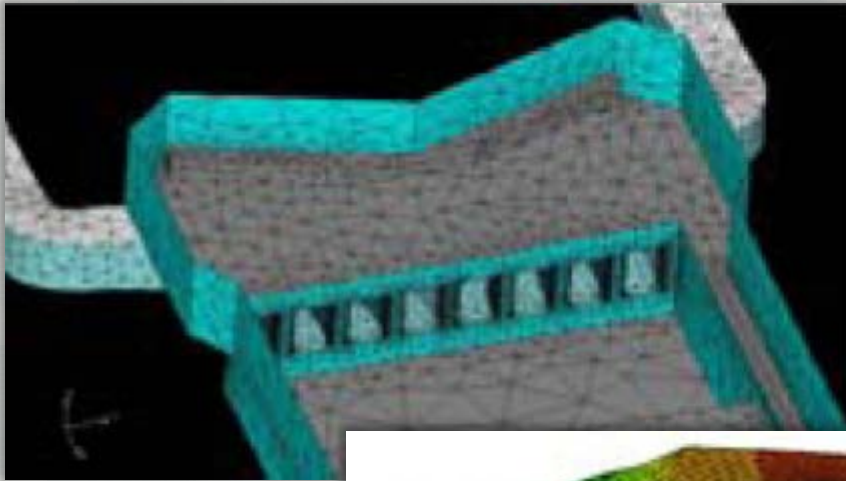


- Rapid assessment of levees and riverbanks
- Debris estimation
- Assessment of condition of hydraulic structures
- Assessment of flow fluctuations in channels and overbanks



# AdH Models

***Multi-dimensional modeling system for saturated and unsaturated groundwater, overland flow, three-dimensional Navier-Stokes flow, and two- or three-dimensional shallow water problems***



- Estimated impact to neighboring levee from flood control structure
- Morganza Floodway model
- Lower Mississippi model to estimate effect of Bonnet Carre Spillway