

Joint AASHTO SCOE and SCOD Meeting

Infrastructure Resilience

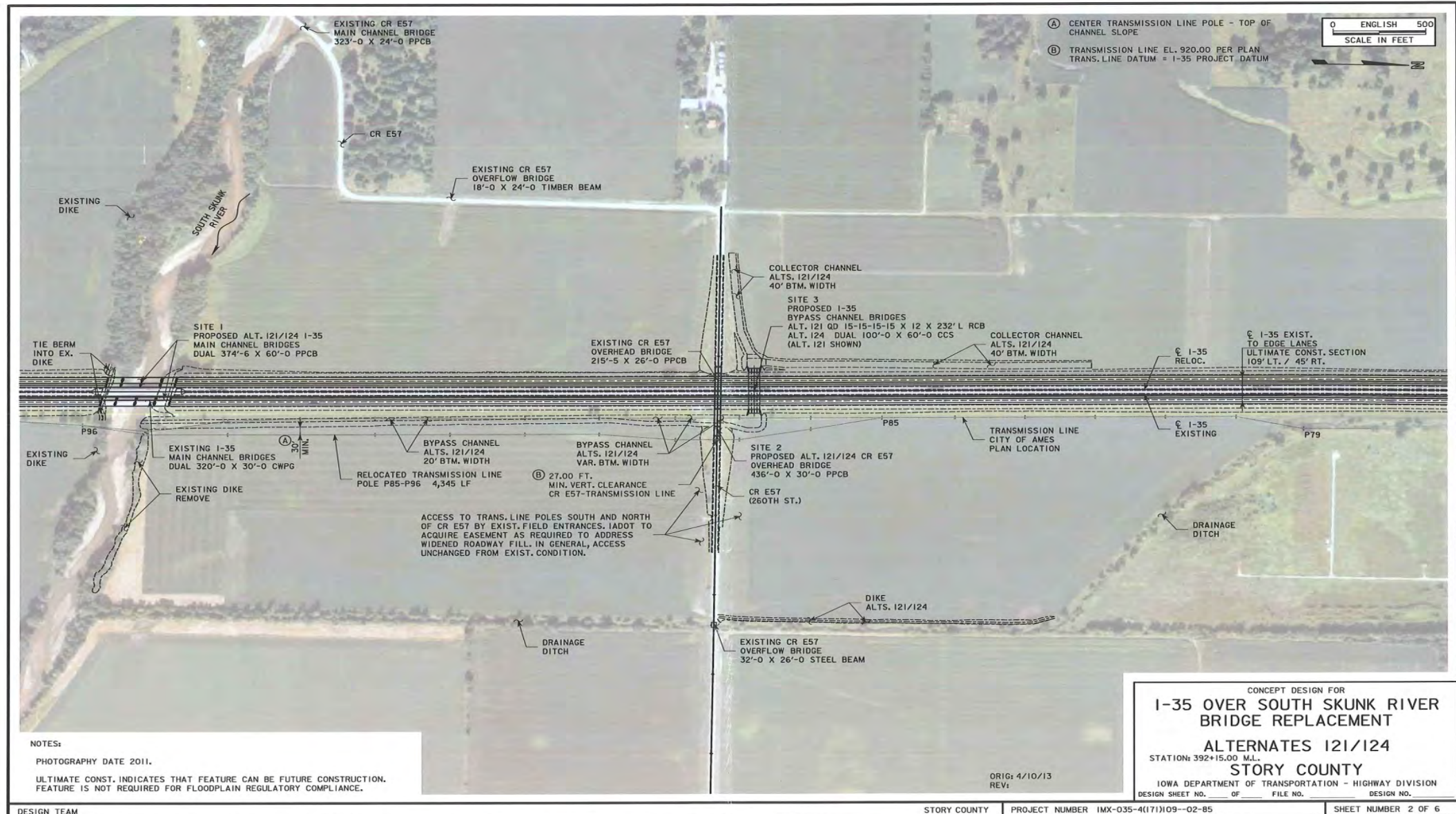


I-35 over South Skunk River - 2010



© James Moreland

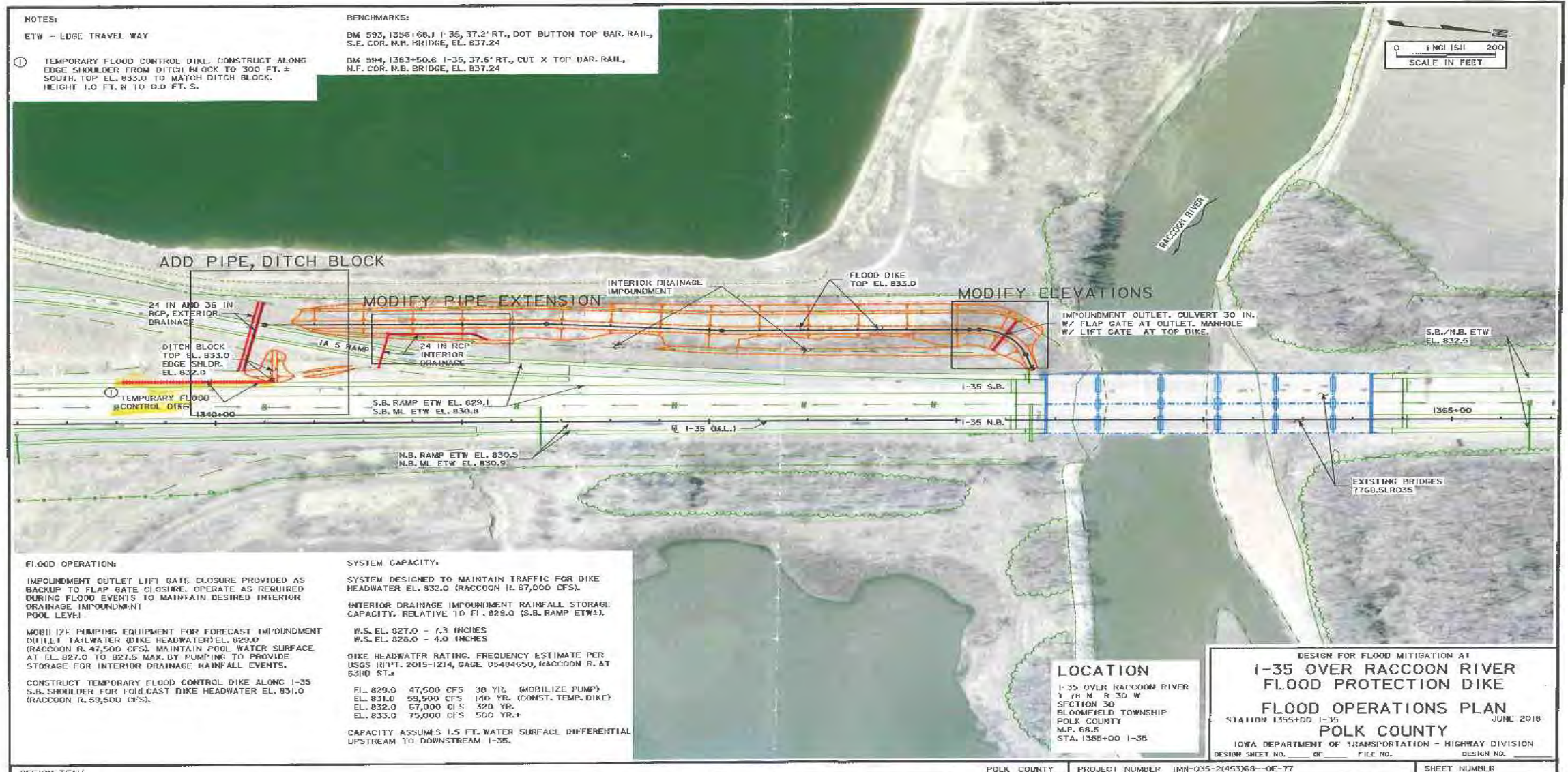
Design for Resiliency – I-35 over South Skunk River



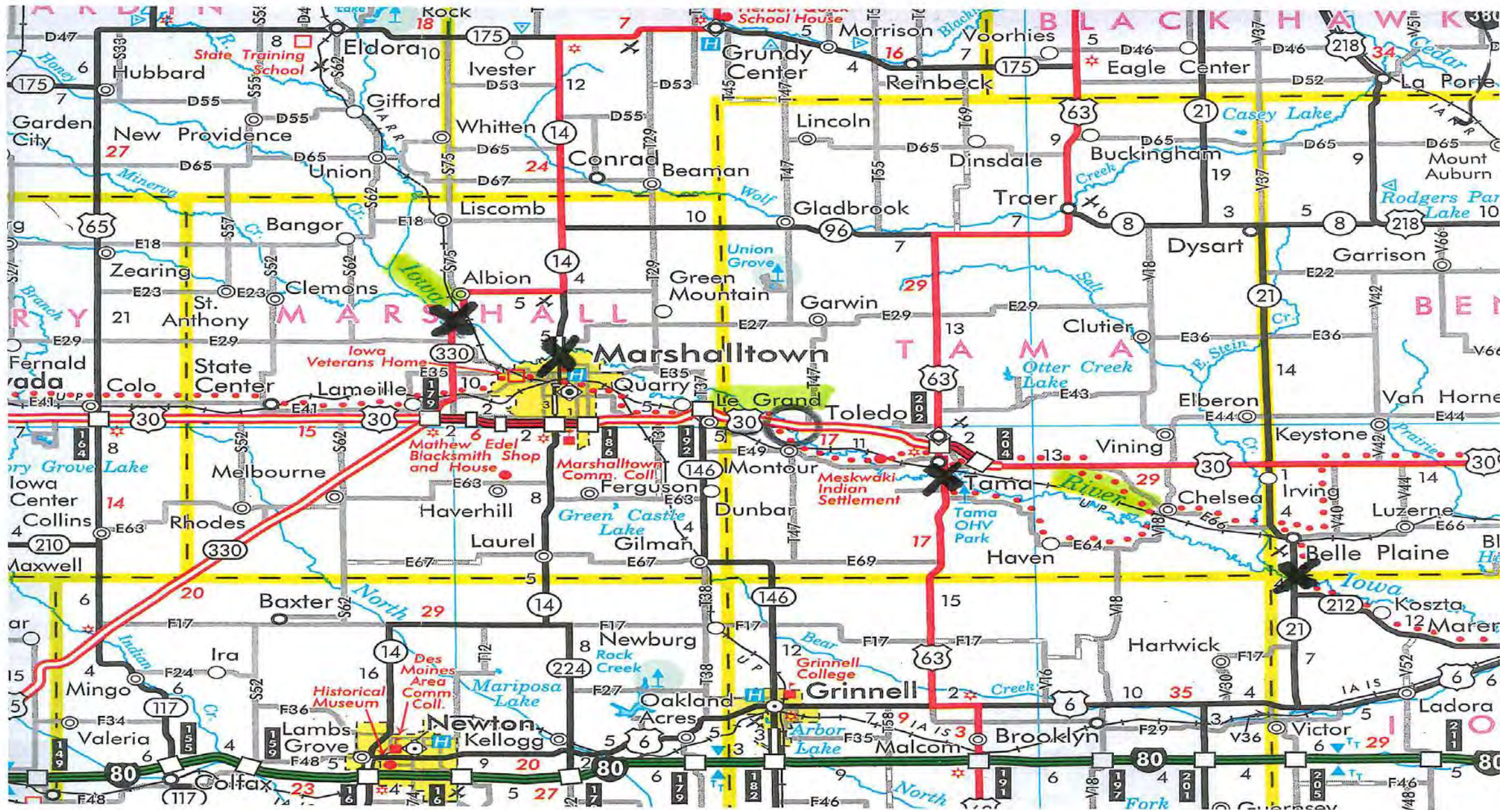
I-35 over Raccoon River in West Des Moines



I-35 over Raccoon River



TRANSPORTATION ADAPTATION

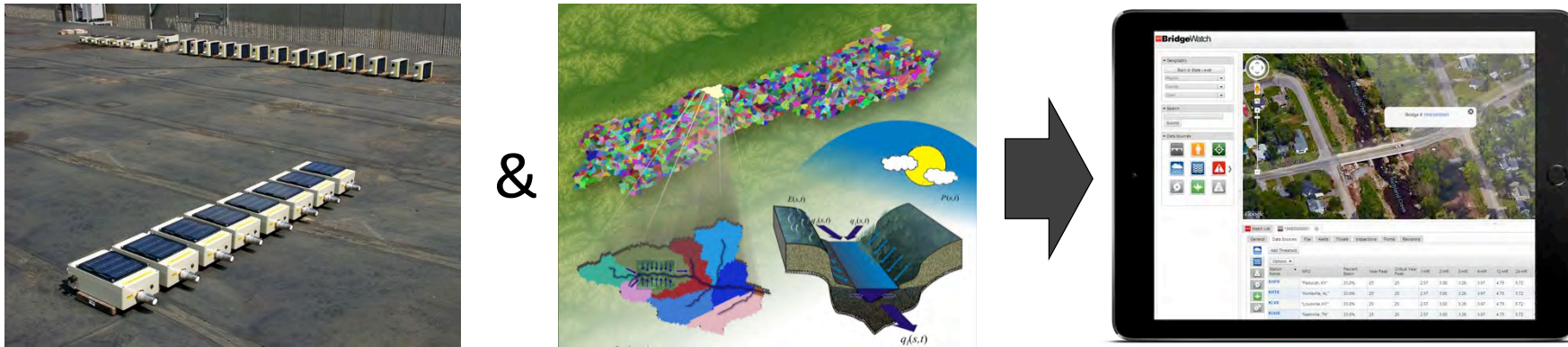


U.S. 30 over Iowa River near Le Grand, IA

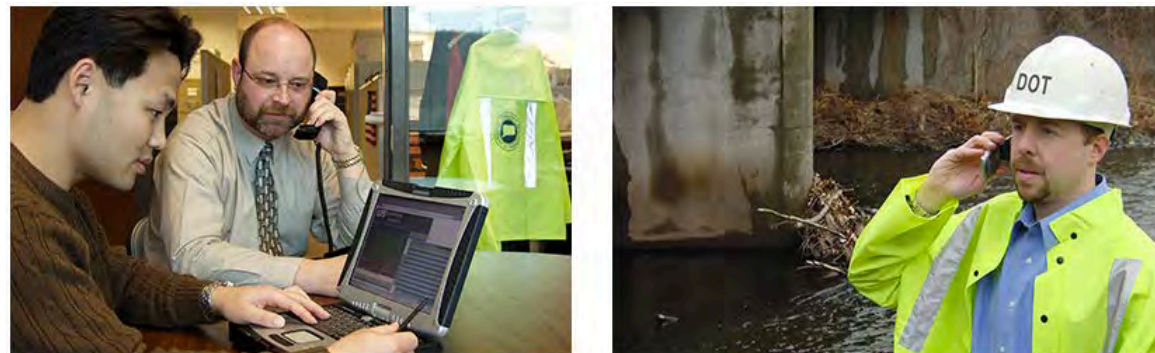


Implementation of Real-Time Monitoring of Highway Overtopping:

1. Integrating IFC technologies into the IDOT Operational Framework for Roadway Flooding

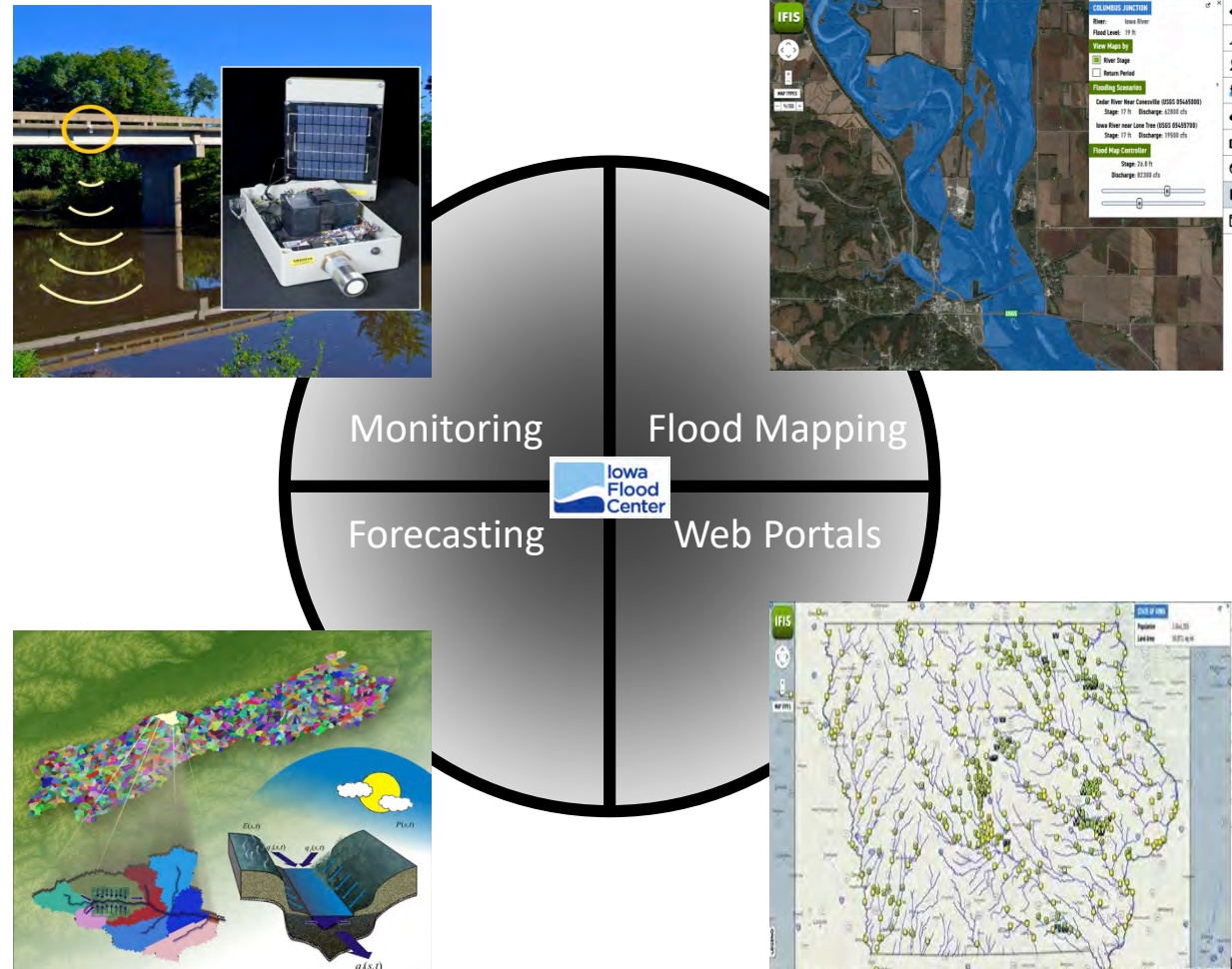


2. Proactively notifying Garage Supervisors of Highway Overtopping

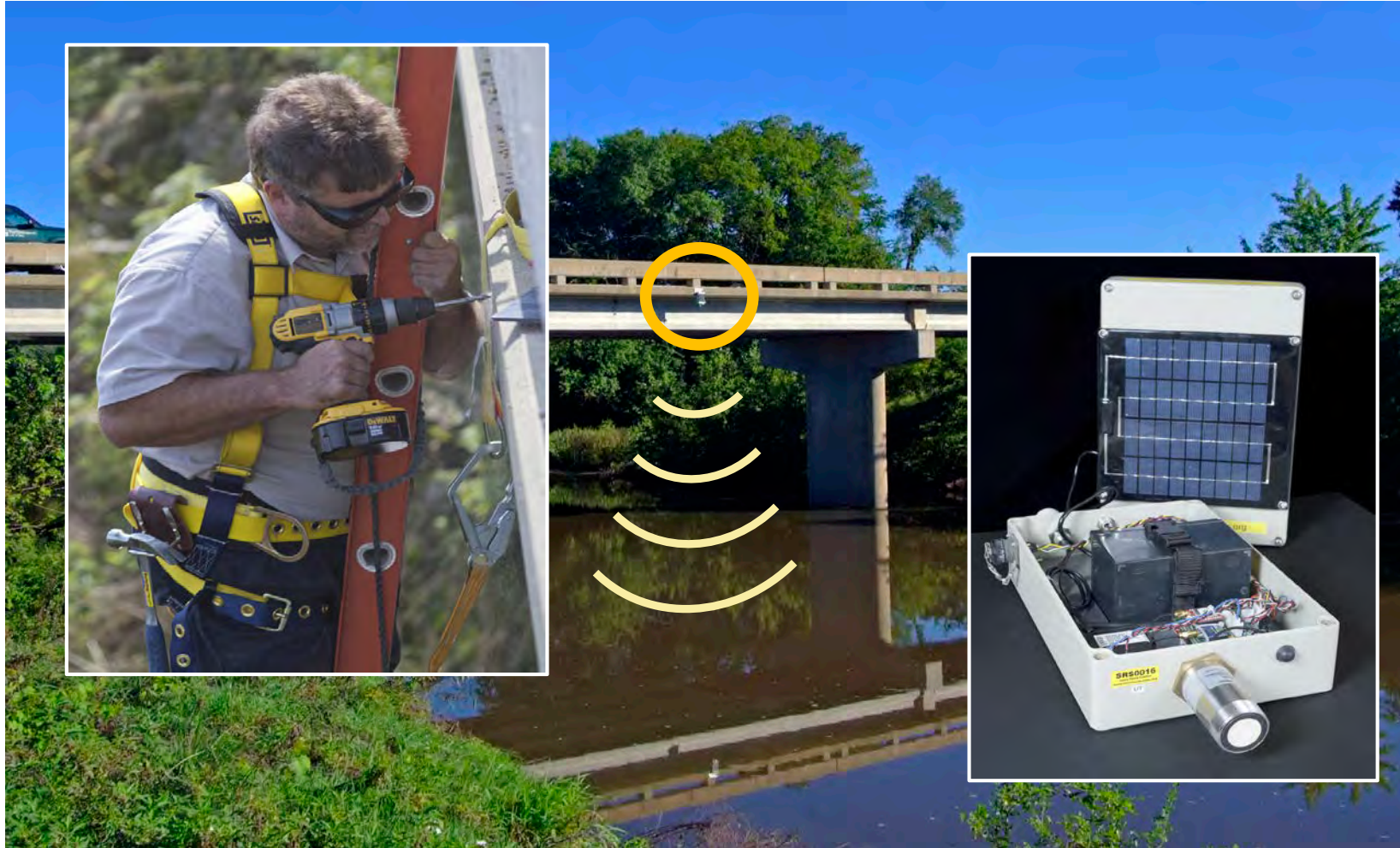


The Iowa Flood Center

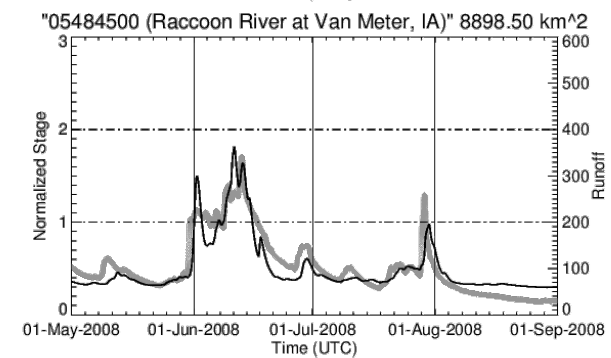
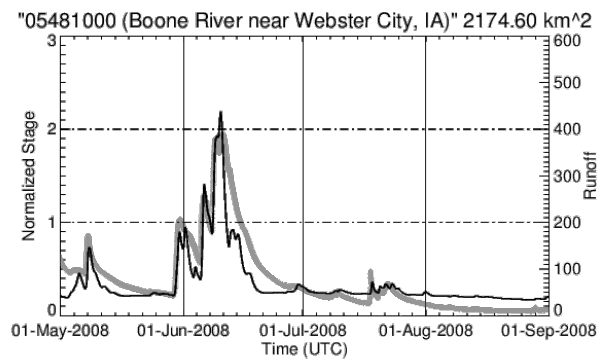
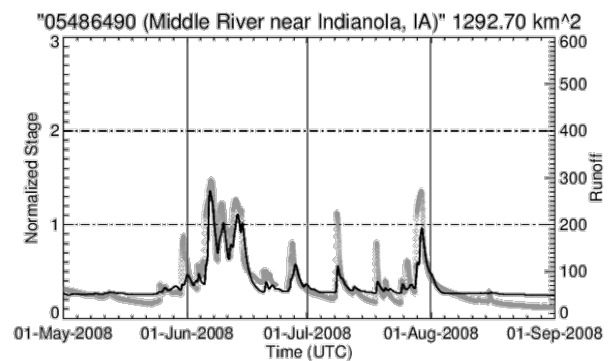
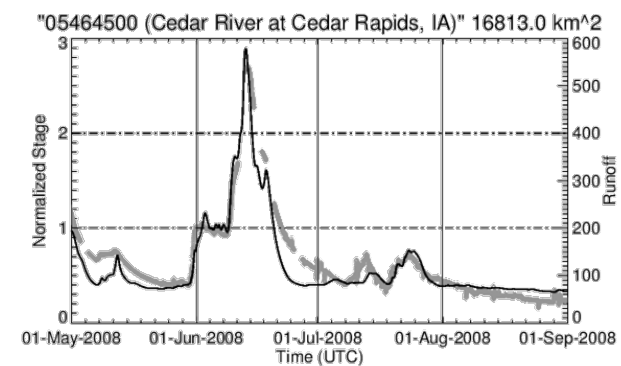
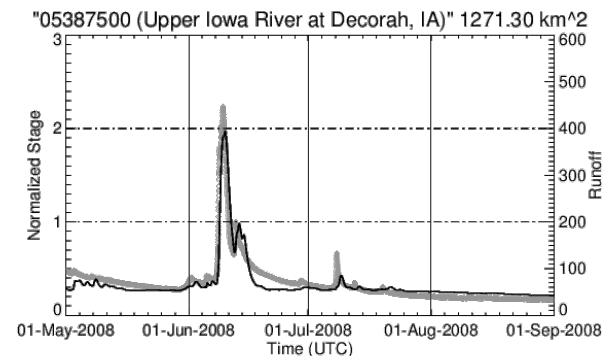
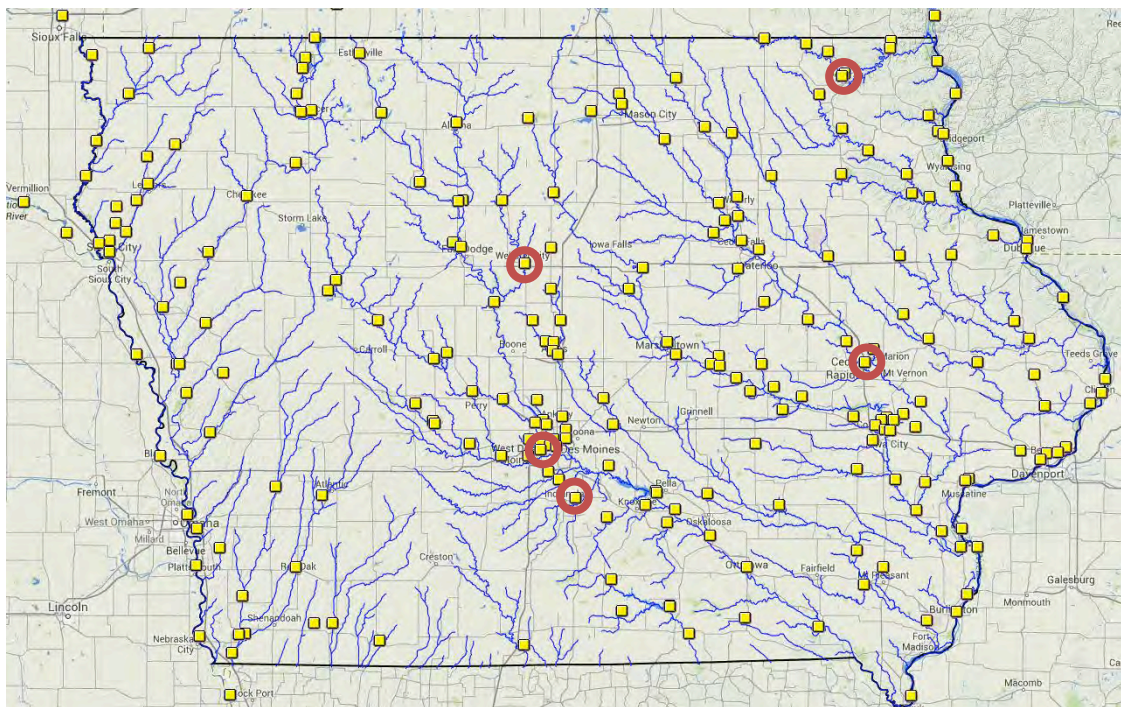
Since its creation in 2009 the IFC has been developing technologies for monitoring, predicting and anticipating the effect of floods and flash-floods in Iowa



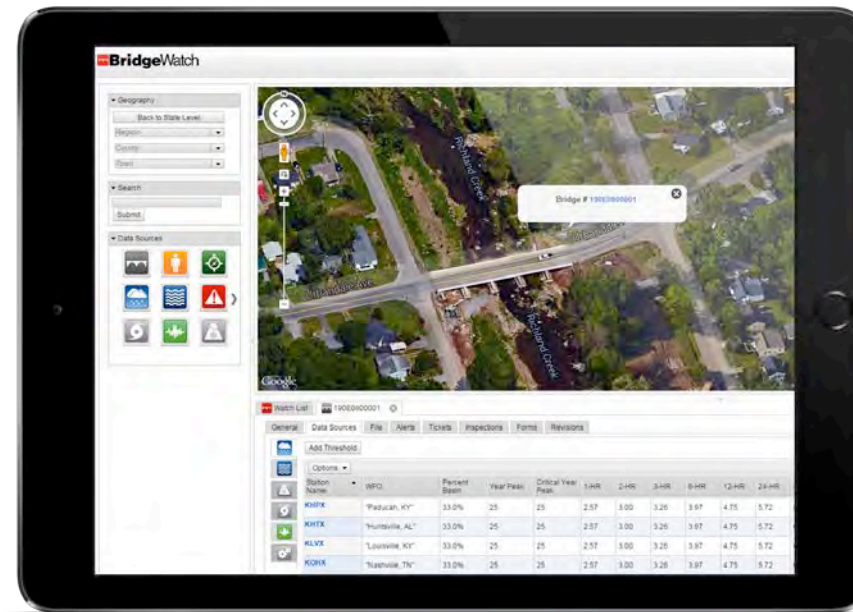
Sonic Stage Sensors



Flood Forecasting Model



Integration with BridgeWatch™

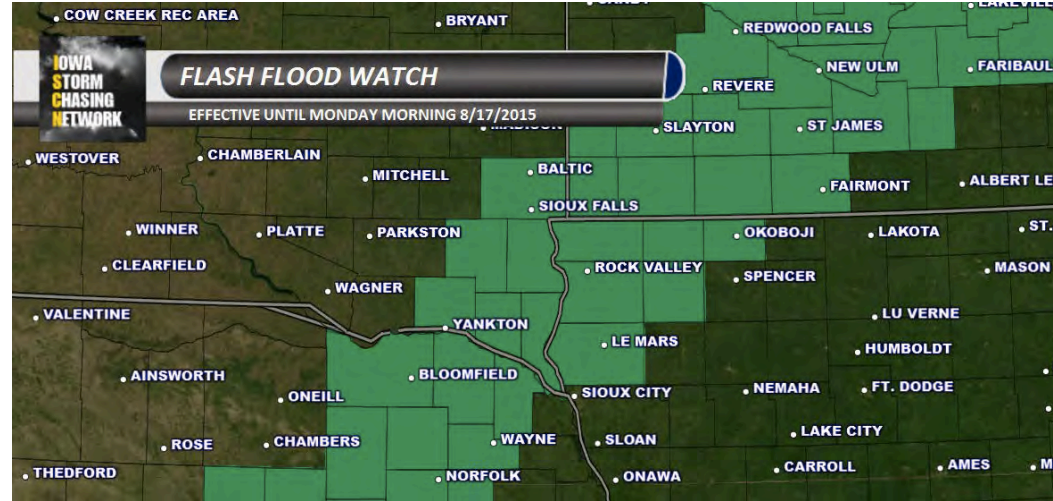


Garage Supervisors will receive information from from actual observations by sonic-sensors or from model predicted states. In addition, roadway overtopping locations with rating curves will receive model forecast.

22 Most Susceptible Overtopping Sites

	CURRENT STAGE	FUTURE STAGE
11 Sensor Sites	Ultrasonic Bridge Mounted Sensor <small>High Accuracy</small>	Hydrological Model + Rating Curve <small>Limited but Higher Accuracy</small>
11 Model Sites (*2 USGS Gauge)	Hydrological Model + Rating Curve <small>Limited Accuracy</small>	Hydrological Model + Rating Curve <small>Limited Accuracy</small>

Resiliency is Proacative – Not Reactive



Research will Accomplish:

Consistency - to develop a statewide framework which enhances public safety by proactively responding to overtopping alerts as opposed to responding to situations where overtopping has already occurred.

Quality - the degree to which the forecast corresponds to what actually happened.

Value - the economic benefits of the real-time forecast by properly allocating time and resources for monitoring and closing the road.

AASHTO SCOE & SCOD MEETING

QUESTIONS?

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