

## CHAMP: Minimizing Illinois Flood Loss

The Coordinated Hazard Assessment and Mapping Program (CHAMP) is an active partner with the Federal Emergency Management Administration (FEMA) in producing and maintaining high resolution maps of flood risk areas, as well as maximizing their benefits to Illinois communities. These maps are used by the National Flood Insurance Program to minimize the socio-economic impact of flooding by providing insurance to individuals in communities that participate in the program.

CHAMP has produced Flood Insurance Rate Maps (FIRMs) in nearly all Illinois counties. These maps are developed through hydrologic and hydraulic studies employing high-resolution digital terrain models, stream gauge data, and weather data.

Floodplain maps are not static. Additional development, changing land use and climate change alter flood risks. CHAMP staff review applications for map revisions by communities and individuals and partners with FEMA and the Illinois Department of Natural Resources, Office of Water Resources to identify Illinois communities that would benefit from updated engineering analyses and mapping services.

CHAMP engineers, hydrologists, and certified floodplain managers provide continuous outreach support to communities as part of FEMA programs. Engagement with floodplain managers, local engineers and planners, developers, and other interested groups helps communities develop flood mitigation plans.

While conducting flood studies and community outreach, CHAMP identifies needs for relevant research studies. Recent research projects have involved trends in peak flows, effects of urbanization, stormwater management, mitigation, climate change impacts, and detailed hydrologic and hydraulic modeling.

Floods are the most common natural disaster in Illinois, accounting for well over 90 percent of declared disasters. Nearly 12 percent of the land area of state has a one percent chance of inundation in any given year.

Flooding in certain areas is predictable, yet too many Illinois citizens suffer personal and economic losses due to flooding of homes and businesses.

The first step to reduce these losses is to accurately identify where flooding is likely to occur. This information empowers Illinois communities to understand the risk and take action to meet the threat.

### FOCUS AREAS

#### Foundational Research

Emerging Issues

HEAL Laboratory

Community/Citizen Outreach

State Agency Engagement

## FOUNDATIONAL RESEARCH

### ISWS MONITORING/DATA COLLECTION MILESTONES

- Illinois Benchmark Sediment Monitoring Program 35-year trends analysis – no or decreasing trends.
- Cache River Wetlands Restoration and Management Alternatives – hydrologic & hydraulic modeling of restoration scenarios based on 25 years of monitoring.
- Lake Decatur Watershed Nutrient Monitoring, City of Decatur drinking water standards – 15 years of monitoring, developed prediction tool, National Science Foundation grant (Critical Zone Observatory).
- Illinois Conservation Reserve Enhancement Program. Hydrologic, nutrient and sediment monitoring and evaluation of BMP effectiveness – monitoring 18 years, trends analyses, watershed models calibration, test future scenarios of BMP effect on loading.
- Watershed-scale hydrologic and nutrient/sediment modeling framework for major watersheds of Illinois to determine critical source areas of runoff, and sediment and nutrient loadings.
- Watershed/river monitoring studies: Upper Sangamon (Decatur), Cache, Kaskaskia tributaries, Embarras tributaries, Vermilion (Wabash), Vermilion (Illinois), Lake Springfield tributaries, Spoon River tributaries, Lower Sangamon tributaries.
- Stream restoration projects: Sangamon River, Kaskaskia River, Embarras River, Cache River, Spoon River, Hall Creek, Waukegan River, Panther Creek, Cox Creek, Blue Creek, North Creek, Court Creek, and Hickory Creek.

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