

IFC UPDATE

For Iowa

January 2018 to December 2019 marked the wettest two-year period on record in Iowa. Frozen and saturated soils, melting snowpack, ice jams, and rainfall led to unprecedented flooding across the Missouri and Mississippi River basins. The 2019 spring floods caused damages in the state of Iowa to the tune of \$2 billion, impacting homes, farms, businesses, and schools in almost every county. A U.S. Geological Survey stream gauge at Nebraska City along the Missouri River border remained uninterrupted above flood stage from mid-March through September 2019. Interstate 29 was closed for two months. On the Mississippi River, the Quad Cities River Bandits minor league baseball team canceled nearly two dozen home games because the ballpark was surrounded by floodwater, which rose nearly two stories high in downtown Davenport, Iowa. Throughout the Midwest and southern states, over 14 million people were impacted by the floods.

THE IOWA WAY

Thanks to the investment of Iowa's state legislators, the Iowa Flood Center

(IFC) is here to help Iowans and communities be better informed and prepared when water begins to rise. In 2020, the IFC will expand its stream sensor network, which measures river levels every 15 minutes and shares that information on the Iowa Flood Information System (IFIS) web platform. Working with a team of interagency state partners and with funding from the Iowa Department of Natural Resources, this year over 30 new IFC stream sensors will support improved flood monitoring and forecasting.

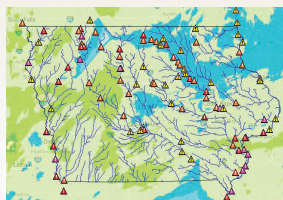
INFORMATION IS THE KEY

IFC will soon release detailed flood maps showing the extent and depth of predicted floodwaters for five new communities (also available on IFIS),

adding to the 30 community-specific maps already available. These maps will aid in planning and decision-making in advance of a flood and complement IFC-created statewide floodplain maps available for every Iowa county.

Through a collaborative effort with state and federal agencies, IFC will develop a detailed flood model of the Missouri River basin in parts of Iowa and Nebraska to simulate the path of floodwaters across the river valley and identify levee failure impacts. These modeling efforts will provide valuable information about how best to address damages from the 2019 floods moving forward.

The Iowa Flood Center will continue to challenge the status quo in the fight against floods to help Iowans become more resilient in the face of extreme weather.



"All of the projections from the climate model indicate that this part of the country will continue to get wetter, so we need to be prepared."

■ WITOLD KRAJEWSKI, IOWA FLOOD CENTER DIRECTOR

A Model for the Nation

Flooding is now the country's most common and costliest natural disaster. Iowa's flood challenges are not unique, but its solutions are. That's the reason states across the country look to Iowa and the expertise at the Iowa Flood Center to learn how to adopt similar strategies.

NORTH CAROLINA VISIT

Just a week before Hurricane Dorian brought flooding to parts of the East Coast, the IFC hosted a group of 20 North Carolina farmers, scientists, conservation professionals, and elected officials who came to learn about Iowa's efforts to become more flood resilient. The focus of the two-day exchange was sharing information about the Iowa Watershed Approach (IWA), a \$97 million, five-year project to mitigate flooding using a holistic, watershed-based approach. Wilmington Mayor Bill Saffo of North Carolina said about the trip, "This is a great thing for all of us. Building those relationships is critical."

TEXAS VISIT

In August 2017, Hurricane Harvey dumped more than 27 trillion gallons of rain over Texas and caused an estimated \$125 billion in damage. In January 2020, a group of 30 delegates from Texas representing various state agencies and academic institutions visited the Iowa Flood Center looking for ideas they could adopt back home to help prepare for future disasters. Their focus was on

technologies that IFC has developed to help communicate flood risk to the general public, as well as the relationships that bring together local, state, and federal partners. "We don't want to reinvent the wheel—we want to learn from what you have accomplished and bring some of that technology down to Texas and the great work you've done to better manage flood risk," said Jerry Cotter, the chief of water resources for the U.S. Army Corps of Engineers in Fort Worth, Texas.

The Iowa Flood Center has also been engaged in conversations with colleagues in Wisconsin, Nebraska, Kansas, and Missouri to share ideas and lessons learned.

"We're flattered, but we have a long way to go here in Iowa, too," said Witold Krajewski, director of the Iowa Flood Center. "These relationships help us continue to grow and develop our services that benefit Iowans."

THIS PHOTO: Kinston, N.C., Mayor Don Hardy poses for a photo with Iowa corn.

MIDDLE, LEFT TO RIGHT: IFC Director Witold Krajewski; Texas visitors tour IFC's lab spaces to try out new technologies and learn about monitoring equipment.

BOTTOM: Rural Iowa photo captured in Benton County during a watershed tour with North Carolina visitors.



"Iowa really knows ... They've modeled and mapped the state, they have great data visualization tools, and they have really effective outreach and communication. To really have a complete flood approach, you have to do all of those things."

■ SAM MARIE HERMITTE, TEXAS WATER DEVELOPMENT BOARD



NEWSFLASH

Breaking Ground

Projects such as ponds, terraces, and wetlands are now under construction through the Iowa Watershed Approach (IWA)! Eligible landowners receive up to 90 percent cost-share assistance to strategically place conservation practices that support the IWA program goals: to reduce flooding, improve water quality, and build community flood resilience.



Construction begins on a wetland project in the Middle Cedar Watershed.

The IWA is in year four of the five-year program, which is set to end in December 2021, with over 650 conservation practices sited and under design and \$26 million requested for conservation projects (at press time). The IWA is a collaboration of many local, state, and federal partners. IFC researchers and staff provide assistance in the form of technical consultation, communication and outreach support, and monitoring and data collection.

For more information, visit www.iowawatershedapproach.org.

IFC Receives National Awards



In 2019, the IFC received the Tom Lee State Award in recognition of the center's joint floodplain management work with the Iowa Silver Jackets. This team of interagency partners works together to share resources and identify solutions to improve flood forecasting capabilities and expand data collection. The team won the award for the Iowa Bridge Sensor Project that deploys stream sensors across the state to help Iowans prepare for future floods.

In addition, IFC won a second award—the Hydrologic Innovation Award through the National Hydrologic Warning Council. The award recognizes IFC's development of the Iowa Flood Information System, a user-friendly online platform that provides Iowans with real-time flood information.

IIHR Turns 100

The year 2020 marks the 100th birthday of IIHR—Hydrosience & Engineering (IIHR), the Iowa Flood Center's parent organization. IIHR's world-renowned research expertise and leadership in all things fluid and water resources-related laid the foundation for IFC's path to success when it was created in 2009. Join us for *The Big Splash!* (Aug. 14–16), a celebration of—and on—the Iowa River in recognition of IIHR's milestone. In addition, the 8th International Conference on Flood Management (Aug. 17–19) will be held in the United States for the first time ever right here in Iowa City!

For more information, visit www.iowafloodcenter.org/events/list.



IIHR researchers calibrating one of the lab's first weather stations.



IFC's modern day hydrologic station measures rainfall, soil moisture and temperature, windspeed and direction, and groundwater levels to help improve flood monitoring and forecasting.

IFIS

Iowa Flood Information System (IFIS)
ifis.iowafloodcenter.org

Reliable Information

IFIS is a free, user-friendly online application that helps Iowans prepare for flooding. IFIS displays up-to-the-minute community-specific information on rainfall, stream levels, and more, including:

- Real-time stream levels at 260 locations in Iowa;
- Flood alerts and forecasts for more than 1,000 Iowa communities;
- Weather conditions including current, future, and past rainfall accumulations;
- Statewide flood map coverage for all 99 counties; and
- Scenario-based flood inundation maps for dozens of communities.

New and Upcoming:

- Expanding our hydrologic network;
- Adding stream sensors;
- Creating real-time inundation maps for the Missouri River Basin;
- Improving flood forecasting for communities; and
- Upgrading communication technologies.

ABOVE: IFC team members helping with flood clean-up efforts in Hamburg, Iowa, after the 2019 floods.

RIGHT: Joe Bolcom, Kate Giannini, and Breanna Shea participate in the League of Cities' luau-themed annual conference to share information about IFC services that benefit communities.

FAR RIGHT: Even Spiderman loves the IFC's watershed model!

Iowa Strong



Tuesday, April 16, 2019, was a humbling day for the eight Iowa Flood Center staff and students who traveled to Hamburg, Iowa, to help with flood clean-up after hearing of the tragedy and devastation that had swept through the town in the wake of the 2019 spring floods.

The IFC team partnered with Go-Serv, an organization that helps to coordinate volunteer opportunities during disaster events. Bruce, a local Go-Serv coordinator and Hamburg resident, led the IFC team to a small complex of low-income senior citizen apartments that had been flooded and evacuated. The crew spent the day tearing out wet, moldy drywall and clearing ruined cupboards, bathroom fixtures, and more. Everything went out to the curb to add to the endless tunnels of furniture, appliances, photo albums, heirloom furniture, and memories that lined both sides of the streets throughout the town. "I had no idea what to expect. It gave our team a whole new sense of purpose for the kind of work we do," says Kate Giannini, communications specialist for the IFC.

The IFC group was part of a small army of volunteers who turned up in Hamburg and other flood-devastated Iowa communities. Judy Holliman of the Hamburg Kiwanis Club told the *Des Moines Register* that people in her community are working hard to recover from the flood. "We're a strong community," she said. "I see that everywhere. Nebraska strong, Iowa strong, and Hamburg's going to be strong, too."

At the end of the day, the IFC team was exhausted, filthy, and proud to be "Iowa strong," working together with the citizens of Hamburg to build a more flood-resilient Iowa.

