Flooding in the Corridor

Closures of the Iowa City Gateway Corridor due to flooding are more than a local inconvenience. Dubuque Street carries more than 25,000 vehicles a day between Interstate 80, Iowa City's downtown business district and the University of Iowa, and along with Park Road Bridge, provides critical access to three area hospitals. Together, they provide vital connections for the community's safety, commerce, neighborhoods and recreation.

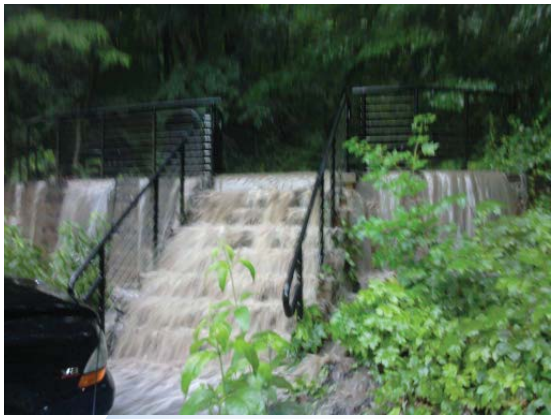
The Iowa City Gateway Corridor can be flooded and closed due to two types of flooding:

- **Flash floods** are caused by locally heavy rains or rapid snow melt. They tend to have a relatively short duration, and can happen almost anywhere water collects. Dubuque Street is closed fairly regularly due to flash floods, most often in the spring.
- **Historic floods** (also known as Overbank or Riverine floods) are caused by regional weather conditions like long rainy periods and heavy snow melt within the river basin. These conditions can raise water levels in the Coralville Reservoir, sometimes causing the Iowa River to rise enough to flood the corridor. These events usually last longer than flash foods and can cause the corridor to be closed for days rather than hours.

Keeping the corridor open during flash floods:

The Iowa City Gateway project is looking at a variety of options to reduce the impacts of flash floods on Dubuque Street. Flash floods cause the majority of the short-term closures of Dubuque Street.

- **Elevate Dubuque Street** – Dubuque Street may be reconstructed so that it is higher and better protected from future flash floods.
- **Improve storm sewers** – The current storm sewers are not big enough to handle the storm water that can flow into the area during heavy rains. The elevation of the ditches along Dubuque Street are equal to the normal elevation of the river. Improvements could include higher-capacity storm sewers and better drainage away from Dubuque Street.



Flash flooding behind the University of Iowa's Mayflower Residence Hall, June, 2010

- **Increase storage** – The team is looking for opportunities to store local storm water runoff in nearby wetlands and open spaces. During locally heavy rain events, this would give the water a place to drain to and promote infiltration. During historic floods, these areas would be under water, and would not provide any significant storage.

The Iowa City Gateway Project is led by Iowa City in coordination with the U.S. Economic Development Administration, the Iowa Department of Transportation and the Federal Highway Administration and in cooperation with the University of Iowa.

More information about Iowa City Gateway can be found at: iowacitygateway.org or by phoning 319-356-5140.

June, 2011

Keeping the corridor open during historic floods:

2008 Flood in Iowa City

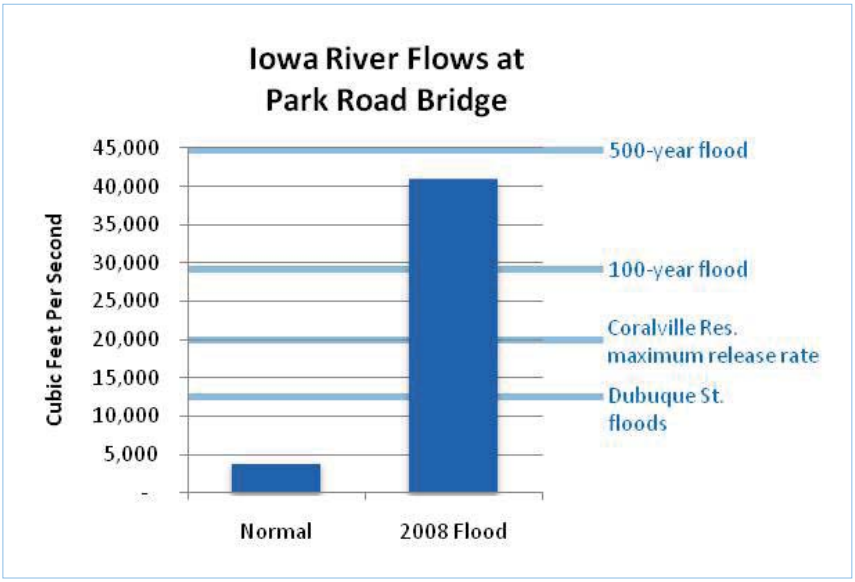
Getting it right: After the 2008 flood, a new HEC-RAS Iowa River model was developed, stretching from the Coralville Dam to the southern city limits. Output was calibrated with actual data gathered during the flood and new technology was used to obtain accurate cross-sections of the river and floodplain. This model is being updated by the City of Iowa City along with the City of Coralville and the University of Iowa to incorporate all proposed and constructed flood mitigation projects to determine their aggregate effects during flood events.

In addition, Iowa City projects will be analyzed separately to determine each project's potential effects on properties adjacent to the Iowa River. This model will be used to help guide the decision-making process for the reconstruction of Dubuque Street and meeting a key project goal of keeping the Iowa City Gateway corridor open to traffic during historic flood events.

Raising Park Road Bridge: The most significant finding in the new hydraulic model was that raising Park Road Bridge will lower the water surface elevation upstream, even with all of the other flood projects in place.

Because Park Road Bridge played a role in the creation of upstream backwater upstream in 2008, it will play an important role in reducing backwater during future historic flood events.

- Under normal conditions, water flows under the existing bridge. From there, it flows to the Burlington Street Dam, the next major control as the Iowa River makes its way to the Mississippi River.
- In 2008, as the river rose, the beams of the existing bridge deck acted as a dam, trapping debris and creating up to 14 inches of water that contributed to additional backwater flooding of upstream properties. The piers of the existing bridge were not significant in creating backwater.
- In future normal conditions, water under a new bridge would flow as it always has. In flood events, the higher bridge would better allow water to pass, minimizing upstream backwater flooding. A new bridge would also be longer, relocating the western abutment farther to the west. A new Park Road Bridge would not impact water surface levels downstream. Those levels would still be controlled by the Burlington Street Dam.



Iowa River flows impact Dubuque Street and its ability to stay open. The normal flow of the river is 4,000 cubic feet per second (cfs). Dubuque Street floods at 12,000 cfs. During the flood of 2008, the flow of the Iowa River was approximately 41,000 cfs.