

# Ames Tribune

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## **Flooding, E. coli, and cohesive management at the center of the Squaw Creek watershed**

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The 2010 flood that swamped the city of Ames heightened awareness of and the need for action to combat the floodwaters that can swell from the banks of the tributaries of the South Skunk River.

That led to a community-wide flood mitigation study, and the search for alternatives to keep floodwaters at bay in times of heavy rain, especially in the area of South Duff Avenue.

“We’ve had recent, multi-million dollar damages in that South Duff area as a result of multiple floods,” said Tracy Warner, municipal engineer with Ames Public Works Department. “The most recent, worst one was 2010, and after it, we wanted to find alternatives on lowering floodwaters.”

One of those alternatives is a grant application to the Federal Emergency Management Agency. In the application, the city is seeking up to \$5 million to reduce the impact of flooding in the South Duff Avenue area. The grant application is expected to be filed by the end of this month, with word on approval by May.

If the grant is approved, the funds would become available in February 2020.

If approved, the city would ideally work in the channel of the creek itself, widening it to allow more stable stream flow. Additionally, the planting of more native vegetation could soak up water and help prevent erosion on the stream banks.

Warner also outlined prioritized efforts to mitigate the effect of stormwater on Squaw Creek, and future work that could take place later this year.

The Stormwater Erosion Control Program, which will be launched later this year, aims to provide stabilization for the eroded stream banks between Sixth and 13th streets.

Stormwater is rainfall that doesn't soak into the ground, but instead flows over land into an extensive storm drain network of pipes, where it's released — untreated — into the streams.

But Warner understands, like many who have tackled the issue of flooding in Squaw Creek — that it's a multi-faceted project.

“You need to be doing things on South Duff, but also doing things community-wide, and also in the watershed,” she said. “One option isn't going to fix everything.”

The most recent efforts to maintain water quality and control in Squaw Creek is the latest chapter in a near 20-year chronicle.

Former Story County Water and Soil District commissioner Erwin Klaas had always been aware of the flood effects of Squaw Creek.

“Squaw Creek, over many years, has been a flooding problem,” Klaas said. “In 1993, we had major flooding, that resulted in lost and damaged houses.”

But, Klaas also intimated concerns about the quality of water that flood through the 41-mile Skunk River tributary.

When the Iowa Department of Natural Resources created the Iowa Water program, Klaas was on board to be one of the participants sampling water from one of the major sub-watersheds in Iowa.

Born from this program was the Squaw Creek Watershed Coalition, starting with 20 volunteers who aimed to test and monitor the water quality of the 141-acre Squaw Creek watershed.

The Squaw Creek watershed spans more than 147,000 miles through Story, Hamilton and Boone counties, with 93 percent of the watershed made of rural land.

The city of Ames lies at the base of the Squaw Creek watershed drainage basin.

The run-off from the basin, as evidenced by catastrophic floods in 1990, 1993 and 2010, create severe consequences for the city.

“Ames gets the brunt of that basin, but there are also three other towns (Gilbert, Stanhope, and Stafford) and they also are affected by the watershed as well,” Klaas said.

Ames is a point-source, as water from all the sanitary drains and sewers in the city is filtered through the Ames Water Pollution Control Facility.

The water discharged from the facility is released from a pipe into the South Skunk River.

Since 2001, Klaas measured and sampled water depth, quality and streamflow in Squaw Creek, north of the Fourth Street bridge in Ames.

In 2009 and 2010, the waters of Squaw Creek revealed troubling tales to Klaas.

Klaas detected high levels of bacteria, confirmed as E. coli in the water, and contacted city of Ames officials.

When the city got back to Klaas, it revealed sewer breaks that were flowing raw sewage into the creek under the Duff Avenue bridge.

“They corrected those, and the important point is, because we had people sampling water — we were able to do something about it,” Klaas said.

These findings coincided with the state’s 2008 decision to adopt a nutrient-reduction strategy with Iowa State University in which it targeted six major watersheds in the state.

At the time, Klaas worked with the Ames-based nonprofit organization Prairie Rivers of Iowa, and after obtaining state funding, helped develop the Squaw Creek Watershed Management plans.

The management plan uses geographic information systems that provide a detailed scope of the watershed’s landscape.

In 2014, a major stream of cities, counties and soil and water conservation districts in central Iowa entered a coalition named Squaw Creek Watershed

Management Authority.

The coalition devised a 20-year management plan for the Squaw Creek Watershed.

At the root of this management plan were improving soil health and water quality on the landscape in Squaw Creek, as well as educating the watershed citizens about soil health, water quality and watershed topics.

“We received \$350,000 in funding from the Department of Agriculture, and we would go out and contact the landowners and notify them areas that needed to be corrected,” Klaas said.

Klaas believes that the creation of the watershed authority has created a more united front in correcting the environmental issues that lie in the Squaw Creek watershed.

“Sitting at the table were representatives from the rural and urban components, talking together about what they can do in the watershed to prevent flooding and maintain water quality,” Klaas said.

Prairie Rivers Watershed Coordinator Kayla Bergmann said the breakthrough between rural and urban areas can lead to a positive impact when it comes to the watershed.

“No matter if they live next to the stream itself or they live 30 miles away, they are affecting the water quality,” said Bergmann. “What happens on their land and their daily practices, farmer or city-goer, affects the water quality.”

Recently, Prairie Rivers of Iowa is working with landowners near the Worrell Creek watershed to implement more co-habitable farming and eco-friendly land management practices.

Bergmann said that the efforts by the city to address and manage stormwater entering Squaw Creek are steps in the right direction.

While great strides have been made five years into the Watershed Authority’s 20-year vision, Klaas and Bergmann agree that there’s still a long way to go.

“We are going to see major climate change in the coming years, and there’s still a

long road ahead,” said Bergmann. “But the work that all parties involved are doing goes a long way in restoring our water quality in the watershed.”