

# Residents willing to pay for water improvements

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Managing storm-water runoff in urban settings is critical to keep basements dry, streets clear and passable, and streams and rivers healthy, but how much are homeowners willing to pay for it?

A University of Illinois survey of randomly selected households in Champaign-Urbana concluded that people are willing to pay to reduce flooding in their own basement, but they may also place a high value on [water](#) quality and the health of local rivers and streams.

"It came as no surprise to us that people who experienced basement flooding were willing to pay for the city to manage the storm-water runoff," said U of I environmental economist Amy Ando. "However, what did surprise us is that people were also willing to pay quite a lot of money for improvements in environmental quality—in having cleaner water in the streams and better hydrological functioning."

Ando explained that parking lots, buildings, and streets interrupt the way the hydrological system usually functions. Low-impact, environmentally friendly storm-water management options, such as rain gardens, permeable concrete, cisterns, and green roofs, are designed to mimic the way things function in the absence of development.

"These low-impact options use decentralized storm-water management methods aimed at keeping water on site rather than the traditional concrete structure that takes water away as quickly as possible," Ando said. "If we use low-impact development approaches to storm-water

management instead of just building bigger storm water pipes, we can reduce flooding, have cleaner water, and improve habitat for wildlife."

While there has been a lot of research about storm disasters and the benefits of some kinds of flood reduction, this is the first research to determine joint monetary estimates of multiple benefits to society of modern storm water, including environmental improvements more complex than just reduced [water pollution](#).

The survey was hand delivered to 1,000 households in randomly selected neighborhoods in Champaign-Urbana. Of those, 140 surveys were completed and returned—some from people who experience a lot of flooding and some from people who had no flooding at all. The data were analyzed from 131 of those respondents.

"The results help us understand which type of flooding people care about most and should be prioritized in terms of management in urban areas," Ando said. "It can also help federal and local policy makers evaluate the benefits of new storm-water regulations that implement low-impact development techniques."

Cities across the country are developing a wide range of policies to improve storm-water management, and the Environmental Protection Agency is evaluating regulations that might mandate significant on site management of storm water nationwide.

"No city is going to use all low-impact development," Ando said. "The question is, what mixture of things do you want to use? And how important is it to try to improve hydrological functioning by using low-impact development solutions rather than traditional [storm-water](#) solutions. This study provides the actual benefit estimates. City decision makers can see how much people are willing to pay for a project if it achieves a particular mix of outcomes," she said.

Ando said the research also cautions that policies and municipal storm sewer projects that worsen aquatic habitat in a quest to reduce flooding that affects only a subset of households in an area may have questionable net benefits for the community as a whole.

"Valuing preferences over stormwater management outcomes including improved hydrologic function," co-authored by Amy Ando and her graduate student Catalina Londoño Cadavid, was published in a recent issue of *Water Resources Research*.

Provided by University of Illinois at Urbana-Champaign

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