

Local Focus

Cities Seek to Prepare for Local Climate Effects



As is true throughout the Midwest, summer storms have gotten worse in Dubuque, Iowa, leading to flash floods along the Mississippi River. Water speeds downhill toward the Bee Branch Creek, a partially buried waterway that flows beneath several neighborhoods before emptying into the Mississippi. Often, the storms dump so much rain that the creek's concrete channels cannot contain the runoff. Water spills over streets, across backyards, and into basements. It can push open manhole covers, spray out from fire hydrants, and carry away parked cars.

Six times between 1999 and 2014, Dubuque has been declared a presidential disaster area. One storm in 2011 dumped nearly 11 inches of rain on the city in less than 24 hours. The city estimates that since 1999 floods in the Bee Branch Creek watershed have caused \$70 million in damage to homes and businesses. Mayor Roy Buol worries that climate change, which has raised the average U.S. temperature by 1.5 degrees since 1895, will only make the storms worse. So Buol and other Dubuque leaders are planning for \$200 million in infrastructure improvements to give the city resilience in the face of global warming and natural disasters.

Dubuque is not alone. Cities love their waterfronts, but in an era of fierce storms and rising sea levels, they are investing heavily in infrastructure improvements designed to help them ride out the next storm. It's expensive—Miami Beach is planning to spend \$300 million on new storm-water pumping stations alone—but increasingly necessary. “We have approximately \$22 billion worth of property value in the seven square miles that make up Miami Beach,” said Eric Carpenter, the city's public works director. When you're looking at it from a perspective of having \$22 billion in assets, coming up with half a billion dollars to become resilient becomes a little bit more manageable.”

South Florida is considered one of the regions most vulnerable to climate change. To address rising sea levels, four area counties have formed a compact to come up

with recommendations—more than 100 so far—including a surface water reservoir. By reducing flooding, the reservoir would help cope with extreme storms, such as the one that dumped 22 inches of rain on Palm Beach County on a single day in January 2014.

Just the first phase of the reservoir could cost \$150 million, however. Local governments don't have enough extra money to take on such projects alone. “Everything that Norfolk needs to do is \$1 billion,” said Lori Crouch, a spokeswoman for that southeastern Virginia city. “We don't have \$1 billion.”

That's why a lot of cities and counties are drawing up wish lists—so they have projects in mind that they can start working on once they receive federal and state aid after disasters strike. “Every time there is a disaster, you use the money you get from the disaster to build up your long-term resiliency,” said Niek Veraart, an infrastructure consultant.

Rebuilding after one disaster offers a unique opportunity to learn and prepare for the next. Still, it would be better to put resilience measures in place before the next disaster strikes, rather than afterward. But while it can be hard to secure funds to prevent bad things from happening, money almost inevitably starts to flow once disasters occur. Cities have learned that they can't simply rebuild what was lost but also have to think about making changes that will prevent repetition of the same type of destruction.

Even as cities plan for their wetter, potentially more devastating futures, they are hoping that federal policymakers will provide more forethought—and dollars—to their cause. Coastal communities account for 45 percent of the nation's economy; so the fate of many regions and industries is tied to their survival. “No one could afford to do these projects on their own, [so we] will be looking for financial resources either at the state or federal level,” said Jennifer Jurado, director of environmental planning in Broward County, Florida. “As a nation, we can't afford to just allow individual localities to figure it out.”