

# Creative projects help manage storm water in Greater Cleveland neighborhoods

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CLEVELAND, Ohio -- It used to be that the residents of Cleveland's Milligan Avenue would find themselves wading across water that flooded their street during heavy rains, melting snow or the disastrous combination of both.

But the rising waters of the [Big Creek Chevy Branch](#), which flows under Milligan Avenue, appear to pretty much be a problem of the past, in large part thanks to a stream restoration project by the regional sewer district that has helped get the water flowing toward Lake Erie instead of pooling in the west-side neighborhood.

In suburban University Heights, residents of Ashurst Road faced a similar storm water issue: Heavy rains would send thousands of gallons of water sweeping across a vacant lot and into neighbors' yards.

A \$10,000 sewer district grant allowed the city last year to transform what had long been an eye sore into the pride of the neighborhood, a park-like woodlands rain garden that uses native trees, shrubs and plants to capture and clean water on the property.



[Lisa DeJong](#), The Plain Dealer, [Jean Loria](#), right, designed a woodlands rain garden on Ashurst Road in University Heights with help from her team, from left, [Marcy Forbes](#), [Pebbles Bush](#) and [Angelisa Crognale](#). It's astonishing, says [Jean Loria](#), who designed the rain garden, but the 50- by 200-foot lot sees up to 300,000 gallons of water a year.

"It's a big number," Loria said. "We don't realize how much water comes down onto our property."

The two so-called "demonstration" projects may seem small when compared to flooding issues faced by the 62 communities served by the [Northeast Ohio Regional Sewer District](#).

But officials say they show how projects can beautify neighborhoods, and provide a glimpse of some of what the sewer district plans to do once it begins collecting a storm water fee and accumulates a budget of \$38 million a year for larger storm water management projects.

[That fee](#), which customers are likely to begin seeing sometime next year, will be based on the square footage of their hard surfaces such as roofs, parking areas and patios. It will be \$4.75 a month for a typical homeowner, more for businesses with large structures and parking lots.

As for the storm water demonstration projects, the sewer district received 29 grant applications this year, up from just three the first two years of the program. The sewer board gave out \$104,000 earlier this month to fund 13 of them.

They include rain gardens at Grace Lutheran Church in Cleveland Heights, Euclid Beach Park and Cleveland State University; a bioswale at Shaker Parks and storm drain educational markers installed by Boy Scout Troop 319 in Brooklyn.

"Most of these projects are right in neighborhoods, and they create green spaces and places that invite neighbors in with a place to sit or walk," said [Linda Mayer-Mack](#), a storm water expert with the sewer district.

[University Heights Mayor Susan Infeld](#) likes the city's rain gardens so much she wants to build more as land becomes available.

The city has another rain garden, also designed by Loria, next to the service department yard, where storm runoff that includes road salt and motor oil from the trucks is cleansed through a series of filters, including a bio-retention cell, two gravel beds and a series of berms, swales and plantings.



[Lisa DeJong](#), The Plain Dealer, A stone trench, two feet deep and 190 feet long, curves through the rain garden on Ashurst Road in University Heights. It helps capture the more than 6,000 gallons of water that the site sees every time there's an inch of rain.

The Ashurst Road rain garden, installed in November, is tucked into a well-kept tree-lined street off Fairmont Blvd. An abandoned home, unusual in the neighborhood, occupied the property for years. The city acquired the property in 2009, and the home was demolished, leaving hard, compressed earth and a slightly sloped vacant lot.

"What was here before was a nuisance," said [Linda Johnson](#), an environmental engineer who lives directly across the street. "I think this is fantastic. They did a wonderful job."

The woodlands rain garden is anchored by two mature maple trees near the front of the property. Water, more than 6,000 gallons every time there's an inch of rain, is directed across the property by a fishtail design of berms and swales. A two-foot deep, 190-foot long trench filled with stones curves across the narrow property, retaining water and giving it a chance to soak into the ground.

The design team -- which included artists [Marcy Forbes](#) and [Angelisa Crognale](#) and horticulturist [Pebbles Bush](#) - brought in trees such as River Birch, Baldcypress and Black Gum. They added shrubs, including Spicebush and Witch Hazel, and plants such as Columbine, Heuchera and Camassia, all colorful and effective for water management.

[Forbes](#) said the rain garden is meant to be mostly self-sustaining, but the trees need to be cared for during dry times. Three rain barrels on the edge of the property are connected to a neighbor's garage, so that water for the trees can be collected.

[Loria](#), the designer, said the rain garden will improve as it matures.

"Last fall, when we had some storms with two inches of rain at a time, the trench and the berms and the swales were definitely holding the water back. I'm not going to say that it's perfect. But we had good success."

On Cleveland's west side, [Melissa Miller](#) of the [Bellairie-Puritas Development Corp.](#) said the Big Creek Chevy Branch has seen its share of abuse and neglect.

"We do a creek cleanup every year where we pull out bikes, and mattresses, air conditioners, everything that's been dumped in it," she said.

[Miller](#) has lead the effort to stop of the flooding near Milligan Avenue, which is just off W. 130th Street. With the sewer district's \$19,000 grant they rebuilt the stream's bank, restoring plants that help manage high water. [Miller](#) also managed to acquire several low-lying lots nearby, which serve as a wetlands.

[Mike Vura](#), a regular with his family at the steam cleanups, said that with the projects has come a renewed sense of pride in maintaining the waterway.



[Northeast Ohio Regional Sewer District](#) A stream restoration project on the Big Creek Chevy Branch near Milligan Avenue on Cleveland's west side has helped put an ending to flooding. This picture of the project was taken when it was completed in fall.

You can hear his enthusiasm when he talks about a family ducks who have taken up residence near his home and a deer he recently spotted - endearing, visible signs of water-quality improvement.

[Vura](#) has lived with his wife on Milligan Avenue for about 20 years, adding two bedrooms to their home as their family grew.

Before the stream restoration project, which was finished in September, a heavy, consistent rain would cause flooding, which was bad enough to close the street a few times a year.

"My whole front yard would be under water," [Vura](#) said. "It would come to my front step. It would be three feet in the deepest part of the street."

Both [Vura](#) and [Miller](#) say that's now changed for the better.

Said [Miller](#), "It really does work to reduce flooding in the neighborhood. So it's a win-win on many levels."

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