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# Seeing Beyond the Trees

## The Greening of Detroit expands its reach to tackle water reclamation

BY MONICA MERCER



It's a deceptively simple question: Where does the water go when it rains?

If you're working for the Greening of Detroit, you're going to know how complicated the answer really is. And in painstaking detail. Much more than the average citizen, at least, for whom the concept of "water" is easy to take for granted.

Yet in the Corktown office space of the Greening, which has quietly operated for more than two decades as one of the city's most respected environmental initiatives, President Rebecca Salminen Witt explains why water issues shouldn't just be the domain of high-minded environmentalists. It's about money, too, she says — something that practically everyone can appreciate in a city and region plagued by financial woes.

If residents understood where their water went, and if the city could embrace a viable way to use its water more efficiently, the Greening believes there would be long-term economic — as well as environmental — benefits.

"You'd be amazed at how quickly the savings would add up just by diverting water to green infrastructure instead of letting it go to a water-treatment plant," Witt says.

But what, exactly, is green infrastructure? For the Greening, it's the answer that *should* follow the question of where rainwater ends up. It's also the No. 1 example of how an organization known best for its simpler tree-planting efforts is becoming high-tech in its newly methodical approach to make a meaningful impact on the communities of Detroit.

## GREEN INFRASTRUCTURE IS DIRECTLY LINKED TO:

### IMPROVED WATER QUALITY.

Nearly 45 percent of America's bodies of water are polluted because of storm-water runoff and non-point source pollution linked to poor land-use management. Paved areas, which account for 20 to 40 percent of a city's surface, pollute. Trees help cities meet clean-water regulations by preventing polluted rainwater from washing into clean sources. Knowledgeable design of urban development can solve the problem of runoff quality at the source — and also reduce cities' costs for storm-water management.

### DECREASED RISK OF FLOODING.

Community forests function as nonstructural storm-water-management facilities. For example, in Washington, D.C., one organization found that urban greening prevents over 1.2 billion gallons of storm water from entering the sewer system — 10 percent of the total volume and a savings of \$4.74 billion in gray infrastructure costs per 30-year construction cycle.

### RECHARGED LOCAL GROUNDWATER.

We're literally paving our way to water shortages. Increases in impervious surface cover from unplanned development impair the landscape's ability to recharge aquifers and surface waters. Trees, on the other hand, increase soil permeability and facilitate groundwater recharge.

Source: *Greening of Detroit*

While the execution of green infrastructure might not be simple, the concept is. Witt tells people to think of two areas side by side. One area is a large parking lot paved over with asphalt. The other is a park covered with grass and gardens. When it rains on the parking lot, that water runs into a treatment plant. Any overflow might run into a nearby river. When it rains on the park, however, the water immediately gets to work soaking the earth and feeding the trees and the gardens. That's water that's used immediately. It also means less energy and money needed to treat the water at the plant — and less water wasted when it flows away unused into a river.

"This is where we're really concentrating now," Witt says of the organization's green infrastructure initiatives. "Looking critically at every single tree that we plant, and overlaying the environmental benefit it could have, the water-quality benefit it could have, the air-quality benefit it could have, [and] the social-quality benefit it could have."

This is not to say that the bread and butter of the Greening — the basic planting of trees — has lost its luster. The organization's 2012 annual report boasted its largest planting season ever last year — with the installation of 12,156 trees by 7,425 volunteers and with the help of 35 community partners. In 2012, the Greening also established a unique workforce program, recognizing the high unemployment rate in Detroit and offering participants a chance to get job training and certification in

the green industry. As a result, 71 people so far have landed employment in what the Greening calls a "growing jobs sector."



Still, the green infrastructure initiatives are seen by the organization as its most innovative and ambitious projects to date — ones that could end up significantly affecting all Detroiters.

Director of Green Infrastructure Dean Hay, an engineer and landscape architect by trade, is leading these efforts. One of the biggest is the Greening's partnership with the Detroit Water and Sewerage Department to conduct a pilot project to help get the city up to speed on water reclamation. In other words — as in the parking lot vs. green-space example — the Greening wants Detroit to finally get serious about preventing so much water from either needlessly going into water treatment or simply being washed away. Pittsburgh and Philadelphia have become national examples of water projects like this, Witt says, but "Detroit is behind."





“This is a large-scale, organized operation to methodically deal with [water reclamation],” Hay says. “Historically, there have been other people in Detroit who have tried on a smaller scale, but this is by far the largest combined effort to date.”

Another green infrastructure method in the works is a “dendro-remediation” project, which uses certain kinds of trees to slowly and naturally rid land of toxic substances. Over time, trees are able to metabolize toxic chemicals in the soil, making the soil “clean” and safe to use. Because of Detroit’s manufacturing legacy, soil toxicity on vacant land throughout the city remains a substantial problem. But Hay says that cleaning the soil through quicker, conventional methods is “prohibitively expensive.”





Photographs Courtesy of The Greening of Detroit

According to the Greening of Detroit, it recently cost \$500,000 to remediate a three-acre plot of land in Eastern Market via conventional methods. For land that needs to be developed quickly for commercial reasons, spending that kind of money makes sense. For the rest of Detroit's vacant land, the Greening wants to foster an active dendro-remediation effort that will slowly, but surely, guarantee that the land will be viable in the future.

"Detroit has nearly 40 square miles of vacant residential, commercial, and industrial property," says the Greening's marketing director, Trish Hubbell. These key green infrastructure methods are "part of a broader redevelopment strategy" to use all of this space to its full potential