

## 'Green infrastructure' -- a toolbox for reducing runoff and beautifying American cityscapes, too

By Ron Meador | Published Mon, Nov 21 2011 10:25 am



Photo by Bill KelleyA scene from Target Center's green roof

An interesting new report arrived by e-mail last week, describing how cities across America are using "green infrastructure" in ambitious ways to reduce the flow of polluted runoff into lakes and rivers.

According to "Rooftops to Rivers II," prepared by the Natural Resources Defense Council:

- Chicago has become a national leader in the "green roof" movement, planting runoff-reducing vegetation on some 500 roofs totaling nearly 5.5 million square feet, and has created more than 13,000 "green alleys" through plantings, grading changes and repaving with permeable materials. Most of the projects were accomplished through voluntary incentives and without a dedicated source of funding assistance.
- Syracuse has become the first city in the United States to mandate green infrastructure improvements as a way of reducing sewage runoff, albeit under a consent decree resulting from its pollution of Onondaga Lake in upstate New York. Using sewer fees, grants and low-interest loans, the city plans to spend \$80 million over the next decade on a "Save the Rain" program utilizing green roofs, rain barrels and permeable paving as well as such "gray" infrastructure retrofits as sewer separation and runoff retention structures.
- Philadelphia, not always viewed as a model of environmental progressivism, tops the NRDC's list of cities doing the most to improve water quality with green infrastructure. Indeed, it was the only city to score in all of the categories cited as keys to reducing runoff through green techniques: having a long-term plan and requirements for use of green infrastructure, setting effective rules for storm water retention, providing guidance and incentives to property owners as a way of stimulating private action, and ensuring a long-term, dedicated funding source to support infrastructure investment.

Eleven other cities ranging in size from Aurora, Ill., to New York City round out the reports list of exemplary efforts, all of which had the benefit of making urban landscapes more beautiful as well as less polluting.

No Minnesota city made the list, although Minneapolis was among a half-dozen cities mentioned for "doing interesting, innovative projects that warrant recognition."

And I find no sign that any Minnesota media mentioned the report, which is kind of unfortunate, because the challenges and opportunities it discusses are the same ones shaping the future of water quality and pollution control across our state.

#### **A regulatory agenda**

As you might expect, NRDC's report comes with an agenda attached: to greatly reduce the "estimated 10 trillion gallons a year of untreated stormwater [that] runs off roofs, roads, parking lots, and other paved surfaces, often through the sewage systems, into rivers and waterways that serve as drinking water supplies and flow to our beaches, increasing health risks, degrading ecosystems, and damaging tourist economies."

More specifically, the organization is looking ahead to the U.S. Environmental Protection Agency's pending review and revision of national regulations on stormwater runoff. In that revision, NRDC says, the EPA must

*reform the national Clean Water Act rules that apply to stormwater sources to require retention of a sufficient amount of stormwater through infiltration, evapotranspiration, and rainwater harvesting to ensure water quality protection. The rules should apply throughout urban and urbanizing areas. The EPA should also require retrofits in already developed areas and as part of infrastructure reconstruction projects. In so doing, the EPA will embody the lessons learned from cities across this country and the leaders who understand that, from an environmental, public health, and economic perspective, green infrastructure is the best approach to cleaning up our waters.*

Whether such an overhaul is feasible in the current anti-regulation, anti-EPA weather system dominating the nation's political climate these days is open to debate, I guess. But the interesting thing about the case studies in this report is how much can be accomplished even under the old rules -- as long as local leadership is willing to take on the task, and citizens are willing to give their support.

#### **Four Minnesota case studies**

The problems of controlling runoff were at the heart of an interesting conversation earlier this month in St. Cloud, where 100 or so people who work in some way on water issues gathered for a policy forum with the hopeful heading, "[Working Together to Achieve Healthy Waters.](#)"

The convenor was Environmental Initiative, whose mission is to encourage problem-solving collaboration among government agencies, businesses, advocacy groups and other nonprofits with stakes in environmental issues. (Until a recent name change, it had been known for nearly 20 years as the Minnesota Environmental Initiative, or MEI.)

The NRDC report hadn't come out yet, so it wasn't part of the conversation. But green infrastructure, in both urban and rural forms, was a theme running strongly through the four case-study presentations that formed the heart of the program:

- Dennis Fuchs, administrator of the Stearns County Soil and Water Conservation District, on [educating and assisting livestock operations to control runoff](#).
- Mary Blickenderfer, an educator with the University of Minnesota Extension Service, on [engaging lakeshore landowners to create runoff buffers](#) where their lawns meet the lake.
- Patrick Shea, St. Cloud's public services director, on a range of things his city is doing to [reduce runoff into the Mississippi River](#).
- Shawn Tracy, a landscape ecologist with Metro Conservation Districts, on new mapping tools that can help cities and suburbs [identify the highest-benefit retrofit projects](#) for stormwater control.

#### Preventing bad vs. creating good

After the presentations, the discussion turned to how the successes of these rather small efforts could be scaled up for wider application, as funding from the Legacy Amendment enables Minnesota to begin a new era of raising water quality statewide.

And one observation kept coming back to me as I read the NRDC report. It was from John Jaschke, executive director of the Minnesota Board of Soil and Water Resources, who said something very much like this:

We've learned from experience that regulation is a good tool for stopping a bad situation from getting worse, by forcing people to give up their old/bad ways. But it isn't such a good tool for making things better, because that requires persuading people to adopt new/better ways.

The most stirring aspect of "Rooftops to Rivers" is how much better these example cities have become — in ways that go far beyond simply reducing runoff — through creation of beautiful streetscapes, rooftop oases, public gardens, greenbelts and more.

A close runner-up is the intriguing variety of tools and strategies that produced these results. Regulation is always present in some role, to be sure. But not always, and not necessarily, in the lead.

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