



# Organized Greening

## *A closer look at Pennsylvania's first green infrastructure plan*

By **Anthony Haubert**, Public Relations Specialist, RETTEW

**N**oted for its natural resources, farmlands, parks and trails, and native plant and animal habitat, Lancaster County—like so many other communities—has witnessed tremendous economic growth over the years. While its verdant pastures, lush vegetation and densely populated forests appear unaffected, since European settlement, in fact, the county's resources have been altered extensively by activities such as agriculture, infrastructure construction and—more recently—urban and suburban development.

Although at first glance preserving and restoring the natural aspects of Lancaster County—a part of Pennsylvania known for its scenic beauty—may only seem important to improve aesthetics, reversing the toll that the forces of nature and mankind have taken is absolutely necessary. Without reversing the

trend, the county's ecosystem—its natural elements, including forests, wildlife and even water quality—would suffer.

In an effort to reverse these impacts, in February of this year the Lancaster County Planning Commission (LCPC) adopted *Greenscapes*, the Commonwealth's first ever green infrastructure plan. The plan, which LCPC developed in concert with RETTEW Associates, Inc. and Wallace, Roberts & Todd, establishes a green infrastructure system intended to fulfill four basic purposes or goals: preservation, conservation, restoration and recreation, highlighting the importance of protecting large blocks of contiguous land and improving connectivity as it aims to establish a network of natural areas, conservation lands and working landscapes. On a broader level, it is an innovative approach to preserving Lancaster County's open space and restoring vital natural

elements that have been impacted over time while accommodating continued growth in the area.

"Boroughs, townships and the City of Lancaster—essentially all levels of government within Lancaster County—benefit by the recommendations provided in *Greenscapes*," said Michael Domin, principal planner with LCPC. "It contains various initiatives that, together, have far reaching impacts on Lancaster County's landscape, environment and people."

While the plan contains tools that both rural and urban areas can use to address everything from decreasing stormwater runoff to incorporating context-sensitive design into road improvement projects, urban greening is a key component to *Greenscapes*, as are all green infrastructure plans. As its name implies, urban greening includes the planting of trees and other vegetation, preferably native species, to reinforce the urban

## What is Green Infrastructure?

Green infrastructure is a strategically planned and managed network of natural lands, working landscapes and other open spaces that conserve ecosystem values and functions and provide associated benefits to human populations.

The foundation of green infrastructure networks are their natural elements – woodlands, wetlands, rivers, grasslands – that work together as a whole to sustain ecological values and functions. Healthy functioning natural or restored ecological systems are essential to ensure the availability of the network's ecological services.

Additional elements and functions can then be added to the network, depending on the desires and needs of the designers – working lands, trails and other recreational features, cultural and historic sites. These all can be incorporated into green infrastructure networks that contribute to the health and quality of life for America's communities. **(B)**

Source: [www.greeninfrastructure.net](http://www.greeninfrastructure.net)

more positive social and economic environment, make business districts more attractive, increase property values, calm traffic and reduce stress. Some research even ties trees as part of a downtown's streetscape to reducing crime. In addition to Columbia Borough receiving \$15,000 through the TreeVitalize program, the City of Lancaster acquired \$25,000 through TreeVitalize to implement a tree planting program.

Although some of the implementation tools outlined

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Lancaster Planning Commission



**A VIEW FROM THE TOP** What appears to be a field at first glance is actually a green roof; owners of both residential and commercial properties, such as the National Novelty Brush Company, are installing green roofs in an effort to conserve energy

tree canopy and “green” the urban environment in local streets, parks, other public spaces and residential yards.

As part of the urban greening tool outlined in *Greenscapes*, Columbia Borough received \$15,000 from TreeVitalize to establish a tree planting program. Administered through the Pennsylvania Department of Conservation and Natural Resources (DCNR), the TreeVitalize program aims to have one million trees planted throughout Pennsylvania by 2012. Columbia Borough purchased 200 trees through the program.

“The funding through the TreeVitalize program enabled us to purchase trees to green our borough,” said Columbia Borough’s Mayor, Leo Lutz. Lutz added that initiatives like urban greening and other revitalization efforts have multiple benefits to the environment and ultimately the borough’s economy.

“We’re hoping through our

greening efforts that the town will be more attractive, lure residents back into the community and ultimately help combat urban sprawl,” he added.

Columbia Borough’s main thoroughfare, Locust Street, is already lined with trees; however, they are diseased and breaking up the sidewalks. This fall, the Borough plans to extract those trees and plant 47 new trees purchased through TreeVitalize; the remaining 153 are being planted on 9th Street and at various locations throughout the borough. But the trees go beyond improving aesthetics.

“Trees, shrubs and plants have other benefits besides improving a community’s appearance,” Domin added. “When the proper species of trees and shrubs are planted in urban areas, they help control stormwater runoff, provide shade to cool buildings and paved areas and increase property values.”

According to [www.treevitalize.net](http://www.treevitalize.net), trees in urban areas promote a



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in *Greenscapes* are still gaining momentum at the borough level, others are taking hold in Lancaster City. Through the Lancaster County Roof Greening Project, *Greenscapes* supports and promotes the installation of vegetated or “green” roofs. Project officials plan to have green roofs installed on roughly 79,000 square feet of roof space in the City of Lancaster and surrounding county. The program is funded through the Pennsylvania Department of Environmental Protection Energy Harvest Fund.

“Green roofs are pretty cutting-edge for Central Pennsylvania, but they have a lot of environmental benefits, and businesses and even homeowners are embracing the trend,” said Domin. Besides extending the life of the roof and improving air quality, green roofs act as a natural insulator to conserve energy and lower cooling costs, reduce stormwater runoff by capturing between 70 to 100 percent of precipitation and promote cooling in urban areas by reducing the heat island effect.

LIVE Green (<http://www.livelancaster.org/>), a partner in the Lancaster County Planning Commission’s roof greening project, is an organization dedicated to implementing and supporting initiatives that have measurable impact on the livability and environmental sustainability of Lancaster City. LIVE Green director Fritz Schroeder works tirelessly to educate the community about the benefits of green roofing in addition to other environmental initiatives and foster support through local business owners and residents.

“One of LIVE Green’s primary roles involves promoting green roofing to businesses and residents,” said Schroeder, “and we’ve made a lot of progress on educating the community on its benefits.” His



**REDUCE AND REUSE** *Greenscapes* promotes the use of rain barrels as a cost effective, environmentally friendly way to conserve and recycle water

efforts are paying off. In addition to green roofs atop commercial buildings, they’re appearing on residential properties.

Residents are implementing some of the other tools as outlined in *Greenscapes*, too. Through its rain barrel program, LIVE Green facilitates educational seminars to inform residents about stormwater management alternatives that are cost effective and environmentally friendly. Rain barrels can reduce the amount of stormwater that enters the municipal sewer system and streams, and installing one is relatively inexpensive and easy. “It’s as simple as taking a saw, cutting the downspout and installing an elbow, and putting the rain barrel under it,” said Schroeder, who encourages homeowners to try installing the rain barrels themselves. The high-quality

rain barrel, which LIVE Green provides at a subsidized cost, is offered to residents along with training on proper installation and management. The rain barrel, which collects stormwater during each rainfall, not only helps with keeping basements dry and diverting rainfall away from the house, the collected water can be used to water plants, wash the car or the windows on your house and even do laundry. During dry weather, a hose connected to the barrel allows the water to seep out to water the garden and replenish the groundwater table. What’s more is that the program helps to protect rivers and streams from runoff pollution and conserve a vital natural resource—water.

Regardless of the initiatives currently underway in Lancaster County as a result of *Greenscapes*,

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the measurements revealed. That is, the human observers seemed more sensitive to hue differences than the instruments. However, study participants tended to perceive the colors to be less saturated, on average, when compared to instrument measurements, and detected little difference in the saturation of the four quadrants for yellow and orange. According to Molino, this implies that, within certain limits, the fading of yellow and orange signs, although not desirable, might not pose as significant a problem as physical measurements might indicate.

A comparison of the luminance measured in the field with the participants' ratings of brightness indicated that people are less sensitive to differences in the luminance of signs that are relatively bright (as is typical for white and yellow backgrounds) than

to differences in the luminance of relatively dark signs (especially blue). The results indicate that for people with normal color vision, the probability of improper color recognition of traffic signs, at least for the colors evaluated, appears to be very low. However, the subtle differences between instrument measurements and human perception, and the relative lack of human sensitivity to differences in color saturation and sign luminance, indicate a possibility that existing measurement procedures can fail to properly account for how the driving public views individual signs.

Ultimately, the researchers found that the red versus orange sign materials and, to some extent, the orange versus yellow sign materials were more difficult for observers to discriminate. Although not likely to be a source of confusion with the present definition of acceptable

colors, Molino says, care needs to be taken when considering modifications to color boxes in these color regions. The final report will be available by fall 2009 at [www.tfhr.gov/safety/index.htm](http://www.tfhr.gov/safety/index.htm). (B)



Domin believes that the plan is a prototype that county officials, borough officials, businesses and residents all over Pennsylvania can use to restore valuable natural resources, preserve the environment and add vibrancy to their community.

"No matter how you look at it, green infrastructure planning is a good thing for all communities," Domin concluded.

For more information on *Greenscapes*, Lancaster County's Green Infrastructure Plan, visit [www.co.lancaster.pa.us/planning](http://www.co.lancaster.pa.us/planning). (B)

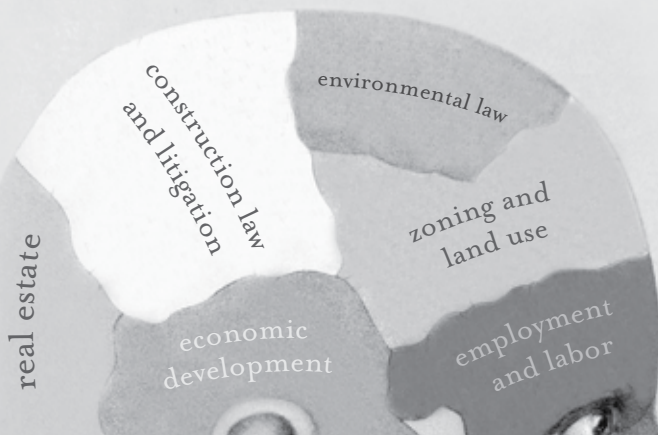
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