Under the Canopy

Posted By Janice Kasper sen On September 12, 2017 @ 11:28 am In Stormwater, Stormwater Weekly | 1 Comment

People love to put a value on things; the popularity of programs like Antiques Roadshow and websites like Zillow illustrate the point. The impulse extends even to trees. The city of Phoenix, AZ, began labeling its trees a couple of years ago, attaching large orange tags to them listing some of the trees’ benefits, such as removing carbon from the atmosphere, curbing stormwater runoff, and reducing the heat island effect, along with each tree’s annual dollar value to the community. It was part of an effort to get public support for increasing the city’s overall tree canopy. Phoenix hopes to increase the total from the current amount of less than 12% to at least 25% over 15 years.

But it turns out that not all trees are equal—or perhaps it’s more accurate to say that not all cities are. A recent study [2] looked at the benefits of trees in 10 cities around the world: Beijing, Buenos Aires, Cairo, Istanbul, London, Los Angeles, Mexico City, Moscow, Mumbai, and Tokyo. (For the record, Cairo has the least amount of canopy at just over 8%. Moscow has 36%. The average is 20.9%.)


The study hoped to show how each city could benefit from increasing its number of trees. The advantages include those that Phoenix listed on its orange tags and more. But the researchers found that the rewards varied depending on each city’s climate and culture. Arid Cairo didn’t see much stormwater-related benefit, for instance. Mumbai, which uses less energy per capita than the other cities in the study, didn’t see as much reduction in heating and cooling costs. Car-dependent Los Angeles saw the most benefit from trees’ sequestration of carbon dioxide.

In all, the study estimated that each city, on average, recognized an annual payoff of $505 million from its trees, broken down as follows:

• $482 million per year in decreased air pollution (predominantly from smaller particulate matter, a byproduct of combustion and diesel engines)
• $11 million annually through improved stormwater remediation
• $8 million in CO2 sequestration
• $500,000 saved in heating and cooling costs

To achieve greater density of trees and gain more benefits, “cities will need participation along the lines of public-private partnerships and citizen advocacy, as well as innovations from city planners, environmental engineers, and landscape architects as they redouble their efforts to increase the extent and health of the urban forest,” says the study’s lead researcher.

For more on the benefits of trees, see this article [4] from the October 2016 issue of Stormwater, which details some of the same numbers for different varieties of urban trees.

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