

# In the Shade of Trees

*“Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO2”  
Action Item #11 from the Mayors’ Climate Protection Agreement*

Urban forests are playing an important role in the effort to cool and clean our cities’ air. Cities such as Chicago and New York are embarking on massive tree-planting programs as part of the effort to reduce green house gas emissions, improve health and well-being, and help meet government requirements for ground-level ozone control. Here is yet another way for us to make an impact both globally and locally.

Shade trees are an integral part of reducing energy use and emissions in buildings. Deciduous trees can be used to shade the south and west walls of buildings, as well as paved areas, to reduce the need for summer air-conditioning. Evergreen trees and shrubs planted on the north or west sides of a building can serve as winter wind breaks, reducing heating bills. But there’s more than one way a tree cools a space...

Have you heard of the term “transpiration”? It’s not a medical condition – it refers to the way that water is pulled up through a tree’s roots and is evaporated through its leaves, using heat energy from the air and causing the surrounding air temperature to be lowered in the process. According to the U.S. Dept. of Agriculture, “The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day.” When it comes to transpiration, lawn is cooler than paving, and shrubs a little cooler than lawn, but trees trump all.

Trees also help us breathe easier. They reduce smog, provide oxygen, and trap the particulates in the air that aggravate asthma. According to the U.S. Dept. of Agriculture, “One acre of forest absorbs six tons of carbon dioxide and puts out four tons of oxygen. This is enough to meet the annual needs of 18 people.” So if each family forests their quarter-acre city lot, they’ll oxygenate their family and a pet or two. Trees in a city are also known to lower stress and blood pressure, so you’ll be oxygenated and more relaxed as well!

So how is Alliance doing? We’re definitely on the right track: Alliance has been a designated “Tree City, USA” for 25 years now. Thanks to Keep Alliance Beautiful, the Shade Tree Commission, and Friends of the Parks, our city is continuing to plan for shade on its streets and in its parks. However, it’s up to us to keep the city parks and these commissions funded to allow them to continue their work which benefits us all.

How about businesses and individuals? Imagine for a moment stepping out of your car into a treeless parking lot in August. Now imagine stepping out into a parking area that’s at least 50% shaded by mature trees (picture a residential street, or the College, or a park). Can you imagine the difference? Now, if you have to pay the summer utility bills for a building, which parking area described above would you like to have surrounding your home or business?

As carbon emissions begin to have a price tag in the world economy, trees are increasing in value. According to the Sustainable Urban Forests Coalition, “Urban trees sequester 22.8 million tons of carbon per year – a service worth \$3.8 billion annually.” Plant a tree today, and

watch it grow in value as well as size, as trees become financially recognized as “carbon scrubbers.”

It is said that the value of a property can be increased by as much as 20% by the planting of landscaping, especially trees. Then there’s the value of the utility bill: the USDA Forest Service reminds us that “Trees properly placed around buildings can reduce air conditioning needs by 30 percent and can save 20 - 50 percent in energy used for heating.”

Plant native tree species that don’t require irrigation or special care once they are established, and this energy savings could more than compensate for the cost of planting a few shade trees. For your investment to thrive, be sure they have an adequate tree-well or soil around them (see “check it out” for info on planting and care). Combine tree-planting with solar panels and a reflective white roof membrane on your flat roof, and watch your electric bill melt away.

And individuals? In addition to lowering utility bills and adding oxygen, beauty and comfort, mature trees increase property values and help when it comes time to sell. A mature tree can add thousands to your selling price, and help you to sell more quickly. Plant a nursery tree to be sure what you’re getting; or if you’re on a tight budget, identify and relocate a sapling that shows up in your flower bed. Check with the city engineering department about appropriate street trees to avoid problems with your utility lines. Of course, if you think you may be installing solar panels in the future, plant so that they don’t end up being shaded. Panels can go on a garage roof, or on a free-standing structure, while the house remains comfortably in the shade of trees.

*“The best time to plant a tree was twenty years ago. The second best time is now. □” anonymous*

### **Check it out:**

Ohio Dept. of Natural Resources, Urban Forests info:  
<http://dnr.state.oh.us/urban/defaultbu/tabid/5438/Default.aspx>

Alliance for Community Trees (grants available for projects): <http://actrees.org/site/index.php>

THE SIMPLE ACT OF PLANTING A TREE: □ A Citizen Forester's Guide to Healing Your Neighborhood, Your City, and Your World: <http://www.treelink.org/books/simpleact/index.htm>

Backyard Woods: a guide for managing your 1 – 10 acre private woodlot:  
<http://www.arboday.org/backyardwoods/>

Natl. Arbor Day Foundation: Benefits of Trees - Links on selecting and caring for trees:  
<http://www.arboday.org/trees/benefits.cfm>

New York City Infrastructure plan, including planting street trees and landscaping:  
<http://www.nyc.gov/html/ddc/html/ddcgreen/documents/hpig.pdf>