

Urban Forests

Description

In FY 2012, the USDA Forest Service made an investment of \$1 million in the design and launch of the Arbor Day Foundation's Energy-Saving Trees Program. This program provides a research-based, easy-to-use online mapping tool to help homeowners decide where to plant trees in order to provide the greatest energy and money savings benefits. When planted properly, a tree can save homeowners up to 20 percent on their energy costs while simultaneously reducing stormwater runoff, improving air quality, reducing urban heat island effects, absorbing carbon, and increasing curb appeal and property values.

The tool, developed by the Davey Tree Company and the Arbor Day Foundation and funded in part by the UPS Foundation, is powered by i-Tree, a peer-reviewed software suite from the USDA Forest Service that provides urban forestry analysis and benefits assessment tools. i-Tree Tools help communities of all sizes to strengthen their urban forest management and advocacy efforts by quantifying the structure of community trees and the environmental services that trees provide.

The Arbor Day Foundation has partnered with utility companies across the country to allow homeowners to select best placement and species for their yards and to provide them with reduced or no-cost trees. Through this program, the Forest Service and Arbor Day plan to plant 100,000 trees over the next decade. Over 10 years, these trees will sequester 0.1 MMTCO₂e (equivalent to removing more than 3,000 cars from the road for 1 year), save 23 million kWh of electricity (equivalent to the electricity use of more than 2,000 homes for 1 year) and 155,000 therms of energy in natural gas offsets (equivalent to the electricity use of more than 110 homes for 1 year), treat 133 million gallons of stormwater (equivalent to the water used in 7.7 million showers), and absorb nearly 131,000 pounds of air pollutants. Taking into account property value increase, stormwater retention value, value of air quality improvements, and energy savings, these trees will net more than \$5 million in economic value over their lifetime.

Greenhouse Gas Reduction Goal

Goal	GHG Reduction Goal (MMTCO ₂ e per year by 2025) ²²
Plant 100,000 additional trees in urban areas.	0.1

Partnership Opportunities

Currently the Arbor Day Foundation is working with 24 utility partners across the country to implement the Energy-Saving Trees Program, including 4 new partnerships established in FY 2016. FY 2016 also marked the launch of the first statewide initiative in Florida. The Arbor Day Foundation is actively working to grow the program by cultivating relationships with new utilities and potentially other types of organizations as well. Once these new relationships are established, there could be a role for nonprofit partners in promoting and marketing the program if the main utility or other organization partners are interested in that type of support.

In addition, there is room to grow partnerships with State forestry agencies, particularly around the selection of appropriate tree species to offer homeowners. After trees are planted, State agencies and nonprofit partners could also play a key role in the maintenance and monitoring of tree health over time, helping homeowners to learn to properly care for their trees.

The Forest Service's Urban and Community Forestry program is also pursuing interagency partnerships that will lead to more tree plantings in communities across the country. For example, working with the Environmental Protection Agency's Office of Water, the Forest Service is piloting partnerships in three States that will direct Clean Water State Revolving Funds (SRF) to Green Infrastructure and tree planting work. In most of these pilots, State Urban and Community Forestry personnel will serve as technical experts, helping applicants for the SRF integrate green infrastructure work into otherwise gray infrastructure projects. Through this partnership, municipalities and partners planning tree planting and green infrastructure work will have access to the roughly \$1 billion appropriated into the SRF each year, funds previously not used or under-utilized for tree planting.

²² For information on how to interpret this goal, see p. 6.

CASE STUDY

In addition to the Energy-Saving Trees Program, the Forest Service and its partners are engaged in a wide variety of initiatives to encourage tree planting in urban areas. One of those, the MillionTreesNYC campaign, was launched in 2007 as a public-private partnership to plant and care for 1 million new trees across New York City. At the outset of creating the city's long-term sustainability plan, the City of New York Department of Parks and Recreation leveraged USDA Forest Service research science to make the case to the NYC Mayor's Office that planting trees was a sound investment that would make the city more livable and therefore more attractive to residents and businesses alike. By growing the urban forest, the City hopes to cool surface temperatures, enhance public space, and help advance long-term sustainability. One of the key pivot points for public officials and decision-makers was learning that there had been scientific research on the economic and environmental value of New York City's trees conducted by the USDA Forest Service, including application of the i-Tree Eco and Streets models. NYC Parks also used the Forest Service's Urban Tree Canopy research to help provide a context for these numbers and to determine where there was space across the densely built city to plant all of these new trees.

Representing a transformative investment in the urban forest, more than \$400 million in municipal capital funds were committed to the tree planting initiative via the city's sustainability plan. A formal public-private partnership was formed between NYC Parks and the New York Restoration Project. Through this partnership, public funding was matched by several more million dollars from corporate sponsors, private philanthropists, foundations, and individuals that were attracted through social networks, professionalized connections, and savvy outreach and marketing of the campaign. In addition, the leaders of the campaign created an advisory committee of more than 400 individuals from 109 organizations to provide insight and guidance to the implementation of the campaign. A natural resource manager reflected on the role of this network of advisors, "I think the advisory board serves several purposes: breadth and also longevity. So, the advisory board allows us to be able to say in a very real way that it's not just about tree planting; that we want MillionTreesNYC to be about creating...an urban forestry movement for planting and care and awareness."

MillionTreesNYC also launched a Stewardship Corps program to help educate and cultivate citizen stewards. This later evolved into the TreeLC program that offered trainings and mini-grants directly to community-based stewardship groups. Existing Forest Service research on civic stewardship was used to help support this program, as the STEW-MAP database of stewards in New York City provided a list of potential partners to MillionTreesNYC. A decision-maker in a public agency noted the transformative impact of the campaign, saying "the investment we were able to make into research, the improvements to our technology, the connections that we've made to academia, other government agencies, and other practitioners in the field have just been extraordinary."

In the fall of 2015, the millionth tree was planted ahead of schedule. In total, trees in New York City remove more than 38,000 metric tons of carbon dioxide from the atmosphere each year, the equivalent of eliminating more than 6,700 cars from the road. More information on MillionTreesNYC can be found at: <http://www.milliontreesnyc.org/>.



Volunteers work during a MillionTreesNYC fall planting day in New York City. Photo courtesy of New York City Department of Parks and Recreation and Malcolm Pinckney.

Proposed Actions

FY 2016

Action	Lead USDA Agency(s)
Plant 10,000 additional trees in urban areas.	Forest Service, in partnership with the Arbor Day Foundation

FY 2017

Action	Lead USDA Agency(s)
Plant 10,000 additional trees in urban areas.	Forest Service, in partnership with the Arbor Day Foundation

FY 2018

Action	Lead USDA Agency(s)
Plant 10,000 additional trees in urban areas.	Forest Service, in partnership with the Arbor Day Foundation

To further encourage investment in growing and maintaining the urban canopy, the Forest Service, in partnership with American Forests, will develop a Web platform that informs policy- and decision-makers about the role of trees in enhancing key services and systems, including but not limited to: human health; transportation systems; storm water capture and treatment; social equity, and infrastructure investment. This Web platform will include a succinct synthesis of state-of-the-art science

around each topic area, as well as case studies and policy examples that can be easily replicated in other communities. Guiding policy- and decision-makers in integrating trees into other facets of city management may increase investment in the urban canopy, helping to maintain the health of existing trees and plant more trees that will sequester and store GHG into the future. An initial version of the Web platform will be launched in late 2016.