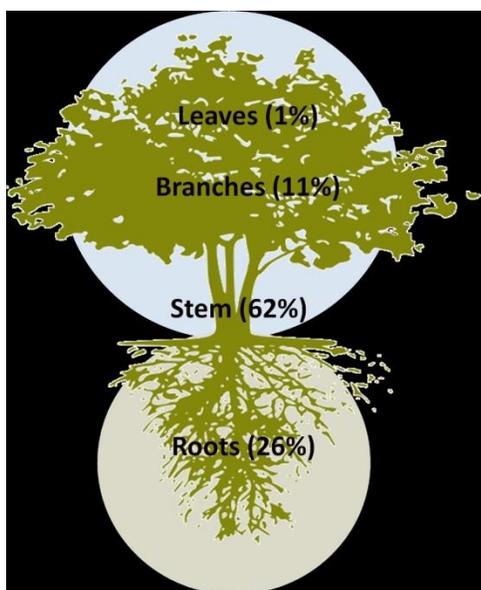


MUNICIPAL CLIMATE ACTION OPPORTUNITY

ENHANCING MUNICIPAL TREE COVER THROUGH ORDINANCES AND PLANTING PROGRAMS

Trees provide a number of climate benefits, removing greenhouse gases from the atmosphere, moderating the effects of increasing summer temperatures, and moderating stormwater impacts from heavy storms. While the amount of carbon sequestered per tree varies widely based on tree age, species, and other factors, trees are still the best available option for removing carbon from the atmosphere: some 90% of the carbon sequestration taking place in

America is attributable to trees. It is the trees' woody tissues and long life spans that make them so effective in capturing the carbon they remove from the atmosphere.



Source: Ecometrica

Oversight may be handled by a shade tree advisory board created for that purpose, or may be assigned to other agencies of the local government.

Municipalities can add climate benefits as a reason for promoting the protection and planting of trees throughout their township. Tree planting programs and tree ordinances are two of the approaches most often used by local municipalities. Some municipalities also using land use planning tools such as clustered development to protect existing forested lands.

Tree ordinances may address trees on public or private property, or both, detailing requirements for tree protection, care, and replacement. Most often the ordinances for private property apply to new development, but ordinances may also govern existing

properties as well. With lifespans of 50 or 100 years – or more – the trees installed in our parks, schoolyards, and streetscapes will live to see future conditions different from those of today. Municipalities in the region are beginning to re-examine the mix of tree species used in their planting programs, with an eye to species fitness under future conditions. Increasing heat stress and summer drought, and possible increases in pest organisms, may necessitate taking some previously reliable tree species off a township's recommended trees list.

Information on how tree species can be expected to fare under changed climate conditions is being developed by universities and arboreta throughout the region and by the Philadelphia Parks Department. Until the results are known for these multi-year test plots, municipal staff may find it instructive to look at the projections developed by the US Forest Service to identify the types of trees most vulnerable to the types of climate stresses expected in the Kittatinny region. Other strategies include selecting for species with ranges that extend to the south, and ordering trees from nurseries stocking trees grown at sites south of your location.

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Selecting native tree species can also help birds and other wildlife thrive under the increased stress created by climate change. Climate change thus presents multiple reasons for municipalities to re-examine the species used in their street trees and public lands planting efforts.



Image from Pennsylvania Bureau of Forestry

Where to get more information

i-Tree Design is on-line software that estimates the greenhouse gas and other ecobenefits provided by individual trees or small numbers of trees in your community. This tool is useful for estimating benefits for planned tree plantings or plantings on school campuses or public lands. <https://design.itreetools.org/>

I-Tree Landscape provides similar information for larger scale assessments, for example at the county or greenway level. <https://landscape.itreetools.org/>

The **US Forest Service Tree Atlas** provides information on current and forecast ranges for individual tree species. This information can help inform the selection of preferred species to plant in your township and avoidance of species which tend to require more northerly conditions. <https://www.fs.fed.us/nrs/atlas/>

Eartheasy provides a top ten list of tree species to consider if carbon sequestration and ability to tolerate urban conditions are priorities. <http://learn.eartheasy.com/2014/01/10-carbon-storing-trees-and-how-to-plant-them/>

The **Conservation Tools** website provides guidance on establishing a municipal tree ordinance and links to multiple references. <http://conservationtools.org/guides/37-tree-ordinance>

Members of the **Pennsylvania State Association of Township Supervisors (PSATS)** can also access information on tree ordinances via their on-line resource center. <http://psats.org/>

In 2015, **PA Township News** published lots of good information about municipal tree ordinances. <http://www.eastbradford.org/publicinfo/TownshipPolicies/Community%20Forests-Apr2015.pdf>

More guidance on tree ordinances is available from the **International Society for Arboriculture**. http://www.isa-arbor.com/education/resources/educ_TreeOrdinanceGuidelines.pdf