



## IDNR, Division of Forestry Community & Urban Forestry

### The Top Rated Trees that have the Capability of Improving Air Quality

The trees listed are the top rated tree species for improving air quality. The list is based on rating the combined effects of pollution removal, volatile organic compounds (VOCs) emissions, and air temperature reduction of 242 tree species at maturity under average US. Urban conditions (Nowak et al., inprep). Trees listed are tolerant to pollutant under which it is ranked unless otherwise noted. Overall ranking is based on individual pollutant effects weighted by the average pollutant externality value (estimate of societal cost of pollutant in the atmosphere).

Reference: Nowak, David J. *Tree Species Selection, Design, and Management to Improve Air Quality*. From the Annual Meeting Proceedings, ASLA 2000.

OZONE	CARBON MONOXIDE	OVERALL	* Species or various cultivars of species rated as recommended trees for street use our urban conditions (Bassuk et al., 1998; Bridwell, 1994; Flint, 1997). Note: hardiness zone and other tree factors need to be considered in urban tree selection.  I intermediate tolerance to pollutant  S sensitive to pollutant
Ulmus procera	Tilia Americana*	Ulmus procera*	
Tilia europea*i	Fagus grandifolia	Tilia europea	
Fagus grandifolia	Tilia tomentosa*	Metasequoia glyptostroboides*	
Liriodendron tulipifera*s	Fagus sylvatica	Fagus grandifolia	
Tilia americana*	Betula alleghaniensis	Tilia platyphyllos*	
Fagus sylvatica	Tilia euchiora*	Betula alleghaniensis	
Tilia platyphyllos*s	Ulmus procera*	Fagus sylvatica	
Metasequoia glyptostroboides*	Ginkgo biloba*	Tilia americana*	
Betula papyrifera	Liriodendron tulipifera*	Ulmus americana	
		Ulmus thomas	
PARTICULATE MATTER	SULFUR/ NITROGEN DIOXIDE	OVERALL	T tolerant to sulfur dioxide (SO <sub>2</sub> ), unknown tolerant to NO <sub>2</sub>  I/U intermediate tolerance to SO <sub>2</sub> ; unknown tolerance to NO <sub>2</sub>  s/u Sensitive to SO <sub>2</sub> ; unknown tolerance to NO <sub>2</sub>  T/S Tolerant to SO <sub>2</sub> ; sensitive to NO <sub>2</sub>
Ulmus procera*	Ulmus procera*i/u	Tsuga heterophylla	
Platanus occidentalis*	Tilia europea*T/S	Tilia cordata*	
Juglans nigra	Populus deltoides T	Tsuga mertensiana	
Tilia europea	Platanus occidentalis*T	Tilia tomentosa*	
	Platanus x acerifolia*T	Betula papyrifera	
	Metasequoia glyptostroboides*T	Celtis laevigata*	
	Liriodendron tulipifera*T	Fraxinus excelsior*	
	Juglans nigra S/U	Ulmus crassifolia	
	Betula alleghaniensis S	Betula nigra*	
	Fagus grandifolia		

Nowak has other trees listed, but we have only listed those for our region of the U.S.

For more information: Call the CUF office at 317-591-1170