

Urban Forestry/Urban Greening Research

Green Cities: Good Health



UNIVERSITY of WASHINGTON

summaries of scientific research about human health and well-being and urban nature experiences

Safe Streets

Effects of Roadside Trees and Vegetation on Transportation Safety

City streets are not just thoroughfares for motor vehicles; they serve as public spaces where people walk, shop, meet, and participate in activities that make urban living enjoyable. Conventional guidelines for transportation safety regard trees as roadside fixed-objects that constitute driving hazards. Meanwhile urban foresters, designers, and planners encourage tree planting to enhance the livability of urban streets, and improve walkability. This article surveys the research on roadside vegetation benefits, and the scientific evidence concerning city trees, and transportation safety.

Research Highlights:

- The public judges communities having vegetation-bordered roads more positively, with ratings of visual quality for an adjoining city or town increasing as the amount of roadside vegetation increases. (Wolf, 2003, *Journal of Arboriculture*)
- Commuting by car is a stressful experience of urban life. Drivers seeing natural roadside views show lower levels of stress and frustration compared to those viewing all-built settings. (Parsons et al., 1998, *Journal of Environmental Psychology*)
- Transportation safety guidelines for roadsides are generally derived from studies of high speed rural roads, while recommendations for urban streets have been less rigorously derived. (McGinnis, 2001, NCHRP Project G-17-13)
- Far less than 1% of U.S. annual vehicle crashes involve a tree on an urban street.²⁴ Crash prevention efforts should address high-risk conditions, such as reducing plantings at curves, rather than generalized tree removal. (Bratton and Wolf, 2005, TRB Proceedings 05-0946)
- The most recent research suggests that trees may improve driving safety. One study found a 46% decrease in crash rates across urban arterial and highway sites after landscape improvements were installed. Another study found that placing trees and planters in urban arterial roadsides reduced mid-block crashes by 5% to 20%. (Mok et al., 2006, *Landscape and Urban Planning*; Naderi, 2003, *Transportation Research Record*)
- Context Sensitive Solutions is a transportation planning strategy that integrates built elements that are valued by communities, including trees and landscape. (www.contextsensitivesolutions.org/content/topics/what_is_css/)

More information at: www.greenhealth.washington.edu

Additional social science about urban roadside landscapes and transportation safety can be found at the Green Cities: Good Health web site (including research sources & citations).

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