

Integrating vegetation into sustainable transportation planning may benefit public health

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Strategic placement of trees and plants near busy roadways may enhance air quality and positively impact public health.

In recent years, the health of people living, working, or going to school near roads with high traffic volume has been a rising national concern. Studies conducted in the United States and throughout the world have shown that [air pollution](#) levels are especially elevated near high-volume roadways. A multidisciplinary group of researchers, planners and policymakers recently gathered in Sacramento, Calif. to discuss roadside vegetation as a viable option for mitigating these adverse health impacts from air pollution. The group combined their key concerns and findings for an article in TR News magazine.

The article, by the U.S. Environmental Protection Agency, U.S. Forest Service and other organizations, addresses planning practices for locations along major transportation corridors, and considers options to address short- and long-term impacts of human exposure to pollutants emitted by transportation sources.

The group agreed that vegetation barriers are a form of [green infrastructure](#) that can provide environmental, economic, and social benefits to their surrounding areas. They provide aesthetic value while having the potential to reduce air pollution, because plants naturally capture some of the pollutants emitted by traffic.

"Properly designed and managed roadside vegetation can help us breathe a little easier," said Dr. Greg McPherson, research forester at the U.S. Forest Service's Pacific Southwest Research Station. "Besides reducing pollutants in the air, these buffers can protect water quality, store carbon, cool urban heat islands and soften views along our streetscapes. They are essential components of green infrastructure in cities and towns."

Scientists in the group have conducted research using field studies, [air quality](#) modeling of pollutant transport and deposition in roadside vegetative barriers, and tree performance studies. Their research indicates that vegetative barriers will reduce pollutant concentrations in carefully designed sites, however, under certain circumstances, concentrations can be increased. The article provides guidance on optimal design considerations (length, width, height, density) for achieving maximum barrier performance based on research to date. Ongoing studies are providing valuable new knowledge about barrier design and management, however, further research is needed to explore effects of wind conditions and other variables.

More information: treeearch.fs.fed.us/pubs/45250

Provided by USDA Forest Service

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