C5
Environmental/Health

USE OF NOISE BARRIERS AND ROADSIDE VEGETATION AS POTENTIAL MITIGATION METHODS FOR TRAFFIC EMISSIONS NEAR LARGE ROADWAYS

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Public health concerns for populations spending time near high traffic roadways has increased substantially in recent years. Air quality measurements indicate high pollutant concentrations near these large roads. However, roadside features have been shown to substantially affect the concentrations and exposures for the nearby populace. Recently, mobile monitoring has been implemented to identify the spatial variability of pollutant concentrations near large roads. These measurements have been used to identify the potential for noise barriers and roadside vegetation to reduce near-road air pollution concentrations, including the development of air dispersion model algorithms to simulate pollutant transport and dispersion around these features. This presentation will provide an overview of studies that have investigated how roadside features alter near-road air quality; how combinations of mobile monitoring measurements and wind tunnel assessments have been used to develop dispersion modeling algorithms; and recommendations on the design and location of these features to maximize opportunities for pollution reduction and minimize potential increases in near-road pollutant concentrations. The presentation will focus on how small and medium sized communities can incorporate these results into transportation planning projects.