



Percent Tree Cover along Walkable Roads

This EnviroAtlas community map estimates the percentage of tree cover within an estimated pedestrian area alongside walkable roads.

Why is tree cover along walkable roads important?

Tree cover provides many services, including air and water filtration, carbon storage, natural hazard mitigation, and pleasing settings that encourage people to spend time outdoors. Street trees in particular can reduce noise, buffer pedestrians from traffic, and cool summer temperatures, making these frequently traveled spaces more hospitable. There are many health benefits that can be gained from the natural services that trees provide; examples from scientific studies show trees improve mental health, promote physical activity, encourage social interaction, and protect against heat related illness and ultraviolet light.

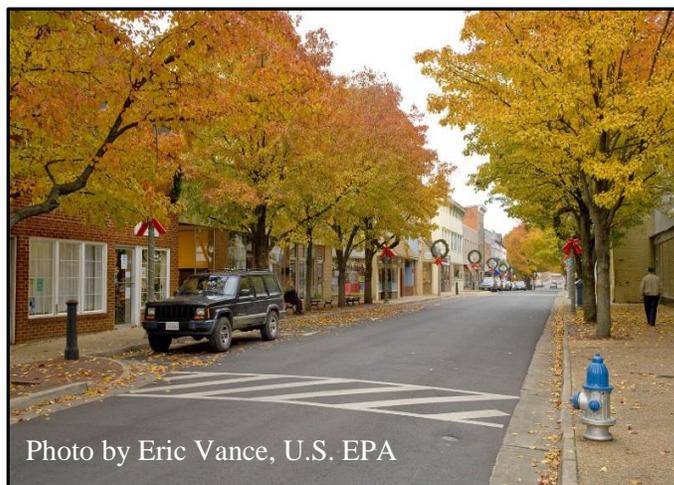
Street trees promote active lifestyles by increasing the aesthetic value, comfort, and safety of walking outdoors. In urban centers, people frequent parks and tree-lined districts to socialize, recreate, and engage with nature. Spending time in these settings has been shown to decrease stress, depression, and feelings of hostility.

Tree-lined streets offer a reprieve from extreme summer day and nighttime temperatures through evapotranspiration and shading. This cooling effect increases with the amount of woody vegetation. During heat events, tree cover can significantly reduce local ambient air temperatures, helping to reduce stress, hospital admissions, and mortality associated with extreme heat.

Tree cover further serves communities by filtering and absorbing water that flows off impervious surfaces like roads and parking lots. Tree cover helps to regulate water flow through a watershed by intercepting, absorbing, and slowly releasing water. This “sponge” effect can reduce negative impacts of stormwater runoff. The lack of significant tree cover and other vegetation in and around populated areas can result in more frequent and/or severe flooding, potentially resulting in adverse health effects.

How can I use this information?

The map, Percent Tree Cover along Walkable Roads, can support assessments of existing “green” assets across city



blocks and neighborhoods. When overlaid with the EnviroAtlas map, Percent Green Space within $\frac{1}{4}$ km², it indicates where street trees can help mitigate urban heat islands. It can be combined with the EnviroAtlas Intersection Density map to target pedestrian areas for green enhancements. Demographic layers can be added to redress unequal access to health boosting tree-lined streets. All of these layers may be combined with local maps, such as school sites, bus and bike routes, and greenways, to further support citizens, decision-makers, and researchers.

How were the data for this map created?

This map is based on one-meter resolution land cover data derived for each EnviroAtlas community, and NAVTEQ road centerlines and attributes. EnviroAtlas land cover data are classified to one-meter resolution from aerial photography and supplemental data through remote-sensing methods. Land cover classes that were considered tree cover for this map layer included trees and forests and woody wetlands.

Only NAVTEQ roads with a speed limit less than 55 miles per hour were included to isolate potentially walkable streets. Road width was estimated based on the given or calculated number of lanes. The estimated sidewalk area was determined to lie within 7.5 meters of the road edge. One meter of overlap with the road was added to account for variabilities in the centerline placement and in the actual road width, leading to a focus area width of 8.5 meters on each side of the road (Figure 1).

