



## Percent of Workers Who Bike or Walk to Work

This EnviroAtlas map estimates the percentage of workers residing within each U.S. Census block group who bike or walk to work.

### Why is commuter transport choice important?

City planners use metrics that examine commuting modes of travel to evaluate the accessibility of workplaces, the diversity of land use, and the usage of alternative forms of transport. Three out of 4 people in the U.S. drive to work.<sup>1</sup> In 2014, urban Americans spent an extra 6.2 billion hours in traffic congestion at a cost of an extra 3.1 billion gallons of fuel (about \$160 billion).<sup>2</sup> Walking and bicycling are alternative commuting modes employed by just 3–4% of workers nationwide.<sup>3</sup> Five states (Alaska, Oregon, Montana, New York, and Vermont) have the highest percentage of biking and walking commuters, ranging from 6.2–8.9% of the total number of commuters in all categories.<sup>3</sup> Though walking and biking to work cover a small segment of all commuting types, both have increased in recent years.

Workers living in cities walk and bicycle to work more than those living in suburbs or outside of a metropolitan area. Walking to work in the U.S. declined by half since 1980, while bicycling increased from 0.5% to 0.6% over the same time period.<sup>4</sup> However, between 2000 and the U.S. Census American Community Survey 2008–2012 time period, the number of workers across the U.S. who traveled to work by bicycle increased almost 61% from about 488,000 in 2000 to about 786,000 individuals in 2008–2012, the largest percentage increase of any other commuting mode.<sup>4</sup>

Physical activities like walking or biking to work have been shown to be associated with reduced obesity, diabetes, and cardiovascular disease in participants.<sup>5</sup> Besides increasing health and physical fitness, physical activity also reduces depression and anxiety and improves cognitive function. In addition, walking or biking to work can reduce the costs of owning and maintaining one or more vehicles.

The extent of participation in active commuting such as walking or biking is influenced by the proximity of residential and employment centers and the design of the surrounding neighborhood (e.g., connectivity and street grid pattern). Typically, neighborhood residential streets empty into higher-capacity collector and arterial streets. Collector and arterial streets are designed to be wide to allow vehicles to move faster and to handle large traffic volumes. Wide streets are



Photo: Pedestrians and cyclists in NYC, J. Henderson

difficult and often dangerous for pedestrians and bicyclists to cross or to share with vehicles, especially if they lack sidewalks, crosswalks, or bike lanes.<sup>1</sup> Poor street grid environments discourage walking and bicycling, leading people to rely on driving, even for short trips. High connectivity street networks with short blocks can provide multiple routes for walkers and bike traffic, reducing the need for wide arterials.

Understanding active commuter movement is an important element in planning for increased walking and bicycling commuting. Straight line distance to a destination may be relatively short, but connectivity may be hampered by dead ends or wide arterials. Other elements besides distance to work are important for walking and biking to be acceptable options for residents—pedestrian-friendly routes, bike lanes, street grid design, traffic density and speed, sidewalk setback, presence of landscaping and street trees, lighting, and security.<sup>6,7</sup> Studies have shown a relationship between inviting walkable and bike-able environments and the amount of each activity that actually occurs.

Communities that pursue compact growth patterns and mixed use development facilitate workplace accessibility by automobile, transit, biking, and walking. Research indicates that people who live in compact neighborhoods walk, bike, and use transit more (and drive less) than people living in lower density neighborhoods.<sup>1</sup> Continued progress in promoting active commuting by walking and bicycling in metro areas, including suburbs, will help to reduce vehicle miles traveled and [greenhouse gas emissions](#).

## How can I use this information?

This map allows users to evaluate various census block groups by the percentage of workers who commute to work by walking or bicycling. Federal, state, and local policymakers can use commuting information to understand workers' transportation choices and make suggestions for improving future transportation infrastructure. Employers can use this information to help workers to adopt alternative transport options. Communities seeking to decrease vehicle miles traveled may encourage pedestrian- and bicycle-friendly development in areas already supporting a large working age population. EnviroAtlas community data layers such as Percent Tree Cover along Walkable Roads overlaid on this map can help prioritize neighborhoods for improvements to shade and aesthetics. This information may also be useful when marketing the availability of areas for development. Planners can use the information to help evaluate whether proposed commercial development may improve or exacerbate regional imbalances between the location of job centers and residential areas. New employment in areas with poor accessibility to residential neighborhoods would likely result in longer commutes and additional traffic on regional highways, particularly if public transportation were lacking. New employment in areas of high accessibility, on the other hand, can provide more residents with opportunities to live closer to jobs, shopping, and services and to take alternate means of travel to work.

## How were the data for this map created?

This metric was compiled from U.S. Census [American Community Survey \(ACS\)](#) 5-year Summary Data for 2008–2012. ACS obtained the data (Table B08301) at the census block group scale through survey questions related to commuting mode. The ACS data are collected every month through statistical sampling of the total population; estimates are published on an annual basis. The data cover workers older than 16 years of age and younger than 64 years who were

## Selected Publications

1. Kramer, M. 2013. [Our built and natural environments: A technical review of the interactions among land use, transportation, and environmental quality, Second edition](#). Environmental Protection Agency, Washington, D.C. 139 p.
2. Schrank, D., B. Eisele, T. Lomax, and J. Bak. 2015. [Urban mobility scorecard](#). Report published jointly by the Texas A&M Transportation Institute and Inrix, Inc. 47 p.
3. Friedman, L.F. 2014. [Here are the states where the most people bike or walk to work](#). Business Insider-Science. Accessed August 2016.
4. McKenzie, B. 2014. [Modes less traveled: Bicycling and walking to work in the United States 2008–2012](#). American Community Survey Report 25. U.S. Census Bureau, Washington, D.C.
5. Pucher, J., R. Buehler, D. Bassett, and A.L. Dannenberg. 2010. [Walking and cycling to health: A comparative analysis of city, state, and international data](#). American Journal of Public Health 100(10): 1986–1992.
6. Schlossberg, M., and N. Brown. 2004. [Comparing transit-oriented development sites by walkability indicators](#). *Transportation Research Record* 1887:34–42.
7. Buehler, R., and J. Pucher. 2012. [Cycling to work in 90 large American cities: New evidence on the role of bike paths and lanes](#). *Transportation* 39:409–432.

employed during the week prior to the ACS reference week and did not work at home. Respondents answered questions about the means of transportation used to get to work. The percentage of workers using a specific travel mode was obtained by dividing the number of workers in that category by the total population of workers.

## What are the limitations of these data?

The accuracy of this data layer depends on the accuracy of the ACS Survey, which could be limited by its multiple data collection agencies, methods, and calculations. Accuracy of ACS data increases with the use of multiple-year summary data and the use of *percentages* of household characteristics rather than *numbers*. Estimates for rural areas with low populations should be interpreted with caution.

## How can I access these data?

EnviroAtlas data can be viewed in the interactive map, accessed through web services, or downloaded. American Community Survey [annual](#) and [summary file](#) data may be downloaded from the ACS websites. Commuting data may be found on the U.S. Census Bureau website [American Fact Finder](#); enter ID number B08301.

## Where can I get more information?

A selection of resources on the relationships among city planning, commuting modes, and environmental quality is listed below. For additional information on data creation, access the [metadata](#) for the data layer. To ask specific questions about this data layer, please contact the [EnviroAtlas Team](#).

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