



Office of Health Equity

Healthy Communities Data and Indicators Project

Short title: Walkable Distance to High Quality Public Transit.

Full Title: Percent of population residing within ½ mile of a major transit stop.

1. Healthy Community Framework:

Meets basic needs of all.

2. What is our aspirational goal?

Safe, sustainable, accessible and affordable transportation options.

3. Why is this important to health?

a. Significance and health connection.

A strong and sustainable transportation system supports safe, reliable, and affordable transportation opportunities for walking, bicycling, and public transit, and helps reduce health inequities by providing more opportunities for access to healthy food, jobs, health care, education, and other essential services. Active and public transportation promote health by enabling individuals to increase their level of physical activity, potentially reducing the risk of heart disease and obesity, improving mental health, and lowering blood pressure. Further, the transition from automobile-focused transport to public and active transport offers environmental health benefits, including reductions in air pollution, greenhouse gases and noise pollution, and leads to greater overall safety in transportation. Compared to public transit, a higher portion of trips by automobiles are associated with traffic accidents and increased air pollution, which are linked to increased rates of respiratory illness and heart disease.

b. Summary of evidence.

Individuals who live close to transit are more likely to be transit users and drive their cars less than people residing far from transit. Increased access to active and public transit is associated with increases in physical activity, which reduces risks of chronic disease and obesity.

c. References.

1. Ewing R, Cervero R. Travel and the built environment: A meta-analysis. *JAPA* 2010; 76(3): 265-294.
2. Frank LD, Andresen M, Schmid T. Obesity relationships with community design, physical activity, and time spent in cars. *Am J Prev Med* 2004; 27(2): 87-96.
3. Besser LM, Dannenberg AL. Walking to public transit: Steps to help meet physical activity recommendations. *Am J Prev Med* 2005; 29(4): 273-280.
4. Centers for Disease Control and Prevention. [CDC Recommendations for Improving Health through Transportation Policy \(http://www.cdc.gov/transportation/docs/final-](http://www.cdc.gov/transportation/docs/final-Health%20through%20Transportation%20Policy)



[cdc-transportation-recommendations-4-28-2010.pdf](#). National Center for Environmental Health.2008.

4. What is the indicator?

a. Detailed definition.

Percent of population residing within ½ mile of bus/rail/ferry stop whose headway (waiting time) is less than 15 minutes during peak commute hours.

b. Stratification.

Race/Ethnicity (8 U.S. Census groups).

c. Data Description.

- i. Data Sources: 2012 Transit Stops from the [San Diego Association of Governments \(www.sandag.org/\)](http://www.sandag.org/), the [Southern California Association of Governments \(www.scag.ca.gov\)](http://www.scag.ca.gov), and the [Metropolitan Transportation Commission \(www.mtc.ca.gov\)](http://www.mtc.ca.gov) ; [2008 Transit Stops from the Sacramento Council of Governments \(www.sacog.org\)](http://www.sacog.org); 2010 block-level population data by race and ethnicity from the U.S. Census Bureau (provided by California State Data Center at the California Department of Finance).
- ii. Years available: 2012 (2008 for SACOG region).
- iii. Updated: decennially.
- iv. Geographies available: census tracts, cities/towns, counties, and region for the 6-county SCAG region (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura), San Diego County, 3-county SACOG region (Placer, Sacramento, and Yolo), and 9-county Bay Area MTC region (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma).

Transit stops included those served by one or more fixed route transit service with a frequency of 15 minutes or less during peak hours (6-9AM, 3-6PM). For the SCAG and MTC regions, stops with multiple routes whose average frequency was 15 minutes or less were included (e.g. 2 different bus routes with 30 minute frequencies each). Geospatial software (ArcMAP 10.1) was used to identify census blocks with centroids inside ½ mile buffers of the transit stops.

Block-level 2010 Census redistricting data (100% counts by race/ethnicity) was merged with blocks inside the transit access area, and population counts were aggregated by census tract, city/town, county, and region. For each geography level and race/ethnicity strata, rates of transit access were calculated. Standard errors, relative standard errors, and 95% upper and lower confidence intervals, and decile rankings for cities and census tracts were calculated.



5. Strengths and limitations.

Transit stops and service are subject to change and this analysis may not reflect recent changes. Census blocks are designated as inside or outside of transit buffers based on block centroids, which may result in small under- or overestimates of the population within buffer areas. The population data are from a slighter earlier time period (2010) than the transit data (2012), which may introduce a small error if the population numbers or demographics have changed. This indicator measures geographic access; however, other characteristics of public transit, such as affordability and personal safety (e.g. crime), also impact transit use.

6. Projects using this indicator.

The definition of this indicator was crafted to be consistent with the definition of a transit priority project in 2008 California legislation known as SB375 or the Sustainable Communities Strategy §21155 (b)(3).