Appendix A: Variable Definitions

Nationally Available Variable	Definition
Dependent Variables	
Automobile share	The number of workers in the tract who reported commuting by automobile divided by total number of workers in the tract who commuted by automobile, public transit, walk, and bicycle. Workers who worked from home or commuted by other means were excluded. (Source: ACS 2009-2013)
Public transit share	The number of workers in the tract who reported commuting by public transit divided by total number of workers in the tract who commuted by automobile, public transit, walk, and bicycle. Workers who worked from home or commuted by other means were excluded. (Source: ACS 2009-2013)
Walk share	The number of workers in the tract who reported commuting by walking divided by total number of workers in the tract who commuted by automobile, public transit, walk, and bicycle. Workers who worked from home or commuted by other means were excluded. (Source: ACS 2009-2013)
Bicycle share	The number of workers in the tract who reported commuting by bicycle divided by total number of workers in the tract who commuted by automobile, public transit, walk, and bicycle. Workers who worked from home or commuted by other means were excluded. (Source: ACS 2009-2013)
Socioeconomic Variables	
Elderly (>64 years) share	Proportion of tract residents who are older than 64 (Source: ACS 2009-2013)
Non-Hispanic Black share	Proportion of tract residents who are Non-Hispanic Black (Source: ACS 2009-2013)
Asian share	Proportion of tract residents who are Asian (Source: ACS 2009-2013)
Hispanic share	Proportion of tract residents who are Hispanic (Source: ACS 2009-2013)
Disabled share	Proportion of tract residents who have a disability (Source: ACS 2009-2013)
Median Income (thousands of 2013 dollars)	Median annual income of households in tract (in thousands of 2013 dollars) (Source: ACS 2009-2013)
Unemployed share	Proportion of tract residents in the workforce who are unemployed (Source: ACS 2009-2013)
In College share	Proportion of tract residents enrolled in school who are at a university (Source: ACS 2009-2013)
Work in Construction share	Proportion of tract workers who are in the construction industry (Source: ACS 2009-2013)
Work in Manufacturing share	Proportion of tract workers who are in the manufacturing industry (Source: ACS 2009-2013)
Born in Same State share	Proportion of tract residents who live in the state where they were born (Source: ACS 2009-2013)
General Neighborhood Characteristics	
Population per sq. mi. (000s)	Population divided by land area (water is excluded). "000s" indicates that the values are in thousands. 1 sq. mi. = 2.59 sq. km. (Source: ACS 2009-2013)
Employment within 1 mi. (000s)	The total number of jobs within one-mile of the center of the census tract. "000s" indicates that the values are in thousands. 1 sq. mi. = 2.59 sq. km. (Source: LEHD 2011)
Pre-1940 housing share	Proportion of tract housing units constructed before 1940 (Source: ACS 2009-2013)
Rental housing share	Proportion of tract housing units occupied by renters (Source: ACS 2009-2013)
Regional Characteristics	
Warm climate (0 = no, 1 = yes)	Variable indicating that the tract typically experiences fewer than 10 days per year with high temperatures colder than 32°F (0°C) (0 = no, 1 = yes). (Source: NOAA 1981-2010)
Northeast state (0 = no, 1 = yes)	Variable indicating that the tract is in a Northeastern state (not including MA, which is excluded from the study): CT, DC, DE, MD, NJ, NY, PA, RI (0 = no, 1 = yes).

Southern state (0 = no, 1 = yes)	Variable indicating that the tract is in a Southern state: AL, AR, FL, GA, LA, MS, NC, OK, SC, TN, TX (0 = no, 1 = yes).
West Coast state (0 = no, 1 = yes)	Variable indicating that the tract is in a West Coast state: CA, OR, WA (0 = no, 1 = yes).
Detailed Environment Variable	**Definition**
Transportation System Characteristics	
Proportion of roadways with sidewalks	The proportion of roadways that have sidewalks on both sides. Complete coverage is continuous sidewalks on both sides of each roadway segment. Therefore, if a street has sidewalks on both sides, it has 100% (1.00) sidewalk coverage. If a street has a complete sidewalk on one side, but no sidewalk on the other, it has 50% (0.50) coverage. The variable is calculated as the distance-weighted average of sidewalk coverage for all roadway segments. Note that alleys are not included in the overall sidewalk coverage calculation because they are assumed to be shared spaces (i.e., no sidewalk is needed). Freeways are also not included. The variable is estimated to the nearest 0.1. (Source: Google Earth 2015)
Bicycle facility density (mi. per sq. mi.)	The total length of bicycle facilities divided by the census tract area. Bicycle facilities include cycle tracks, bicycle lanes, shared lane markings, bicycle boulevards, and multi-use trails. They do not include streets that only have bicycle route signs. Bicycle facility miles are calculated using the same methodology as automobile lane miles. If bicycle lanes or shared lane markings are on both sides of a one-km-long street segment, this represents two km of bicycle facilities (this avoids the problem of misrepresenting one-way bicycle facilities on one-way streets). Bicycle boulevards and multi-use trails are two-way facilities, so one-km of centerline counts as two km of bicycle facilities. (Source: Google Earth 2015)
Major trail between the tract and local business district (0 = no, 1 = yes)	Indicates whether or not there is a major trail between the census tract and the local business district. The major trail must meet the criteria of a multi-use trail and not require a person using the trail to travel more than 150% of the shortest-path distance to the local central district, and be used for more than 50% of the distance between the center of the census tract and the local business district. The local central business district is the downtown of the community containing the census tract. In the case of a suburban census tract, the "central business district" is the historic center of the suburb (not the distance to the major city CBD at the center of the region). In the case of a major city census tract, the local central business district is the same as the regional central business district. (Source: Google Maps 2015; Google Earth 2015)
Major trail between the tract and the closest university campus (0 = no, 1 = yes)	Indicates whether or not there is a major trail between the census tract and the closest university campus. The major trail must meet the criteria of a multi-use trail, not require a person using the trail to travel more than 150% of the shortest-path distance to the closest university campus, and be used for more than 50% of the distance between the center of the census tract and the closest university campus. To be considered, a campus must have a minimum of 2,000 students. (Source: Google Maps 2015; Google Earth 2015)
Transit stops per sq. mi.	The number of bus stops or rail stations within the census tract divided by the census tract area in square miles. (Source: Google Maps 2015; Google Earth 2015)
Rail station within 0.5 mi. of tract (0 = no, 1 = yes)	Indicates whether or not there is a rail station within the census tract or within 0.5 miles of the census tract boundary. (Source: Google Maps 2015; Google Earth 2015)
Proportion of developed land used for off-street parking	The proportion of all non-park, non-agricultural parcel areas that are visible as parking lots from aerial photographs. This includes surface parking lots as well as parking structures that have top-level parking. It does not include parking structures that do not have top-level parking. The variable is estimated to the nearest 0.1. (Source: Google Earth 2015)

Proportion of roadways with 2 or 3 lanes	The distance-weighted proportion of all roadway segments that are either 2 or 3 lanes (sum of both directions). The number of lanes is assessed at a typical location between intersections, so it does not include left- or right-turn lanes. The variable is estimated to the nearest 0.1. (Source: Google Earth 2015)
Proportion of roadways with 6 or more lanes	The distance-weighted proportion of all roadway segments that are either 6 or more lanes (sum of both directions). The number of lanes is assessed at a typical location between intersections, so it does not include left- or right-turn lanes. The variable is estimated to the nearest 0.1. (Source: Google Earth 2015)
Freeway within the tract (0 = no, 1 = yes)	A limited-access freeway is within or on the boundary of the census tract. (Source: Google Earth 2015)
Freeway between tract & employment center (0 = no, 1 = yes)	A limited-access freeway is located between the census tract and the nearest employment center. (Source: Google Earth 2015)
Land Use Characteristics	
Local business district near tract (0 = no, 1 = yes)	Indicates that there is a local business district within 2 miles (3.2 km) of the center of the census tract. (Source: Google Earth 2015)
Distance to regional central business district (mi.)	Distance between the center of the census tract and the center of the closest major regional central business district. The major regional central business district is located at the center of a US Census Metropolitan Statistical Area (MSA). (Source: Google Earth 2015)
Distance to closest university campus (mi.)	Distance between the center of the census tract and the center of the closest university campus. To be considered, a campus should have a minimum of 2,000 students. (Source: Google Maps 2015; Google Earth 2015)
Distance to closest shopping center (mi.)	Distance between the center of the census tract and the center of the shopping center, as identified from a Google Maps search. The Google Maps search query that is used is "Shopping centers near Location X" where Location X is the center of the census tract. (Source: Google Maps 2015; Google Earth 2015)
Tract has a mix of land uses (0 = no, 1 = yes)	Indicates whether or not a census tract has 20% or more of its developed land area used for non-residential uses. Developed land area is all non-park, non-agricultural parcel areas that are visible from aerial photographs. This variable is estimated from aerial photographs rather than parcel-based land use maps. (Source: Google Earth 2015)
Range of elevations at edge of tract (ft.)	The highest elevation minus the lowest elevation at five specific points in the census tract. Elevations are taken at the 1) center of the north side, 2) center of the east side, 3) center of the south side, and 4) center of the west side of the census tract boundary. An elevation is also taken at the 5) geographic center of the tract. (Source: Google Earth 2015)