CPBS
Center for Pedestrian and Bicyclist Safety

A Tier-1 University Transportation Center

What Policy and Budget Choices Yield the Greatest Decreases in Pedestrian & Bicyclist Fatality Rates?

July 2024

A Report From the Center for Pedestrian and Bicyclist Safety

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About the Center for Pedestrian and Bicyclist Safety (CPBS)

The Center for Pedestrian and Bicyclist Safety (CPBS) is a consortium of universities committed to eliminating pedestrian and bicyclist fatalities and injuries through cutting-edge research, workforce development, technology transfer, and education. Consortium members include: The University of New Mexico; San Diego State University; The University of California Berkeley; The University of Tennessee Knoxville; and The University of Wisconsin Milwaukee. More information can be found at: https://pedbikesafety.org

Disclaimer

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16. Abstract

US pedestrian fatalities increased from 22,100 during the 2008-2012 five-year period to 32,674 during the 2017-2021 five-year period (a 48% increase). Bicyclist fatalities increased from 3,385 to 4,450 during the same timeframe (a 31% increase). However, changes in fatality rates were not distributed evenly across US communities between 2008-2012 and 2017-2021. Overall, ACS journey-to-work data showed that US pedestrian commuting decreased from 2.82% to 2.48% and bicycle commuting decreased from 0.56% to 0.48% of all workers between the baseline and later study periods. However, pedestrian commuting increased in MSAs such as Virginia Beach, VA, San Diego, CA, San Jose, CA, and Dallas, TX and counties such as Collin County, TX (Plano), San Francisco County, CA, Davidson County, TN (Nashville), and Jefferson County, AL (Birmingham). Bicycle commuting increased in MSAs such as New York, NY, San Antonio, TX, and Washington, DC, and counties such as Collin County, TX (Plano), New York County, NY (Manhattan), and Hudson County, NJ (Jersey City). Nationally, pedestrian fatality rates increased by 51% (from 1.12 fatalities per thousand to 1.70 fatalities per thousand walk commuters) and bicyclist fatality rates increased by 40% (from 0.86 fatalities per thousand to 1.20 fatalities per thousand bike commuters). Yet, pedestrian fatality rates decreased in New York, Massachusetts, New York County, NY (Manhattan), Collin County, TX (Plano), Kings County, NY (Brooklyn), and Essex County, MA. Bicyclist fatality rates decreased in New York, Massachusetts, Arkansas, Hartford County, CT, Queens County, NY, Kings County, NY (Brooklyn), and San Mateo County, CA. Identifying leading communities may help reveal policies and practices that can be used in other parts of the country to increase pedestrian and bicyclist activity and reduce pedestrian and bicyclist fatalities.

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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
		AREA		
in^2	square inches	645.2	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yard	0.836	square meters	m^2
ac	acres	0.405	hectares	ha
mi^2	square miles	2.59	square kilometers	km^2
		VOLUME		
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
		NOTE: volumes greater than 1000 L shall be shown in m^3		
		MASS		
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
		TEMPERATURE (exact degrees)		
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
		ILLUMINATION		
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	$candela/m^2$	cd/m^2
		FORCE and PRESSURE or STRESS		
lbf	poundforce	4.45	newtons	N
lbf/in^2	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
		AREA		
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
ha	hectares	2.47	acres	ac
km^2	square kilometers	0.386	square miles	mi^2
		VOLUME		
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m^3	cubic meters	35.314	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
		MASS		
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
		TEMPERATURE (exact degrees)		
°C	Celsius	1.8C+32	Fahrenheit	°F
		ILLUMINATION		
lx	lux	0.0929	foot-candles	fc
cd/m^2	$candela/m^2$	0.2919	foot-Lamberts	fl
		FORCE and PRESSURE or STRESS		
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in^2

What Policy and Budget Choices Yield the Greatest Decreases in Pedestrian & Bicyclist Fatality Rates?

A Center for Pedestrian and Bicyclist Safety Research Report

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Acronyms, Abbreviations, and Symbols

AADT	Annualized Average Daily Traffic
ADA	Americans with Disabilities Act
FHWA	Federal Highway Administration
NHTSA	National Highway Traffic Safety Administration

Abstract

US pedestrian fatalities increased from 22,100 during the 2008-2012 five-year period to 32,674 during the 2017-2021 five-year period (a 48% increase). Bicyclist fatalities increased from 3,385 to 4,450 during the same timeframe (a 31% increase). However, changes in fatality rates were not distributed evenly across US communities between 2008-2012 and 2017-2021. Overall, ACS journey-to-work data showed that US pedestrian commuting decreased from 2.82% to 2.48% and bicycle commuting decreased from 0.56% to 0.48% of all workers between the baseline and later study periods. However, pedestrian commuting increased in MSAs such as Virginia Beach, VA, San Diego, CA, San Jose, CA, and Dallas, TX and counties such as Collin County, TX (Plano), San Francisco County, CA, Davidson County, TN (Nashville), and Jefferson County, AL (Birmingham). Bicycle commuting increased in MSAs such as New York, NY, San Antonio, TX, and Washington, DC, and counties such as Collin County, TX (Plano), New York County, NY (Manhattan), and Hudson County, NJ (Jersey City). Nationally, pedestrian fatality rates increased by 51% (from 1.12 fatalities per thousand to 1.70 fatalities per thousand walk commuters) and bicyclist fatality rates increased by 40% (from 0.86 fatalities per thousand to 1.20 fatalities per thousand bike commuters). Yet, pedestrian fatality rates decreased in New York, Massachusetts, New York County, NY (Manhattan), Collin County, TX (Plano), Kings County, NY (Brooklyn), and Essex County, MA. Bicyclist fatality rates decreased in New York, Massachusetts, Arkansas, Hartford County, CT, Queens County, NY, Kings County, NY (Brooklyn), and San Mateo County, CA. Identifying leading communities may help reveal policies and practices that can be used in other parts of the country to increase pedestrian and bicyclist activity and reduce pedestrian and bicyclist fatalities.

Executive Summary

US pedestrian fatalities increased from 22,100 during the 2008-2012 five-year period to 32,674 during the 2017-2021 five-year period (a 48% increase). Bicyclist fatalities increased from 3,385 to 4,450 during the same timeframe (a 31% increase). However, changes in fatality rates were not distributed evenly across US communities.

This longitudinal study documented changes in pedestrian and bicyclist commuting to work and commute-based pedestrian and bicyclist fatality rates in different parts of the US between two five-year periods, 2008-2012 and 2017-2021. Specifically, we analyzed pedestrian and bicycle commuting in all states plus the District of Columbia, the 50 largest MSAs, and the 100 largest counties. We analyzed fatality rates in states and counties.

Changes in Pedestrian Commuting

Throughout the US, the number of workers who commuted by walking decreased by 2.26% (from 3.94 million to 3.85 million) between the 2008-2012 and 2017-2021 time periods. The share of all workers who walked decreased by 11.9% (from 2.82% to 2.48%), and the share of commuters (people who worked outside their home) who walked decreased by 6.65% (from 2.94% to 2.75%) between the baseline and later time periods.

No states experienced an increase in the share of all workers who walked. However, Alaska, Virginia, and Missouri had the smallest decreases (all less than 3%). Considering the percentage change in the share of commuters (excluding people working from home), the largest increases were in the District of Columbia, Massachusetts, Virginia, and Washington. The largest decreases in the percentages of workers and commuters who walked were in Mississippi, Idaho, South Dakota, and Nevada.

Examining shifts in walk commuting by MSA between 2008-2012 and 2017-2021 showed that the Virginia Beach, VA, San Diego, CA, San Jose, CA, and Dallas, TX regions experienced the greatest growth in the percentage of workers and percentage of commuters who walked. In contrast, the Memphis, TN, Las Vegas, NV, and Riverside, CA regions had the greatest decreases in walk mode shares.

Among the top 100 counties, the greatest growth in the percentage of workers and percentage of commuters who walked between 2008-2012 and 2017-2021 occurred in Collin County, TX (Plano), San Francisco County, CA, Davidson County, TN (Nashville), and Jefferson County, AL (Birmingham). The greatest decreases in walk mode shares were in Kern County, CA (Bakersfield), Monmouth County, NJ, El Paso County, TX, and Fresno County, CA.

Changes in Bicycle Commuting

Overall, the number of US workers who commuted by bicycling decreased by 5.94% (from 786,000 to 739,000) between the 2008-2012 and 2017-2021 time periods. The share of all workers

who bicycled decreased by 15.3% (from 0.56% to 0.48%), and the share of commuters (people who worked outside their home) who bicycled decreased by 10.2% (from 0.59% to 0.53%) between the baseline and later time periods.

Considering the percentage change in total bicycle commuters between 2008-2012 and 2017-2021, Arkansas, New York, and the District of Columbia had the largest increases. These same three states also had the largest increases in bicycle commuting according to the other two measures, the percentage change in the share of all workers and all commuters who bicycled. The largest decreases in the percentages of workers and commuters who bicycled were in North Dakota, South Dakota, Nebraska, and Nevada.

Examining shifts in bicycle commuting by MSA between 2008-2012 and 2017-2021 showed that the New York, NY, San Antonio, TX, and Washington, DC, regions experienced the greatest growth in the percentage of workers and percentage of commuters who bicycled. The Raleigh, NC, Riverside, CA, and Las Vegas, NV regions had the greatest declines in bicycle mode shares.

Among the top 100 counties, the greatest growth in the percentage of workers and percentage of commuters who bicycled between 2008-2012 and 2017-2021 occurred in Collin County, TX (Plano), New York County, NY (Manhattan), and Hudson County, NJ (Jersey City). The greatest declines in bicycle mode shares were in Will County, IL (Joliet), Cobb County, GA (Marietta), Essex County, MA, and Lake County, IL (Waukegan).

Changes in Pedestrian Fatality Rates

Nationwide, pedestrian fatality rates increased from 1.43 to 1.98 per 100,000 population (39%), 3.16 to 4.21 per 100,000 workers (33%), and 1.12 to 1.70 per 1,000 walk commuters (51%) from 2008-2012 to 2017-2021.

In contrast to the national trend, pedestrian fatalities per 1,000 walk commuters decreased in New York from 0.53 to 0.48 (-9.6%) and in Massachusetts from 0.45 to 0.43 (-3.5%). The District of Columbia only had a small increase from 0.275 to 0.281 (2.2%). However, several states had pedestrian fatalities per 1,000 walk commuters more than double: Nebraska increased from 0.32 to 0.77 (144%), New Mexico increased from 2.05 to 5.01 (144%), Mississippi increased from 2.52 to 5.46 (116%), and South Dakota increased from 0.36 to 0.75 (107%).

Some counties were successful at decreasing pedestrian fatality rates between 2008-2012 and 2017-2021. Pedestrian fatalities per 1,000 walk commuters decreased in New York County, NY (Manhattan) from 0.18 to 0.11 (-40%), Collin County, TX (Plano) from 0.85 to 0.72 (-33%), Kings County, NY (Brooklyn) from 0.47 to 0.32 (-31%), and Essex County, MA from 0.69 to 0.49 (-28%). Yet, in others, fatality rates increased dramatically. Pedestrian fatalities per 1,000 walk commuters increased in Shelby County, TN (Memphis) from 2.44 to 10.86 (345%), El Paso County, CO (Colorado Springs) from 0.27 to 1.08 (296%), Kern County, CA (Bakersfield) from

3.39 to 10.74 (217%), Bernalillo County, NM (Albuquerque) from 2.18 to 6.65 (205%), and Pierce County, WA (Tacoma) from 0.56 to 1.58 (180%).

Changes in Bicyclist Fatality Rates

Nationwide, bicyclist fatality rates increased from 0.22 to 0.27 per 100,000 population (23%), 0.48 to 0.57 per 100,000 workers (18%) and 0.86 to 1.20 per 1,000 bicycle commuters (40%) from 2008-2012 to 2017-2021.

Despite the increasing national trend, bicyclist fatalities per 1,000 bicycle commuters decreased in New York from 0.94 to 0.59 (-37%), Massachusetts from 0.38 to 0.26 (-31%), and Arkansas—despite having a high baseline bicyclist fatality rate—from 3.61 to 2.50 (-31%). However, several states had bicyclist fatalities per 1,000 bicycle commuters more than double: Maine increased from 0.37 to 0.95 (155%), Missouri increased from 0.60 to 1.48 (146%), and Nevada increased from 0.92 to 2.20 (139%).

Considering counties, bicyclist fatalities per 1,000 bicycle commuters decreased in Hartford County, CT from 1.75 to 0.22 (-87%), Queens County, NY from 0.83 to 0.34 (-59%), Kings County, NY (Brooklyn) from 0.66 to 0.29 (-56%), and San Mateo County, CA from 0.53 to 0.27 (-50%). However, bicyclist fatalities per 1,000 bicycle commuters increased dramatically in Bucks County, PA (north Philadelphia metro area) from 0.94 to 5.67 (500%), Kern County, CA (Bakersfield) from 1.55 to 6.50 (321%), Fulton County, GA (Atlanta) from 0.24 to 0.94 (287%), El Paso County, CO (Colorado Springs) from 0.66 to 2.48 (276%), and Clark County, NV (Las Vegas) from 0.93 to 2.99 (221%).

Next Steps

Our findings provide the quantitative baseline for the next phase of the project, which will investigate which specific budget choices, adopted policies, and implementation actions have been the most effective at producing positive pedestrian and bicyclist safety outcomes.

Introduction

Between 2010 and 2019, annual US pedestrian fatalities increased by 46% (4,302 to 6,272) and bicyclist fatalities increased by 38% (623 to 859) (NHTSA 2024). Both modes outpaced the overall national fatality increase of 11% (32,999 to 36,555) (NHTSA 2024). The growth in traffic fatalities occurred during a decade when many local, state, and national organizations established visionary goals to reduce traffic-related deaths to zero (Toward Zero Deaths 2011; Ecola et al. 2018; Vision Zero Network 2019) and adopted "complete streets" policies to better accommodate pedestrians in roadway projects (Smart Growth America 2022). After having success as a life-saving initiative in Europe, Vision Zero in the US has lagged as some communities with Vision Zero policies, such as Los Angeles, Portland, Seattle, and the District of Columbia have experienced increases in traffic fatalities (Schmidt 2022). Unfortunately, the increasing trend in traffic fatalities has continued into the 2020s (Petraglia & Macek 2023).

Factors that may have contributed to this backsliding are difficult to pinpoint, but some suggest that cities have not dedicated sufficient budget or staff resources toward transportation system changes, social behaviors have become more reckless since the COVID-19 pandemic, and some city-led efforts may be undercut by state policies. Yet, there may be hope based on Vision Zero outcomes in cities like New York and Hoboken, NJ. Recognizing how little we know about what factors contribute to the success of Vision Zero (or other safety initiatives) at the community level, this project will identify and analyze cities, counties, metropolitan areas and states that are experiencing the greatest decreases in pedestrian and bicyclist fatality rates.

Our study focuses specifically on pedestrians and bicyclists because they have experienced the steepest increases in fatalities among all modes. We explore the following research question: Which cities, counties, metropolitan areas, and states have made the most progress toward Vision Zero (whether or not they have adopted an official goal to eliminate traffic fatalities)? Specifically, which have experienced the greatest reductions in pedestrian and bicyclist fatality rates (based on fatalities per pedestrian and per bicyclist commuting to work)?

This longitudinal study documents changes in pedestrian and bicyclist commuting to work and commute-based pedestrian and bicyclist fatality rates in different parts of the US. Specifically, we analyze pedestrian and bicycle commuting in states, MSAs, and counties and fatality rates in states and counties. Our findings provide the quantitative baseline for the next phase of the project, which will investigate which specific budget choices, adopted policies, and implementation actions have been the most effective at producing positive pedestrian and bicyclist safety outcomes. We will gather insights into these policy choices through interviews with local practitioners in communities with both decreasing and increasing pedestrian and bicyclist crash rates.

Previous Research

Most summaries of US pedestrian and bicycle fatality rates and trends have been presented in the grey literature, which encompasses professional reports and media documents. National trends in pedestrian and bicyclist fatalities are documented in the Fatality Analysis Reporting System (FARS) database (NHTSA 2024) and in journalistic sources such as the New York Times (Badger & Parlapaino 2022). Data show increasing traffic fatalities among all modes since 2010, but pedestrians and bicyclists have experienced steepest increases.

NHTSA's Traffic Safety Facts series presents population-based pedestrian and bicyclist fatality rates by state on an annual basis. For pedestrians, these annual reports show that the overall US pedestrian fatality rate increased from 1.33 per 100,000 people in 2009 (NHTSA 2011a) to 2.23 per 100,000 people in 2021 (NHTSA 2023a). Florida (2.51 fatalities per 100,000 people) and Louisiana (2.38) had the highest pedestrian fatality rates in 2009 (NHTSA 2011a). By 2021, New Mexico (4.82) and Louisiana (3.98) had the highest fatality rates, though Florida's fatality rate increased to 3.75 fatalities per 100,000 people (NHTSA 2023a). The lowest population-based pedestrian fatality rates were in the relatively-low population states of Wyoming (0.37) and South Dakota (0.49) in 2009 and New Hampshire (0.58) and Rhode Island (0.64) in 2021. An academic study showed how population-based pedestrian fatality rates in selected Sunbelt states (New Mexico, Florida, Arizona, South Carolina, and Louisiana) were consistently higher than the US average over five-year intervals between 1977 and 2016 (Schneider 2020).

For bicyclists, the NHTSA Traffic Safety Facts show that the overall US bicyclist fatality rate increased from 0.21 per 100,000 people in 2009 (NHTSA 2011b) to 0.29 per 100,000 people in 2021 (NHTSA 2023b). Delaware (0.68 fatalities per 100,000 people) and Florida (0.58) had the highest bicyclist fatality rates in 2009 (NHTSA 2011b). By 2021, Florida (0.90) and Louisiana (0.76) had the highest fatality rates, and Delaware's fatality rate decreased to 0.20 fatalities per 100,000 people. Several states had zero bicyclist fatalities in 2009 and in 2021, so their fatality rates were zero.

Smart Growth America and the National Complete Streets Coalition summarize population-based pedestrian fatality rates by metropolitan area in the Dangerous by Design series. The most recent report shows the highest pedestrian fatality rates in the Memphis, Alburquerque, and Tucson Metropolitan Statistical Areas (MSAs) (Smart Growth America and the National Complete Streets Coalition 2024). Further, these three regions experienced the highest rates of growth in pedestrian fatality rates between 2013-2017 and 2018-2022, evidence of deepening regional disparities in pedestrian safety outcomes.

Besides the Dangerous by Design reports, few studies have presented trends in pedestrian fatality rates over time, particularly at the sub-state geographic scale. We are unaware of any studies that have presented trends in bicyclist fatality rates over time.

Further, population-based fatality rates are limited because they do not represent pedestrian or bicyclist mode shares, or how much pedestrian or bicyclist activity there is among the population. Few studies have normalized fatalities by more specific measures of pedestrian or bicyclist exposure, such as trips, miles traveled, or time traveled. One exception is Schneider, Vargo, and Sanatizadeh (2017), which calculated trip-based MSA pedestrian fatality rates and bicyclist fatality rates for 46 MSAs using FARS fatalities normalized by pedestrian trips and bicyclist trips reported in the 2001 and 2009 National Household Travel Surveys (NHTS). They found relatively high pedestrian fatality rates in the Sunbelt MSAs of Houston, Jacksonville, Miami, Orlando, San Antonio, Tampa and relatively low pedestrian fatality rates in Chicago, Cincinnati, Cleveland, Minneapolis, New York City, Portland (OR), San Francisco, and Seattle. Bicyclist fatality rates were relatively high in Jacksonville, New York City, Orlando, Tampa, and West Palm Beach and relatively low in Portland (OR).

Research Gaps Addressed by this Study

This report helps fill several of these gaps by presenting commute-based pedestrian and bicyclist fatality rates at the county and state levels. It also shows how these fatality rates changed between the 2008-2012 and 2017-2021 periods.

Methods

We investigated changes in pedestrian and bicyclist fatality rates between 2008-2012 and 2017-2021 at the state, MSA, and county level using FARS data (NHTSA 2023a). We used the five-year analysis periods of 2008-2012 and 2017-2021 because they represent each end of the 2010s, with 2017-2021 being the most recent 5-year data period available at the time of our data collection. The first parts of this section describe our three geographic units of analysis, fatality data, and exposure data (e.g., population and walk and bicycle commute estimates). The final parts summarize our descriptive analysis approach.

Geographic Units of Analysis

We collected data from the 2008-2012 and 2017-2021 time periods for all states and the District of Columbia, the 50 MSAs with the most workers during the 2008-2012 period, and the 100 counties with the most workers during the 2008-2012 period.

Note that several MSAs were added, eliminated, or had their boundaries change between the 2010 and 2020 US Census. Among the top 50 MSAs, boundaries changed for Houston, Atlanta, Cincinnati, Charlotte, Indianapolis, and San Juan PR. As a result, we used 50 MSAs for analyses of 2008-2012 data but only 44 MSAs for analyses of 2017-2021 data and commute shifts between the two time periods. We do not include MSAs in our fatality rate analysis because we are still working to verify the correct number of fatalities within each MSA boundary.

Fatality Data

We gathered pedestrian and bicyclist fatality data from the FARS database (NHTSA 2023a). FARS includes all crashes on public roadways in the US that involve at least one motor vehicle and at least one person dies within 30 days due to injuries from the crash (NHTSA 2023b). Some crashes produce more than one pedestrian or bicyclist fatality; our analysis counts each of these people.

In this report, we analyzed the 22,100 pedestrian fatalities during 2008-2012 and 32,674 pedestrian fatalities during 2017-2021. We also analyzed 3,385 bicyclist fatalities during 2008-2012 and 4,450 bicyclist fatalities during 2017-2021.

Exposure Data

We used three proxy measures of exposure to normalize the pedestrian and bicyclist fatality data in each geographic area. The first two were total population and total workers, and the third was the total number of workers who commuted regularly by walking (used as exposure for pedestrian fatalities) or by bicycling (used as exposure for bicyclist fatalities). All three were obtained from the American Community Survey five-year estimates for the 2008-2012 and 2017-2021 periods (US Census Bureau 2023).

As noted in the literature review section, total population is commonly used to normalize crash data, but it is a very imprecise measure of pedestrian or bicyclist exposure. Population does not account for how much pedestrian or bicyclist activity is done by the average person in different communities. The number of workers has a similar limitation.

In contrast, journey-to-work commute mode data are more correlated with overall pedestrian and bicyclist activity than population or workers. Census commute data have been used to differentiate levels of walking and bicycling between communities (Schneider & Stefanich 2015; Mcleod 2023), particularly because these data are collected consistently and continuously at the neighborhood level throughout the US. However, journey-to-work data are limited because they only include people who walk or bicycle as their primary means of commuting. They exclude walking and bicycling to school, stores, and other destinations or for active recreation; exclude people who occasionally commute by walk or bicycle; exclude children younger than 16; and exclude walking or bicycling done as a part of driving or public transportation commutes. Still, journey-to-work data are likely to be the best exposure proxy data available in the US at the sub-national level for the two time periods in our study.

Changes in Pedestrian and Bicyclist Commuting

Before we analyzed changes in pedestrian and bicyclist fatality rates, we quantified changes in pedestrian and bicycle commuting to work in states, MSAs, and counties between 2008-2012 and 2017-2021. This helped provide a sense of how pedestrian and bicycle exposure may have shifted between these large areas during the 2010s.

Our descriptive analysis explored several measures of pedestrian and bicyclist commuting. These included the total number of workers using each of these two modes, the share of all workers using these modes, and the share of commuters using these modes. The share of all workers includes people who worked from home, while the share of commuters only includes people who worked outside of their homes. This distinction is particularly important for the 2017-2021 period because the end of this period was strongly influenced by the shift to remote work during the COVID-19 pandemic. For example, the share of US workers who worked from home increased from 4.3% (6.00 million of 141 million) during 2008-2012, to 9.7% (15.1 million of 156 million) during 2017-2021. Using both measures of commute mode share provides different perspectives on pedestrian and bicyclist activity within the transportation system.

We also examined how each of these measures of pedestrian and bicycle commuting changed between the 2008-2012 and 2017-2021 periods. Our analysis ranks the states, MSAs, and counties according to the change in the total number of workers who walked to work, change in the percent of all workers who walked to work, and change in the percent of commuters (worked outside of their homes) who walked to work.

Changes in Pedestrian and Bicyclist Fatality Rates

To calculate pedestrian and bicyclist fatality rates, we divided the total number of pedestrian fatalities and bicyclist fatalities in each geographic area during 2008-2012 and 2017-2021 by our three measures of exposure in each geographic area for each time period. We analyzed changes in these pedestrian and bicyclist fatalities between 2008-2012 and 2017-2021 using the following calculations: percent change in pedestrian or bicyclist fatalities per 100,000 population, percent change in pedestrian or bicyclist fatalities per 100,000 workers, and percent change in pedestrian or bicyclist fatalities per thousand walk or bicycle commuters.

Results

This section describes the results from our descriptive analyses of pedestrian and bicycle commuting and pedestrian and bicyclist fatality rates by state, MSA, and county.

Changes in Pedestrian and Bicycle Commuting to Work

Our results show jurisdictions with the largest increases in pedestrian and bicycle commuting between 2008-2012 and 2017-2021. Large increases in pedestrian or bicycle commuting could indicate that local, regional, or state agencies made these modes more appealing to residents through changes such as adding sidewalks, improving pedestrian crossings, installing protected bike lanes, or implementing new mixed-use developments that provided more jobs close to where people live.

Changes in Pedestrian Commuting

Throughout the US, the number of workers who commuted by walking decreased by 2.26% (from 3.94 million to 3.85 million) between the 2008-2012 and 2017-2021 time periods (Table 1). The share of all workers who walked decreased by 11.9% (from 2.82% to 2.48%), and the share of commuters (people who worked outside their home) who walked decreased by 6.65% (from 2.94% to 2.75%) between the baseline and later time periods.

Before considering state-level changes between 2008-2012 and 2017-2021, it is important to note that the highest overall walk commute mode shares in both time periods were in the District of Columbia (more than 11% of all workers), Alaska (more than 7%), and New York (more than 5%) (Table 1).

We measured walk commute shifts in three ways. The percentage change in total walk commuters tended to highlight states with high population growth (and growth in workers and commuters). According to this measure, the District of Columbia (13.2%), Washington (11.1%), Massachusetts (7.0%), and Virginia (6.1%) had the largest increases. Using the percentage change in the share of all workers who walked, no states experienced an increase. However, Alaska, Virginia, and Missouri had the smallest decreases (all less than 3%). Finally, the percentage change in the share of commuters (excluding people working from home) showed that the largest increases were in the District of Columbia, Massachusetts, Virginia, and Washington (Table 1). The largest decreases in the percentages of workers and commuters who walked were in Mississippi, Idaho, South Dakota, and Nevada.

Considering the 50 MSAs with the largest numbers of workers during the 2008-2012, the highest overall walk commute mode shares in both time periods were in the New York, NY (more than 5% of all workers), Boston, MA (more than 5%), San Francisco, CA (more than 4%), Philadelphia, PA (more than 3%), Seattle, WA (more than 3%), and Portland, OR (more than 3%) regions (Table 2). These regions tend to have high population densities.

Examining shifts in walk commuting by MSA between 2008-2012 and 2017-2021 showed that the Virginia Beach, VA, San Diego, CA, San Jose, CA, and Dallas, TX regions experienced the greatest growth in the percentage of workers and percentage of commuters who walked. In contrast, the Memphis, TN, Las Vegas, NV, and Riverside, CA regions had the greatest declines in walk mode shares (Table 2).

Our analysis of the 100 counties with the largest numbers of workers showed that the counties with the highest pedestrian mode shares in both time periods were New York County, NY (Manhattan) (more than 18% of all workers), Suffolk County, MA (Boston) (more than 12%), District of Columbia (more than 11%), and San Francisco County, CA (more than 9%) (Table 3). These counties contain the densest cities in the US.

Among the top 100 counties, the greatest growth in the percentage of workers and percentage of commuters who walked between 2008-2012 and 2017-2021 occurred in Collin County, TX (Plano), San Francisco County, CA, Davidson County, TN (Nashville), and Jefferson County, AL (Birmingham). The greatest declines in walk mode shares were in Kern County, CA (Bakersfield), Monmouth County, NJ, El Paso County, TX, and Fresno County, CA (Table 3).

Table 1. Pedestrian Commuting by State, 2008-2012 and 2017-2021

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
State	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
All States	*139,893,639*	*133,916,010*	*3,938,418*	*2.82%*	*2.94%*	*155,284,955*	*140,223,271*	*3,849,557*	*2.48%*	*2.75%*	*-2.26%*	*-11.94%*	*-6.65%*
Alabama	1,988,366	1,936,854	23,738	1.19%	1.23%	2,146,674	2,025,951	23,088	1.08%	1.14%	-2.74%	-9.91%	-7.02%
Alaska	345,577	327,252	25,888	7.49%	7.91%	349,920	325,098	25,805	7.37%	7.94%	-0.32%	-1.56%	0.34%
Arizona	2,694,999	2,548,520	57,013	2.12%	2.24%	3,174,911	2,802,982	56,737	1.79%	2.02%	-0.48%	-15.53%	-9.52%
Arkansas	1,232,938	1,192,287	22,306	1.81%	1.87%	1,295,639	1,222,706	19,734	1.52%	1.61%	-11.53%	-15.81%	-13.73%
California	16,282,943	15,443,783	449,779	2.76%	2.91%	18,283,118	16,206,506	443,699	2.43%	2.74%	-1.35%	-12.14%	-5.99%
Colorado	2,481,269	2,320,965	75,896	3.06%	3.27%	2,959,315	2,545,160	77,629	2.62%	3.05%	2.28%	-14.24%	-6.73%
Connecticut	1,730,076	1,659,265	50,900	2.94%	3.07%	1,791,786	1,605,422	47,482	2.65%	2.96%	-6.72%	-9.93%	-3.59%
Delaware	416,699	401,668	9,388	2.25%	2.34%	459,571	414,367	9,458	2.06%	2.28%	0.75%	-8.65%	-2.34%
District of Columbia	306,336	291,401	37,055	12.10%	12.72%	371,014	297,447	41,960	11.31%	14.11%	13.24%	-6.50%	10.94%
Florida	8,107,476	7,728,054	126,718	1.56%	1.64%	9,698,180	8,741,175	130,097	1.34%	1.49%	2.67%	-14.17%	-9.23%
Georgia	4,234,475	4,037,325	65,828	1.55%	1.63%	4,926,936	4,427,990	68,099	1.38%	1.54%	3.45%	-11.09%	-5.68%
Hawaii	665,358	634,317	31,274	4.70%	4.93%	707,605	658,351	31,226	4.41%	4.74%	-0.15%	-6.11%	-3.80%
Idaho	687,321	648,218	21,278	3.10%	3.28%	836,154	758,836	19,237	2.30%	2.54%	-9.59%	-25.68%	-22.77%
Illinois	5,926,796	5,685,247	185,519	3.13%	3.26%	6,164,668	5,554,064	170,236	2.76%	3.07%	-8.24%	-11.78%	-6.07%
Indiana	2,923,571	2,828,307	63,844	2.18%	2.26%	3,189,106	2,966,202	64,750	2.03%	2.18%	1.42%	-7.03%	-3.30%
Iowa	1,529,744	1,457,832	56,351	3.68%	3.87%	1,592,872	1,464,112	47,258	2.97%	3.23%	-16.14%	-19.46%	-16.50%
Kansas	1,386,193	1,325,839	34,175	2.47%	2.58%	1,441,378	1,324,704	31,859	2.21%	2.40%	-6.78%	-10.35%	-6.70%
Kentucky	1,833,778	1,779,013	39,832	2.17%	2.24%	1,976,861	1,844,983	41,391	2.09%	2.24%	3.91%	-3.61%	0.20%
Louisiana	1,960,054	1,914,678	38,067	1.94%	1.99%	1,991,358	1,886,345	36,430	1.83%	1.93%	-4.30%	-5.80%	-2.86%
Maine	637,261	603,825	25,829	4.05%	4.28%	667,845	597,949	24,667	3.69%	4.13%	-4.50%	-8.87%	-3.56%
Maryland	2,889,278	2,771,555	68,201	2.36%	2.46%	3,091,677	2,724,672	61,787	2.00%	2.27%	-9.40%	-15.34%	-7.85%
Massachusetts	3,231,819	3,095,432	153,159	4.74%	4.95%	3,591,598	3,164,395	163,881	4.56%	5.18%	7.00%	-3.72%	4.67%
Michigan	4,171,196	4,022,984	92,540	2.22%	2.30%	4,594,453	4,211,728	97,132	2.11%	2.31%	4.96%	-4.71%	0.26%
Minnesota	2,697,932	2,559,091	76,945	2.85%	3.01%	2,925,932	2,591,070	75,175	2.57%	2.90%	-2.30%	-9.91%	-3.51%
Mississippi	1,190,185	1,161,667	20,100	1.69%	1.73%	1,227,836	1,181,315	15,538	1.27%	1.32%	-22.70%	-25.07%	-23.98%
Missouri	2,747,695	2,631,089	54,295	1.98%	2.06%	2,910,919	2,666,813	55,963	1.92%	2.10%	3.07%	-2.71%	1.69%
Montana	470,377	439,906	22,790	4.85%	5.18%	518,868	469,902	22,075	4.25%	4.70%	-3.14%	-12.19%	-9.32%
Nebraska	935,599	892,248	27,834	2.97%	3.12%	1,000,159	923,878	25,109	2.51%	2.72%	-9.79%	-15.61%	-12.88%
Nevada	1,223,670	1,184,658	25,468	2.08%	2.15%	1,406,731	1,302,477	22,343	1.59%	1.72%	-12.27%	-23.69%	-20.21%
New Hampshire	679,196	641,763	20,887	3.08%	3.25%	724,368	645,911	17,030	2.35%	2.64%	-18.47%	-23.55%	-18.99%
New Jersey	4,127,735	3,974,162	130,828	3.17%	3.29%	4,489,790	4,012,562	115,825	2.58%	2.89%	-11.47%	-18.61%	-12.31%
New Mexico	873,552	830,436	20,559	2.35%	2.48%	887,251	814,329	16,839	1.90%	2.07%	-18.09%	-19.36%	-16.47%
New York	8,877,453	8,533,368	567,840	6.40%	6.65%	9,440,371	8,540,691	548,993	5.82%	6.43%	-3.32%	-9.08%	-3.40%
North Carolina	4,237,689	4,057,165	75,666	1.79%	1.86%	4,840,986	4,343,047	79,482	1.64%	1.83%	5.04%	-8.05%	-1.87%
North Dakota	363,094	342,549	14,101	3.88%	4.12%	403,477	380,209	13,022	3.23%	3.42%	-7.65%	-16.89%	-16.80%
Ohio	5,196,293	5,016,561	118,658	2.28%	2.37%	5,548,580	5,099,813	114,274	2.06%	2.24%	-3.69%	-9.81%	-5.27%
Oklahoma	1,676,739	1,616,220	31,973	1.91%	1.98%	1,775,842	1,663,002	30,563	1.72%	1.84%	-4.41%	-9.74%	-7.10%
Oregon	1,705,593	1,597,654	69,304	4.06%	4.34%	1,988,071	1,739,372	68,179	3.43%	3.92%	-1.62%	-15.60%	-9.64%
Pennsylvania	5,808,681	5,593,858	226,655	3.90%	4.05%	6,173,679	5,571,052	206,977	3.35%	3.72%	-8.68%	-14.08%	-8.31%
Rhode Island	500,642	483,179	17,770	3.55%	3.68%	541,019	497,579	16,110	2.98%	3.24%	-9.34%	-16.11%	-11.97%
South Carolina	1,988,444	1,915,910	40,381	2.03%	2.11%	2,304,699	2,139,404	42,783	1.86%	2.00%	5.95%	-8.59%	-5.12%
South Dakota	412,161	388,727	17,618	4.27%	4.53%	442,846	408,605	14,623	3.30%	3.58%	-17.00%	-22.75%	-21.04%
Tennessee	2,762,765	2,667,525	36,988	1.34%	1.39%	3,155,978	2,902,545	38,772	1.23%	1.34%	4.82%	-8.24%	-3.66%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
State	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
Texas	11,314,152	10,866,502	190,603	1.68%	1.75%	13,464,482	12,233,649	196,328	1.46%	1.60%	3.00%	-13.45%	-8.51%
Utah	1,249,915	1,190,956	34,700	2.78%	2.91%	1,569,101	1,383,952	33,909	2.16%	2.45%	-2.28%	-22.16%	-15.91%
Vermont	319,359	296,759	18,792	5.88%	6.33%	328,766	291,169	16,342	4.97%	5.61%	-13.04%	-15.53%	-11.37%
Virginia	3,906,766	3,731,703	89,797	2.30%	2.41%	4,268,079	3,780,856	95,270	2.23%	2.52%	6.09%	-2.89%	4.72%
Washington	3,127,950	2,961,151	108,611	3.47%	3.67%	3,670,752	3,207,425	120,682	3.29%	3.76%	11.11%	-5.32%	2.58%
West Virginia	743,046	720,658	21,443	2.89%	2.98%	722,460	681,545	19,578	2.71%	2.87%	-8.70%	-6.10%	-3.46%
Wisconsin	2,807,856	2,694,612	92,860	3.31%	3.45%	2,969,464	2,717,256	84,307	2.84%	3.10%	-9.21%	-14.15%	-9.97%
Wyoming	285,577	271,312	10,374	3.63%	3.82%	281,810	262,698	9,824	3.49%	3.74%	-5.30%	-4.04%	-2.20%

Table 2. Pedestrian Commuting in Top 50 MSAs with the most workers, 2008-2012 and 2017-2021

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
Top 50 MSA	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
Top 50 MSAs	*77,863,941*	*74,438,882*	*2,206,025*	*2.83%*	*2.96%*								
New York-Newark-Jersey City, NY-NJ-PA Metro Area	8,747,542	8,407,146	540,093	6.17%	6.42%	9,564,577	8,551,738	528,729	5.53%	6.18%	-2.10%	-10.47%	-3.76%
Los Angeles-Long Beach-Anaheim, CA Metro Area	5,805,874	5,523,693	154,886	2.67%	2.80%	6,316,352	5,605,794	143,850	2.28%	2.57%	-7.13%	-14.63%	-8.49%
Chicago-Naperville-Elgin, IL-IN-WI Metro	4,396,833	4,212,913	137,965	3.14%	3.27%	4,711,327	4,197,386	130,845	2.78%	3.12%	-5.16%	-11.49%	-4.81%
Dallas-Fort Worth-Arlington, TX Metro Area	3,043,357	2,907,747	37,051	1.22%	1.27%	3,758,555	3,339,612	46,027	1.22%	1.38%	24.23%	0.59%	8.16%
Washington-Arlington-Alexandria, DC-VA-MD-WV Metro	2,963,876	2,825,076	94,829	3.20%	3.36%	3,357,080	2,839,751	96,610	2.88%	3.40%	1.88%	-10.05%	1.35%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metro	2,759,585	2,655,135	102,153	3.70%	3.85%	3,028,700	2,673,918	97,511	3.22%	3.65%	-4.54%	-13.03%	-5.21%
Houston-The Woodlands-Sugar Land, TX Metro	2,758,778	2,665,158	39,139	1.42%	1.47%								
Miami-Fort Lauderdale-Pompano Beach, FL Metro Area	2,517,921	2,404,564	44,689	1.77%	1.86%	2,937,950	2,667,502	42,833	1.46%	1.61%	-4.15%	-17.86%	-13.60%
Atlanta-Sandy Springs-Alpharetta, GA Metro Area	2,440,294	2,302,221	32,535	1.33%	1.41%	2,950,242							
Boston-Cambridge-Newton, MA-NH Metro Area	2,313,366	2,211,758	122,317	5.29%	5.53%	2,605,200	2,266,002	131,480	5.05%	5.80%	7.49%	-4.55%	4.92%
San Francisco-Oakland-Berkeley, CA Metro Area	2,088,667	1,964,152	90,427	4.33%	4.60%	2,399,468	2,008,836	103,233	4.30%	5.14%	14.16%	-0.63%	11.62%
Phoenix-Mesa-Chandler, AZ Metro Area	1,836,152	1,733,127	28,820	1.57%	1.66%	2,254,347	1,962,032	32,447	1.44%	1.65%	12.59%	-8.30%	-0.55%
Detroit-Warren-Dearborn, MI Metro Area	1,801,136	1,744,571	24,963	1.39%	1.43%	2,012,308	1,824,506	26,843	1.33%	1.47%	7.53%	-3.75%	2.82%
Seattle-Tacoma-Bellevue, WA Metro Area	1,716,731	1,626,140	61,555	3.59%	3.79%	2,056,375	1,749,397	73,680	3.58%	4.21%	19.70%	-0.07%	11.26%
Minneapolis-St. Paul-Bloomington, MN-WI Metro	1,706,299	1,625,481	38,381	2.25%	2.36%	1,946,949	1,692,070	40,790	2.10%	2.41%	6.28%	-6.86%	2.09%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
Top 50 MSA	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
Riverside-San Bernardino-Ontario, CA Metro	1,643,359	1,570,508	29,175	1.78%	1.86%	1,946,306	1,792,084	26,166	1.34%	1.46%	-10.31%	-24.27%	-21.40%
San Diego-Chula Vista-Carlsbad, CA Metro Area	1,431,134	1,341,529	38,874	2.72%	2.90%	1,618,547	1,416,912	47,500	2.93%	3.35%	22.19%	8.04%	15.69%
Baltimore-Columbia-Towson, MD Metro Area	1,333,905	1,282,508	35,794	2.68%	2.79%	1,419,476	1,259,914	32,463	2.29%	2.58%	-9.31%	-14.77%	-7.68%
St. Louis, MO-IL Metro Area	1,325,726	1,276,652	23,150	1.75%	1.81%	1,389,121	1,253,427	21,567	1.55%	1.72%	-6.84%	-11.09%	-5.11%
Denver-Aurora-Lakewood, CO Metro Area	1,291,215	1,213,390	27,652	2.14%	2.28%	1,591,419	1,346,495	33,502	2.11%	2.49%	21.16%	-1.70%	9.18%
Tampa-St. Petersburg-Clearwater, FL Metro Area	1,214,567	1,151,403	18,978	1.56%	1.65%	1,465,092	1,282,792	18,812	1.28%	1.47%	-0.87%	-17.82%	-11.03%
Pittsburgh, PA Metro Area	1,100,825	1,062,775	39,434	3.58%	3.71%	1,153,267	1,029,253	34,499	2.99%	3.35%	-12.51%	-16.49%	-9.67%
Portland-Vancouver-Hillsboro, OR-WA Metro Area	1,052,356	986,104	36,613	3.48%	3.71%	1,257,719	1,076,389	39,052	3.10%	3.63%	6.66%	-10.75%	-2.28%
Cincinnati, OH-KY-IN Metro Area	999,355	962,984	21,124	2.11%	2.19%	1,096,590							
Orlando-Kissimmee-Sanford, FL Metro	994,356	950,019	11,183	1.12%	1.18%	1,275,837	1,145,188	13,614	1.07%	1.19%	21.74%	-5.12%	0.99%
Kansas City, MO-KS Metro Area	989,484	948,731	13,042	1.32%	1.37%	1,100,432	983,283	12,368	1.12%	1.26%	-5.17%	-14.73%	-8.50%
San Antonio-New Braunfels, TX Metro Area	969,402	931,982	18,626	1.92%	2.00%	1,187,332	1,079,270	18,668	1.57%	1.73%	0.23%	-18.17%	-13.45%
Cleveland-Elyria, OH Metro Area	944,627	912,692	20,135	2.13%	2.21%	995,022	907,027	20,602	2.07%	2.27%	2.32%	-2.86%	2.96%
Sacramento-Roseville-Folsom, CA Metro Area	921,721	870,120	18,851	2.05%	2.17%	1,083,106	940,847	17,595	1.62%	1.87%	-6.66%	-20.57%	-13.68%
Las Vegas-Henderson-Paradise, NV Metro Area	889,931	863,545	16,052	1.80%	1.86%	1,018,843	943,438	13,620	1.34%	1.44%	-15.15%	-25.89%	-22.34%
Columbus, OH Metro Area	887,211	849,498	18,843	2.12%	2.22%	1,064,636	941,117	21,514	2.02%	2.29%	14.18%	-4.85%	3.06%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
Top 50 MSA	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
Austin-Round Rock-Georgetown, TX Metro Area	866,411	809,519	15,916	1.84%	1.97%	1,190,031	990,500	21,815	1.83%	2.20%	37.06%	-0.21%	12.02%
San Jose-Sunnyvale-Santa Clara, CA Metro	861,197	820,426	17,663	2.05%	2.15%	1,008,967	854,759	21,518	2.13%	2.52%	21.83%	3.98%	16.93%
Charlotte-Concord-Gastonia, NC-SC Metro Area	832,041	788,809	12,309	1.48%	1.56%								
Indianapolis-Carmel-Anderson, IN Metro Area	831,221	800,843	13,203	1.59%	1.65%								
Virginia Beach-Norfolk-Newport News, VA-NC Metro Area	830,034	793,126	21,599	2.60%	2.72%	901,367	834,021	27,702	3.07%	3.32%	28.26%	18.11%	21.97%
San Juan-Bayamon-Caguas, PR Metro Area	766,883	750,009	25,946	3.38%	3.46%								
Providence-Warwick, RI-MA Metro Area	760,273	735,492	24,012	3.16%	3.26%	824,719	760,500	22,426	2.72%	2.95%	-6.61%	-13.90%	-9.68%
Nashville-Davidson--Murfreesboro--Franklin, TN Metro	758,698	723,802	9,436	1.24%	1.30%	1,011,034	894,015	12,007	1.19%	1.34%	27.25%	-4.51%	3.02%
Milwaukee-Waukesha, WI Metro Area	748,539	724,288	20,604	2.75%	2.84%	782,458	707,830	17,837	2.28%	2.52%	-13.43%	-17.18%	-11.42%
Jacksonville, FL Metro Area	619,566	592,219	8,395	1.35%	1.42%	753,761	674,776	9,531	1.26%	1.41%	13.53%	-6.68%	-0.36%
Richmond, VA Metro Area	598,300	571,138	8,298	1.39%	1.45%	654,556	576,844	9,196	1.40%	1.59%	10.82%	1.30%	9.73%
Oklahoma City, OK Metro Area	595,531	576,118	9,785	1.64%	1.70%	681,651	634,259	11,078	1.63%	1.75%	13.21%	-1.09%	2.84%
Louisville/Jefferson County, KY-IN Metro Area	590,541	573,279	9,619	1.63%	1.68%	623,753	569,535	9,023	1.45%	1.58%	-6.20%	-11.19%	-5.58%
Hartford-East Hartford-Middletown, CT Metro Area	590,044	567,842	15,698	2.66%	2.76%	607,107	542,645	13,975	2.30%	2.58%	-10.98%	-13.48%	-6.84%
Memphis, TN-MS-AR Metro Area	578,883	562,500	7,566	1.31%	1.35%	606,875	572,039	5,391	0.89%	0.94%	-28.75%	-32.03%	-29.94%
Raleigh-Cary, NC Metro Area	554,144	521,272	7,589	1.37%	1.46%	709,796	590,336	7,785	1.10%	1.32%	2.58%	-19.91%	-9.42%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
Top 50 MSA	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
Salt Lake City, UT Metro Area	543,909	519,060	12,398	2.28%	2.39%	643,442	562,720	12,089	1.88%	2.15%	-2.49%	-17.58%	-10.06%
New Orleans-Metairie, LA Metro	529,289	515,473	13,046	2.46%	2.53%	576,440	533,737	13,751	2.39%	2.58%	5.40%	-3.22%	1.80%
Buffalo-Cheektowaga, NY Metro Area	522,852	510,345	15,614	2.99%	3.06%	553,271	512,820	13,813	2.50%	2.69%	-11.53%	-16.40%	-11.96%

Table 3. Pedestrian Commuting in top 100 Counties with the most workers, 2008-2012 and 2017-2021

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
County	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
Top 100 Counties	*60,079,883*	*57,421,467*	*1,904,390*	*3.17%*	*3.32%*	*68,255,589*	*60,352,125*	*1,938,363*	*2.84%*	*3.21%*	*1.78%*	*-10.41%*	*-3.16%*
Los Angeles County, CA	4,384,405	4,172,640	126,810	2.89%	3.04%	4,753,898	4,234,400	116,234	2.45%	2.74%	-8.34%	-15.46%	-9.68%
Cook County, Illinois	2,372,336	2,278,500	102,658	4.33%	4.51%	2,550,520	2,263,021	101,374	3.97%	4.48%	-1.25%	-8.15%	-0.58%
Harris County, Texas	1,909,380	1,848,444	29,493	1.54%	1.60%	2,210,850	2,031,669	30,143	1.36%	1.48%	2.20%	-11.73%	-7.01%
Maricopa County, AZ	1,707,548	1,612,289	27,190	1.59%	1.69%	2,096,842	1,820,741	30,398	1.45%	1.67%	11.80%	-8.96%	-1.00%
San Diego County, CA	1,431,134	1,341,529	38,874	2.72%	2.90%	1,618,547	1,416,912	47,500	2.93%	3.35%	22.19%	8.04%	15.69%
Orange County, CA	1,421,469	1,351,053	28,076	1.98%	2.08%	1,562,454	1,371,394	27,616	1.77%	2.01%	-1.64%	-10.51%	-3.10%
Miami-Dade County, FL	1,115,424	1,070,025	24,365	2.18%	2.28%	1,305,587	1,192,352	24,139	1.85%	2.02%	-0.93%	-15.36%	-11.09%
Dallas County, Texas	1,106,207	1,065,653	16,800	1.52%	1.58%	1,281,466	1,159,169	19,923	1.55%	1.72%	18.59%	2.37%	9.02%
Kings County, NY	1,080,412	1,036,695	95,051	8.80%	9.17%	1,233,234	1,088,284	104,403	8.47%	9.59%	9.84%	-3.77%	4.63%
Queens County, NY	1,043,646	1,018,700	59,632	5.71%	5.85%	1,125,992	1,038,725	64,864	5.76%	6.24%	8.77%	0.82%	6.68%
King County, Washington	1,004,804	946,540	44,993	4.48%	4.75%	1,203,566	987,288	57,739	4.80%	5.85%	28.33%	7.14%	23.03%
Clark County, Nevada	889,931	863,545	16,052	1.80%	1.86%	1,018,843	943,438	13,620	1.34%	1.44%	-15.15%	-25.89%	-22.34%
Tarrant County, Texas	859,034	826,470	9,592	1.12%	1.16%	1,031,178	934,770	11,192	1.09%	1.20%	16.68%	-2.80%	3.16%
Riverside County, CA	847,993	805,058	13,342	1.57%	1.66%	1,020,284	938,483	12,053	1.18%	1.28%	-9.66%	-24.92%	-22.50%
Santa Clara County, CA	837,242	797,655	17,258	2.06%	2.16%	979,075	827,218	21,241	2.17%	2.57%	23.08%	5.25%	18.68%
New York County, NY	832,836	777,313	177,056	21.26%	22.78%	886,916	736,311	167,318	18.87%	22.72%	-5.50%	-11.26%	-0.24%
Broward County, FL	832,732	795,679	11,203	1.35%	1.41%	957,695	870,554	10,651	1.11%	1.22%	-4.93%	-17.33%	-13.10%
San Bernardino County, CA	795,366	765,450	15,833	1.99%	2.07%	926,022	853,601	14,113	1.52%	1.65%	-10.86%	-23.44%	-20.07%
Middlesex County, MA	785,696	748,632	37,690	4.80%	5.03%	880,537	743,450	41,007	4.66%	5.52%	8.80%	-2.92%	9.56%
Bexar County, Texas	776,516	748,117	15,558	2.00%	2.08%	941,932	858,896	16,341	1.73%	1.90%	5.03%	-13.41%	-8.51%
Suffolk County, NY	713,596	687,967	11,206	1.57%	1.63%	760,938	702,733	10,056	1.32%	1.43%	-10.26%	-15.85%	-12.15%
Alameda County, CA	693,960	657,613	26,202	3.78%	3.98%	817,140	683,447	25,916	3.17%	3.79%	-1.09%	-16.00%	-4.83%
Wayne County, MI	673,168	655,399	12,347	1.83%	1.88%	740,725	677,139	13,077	1.77%	1.93%	5.91%	-3.75%	2.51%
Nassau County, NY	639,524	616,836	16,795	2.63%	2.72%	687,971	619,162	15,156	2.20%	2.45%	-9.76%	-16.11%	-10.10%
Hennepin County, MN	610,001	579,833	19,272	3.16%	3.32%	692,588	586,541	21,652	3.13%	3.69%	12.35%	-1.05%	11.06%
Philadelphia County, PA	601,331	584,423	51,760	8.61%	8.86%	710,964	634,527	54,269	7.63%	8.55%	4.85%	-11.32%	-3.43%
Sacramento County, CA	599,406	570,069	12,320	2.06%	2.16%	715,334	628,001	12,228	1.71%	1.95%	-0.75%	-16.83%	-9.90%
Allegheny County, PA	586,994	565,700	25,912	4.41%	4.58%	627,613	547,685	23,346	3.72%	4.26%	-9.90%	-15.73%	-6.94%
Fairfax County, VA	586,121	556,511	10,782	1.84%	1.94%	611,449	503,905	9,862	1.61%	1.96%	-8.53%	-12.32%	1.02%
Franklin County, Ohio	572,858	550,356	13,629	2.38%	2.48%	677,271	599,522	16,047	2.37%	2.68%	17.74%	-0.41%	8.09%
Hillsborough County, FL	571,659	541,245	9,331	1.63%	1.72%	706,303	617,397	9,470	1.34%	1.53%	1.49%	-17.86%	-11.03%
Palm Beach County, FL	569,765	538,860	9,121	1.60%	1.69%	674,668	604,596	8,043	1.19%	1.33%	-11.82%	-25.53%	-21.41%
Cuyahoga County, Ohio	567,874	549,357	14,838	2.61%	2.70%	592,768	538,096	15,092	2.55%	2.80%	1.71%	-2.56%	3.84%
Oakland County, MI	567,259	544,820	6,774	1.19%	1.24%	642,908	564,409	7,306	1.14%	1.29%	7.85%	-4.84%	4.11%
Orange County, FL	555,297	532,506	6,860	1.24%	1.29%	704,814	632,481	8,595	1.22%	1.36%	25.29%	-1.29%	5.49%
Travis County, Texas	536,112	499,861	11,547	2.15%	2.31%	705,996	574,680	15,599	2.21%	2.71%	35.09%	2.58%	17.50%
Bronx County, New York	524,892	508,474	41,053	7.82%	8.07%	578,177	544,865	41,772	7.22%	7.67%	1.75%	-7.63%	-5.04%
Montgomery County, MD	515,347	486,886	10,949	2.12%	2.25%	553,355	456,114	10,125	1.83%	2.22%	-7.53%	-13.88%	-1.29%
Salt Lake County, Utah	499,823	478,103	11,379	2.28%	2.38%	608,792	530,926	11,401	1.87%	2.15%	0.19%	-17.74%	-9.78%
St. Louis County, MO	478,292	456,944	7,592	1.59%	1.66%	493,169	436,150	6,311	1.28%	1.45%	-16.87%	-19.38%	-12.91%
Honolulu County, HI	476,354	459,335	25,363	5.32%	5.52%	506,185	473,886	26,405	5.22%	5.57%	4.11%	-2.03%	0.91%
Contra Costa County, CA	473,623	446,916	7,384	1.56%	1.65%	553,536	474,369	8,310	1.50%	1.75%	12.54%	-3.71%	6.03%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
County	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
DuPage County, Illinois	461,186	439,422	8,442	1.83%	1.92%	482,036	414,635	7,371	1.53%	1.78%	-12.69%	-16.46%	-7.47%
Mecklenburg County, NC	456,641	430,109	8,796	1.93%	2.05%	577,880	478,928	10,106	1.75%	2.11%	14.89%	-9.21%	3.18%
Wake County, North Carolina	451,578	422,289	6,562	1.45%	1.55%	578,728	470,657	6,720	1.16%	1.43%	2.41%	-20.09%	-8.12%
Prince George's County, MD	450,045	438,035	9,521	2.12%	2.17%	494,767	444,182	8,257	1.67%	1.86%	-13.28%	-21.11%	-14.48%
Westchester County, NY	444,511	423,091	22,788	5.13%	5.39%	485,787	424,657	20,980	4.32%	4.94%	-7.93%	-15.76%	-8.27%
Bergen County, NJ	441,456	422,772	13,118	2.97%	3.10%	480,317	423,214	12,463	2.59%	2.94%	-4.99%	-12.68%	-5.09%
Fulton County, Georgia	440,231	407,091	12,290	2.79%	3.02%	543,677	444,627	13,467	2.48%	3.03%	9.58%	-11.27%	0.33%
San Francisco County, CA	439,726	409,015	43,363	9.86%	10.60%	500,344	410,181	55,226	11.04%	13.46%	27.36%	11.93%	27.00%
Fairfield County, CT	434,941	412,698	12,373	2.84%	3.00%	475,201	415,402	11,849	2.49%	2.85%	-4.24%	-12.35%	-4.86%
Milwaukee County, WI	433,168	422,541	15,909	3.67%	3.77%	446,291	407,043	13,679	3.07%	3.36%	-14.02%	-16.55%	-10.74%
Hartford County, CT	426,321	411,811	9,369	2.20%	2.28%	444,943	398,621	8,233	1.85%	2.07%	-12.13%	-15.80%	-9.22%
Erie County, New York	425,669	415,158	12,668	2.98%	3.05%	454,568	420,232	11,395	2.51%	2.71%	-10.05%	-15.77%	-11.14%
Marion County, IN	417,094	405,020	8,237	1.97%	2.03%	468,561	429,849	8,222	1.75%	1.91%	-0.18%	-11.15%	-5.95%
Pima County, Arizona	416,647	396,702	10,377	2.49%	2.62%	454,998	408,181	9,377	2.06%	2.30%	-9.64%	-17.25%	-12.18%
New Haven County, CT	413,216	399,561	13,643	3.30%	3.41%	423,971	387,108	14,590	3.44%	3.77%	6.94%	4.23%	10.38%
Shelby County, TN	408,911	397,244	5,988	1.46%	1.51%	422,071	396,124	4,329	1.03%	1.09%	-27.71%	-29.96%	-27.50%
Pinellas County, FL	407,937	387,325	7,260	1.78%	1.87%	452,828	396,547	6,712	1.48%	1.69%	-7.55%	-16.71%	-9.70%
Duval County, Florida	405,660	388,911	5,665	1.40%	1.46%	481,743	437,789	6,507	1.35%	1.49%	14.86%	-3.28%	2.04%
Montgomery County, PA	404,316	386,891	12,140	3.00%	3.14%	441,814	376,925	9,057	2.05%	2.40%	-25.40%	-31.73%	-23.42%
Baltimore County, MD	400,980	387,461	8,796	2.19%	2.27%	421,882	381,515	6,748	1.60%	1.77%	-23.28%	-27.08%	-22.09%
Collin County, Texas	400,325	370,507	3,155	0.79%	0.85%	535,579	440,666	5,576	1.04%	1.27%	76.74%	32.10%	48.60%
Worcester County, MA	387,403	372,003	10,980	2.83%	2.95%	429,028	383,875	11,468	2.67%	2.99%	4.44%	-5.69%	1.21%
Middlesex County, NJ	387,057	373,543	11,531	2.98%	3.09%	416,538	368,641	8,273	1.99%	2.24%	-28.25%	-33.33%	-27.30%
Ventura County, CA	380,261	359,574	7,972	2.10%	2.22%	402,256	359,188	6,431	1.60%	1.79%	-19.33%	-23.74%	-19.24%
Gwinnett County, GA	378,803	359,543	2,982	0.79%	0.83%	457,329	402,843	3,223	0.70%	0.80%	8.08%	-10.48%	-3.54%
Hamilton County, Ohio	375,832	362,046	10,667	2.84%	2.95%	406,213	367,333	11,492	2.83%	3.13%	7.73%	-0.32%	6.18%
Macomb County, MI	372,677	363,796	3,329	0.89%	0.92%	420,591	389,919	4,029	0.96%	1.03%	21.03%	7.24%	12.92%
Suffolk County, MA	367,834	355,642	49,882	13.56%	14.03%	427,233	377,994	54,594	12.78%	14.44%	9.45%	-5.77%	2.97%
Multnomah County, OR	366,500	341,928	18,474	5.04%	5.40%	437,223	365,193	20,287	4.64%	5.56%	9.81%	-7.95%	2.82%
Pierce County, Washington	363,532	348,223	10,286	2.83%	2.95%	439,523	400,728	8,858	2.02%	2.21%	-13.88%	-28.77%	-25.17%
Essex County, Massachusetts	359,988	343,508	12,253	3.40%	3.57%	410,241	367,824	12,636	3.08%	3.44%	3.13%	-9.51%	-3.69%
San Mateo County, CA	358,970	340,275	9,447	2.63%	2.78%	400,489	340,934	9,833	2.46%	2.88%	4.09%	-6.70%	3.88%
Snohomish County, WA	348,395	331,377	6,276	1.80%	1.89%	413,286	361,381	7,083	1.71%	1.96%	12.86%	-4.86%	3.49%
Cobb County, GA	347,115	324,644	3,653	1.05%	1.13%	394,381	333,847	4,490	1.14%	1.34%	22.91%	8.18%	19.52%
Monroe County, NY	346,802	335,001	11,491	3.31%	3.43%	365,270	330,485	9,528	2.61%	2.88%	-17.08%	-21.28%	-15.95%
Fresno County, CA	346,377	332,682	7,520	2.17%	2.26%	403,192	375,599	5,940	1.47%	1.58%	-21.01%	-32.14%	-30.04%
Jefferson County, KY	343,060	332,808	6,707	1.96%	2.02%	383,576	348,737	6,778	1.77%	1.94%	1.06%	-9.62%	-3.56%
Essex County, NJ	342,989	332,695	15,122	4.41%	4.55%	392,629	351,920	13,581	3.46%	3.86%	-10.19%	-21.55%	-15.10%
Denton County, TX	342,383	322,587	4,352	1.27%	1.35%	473,116	401,985	5,473	1.16%	1.36%	25.76%	-8.99%	0.92%
Oklahoma County, OK	340,057	328,788	5,844	1.72%	1.78%	378,959	353,358	6,474	1.71%	1.83%	10.78%	-0.59%	3.08%
Lake County, IL	339,269	317,717	9,550	2.81%	3.01%	358,325	313,244	7,537	2.10%	2.41%	-21.08%	-25.28%	-19.95%
Norfolk County, MA	337,690	322,931	11,826	3.50%	3.66%	377,681	323,292	13,455	3.56%	4.16%	13.77%	1.73%	13.65%
El Paso County, TX	323,612	314,375	6,890	2.13%	2.19%	375,126	353,316	5,218	1.39%	1.48%	-24.27%	-34.67%	-32.61%
DeKalb County, GA	323,385	307,056	5,564	1.72%	1.81%	378,700	325,069	5,031	1.33%	1.55%	-9.58%	-22.79%	-14.59%
Hudson County, NJ	318,163	309,650	28,450	8.94%	9.19%	374,232	328,717	25,769	6.89%	7.84%	-9.42%	-22.99%	-14.68%
Will County, IL	317,703	304,861	2,884	0.91%	0.95%	349,596	316,739	2,828	0.81%	0.89%	-1.94%	-10.89%	-5.62%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
County	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Workers	Commuters	Walked to Work	% of Workers who Walked	% of Commuters who Walked	Walked to Work	% of Workers who Walked	% of Commuters who Walked
Jackson County, MO	314,194	302,195	5,019	1.60%	1.66%	354,999	320,725	4,996	1.41%	1.56%	-0.46%	-11.90%	-6.21%
Bucks County, PA	313,874	299,782	4,961	1.58%	1.65%	335,092	294,274	4,618	1.38%	1.57%	-6.91%	-12.81%	-5.17%
Denver County, CO	311,360	293,188	13,670	4.39%	4.66%	403,262	333,719	17,863	4.43%	5.35%	30.67%	0.89%	14.80%
Davidson County, TN	309,633	295,650	5,871	1.90%	1.99%	386,802	337,447	8,201	2.12%	2.43%	39.69%	11.82%	22.38%
Bernalillo County, NM	307,864	294,695	5,960	1.94%	2.02%	318,290	288,042	5,713	1.79%	1.98%	-4.14%	-7.28%	-1.93%
Kern County, CA	307,542	298,356	5,728	1.86%	1.92%	346,503	327,646	3,239	0.93%	0.99%	-43.45%	-49.81%	-48.51%
District of Columbia, DC	306,336	291,401	37,055	12.10%	12.72%	371,014	297,447	41,960	11.31%	14.11%	13.24%	-6.50%	10.94%
Monmouth County, NJ	301,874	288,217	6,973	2.31%	2.42%	323,136	284,378	4,592	1.42%	1.61%	-34.15%	-38.48%	-33.26%
El Paso County, CO	297,257	280,081	13,987	4.71%	4.99%	360,357	319,617	11,895	3.30%	3.72%	-14.96%	-29.85%	-25.48%
Jefferson County, AL	289,317	282,370	3,599	1.24%	1.27%	302,550	280,404	4,299	1.42%	1.53%	19.45%	14.23%	20.29%
Johnson County, KS	288,683	273,050	2,617	0.91%	0.96%	326,382	279,350	3,013	0.92%	1.08%	15.13%	1.83%	12.54%
Arapahoe County, CO	288,166	273,574	4,616	1.60%	1.69%	346,381	298,525	4,894	1.41%	1.64%	6.02%	-11.80%	-2.84%

Changes in Bicycle Commuting

Overall, the number of US workers who commuted by bicycling decreased by 5.94% (from 786,000 to 739,000) between the 2008-2012 and 2017-2021 time periods (Table 4). The share of all workers who bicycled decreased by 15.3% (from 0.56% to 0.48%), and the share of commuters (people who worked outside their home) who bicycled decreased by 10.2% (from 0.59% to 0.53%) between the baseline and later time periods.

Before considering state-level changes between 2008-2012 and 2017-2021, it is important to note that the highest overall bicycle commute mode shares in both time periods were in the District of Columbia (more than 3.0% of all workers), Oregon (more than 1.5%), Colorado (more than 1.0%) and Montana (more than 1.0%) (Table 4).

Considering the percentage change in total bicycle commuters between 2008-2012 and 2017-2021, Arkansas (62%), New York (55%), and the District of Columbia (49%) had the largest increases. These same three states also had the largest increases in bicycle commuting according to the other two measures, the percentage change in the share of all workers and all commuters who bicycled. The largest decreases in the percentages of workers and commuters who bicycled were in North Dakota, South Dakota, Nebraska, and Nevada (Table 4).

Next, we analyzed the 50 MSAs with the largest numbers of workers during 2008-2012 (Table 5). The highest overall bicycle commute mode shares in both time periods were in the Portland, OR (more than 1.7% of all workers), San Francisco, CA (more than 1.5%), and San Jose, CA (more than 1.3%) regions (Table 5).

Examining shifts in bicycle commuting by MSA between 2008-2012 and 2017-2021 showed that the New York, NY, San Antonio, TX, and Washington, DC, regions experienced the greatest growth in the percentage of workers and percentage of commuters who bicycled. In contrast, the Raleigh, NC, Riverside, CA, and Las Vegas, NV regions had the greatest declines in bicycle mode shares (Table 5).

Our analysis of the 100 counties with the largest numbers of workers showed that the counties with the highest bicyclist mode shares in both time periods were Multnomah County, OR (Portland) (more than 3.9% of all workers), San Francisco County, CA (more than 3.3%), and District of Columbia (more than 3.0%) (Table 6).

Among the top 100 counties, the greatest growth in the percentage of workers and percentage of commuters who bicycled between 2008-2012 and 2017-2021 occurred in Collin County, TX (Plano), New York County, NY (Manhattan), and Hudson County, NJ (Jersey City). The greatest declines in bicycle mode shares were in Will County, IL (Joliet), Cobb County, GA (Marietta), Essex County, MA, and Lake County, IL (Waukegan) (Table 6).

Table 4. Bicyclist Commuting by State, 2008-2012 and 2017-2021

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
State	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
All States	*139,893,639*	*133,916,010*	*785,665*	*0.56%*	*0.59%*	*155,284,955*	*140,223,271*	*739,008*	*0.48%*	*0.53%*	*-5.94%*	*-15.26%*	*-10.17%*
Alabama	1,988,366	1,936,854	2,552	0.13%	0.13%	2,146,674	2,025,951	1,934	0.09%	0.10%	-24.22%	-29.81%	-27.55%
Alaska	345,577	327,252	3,416	0.99%	1.04%	349,920	325,098	2,541	0.73%	0.78%	-25.61%	-26.54%	-25.12%
Arizona	2,694,999	2,548,520	24,687	0.92%	0.97%	3,174,911	2,802,982	20,578	0.65%	0.73%	-16.64%	-29.24%	-24.21%
Arkansas	1,232,938	1,192,287	1,330	0.11%	0.11%	1,295,639	1,222,706	2,157	0.17%	0.18%	62.18%	54.33%	58.15%
California	16,282,943	15,443,783	169,860	1.04%	1.10%	18,283,118	16,206,506	139,957	0.77%	0.86%	-17.60%	-26.62%	-21.48%
Colorado	2,481,269	2,320,965	32,578	1.31%	1.40%	2,959,315	2,545,160	30,214	1.02%	1.19%	-7.26%	-22.24%	-15.43%
Connecticut	1,730,076	1,659,265	4,737	0.27%	0.29%	1,791,786	1,605,422	3,988	0.22%	0.25%	-15.81%	-18.71%	-12.99%
Delaware	416,699	401,668	1,284	0.31%	0.32%	459,571	414,367	1,261	0.27%	0.30%	-1.79%	-10.95%	-4.80%
District of Columbia	306,336	291,401	9,347	3.05%	3.21%	371,014	297,447	13,885	3.74%	4.67%	48.55%	22.65%	45.53%
Florida	8,107,476	7,728,054	51,997	0.64%	0.67%	9,698,180	8,741,175	50,037	0.52%	0.57%	-3.77%	-19.55%	-14.92%
Georgia	4,234,475	4,037,325	9,329	0.22%	0.23%	4,926,936	4,427,990	9,448	0.19%	0.21%	1.28%	-12.96%	-7.66%
Hawaii	665,358	634,317	6,332	0.95%	1.00%	707,605	658,351	5,678	0.80%	0.86%	-10.33%	-15.68%	-13.60%
Idaho	687,321	648,218	8,291	1.21%	1.28%	836,154	758,836	6,475	0.77%	0.85%	-21.90%	-35.80%	-33.29%
Illinois	5,926,796	5,685,247	35,072	0.59%	0.62%	6,164,668	5,554,064	34,299	0.56%	0.62%	-2.20%	-5.98%	0.11%
Indiana	2,923,571	2,828,307	13,637	0.47%	0.48%	3,189,106	2,966,202	12,071	0.38%	0.41%	-11.48%	-18.85%	-15.60%
Iowa	1,529,744	1,457,832	7,537	0.49%	0.52%	1,592,872	1,464,112	5,920	0.37%	0.40%	-21.45%	-24.57%	-21.79%
Kansas	1,386,193	1,325,839	4,953	0.36%	0.37%	1,441,378	1,324,704	4,288	0.30%	0.32%	-13.43%	-16.74%	-13.35%
Kentucky	1,833,778	1,779,013	4,078	0.22%	0.23%	1,976,861	1,844,983	3,480	0.18%	0.19%	-14.66%	-20.84%	-17.72%
Louisiana	1,960,054	1,914,678	8,027	0.41%	0.42%	1,991,358	1,886,345	8,488	0.43%	0.45%	5.74%	4.08%	7.33%
Maine	637,261	603,825	3,235	0.51%	0.54%	667,845	597,949	2,115	0.32%	0.35%	-34.62%	-37.62%	-33.98%
Maryland	2,889,278	2,771,555	8,533	0.30%	0.31%	3,091,677	2,724,672	9,105	0.29%	0.33%	6.70%	-0.28%	8.54%
Massachusetts	3,231,819	3,095,432	23,261	0.72%	0.75%	3,591,598	3,164,395	27,543	0.77%	0.87%	18.41%	6.55%	15.83%
Michigan	4,171,196	4,022,984	19,004	0.46%	0.47%	4,594,453	4,211,728	16,609	0.36%	0.39%	-12.60%	-20.65%	-16.52%
Minnesota	2,697,932	2,559,091	20,503	0.76%	0.80%	2,925,932	2,591,070	16,341	0.56%	0.63%	-20.30%	-26.51%	-21.28%
Mississippi	1,190,185	1,161,667	1,429	0.12%	0.12%	1,227,836	1,181,315	1,076	0.09%	0.09%	-24.70%	-27.01%	-25.95%
Missouri	2,747,695	2,631,089	6,326	0.23%	0.24%	2,910,919	2,666,813	5,412	0.19%	0.20%	-14.45%	-19.25%	-15.59%
Montana	470,377	439,906	6,515	1.39%	1.48%	518,868	469,902	5,733	1.10%	1.22%	-12.00%	-20.23%	-17.62%
Nebraska	935,599	892,248	4,691	0.50%	0.53%	1,000,159	923,878	2,919	0.29%	0.32%	-37.77%	-41.79%	-39.90%
Nevada	1,223,670	1,184,658	5,652	0.46%	0.48%	1,406,731	1,302,477	3,824	0.27%	0.29%	-32.34%	-41.15%	-38.46%
New Hampshire	679,196	641,763	1,715	0.25%	0.27%	724,368	645,911	1,592	0.22%	0.25%	-7.17%	-12.96%	-7.77%
New Jersey	4,127,735	3,974,162	13,924	0.34%	0.35%	4,489,790	4,012,562	12,349	0.28%	0.31%	-11.31%	-18.46%	-12.16%
New Mexico	873,552	830,436	6,154	0.70%	0.74%	887,251	814,329	4,595	0.52%	0.56%	-25.33%	-26.49%	-23.86%
New York	8,877,453	8,533,368	44,548	0.50%	0.52%	9,440,371	8,540,691	69,006	0.73%	0.81%	54.90%	45.67%	54.77%
North Carolina	4,237,689	4,057,165	10,489	0.25%	0.26%	4,840,986	4,343,047	7,761	0.16%	0.18%	-26.01%	-35.23%	-30.88%
North Dakota	363,094	342,549	2,089	0.58%	0.61%	403,477	380,209	1,190	0.29%	0.31%	-43.03%	-48.74%	-48.68%
Ohio	5,196,293	5,016,561	15,567	0.30%	0.31%	5,548,580	5,099,813	15,270	0.28%	0.30%	-1.91%	-8.14%	-3.51%
Oklahoma	1,676,739	1,616,220	4,027	0.24%	0.25%	1,775,842	1,663,002	3,925	0.22%	0.24%	-2.53%	-7.97%	-5.27%
Oregon	1,705,593	1,597,654	39,517	2.32%	2.47%	1,988,071	1,739,372	35,036	1.76%	2.01%	-11.34%	-23.94%	-18.56%
Pennsylvania	5,808,681	5,593,858	25,969	0.45%	0.46%	6,173,679	5,571,052	27,303	0.44%	0.49%	5.14%	-1.08%	5.57%
Rhode Island	500,642	483,179	2,090	0.42%	0.43%	541,019	497,579	1,729	0.32%	0.35%	-17.27%	-23.45%	-19.67%
South Carolina	1,988,444	1,915,910	6,020	0.30%	0.31%	2,304,699	2,139,404	4,672	0.20%	0.22%	-22.39%	-33.04%	-30.50%
South Dakota	412,161	388,727	2,491	0.60%	0.64%	442,846	408,605	1,490	0.34%	0.36%	-40.18%	-44.33%	-43.09%
Tennessee	2,762,765	2,667,525	3,896	0.14%	0.15%	3,155,978	2,902,545	3,712	0.12%	0.13%	-4.72%	-16.59%	-12.44%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
State	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
Texas	11,314,152	10,866,502	29,282	0.26%	0.27%	13,464,482	12,233,649	30,512	0.23%	0.25%	4.20%	-12.44%	-7.44%
Utah	1,249,915	1,190,956	10,217	0.82%	0.86%	1,569,101	1,383,952	8,730	0.56%	0.63%	-14.55%	-31.94%	-26.47%
Vermont	319,359	296,759	2,417	0.76%	0.81%	328,766	291,169	2,498	0.76%	0.86%	3.35%	0.39%	5.34%
Virginia	3,906,766	3,731,703	14,182	0.36%	0.38%	4,268,079	3,780,856	14,445	0.34%	0.38%	1.85%	-6.77%	0.53%
Washington	3,127,950	2,961,151	28,304	0.90%	0.96%	3,670,752	3,207,425	26,175	0.71%	0.82%	-7.52%	-21.20%	-14.62%
West Virginia	743,046	720,658	924	0.12%	0.13%	722,460	681,545	1,022	0.14%	0.15%	10.61%	13.76%	16.95%
Wisconsin	2,807,856	2,694,612	21,098	0.75%	0.78%	2,969,464	2,717,256	16,181	0.54%	0.60%	-23.31%	-27.48%	-23.94%
Wyoming	285,577	271,312	2,552	0.89%	0.94%	281,810	262,698	2,439	0.87%	0.93%	-4.43%	-3.15%	-1.29%

Table 5. Bicyclist Commuting in Top 50 MSAs with the most workers, 2008-2012 and 2017-2021

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
Top 50 MSA	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
Top 50 MSAs	*77,863,941*	*74,438,882*	*458,762*	*0.59%*	*0.62%*								
New York-Newark-Jersey City, NY-NJ-PA Metro Area	8,747,542	8,407,146	42,261	0.48%	0.50%	9,564,577	8,551,738	68,002	0.71%	0.80%	60.91%	47.16%	58.19%
Los Angeles-Long Beach-Anaheim, CA Metro Area	5,805,874	5,523,693	49,796	0.86%	0.90%	6,316,352	5,605,794	38,357	0.61%	0.68%	-22.97%	-29.20%	-24.10%
Chicago-Naperville-Elgin, IL-IN-WI Metro	4,396,833	4,212,913	26,915	0.61%	0.64%	4,711,327	4,197,386	28,600	0.61%	0.68%	6.26%	-0.83%	6.65%
Dallas-Fort Worth-Arlington, TX Metro Area	3,043,357	2,907,747	4,829	0.16%	0.17%	3,758,555	3,339,612	5,233	0.14%	0.16%	8.37%	-12.25%	-5.65%
Washington-Arlington-Alexandria, DC-VA-MD-WV Metro	2,963,876	2,825,076	18,444	0.62%	0.65%	3,357,080	2,839,751	24,782	0.74%	0.87%	34.36%	18.63%	33.67%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metro	2,759,585	2,655,135	16,756	0.61%	0.63%	3,028,700	2,673,918	18,118	0.60%	0.68%	8.13%	-1.48%	7.37%
Houston-The Woodlands-Sugar Land, TX Metro	2,758,778	2,665,158	7,507	0.27%	0.28%								
Miami-Fort Lauderdale-Pompano Beach, FL Metro Area	2,517,921	2,404,564	14,060	0.56%	0.58%	2,937,950	2,667,502	14,260	0.49%	0.53%	1.42%	-13.08%	-8.57%
Atlanta-Sandy Springs-Alpharetta, GA Metro Area	2,440,294	2,302,221	4,132	0.17%	0.18%								
Boston-Cambridge-Newton, MA-NH Metro Area	2,313,366	2,211,758	19,752	0.85%	0.89%	2,605,200	2,266,002	24,467	0.94%	1.08%	23.87%	9.99%	20.91%
San Francisco-Oakland-Berkeley, CA Metro Area	2,088,667	1,964,152	35,567	1.70%	1.81%	2,399,468	2,008,836	37,273	1.55%	1.86%	4.80%	-8.78%	2.47%
Phoenix-Mesa-Chandler, AZ Metro Area	1,836,152	1,733,127	14,738	0.80%	0.85%	2,254,347	1,962,032	12,644	0.56%	0.64%	-14.21%	-30.12%	-24.22%
Detroit-Warren-Dearborn, MI Metro Area	1,801,136	1,744,571	4,254	0.24%	0.24%	2,012,308	1,824,506	3,973	0.20%	0.22%	-6.61%	-16.41%	-10.70%
Seattle-Tacoma-Bellevue, WA Metro Area	1,716,731	1,626,140	17,213	1.00%	1.06%	2,056,375	1,749,397	17,618	0.86%	1.01%	2.35%	-14.55%	-4.86%
Minneapolis-St. Paul-Bloomington, MN-WI Metro	1,706,299	1,625,481	14,958	0.88%	0.92%	1,946,949	1,692,070	12,397	0.64%	0.73%	-17.12%	-27.37%	-20.38%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
Top 50 MSA	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
Riverside-San Bernardino-Ontario, CA Metro	1,643,359	1,570,508	6,241	0.38%	0.40%	1,946,306	1,792,084	3,971	0.20%	0.22%	-36.37%	-46.28%	-44.24%
San Diego-Chula Vista-Carlsbad, CA Metro Area	1,431,134	1,341,529	9,929	0.69%	0.74%	1,618,547	1,416,912	8,669	0.54%	0.61%	-12.69%	-22.80%	-17.34%
Baltimore-Columbia-Towson, MD Metro Area	1,333,905	1,282,508	3,546	0.27%	0.28%	1,419,476	1,259,914	3,538	0.25%	0.28%	-0.23%	-6.24%	1.56%
St. Louis, MO-IL Metro Area	1,325,726	1,276,652	3,299	0.25%	0.26%	1,389,121	1,253,427	2,578	0.19%	0.21%	-21.86%	-25.42%	-20.41%
Denver-Aurora-Lakewood, CO Metro Area	1,291,215	1,213,390	11,445	0.89%	0.94%	1,591,419	1,346,495	12,268	0.77%	0.91%	7.19%	-13.03%	-3.41%
Tampa-St. Petersburg-Clearwater, FL Metro Area	1,214,567	1,151,403	8,697	0.72%	0.76%	1,465,092	1,282,792	7,918	0.54%	0.62%	-8.96%	-24.53%	-18.28%
Pittsburgh, PA Metro Area	1,100,825	1,062,775	2,662	0.24%	0.25%	1,153,267	1,029,253	2,659	0.23%	0.26%	-0.11%	-4.65%	3.14%
Portland-Vancouver-Hillsboro, OR-WA Metro Area	1,052,356	986,104	23,537	2.24%	2.39%	1,257,719	1,076,389	21,683	1.72%	2.01%	-7.88%	-22.92%	-15.60%
Cincinnati, OH-KY-IN Metro Area	999,355	962,984	1,542	0.15%	0.16%								
Orlando-Kissimmee-Sanford, FL Metro	994,356	950,019	4,581	0.46%	0.48%	1,275,837	1,145,188	4,531	0.36%	0.40%	-1.09%	-22.91%	-17.95%
Kansas City, MO-KS Metro Area	989,484	948,731	1,671	0.17%	0.18%	1,100,432	983,283	1,610	0.15%	0.16%	-3.65%	-13.36%	-7.04%
San Antonio-New Braunfels, TX Metro Area	969,402	931,982	1,452	0.15%	0.16%	1,187,332	1,079,270	2,243	0.19%	0.21%	54.48%	26.12%	33.40%
Cleveland-Elyria, OH Metro Area	944,627	912,692	2,936	0.31%	0.32%	995,022	907,027	2,527	0.25%	0.28%	-13.93%	-18.29%	-13.39%
Sacramento-Roseville-Folsom, CA Metro Area	921,721	870,120	16,616	1.80%	1.91%	1,083,106	940,847	12,416	1.15%	1.32%	-25.28%	-36.41%	-30.89%
Las Vegas-Henderson-Paradise, NV Metro Area	889,931	863,545	3,648	0.41%	0.42%	1,018,843	943,438	2,273	0.22%	0.24%	-37.69%	-45.58%	-42.97%
Columbus, OH Metro Area	887,211	849,498	3,835	0.43%	0.45%	1,064,636	941,117	2,958	0.28%	0.31%	-22.87%	-35.72%	-30.38%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
Top 50 MSA	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
Austin-Round Rock-Georgetown, TX Metro Area	866,411	809,519	7,034	0.81%	0.87%	1,190,031	990,500	6,729	0.57%	0.68%	-4.34%	-30.35%	-21.82%
San Jose-Sunnyvale-Santa Clara, CA Metro	861,197	820,426	14,479	1.68%	1.76%	1,008,967	854,759	13,935	1.38%	1.63%	-3.76%	-17.85%	-7.62%
Charlotte-Concord-Gastonia, NC-SC Metro Area	832,041	788,809	1,183	0.14%	0.15%								
Indianapolis-Carmel-Anderson, IN Metro Area	831,221	800,843	2,404	0.29%	0.30%								
Virginia Beach-Norfolk-Newport News, VA-NC Metro Area	830,034	793,126	3,502	0.42%	0.44%	901,367	834,021	2,628	0.29%	0.32%	-24.96%	-30.90%	-28.64%
San Juan-Bayamon-Caguas, PR Metro Area	766,883	750,009	1,550	0.20%	0.21%								
Providence-Warwick, RI-MA Metro Area	760,273	735,492	2,560	0.34%	0.35%	824,719	760,500	2,042	0.25%	0.27%	-20.23%	-26.47%	-22.86%
Nashville-Davidson--Murfreesboro--Franklin, TN Metro	758,698	723,802	1,398	0.18%	0.19%	1,011,034	894,015	1,331	0.13%	0.15%	-4.79%	-28.55%	-22.92%
Milwaukee-Waukesha, WI Metro Area	748,539	724,288	3,856	0.52%	0.53%	782,458	707,830	2,916	0.37%	0.41%	-24.38%	-27.66%	-22.62%
Jacksonville, FL Metro Area	619,566	592,219	3,759	0.61%	0.63%	753,761	674,776	3,083	0.41%	0.46%	-17.98%	-32.59%	-28.02%
Richmond, VA Metro Area	598,300	571,138	2,572	0.43%	0.45%	654,556	576,844	2,693	0.41%	0.47%	4.70%	-4.29%	3.67%
Oklahoma City, OK Metro Area	595,531	576,118	1,645	0.28%	0.29%	681,651	634,259	1,762	0.26%	0.28%	7.11%	-6.42%	-2.71%
Louisville/Jefferson County, KY-IN Metro Area	590,541	573,279	1,411	0.24%	0.25%	623,753	569,535	1,124	0.18%	0.20%	-20.34%	-24.58%	-19.82%
Hartford-East Hartford-Middletown, CT Metro Area	590,044	567,842	1,401	0.24%	0.25%	607,107	542,645	1,085	0.18%	0.20%	-22.56%	-24.73%	-18.96%
Memphis, TN-MS-AR Metro Area	578,883	562,500	593	0.10%	0.11%	606,875	572,039	648	0.11%	0.11%	9.27%	4.23%	7.45%
Raleigh-Cary, NC Metro Area	554,144	521,272	1,531	0.28%	0.29%	709,796	590,336	942	0.13%	0.16%	-38.47%	-51.96%	-45.67%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
Top 50 MSA	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
Salt Lake City, UT Metro Area	543,909	519,060	4,352	0.80%	0.84%	643,442	562,720	3,877	0.60%	0.69%	-10.91%	-24.70%	-17.83%
New Orleans-Metairie, LA Metro	529,289	515,473	4,467	0.84%	0.87%	576,440	533,737	5,475	0.95%	1.03%	22.57%	12.54%	18.37%
Buffalo-Cheektowaga, NY Metro Area	522,852	510,345	2,246	0.43%	0.44%	553,271	512,820	1,865	0.34%	0.36%	-16.96%	-21.53%	-17.36%

Table 6. Bicyclist Pedestrian Commuting in top 100 Counties with the most workers, 2008-2012 and 2017-2021

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
County	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
Top 100 Counties	*60,079,883*	*57,421,467*	*412,277*	*0.69%*	*0.72%*	*68,255,589*	*60,352,125*	*425,672*	*0.62%*	*0.71%*	*3.25%*	*-9.12%*	*-1.76%*
Los Angeles County, CA	4,384,405	4,172,640	36,069	0.82%	0.86%	4,753,898	4,234,400	29,567	0.62%	0.70%	-18.03%	-24.40%	-19.22%
Cook County, Illinois	2,372,336	2,278,500	21,420	0.90%	0.94%	2,550,520	2,263,021	24,931	0.98%	1.10%	16.39%	8.26%	17.19%
Harris County, Texas	1,909,380	1,848,444	5,624	0.29%	0.30%	2,210,850	2,031,669	6,261	0.28%	0.31%	11.33%	-3.85%	1.29%
Maricopa County, AZ	1,707,548	1,612,289	14,339	0.84%	0.89%	2,096,842	1,820,741	11,989	0.57%	0.66%	-16.39%	-31.91%	-25.96%
San Diego County, CA	1,431,134	1,341,529	9,929	0.69%	0.74%	1,618,547	1,416,912	8,669	0.54%	0.61%	-12.69%	-22.80%	-17.34%
Orange County, CA	1,421,469	1,351,053	13,727	0.97%	1.02%	1,562,454	1,371,394	8,790	0.56%	0.64%	-35.97%	-41.74%	-36.92%
Miami-Dade County, FL	1,115,424	1,070,025	5,802	0.52%	0.54%	1,305,587	1,192,352	7,075	0.54%	0.59%	21.94%	4.18%	9.43%
Dallas County, Texas	1,106,207	1,065,653	1,598	0.14%	0.15%	1,281,466	1,159,169	2,071	0.16%	0.18%	29.60%	11.87%	19.14%
Kings County, NY	1,080,412	1,036,695	12,974	1.20%	1.25%	1,233,234	1,088,284	24,134	1.96%	2.22%	86.02%	62.97%	77.20%
Queens County, NY	1,043,646	1,018,700	4,357	0.42%	0.43%	1,125,992	1,038,725	7,082	0.63%	0.68%	62.54%	50.66%	59.41%
King County, Washington	1,004,804	946,540	14,917	1.48%	1.58%	1,203,566	987,288	14,930	1.24%	1.51%	0.09%	-16.44%	-4.04%
Clark County, Nevada	889,931	863,545	3,648	0.41%	0.42%	1,018,843	943,438	2,273	0.22%	0.24%	-37.69%	-45.58%	-42.97%
Tarrant County, Texas	859,034	826,470	1,417	0.16%	0.17%	1,031,178	934,770	1,285	0.12%	0.14%	-9.32%	-24.45%	-19.82%
Riverside County, CA	847,993	805,058	3,255	0.38%	0.40%	1,020,284	938,483	2,038	0.20%	0.22%	-37.39%	-47.96%	-46.29%
Santa Clara County, CA	837,242	797,655	14,269	1.70%	1.79%	979,075	827,218	13,846	1.41%	1.67%	-2.96%	-17.02%	-6.43%
New York County, NY	832,836	777,313	9,350	1.12%	1.20%	886,916	736,311	20,706	2.33%	2.81%	121.45%	107.95%	133.79%
Broward County, FL	832,732	795,679	4,649	0.56%	0.58%	957,695	870,554	4,142	0.43%	0.48%	-10.91%	-22.53%	-18.57%
San Bernardino County, CA	795,366	765,450	2,986	0.38%	0.39%	926,022	853,601	1,933	0.21%	0.23%	-35.26%	-44.40%	-41.95%
Middlesex County, MA	785,696	748,632	10,008	1.27%	1.34%	880,537	743,450	12,881	1.46%	1.73%	28.71%	14.84%	29.60%
Bexar County, Texas	776,516	748,117	1,194	0.15%	0.16%	941,932	858,896	1,738	0.18%	0.20%	45.56%	20.00%	26.79%
Suffolk County, NY	713,596	687,967	1,693	0.24%	0.25%	760,938	702,733	1,520	0.20%	0.22%	-10.22%	-15.80%	-12.11%
Alameda County, CA	693,960	657,613	11,945	1.72%	1.82%	817,140	683,447	11,792	1.44%	1.73%	-1.28%	-16.16%	-5.01%
Wayne County, MI	673,168	655,399	1,887	0.28%	0.29%	740,725	677,139	2,223	0.30%	0.33%	17.81%	7.06%	14.02%
Nassau County, NY	639,524	616,836	1,770	0.28%	0.29%	687,971	619,162	1,285	0.19%	0.21%	-27.40%	-32.51%	-27.67%
Hennepin County, MN	610,001	579,833	10,634	1.74%	1.83%	692,588	586,541	8,426	1.22%	1.44%	-20.76%	-30.21%	-21.67%
Philadelphia County, PA	601,331	584,423	11,755	1.95%	2.01%	710,964	634,527	14,172	1.99%	2.23%	20.56%	1.97%	11.04%
Sacramento County, CA	599,406	570,069	7,522	1.25%	1.32%	715,334	628,001	5,705	0.80%	0.91%	-24.16%	-36.45%	-31.15%
Allegheny County, PA	586,994	565,700	2,317	0.39%	0.41%	627,613	547,685	2,499	0.40%	0.46%	7.85%	0.87%	11.40%
Fairfax County, VA	586,121	556,511	1,453	0.25%	0.26%	611,449	503,905	1,959	0.32%	0.39%	34.82%	29.24%	48.90%
Franklin County, Ohio	572,858	550,356	3,379	0.59%	0.61%	677,271	599,522	2,549	0.38%	0.43%	-24.56%	-36.19%	-30.75%
Hillsborough County, FL	571,659	541,245	3,830	0.67%	0.71%	706,303	617,397	3,418	0.48%	0.55%	-10.76%	-27.77%	-21.76%
Palm Beach County, FL	569,765	538,860	3,609	0.63%	0.67%	674,668	604,596	3,043	0.45%	0.50%	-15.68%	-28.79%	-24.85%
Cuyahoga County, Ohio	567,874	549,357	1,975	0.35%	0.36%	592,768	538,096	2,006	0.34%	0.37%	1.57%	-2.70%	3.70%
Oakland County, MI	567,259	544,820	1,352	0.24%	0.25%	642,908	564,409	990	0.15%	0.18%	-26.78%	-35.39%	-29.32%
Orange County, FL	555,297	532,506	2,805	0.51%	0.53%	704,814	632,481	3,058	0.43%	0.48%	9.02%	-14.11%	-8.21%
Travis County, Texas	536,112	499,861	6,280	1.17%	1.26%	705,996	574,680	5,670	0.80%	0.99%	-9.71%	-31.44%	-21.47%
Bronx County, New York	524,892	508,474	1,477	0.28%	0.29%	578,177	544,865	2,589	0.45%	0.48%	75.29%	59.13%	63.58%
Montgomery County, MD	515,347	486,886	2,350	0.46%	0.48%	553,355	456,114	2,772	0.50%	0.61%	17.96%	9.86%	25.92%
Salt Lake County, Utah	499,823	478,103	3,993	0.80%	0.84%	608,792	530,926	3,817	0.63%	0.72%	-4.41%	-21.52%	-13.92%
St. Louis County, MO	478,292	456,944	1,096	0.23%	0.24%	493,169	436,150	722	0.15%	0.17%	-34.12%	-36.11%	-30.98%
Honolulu County, HI	476,354	459,335	4,995	1.05%	1.09%	506,185	473,886	4,735	0.94%	1.00%	-5.21%	-10.79%	-8.12%
Contra Costa County, CA	473,623	446,916	2,524	0.53%	0.56%	553,536	474,369	2,172	0.39%	0.46%	-13.95%	-26.37%	-18.93%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
County	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
DuPage County, Illinois	461,186	439,422	1,669	0.36%	0.38%	482,036	414,635	1,129	0.23%	0.27%	-32.35%	-35.28%	-28.31%
Mecklenburg County, NC	456,641	430,109	802	0.18%	0.19%	577,880	478,928	845	0.15%	0.18%	5.36%	-16.74%	-5.38%
Wake County, North Carolina	451,578	422,289	1,483	0.33%	0.35%	578,728	470,657	899	0.16%	0.19%	-39.38%	-52.70%	-45.61%
Prince George's County, MD	450,045	438,035	1,344	0.30%	0.31%	494,767	444,182	1,528	0.31%	0.34%	13.69%	3.41%	12.12%
Westchester County, NY	444,511	423,091	609	0.14%	0.14%	485,787	424,657	1,050	0.22%	0.25%	72.41%	57.76%	71.78%
Bergen County, NJ	441,456	422,772	855	0.19%	0.20%	480,317	423,214	1,255	0.26%	0.30%	46.78%	34.91%	46.63%
Fulton County, Georgia	440,231	407,091	1,653	0.38%	0.41%	543,677	444,627	2,563	0.47%	0.58%	55.05%	25.55%	41.96%
San Francisco County, CA	439,726	409,015	14,833	3.37%	3.63%	500,344	410,181	16,760	3.35%	4.09%	12.99%	-0.70%	12.67%
Fairfield County, CT	434,941	412,698	803	0.18%	0.19%	475,201	415,402	598	0.13%	0.14%	-25.53%	-31.84%	-26.01%
Milwaukee County, WI	433,168	422,541	3,030	0.70%	0.72%	446,291	407,043	2,211	0.50%	0.54%	-27.03%	-29.18%	-24.25%
Hartford County, CT	426,321	411,811	1,145	0.27%	0.28%	444,943	398,621	893	0.20%	0.22%	-22.01%	-25.27%	-19.43%
Erie County, New York	425,669	415,158	2,006	0.47%	0.48%	454,568	420,232	1,680	0.37%	0.40%	-16.25%	-21.58%	-17.26%
Marion County, IN	417,094	405,020	1,635	0.39%	0.40%	468,561	429,849	1,803	0.38%	0.42%	10.28%	-1.84%	3.91%
Pima County, Arizona	416,647	396,702	6,161	1.48%	1.55%	454,998	408,181	5,407	1.19%	1.32%	-12.24%	-19.64%	-14.71%
New Haven County, CT	413,216	399,561	2,168	0.52%	0.54%	423,971	387,108	1,814	0.43%	0.47%	-16.33%	-18.45%	-13.64%
Shelby County, TN	408,911	397,244	520	0.13%	0.13%	422,071	396,124	628	0.15%	0.16%	20.77%	17.00%	21.11%
Pinellas County, FL	407,937	387,325	4,138	1.01%	1.07%	452,828	396,547	3,836	0.85%	0.97%	-7.30%	-16.49%	-9.45%
Duval County, Florida	405,660	388,911	2,158	0.53%	0.55%	481,743	437,789	2,002	0.42%	0.46%	-7.23%	-21.88%	-17.59%
Montgomery County, PA	404,316	386,891	1,071	0.26%	0.28%	441,814	376,925	680	0.15%	0.18%	-36.51%	-41.90%	-34.83%
Baltimore County, MD	400,980	387,461	439	0.11%	0.11%	421,882	381,515	422	0.10%	0.11%	-3.87%	-8.64%	-2.37%
Collin County, Texas	400,325	370,507	307	0.08%	0.08%	535,579	440,666	899	0.17%	0.20%	192.83%	118.88%	146.21%
Worcester County, MA	387,403	372,003	746	0.19%	0.20%	429,028	383,875	906	0.21%	0.24%	21.45%	9.66%	17.69%
Middlesex County, NJ	387,057	373,543	1,188	0.31%	0.32%	416,538	368,641	1,059	0.25%	0.29%	-10.86%	-17.17%	-9.67%
Ventura County, CA	380,261	359,574	2,636	0.69%	0.73%	402,256	359,188	1,437	0.36%	0.40%	-45.49%	-48.47%	-45.43%
Gwinnett County, GA	378,803	359,543	164	0.04%	0.05%	457,329	402,843	234	0.05%	0.06%	42.68%	18.18%	27.35%
Hamilton County, Ohio	375,832	362,046	891	0.24%	0.25%	406,213	367,333	679	0.17%	0.18%	-23.79%	-29.49%	-24.89%
Macomb County, MI	372,677	363,796	501	0.13%	0.14%	420,591	389,919	608	0.14%	0.16%	21.36%	7.53%	13.23%
Suffolk County, MA	367,834	355,642	5,448	1.48%	1.53%	427,233	377,994	7,676	1.80%	2.03%	40.90%	21.31%	32.56%
Multnomah County, OR	366,500	341,928	18,756	5.12%	5.49%	437,223	365,193	17,381	3.98%	4.76%	-7.33%	-22.32%	-13.23%
Pierce County, Washington	363,532	348,223	1,269	0.35%	0.36%	439,523	400,728	1,194	0.27%	0.30%	-5.91%	-22.18%	-18.24%
Essex County, Massachusetts	359,988	343,508	1,200	0.33%	0.35%	410,241	367,824	595	0.15%	0.16%	-50.42%	-56.49%	-53.69%
San Mateo County, CA	358,970	340,275	4,513	1.26%	1.33%	400,489	340,934	5,219	1.30%	1.53%	15.64%	3.65%	15.42%
Snohomish County, WA	348,395	331,377	1,027	0.29%	0.31%	413,286	361,381	1,494	0.36%	0.41%	45.47%	22.63%	33.39%
Cobb County, GA	347,115	324,644	490	0.14%	0.15%	394,381	333,847	172	0.04%	0.05%	-64.90%	-69.10%	-65.87%
Monroe County, NY	346,802	335,001	1,841	0.53%	0.55%	365,270	330,485	1,565	0.43%	0.47%	-14.99%	-19.29%	-13.83%
Fresno County, CA	346,377	332,682	2,268	0.65%	0.68%	403,192	375,599	1,680	0.42%	0.45%	-25.93%	-36.36%	-34.39%
Jefferson County, KY	343,060	332,808	1,213	0.35%	0.36%	383,576	348,737	1,017	0.27%	0.29%	-16.16%	-25.01%	-19.99%
Essex County, NJ	342,989	332,695	652	0.19%	0.20%	392,629	351,920	488	0.12%	0.14%	-25.15%	-34.62%	-29.24%
Denton County, TX	342,383	322,587	1,278	0.37%	0.40%	473,116	401,985	791	0.17%	0.20%	-38.11%	-55.21%	-50.33%
Oklahoma County, OK	340,057	328,788	786	0.23%	0.24%	378,959	353,358	851	0.22%	0.24%	8.27%	-2.84%	0.74%
Lake County, IL	339,269	317,717	1,016	0.30%	0.32%	358,325	313,244	475	0.13%	0.15%	-53.25%	-55.73%	-52.58%
Norfolk County, MA	337,690	322,931	1,895	0.56%	0.59%	377,681	323,292	2,557	0.68%	0.79%	34.93%	20.65%	34.78%
El Paso County, TX	323,612	314,375	475	0.15%	0.15%	375,126	353,316	439	0.12%	0.12%	-7.58%	-20.27%	-17.77%
DeKalb County, GA	323,385	307,056	699	0.22%	0.23%	378,700	325,069	895	0.24%	0.28%	28.04%	9.34%	20.94%
Hudson County, NJ	318,163	309,650	1,095	0.34%	0.35%	374,232	328,717	2,173	0.58%	0.66%	98.45%	68.72%	86.94%
Will County, IL	317,703	304,861	337	0.11%	0.11%	349,596	316,739	115	0.03%	0.04%	-65.88%	-68.99%	-67.16%

	2008-2012					2017-2021					% change, 2008-2012 to 2017-2021		
County	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Workers	Commuters	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled	Bicycled to Work	% of Workers who Bicycled	% of Commuters who Bicycled
Jackson County, MO	314,194	302,195	735	0.23%	0.24%	354,999	320,725	675	0.19%	0.21%	-8.16%	-18.72%	-13.47%
Bucks County, PA	313,874	299,782	635	0.20%	0.21%	335,092	294,274	388	0.12%	0.13%	-38.90%	-42.77%	-37.75%
Denver County, CO	311,360	293,188	7,019	2.25%	2.39%	403,262	333,719	7,963	1.97%	2.39%	13.45%	-12.41%	-0.33%
Davidson County, TN	309,633	295,650	935	0.30%	0.32%	386,802	337,447	892	0.23%	0.26%	-4.60%	-23.63%	-16.42%
Bernalillo County, NM	307,864	294,695	3,572	1.16%	1.21%	318,290	288,042	2,226	0.70%	0.77%	-37.68%	-39.72%	-36.24%
Kern County, CA	307,542	298,356	1,294	0.42%	0.43%	346,503	327,646	800	0.23%	0.24%	-38.18%	-45.13%	-43.70%
District of Columbia, DC	306,336	291,401	9,347	3.05%	3.21%	371,014	297,447	13,885	3.74%	4.67%	48.55%	22.65%	45.53%
Monmouth County, NJ	301,874	288,217	1,982	0.66%	0.69%	323,136	284,378	1,452	0.45%	0.51%	-26.74%	-31.56%	-25.75%
El Paso County, CO	297,257	280,081	1,212	0.41%	0.43%	360,357	319,617	1,289	0.36%	0.40%	6.35%	-12.27%	-6.80%
Jefferson County, AL	289,317	282,370	425	0.15%	0.15%	302,550	280,404	446	0.15%	0.16%	4.94%	0.35%	5.68%
Johnson County, KS	288,683	273,050	515	0.18%	0.19%	326,382	279,350	387	0.12%	0.14%	-24.85%	-33.53%	-26.55%
Arapahoe County, CO	288,166	273,574	1,220	0.42%	0.45%	346,381	298,525	1,204	0.35%	0.40%	-1.31%	-17.90%	-9.56%

Changes in Pedestrian and Bicyclist Fatality Rates

This section presents commute-based pedestrian and bicyclist fatality rates for states and counties and describes how these fatality rates changed between 2008-2012 and 2017-2021. We did not include MSAs in this fatality rate section because we are rechecking the fatality data within the MSA boundaries.

Changes in Pedestrian Fatality Rates

Nationwide, the number of pedestrian fatalities increased from 22,100 during the 2008-2012 five-year period to 32,674 during the 2017-2021 five-year period (a 48% increase) (Table 7). This corresponded with pedestrian fatality rate increases from 1.43 to 1.98 per 100,000 population (39%), 3.16 to 4.21 per 100,000 workers (33%) and 1.12 to 1.70 per 1,000 walk commuters (51%).

Before examining trends between 2008-2012 and 2017-2021, it is worth noting which states had the lowest and highest pedestrian fatality rates in both time periods. Overall, the lowest pedestrian fatalities per 1,000 walk commuters were in the District of Columbia (less than 0.30 in both time periods), Vermont (less than 0.45), and Alaska (less than 0.50). Florida (more than 3.8), Alabama (more than 2.9), Louisiana (more than 2.6), Mississippi (more than 2.5), and South Carolina (more than 2.5) had the highest pedestrian fatality rates (Table 7).

Despite the increasing national trend in pedestrian fatality rates, two states reduced their pedestrian fatality rates between 2008-2012 and 2017-2021. Pedestrian fatalities per 1,000 walk commuters decreased in New York from 0.53 to 0.48 (-9.6%) and in Massachusetts from 0.45 to 0.43 (-3.5%). The District of Columbia only had a small increase from 0.275 to 0.281 (2.2%). However, several states had pedestrian fatalities per 1,000 walk commuters more than double: Nebraska increased from 0.32 to 0.77 (144%), New Mexico increased from 2.05 to 5.01 (144%), Mississippi increased from 2.52 to 5.46 (116%), and South Dakota increased from 0.36 to 0.75 (107%).

Within the 100 counties with the most workers, pedestrian fatalities increased from 10,447 during 2008-2012 to 16,026 during 2017-2021 (Table 8). This increase corresponded with pedestrian fatality rate increases of 1.61 to 2.29 fatalities per 100,000 population (an increase of 42%), 3.48 to 4.70 fatalities per 100,000 workers (35%), and 1.10 to 1.65 fatalities per 1,000 walk commuters (51%).

Some counties were successful at decreasing pedestrian fatality rates between these two time periods. Pedestrian fatalities per 1,000 walk commuters decreased in New York County, NY (Manhattan) from 0.18 to 0.11 (-40%), Collin County, TX (Plano) from 0.85 to 0.72 (-33%), Kings County, NY (Brooklyn) from 0.47 to 0.32 (-31%), and Essex County, MA from 0.69 to 0.49 (-28%). Yet, in others, fatality rates increased dramatically. Pedestrian fatalities per 1,000 walk commuters increased in Shelby County, TN (Memphis) from 2.44 to 10.86 (345%), El Paso County, CO (Colorado Springs) from 0.27 to 1.08 (296%), Kern County, CA (Bakersfield) from 3.39 to 10.74 (217%), Bernalillo County, NM (Albuquerque) from 2.18 to 6.65 (205%), and Pierce County, WA (Tacoma) from 0.56 to 1.58 (180%).

Table 7. Pedestrian Fatality Rates by State, 2008-2012 and 2017-2021

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
State	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Walk Commuters
All States	22,100	309,138,711	139,893,639	3,938,418	1.43	3.16	1.12	32,674	329,725,481	155,284,955	3,849,557	1.98	4.21	1.70	38.62%	33.19%	51.26%
Alabama	349	4,777,326	1,988,366	23,738	1.46	3.51	2.94	574	4,997,675	2,146,674	23,088	2.30	5.35	4.97	57.22%	52.34%	69.10%
Alaska	35	711,139	345,577	25,888	0.98	2.03	0.27	63	735,951	349,920	25,805	1.71	3.60	0.49	73.93%	77.77%	80.58%
Arizona	653	6,410,979	2,694,999	57,013	2.04	4.85	2.29	1,129	7,079,203	3,174,911	56,737	3.19	7.11	3.98	56.57%	46.76%	73.74%
Arkansas	209	2,916,372	1,232,938	22,306	1.43	3.39	1.87	332	3,006,309	1,295,639	19,734	2.21	5.12	3.36	54.10%	51.16%	79.56%
California	3,074	37,325,068	16,282,943	449,779	1.65	3.78	1.37	5,050	39,455,353	18,283,118	443,699	2.56	5.52	2.28	55.41%	46.31%	66.53%
Colorado	247	5,042,853	2,481,269	75,896	0.98	1.99	0.65	433	5,723,176	2,959,315	77,629	1.51	2.93	1.12	54.47%	46.99%	71.39%
Connecticut	188	3,572,213	1,730,076	50,900	1.05	2.17	0.74	274	3,605,330	1,791,786	47,482	1.52	3.06	1.15	44.41%	40.73%	56.24%
Delaware	103	900,131	416,699	9,388	2.29	4.94	2.19	142	981,892	459,571	9,458	2.89	6.18	3.00	26.38%	25.00%	36.84%
District of Columbia	51	605,759	306,336	37,055	1.68	3.33	0.28	59	683,154	371,014	41,960	1.73	3.18	0.28	2.58%	-4.48%	2.16%
Florida	2,410	18,885,152	8,107,476	126,718	2.55	5.95	3.80	3,586	21,339,762	9,698,180	130,097	3.36	7.40	5.51	31.68%	24.39%	44.93%
Georgia	764	9,714,569	4,234,475	65,828	1.57	3.61	2.32	1,336	10,625,615	4,926,936	68,099	2.51	5.42	3.92	59.88%	50.29%	69.04%
Hawaii	111	1,362,730	665,358	31,274	1.63	3.34	0.71	138	1,453,498	707,605	31,226	1.90	3.90	0.88	16.56%	16.90%	24.52%
Idaho	53	1,567,803	687,321	21,278	0.68	1.54	0.50	79	1,811,617	836,154	19,237	0.87	1.89	0.82	29.00%	22.52%	64.87%
Illinois	634	12,823,860	5,926,796	185,519	0.99	2.14	0.68	870	12,821,813	6,164,668	170,236	1.36	2.82	1.02	37.25%	31.93%	49.54%
Indiana	287	6,485,530	2,923,571	63,844	0.89	1.96	0.90	492	6,751,340	3,189,106	64,750	1.46	3.09	1.52	64.68%	57.15%	69.03%
Iowa	101	3,047,646	1,529,744	56,351	0.66	1.32	0.36	125	3,179,090	1,592,872	47,258	0.79	1.57	0.53	18.65%	18.86%	47.58%
Kansas	96	2,851,183	1,386,193	34,175	0.67	1.39	0.56	166	2,932,099	1,441,378	31,859	1.13	2.30	1.04	68.14%	66.30%	85.49%
Kentucky	267	4,340,167	1,833,778	39,832	1.23	2.91	1.34	395	4,494,141	1,976,861	41,391	1.76	4.00	1.91	42.87%	37.23%	42.37%
Louisiana	501	4,529,605	1,960,054	38,067	2.21	5.11	2.63	725	4,657,305	1,991,358	36,430	3.11	7.28	3.98	40.74%	42.44%	51.21%
Maine	54	1,329,084	637,261	25,829	0.81	1.69	0.42	70	1,357,046	667,845	24,667	1.03	2.10	0.57	26.96%	23.69%	35.74%
Maryland	531	5,785,496	2,889,278	68,201	1.84	3.68	1.56	635	6,148,545	3,091,677	61,787	2.07	4.11	2.06	12.52%	11.76%	32.00%
Massachusetts	341	6,560,595	3,231,819	153,159	1.04	2.11	0.45	352	6,991,852	3,591,598	163,881	1.01	1.96	0.43	-3.14%	-7.11%	-3.53%
Michigan	628	9,897,264	4,171,196	92,540	1.27	3.01	1.36	785	10,062,512	4,594,453	97,132	1.56	3.42	1.62	22.95%	13.48%	19.09%
Minnesota	179	5,313,081	2,697,932	76,945	0.67	1.33	0.47	222	5,670,472	2,925,932	75,175	0.78	1.52	0.59	16.21%	14.36%	26.94%
Mississippi	253	2,967,620	1,190,185	20,100	1.71	4.25	2.52	424	2,967,023	1,227,836	15,538	2.86	6.91	5.46	67.62%	62.45%	116.79%
Missouri	345	5,982,413	2,747,695	54,295	1.15	2.51	1.27	545	6,141,534	2,910,919	55,963	1.77	3.74	1.95	53.88%	49.11%	53.26%
Montana	57	990,785	470,377	22,790	1.15	2.42	0.50	80	1,077,978	518,868	22,075	1.48	3.08	0.72	29.00%	27.23%	44.90%
Nebraska	44	1,827,306	935,599	27,834	0.48	0.94	0.32	97	1,951,480	1,000,159	25,109	0.99	1.94	0.77	106.43%	106.22%	144.38%
Nevada	228	2,704,204	1,223,670	25,468	1.69	3.73	1.79	393	3,059,238	1,406,731	22,343	2.57	5.59	3.52	52.36%	49.94%	96.48%
New Hampshire	37	1,317,474	679,196	20,887	0.56	1.09	0.35	54	1,372,175	724,368	17,030	0.79	1.49	0.63	40.13%	36.84%	79.00%
New Jersey	730	8,793,888	4,127,735	130,828	1.66	3.54	1.12	916	9,234,024	4,489,790	115,825	1.98	4.08	1.58	19.50%	15.36%	41.73%
New Mexico	211	2,055,287	873,552	20,559	2.05	4.83	2.05	422	2,109,366	887,251	16,839	4.00	9.51	5.01	94.87%	96.91%	144.18%
New York	1,498	19,398,125	8,877,453	567,840	1.54	3.37	0.53	1,310	20,114,745	9,440,371	548,993	1.30	2.78	0.48	-15.67%	-17.76%	-9.55%
North Carolina	836	9,544,249	4,237,689	75,666	1.75	3.95	2.21	1,121	10,367,022	4,840,986	79,482	2.16	4.63	2.82	23.45%	17.38%	27.65%
North Dakota	33	676,253	363,094	14,101	0.98	1.82	0.47	34	773,344	403,477	13,022	0.88	1.69	0.52	-9.90%	-7.28%	11.57%
Ohio	494	11,533,561	5,196,293	118,658	0.86	1.90	0.83	720	11,769,923	5,548,580	114,274	1.22	2.60	1.26	42.82%	36.50%	51.34%
Oklahoma	252	3,749,005	1,676,739	31,973	1.34	3.01	1.58	416	3,948,136	1,775,842	30,563	2.11	4.69	2.72	56.75%	55.87%	72.70%
Oregon	243	3,836,628	1,705,593	69,304	1.27	2.85	0.70	387	4,207,177	1,988,071	68,179	1.84	3.89	1.14	45.23%	36.63%	61.89%
Pennsylvania	726	12,699,589	5,808,681	226,655	1.14	2.50	0.64	810	12,970,650	6,173,679	206,977	1.25	2.62	0.78	9.24%	4.97%	22.18%
Rhode Island	56	1,052,471	500,642	17,770	1.06	2.24	0.63	60	1,091,949	541,019	16,110	1.10	2.22	0.74	3.27%	-0.85%	18.18%
South Carolina	516	4,630,351	1,988,444	40,381	2.23	5.19	2.56	861	5,078,903	2,304,699	42,783	3.39	7.47	4.02	52.12%	43.96%	57.49%
South Dakota	32	815,871	412,161	17,618	0.78	1.55	0.36	55	881,785	442,846	14,623	1.25	2.48	0.75	59.03%	59.97%	107.08%
Tennessee	365	6,353,226	2,762,765	36,988	1.15	2.64	1.97	754	6,859,497	3,155,978	38,772	2.20	4.78	3.89	91.33%	80.84%	97.07%
Texas	2,041	25,208,897	11,314,152	190,603	1.62	3.61	2.14	3,378	28,862,581	13,464,482	196,328	2.34	5.02	3.44	44.56%	39.07%	60.68%

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
State	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Walk Commuters
Utah	137	2,766,233	1,249,915	34,700	0.99	2.19	0.79	192	3,231,370	1,569,101	33,909	1.19	2.45	1.13	19.97%	11.64%	43.42%
Vermont	23	625,498	319,359	18,792	0.74	1.44	0.24	33	641,637	328,766	16,342	1.03	2.01	0.40	39.87%	39.37%	64.99%
Virginia	392	8,014,955	3,906,766	89,797	0.98	2.01	0.87	586	8,582,479	4,268,079	95,270	1.37	2.75	1.23	39.60%	36.83%	40.90%
Washington	318	6,738,714	3,127,950	108,611	0.94	2.03	0.59	552	7,617,364	3,670,752	120,682	1.45	3.01	0.91	53.56%	47.92%	56.22%
West Virginia	98	1,850,481	743,046	21,443	1.06	2.64	0.91	133	1,801,049	722,460	19,578	1.48	3.68	1.36	39.44%	39.58%	48.64%
Wisconsin	245	5,687,219	2,807,856	92,860	0.86	1.75	0.53	269	5,871,661	2,969,464	84,307	0.92	1.81	0.64	6.35%	3.82%	20.93%
Wyoming	24	562,803	285,577	10,374	0.85	1.68	0.46	40	576,641	281,810	9,824	1.39	2.84	0.81	62.67%	68.89%	76.00%

Table 8. Pedestrian Fatality Rates in the Top 100 Counties with the most workers, 2008-2012 and 2017-2021

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
County	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Walk Commuters
Top 100 Counties	*10,447*	*129,654,834*	*60,079,883*	*1,904,390*	*1.61*	*3.48*	*1.10*	*16,026*	*140,008,387*	*68,255,589*	*1,938,363*	*2.29*	*4.70*	*1.65*	*42.06%*	*35.03%*	*50.71%*
Los Angeles County, CA	928	9,840,024	4,384,405	126,810	1.89	4.23	1.46	1,352	10,019,635	4,753,898	116,234	2.70	5.69	2.33	43.08%	34.37%	58.95%
Cook County, Illinois	320	5,197,677	2,372,336	102,658	1.23	2.70	0.62	475	5,265,398	2,550,520	101,374	1.80	3.72	0.94	46.53%	38.07%	50.32%
Harris County, Texas	369	4,101,752	1,909,380	29,493	1.80	3.87	2.50	630	4,697,957	2,210,850	30,143	2.68	5.70	4.18	49.06%	47.45%	67.05%
Maricopa County, AZ	327	3,841,819	1,707,548	27,190	1.70	3.83	2.41	715	4,367,186	2,096,842	30,398	3.27	6.82	4.70	92.35%	78.06%	95.58%
San Diego County, CA	263	3,100,500	1,431,134	38,874	1.70	3.68	1.35	445	3,296,317	1,618,547	47,500	2.70	5.50	1.87	59.15%	49.61%	38.47%
Orange County, CA	182	3,021,840	1,421,469	28,076	1.20	2.56	1.30	318	3,182,923	1,562,454	27,616	2.00	4.07	2.30	65.88%	58.96%	77.64%
Miami-Dade County, FL	341	2,512,219	1,115,424	24,365	2.71	6.11	2.80	430	2,690,113	1,305,587	24,139	3.20	6.59	3.56	17.76%	7.73%	27.28%
Dallas County, Texas	200	2,379,214	1,106,207	16,800	1.68	3.62	2.38	396	2,604,722	1,281,466	19,923	3.04	6.18	3.98	80.86%	70.92%	66.96%
Kings County, NY	221	2,512,740	1,080,412	95,051	1.76	4.09	0.47	167	2,712,360	1,233,234	104,403	1.23	2.71	0.32	-30.00%	-33.80%	-31.20%
Queens County, NY	195	2,235,008	1,043,646	59,632	1.74	3.74	0.65	159	2,393,104	1,125,992	64,864	1.33	2.82	0.49	-23.85%	-24.42%	-25.04%
King County, Washington	85	1,940,777	1,004,804	44,993	0.88	1.69	0.38	174	2,240,876	1,203,566	57,739	1.55	2.89	0.60	77.29%	70.90%	59.52%
Clark County, Nevada	171	1,954,773	889,931	16,052	1.75	3.84	2.13	298	2,231,147	1,018,843	13,620	2.67	5.85	4.38	52.68%	52.22%	105.39%
Tarrant County, Texas	131	1,814,667	859,034	9,592	1.44	3.05	2.73	234	2,091,953	1,031,178	11,192	2.24	4.54	4.18	54.95%	48.81%	53.09%
Riverside County, CA	173	2,192,982	847,993	13,342	1.58	4.08	2.59	364	2,409,331	1,020,284	12,053	3.02	7.14	6.04	91.51%	74.87%	132.91%
Santa Clara County, CA	117	1,788,393	837,242	17,258	1.31	2.79	1.36	185	1,932,022	979,075	21,241	1.92	3.78	1.74	46.36%	35.21%	28.47%
New York County, NY	162	1,596,735	832,836	177,056	2.03	3.89	0.18	92	1,669,127	886,916	167,318	1.10	2.07	0.11	-45.67%	-46.67%	-39.90%
Broward County, FL	231	1,761,993	832,732	11,203	2.62	5.55	4.12	345	1,934,551	957,695	10,651	3.57	7.20	6.48	36.03%	29.86%	57.09%
San Bernardino County, CA	197	2,041,029	795,366	15,833	1.93	4.95	2.49	415	2,171,071	926,022	14,113	3.82	8.96	5.88	98.04%	80.94%	136.33%
Middlesex County, MA	68	1,507,558	785,696	37,690	0.90	1.73	0.36	56	1,623,411	880,537	41,007	0.69	1.27	0.27	-23.52%	-26.52%	-24.31%
Bexar County, Texas	172	1,719,902	776,516	15,558	2.00	4.43	2.21	310	1,990,522	941,932	16,341	3.11	6.58	3.79	55.73%	48.58%	71.60%
Suffolk County, NY	181	1,492,360	713,596	11,206	2.43	5.07	3.23	184	1,522,998	760,938	10,056	2.42	4.84	3.66	-0.39%	-4.67%	13.28%
Alameda County, CA	98	1,515,136	693,960	26,202	1.29	2.82	0.75	139	1,673,133	817,140	25,916	1.66	3.40	1.07	28.44%	20.46%	43.40%
Wayne County, MI	199	1,822,469	673,168	12,347	2.18	5.91	3.22	233	1,789,781	740,725	13,077	2.60	6.29	3.56	19.22%	6.41%	10.55%
Nassau County, NY	146	1,338,712	639,524	16,795	2.18	4.57	1.74	130	1,391,678	687,971	15,156	1.87	3.78	1.72	-14.35%	-17.23%	-1.33%
Hennepin County, MN	39	1,158,039	610,001	19,272	0.67	1.28	0.40	61	1,270,283	692,588	21,652	0.96	1.76	0.56	42.59%	37.76%	39.22%
Philadelphia County, PA	153	1,525,811	601,331	51,760	2.01	5.09	0.59	198	1,596,865	710,964	54,269	2.48	5.57	0.73	23.65%	9.46%	23.43%
Sacramento County, CA	129	1,422,348	599,406	12,320	1.81	4.30	2.09	267	1,571,767	715,334	12,228	3.40	7.47	4.37	87.30%	73.43%	108.53%
Allegheny County, PA	49	1,224,772	586,994	25,912	0.80	1.67	0.38	67	1,246,116	627,613	23,346	1.08	2.14	0.57	34.39%	27.89%	51.76%
Fairfax County, VA	39	1,083,770	586,121	10,782	0.72	1.33	0.72	72	1,146,825	611,449	9,862	1.26	2.36	1.46	74.46%	76.97%	101.84%
Franklin County, Ohio	85	1,167,484	572,858	13,629	1.46	2.97	1.25	128	1,313,598	677,271	16,047	1.95	3.78	1.60	33.84%	27.37%	27.90%
Hillsborough County, FL	183	1,238,365	571,659	9,331	2.96	6.40	3.92	267	1,444,359	706,303	9,470	3.70	7.56	5.64	25.09%	18.09%	43.76%
Palm Beach County, FL	133	1,324,085	569,765	9,121	2.01	4.67	2.92	212	1,481,233	674,668	8,043	2.86	6.28	5.27	42.49%	34.61%	80.76%
Cuyahoga County, Ohio	52	1,278,024	567,874	14,838	0.81	1.83	0.70	85	1,263,667	592,768	15,092	1.35	2.87	1.13	65.32%	56.60%	60.71%
Oakland County, MI	63	1,207,097	567,259	6,774	1.04	2.22	1.86	88	1,271,983	642,908	7,306	1.38	2.74	2.41	32.56%	23.25%	29.51%
Orange County, FL	171	1,153,795	555,297	6,860	2.96	6.16	4.99	284	1,409,949	704,814	8,595	4.03	8.06	6.61	35.91%	30.85%	32.56%
Travis County, Texas	92	1,034,842	536,112	11,547	1.78	3.43	1.59	185	1,267,795	705,996	15,599	2.92	5.24	2.37	64.14%	52.70%	48.85%
Bronx County, New York	120	1,386,364	524,892	41,053	1.73	4.57	0.58	88	1,468,262	578,177	41,772	1.20	3.04	0.42	-30.76%	-33.43%	-27.93%
Montgomery County, MD	55	974,824	515,347	10,949	1.13	2.13	1.00	69	1,057,201	553,355	10,125	1.31	2.49	1.36	15.68%	16.84%	35.66%
Salt Lake County, Utah	62	1,032,226	499,823	11,379	1.20	2.48	1.09	88	1,173,331	608,792	11,401	1.50	2.89	1.54	24.87%	16.53%	41.66%
St. Louis County, MO	42	999,147	478,292	7,592	0.84	1.76	1.11	95	1,001,982	493,169	6,311	1.90	3.85	3.01	125.55%	119.37%	172.10%
Honolulu County, HI	74	955,215	476,354	25,363	1.55	3.11	0.58	94	1,015,167	506,185	26,405	1.85	3.71	0.71	19.53%	19.54%	22.01%
Contra Costa County, CA	61	1,052,047	473,623	7,384	1.16	2.58	1.65	102	1,161,643	553,536	8,310	1.76	3.69	2.45	51.44%	43.07%	48.58%
DuPage County, Illinois	25	918,608	461,186	8,442	0.54	1.08	0.59	39	934,094	482,036	7,371	0.84	1.62	1.06	53.41%	49.25%	78.67%
Mecklenburg County, NC	93	926,873	456,641	8,796	2.01	4.07	2.11	154	1,100,984	577,880	10,106	2.80	5.33	3.05	39.40%	30.85%	44.13%

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
County	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Walk Commuters
Wake County, North Carolina	60	905,573	451,578	6,562	1.33	2.66	1.83	86	1,112,883	578,728	6,720	1.55	2.97	2.56	16.63%	11.84%	39.96%
Prince George's County, MD	138	865,443	450,045	9,521	3.19	6.13	2.90	154	957,767	494,767	8,257	3.22	6.23	3.73	0.84%	1.51%	28.68%
Westchester County, NY	43	950,227	444,511	22,788	0.91	1.93	0.38	37	999,723	485,787	20,980	0.74	1.52	0.35	-18.21%	-21.26%	-6.54%
Bergen County, NJ	58	906,781	441,456	13,118	1.28	2.63	0.88	79	952,979	480,317	12,463	1.66	3.29	1.27	29.60%	25.19%	43.37%
Fulton County, Georgia	96	929,535	440,231	12,290	2.07	4.36	1.56	189	1,054,286	543,677	13,467	3.59	6.95	2.81	73.58%	59.42%	79.67%
San Francisco County, CA	80	807,755	439,726	43,363	1.98	3.64	0.37	76	865,933	500,344	55,226	1.76	3.04	0.28	-11.38%	-16.51%	-25.41%
Fairfield County, CT	38	918,892	434,941	12,373	0.83	1.75	0.61	60	956,446	475,201	11,849	1.25	2.53	1.01	51.70%	44.52%	64.88%
Milwaukee County, WI	67	946,584	433,168	15,909	1.42	3.09	0.84	86	939,123	446,291	13,679	1.83	3.85	1.26	29.38%	24.58%	49.28%
Hartford County, CT	48	893,504	426,321	9,369	1.07	2.25	1.02	78	898,636	444,943	8,233	1.74	3.51	1.89	61.57%	55.70%	84.92%
Erie County, New York	60	919,542	425,669	12,668	1.30	2.82	0.95	47	949,715	454,568	11,395	0.99	2.07	0.82	-24.16%	-26.65%	-12.92%
Marion County, IN	77	904,535	417,094	8,237	1.70	3.69	1.87	146	969,542	468,561	8,222	3.01	6.23	3.55	76.90%	68.78%	89.96%
Pima County, Arizona	95	981,048	416,647	10,377	1.94	4.56	1.83	190	1,035,063	454,998	9,377	3.67	8.35	4.05	89.56%	83.14%	121.33%
New Haven County, CT	57	860,995	413,216	13,643	1.32	2.76	0.84	102	864,751	423,971	14,590	2.36	4.81	1.40	78.17%	74.41%	67.33%
Shelby County, TN	73	929,437	408,911	5,988	1.57	3.57	2.44	235	929,178	422,071	4,329	5.06	11.14	10.86	222.01%	211.88%	345.29%
Pinellas County, FL	134	917,389	407,937	7,260	2.92	6.57	3.69	198	957,989	452,828	6,712	4.13	8.75	5.90	41.50%	33.11%	59.83%
Duval County, Florida	111	866,431	405,660	5,665	2.56	5.47	3.92	209	983,153	481,743	6,507	4.25	8.68	6.42	65.93%	58.55%	63.92%
Montgomery County, PA	38	799,886	404,316	12,140	0.95	1.88	0.63	49	850,890	441,814	9,057	1.15	2.22	1.08	21.22%	18.00%	72.84%
Baltimore County, MD	86	807,318	400,980	8,796	2.13	4.29	1.96	109	850,702	421,882	6,748	2.56	5.17	3.23	20.28%	20.46%	65.21%
Collin County, Texas	17	788,580	400,325	3,155	0.43	0.85	1.08	20	1,039,812	535,579	5,576	0.38	0.75	0.72	-10.78%	-12.06%	-33.43%
Worcester County, MA	33	799,277	387,403	10,980	0.83	1.70	0.60	36	856,858	429,028	11,468	0.84	1.68	0.63	1.76%	-1.49%	4.45%
Middlesex County, NJ	68	811,064	387,057	11,531	1.68	3.51	1.18	70	858,770	416,538	8,273	1.63	3.36	1.69	-2.78%	-4.34%	43.48%
Ventura County, CA	40	822,794	380,261	7,972	0.97	2.10	1.00	55	845,255	402,256	6,431	1.30	2.73	1.71	33.85%	29.98%	70.45%
Gwinnett County, GA	45	810,624	378,803	2,982	1.11	2.38	3.02	70	948,505	457,329	3,223	1.48	3.06	4.34	32.94%	28.85%	43.92%
Hamilton County, Ohio	35	801,350	375,832	10,667	0.87	1.86	0.66	63	826,790	406,213	11,492	1.52	3.10	1.10	74.46%	66.54%	67.08%
Macomb County, MI	47	841,769	372,677	3,329	1.12	2.52	2.82	61	879,123	420,591	4,029	1.39	2.90	3.03	24.27%	15.00%	7.24%
Suffolk County, MA	46	724,502	367,834	49,882	1.27	2.50	0.18	49	792,647	427,233	54,594	1.24	2.29	0.18	-2.64%	-8.29%	-2.67%
Multnomah County, OR	52	737,110	366,500	18,474	1.41	2.84	0.56	114	810,011	437,223	20,287	2.81	5.21	1.12	99.50%	83.77%	99.64%
Pierce County, Washington	29	798,528	363,532	10,286	0.73	1.60	0.56	70	910,225	439,523	8,858	1.54	3.19	1.58	111.76%	99.65%	180.29%
Essex County, Massachusetts	42	744,961	359,988	12,253	1.13	2.33	0.69	31	804,598	410,241	12,636	0.77	1.51	0.49	-31.66%	-35.23%	-28.43%
San Mateo County, CA	45	721,183	358,970	9,447	1.25	2.51	0.95	56	762,488	400,489	9,833	1.47	2.80	1.14	17.70%	11.54%	19.56%
Snohomish County, WA	41	714,443	348,395	6,276	1.15	2.35	1.31	57	820,024	413,286	7,083	1.39	2.76	1.61	21.12%	17.20%	23.18%
Cobb County, GA	45	691,820	347,115	3,653	1.30	2.59	2.46	79	762,500	394,381	4,490	2.07	4.01	3.52	59.28%	54.52%	42.83%
Monroe County, NY	35	744,746	346,802	11,491	0.94	2.02	0.61	55	757,332	365,270	9,528	1.45	3.01	1.15	54.53%	49.20%	89.52%
Fresno County, CA	102	930,517	346,377	7,520	2.19	5.89	2.71	184	1,003,150	403,192	5,940	3.67	9.13	6.20	67.33%	54.97%	128.38%
Jefferson County, KY	73	741,285	343,060	6,707	1.97	4.26	2.18	139	780,449	383,576	6,778	3.56	7.25	4.10	80.86%	70.30%	88.42%
Essex County, NJ	91	783,840	342,989	15,122	2.32	5.31	1.20	106	852,720	392,629	13,581	2.49	5.40	1.56	7.07%	1.76%	29.70%
Denton County, TX	19	667,934	342,383	4,352	0.57	1.11	0.87	43	885,012	473,116	5,473	0.97	1.82	1.57	70.80%	63.78%	79.96%
Oklahoma County, OK	59	721,088	340,057	5,844	1.64	3.47	2.02	120	790,938	378,959	6,474	3.03	6.33	3.71	85.43%	82.51%	83.60%
Lake County, IL	21	701,282	339,269	9,550	0.60	1.24	0.44	37	714,484	358,325	7,537	1.04	2.07	0.98	72.93%	66.82%	123.25%
Norfolk County, MA	38	672,078	337,690	11,826	1.13	2.25	0.64	45	720,403	377,681	13,455	1.25	2.38	0.67	10.48%	5.88%	4.08%
El Paso County, TX	86	801,115	323,612	6,890	2.15	5.32	2.50	114	860,485	375,126	5,218	2.65	6.08	4.37	23.41%	14.35%	75.03%
DeKalb County, GA	94	694,671	323,385	5,564	2.71	5.81	3.38	171	758,634	378,700	5,031	4.51	9.03	6.80	66.58%	55.34%	101.19%
Hudson County, NJ	51	636,194	318,163	28,450	1.60	3.21	0.36	56	713,264	374,232	25,769	1.57	2.99	0.43	-2.06%	-6.65%	21.23%
Will County, IL	24	677,669	317,703	2,884	0.71	1.51	1.66	30	696,403	349,596	2,828	0.86	1.72	2.12	21.64%	13.60%	27.48%
Jackson County, MO	60	672,784	314,194	5,019	1.78	3.82	2.39	89	713,229	354,999	4,996	2.50	5.01	3.56	39.92%	31.28%	49.02%
Bucks County, PA	51	625,485	313,874	4,961	1.63	3.25	2.06	57	643,872	335,092	4,618	1.77	3.40	2.47	8.57%	4.69%	20.07%
Denver County, CO	62	604,356	311,360	13,670	2.05	3.98	0.91	80	706,799	403,262	17,863	2.26	3.97	0.90	10.33%	-0.37%	-1.26%

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
County	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Pedestrian Fatalities	Population	Workers	Walked to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Walk Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Walk Commuters
Davidson County, TN	67	629,113	309,633	5,871	2.13	4.33	2.28	152	708,490	386,802	8,201	4.29	7.86	3.71	101.45%	81.60%	62.41%
Bernalillo County, NM	65	661,924	307,864	5,960	1.96	4.22	2.18	190	674,919	318,290	5,713	5.63	11.94	6.65	186.68%	182.73%	204.95%
Kern County, CA	97	839,153	307,542	5,728	2.31	6.31	3.39	174	905,644	346,503	3,239	3.84	10.04	10.74	66.21%	59.21%	217.23%
District of Columbia, DC	51	605,759	306,336	37,055	1.68	3.33	0.28	59	683,154	371,014	41,960	1.73	3.18	0.28	2.58%	-4.48%	2.16%
Monmouth County, NJ	43	629,263	301,874	6,973	1.37	2.85	1.23	49	642,160	323,136	4,592	1.53	3.03	2.13	11.66%	6.46%	73.04%
El Paso County, CO	19	622,816	297,257	13,987	0.61	1.28	0.27	64	722,736	360,357	11,895	1.77	3.55	1.08	190.27%	177.86%	296.08%
Jefferson County, AL	59	658,464	289,317	3,599	1.79	4.08	3.28	101	672,550	302,550	4,299	3.00	6.68	4.70	67.60%	63.70%	43.31%
Johnson County, KS	13	546,046	288,683	2,617	0.48	0.90	0.99	16	605,154	326,382	3,013	0.53	0.98	1.06	11.06%	8.86%	6.90%
Arapahoe County, CO	26	574,357	288,166	4,616	0.91	1.80	1.13	45	651,621	346,381	4,894	1.38	2.60	1.84	52.55%	43.99%	63.25%

Changes in Bicyclist Fatality Rates

Nationwide, the number of bicyclist fatalities increased from 3,385 during the 2008-2012 five-year period to 4,450 during the 2017-2021 five-year period (a 31% increase) (Table 9). This corresponded with bicyclist fatality rate increases from 0.22 to 0.27 per 100,000 population (23%), 0.48 to 0.57 per 100,000 workers (18%) and 0.86 to 1.20 per 1,000 bicycle commuters (40%).

Bicyclist fatality data in lower-population states and counties is sparse. Therefore, our analysis of specific state and county bicyclist fatality rates does not consider jurisdictions that had fewer than 10 bicyclist fatalities in both the 2008-2012 and 2017-2021 study periods.

Before examining trends between 2008-2012 and 2017-2021, it is worth noting which states had the lowest and highest bicyclist fatality rates in both time periods. Overall, the lowest bicyclist fatalities per 1,000 bicycle commuters were in the District of Columbia (less than 0.14 in both time periods), Oregon (less than 0.35) and Idaho (less than 0.45). Mississippi (more than 4.0), Delaware (more than 2.9), Arkansas (more than 2.5), Alabama (more than 2.3), and South Carolina (more than 2.2) had the highest bicyclist fatality rates (Table 9).

Despite the increasing national trend in bicyclist fatality rates, two states reduced their bicyclist fatality rates between 2008-2012 and 2017-2021. Bicyclist fatalities per 1,000 bicycle commuters decreased in New York from 0.94 to 0.59 (-37%), Massachusetts from 0.38 to 0.26 (-31%), and Arkansas—despite having a high baseline bicyclist fatality rate—from 3.61 to 2.50 (-31%). However, several states had bicyclist fatalities per 1,000 bicycle commuters more than double: Maine increased from 0.37 to 0.95 (155%), Missouri increased from 0.60 to 1.48 (146%), and Nevada increased from 0.92 to 2.20 (139%).

Within the 100 counties with the most workers, bicyclist fatalities increased from 1,500 during 2008-2012 to 1,962 during 2017-2021 (Table 10). This increase corresponded with bicyclist fatality rate increases of 0.23 to 0.28 fatalities per 100,000 population (an increase of 21%), 0.50 to 0.57 fatalities per 100,000 workers (15%), and 0.73 to 0.92 fatalities per 1,000 walk commuters (27%).

Some counties were successful at decreasing bicyclist fatality rates between these two time periods. Bicyclist fatalities per 1,000 bicycle commuters decreased in Hartford County, CT from 1.75 to 0.22 (-87%), Queens County, NY from 0.83 to 0.34 (-59%), Kings County, NY (Brooklyn) from 0.66 to 0.29 (-56%), and San Mateo County, CA from 0.53 to 0.27 (-50%). Yet, in others, fatality rates increased dramatically. Bicyclist fatalities per 1,000 bicycle commuters increased in Bucks County, PA (north Philadelphia metro area) from 0.94 to 5.67 (500%), Kern County, CA (Bakersfield) from 1.55 to 6.50 (321%), Fulton County, GA (Atlanta) from 0.24 to 0.94 (287%), El Paso County, CO (Colorado Springs) from 0.66 to 2.48 (276%), and Clark County, NV (Las Vegas) from 0.93 to 2.99 (221%).

Table 9. Bicyclist Fatality Rates by State, 2008-2012 and 2017-2021

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
State	Bicyclist Fatalities	Population	Workers	Bicycled to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Bike Commuters	Bicyclist Fatalities	Population	Workers	Bicycled to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Bike Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Bike Commuters
All States	3,385	309,138,711	139,893,639	785,665	0.22	0.48	0.86	4,450	329,725,481	155,284,955	739,008	0.27	0.57	1.20	23.25%	18.43%	39.76%
Alabama	30	4,777,326	1,988,366	2,552	0.13	0.30	2.35	39	4,997,675	2,146,674	1,934	0.16	0.36	4.03	24.27%	20.41%	71.54%
Alaska	6	711,139	345,577	3,416	0.17	0.35	0.35	7	735,951	349,920	2,541	0.19	0.40	0.55	12.73%	15.22%	56.84%
Arizona	104	6,410,979	2,694,999	24,687	0.32	0.77	0.84	164	7,079,203	3,174,911	20,578	0.46	1.03	1.59	42.81%	33.86%	89.18%
Arkansas	24	2,916,372	1,232,938	1,330	0.16	0.39	3.61	27	3,006,309	1,295,639	2,157	0.18	0.42	2.50	9.13%	7.06%	-30.63%
California	553	37,325,068	16,282,943	169,860	0.30	0.68	0.65	714	39,455,353	18,283,118	139,957	0.36	0.78	1.02	22.14%	14.99%	56.70%
Colorado	51	5,042,853	2,481,269	32,578	0.20	0.41	0.31	88	5,723,176	2,959,315	30,214	0.31	0.59	0.58	52.04%	44.68%	86.05%
Connecticut	26	3,572,213	1,730,076	4,737	0.15	0.30	1.10	16	3,605,330	1,791,786	3,988	0.09	0.18	0.80	-39.03%	-40.58%	-26.90%
Delaware	19	900,131	416,699	1,284	0.42	0.91	2.96	23	981,892	459,571	1,261	0.47	1.00	3.65	10.97%	9.76%	23.26%
District of Columbia	4	605,759	306,336	9,347	0.13	0.26	0.09	10	683,154	371,014	13,885	0.29	0.54	0.14	121.68%	106.42%	68.29%
Florida	566	18,885,152	8,107,476	51,997	0.60	1.40	2.18	814	21,339,762	9,698,180	50,037	0.76	1.68	3.25	27.27%	20.23%	49.45%
Georgia	90	9,714,569	4,234,475	9,329	0.19	0.43	1.93	113	10,625,615	4,926,936	9,448	0.21	0.46	2.39	14.79%	7.91%	23.97%
Hawaii	12	1,362,730	665,358	6,332	0.18	0.36	0.38	20	1,453,498	707,605	5,678	0.28	0.57	0.70	56.26%	56.72%	85.86%
Idaho	15	1,567,803	687,321	8,291	0.19	0.44	0.36	14	1,811,617	836,154	6,475	0.15	0.33	0.43	-19.23%	-23.28%	19.51%
Illinois	126	12,823,860	5,926,796	35,072	0.20	0.43	0.72	126	12,821,813	6,164,668	34,299	0.20	0.41	0.73	0.02%	-3.86%	2.25%
Indiana	64	6,485,530	2,923,571	13,637	0.20	0.44	0.94	92	6,751,340	3,189,106	12,071	0.27	0.58	1.52	38.09%	31.78%	62.40%
Iowa	23	3,047,646	1,529,744	7,537	0.15	0.30	0.61	42	3,179,090	1,592,872	5,920	0.26	0.53	1.42	75.06%	75.37%	132.49%
Kansas	21	2,851,183	1,386,193	4,953	0.15	0.30	0.85	26	2,932,099	1,441,378	4,288	0.18	0.36	1.21	20.39%	19.07%	43.01%
Kentucky	26	4,340,167	1,833,778	4,078	0.12	0.28	1.28	37	4,494,141	1,976,861	3,480	0.16	0.37	2.13	37.43%	32.01%	66.76%
Louisiana	77	4,529,605	1,960,054	8,027	0.34	0.79	1.92	142	4,657,305	1,991,358	8,488	0.61	1.43	3.35	79.36%	81.52%	74.40%
Maine	6	1,329,084	637,261	3,235	0.09	0.19	0.37	10	1,357,046	667,845	2,115	0.15	0.30	0.95	63.23%	59.03%	154.93%
Maryland	34	5,785,496	2,889,278	8,533	0.12	0.24	0.80	48	6,148,545	3,091,677	9,105	0.16	0.31	1.05	32.84%	31.93%	32.31%
Massachusetts	44	6,560,595	3,231,819	23,261	0.13	0.27	0.38	36	6,991,852	3,591,598	27,543	0.10	0.20	0.26	-23.23%	-26.38%	-30.90%
Michigan	116	9,897,264	4,171,196	19,004	0.23	0.56	1.22	131	10,062,512	4,594,453	16,609	0.26	0.57	1.58	11.08%	2.53%	29.22%
Minnesota	44	5,313,081	2,697,932	20,503	0.17	0.33	0.43	43	5,670,472	2,925,932	16,341	0.15	0.29	0.53	-8.43%	-9.89%	22.62%
Mississippi	29	2,967,620	1,190,185	1,429	0.20	0.49	4.06	45	2,967,023	1,227,836	1,076	0.30	0.73	8.36	55.20%	50.41%	106.08%
Missouri	19	5,982,413	2,747,695	6,326	0.06	0.14	0.60	40	6,141,534	2,910,919	5,412	0.13	0.27	1.48	105.07%	98.72%	146.08%
Montana	6	990,785	470,377	6,515	0.12	0.26	0.18	9	1,077,978	518,868	5,733	0.17	0.35	0.31	37.87%	35.98%	70.46%
Nebraska	7	1,827,306	935,599	4,691	0.08	0.15	0.30	6	1,951,480	1,000,159	2,919	0.06	0.12	0.41	-19.74%	-19.82%	37.75%
Nevada	26	2,704,204	1,223,670	5,652	0.19	0.42	0.92	42	3,059,238	1,406,731	3,824	0.27	0.60	2.20	42.79%	40.52%	138.76%
New Hampshire	7	1,317,474	679,196	1,715	0.11	0.21	0.82	8	1,372,175	724,368	1,592	0.12	0.22	1.01	9.73%	7.16%	23.12%
New Jersey	77	8,793,888	4,127,735	13,924	0.18	0.37	1.11	89	9,234,024	4,489,790	12,349	0.19	0.40	1.44	10.08%	6.26%	30.33%
New Mexico	29	2,055,287	873,552	6,154	0.28	0.66	0.94	36	2,109,366	887,251	4,595	0.34	0.81	1.57	20.96%	22.22%	66.26%
New York	209	19,398,125	8,877,453	44,548	0.22	0.47	0.94	204	20,114,745	9,440,371	69,006	0.20	0.43	0.59	-5.87%	-8.21%	-36.99%
North Carolina	123	9,544,249	4,237,689	10,489	0.26	0.58	2.35	115	10,367,022	4,840,986	7,761	0.22	0.48	2.96	-13.92%	-18.16%	26.36%
North Dakota	4	676,253	363,094	2,089	0.12	0.22	0.38	8	773,344	403,477	1,190	0.21	0.40	1.34	74.89%	79.98%	251.09%
Ohio	82	11,533,561	5,196,293	15,567	0.14	0.32	1.05	114	11,769,923	5,548,580	15,270	0.19	0.41	1.49	36.23%	30.20%	41.73%
Oklahoma	30	3,749,005	1,676,739	4,027	0.16	0.36	1.49	59	3,948,136	1,775,842	3,925	0.30	0.66	3.01	86.75%	85.69%	101.78%
Oregon	50	3,836,628	1,705,593	39,517	0.26	0.59	0.25	62	4,207,177	1,988,071	35,036	0.29	0.62	0.35	13.08%	6.38%	39.86%
Pennsylvania	71	12,699,589	5,808,681	25,969	0.11	0.24	0.55	95	12,970,650	6,173,679	27,303	0.15	0.31	0.70	31.01%	25.89%	27.27%
Rhode Island	5	1,052,471	500,642	2,090	0.10	0.20	0.48	7	1,091,949	541,019	1,729	0.13	0.26	0.81	34.94%	29.55%	69.23%
South Carolina	67	4,630,351	1,988,444	6,020	0.29	0.67	2.23	103	5,078,903	2,304,699	4,672	0.41	0.89	4.41	40.15%	32.64%	98.09%
South Dakota	3	815,871	412,161	2,491	0.07	0.15	0.24	1	881,785	442,846	1,490	0.02	0.05	0.13	-69.16%	-68.98%	-44.27%
Tennessee	33	6,353,226	2,762,765	3,896	0.10	0.24	1.69	43	6,859,497	3,155,978	3,712	0.13	0.27	2.32	20.69%	14.07%	36.76%
Texas	244	25,208,897	11,314,152	29,282	0.19	0.43	1.67	364	28,862,581	13,464,482	30,512	0.25	0.54	2.39	30.30%	25.36%	43.17%
Utah	24	2,766,233	1,249,915	10,217	0.17	0.38	0.47	29	3,231,370	1,569,101	8,730	0.18	0.37	0.66	3.44%	-3.75%	41.42%

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
State	Bicyclist Fatalities	Population	Workers	Bicycled to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Bike Commuters	Bicyclist Fatalities	Population	Workers	Bicycled to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Bike Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Bike Commuters
Vermont	1	625,498	319,359	2,417	0.03	0.06	0.08	1	641,637	328,766	2,498	0.03	0.06	0.08	-2.52%	-2.86%	-3.24%
Virginia	53	8,014,955	3,906,766	14,182	0.13	0.27	0.75	60	8,582,479	4,268,079	14,445	0.14	0.28	0.83	5.72%	3.62%	11.15%
Washington	47	6,738,714	3,127,950	28,304	0.14	0.30	0.33	67	7,617,364	3,670,752	26,175	0.18	0.37	0.51	26.11%	21.47%	54.15%
West Virginia	6	1,850,481	743,046	924	0.06	0.16	1.30	14	1,801,049	722,460	1,022	0.16	0.39	2.74	139.74%	139.98%	110.96%
Wisconsin	48	5,687,219	2,807,856	21,098	0.17	0.34	0.46	46	5,871,661	2,969,464	16,181	0.16	0.31	0.57	-7.18%	-9.38%	24.95%
Wyoming	4	562,803	285,577	2,552	0.14	0.28	0.31	1	576,641	281,810	2,439	0.03	0.07	0.08	-75.60%	-74.67%	-73.84%

Table 10. Bicyclist Fatality Rates in the Top 100 Counties with the most workers, 2008-2012 and 2017-2021

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
County	Bicyclist Fatalities	Population	Workers	Bicycled to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Bike Commuters	Bicyclist Fatalities	Population	Workers	Bicycled to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Bike Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Bike Commuters
Top 100 Counties	1,500	129,654,834	60,079,883	412,277	0.23	0.50	0.73	1,962	140,008,387	68,255,589	425,672	0.28	0.57	0.92	21.13%	15.13%	26.68%
Los Angeles County, CA	118	9,840,024	4,384,405	36,069	0.24	0.54	0.65	164	10,019,635	4,753,898	29,567	0.33	0.69	1.11	36.49%	28.18%	69.55%
Cook County, Illinois	55	5,197,677	2,372,336	21,420	0.21	0.46	0.51	61	5,265,398	2,550,520	24,931	0.23	0.48	0.49	9.48%	3.16%	-4.71%
Harris County, Texas	39	4,101,752	1,909,380	5,624	0.19	0.41	1.39	91	4,697,957	2,210,850	6,261	0.39	0.82	2.91	103.72%	101.52%	109.59%
Maricopa County, AZ	67	3,841,819	1,707,548	14,339	0.35	0.78	0.93	94	4,367,186	2,096,842	11,989	0.43	0.90	1.57	23.42%	14.25%	67.80%
San Diego County, CA	35	3,100,500	1,431,134	9,929	0.23	0.49	0.71	41	3,296,317	1,618,547	8,669	0.25	0.51	0.95	10.18%	3.58%	34.17%
Orange County, CA	48	3,021,840	1,421,469	13,727	0.32	0.68	0.70	61	3,182,923	1,562,454	8,790	0.38	0.78	1.39	20.65%	15.62%	98.46%
Miami-Dade County, FL	42	2,512,219	1,115,424	5,802	0.33	0.75	1.45	80	2,690,113	1,305,587	7,075	0.59	1.23	2.26	77.88%	62.73%	56.20%
Dallas County, Texas	20	2,379,214	1,106,207	1,598	0.17	0.36	2.50	22	2,604,722	1,281,466	2,071	0.17	0.34	2.12	0.48%	-5.04%	-15.12%
Kings County, NY	43	2,512,740	1,080,412	12,974	0.34	0.80	0.66	35	2,712,360	1,233,234	24,134	0.26	0.57	0.29	-24.60%	-28.69%	-56.24%
Queens County, NY	18	2,235,008	1,043,646	4,357	0.16	0.34	0.83	12	2,393,104	1,125,992	7,082	0.10	0.21	0.34	-37.74%	-38.21%	-58.99%
King County, Washington	17	1,940,777	1,004,804	14,917	0.18	0.34	0.23	26	2,240,876	1,203,566	14,930	0.23	0.43	0.35	32.46%	27.68%	52.81%
Clark County, Nevada	17	1,954,773	889,931	3,648	0.17	0.38	0.93	34	2,231,147	1,018,843	2,273	0.30	0.67	2.99	75.23%	74.69%	220.99%
Tarrant County, Texas	7	1,814,667	859,034	1,417	0.08	0.16	0.99	10	2,091,953	1,031,178	1,285	0.10	0.19	1.56	23.92%	19.01%	57.53%
Riverside County, CA	42	2,192,982	847,993	3,255	0.38	0.99	2.58	40	2,409,331	1,020,284	2,038	0.33	0.78	3.93	-13.31%	-20.84%	52.11%
Santa Clara County, CA	21	1,788,393	837,242	14,269	0.23	0.50	0.29	36	1,932,022	979,075	13,846	0.37	0.74	0.52	58.68%	46.59%	76.67%
New York County, NY	17	1,596,735	832,836	9,350	0.21	0.41	0.36	22	1,669,127	886,916	20,706	0.26	0.50	0.21	23.80%	21.52%	-41.56%
Broward County, FL	60	1,761,993	832,732	4,649	0.68	1.44	2.58	67	1,934,551	957,695	4,142	0.69	1.40	3.24	1.71%	-2.90%	25.34%
San Bernardino County, CA	29	2,041,029	795,366	2,986	0.28	0.73	1.94	42	2,171,071	926,022	1,933	0.39	0.91	4.35	36.15%	24.39%	123.72%
Middlesex County, MA	6	1,507,558	785,696	10,008	0.08	0.15	0.12	4	1,623,411	880,537	12,881	0.05	0.09	0.06	-38.09%	-40.51%	-48.20%
Bexar County, Texas	14	1,719,902	776,516	1,194	0.16	0.36	2.35	24	1,990,522	941,932	1,738	0.24	0.51	2.76	48.12%	41.32%	17.77%
Suffolk County, NY	37	1,492,360	713,596	1,693	0.50	1.04	4.37	26	1,522,998	760,938	1,520	0.34	0.68	3.42	-31.14%	-34.10%	-21.73%
Alameda County, CA	15	1,515,136	693,960	11,945	0.20	0.43	0.25	14	1,673,133	817,140	11,792	0.17	0.34	0.24	-15.48%	-20.74%	-5.46%
Wayne County, MI	18	1,822,469	673,168	1,887	0.20	0.53	1.91	21	1,789,781	740,725	2,223	0.23	0.57	1.89	18.80%	6.03%	-0.97%
Nassau County, NY	20	1,338,712	639,524	1,770	0.30	0.63	2.26	21	1,391,678	687,971	1,285	0.30	0.61	3.27	1.00%	-2.39%	44.63%
Hennepin County, MN	10	1,158,039	610,001	10,634	0.17	0.33	0.19	9	1,270,283	692,588	8,426	0.14	0.26	0.21	-17.95%	-20.73%	13.58%
Philadelphia County, PA	16	1,525,811	601,331	11,755	0.21	0.53	0.27	20	1,596,865	710,964	14,172	0.25	0.56	0.28	19.44%	5.72%	3.68%
Sacramento County, CA	40	1,422,348	599,406	7,522	0.56	1.33	1.06	45	1,571,767	715,334	5,705	0.57	1.26	1.58	1.81%	-5.73%	48.33%
Allegheny County, PA	3	1,224,772	586,994	2,317	0.05	0.10	0.26	5	1,246,116	627,613	2,499	0.08	0.16	0.40	63.81%	55.88%	54.53%
Fairfax County, VA	6	1,083,770	586,121	1,453	0.11	0.20	0.83	3	1,146,825	611,449	1,959	0.05	0.10	0.31	-52.75%	-52.07%	-62.91%
Franklin County, Ohio	13	1,167,484	572,858	3,379	0.22	0.45	0.77	12	1,313,598	677,271	2,549	0.18	0.35	0.94	-17.96%	-21.92%	22.36%
Hillsborough County, FL	42	1,238,365	571,659	3,830	0.68	1.47	2.19	66	1,444,359	706,303	3,418	0.91	1.87	3.86	34.73%	27.19%	76.08%
Palm Beach County, FL	42	1,324,085	569,765	3,609	0.63	1.47	2.33	39	1,481,233	674,668	3,043	0.53	1.16	2.56	-16.99%	-21.58%	10.13%
Cuyahoga County, Ohio	6	1,278,024	567,874	1,975	0.09	0.21	0.61	8	1,263,667	592,768	2,006	0.13	0.27	0.80	34.85%	27.73%	31.27%
Oakland County, MI	7	1,207,097	567,259	1,352	0.12	0.25	1.04	8	1,271,983	642,908	990	0.13	0.25	1.62	8.46%	0.84%	56.08%
Orange County, FL	37	1,153,795	555,297	2,805	0.64	1.33	2.64	43	1,409,949	704,814	3,058	0.61	1.22	2.81	-4.90%	-8.44%	6.60%
Travis County, Texas	10	1,034,842	536,112	6,280	0.19	0.37	0.32	18	1,267,795	705,996	5,670	0.28	0.51	0.63	46.93%	36.69%	99.37%
Bronx County, New York	10	1,386,364	524,892	1,477	0.14	0.38	1.35	9	1,468,262	578,177	2,589	0.12	0.31	0.70	-15.02%	-18.29%	-48.66%
Montgomery County, MD	3	974,824	515,347	2,350	0.06	0.12	0.26	4	1,057,201	553,355	2,772	0.08	0.14	0.29	22.94%	24.18%	13.04%
Salt Lake County, Utah	13	1,032,226	499,823	3,993	0.25	0.52	0.65	7	1,173,331	608,792	3,817	0.12	0.23	0.37	-52.63%	-55.79%	-43.67%
St. Louis County, MO	2	999,147	478,292	1,096	0.04	0.08	0.36	4	1,001,982	493,169	722	0.08	0.16	1.11	99.43%	93.97%	203.60%
Honolulu County, HI	9	955,215	476,354	4,995	0.19	0.38	0.36	13	1,015,167	506,185	4,735	0.26	0.51	0.55	35.91%	35.93%	52.38%
Contra Costa County, CA	20	1,052,047	473,623	2,524	0.38	0.84	1.58	18	1,161,643	553,536	2,172	0.31	0.65	1.66	-18.49%	-22.99%	4.59%
DuPage County, Illinois	5	918,608	461,186	1,669	0.11	0.22	0.60	4	934,094	482,036	1,129	0.09	0.17	0.71	-21.33%	-23.46%	18.26%
Mecklenburg County, NC	9	926,873	456,641	802	0.19	0.39	2.24	14	1,100,984	577,880	845	0.25	0.48	3.31	30.96%	22.92%	47.64%
Wake County, North Carolina	7	905,573	451,578	1,483	0.15	0.31	0.94	5	1,112,883	578,728	899	0.09	0.17	1.11	-41.88%	-44.26%	17.83%

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
County	Bicyclist Fatalities	Population	Workers	Bicycled to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Bike Commuters	Bicyclist Fatalities	Population	Workers	Bicycled to Work	Fatalities per 100K Population	Fatalities per 100K Workers	Fatalities per 1K Bike Commuters	Fatalities per 1M Population	Fatalities per 1M Workers	Fatalities Per 1K Bike Commuters
Prince George's County, MD	4	865,443	450,045	1,344	0.09	0.18	0.60	6	957,767	494,767	1,528	0.13	0.24	0.79	35.54%	36.44%	31.94%
Westchester County, NY	5	950,227	444,511	609	0.11	0.22	1.64	2	999,723	485,787	1,050	0.04	0.08	0.38	-61.98%	-63.40%	-76.80%
Bergen County, NJ	2	906,781	441,456	855	0.04	0.09	0.47	4	952,979	480,317	1,255	0.08	0.17	0.64	90.30%	83.82%	36.25%
Fulton County, Georgia	2	929,535	440,231	1,653	0.04	0.09	0.24	12	1,054,286	543,677	2,563	0.23	0.44	0.94	429.00%	385.84%	286.97%
San Francisco County, CA	8	807,755	439,726	14,833	0.20	0.36	0.11	7	865,933	500,344	16,760	0.16	0.28	0.08	-18.38%	-23.10%	-22.56%
Fairfield County, CT	7	918,892	434,941	803	0.15	0.32	1.74	2	956,446	475,201	598	0.04	0.08	0.67	-72.55%	-73.85%	-61.63%
Milwaukee County, WI	5	946,584	433,168	3,030	0.11	0.23	0.33	8	939,123	446,291	2,211	0.17	0.36	0.72	61.27%	55.30%	119.27%
Hartford County, CT	10	893,504	426,321	1,145	0.22	0.47	1.75	1	898,636	444,943	893	0.02	0.04	0.22	-90.06%	-90.42%	-87.18%
Erie County, New York	5	919,542	425,669	2,006	0.11	0.23	0.50	12	949,715	454,568	1,680	0.25	0.53	1.43	132.38%	124.74%	186.57%
Marion County, IN	9	904,535	417,094	1,635	0.20	0.43	1.10	21	969,542	468,561	1,803	0.43	0.90	2.33	117.69%	107.70%	111.59%
Pima County, Arizona	16	981,048	416,647	6,161	0.33	0.77	0.52	31	1,035,063	454,998	5,407	0.60	1.36	1.15	83.64%	77.42%	120.77%
New Haven County, CT	6	860,995	413,216	2,168	0.14	0.29	0.55	7	864,751	423,971	1,814	0.16	0.33	0.77	16.16%	13.71%	39.43%
Shelby County, TN	7	929,437	408,911	520	0.15	0.34	2.69	12	929,178	422,071	628	0.26	0.57	3.82	71.48%	66.08%	41.95%
Pinellas County, FL	44	917,389	407,937	4,138	0.96	2.16	2.13	48	957,989	452,828	3,836	1.00	2.12	2.50	4.47%	-1.72%	17.68%
Duval County, Florida	29	866,431	405,660	2,158	0.67	1.43	2.69	41	983,153	481,743	2,002	0.83	1.70	4.10	24.59%	19.05%	52.40%
Montgomery County, PA	1	799,886	404,316	1,071	0.03	0.05	0.19	2	850,890	441,814	680	0.05	0.09	0.59	88.01%	83.03%	215.00%
Baltimore County, MD	3	807,318	400,980	439	0.07	0.15	1.37	8	850,702	421,882	422	0.19	0.38	3.79	153.07%	153.45%	177.41%
Collin County, Texas	4	788,580	400,325	307	0.10	0.20	2.61	7	1,039,812	535,579	899	0.13	0.26	1.56	32.72%	30.81%	-40.24%
Worcester County, MA	3	799,277	387,403	746	0.08	0.15	0.80	2	856,858	429,028	906	0.05	0.09	0.44	-37.81%	-39.80%	-45.11%
Middlesex County, NJ	4	811,064	387,057	1,188	0.10	0.21	0.67	10	858,770	416,538	1,059	0.23	0.48	1.89	136.11%	132.31%	180.45%
Ventura County, CA	12	822,794	380,261	2,636	0.29	0.63	0.91	9	845,255	402,256	1,437	0.21	0.45	1.25	-26.99%	-29.10%	37.58%
Gwinnett County, GA	3	810,624	378,803	164	0.07	0.16	3.66	2	948,505	457,329	234	0.04	0.09	1.71	-43.02%	-44.78%	-53.28%
Hamilton County, Ohio	4	801,350	375,832	891	0.10	0.21	0.90	8	826,790	406,213	679	0.19	0.39	2.36	93.85%	85.04%	162.44%
Macomb County, MI	13	841,769	372,677	501	0.31	0.70	5.19	13	879,123	420,591	608	0.30	0.62	4.28	-4.25%	-11.39%	-17.60%
Suffolk County, MA	9	724,502	367,834	5,448	0.25	0.49	0.33	5	792,647	427,233	7,676	0.13	0.23	0.13	-49.22%	-52.17%	-60.57%
Multnomah County, OR	8	737,110	366,500	18,756	0.22	0.44	0.09	13	810,011	437,223	17,381	0.32	0.59	0.15	47.87%	36.21%	75.36%
Pierce County, Washington	3	798,528	363,532	1,269	0.08	0.17	0.47	5	910,225	439,523	1,194	0.11	0.23	0.84	46.21%	37.85%	77.14%
Essex County, Massachusetts	5	744,961	359,988	1,200	0.13	0.28	0.83	8	804,598	410,241	595	0.20	0.39	2.69	48.14%	40.40%	222.69%
San Mateo County, CA	12	721,183	358,970	4,513	0.33	0.67	0.53	7	762,488	400,489	5,219	0.18	0.35	0.27	-44.83%	-47.71%	-49.56%
Snohomish County, WA	4	714,443	348,395	1,027	0.11	0.23	0.78	5	820,024	413,286	1,494	0.12	0.24	0.67	8.91%	5.37%	-14.07%
Cobb County, GA	4	691,820	347,115	490	0.12	0.23	1.63	5	762,500	394,381	172	0.13	0.25	5.81	13.41%	10.02%	256.10%
Monroe County, NY	5	744,746	346,802	1,841	0.13	0.29	0.54	6	757,332	365,270	1,565	0.16	0.33	0.77	18.01%	13.93%	41.16%
Fresno County, CA	23	930,517	346,377	2,268	0.49	1.33	2.03	31	1,003,150	403,192	1,680	0.62	1.54	3.69	25.02%	15.79%	81.96%
Jefferson County, KY	9	741,285	343,060	1,213	0.24	0.52	1.48	16	780,449	383,576	1,017	0.41	0.83	3.15	68.86%	59.00%	112.04%
Essex County, NJ	3	783,840	342,989	652	0.08	0.17	0.92	9	852,720	392,629	488	0.21	0.46	3.69	175.77%	162.07%	300.82%
Denton County, TX	-	667,934	342,383	1,278	0.00	0.00	0.00	6	885,012	473,116	791	0.14	0.25	1.52	0	0	0
Oklahoma County, OK	6	721,088	340,057	786	0.17	0.35	1.53	13	790,938	378,959	851	0.33	0.69	3.06	97.53%	94.42%	100.12%
Lake County, IL	7	701,282	339,269	1,016	0.20	0.41	1.38	9	714,484	358,325	475	0.25	0.50	3.79	26.20%	21.73%	175.01%
Norfolk County, MA	2	672,078	337,690	1,895	0.06	0.12	0.21	2	720,403	377,681	2,557	0.06	0.11	0.16	-6.71%	-10.59%	-25.89%
El Paso County, TX	2	801,115	323,612	475	0.05	0.12	0.84	4	860,485	375,126	439	0.09	0.21	1.82	86.20%	72.54%	116.40%
DeKalb County, GA	5	694,671	323,385	699	0.14	0.31	1.43	4	758,634	378,700	895	0.11	0.21	0.89	-26.75%	-31.69%	-37.52%
Hudson County, NJ	7	636,194	318,163	1,095	0.22	0.44	1.28	10	713,264	374,232	2,173	0.28	0.53	0.92	27.42%	21.45%	-28.01%
Will County, IL	1	677,669	317,703	337	0.03	0.06	0.59	5	696,403	349,596	115	0.14	0.29	8.70	386.55%	354.39%	1365.22%
Jackson County, MO	5	672,784	314,194	735	0.15	0.32	1.36	10	713,229	354,999	675	0.28	0.56	2.96	88.66%	77.01%	117.78%
Bucks County, PA	3	625,485	313,874	635	0.10	0.19	0.94	11	643,872	335,092	388	0.34	0.66	5.67	256.20%	243.45%	500.09%
Denver County, CO	7	604,356	311,360	7,019	0.23	0.45	0.20	11	706,799	403,262	7,963	0.31	0.55	0.28	34.37%	21.33%	38.51%
Davidson County, TN	3	629,113	309,633	935	0.10	0.19	0.64	-	708,490	386,802	892	0.00	0.00	0.00	-100.00%	-100.00%	-100.00%
Bernalillo County, NM	13	661,924	307,864	3,572	0.39	0.84	0.73	20	674,919	318,290	2,226	0.59	1.26	1.80	50.88%	48.81%	146.87%

	2008-2012							2017-2021							% change, 2008-2012 to 2017-2021		
County	**Bicyclist Fatalities**	**Population**	**Workers**	**Bicycled to Work**	**Fatalities per 100K Population**	**Fatalities per 100K Workers**	**Fatalities per 1K Bike Commuters**	**Bicyclist Fatalities**	**Population**	**Workers**	**Bicycled to Work**	**Fatalities per 100K Population**	**Fatalities per 100K Workers**	**Fatalities per 1K Bike Commuters**	**Fatalities per 1M Population**	**Fatalities per 1M Workers**	**Fatalities Per 1K Bike Commuters**
Kern County, CA	10	839,153	307,542	1,294	0.24	0.65	1.55	26	905,644	346,503	800	0.57	1.50	6.50	140.91%	130.77%	320.55%
District of Columbia, DC	4	605,759	306,336	9,347	0.13	0.26	0.09	10	683,154	371,014	13,885	0.29	0.54	0.14	121.68%	106.42%	68.29%
Monmouth County, NJ	8	629,263	301,874	1,982	0.25	0.53	0.81	4	642,160	323,136	1,452	0.12	0.25	0.55	-51.00%	-53.29%	-31.75%
El Paso County, CO	4	622,816	297,257	1,212	0.13	0.27	0.66	16	722,736	360,357	1,289	0.44	0.89	2.48	244.70%	229.96%	276.11%
Jefferson County, AL	4	658,464	289,317	425	0.12	0.28	1.88	6	672,550	302,550	446	0.18	0.40	2.69	46.86%	43.44%	42.94%
Johnson County, KS	-	546,046	288,683	515	0.00	0.00	0.00	1	605,154	326,382	387	0.03	0.06	0.52	0	0	0
Arapahoe County, CO	3	574,357	288,166	1,220	0.10	0.21	0.49	7	651,621	346,381	1,204	0.21	0.40	1.16	105.67%	94.12%	136.43%

Considerations and Future Research

Our multi-state study provides important insights into how pedestrian and bicyclist commuting and pedestrian and bicyclist fatality rates have shifted between 2008-2012 and 2017-2021, but additional work is needed.

Data and Analysis Considerations

Our analysis of changes in pedestrian and bicyclist commute mode shares was affected by the large shift toward remote work in 2020 and 2021 due to the COVID-19 pandemic. We considered two separate mode share measures to provide different perspectives on pandemic-related changes in commuting patterns: walking and bicycling among all workers as well as walking and bicycling among the subset of workers who commuted to work outside of their homes. Still, there may have been other fundamental changes in employment locations, job expectations, and commute routines that affected people's routine commute mode choices. Further, these macroeconomic changes may have been different in certain regions of the country (e.g., Sunbelt versus Rustbelt), which could have made some geographic areas more likely to see increases or decreases in pedestrian and bicyclist mode shares. More research is needed to understand underlying reasons why shifts in pedestrian and bicyclist commute mode shares occurred in different communities.

Our analysis of pedestrian and bicyclist fatality rates used the most consistent pedestrian and bicyclist exposure data available in our study time periods and geographic areas. However, the American Community Survey journey-to-work data still only represents the number of workers who commute regularly by walking or bicycling. Future studies should use more complete measures of pedestrian and bicyclist exposure, which could include pedestrian and bicyclists trips or distance traveled based on large-sample travel survey data. While aggregated travel data based on mobile phone tracking may be available commercially from data aggregators to represent pedestrian or bicyclist exposure, these sources should be considered cautiously due to undercounting pedestrian and bicycling trips that are made without mobile phones, lower rates of mobile phone use among certain population groups, challenges classifying travel movements by mode (e.g., bus versus bike; short walking trips in downtown areas), and proprietary travel classification algorithms that limit transparency and replicability.

Through the process of comparing the data for each of the MSAs, we realized that some MSA names did not match between the two time periods, meaning that they showed up as N/A when running the VLOOKUP function within Microsoft Excel (as the function must have an exact name match). For instance, the Houston metro area was called "Houston-Sugar Land-Baytown," in the 2008-2012 period, but "Houston-The Woodlands-Sugar Land," in the 2017-2021 period. This meant that a lengthy process of identifying which MSAs had changed names, and afterwards checking the boundaries between the two periods in GIS software to determine if they matched. Further, some MSAs had an exact name match, yet still a different GEOID, so we also checked the boundaries of these MSAs. In total, there were 104 MSAs that needed their boundaries checked. There were 27 MSA boundaries which did not match between the time periods, so we

excluded them from the comparison. These included Houston, Atlanta, Cincinnati, Charlotte, Indianapolis, and San Juan, Puerto Rico[1].

The American Community Survey collects work commute data from a sample of people, so there are margins of error for the estimated number of workers, and number of workers commuting by each means of transportation each geographic. We could conduct further analysis with the reported margins of error to indicate which changes in walk and bicycling to work were statistically significant. Similarly, we could also incorporate annual variations in pedestrian and bicyclist fatality counts within the five-year analysis periods to determine statistically-significant changes in fatality rates.

Future Research

The next phases of our research will involve interviewing transportation agency staff to attempt to understand why large increases in commuting by certain modes may have occurred. Which, if any, actions taken by those states, metropolitan regions, or counties may have contributed to that rise?

In addition, we will conduct in-depth, qualitative investigations in these communities to identify specific policy and budget choices that have potentially contributed to decreases in pedestrian and bicyclist fatality rates between 2008-2012 and 2017-2021. We will do similar investigations in a set of jurisdictions that has experienced significant increases in pedestrian and bicyclist fatality rates. We will look for contrasts between approaches in successful and unsuccessful jurisdictions. Based on the results of this study, we will consider doing interviews in the communities listed in Table 11.

Table 11. Possible Communities for Practitioner Interviews

Notable decreases in pedestrian fatality rates	Notable decreases in bicyclist fatality rates	Notable increases in pedestrian fatality rates	Notable increases in bicyclist fatality rates
New York	New York	Nebraska	Maine
Massachusetts	Massachusetts	New Mexico	Missouri
District of Columbia	Arkansas	Mississippi	Nevada
New York County, NY (Manhattan)	Hartford County, CT	South Dakota	Bucks County, PA
Collin County, TX (Plano)	Queens County, NY	Shelby County, TN (Memphis)	Kern County, CA (Bakersfield)
Kings County, NY (Brooklyn)	Kings County, NY (Brooklyn)	El Paso County, CO (Colorado Springs)	Fulton County, GA (Atlanta)
Essex County, MA	San Mateo County, CA	Kern County, CA (Bakersfield)	El Paso County, CO (Colorado Springs)
		Bernalillo County, NM (Albuquerque)	Clark County, NV (Las Vegas)
		Pierce County, WA (Tacoma)	

[1] We included Puerto Rico in our analysis of MSAs but excluded it from our analysis of states and counties.

Rather than investigating the effectiveness of individual engineering, education, enforcement, and other projects and programs, we will focus on jurisdiction-level change. We will conduct interviews with local jurisdiction representatives (e.g., transportation planners or engineers, community advocates, policymakers) to document transportation system policy, budget, project implementation, and other contextual changes (e.g., population growth/decline, development activity) that may be associated with pedestrian and bicyclist safety changes. Importantly, we will explore why they think safety outcomes have changed in their communities. Interview topics are likely to include:

- Policy adoption
- Agency staffing, budget and grant funding changes
- Community advocacy
- Agency communication with the public
- Engineering/roadway design changes
- Education programs
- Enforcement programs
- Pedestrian and bicyclist activity levels/mode shift
- Population growth/decline
- Socioeconomic changes
- Land use and development changes

We hypothesize that communities that have made the most progress improving pedestrian and bicyclist safety have 1) communicated that pedestrian and bicyclist safety are critical community issues and set aggressive timelines to reduce pedestrian and bicycle fatalities to zero, 2) increased their agency budget for traffic safety improvements significantly, 3) reduced roadway design speeds and posted speed limits in high-injury corridors, 4) increased walking and bicycling mode shares, and 5) increased traffic safety educational messaging, 6) increased traffic safety enforcement, or 7) taken other actions that we do not yet anticipate being associated with success.

Our alternative hypotheses are that communities with pedestrian and bicyclist fatality rate reductions: 1) have lower-risk characteristics (e.g., less automobile-dominated built environments; wealthier and more educated residents) or 2) have simply been lucky, and improvements have occurred randomly (and this randomness is likely to result in more fatalities in the future).

Insights from our interview process will provide important lessons for communities seeking to make similar progress towards zero pedestrian and bicyclist fatalities.

Conclusion

We analyzed changes in pedestrian and bicycle commuting to work in all states, the 50 largest MSAs, and 100 largest counties in the US between 2008-2012 and 2017-2021. We also quantified pedestrian and bicyclist fatality rates in states and counties. The 2010s corresponded with steep increases in pedestrian and bicyclist fatalities at the national level, but it is important to identify specific communities that fared better or worse than the broad, national trend so that we can gather insights to improve safety in the future.

Overall, ACS journey-to-work data showed that US pedestrian commuting decreased from 2.82% to 2.48% and bicycle commuting decreased from 0.56% to 0.48% of all workers between the baseline and later study periods. However, pedestrian commuting increased in MSAs such as Virginia Beach, VA, San Diego, CA, San Jose, CA, and Dallas, TX and counties such as Collin County, TX (Plano), San Francisco County, CA, Davidson County, TN (Nashville), and Jefferson County, AL (Birmingham). Bicycle commuting increased in MSAs such as New York, NY, San Antonio, TX, and Washington, DC, and counties such as Collin County, TX (Plano), New York County, NY (Manhattan), and Hudson County, NJ (Jersey City).

Normalizing FARS pedestrian and bicyclist fatalities by the number of pedestrian and bicyclist commuters showed that US pedestrian fatality rates increased by 51% (from 1.12 fatalities per thousand to 1.70 fatalities per thousand walk commuters) and bicyclist fatalities increased by 40% (from 0.86 fatalities per thousand to 1.20 fatalities per thousand bike commuters) between 2008-2012 and 2017-2021. Yet, pedestrian fatality rates decreased in New York, Massachusetts, New York County, NY (Manhattan), Collin County, TX (Plano), Kings County, NY (Brooklyn), and Essex County, MA. Bicyclist fatality rates decreased in New York, Massachusetts, Arkansas, Hartford County, CT, Queens County, NY, Kings County, NY (Brooklyn), and San Mateo County, CA.

By identifying leading states, MSAs, and counties for improving pedestrian and bicycle activity and safety, we have a list of several possible communities to conduct future practitioner interviews and develop case studies. These examples will help practitioners in other communities identify and implement policies to increase pedestrian and bicyclist activity and reduce pedestrian and bicyclist fatalities.

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