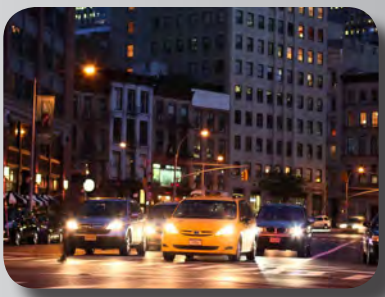
Passenger Travel Facts and Figures 2016



U.S. Department of Transportation
Bureau of Transportation Statistics

Passenger Travel Facts and Figures 2016

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PREFACE

Passenger Travel Facts and Figures is a snapshot of the characteristics and trends of personal travel in the United States; the network over which passenger travel takes place; and the related economic, safety, and environmental aspects of passenger travel. An electronic version of this publication is available at www.bts.gov.

Chapter 1 summarizes the basic demographic and economic characteristics of the United States that contribute to the demand for passenger travel. Chapter 2 examines travel patterns by household characteristics, trip purpose, and transportation mode. Chapter 3 provides information on the passenger transportation system and its performance. Chapter 4 discusses the economic characteristics of passenger travel and tourism. Chapter 5 describes the safety, energy, and environmental impacts of passenger travel.

The data used throughout this document reflect the latest numbers available at the time of publication. Several of the tables, figures, and analysis included in this report are based on results from national surveys that provide details on travel patterns and characteristics of travelers. An overview of these surveys—the National Household Travel Survey, American Community Survey, and American Time Use Survey—is found in box 2-A.

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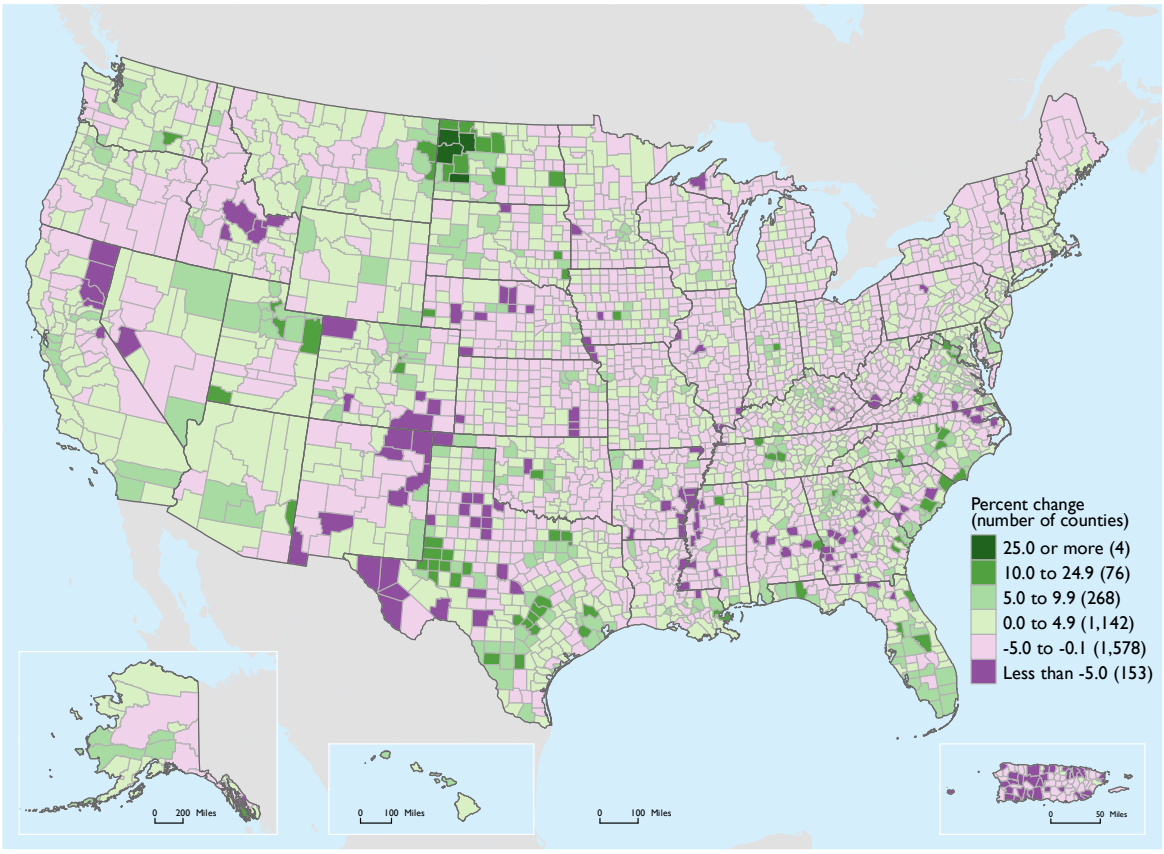
1 A Nation Driven by Travel

Over 300 million residents use the Nation's transportation system every day. Driven primarily by where people live and work, travel demand changes as our Nation grows.

Between 2010 and 2014, the U.S. population grew by 3.1 percent—from 309 million to 319 million. Metropolitan areas experienced the most overall growth, while many non-metropolitan counties, particularly in rural areas, lost residents as employment opportunities declined.

Figure 1-1 Population Change by County: 2010–2014



SOURCE: Developed by the Bureau of Transportation Statistics based on data from U.S. Department of Commerce, Census Bureau, Population Division, available at www.census.gov as of February 2016.

Table 1-1 Selected U.S. Demographics and Gross Domestic Product (GDP) by Census Region: 2000, 2010, and 2014

	2000	2010	2014	Percent change, 2010 to 2014
Civilian labor force (thousands)	**142,583**	**153,889**	**155,922**	**1.3**
Households (thousands)	**104,705**	**117,538**	**123,229**	**4.8**
Resident population (thousands)	**282,172**	**309,347**	**318,907**	**3.1**
Northeast	53,668	55,387	56,171	1.4
Midwest	64,494	66,978	67,762	1.2
South	100,560	114,863	119,795	4.3
West	63,451	72,119	75,179	4.2
GDP (millions of chained 2009 $)[a]	**12,643,017**	**14,639,748**	**15,773,516**	**7.7**
Northeast	2,688,045	3,076,447	3,245,795	5.5
Midwest	2,821,504	3,005,195	3,208,439	6.8
South	4,181,041	5,028,768	5,479,399	9.0
West	2,958,760	3,529,346	3,834,426	8.6
GDP per capita (chained 2009 $)[a]	**44,806**	**47,325**	**49,461**	**4.5**
Northeast	50,087	55,544	57,784	4.0
Midwest	43,748	44,869	47,349	5.5
South	41,578	43,781	45,740	4.5
West	46,631	48,938	51,004	4.2

[a]As of Oct. 26, 2006, the Bureau of Economic Analysis renamed the gross state product (GSP) series to gross domestic product (GDP) by state.

NOTES: Chained dollars are not additive. Thus GDP for all regions is not equal to total GDP. Numbers may not add to totals due to rounding.

SOURCES: **Civilian Labor Force**–U.S. Department of Labor, Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, available at www.bls.gov/data as of February 2016. **Households**–U.S. Department of Commerce, Census Bureau, Families and Living Arrangements, table HH-1, available at www.census.gov/hhes/families/data/households.html as of February 2016. **Population**–U.S. Department of Commerce, Census Bureau, Population Division, Annual Population Estimates, available at www.census.gov/popest as of February 2016. **Gross Domestic Product**–U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Accounts, available at www.bea.gov/regional/ as of February 2016.

Population and economic activity grew faster in the South and West, together accounting for 83.6 percent of population growth since 2010. The Northeast, however, continued to produce the most economic activity per capita, as measured by gross domestic product. Per capita growth was fastest in the Midwest.

2 Passenger Travel

The U.S. passenger transportation system has grown in both extent and use over the last several decades, despite a recent decline in overall transportation activity due to the 2007–2009 economic recession. This expansion is in response to long-term growth in the number of people who travel as well as the distance traveled by each person.

Person-Miles Traveled

Between 2010 and 2014, passenger-miles[1] of travel by commercial aviation, highway, transit, and intercity rail increased, rising by 7.5, 3.0, 8.3, and 4.0 percent, respectively. Miles traveled by aviation and transit modes reached record levels in 2014.

Table 2-1 U.S. Passenger-Miles Traveled by Mode: 2000, 2010 and 2014
Millions

	2000	2010	2014	Percent change, 2010 to 2014
Air, total[a]	**U**	**809,068**	**869,688**	**7.5**
Domestic	U	564,695	607,772	7.6
International	U	244,373	261,917	7.2
Highway, total	**U**	**4,244,833**	**4,371,706**	**3.0**
Light duty vehicle	U	3,646,451	3,731,888	2.3
Motorcycle	U	19,941	21,510	7.9
Bus[b]	U	291,914	339,177	16.2
Transit, total	**45,100**	**52,627**	**57,012**	**8.3**
Heavy rail	13,844	16,407	18,339	11.8
Light rail	1,339	2,173	2,675	23.1
Commuter rail	9,400	10,774	11,600	7.7
Transit bus[b]	18,999	20,729	21,429	3.4
Demand response	588	841	864	2.7
Ferry boat	298	389	414	6.4
Other	632	1,315	1,692	28.7
Passenger rail				
Amtrak[a]	5,498	6,420	6,675	4.0

[a]Rounded to the nearest 100 million revenue passenger-miles. [b]Bus in the highway category includes intercity bus as well as bus and demand response numbers from the transit category. Individual categories under Highway will not add to total as "Highway, total" includes passenger miles from single unit and combination trucks.

KEY: U = Data are unavailable due to a reporting change.

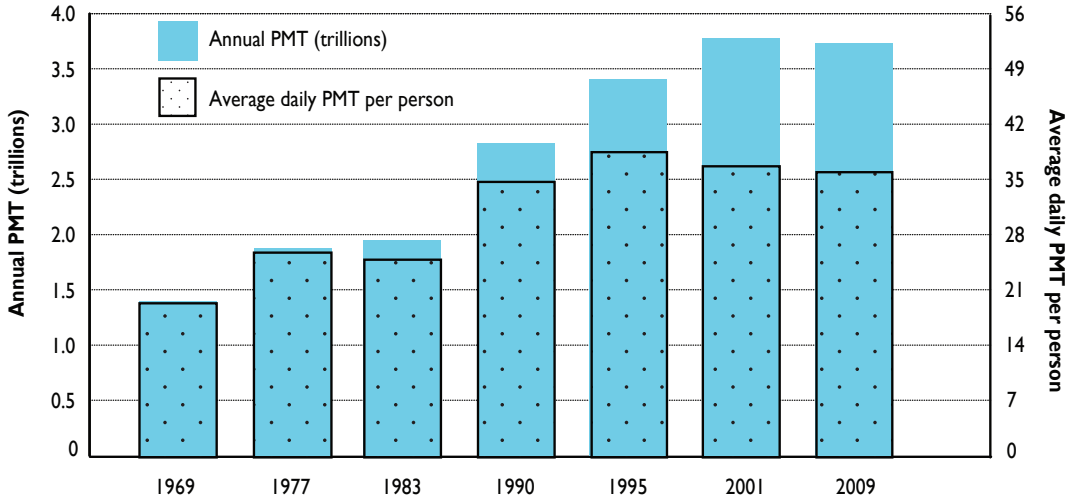
NOTE: Individual categories may not sum to totals due to rounding.

SOURCE: **Air**–U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics (BTS), *T1: U.S. Air Carrier Traffic And Capacity Summary by Service Class*, available at www.transtats.bts.gov as of April 2016. **Highway**–Federal Highway Administration. **Transit**–Federal Transit Administration. **Rail**–Federal Railroad Administration as cited in USDOT, BTS, *National Transportation Statistics*, table 1-40, available at www.bts.gov as of February 2016.

[1] In the *National Household Travel Survey* passenger-miles estimates differ from person-miles traveled estimates (see footnote 2). Passenger-miles are the cumulative sum of the distances ridden by each passenger and do not include mileage accrued by the vehicle operator and crew. A passenger-mile denotes one passenger transported one mile.

Over the last three decades, the total number of miles traveled by passengers has more than doubled. *The National Household Travel Survey* (NHTS), which primarily examines local travel, shows a 169.5 percent increase in annual person-miles traveled[2] (PMT) between 1969 and 2001. Between 2001 and 2009, however, PMT fell by 1.4 percent as people traveled less frequently and made shorter trips. The average number of person-trips declined from 4.1 trips per day in 2001 to 3.8 trips per day in 2009, while average person-trip length declined from 10.0 miles per trip to 9.7 miles per trip. Passenger travel trends also indicate that average daily PMT per person declined between 1995 and 2009.

Figure 2-1 Annual Person-Miles Traveled (PMT) and Average Daily PMT Per Person: 1969, 1977, 1983, 1990, 1995, 2001, and 2009



NOTES: The last *National Household Travel Survey* was completed in 2009. The *2016 National Household Travel Survey* is currently underway, and results will be released in 2018.

SOURCE: U.S Department of Transportation, *2009 National Household Travel Survey*, Summary of Travel Trends, available at nhts.ornl.gov as of February 2016.

[2] Person-miles traveled (PMT) is an estimate of the aggregate distances traveled by all persons, including mileage accrued by the vehicle operator and crew, on a given trip based on the estimated transportation-network-miles traveled on that trip. The *National Household Travel Survey* measures PMT by all modes of travel, including private vehicle, transit, walking, and biking.

Table 2-2 Average Daily Person-Miles of Travel by Age and Gender: 1995, 2001, and 2009

	Total		
Age	**1995**	**2001**	**2009**
Total	**38.7**	**40.2**	**36.1**
Under 16	25.0	24.5	25.3
16 to 20	36.4	38.1	29.5
21 to 35	46.0	45.6	37.7
36 to 65	45.1	48.8	44.0
Over 65	24.4	27.5	24.0

	Men		
Age	**1995**	**2001**	**2009**
Total	**43.9**	**45.0**	**40.9**
Under 16	23.7	24.6	27.2
16 to 20	37.6	34.1	28.2
21 to 35	51.3	49.8	40.5
36 to 65	53.2	57.7	50.9
Over 65	31.7	32.9	30.5

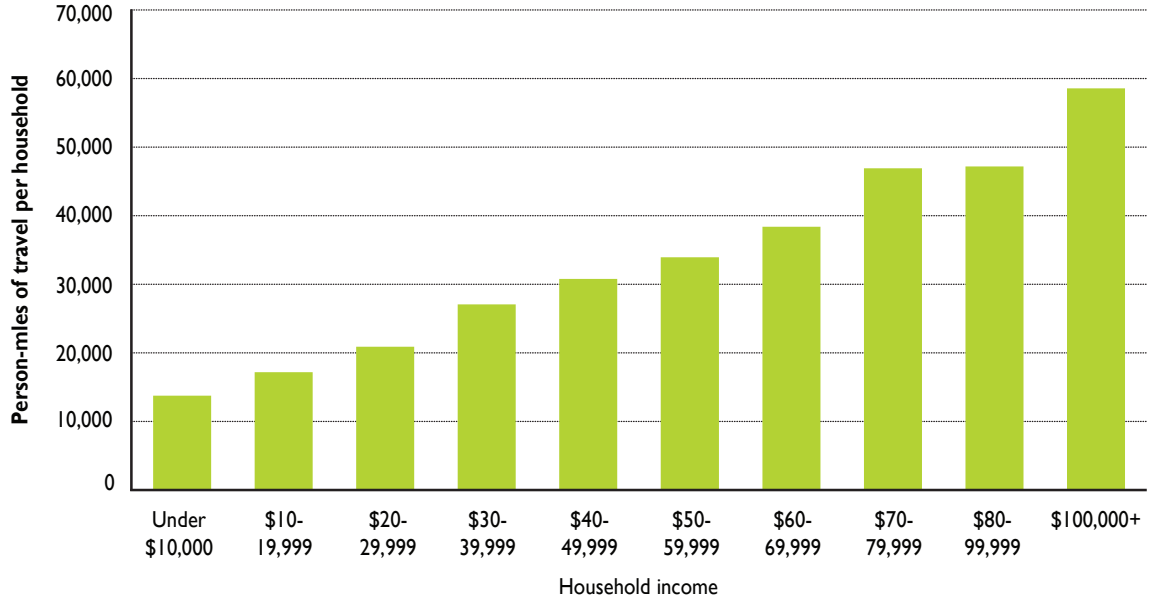
	Women		
Age	**1995**	**2001**	**2009**
Total	**33.8**	**35.7**	**31.5**
Under 16	26.2	24.4	23.3
16 to 20	35.0	42.5	31.0
21 to 35	40.8	41.5	35.0
36 to 65	37.5	40.4	37.0
Over 65	19.2	23.5	19.3

NOTES: All tables reporting totals may include unreported characteristics. 2001 data exclude persons aged 0 to 4 since such persons were not included in the 1995 and 2009 surveys. The *National Household Travel Survey* was last completed in 2009. The *2016 National Household Travel Survey* is currently underway, and results will be released in 2018.

SOURCES: **1995**–U.S. Department of Transportation, *National Passenger Travel Survey* and **2001 and 2009**–U.S Department of Transportation, *National Household Travel Survey* as cited in U.S. Department of Transportation, Federal Highway Administration, *2009 National Household Travel Survey Summary of Travel Trends*, table 14, available at nhts.ornl.gov/2009/pub/stt.pdf as of February 2016.

Many demographic factors influence daily passenger travel patterns. On average, Americans traveled 36.1 miles per day in 2009, a 10.2 percent decline from 2001. Men traveled more than women, averaging 40.9 miles per day compared with 31.5 miles per day for women. For both genders, people in their prime working years traveled more, with persons aged 36 to 65 traveling the most.

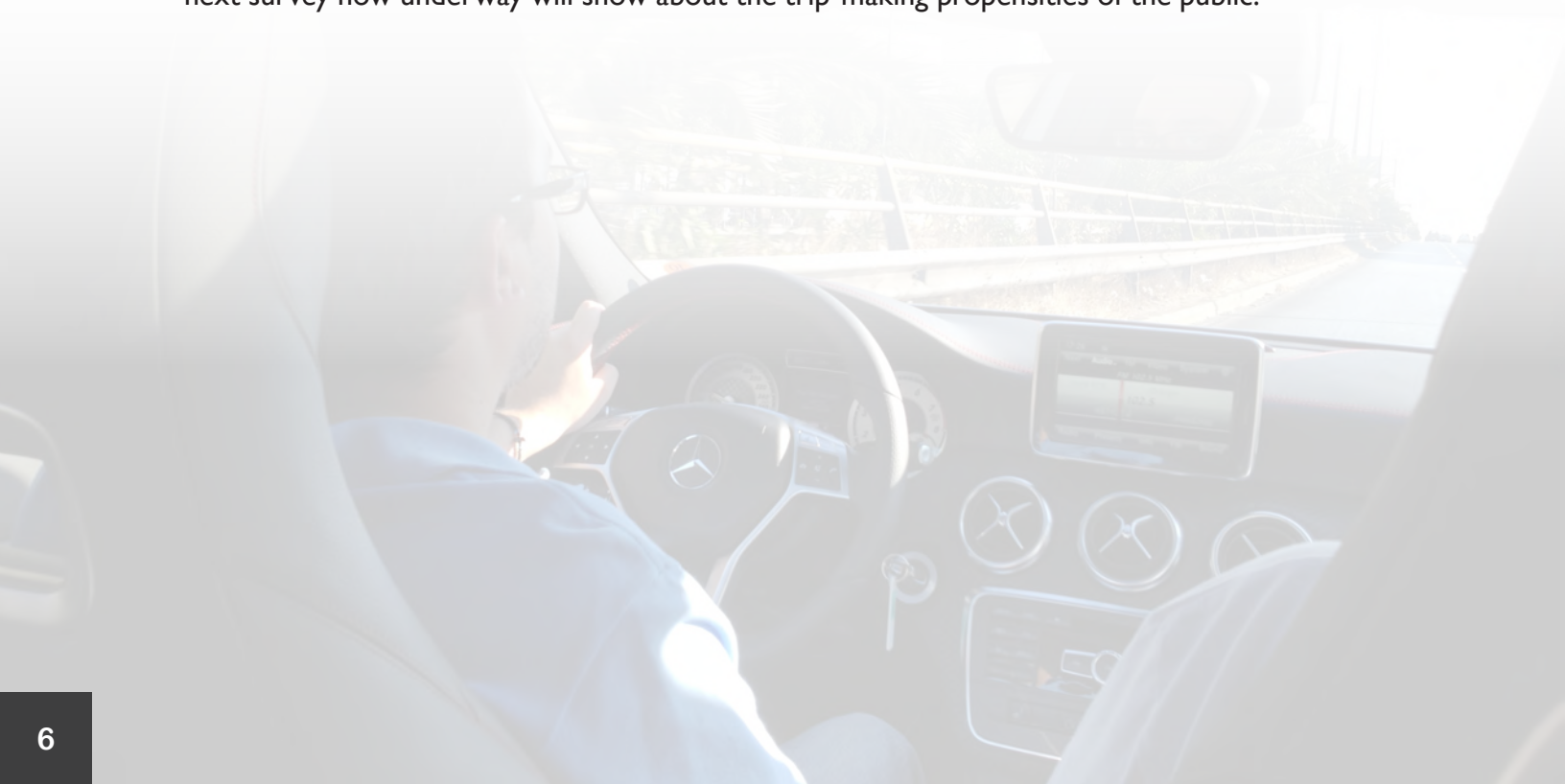
Figure 2-2 Average Annual Person-Miles of Travel per Household by Income: 2009



NOTES: The *National Household Travel Survey* was last completed in 2009. The *2016 National Household Travel Survey* is currently underway, and results will be released in 2018.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *2009 National Household Travel Survey*, latest data available at nhts.ornl.gov as of Feburary 2016.

Historically, higher income households travel more miles than lower income households. In 2009 person-miles of travel increased with household income. With the last national personal travel survey completed in 2009, at the end of the recession, it remains to be seen what the next survey now underway will show about the trip-making propensities of the public.

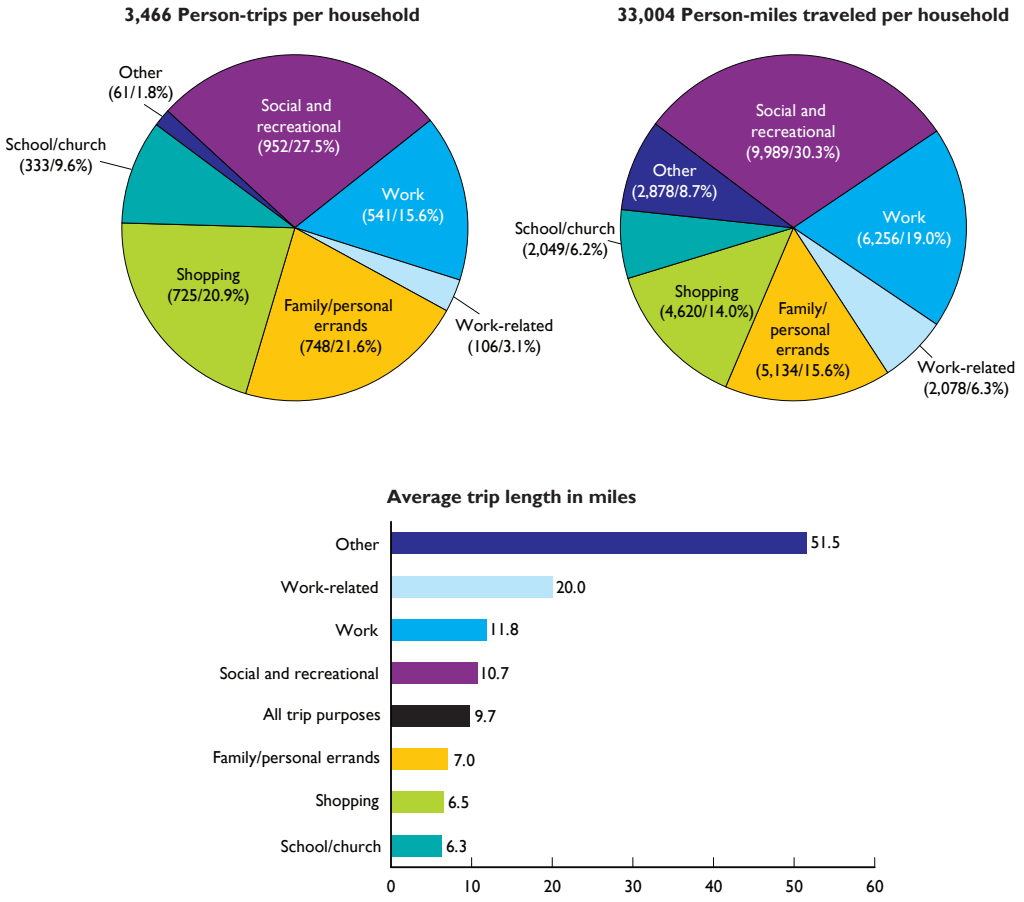


Why We Travel

Personal local travel is dominated by frequent, repetitive patterns, such as a daily commute to work. The most common reasons for travel are for family and personal errands, social and recreational activities, and work or work-related purposes.

In 2009 work and work-related trips were longer than trips for other purposes, making up 25.3 percent of total miles traveled but only 18.7 percent of total trips. Trips for shopping, personal errands, and social and recreational purposes were shorter but more frequent than commuting trips.

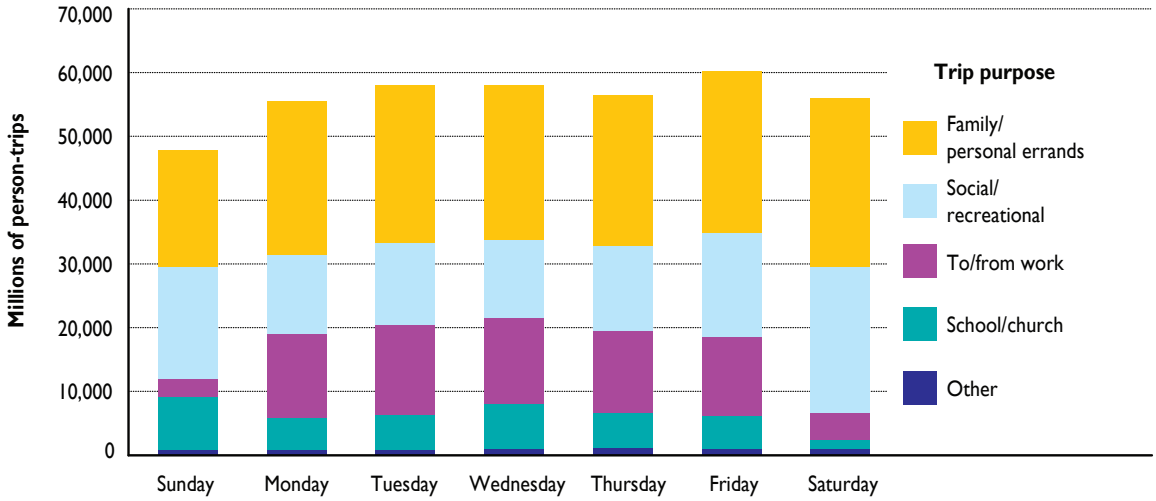
Figure 2-3 Average Annual Person-Trips, Person-Miles, and Trip Length per Household by Purpose: 2009



NOTES: *Person-trips* are trips by one person in any mode of transportation. *Family/personal errands* includes personal business, shopping, and medical/dental appointments. Percents may not add to 100 due to rounding. The *National Household Travel Survey* was last completed in 2009. The *2016 National Household Travel Survey* is currently underway, and results will be released in 2018. Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *2009 National Household Travel Survey Summary of Travel Trends*, table 5, latest data available at nhts.ornl.gov as of February 2016.

Figure 2-4 Annual Person-Trips by Purpose and Day of Week: 2009



NOTES: *Person-trips* are trips by one person in any mode of transportation. *Family/personal errands* includes personal business, shopping, and medical/dental appointments. *To or from work* includes work-related business trips. The *National Household Travel Survey* was last completed in 2009. The *2016 National Household Travel Survey* is currently underway, and results will be released in 2018.

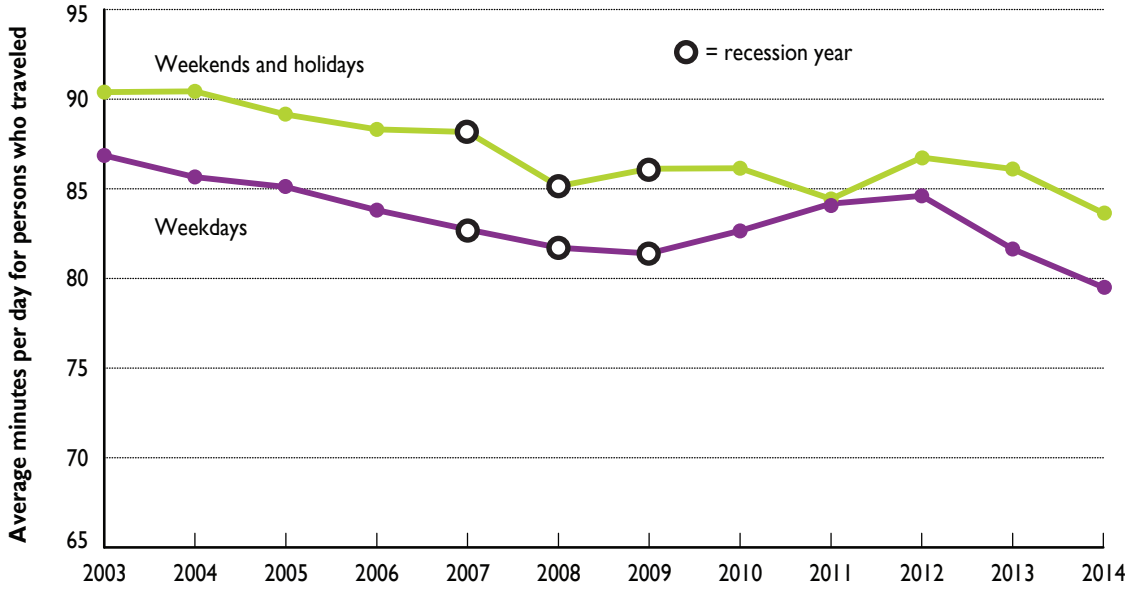
SOURCE: U.S. Department of Transportation, Federal Highway Administration, *2009 National Household Travel Survey*, latest data available at nhts.ornl.gov as of February 2016.

During an average week, people take more trips on weekdays than weekends. Fridays were the busiest days, largely because people make social and recreational trips in addition to regular work and school trips. Over the last 15 years, about one-fifth of trips involved trip-chaining—a sequence of trips with stops of less than 30 minutes. For example, people often run errands on the way to and from work. Trip-chains can reduce travel times, distance traveled, and fuel, but can also contribute to congestion because these trips often occur during peak travel periods. The least travel occurred on Sundays, although the lower numbers of work trips were partially offset by additional social/recreational and church trips.

Time Spent Traveling

Time spent traveling declined to a low in 2014, falling below levels reached in the last recession. Compared with 2005, people spent 7.4 fewer minutes traveling per weekday, a decrease of 8.5 percent; and 6.7 fewer minutes traveling per weekend day, a 7.5 percent decrease.

Figure 2-5 Total Time Spent Traveling on Weekdays and Weekends: 2003–2014



NOTES: Activities are based on *American Time Use Survey Activity Lexicon 2014* definitions. *Weekdays* exclude holidays. *Weekends* and *holidays* includes the following: New Year's Day, Easter, Memorial Day, the Fourth of July, Labor Day, Thanksgiving, and Christmas.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *American Time Use Survey 2014*, available at www.bls.gov as of February 2016.

Table 2-3 Average Weekday and Weekend Time Spent Traveling by Persons Engaged in Selected Activities: 2014

Travel activities related to	Average daily minutes		Average percent of persons engaged in selected activity	
	Weekdays	Weekends and holidays	Weekdays	Weekends and holidays
All travel activities	**79.5**	**83.6**	**86.6**	**80.8**
Work	46.3	39.3	45.2	15.2
Caring for and helping household members	38.7	36.7	15.7	7.2
Education	38.3	34.5	6.3	0.9
Caring for and helping nonhousehold members	34.9	38.8	7.5	9.7
Using government services and civic obligations	34.0	60.6	0.7	0.1
Socializing, relaxing, and leisure	33.5	41.8	23.2	33.6
Personal care	32.7	52.5	2.7	2.6
Consumer purchases	32.5	40.8	35.8	42.1
Other activities	32.5	38.7	18.5	25.9
Using household services	31.3	25.9	1.4	1.2
Using personal care services	31.1	28.0	9.2	3.1
Household activities	24.8	34.9	8.3	8.0
Eating and drinking	23.8	31.0	20.7	26.6

NOTES: Activities are based on *American Time Use Survey Activity Lexicon 2014* definitions. *Other activities* includes religious activities, security procedures, sports and recreation, telephone calls, and volunteering. *Weekdays* exclude holidays. *Weekends and holidays* includes the following: New Year's Day, Easter, Memorial Day, the Fourth of July, Labor Day, Thanksgiving, and Christmas.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *American Time Use Survey 2014*, available at www.bls.gov as of February 2016.

On weekdays in 2014 the average person spent 79.5 minutes per day traveling for a variety of activities. Examining the 45.2 percent of people who engaged in travel for work, the average person spent 46.3 minutes per day traveling, the most time spent traveling for any of the selected travel activities.

On weekends and holidays people spent an average of 83.6 minutes per day engaged in various travel activities, 4.1 minutes more than on weekdays. Out of all selected travel activities, the average person spent the most (52.5 minutes) on weekends and holidays traveling for activities related to personal care, about 19.8 minutes per day more than on weekdays. Travel related to eating and drinking on weekends and holidays accounted for 31.0 minutes, about 7 minutes more than on weekdays.

How We Travel

Most passenger travel occurs in cars or other types of personal motorized vehicles. In 2009, 83.4 percent of trips and 88.4 percent of person-miles traveled were by personal vehicle. The shares for other modes were considerably smaller—walking and biking accounted for 11.5 percent of local trips and 1.0 percent of miles in 2009, while transit's share was 1.9 percent of trips and 1.5 percent of miles. Between 1995 and 2009, the share of personal vehicle trips fell 3.0 percentage points, while the share of miles fell 2.8 percentage points.

Table 2-4 Annual Person-Trips and Person-Miles Traveled by Mode: 1995, 2001, and 2009

Person-trips (millions)

	1995		2001		2009	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Total	**378,930**	**100.0**	**384,485**	**100.0**	**392,023**	**100.0**
Privately owned vehicle	327,400	86.4	331,847	86.3	327,118	83.4
Transit	6,638	1.8	6,202	1.6	7,520	1.9
Walk	20,325	5.4	33,145	8.6	40,962	10.4
Bike	3,342	0.9	3,213	0.8	4,082	1.0
Air	313	0.1	359	0.1	311	0.1
Other	20,913	5.5	9,718	2.5	12,031	3.1

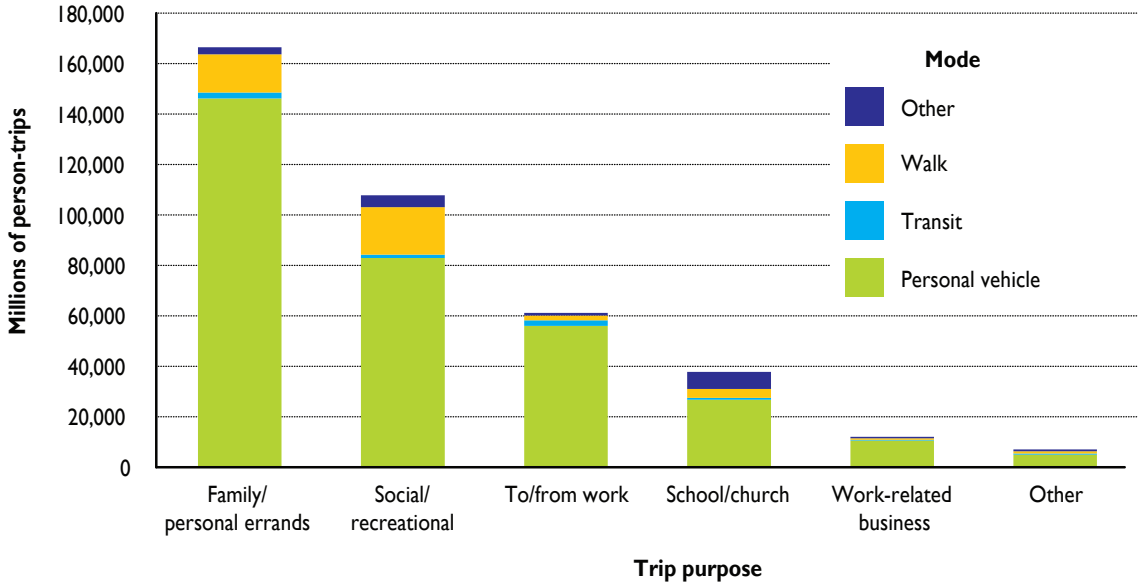
Person-miles traveled (millions)

	1995		2001		2009	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Total	**3,411,122**	**100.0**	**3,783,979**	**100.0**	**3,732,791**	**100.0**
Privately owned vehicle	3,110,249	91.2	3,337,234	88.2	3,298,168	88.4
Transit	72,577	2.1	44,355	1.2	54,393	1.5
Walk	10,821	0.3	23,522	0.6	27,943	0.7
Bike	4,586	0.1	6,162	0.2	8,956	0.2
Air	116,694	3.4	280,974	7.4	240,651	6.4
Other	96,194	2.8	91,733	2.4	102,680	2.8

NOTES: *Person-trips* are trips by one person in any mode of transportation. *Other* includes other and unreported modes. Percentages may not add to 100 due to rounding. The National Household Travel Survey was last completed in 2009. The 2016 National Household Travel Survey is currently underway, and results will be released in 2018.

SOURCE: **1995**–U.S. Department of Transportation, *National Passenger Travel Survey* and **2001 and 2009**–U.S Department of Transportation, *National Household Travel Survey*, all available at nhts.ornl.gov as of February 2016.

Figure 2-6 Annual Person-Trips by Mode and Purpose: 2009



NOTES: *Person-trips* are trips by one person in any mode of transportation. *Family/personal errands* includes personal business, shopping, and medical/dental appointments. The National Household Travel Survey was last completed in 2009. The 2016 National Household Travel Survey is currently underway, and results will be released in 2018.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *2009 National Household Travel Survey*, latest data available at nhts.ornl.gov as of February 2016.

Trips to and from work and for work-related business accounted for 18.7 percent of trips. Walking trips, accounting for 10.4 percent of trips in 2009, were mostly for family/personal errands and social/recreational purposes. Together these two trip-purpose categories accounted for 83.0 percent of walking trips.

Most workers (85.7 percent) drove to work in a personal vehicle in 2014, either by themselves or with others. The shares of workers using alternative modes as their primary means of transportation were smaller: 5.2 percent of workers used transit, 2.7 percent walked, and 0.6 percent biked. Although the number of commuters who drove to work increased between 2010 and 2014, the overall share of drivers decreased. The working population shifted to others modes of transportation as commuters who used transit grew by 12.3 percent, and workers who biked rose 23.7 percent.

Table 2-5 Commuting by Mode of Transportation: 2000, 2010, and 2014

Thousands of workers

	2000		2010		2014		Change, 2010 to 2014	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	**128,279**	**100.0**	**136,941**	**100.0**	**145,871**	**100.0**	**8,930**	**6.5**
Personal vehicle, total	112,736	87.9	118,124	86.3	125,007	85.7	6,883	5.8
Drives self	97,102	75.7	104,858	76.6	111,525	76.5	6,668	6.4
Carpool, total	15,634	12.2	13,266	9.7	13,481	9.2	215	1.6
2-person	12,097	9.4	10,294	7.5	10,348	7.1	55	0.5
3-person	2,159	1.7	1,733	1.3	1,840	1.3	106	6.1
4+ person	1,378	1.1	1,239	0.9	1,293	0.9	54	4.4
Public transportation	6,068	4.7	6,769	4.9	7,600	5.2	832	12.3
Taxicab	200	0.2	151	0.1	166	0.1	15	9.7
Bicycle	488	0.4	731	0.5	904	0.6	173	23.7
Motorcycle	142	0.1	267	0.2	285	0.2	19	7.0
Walks only	3,759	2.9	3,797	2.8	4,011	2.7	214	5.6
Other means	901	0.7	1,178	0.9	1,354	0.9	176	14.9
Works at home	4,184	3.3	5,924	4.3	6,543	4.5	618	10.4

NOTES: Mode of transportation is the principal means of transportation used most frequently to get from home to place of employment. If more than one means of transportation was used each day, those surveyed were asked to specify the one used for the longest distance during the trip from home to work. Component values may not add to totals due to rounding.

SOURCES: **2000**–U.S. Department of Commerce (USDOC), Census Bureau (CB), *Census 2000 Summary File 3*, available at www.census.gov as of February 2016. **2010 and 2014**–USDOC/CB, *American Community Survey 1-Year Estimates*, as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-41, available at www.bts.gov as of February 2016.

The geography of commuting involves two opposing trends. While workers and their places of work have grown farther apart over recent decades, an increasing number of people are working at home. Part of the longer term growth in working at home had been masked in earlier decades by the number of farmers who worked where they also lived[3]. In 2010, 13.4 million people worked from home at least one day per week, an increase of about 4.2 million people (35.4 percent) from 1997. Home-based workers included those who worked exclusively at home as well as those who worked at both home and at a job site. Revealing a similar trend between 2010 and 2014, the *American Community Survey* reported an increase of over 600,000 people (10.4 percent) who worked at home the week before the survey interview.

[3] American Association of State Highway and Transportation Officials (AASHTO), *Commuting in America 2013* (October 2013), available traveltrends.transportation.org as of March 2015.

Box 2-A National Surveys

National surveys conducted by multiple agencies throughout the Federal Government capture details on how and why people travel and use the transportation networks within the United States. This report utilizes many sources to draw a complete picture of passenger travel; however, the data collected as part of three surveys were especially useful for developing many of the tables, figures, and analyses: the National Household Travel Survey (NHTS), the American Community Survey (ACS), and the American Time Use Survey (ATUS). Included below are details on each of these surveys.

National Household Travel Survey (NHTS)

The NHTS, conducted by the U.S. Department of Transportation (USDOT), is a telephone survey of the civilian, noninstitutionalized population of the United States. As such, an eligible household excludes motels; hotels; group quarters such as nursing homes, prisons, barracks, convents, or monasteries; and any living quarters with 10 or more unrelated roommates. The precursor to the NHTS was first administered in 1969 as the Nationwide Personal Transportation Survey (NPTS).

In 2001 the effort was expanded and renamed the National Household Travel Survey. Prior surveys were conducted in 1969, 1977, 1983, 1990, and 1995. The 2009 NHTS was conducted from March 2008 through May 2009. Travel days were assigned for all seven days of the week, including all holidays. The survey data were weighted to a 12-month period to produce annual estimates of travel. In April 2016, USDOT began its year-long effort to collect data for the 2016 NHTS. For more information refer to http://nhts.ornl.gov.

American Community Survey (ACS)

The ACS, conducted by the U.S. Census Bureau, began in 1995 with a sample of counties across the country. Today the survey is conducted in all U.S. counties and in Puerto Rico, where it is called the Puerto Rico Community Survey. Designed as a replacement for the Census long form, the ACS is a continuous monthly survey and provides annual and multiyear estimates. Most of the questions in the survey are the same (or similar) to those of the Census 2000 long form. The ACS provides critical economic, social, demographic, and housing information to this country's communities every year.

One of the key transportation-related modules in the ACS is the "Journey to Work" section. To gauge how American's are traveling to work, the ACS asks respondents (each household member) what their usual way to work was for the week prior to the survey. Respondents are given a variety of modal options to choose from. In addition to journey to work information, the ACS also provides data on household vehicle availability, which is another key transportation variable.

Special tabulations, known as the Census Transportation Planning Package (CTPP), are also produced from the ACS data for transportation planners. The CTPP is a set of special tabulations designed by transportation planners using large sample surveys conducted by the Census Bureau. From 1970 to 2000, the CTPP and its predecessor, the Urban Transportation Planning Package, used data from the decennial census long form. The decennial census long form has now been replaced with a continuous survey called the ACS. Therefore, the CTPP now uses the ACS sample for the special tabulation. The first CTPP was tabulated using 2006–2010 ACS data.

For more information on the ACS, refer to http://www.census.gov/acs/. More information on the CTPP can be found at: http://www.fhwa.dot.gov/planning/census_issues/ctpp/.

American Time Use Survey (ATUS)

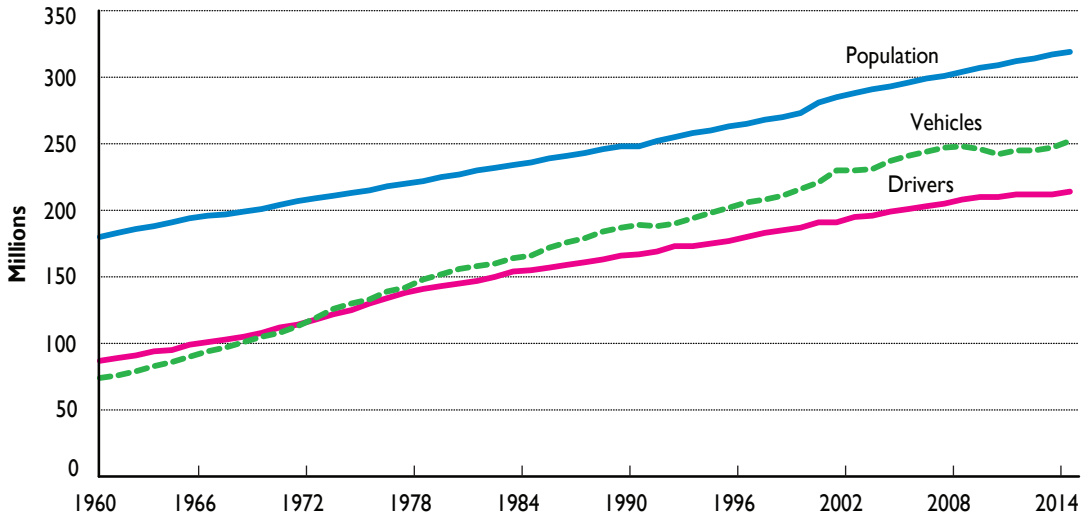
The ATUS provides nationally representative estimates of how, where, and with whom Americans spend their time and is the only Federal survey providing data on the full range of nonmarket activities, from childcare to volunteering. In the time diary portion of the ATUS interview, survey respondents sequentially report activities they did between 4 a.m. on the day before the interview ("yesterday") until 4 a.m. on the day of the interview. For each activity, respondents are asked how long the activity lasted. Data collected in the ATUS includes the overall average time the population spends traveling on selected activities as well as averages for the subpopulation that engages in selected activities (e.g., omitting persons who did not participate in each activity).

ATUS data files are used by researchers to study a broad range of issues; the data files include information collected from over 136,000 interviews conducted from 2003 to 2013. For more information on the ATUS, refer to http://www.bls.gov/tus/news.htm.

Personal Vehicles

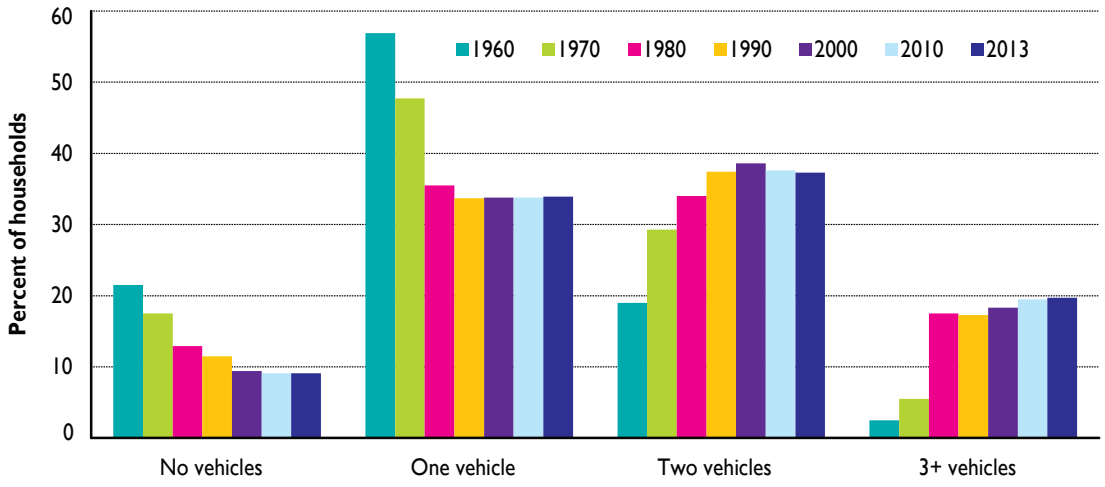
In 1960 the number of drivers exceeded the number of vehicles by 17.6 percent—there were 0.9 vehicles for every driver. By 1972 the number of registered vehicles surpassed the number of licensed drivers. This trend, in which the number of registered vehicles outnumbered licensed drivers, peaked in 2007 with 20.5 percent more vehicles than drivers. By 2014 that ratio had dropped, but vehicles still outnumbered drivers with about 1.2 vehicles per driver.

Figure 2-7 Licensed Drivers, Vehicle Registrations, and Resident Population: 1960–2014



SOURCE: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2014*. Chart DV-1C, available at www.fhwa.dot.gov/policyinformation/statistics/2014 as of February 2016.

Figure 2-8 Household Vehicle Ownership: 1960–2013

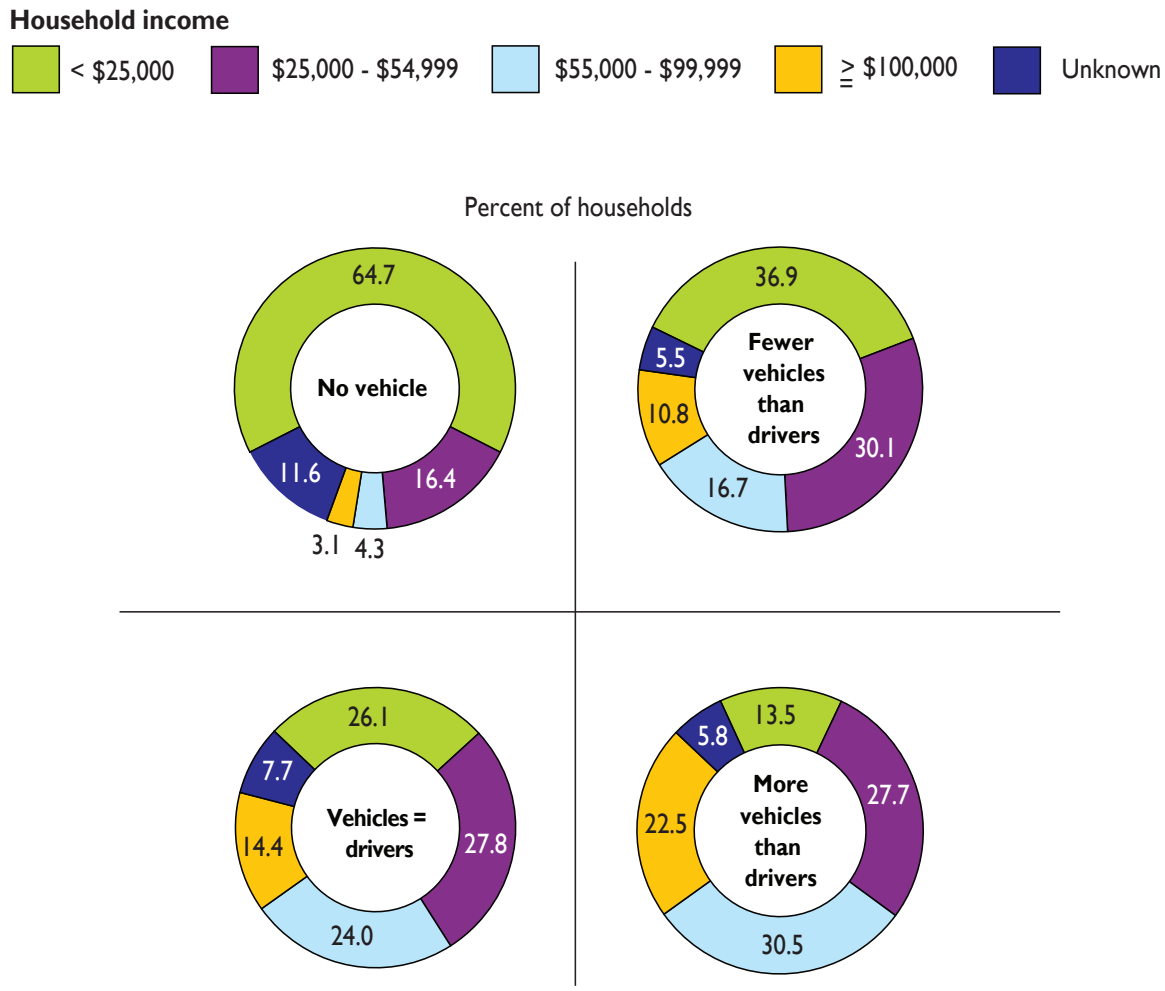


SOURCES: **1960–1990**–U.S. Department of Transportation, Volpe National Transportation Systems Center, *Journey-to-Work Trends in the United States and its Major Metropolitan Area, 1960–1990*. **2000**–U.S. Census Bureau, Decennial Census, table QT-04. **2010 and 2013**–U.S. Census Bureau, American Community Survey, table CP04, as cited in Oak Ridge National Laboratory, *Transportation Energy Data Book*, table 8.5, available at cta.ornl.gov/data as of February 2016.

Although household size has fallen since 1960, household vehicle ownership has increased. Before 1980 the majority of households owned one vehicle. Today the majority of households own two or more vehicles. For the last decade, about 1 in 10 households did not own a vehicle. The number of households without vehicles has remained relatively steady, at 10 to 11 million, despite a growing number of households over the past 40 years.

The majority of these "zero-vehicle" households, 64.7 percent in 2009, had a combined household income of less than $25,000. On the other end of the spectrum, the majority of households with more vehicles than drivers, 53.0 percent, had incomes over $55,000.

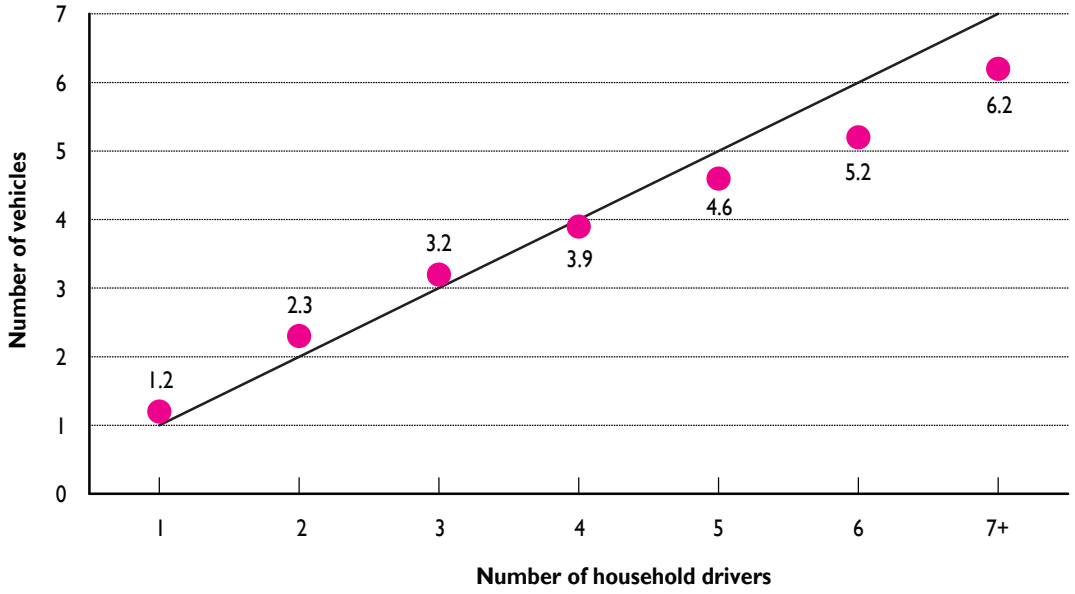
Figure 2-9 Vehicles per Driver by Household Income: 2009



NOTE: Percents may not add to 100 due to rounding. The National Household Travel Survey was last completed in 2009. The 2016 National Household Travel Survey is currently underway, and results will be released in 2018.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *2009 National Household Travel Survey*, available at nhts.ornl.gov as of February 2016.

Figure 2-10 Average Number of Vehicles per Household by Number of Household Drivers: 2009



NOTE: The black diagonal line plots a one-to-one ratio of vehicles to drivers. The National Household Travel Survey was last completed in 2009. The 2016 National Household Travel Survey is currently underway, and results will be released in 2018.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *2009 National Household Travel Survey,* available at nhts.ornl.gov as of February 2016.

According to the 2009 *National Household Travel Survey*, 91.7 percent of households have three or less vehicles. Households with one to three drivers averaged more than one vehicle per driver, but households with four or more drivers average less than one vehicle per driver.

Pedestrians and Bicycles

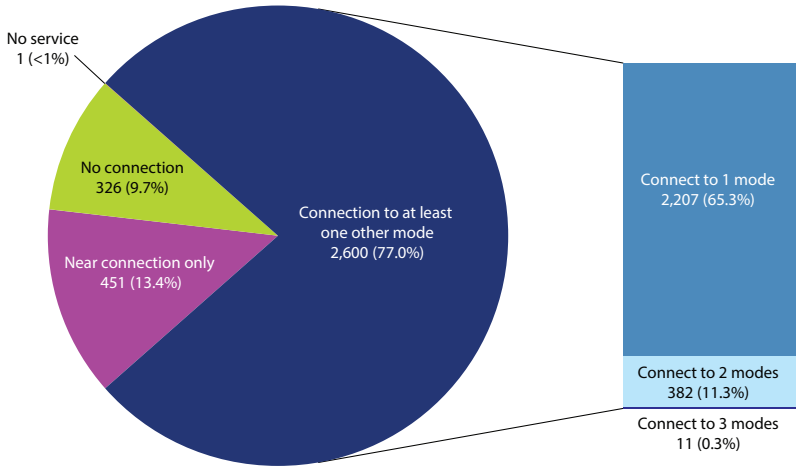
Although walking and biking account for a small portion of passenger travel, 11.5 percent of trips and 1.0 percent of miles traveled, the *National Household Travel Survey* suggests that a growing number of Americans are walking and bicycling. In 2009 walking accounted for 10.4 percent of trips, and biking accounted for 1.0 percent of trips.

Nationwide, 3.4 percent of commuters walk or bike to work, accounting for 2.8 and 0.6 percent of workers, respectively. While less than 1.0 percent of Americans bike to work on a regular basis, the number of bicycle commuters has nearly doubled since 2000.

Walking and biking commuters make up a greater share of workers in urban areas. In principal cities within metropolitan areas, 4.2 percent of workers walk to work and 0.9 percent bike to work. In rural areas, 1.9 percent of workers walk to work and 0.2 percent bike to work.

In the United States, 77.0 percent (2,600 of 3,378) of bike-share stations connect to another scheduled public transportation mode within 1 block, 13.4 percent (451) connect within 1 to 2 blocks, and 9.7 percent (327) either have no connection or no connection to a scheduled public transportation mode within 2 blocks (see figure 2-11).

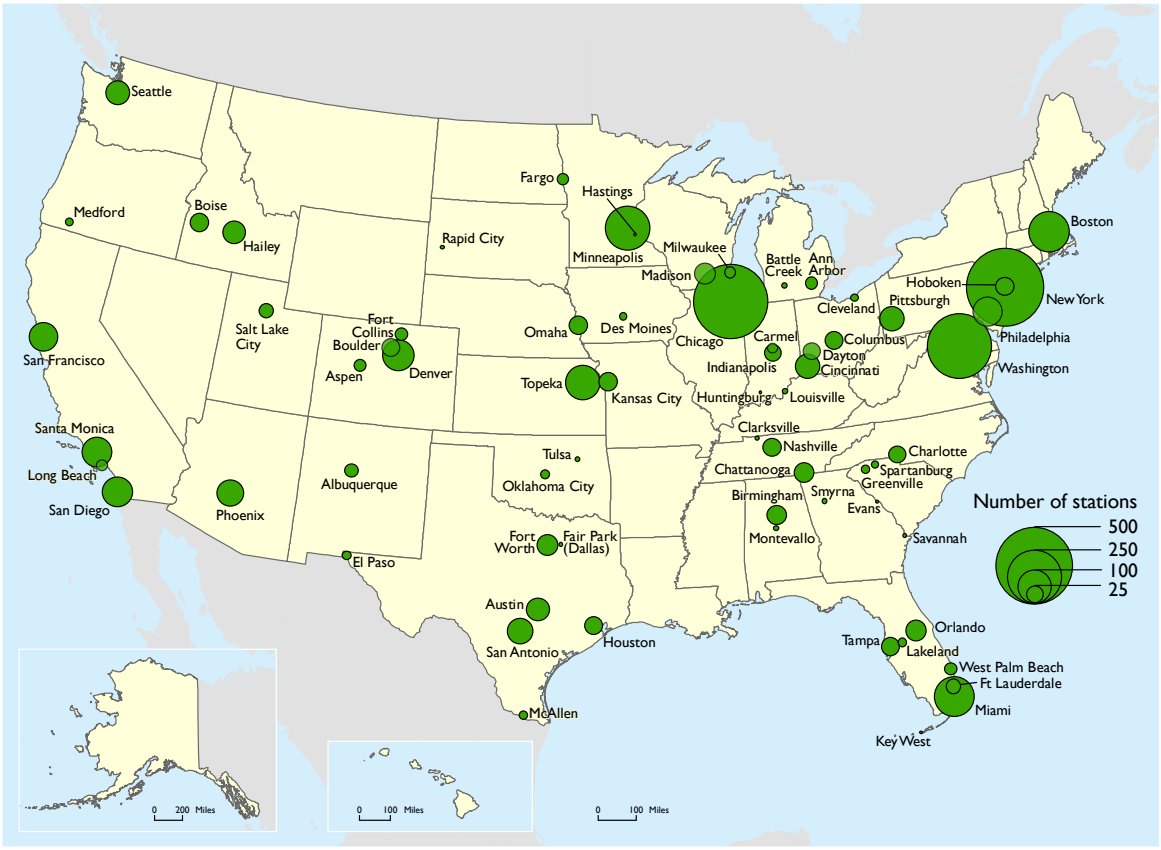
Figure 2-11 Bike-Share Connectivity to Scheduled Public Transportation: 2016



NOTES: "Connection to another mode" indicates the number of bike-share stations in, directly outside, or within one block of another scheduled public transportation mode. "Near connections" means a connecting mode is within one to two blocks of a bike-share station. "No connection" means that another scheduled public transportation mode serves the same metropolitan area as the bike-share station but not within two blocks so it is considered to have no connection. "No service" means that no scheduled public transportation mode serves the same metropolitan area as the bike-share station.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *Bike-Share Stations in the United States*, April 2016, www.bts.gov

Figure 2-12 Cities With Bike-Share Systems: 2016



NOTES: Cities not labeled: Redwood City, CA; Mountain View, CA; and Palo Alto, CA (all part of Bay Area Bike share along with San Francisco, CA and San Jose, CA); Santa Monica, CA and Los Angeles, CA (all part of Breeze Bike Share along with Santa Monica); Ashland, OR and White City, OR (all part of Zagstar Jackson County along with Medford, OR); Mesa, AZ (part of Grid Bike Share along with Phoenix, AZ); Elkhorn Village, ID; Ketchum, ID; and Sun Valley, ID (all part of MR Bike Share along with Hailey, ID); Covington, KY; Newport, KY; and Bellevue, KY (all part of Red Bike along with Cincinnati, OH); St. Paul, MN (part of Nice Ride Minnesota along with Minneapolis, MN); Council Bluffs (part of Heartland B-cycle along with Omaha, NE); Pompano Beach, FL; Lauderdale by the Sea, FL (all part of Broward B-cycle); Kissimmee, FL and Winter Park, FL (all part of Juice Bike share along with Orlando, FL); Rockville, MD; Bethesda, MD; Silver Spring, MD; North Potomac, MD; Takoma Park, MD; Derwood, MD; Redland, MD; Chevy Chase, MD; Alexandria, VA; and Arlington, VA (all part of the Capital Bikeshare system along with Washington DC); Brookline, MA; Cambridge, MA; and Somerville, MA (all part of Hubway along with Boston, MA); Jersey City (part of Citi Bike NYC along with New York, NY).

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *Bike-Share Stations in the United States*, April 2016, www.bts.gov

BTS found a total of 3,378 bike-share stations that operate in 104 U.S cities as of April 2016 (see figure 2-12).[4]

[4] This count does not include bike-share systems operated by a college or university and/or operating exclusively on a college or university campus and does not include private rentals.

Table 2-6 Top 5 Walk and Bike Commuting Cities by City Size: 2010–2014

Large Cities (Population ≥ 200,000)

Walk			Bike		
Rank	**City**	**Percent of commuters**	**Rank**	**City**	**Percent of commuters**
1	Boston, MA	14.7	1	Portland, OR	6.3
2	Washington, DC	12.4	2	Madison, WI	5.5
3	Pittsburgh, PA	10.9	3	Washington, DC	3.9
4	San Francisco, CA	10.3	4	Minneapolis, MN	3.9
5	New York, NY	10.1	5	San Francisco, CA	3.8

Medium Cities (Population 100,000-199,999)

Walk			Bike		
Rank	**City**	**Percent of commuters**	**Rank**	**City**	**Percent of commuters**
1	Cambridge, MA	24.5	1	Boulder, CO	10.1
2	Berkeley, CA	16.2	2	Berkeley, CA	8.5
3	Columbia, SC	15.5	3	Eugene, OR	7.7
4	Ann Arbor, MI	14.7	4	Cambridge, MA	6.9
5	Provo, UT	12.9	5	Fort Collins, CO	6.5

Small Cities (Population 20,000-99,999)

Walk			Bike		
Rank	**City**	**Percent of commuters**	**Rank**	**City**	**Percent of commuters**
1	North Chicago, IL	41.2	1	Isla Vista, CA	34.8
2	Ithaca, NY	40.7	2	Davis, CA	21.8
3	Athens, OH	38.4	3	Key West, FL	17.0
4	State College, PA	35.8	4	Corvallis, OR	11.7
5	Oxford, OH	28.4	5	Santa Cruz, CA	9.7

NOTE: Percent of commuters includes workers originating in the city who walk or bike to work.

SOURCE: U.S. Department of Commerce, Census Bureau, 2010–2014 *American Community Survey 5-Year Estimates*, table S0801, available at www.census.gov as of February 2016.

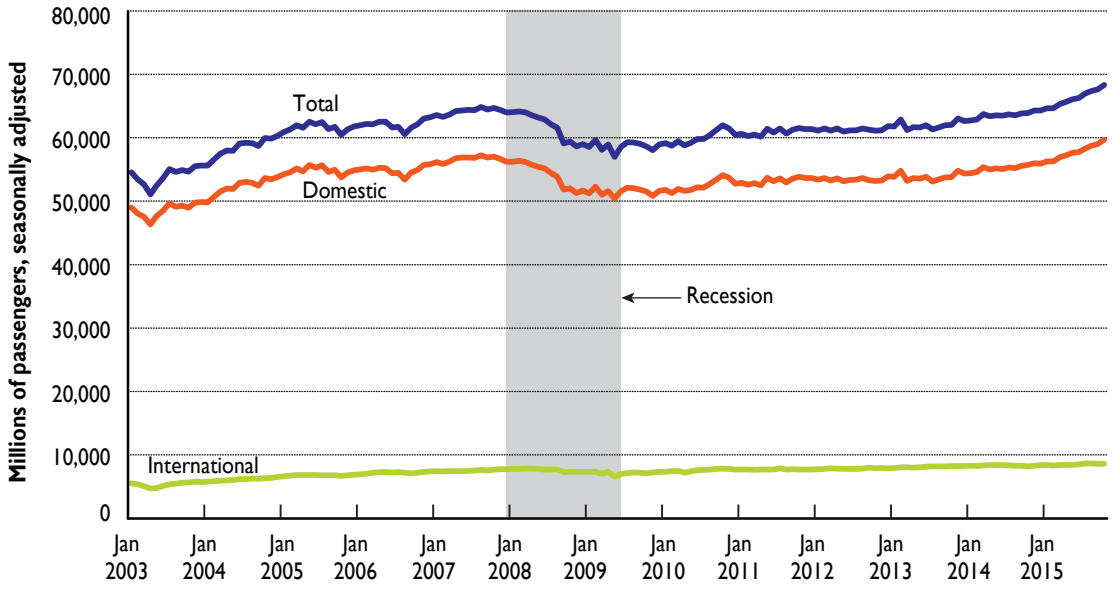
High rates of walking and biking are seen in several small and medium-sized cities, particularly those with significant university or college presence. For large cities, Boston, MA, had the highest rate of walking commuters (14.7 percent), while neighboring Cambridge, MA, had the highest rate of medium-sized cities (24.5 percent). Portland, OR, had the highest rate of bike commuters for large cities, and Boulder, CO, had the highest rate for medium cities.

Air Travel

Between January 2003 and December 2015, U.S. airlines' total (domestic and international) passenger enplanements rose 25.0 percent. The total number of passenger enplanements in 2015 (798.4 million) exceeded the previous high of 769.6 million in 2007. During this period, the growth of international enplanements (57.2 percent) outpaced that of domestic enplanements (21.3 percent).

U.S. airlines handled 59.5 million system enplanements in December 2015, the second highest seasonally adjusted total after the all-time high reached in October 2015 (59.7 million). Nine of the top 10 all-time highest months for domestic enplanements were in 2015. The December 2015 level for international enplanements, 8.7 million, was the highest all-time, seasonally adjusted total.

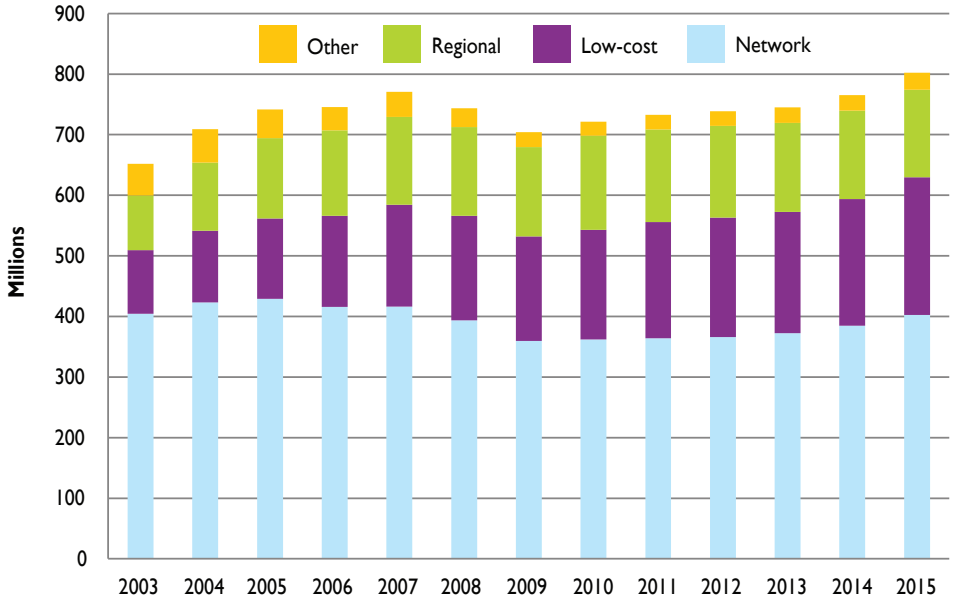
Figure 2-13 U.S. Airline Passenger Enplanements: Jan 2003–Oct 2015



NOTES: Includes enplanements on scheduled services. International enplanements include only U.S. carriers.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *T-100 Market Data*, available at www.transtats.bts.gov as of March 2016.

Figure 2-14 U.S. Airline Passengers by Carrier Type: 2003–2015



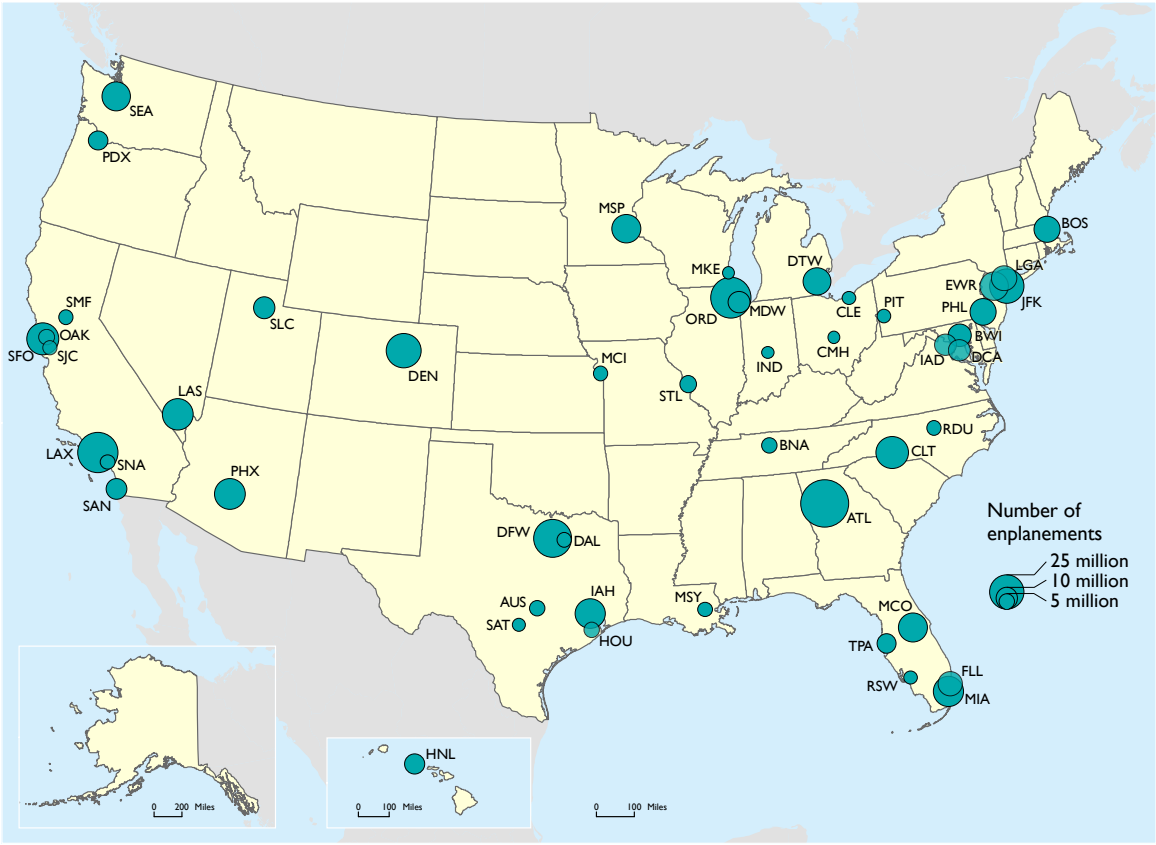
NOTES: Network airlines include United, Continental, Continental Micronesia, Delta, American, US Airways, Alaska, America West, and Northwest. Low-Cost airlines include Southwest, AirTran, JetBlue, Spirit, Frontier, Virgin America, and Allegiant. Regional airlines include Envoy, SkyWest, ExpressJet, Atlantic Southeast, Endeavor, Mesaba , Republic, Horizon, Air Wisconsin, Mesa, Shuttle America, Chautaqua, PSA, PSA, Compass, GoJet, Executive, Colgan, Comair, and Lynx. Other airlines generally operate within specific niche markets.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *T-100 Market Data*, available at www.transtats.bts.gov as of June 2016.

Network airlines, which operate a significant portion of their flights using at least one hub where connections are made for flights to down-line destinations or spoke cities, carry the largest portion of U.S. airline passengers. In 2015 the top three network airlines—United, Delta, and American—together carried 43.8 percent of total passengers traveling on U.S. airlines. The share of network airline passengers, however, has declined over the last decade, from 62.0 percent in 2003 to 50.2 percent in 2015. Meanwhile, low-cost airlines have carried an increasing number of passengers. In 2003 these airlines—Southwest, AirTran, JetBlue, Spirit, Frontier, Virgin America, and Allegiant—carried 16.1 percent of U.S. airline passengers. By 2015 these low-cost airlines carried 28.3 percent of passengers.

The busiest U.S. airport in 2015, measured by the number of enplanements, was Hartsfield–Jackson Atlanta International Airport, followed by Los Angeles International Airport. The top 50 busiest airports accounted for 84.9 percent of the 798.2 million annual U.S. passenger enplanements.

Figure 2-15 Enplanements at the Top 50 U.S. Airports: 2015



NOTE: Includes passengers enplaned on U.S. carrier scheduled domestic and international service and foreign carrier scheduled international service from the United States.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *T-100 Market Data*, available at www.transtats.bts.gov as of June 2016.

Table 2-7 Top 10 Domestic City Markets by Number of Enplanements: 2014 and 2015

2015 rank	Market	Millions of enplaned passengers 2014	2015	Percent change, 2014 to 2015
1	Atlanta, GA	41.4	43.9	6.2
2	Chicago, IL	38.1	41.0	7.5
3	New York City, NY	38.6	40.9	6.1
4	Los Angeles, CA	34.9	36.6	4.8
5	Dallas/Fort Worth, TX	31.8	34.9	9.5
6	Washington, DC	27.5	29.1	6.1
7	San Francisco, CA	27.2	28.8	6.0
8	Denver, CO	24.9	25.2	1.2
9	Houston, TX	20.8	21.3	2.6
10	Miami, FL	19.2	21.0	9.4

NOTES: Enplaned passengers on U.S. carriers only. A city market may be served by more than one airport.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *T-100 Domestic Market Data*, available at www.transtats.bts.gov as of March 2016.

From 2014 to 2015, all of the top 10 domestic markets experienced an increase in enplaned passengers. Atlanta, served by three airports, remained the top market with 43.9 million domestic enplanements in 2015. The largest growth was again seen in the Dallas/Fort Worth market, up 9.5 percent from 2014 to 2015.

Table 2-8 Top 10 Airlines by Domestic Enplanements: 2014 and 2015

2015 Rank	Airline	Millions of enplaned passengers 2014	2015	Percent change, 2014 to 2015
1	Southwest	126.7	142.5	12.4
2	American and US Airways	117.1	118.1	0.9
3	Delta	106.4	115.1	8.1
4	United	64.8	69.3	7.0
5	JetBlue	26.5	28.8	8.9
6	SkyWest	26.0	27.8	7.1
7	ExpressJet	28.0	24.0	-14.2
8	Alaska	19.2	21.3	11.3
9	Spirit	12.6	16.0	27.2
10	Republic	12.8	13.3	3.7

NOTES: Southwest and AirTran began reporting jointly in January 2015 following their 2011 merger announcement. American and US Airways began reporting jointly as American in July 2015 following their 2013 merger announcement.

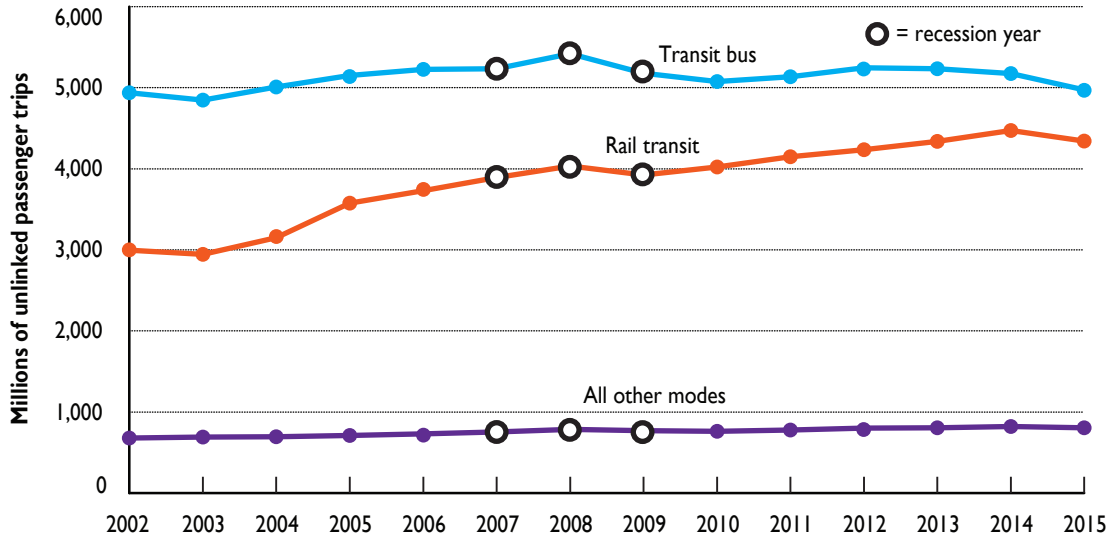
SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *T-100 Domestic Market Data*, available at www.transtats.bts.gov as of May 2016.

Southwest carried the most passengers from domestic airports of any airline in 2014 and 2015. Some of the 12.4 percent year-over-year growth can be attributed to the joint reporting of Southwest and AirTran following their 2011 merger. In second place, American and US Airways saw a 0.9 increase in domestic enplanements. US Airways, which merged with American in 2013, began reporting jointly with American in July 2015. Of the other top 10 airlines, only ExpressJet, a regional airline that provides contract service for mainline carriers, reported a decrease.

Public Transit

Transit riders in the United States took 10.3 billion unlinked passenger trips[5] in 2015, a slight decline over the previous year. About half, 49.1 percent, of these trips occurred on transit buses, and 42.9 percent occurred on rail transit modes (commuter rail, heavy rail, light rail, and streetcar).

Figure 2-16 Transit Ridership: 2002–2015

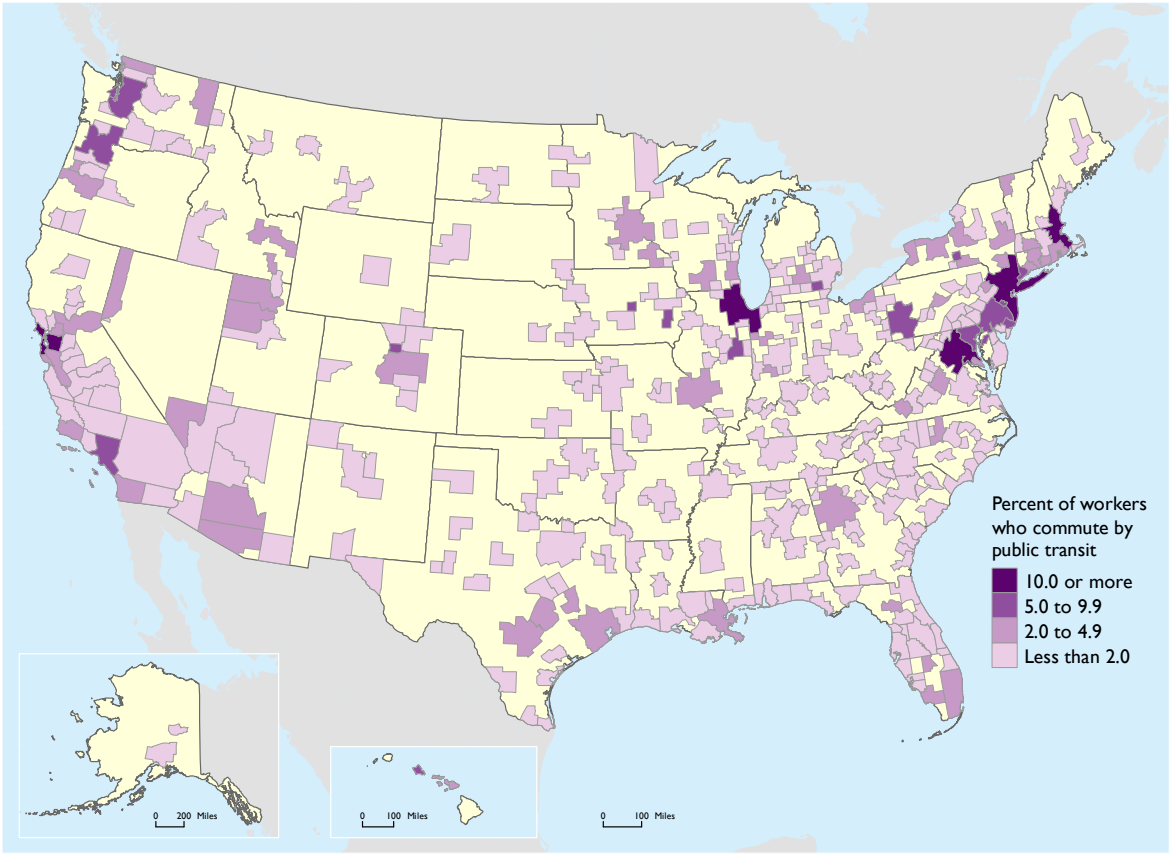


NOTES: *Transit bus* includes local motor bus, commuter bus, and bus rapid transit. *Rail transit* includes heavy rail, light rail, and streetcar rail. *All other modes* includes commuter rail, demand response and demand response taxi, trolley bus, van pool, ferry boat, monorail and automated guideway, cable car, and inclined plane. Starting in 2012, data for Small System Waiver agencies that do not list a mode are reported under *Motor bus*. Data reported under the hybrid rail mode are reported under their classifications prior to 2012.

SOURCE: U.S. Department of Transportation (USDOT), Federal Transit Administration, *National Transit Database*, as cited in USDOT, Bureau of Transportation Statistics, *Multimodal Transportation Indicators*, available at www.bts.gov as of February 2016.

[5] Unlinked passenger trips are the number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination.

Figure 2-17 Percent Commuting by Public Transportation in Metro Areas: 2010–2014



SOURCE: U.S. Department of Commerce, Census Bureau, *2010-2014 American Community Survey 5-Year Estimates*, available at www.census.gov/acs as of February 2016.

Commuting by transit makes up a greater share of trips in larger metropolitan areas: 12.7 percent in areas with populations over 5 million, 5.9 percent in areas between 2.5 and 5 million, and 2.5 percent in areas between 1 and 2.5 million. At the highest extreme, 59.1 percent of workers living in the borough of Manhattan, in New York City, commute by transit and another 22.2 percent walk or bike.

Motorcoach and Intercity Bus

The motorcoach industry, including charter, tour, sightseeing, airport shuttle, commuter, scheduled, and special operations services, provided 604 million person-trips in the United States and Canada in 2014, down 0.2 percent from 2013. The number of motorcoach carriers fell 4.6 percent, and the number of coaches fell 1.0 percent. This reduction in size was largely due to companies that went out of business, merged with other companies, or were acquired by larger companies. Although the motorcoach industry decreased in size, the number of passenger trips per motorcoach increased every year since 2010. The average motorcoach completed 11.5 percent more passenger trips in 2014 than in 2010.

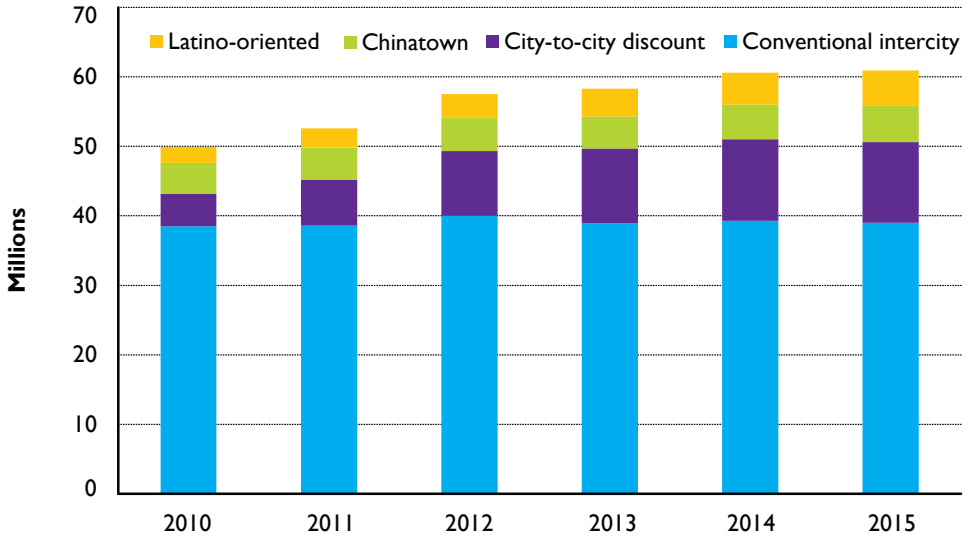
Table 2-9 Motorcoach Carriers, Coaches, Passenger-Miles, and Trips: 2010–2014

	2010	2011	2012	2013	2014
Carriers	4,011	3,984	3,954	3,801	3,628
Coaches	40,709	40,141	39,607	36,903	36,520
Passenger trips (millions)	601	627	637	605	604
Passenger trips per coach	14,800	15,600	16,100	16,400	16,500
Passenger miles (billions)	69	76	76	63	62
Passenger miles per coach	1,703,200	1,897,400	1,912,500	1,710,000	1,693,000

NOTES: *The Motorcoach Census* measures the size and activity of the motorcoach industry in the U.S. and Canada. The survey includes motorcoach charter services, tour and sightseeing services, and passenger motorcoach transportation over regular routes and on regular schedules (airport shuttles, commuter buses, and scheduled intercity and rural transportation services).

SOURCE: American Bus Association, *Motorcoach Census*, available at www.buses.org as of June 2016.

Figure 2-18 Intercity Bus Passenger Trips: 2010–2015



NOTES: Passenger trips are estimated based on amount of service provided and load factor. The *Intercity Bus Database* excludes charter buses, casino buses, local transit, and airport shuttles. Discount city-to-city bus consists of express-oriented carriers operating from downtown districts, for example, Megabus and BoltBus. Chinatown operators typically operate from Chinatown districts in major cities. Latino-oriented operators typically serve Latino and Hispanic communities.

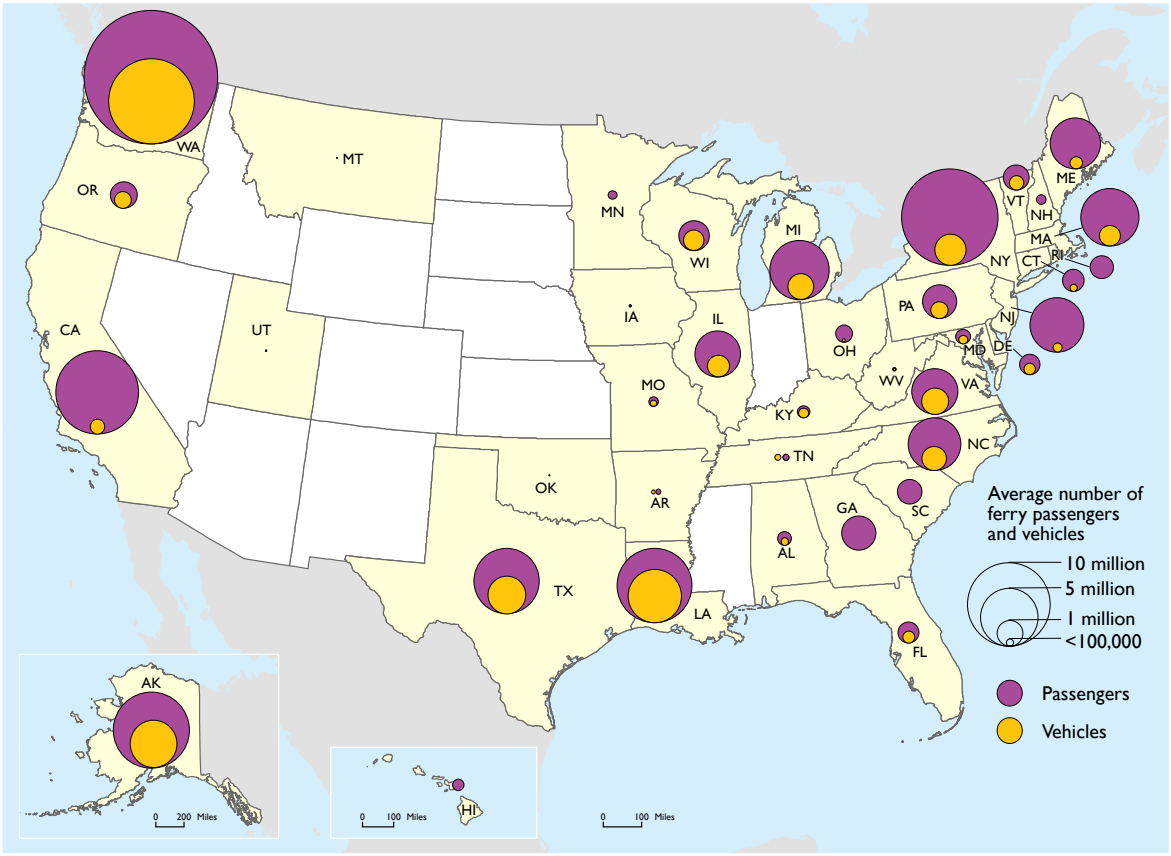
SOURCE: Chaddick Institute for Metropolitan Development, DePaul University, *Intercity Bus Database* as of March 2016.

The intercity bus industry served an estimated 60.9 million passengers in 2015, up 22.0 percent since 2010. The growth in intercity bus travel is largely due to the growing popularity of discount city-to-city, Chinatown, and Latino-oriented bus operations. While the number of trips on conventional service operators, such as Greyhound and Peter Pan, remained fairly constant, these alternative bus operators saw ridership nearly double.

Waterborne Travel

U.S. ferries carried an estimated 115 million passengers and just over 30 million vehicles in 2013. Washington, New York, and California had the greatest number of ferry passengers, accounting for 22.6, 11.6, and 8.8 percent of total passengers, respectively. Ferries in Washington carried the greatest proportion of vehicles as a percent of total vehicle boardings (9.3 percent), followed by Louisiana (3.7 percent) and Alaska (2.9 percent). The states with the most ferry vessels were California (53 vessels), Massachusetts (49 vessels), Washington (46 vessels), New York (45), New Jersey (39), and North Carolina (30). Nearly all of the vessels carried passengers (95.0 percent), while less than half carried vehicles (47.1 percent), and less than a quarter carried freight (22.2 percent).

Figure 2-19 Average Number of Ferry Passengers and Vehicles: 2013

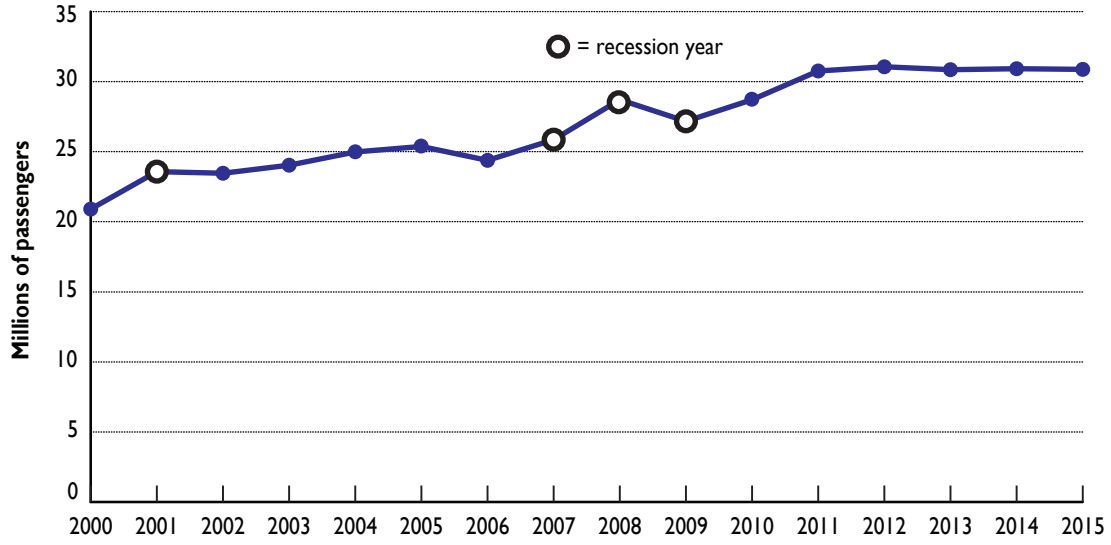


SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *National Census of Ferry Operators* as of May 2016.

Passenger Rail

Amtrak is the primary operator of intercity passenger rail service in the United States. Ridership on Amtrak has been growing since 2000, reaching a record 31 million passengers in fiscal year 2012 and has remained relatively stable since.

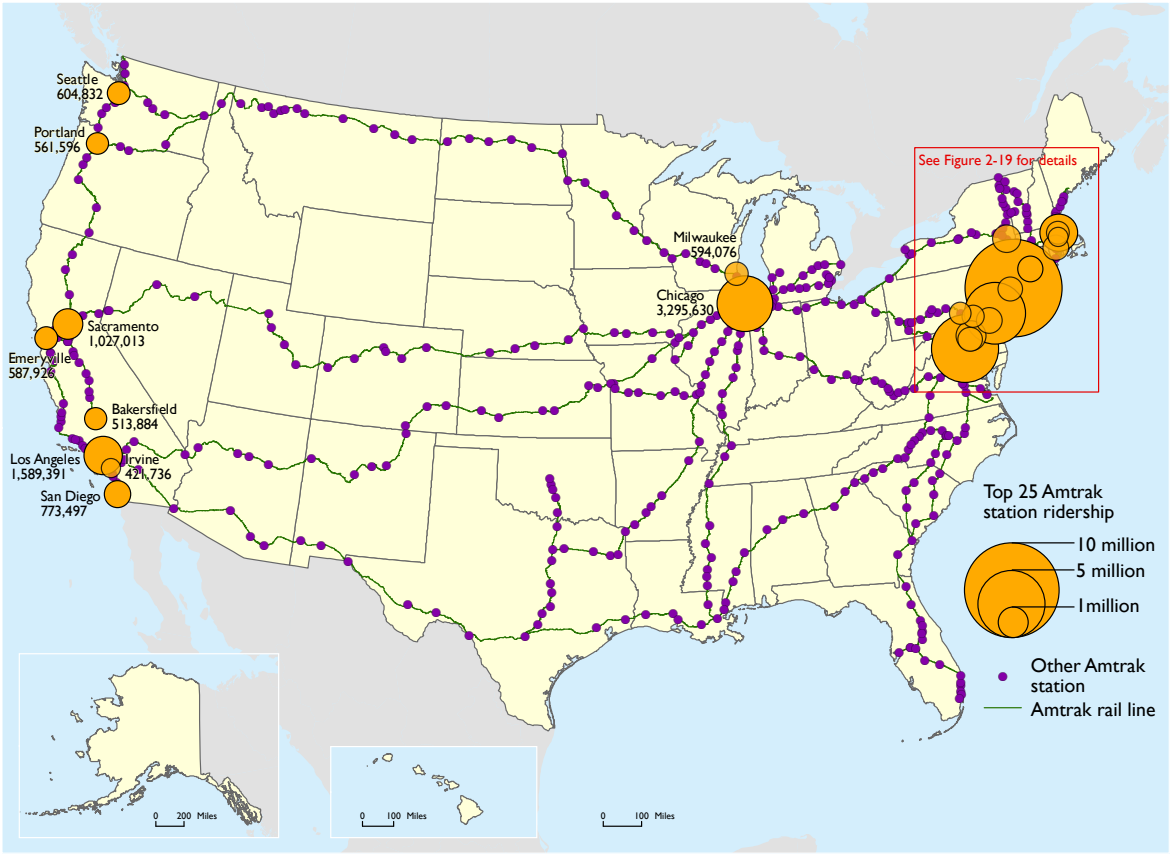
Figure 2-20 Amtrak Ridership: FY2000–FY2015



SOURCE: U.S. Department of Transportation (USDOT), Federal Railroad Administration, Office of Safety Analysis, as cited in USDOT, Bureau of Transportation Statistics, *Multimodal Transportation Statistics*, available at www.bts.gov as of February 2016.

In fiscal year 2015, 12 of the Nation's 25 busiest Amtrak stations served the Northeast Corridor. Passengers along the Northeast Corridor accounted for well over one-third of systemwide ridership. The busiest station within the entire Amtrak network was New York City's Penn Station. Ridership was also high in Chicago as well as at several locations in California and the Pacific Northwest.

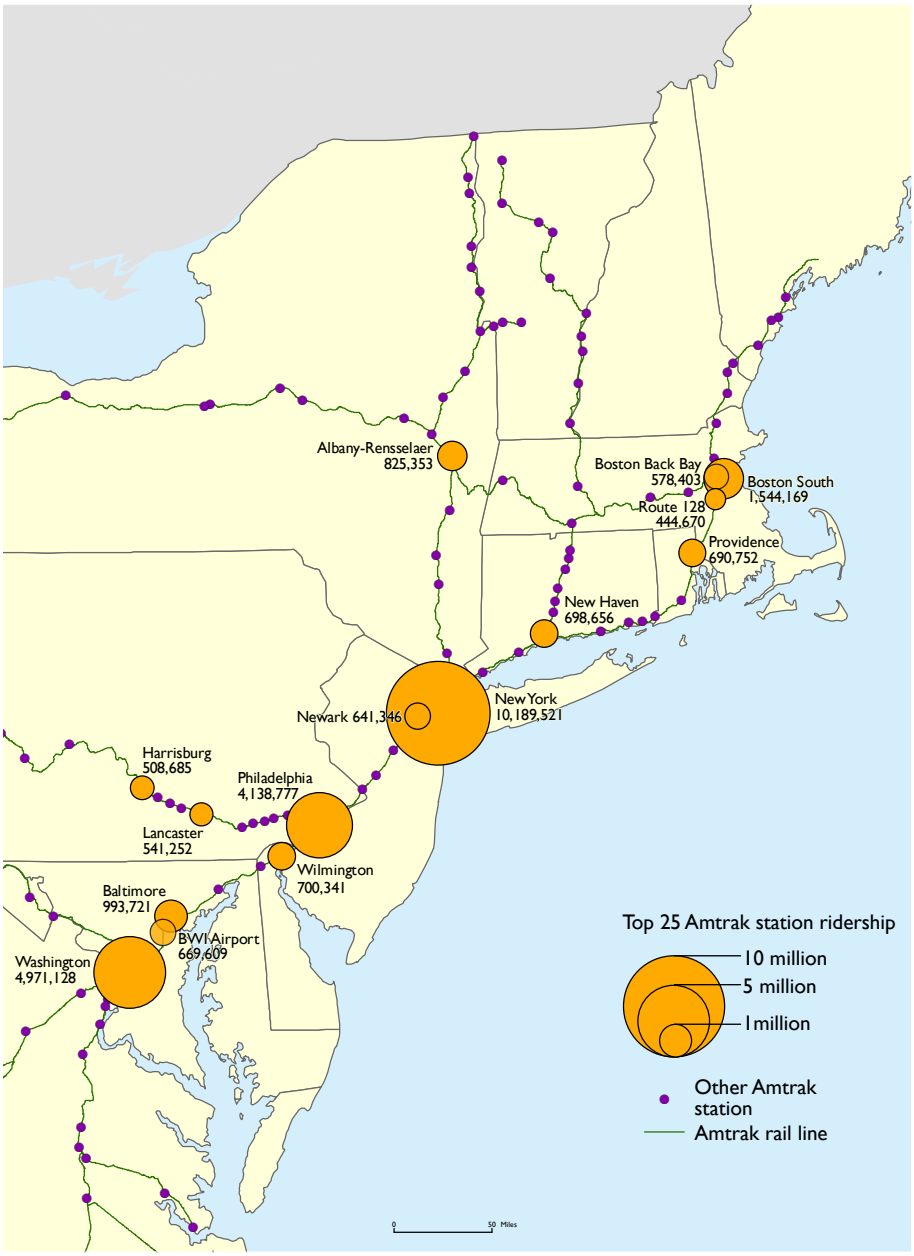
Figure 2-21 Top 25 Busiest Amtrak Stations: FY2015



KEY: FY = fiscal year.

SOURCE: Amtrak, *State Fact Sheets*, available at www.amtrak.com as of February 2016.

Figure 2-22 Amtrak Stations Along the Northeast Corridor: FY2015



KEY: FY = fiscal year.

SOURCE: Amtrak, *State Fact Sheets*, available at www.amtrak.com as of February 2016.

Foreign Travel

In 2014 U.S residents made 68.3 million overnight trips to other countries, a 12.3 percent increase from 2000. Over half, 54.9 percent, of overnight international travel by U.S. residents was to neighboring countries: 25.4 million visits to Mexico and 12.1 million visits to Canada. The busiest month for overnight international trips in 2014 was July (7.6 million), and the least busy was February (4.4 million).

U.S. residents made 30.8 million overnight visits to countries outside of North America in 2014. Between 2000 and 2014, travel to overseas countries grew by 14.6 percent. Travel to Europe fell by 9.4 percent, while visits to the Middle East nearly tripled since 2000.

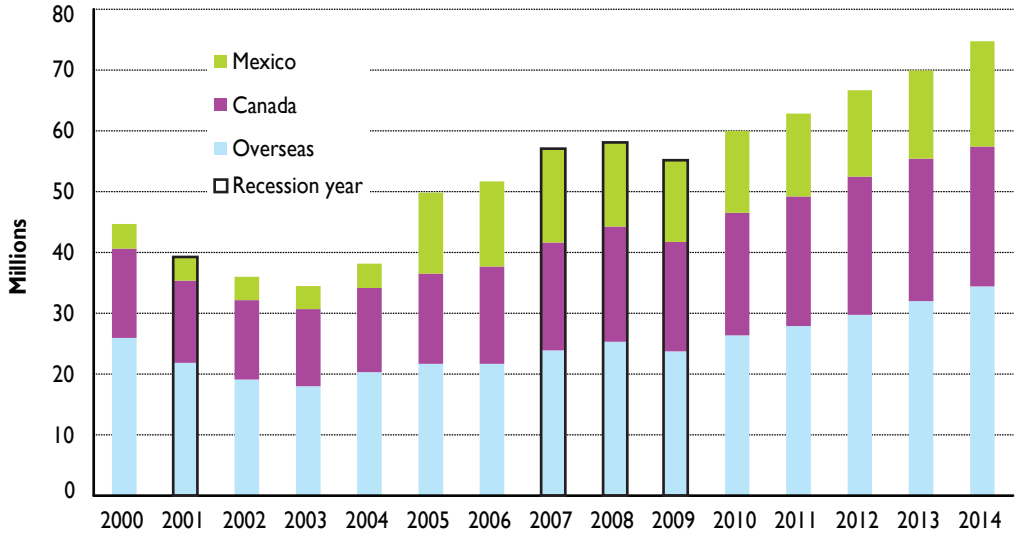
Table 2-10 Top 10 International Travel Destinations Visited by U.S. Residents: 2000 and 2014

	Thousands of travelers					
Region	**2000**	**Rank**	**Rank**	**2014**	**Region**	**Percent change, 2000 to 2014**
Mexico	18,849	1	1	25,410	Mexico	34.8
Canada	15,114	2	2	12,113	Canada	-19.9
Europe	13,122	3	3	11,892	Europe	-9.4
Caribbean	4,682	4	4	7,172	Caribbean	53.2
Asia	4,001	5	5	4,509	Asia	12.7
South America	1,880	6	6	2,697	Central America	67.9
Central America	1,607	7	7	1,780	Middle East	298.5
Oceania	886	8	8	1,772	South America	-5.8
Middle East	447	9	9	601	Oceania	-32.1
Africa	230	10	10	358	Africa	55.6
Total	**60,816**			**68,303**	**Total**	**12.3**

NOTE: Blue shading denotes largest percent change.

SOURCE: U.S. Department of Commerce, International Trade Administration, Office of Travel & Tourism Industries, *Outbound Overview*, available at travel.trade.gov/outreachpages as of March 2016.

Figure 2-23 Foreigner Visits by Main Markets: 2000–2014



NOTES: Data prior to 2005 are not comparable to later years due to a change in methodology for counting visitors from Mexico. Data for 2014 are not comparable to previous years due to the inclusion of one-night stay Overseas travelers in 2014.

SOURCE: U.S. Department of Commerce, Office of Travel and Tourism Industries, *U.S. Monthly Arrivals Trend Line: Overseas, Canada, Mexico & International*, available at travel.trade.gov as of March 2016.

A record 74.7 million foreign travelers visited the United States in 2014, up 6.9 percent from the previous year. International visitation grew every year since the end of the recession in 2009. The largest visitor markets in 2014 were Canada (30.7 percent) and Mexico (23.2 percent).

Travelers from countries outside of North America accounted for 46.1 percent of international visitation in 2014. The top tourist-generating countries outside North America were the United Kingdom (5.3 percent), Japan (4.8 percent), Brazil (3.0 percent), and China (2.9 percent). Combined with Canada and Mexico, these six markets accounted for 70.0 percent of all 2014 international visits. In 2000 China was the 24th largest market for international visitors to the United States. By 2014 visitation from China increased by over 700 percent, and the country is now the 6th largest market.

Table 2-11 Top 10 Countries Sending Tourists to the United States: 2000 and 2014

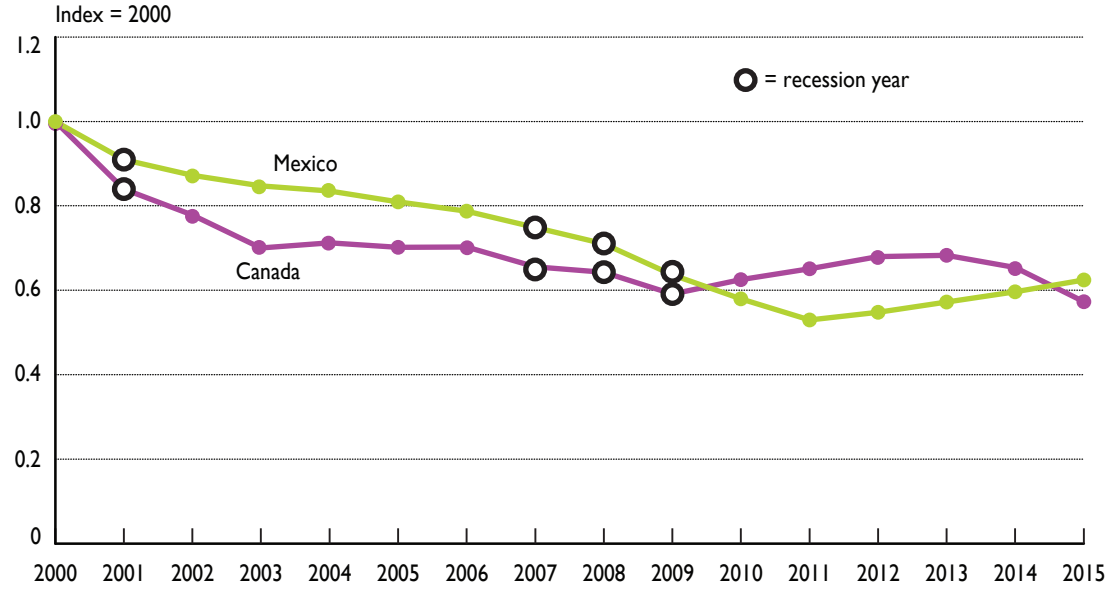
Country	Thousands of travelers 2000	Rank	Rank	2014	Country	Percent change, 2000 to 2014
Canada	14,594	1	1	22,975	Canada	57.4
Mexico	10,322	2	2	17,334	Mexico	67.9
Japan	5,061	3	3	3,973	United Kingdom	-15.5
United Kingdom	4,703	4	4	3,579	Japan	-29.3
Germany	1,786	5	5	2,264	Brazil	207.0
France	1,087	6	6	2,188	China[a]	777.5
Brazil	737	7	7	1,969	Germany	10.2
South Korea	662	8	8	1,625	France	49.4
Australia	540	12	9	1,450	South Korea	119.0
China	249	24	10	1,276	Australia	136.5
Total	**50,890**			**74,729**	**Total**	**46.8**

[a]Arrivals for 2014 excludes Hong Kong.

NOTES: Blue shading denotes largest percent change. Beginning in 2014, overseas data include one-night stay travelers.

SOURCE: U.S. Department of Commerce, International Trade Administration, Office of Travel & Tourism Industries, *International Visitation in the United States*, available at travel.trade.gov/outreachpages as of March 2016.

Figure 2-24 Index of Incoming Persons Crossing Through U.S. Land Borders: 2000–2015



NOTE: Truck crossings are not included because they are primarily freight related.

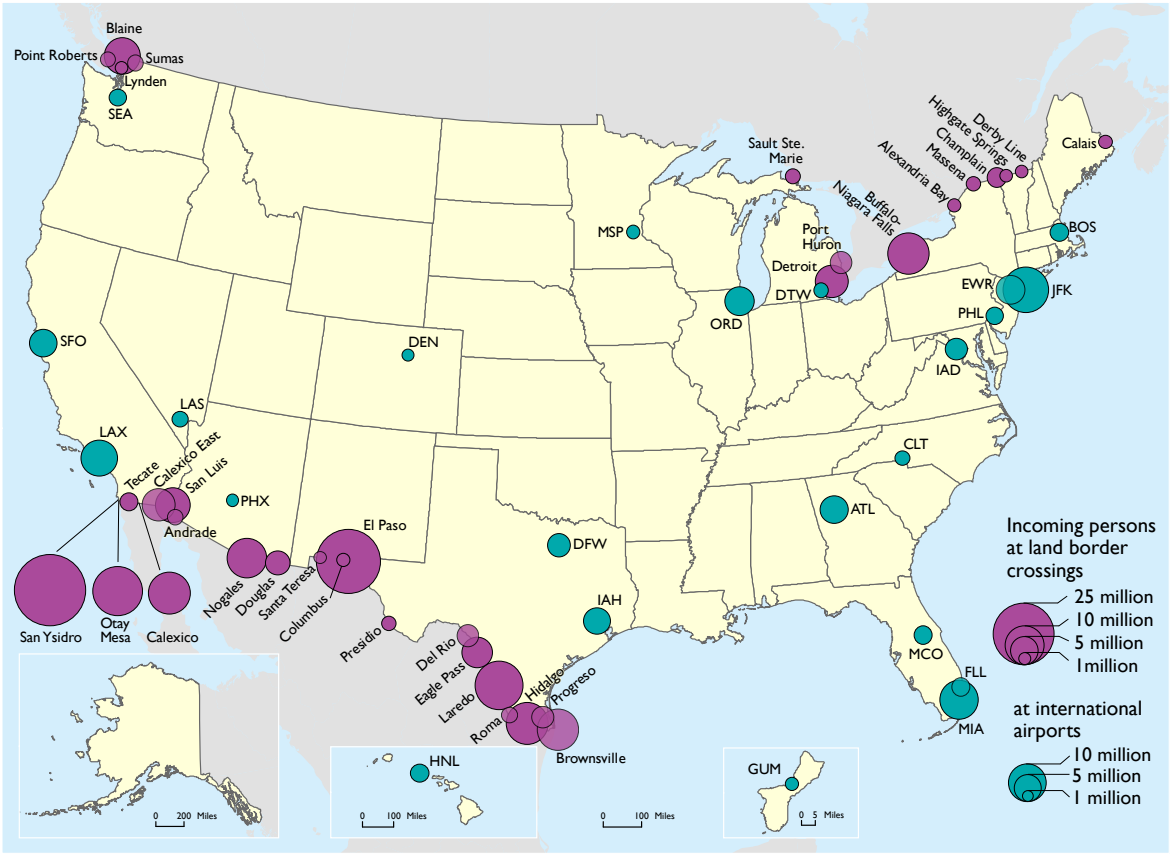
SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *Border Crossing/Entry Database*, available at transborder.bts.gov/programs/international/transborder/TBDR_BC/TBDR_BC_Index.html as of March 2015.

Although Canada and Mexico are the largest visitor markets, incoming persons at the U.S.-Canada and U.S.-Mexico land borders have declined since 2000. In 2015, 76.8 percent of incoming person crossings were along the U.S.-Mexico border, and 23.2 percent of crossings occurred through ports of entry along the U.S.-Canada border. Along the U.S.-Canada border, person crossings reached a low of 55.0 million crossings in 2015.

In 2015 more than one million persons crossed into the United States through each of 34 border ports of entry: 20 along the U.S.–Mexico border and 14 along the U.S.–Canada border. Texas is home to 11 Customs border ports of entry with a total of 82.7 million person crossings. Along the U.S.–Mexico border, California had the second most person crossings with 72.4 million persons crossing at 6 ports of entry. Along the U.S.–Canada border, the State of New York had the greatest number of crossings with 17.8 million persons crossing at 6 ports of entry. Washington had the second highest number of crossings with 13.6 million persons crossing at 15 ports of entry.

There were 23 airports in 2015 with more than one million incoming passengers from international origins. New York (JFK), Miami, and Los Angeles airports received the most international passengers, with 14.9, 10.5, and 10.0 million passengers, respectively. From 2014 to 2015, the largest increase in international passengers was at Orlando International Airport, up 18.3 percent, with Seattle-Tacoma International Airport second at 17.8 percent. Charlotte Douglas International Airport had the greatest decrease in international passengers, down 4.4 percent.

Figure 2-25 Persons Traveling Into the United States at Land Border Crossings and International Airports: 2015



NOTE: Truck crossings are not included because they are primarily freight related.

SOURCES: **Person Crossings**: U.S. Department of Transportation, Bureau of Transportation Statistics, *Border Crossing/Entry Database*, available at transborder.bts.gov/programs/international/transborder/TBDR_BC/TBDR_BC_Index.html as of June 2016. **Air Passengers**: U.S. Department of Transportation, Bureau of Transportation Statistics, *T-100 Data*, available at www.transtats.bts.gov as of June 2016.

3 Passenger Transportation System

Overview of the Passenger Transportation System

The passenger transportation system is a network of highways, railroads, airports, public transit systems, and waterways that serves over 300 million U.S. residents and foreign visitors. It comprises more than 4 million miles of roads, 11,000 miles of transit rail directional route-miles, 21,000 miles of Amtrak routes, 19,000 airports, and about 25,000 miles of navigable waterways.

Table 3-1 Passenger Transportation Infrastructure: 2000, 2010, and 2014

	2000	2010	2014
Public roads (miles)	3,936,222	4,067,077	4,177,073
Public road lanes[a] (miles)	8,224,245	8,581,158	8,766,049
Transit rail[b] (miles)	7,601	10,744	11,294
Amtrak[c] (miles)	23,000	21,178	21,356
Airports	19,281	19,802	19,299
Navigable waterways[d] (miles)	25,000	25,000	25,000

[a]Measured in lane-miles. [b]Measured in directional route-miles. Includes commuter rail, heavy rail, and light rail. [c]Miles of road operated by Amtrak. Amtrak, freight railroads, and commuter rail networks share common trackage. [d]Estimated length of domestic waterways.

SOURCES: **Public roads**–U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), *Highway Statistics* (multiple years), as cited in the USDOT, Bureau of Transportation Statistics (BTS), *National Transportation Statistics* (NTS), tables 1-1 and 1-6, available at www.bts.gov as of March 2016. **Transit rail**–USDOT, Federal Transit Administration, *National Transit Database*, as cited in USDOT, BTS, NTS, table 1-1, available at www.bts.gov as of March 2016. **Amtrak**–Amtrak as cited in USDOT, BTS, NTS, table 1-1, available at www.bts.gov as of March 2016. **Airports**–USDOT, Federal Aviation Administration as cited in USDOT, BTS, NTS, table 1-3, available at www.bts.gov as of March 2016. **Navigable waterways**–U.S. Army Corps of Engineers, Institute for Water Resources, Navigation Data Center, as cited in USDOT, BTS, NTS, table 1-1, available at www.bts.gov as of March 2016.

Public Roads and Vehicles

Composed of over 4.1 million miles of interstate highways, arterials, and local routes, the highway network has expanded since 2010. Between 2010 and 2014, miles of public road grew by 2.7 percent and lane-miles increased by 2.2 percent, while traffic volume grew 2.0 percent. Local roads are by far the most extensive, comprising 2.8 million miles (69.5 percent of total system miles.) Interstate highways handled the highest volumes of traffic as measured by vehicle-miles traveled, 24.8 percent in 2014, but accounted for only 1.1 percent (about 47,700) of total system miles.

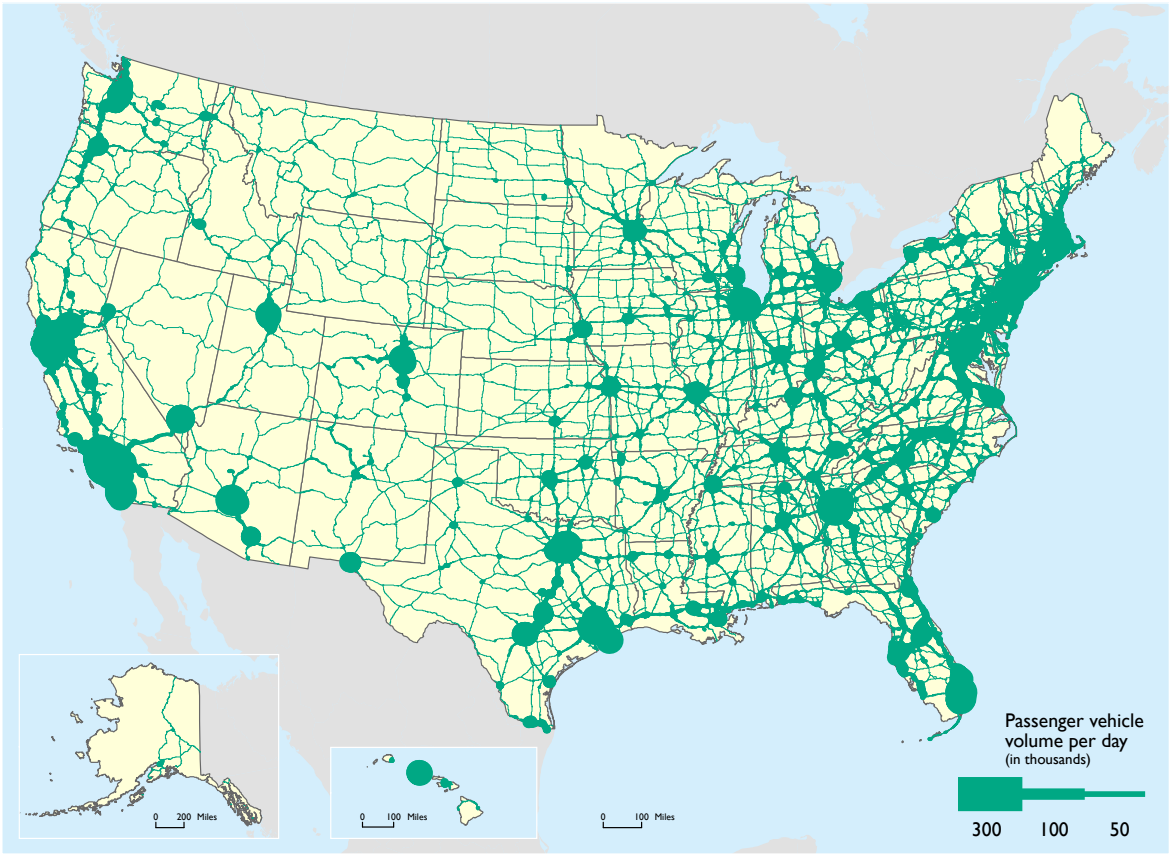
Table 3-2 Highway Transportation System: 2000, 2010, and 2014

	2000	2010	2014
Miles of public roads, total	**3,936,222**	**4,067,076**	**4,177,073**
Interstate	46,427	46,900	47,662
Other freeways and expressways	9,140	11,319	17,250
Other principal arterial	152,233	160,493	157,034
Minor arterial	227,364	242,815	244,961
Collectors	793,124	799,226	808,363
Local	2,707,934	2,806,322	2,901,804
Lane-miles of public roads, total	**8,224,245**	**8,581,158**	**8,766,049**
Number of bridges	**587,135**	**604,460**	**610,749**
Number of passenger vehicle registrations, total	**217,798,592**	**239,299,994**	**249,444,982**
Light-duty vehicle	212,706,399	230,444,440	240,155,238
Motorcycle	4,346,068	8,009,503	8,417,718
Bus	746,125	846,051	872,027

NOTE: *Light-duty vehicles* include passenger cars, light trucks, vans and sport utility vehicles regardless of wheelbase.

SOURCES: U.S. Department of Transportation (USDOT), Federal Highway Administration, Highway Statistics (multiple years), as cited in the USDOT, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 1-5, 1-6, 1-11, and 1-28, available at www.bts.gov as of March 2016.

Figure 3-1 Passenger Vehicle Traffic on the National Highway System: 2011

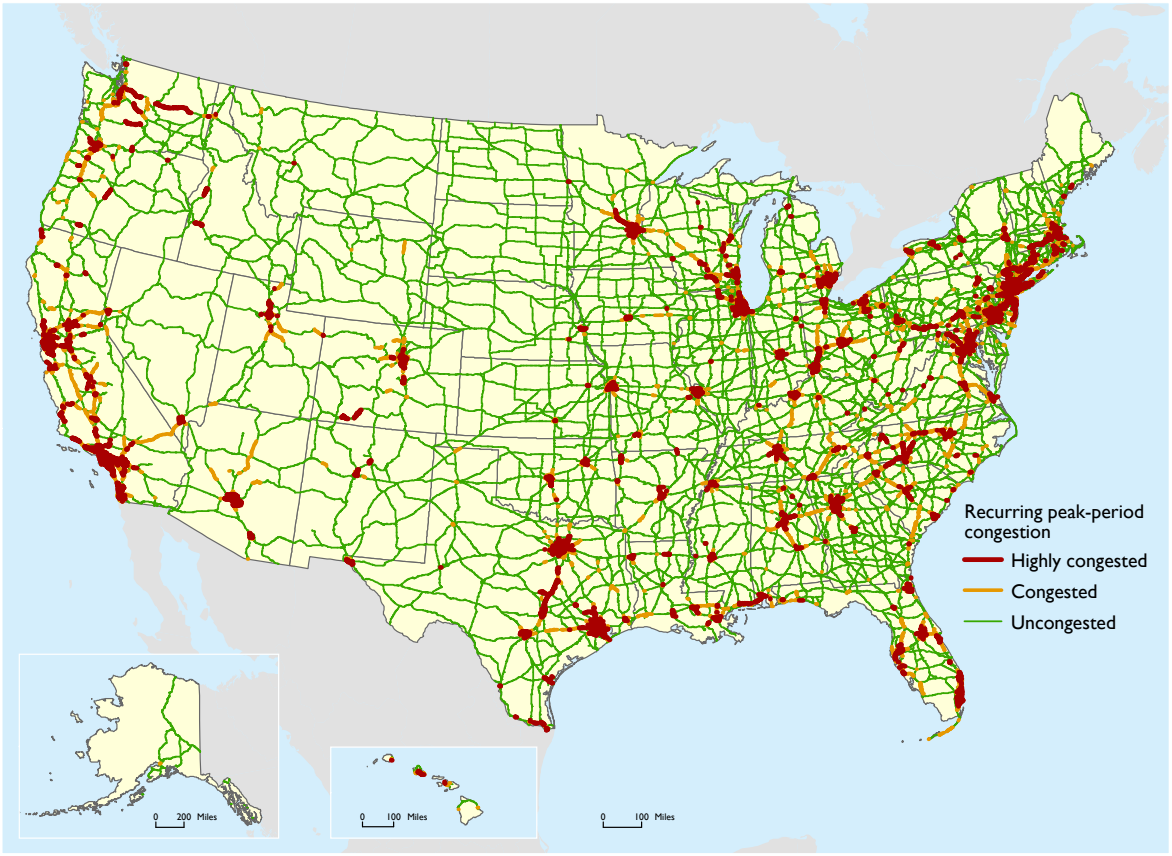


SOURCE: U.S. Department of Transportation, Federal Highway Administration, Highway Performance Monitoring System and Freight Analysis Framework, version 3.4, 2013.

The National Highway System (NHS) is a network of about 230,000 miles of interstates and other roads essential to the Nation's economy, defense, and mobility. While only 5.5 percent of the Nation's total route mileage and 9.0 percent of the total lane-miles were on the NHS, these roads carried 54.9 percent of total vehicle-miles traveled in 2013. Passenger vehicle traffic on the NHS, excluding large trucks and buses, is concentrated in and around large cities. In 2011, 28.4 percent of passenger vehicle traffic was on the NHS. While the majority (69.9 percent) of NHS mileage is rural, only 8.1 percent of passenger vehicle traffic took place in a rural setting.

Road congestion is one of the major causes of travel time delay and negatively impacts transportation system reliability. In 2011 peak-period congestion resulted in traffic dropping below posted speed limits on 13,500 miles, or 6 percent, of the National Highway System. This congestion created stop-and-go conditions on an additional 8,700 miles of road.

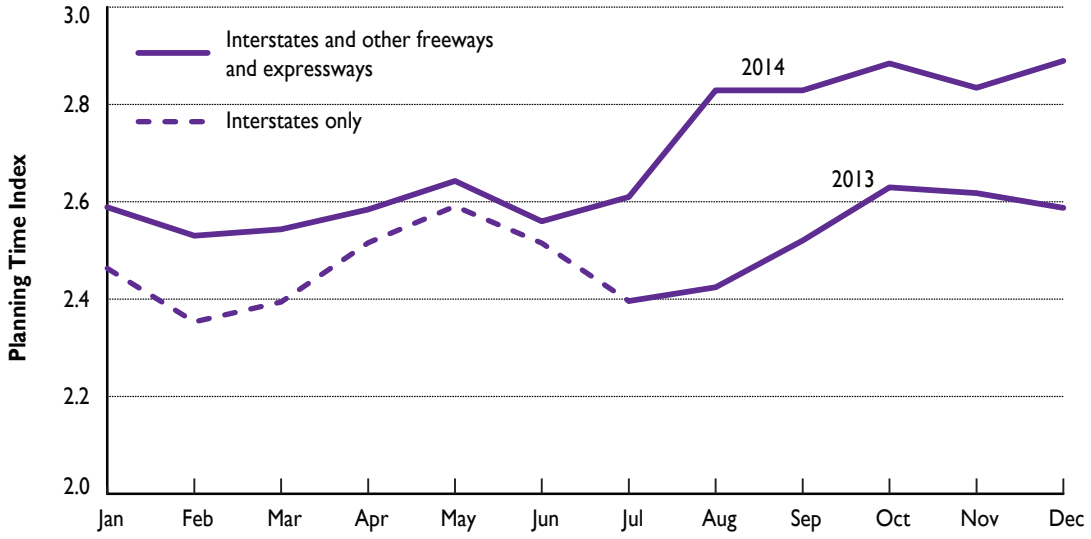
Figure 3-2 Peak-Period Congestion on the National Highway System: 2011



NOTES: Highly congested segments are stop-and-go conditions with volume/service flow ratios greater than 0.95. Congested segment have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95. The volume/service flow ratio is estimated using the procedures outlined in the HPMS Field Manual, Appendix N. Congestion levels are based on all vehicle traffic.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, Highway Performance Monitoring System and Freight Analysis Framework, version 3.4, 2013.

Figure 3-3 Highway Reliability as Measured by the Planning Time Index: January 2013–December 2014



NOTES: The Planning Time Index (PTI) is the ratio of travel time on the worst day of the month (the 95th percentile travel time) compared to the time required to make the same trip at free-flow speeds. A PTI of 1.60 indicates a 20-minute free-flow trip takes more than 32 minutes only one day per month. The Federal Highway Administration *Urban Congestion Report (UCR)* provides monthly PTI averages for 52 metropolitan statistical areas with over 1 million in population. The PTI is weighted by vehicle-miles traveled using volume estimates from the Highway Performance Monitoring System. Beginning in July 2013, data include Interstates and other freeways and expressways; prior data include Interstates only.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, Office of Operations, *Urban Congestion Report*, available at www.ops.fhwa.dot.gov/perf_measurement as of February 2016.

The Planning Time Index (PTI) is a reliability measure that estimates the extra time one should plan for a trip. For example, for a PTI of 1.5, a traveler should allow 50 percent more time in order to arrive on time 19 out of 20 times. In other words, 30 extra minutes should be budgeted for a trip that would typically take 60 minutes in free flow conditions.

Overall congestion worsened from 2013 to 2014. Based on PTI data for 52 metropolitan statistical areas (MSAs), travelers had to plan more than double the free-flow travel time to arrive "on-time" for 19 out of 20 trips. Between December 2013 and December 2014, the PTI increased in 43 of the 52 MSAs.

In the Nation's urban areas, commuters spent 6.9 billion hours in congestion, wasting 3.1 billion gallons of fuel in 2014. This congestion cost the economy an estimated $160 billion, an increase of 40.4 percent since 2010. Overall measures of congestion delay and cost have increased in post-recession years. From 2013 to 2014, the annual delay per auto commuter increased in 96 (95 percent) of the 101 largest urban areas.

Table 3-3 Estimated Annual Congestion Delay and Costs: 2000, 2010, and 2014

Year	2000	2010	2014	Percent change, 2010 to 2014
Delay per auto commuter (hours)	37	40	42	13.5
Total delay (billion hours)	5.2	6.4	6.9	32.7
Commuters (millions)	107.6	109.2	109.9	2.1
Fuel wasted (billion gallons)	2.1	2.5	3.1	47.6
Total cost (billion, 2014 U.S. dollars)	**114**	**149**	**160**	**40.4**

NOTES: Includes 471 urban areas: 15 very large urban areas (population over 3 million), 31 large urban areas (population over 1 million but less than 3 million), 33 medium urban areas (population over 500,000 but less than 1 million), 22 small urban areas (population less than 500,000), and 370 other urban areas. Travel Time Index is the ratio of the travel time during the peak travel period to the time required to make the same trip at free-flow speeds.

SOURCE: Texas Transportation Institute, *2015 Urban Mobility Scorecard*, available at mobility.tamu.edu/ums as of February 2016.

Table 3-4 Most Congested Urban Areas by Annual Hours of Delay per Auto Commuter: 2000, 2010, and 2014

	2000	2010	2014
Very large urban areas	**57**	**60**	**63**
Washington, DC-VA-MD	70	85	82
Los Angeles-Long Beach-Anaheim, CA	75	78	80
San Francisco-Oakland, CA	73	73	78
Large urban areas	**39**	**43**	**45**
San Jose, CA	49	59	67
Riverside-San Bernardino, CA	46	57	59
Austin, TX	42	46	52
Medium urban areas	**32**	**35**	**37**
Honolulu, HI	44	51	50
Bridgeport-Stamford, CT-NY	43	47	49
Baton Rouge, LA	31	44	47
Small urban areas	**23**	**29**	**30**
Jackson, MS	26	37	38
Little Rock, AR	27	38	38
Pensacola, FL-AL	34	38	38

KEY: *Very large urban areas* – 3 million and over population; *Large urban areas* – 1 million to less than 3 million population; *Medium urban areas* – 500,000 to less than 1 million population; *Small urban areas* – less than 500,000 population.

NOTES: *Annual Delay per Auto Commuter* is calculated by dividing the extra travel time during the year by the number of people who commute in private vehicles in the urban area. Historical data differ from previous reports due to new procedures for calculating historical values.

SOURCE: Texas Transportation Institute, *2015 Urban Mobility Scorecard*, available at mobility.tamu.edu/ums as of February 2016.

Although ranking first for their respective population groups, the Washington, DC, and Honolulu, HI, urban areas experienced slight decreases in delay since 2010. Delay per auto commuter fell 3.2 and 2.0 percent respectively. In 2014 Washington, DC, averaged 82 hours of average annual delay per auto commuter. This delay was the highest of the 471 urban ares included in the study. Congestion worsened in urban areas of all sizes. San Jose, CA, experienced the largest growth in congestion since 2010, a 13.6 increase in delay. The Austin, TX, area followed with a 13.0 percent increase.

Aviation

Despite record levels of air travel since the recession ended, the number of airports, aircraft, and pilots shrank between 2010 and 2014. The number of certificated and generation aviation airports declined 2.5 percent, the aircraft fleet fell 8.4 percent, while the pilot pool fell 5.4 percent.

Table 3-5 Air Transportation System: 2000, 2010, and 2014

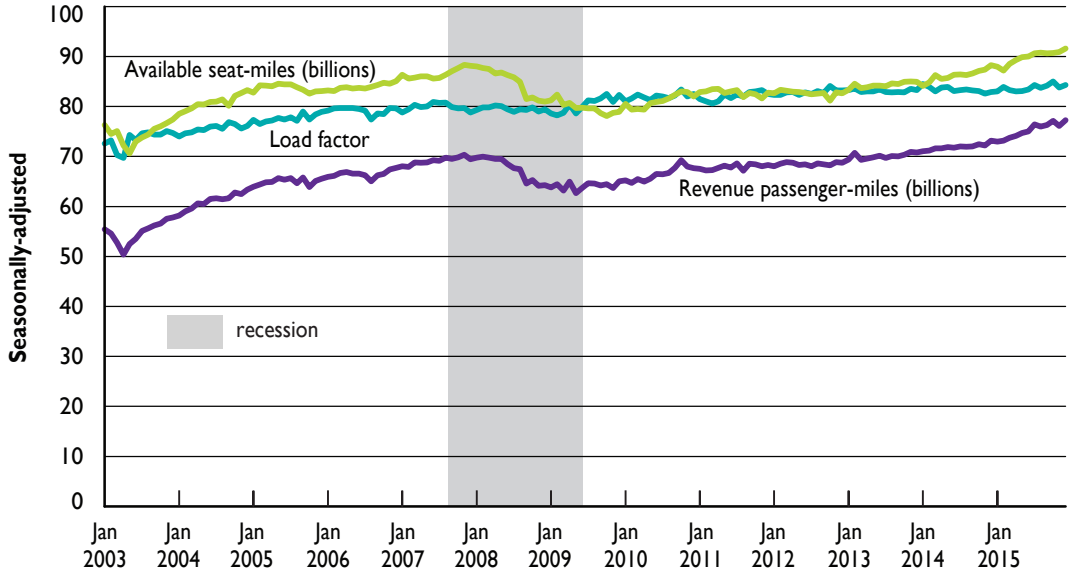
	2000	2010	2014	Percent change, 2010 to 2014
Systemwide enplanements (millions)	**U**	**720.5**	**762.7**	**5.9**
Number of airports, total	**19,281**	**19,802**	**19,299**	**-2.5**
Certificated[a]	651	551	537	-2.5
General aviation	18,630	19,251	18,762	-2.5
Number of aircraft, total	**225,359**	**230,555**	**211,084**	**-8.4**
Commercial aircraft[b]	7,826	7,185	6,676	-7.1
General aviation aircraft	217,533	223,370	204,408	-8.5
Number of pilots	**625,581**	**627,588**	**593,499**	**-5.4**

[a]Certificated airports serve air carrier operations with aircraft seating more than 9 passengers. [b]Commercial Aircraft includes mainline and regional aircraft.

KEY: U = Data are unavailable due to a reporting change.

SOURCES: **Enplanements**–U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics (BTS), *T-100 Market Data*, available at www.transtats.bts.gov as of June 2016. **Airports and Aircraft**–USDOT, Federal Aviation Administration (FAA) as cited in USDOT, BTS, *National Transportation Statistics*, tables 1-3 and 1-11, available at www.bts.gov as of March 2016. **Pilots**–USDOT, FAA, *FAA Aerospace Forecast*, Fiscal Years (multiple issues), available at www.faa.gov as of March 2016.

Figure 3-4 U.S. Airline Revenue Passenger-Miles, Available Seat-Miles, and Load Factor: January 2003–December 2015



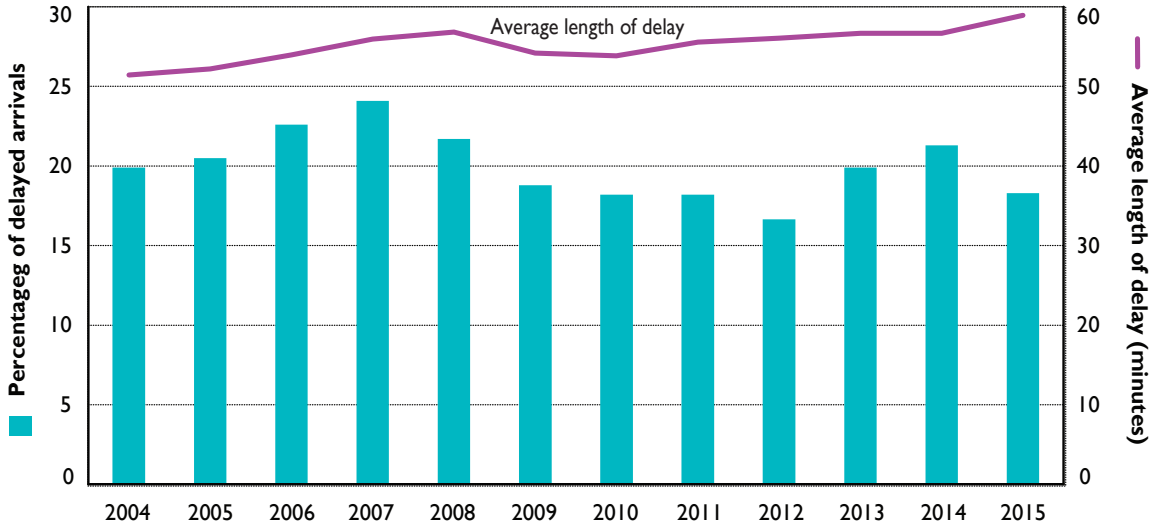
NOTES: Includes domestic and international scheduled services. Revenue passenger-miles (RPM) are a measure of the volume of air passenger transportation. An RPM is equal to one paying passenger carried one mile. Available seat-miles (ASM) are a measure of capacity of air passenger transportation. An ASM is equal to one aircraft seat carried one mile. Load factor is a measure of the use of aircraft capacity that compares RPMs as a proportion of ASMs.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *T-100 Segment Data*, available at www.transtats.bts.gov as of March 2016.

The U.S. airline passenger load factor— a measure that compares system use as a proportion of system capacity—rose from 72.6 in January 2003 to 84.3 in December 2015. After the recent recession, the load factor generally increased because use, measured in revenue passenger-miles, increased at a faster pace than capacity, measured in available seat-miles. In December 2015 use and capacity reached all-time highs, and the monthly, seasonally adjusted load factor was the third highest on record.

During the last decade, U.S. airline on-time performance was at its lowest in 2007 when 24.1 percent of flights were delayed. The percentage of delayed flights rose to another high in 2014, before falling to 18.3 percent in 2015. The average length of flight delays has increased since 2010, reaching 58.9 minutes in 2015.

Figure 3-5 Percentage of Flights Delayed and Average Length of Delay: 2004–2015

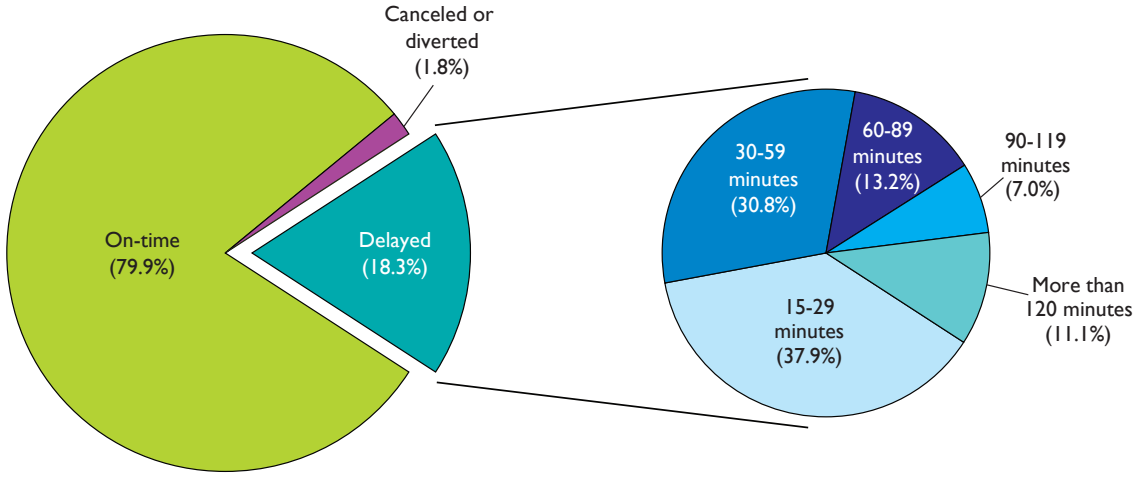


NOTES: Delays are based on data submitted by reporting carriers, which varies by year. For the monthly number of carriers reporting, please refer to the Air Travel Consumer Reports available at http://airconsumer.dot.gov/reports/index.htm. A flight is considered delayed when it arrived 15 or more minutes later than scheduled. Arriving flights consists of scheduled operations less canceled and diverted flights. Average minutes are calculated for delayed flights only.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *On-Time Performance Data*, available at www.transtats.bts.gov as of March 2016.

Figure 3-6 Delayed Flights by Length of Time Delayed: 2015

Percent of arrivals



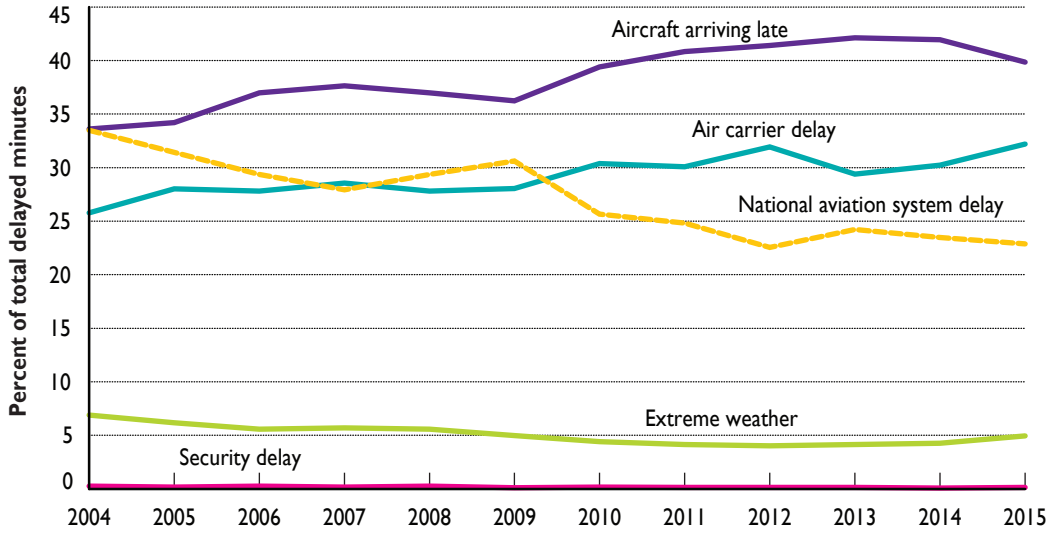
NOTES: Delays are based on data submitted by reporting carriers, which varies by year. For the monthly number of carriers reporting, please refer to the Air Travel Consumer Reports available at http://airconsumer.dot.gov/reports/index.htm. A flight is considered delayed when it arrived 15 or more minutes later than scheduled. Average minutes are calculated for delayed flights only. Percents may not add to 100 due to rounding.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *On-Time Performance Data*, available at www.transtats.bts.gov as of March 2016.

In 2015, 37.9 percent of the delayed arrivals were delayed for less than 30 minutes. Slightly fewer flights, 30.8 percent of delayed arrivals, were delayed between 30 and 59 minutes, while just over 11 percent of delayed arrivals were delayed for more than 2 hours.

Flight delays result from a variety of reasons, ranging from extreme weather to disruptions in airline carrier operations. The combined effects of nonextreme weather conditions, airport operations, heavy traffic volume, and air traffic control delays (i.e., National Aviation System) contributed to 22.9 percent of delays in 2015, a 10.6 percentage point improvement from 2004. Flight delays can ripple through the U.S. aviation system as late arriving flights delay subsequent flights. Late arriving aircraft were the cause of 39.8 percent of delays in 2015.

Figure 3-7 National Flight Delays by Cause: 2004–2015



SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *On-Time Performance Data*, available at www.transtats.bts.gov as of March 2016.

Table 3-6 Average On-Time Arrivals and Cancellations by Month: January 2003–January 2016

Month	On-time (percent)	Canceled (percent)
January	76.7	2.8
February	75.6	3.3
March	78.1	1.8
April	80.7	1.3
May	79.9	1.2
June	74.5	1.7
July	75.3	1.6
August	77.9	1.5
September	83.3	1.4
October	81.7	1.2
November	82.1	1.0
December	72.5	2.5

SOURCE: U.S Department of Transportation, Bureau of Transportation Statistics, *Airline On-Time Data*, available at www.bts.gov as of March 2016.

Table 3-7 Top 10 Worst Months for Canceled Flights Due to Weather: January 2003–January 2016

Year	Month	Total scheduled flights	Flights canceled due to weather	Percent of flights canceled due to weather
2010	February	483,270	20,214	4.2
2014	January	471,949	19,108	4.0
2014	February	430,602	16,762	3.9
2011	February	455,516	16,403	3.6
2015	February	429,191	15,447	3.6
2007	February	565,604	15,872	2.8
2005	January	594,924	15,748	2.7
2011	January	494,400	12,578	2.5
2012	October	515,254	11,985	2.3
2010	December	539,382	12,279	2.3

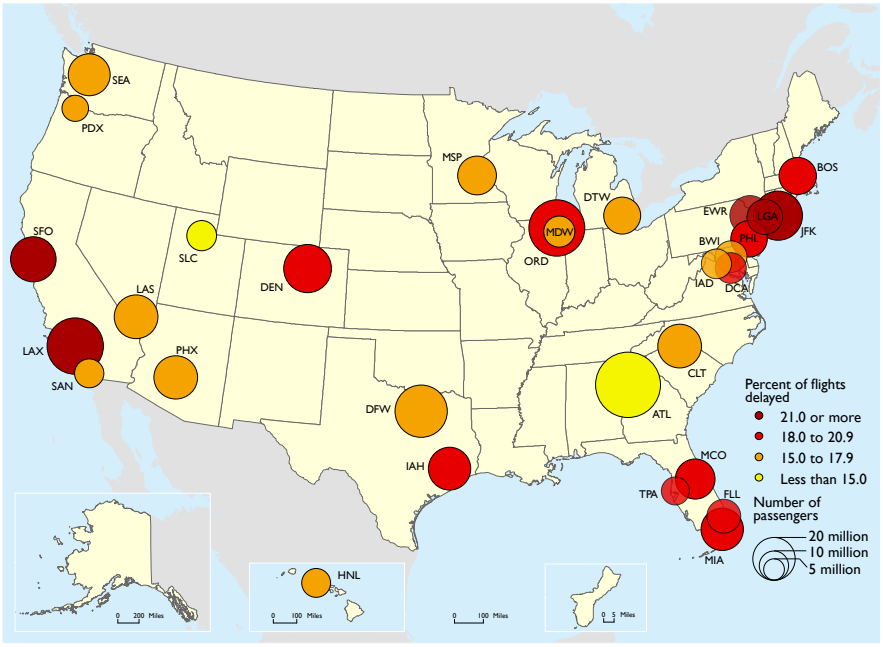
NOTE: Weather cancellations are the result of significant meteorological conditions that prevent the operation of a flight.
SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *Airline On-Time Data*, available at www.transtats.bts.gov as of March 2016.

Flight cancellations are more likely to occur in the winter due to the impact of snow and ice on flight operations. Nine of the top 10 months for flight cancellations between January 2003 and January 2016 occurred in the winter; the only exception was October 2012 when Hurricane Sandy struck the east coast.

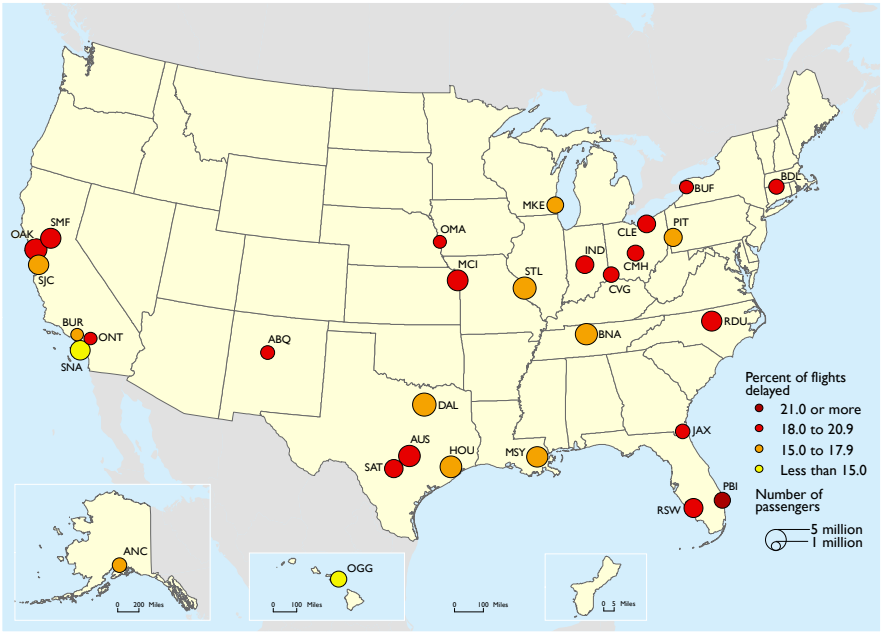
Among large airports, LaGuardia Airport had the highest percentage of flights delayed in 2015. Palm Beach International Airport had the most delayed flights for medium-sized airports, with 22.2 percent of flights delayed.

Figure 3-8 Large and Medium Airports by Enplanements and Overall Delay: 2015

Large airports



Medium airports



NOTES: Airports are categorized based on their share of total enplaned passengers: Large–1% or more; Medium–0.25%-0.99%.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *Air Carrier Airport Activity Statistics* and *On-time Performance Data*, available at www.transtats.bts.gov as of March 2016.

Public Transit

More than 800 urban transit agencies and 1,500 rural and tribal government transit agencies offer transit service. Since 2000 rail transit (commuter rail, heavy rail, and light rail) has expanded to cover over 11,000 directional route-miles and include over 3,000 rail transit stations. Buses accounted for about half, 47.5 percent, of the over 132,000 transit vehicles in 2014.

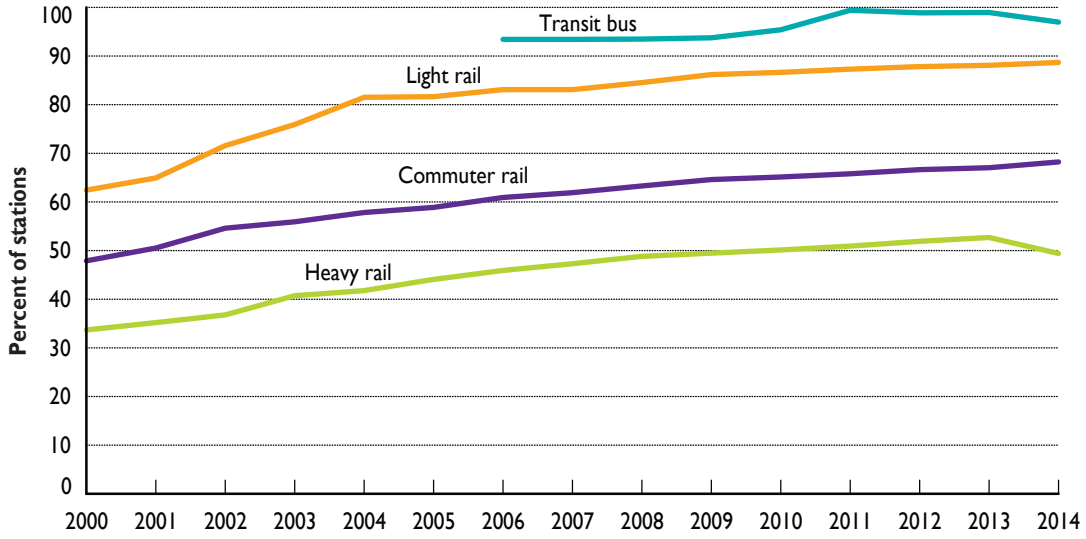
Table 3-8 Public Transit System: 2000, 2010, and 2014

	2000	2010	2014
Directional route-miles of rail transit, total	**7,601**	**10,744**	**11,294**
Commuter rail	5,209	7,630	7,795
Heavy rail	1,558	1,617	1,622
Light rail	834	1,497	1,877
Number of rail transit stations, total	**2,595**	**3,216**	**3,355**
Commuter rail	983	1,244	1,256
Heavy rail	1,009	1,044	1,130
Light rail	603	928	969
Number of transit vehicles, total	**106,136**	**135,674**	**132,511**
Commuter rail cars and locomotives	5,497	6,768	7,177
Heavy rail cars	10,311	11,510	10,551
Light rail cars	1,306	2,096	2,444
Transit bus	59,230	63,679	62,986
Demand response	22,087	33,555	31,359
Ferry boat	98	134	144
Other	7,607	17,932	17,850

NOTES: *Light Rail* includes light rail, streetcar rail, and hybrid rail. *Transit bus* includes bus, commuter bus, bus rapid transit, and trolley bus. *Demand response* includes demand response and demand response taxi.

SOURCE: U.S. Department of Transportation (USDOT), Federal Transit Administration, National Transit Database as cited in USDOT, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 1-1, 1-7, and 1-11, available at www.bts.gov as of March 2016.

Figure 3-9 Stations Compliant with the Americans with Disability Act: 2000–2014



NOTES: *Transit bus* data for years before 2006 are omitted because they are not comparable to later years due to a change in the number of reported stations. *Transit bus* includes local motor bus, commuter bus, and bus rapid transit. *Light rail* includes light rail, streetcar rail, and hybrid rail. Starting in 2012, data for Small System Waiver agencies that do not list a mode are reported under *Transit bus*. Data reported under the hybrid rail mode are reported under classifications used prior to 2012.

SOURCE: U.S. Department of Transportation, Federal Transit Administration, *National Transit Database*, available at www.ntdprogram.gov as of February 2016.

Based on results from the *American Community Survey*, 12.6 percent of the U.S. population self-identified as having a disability in 2014. In 2014, 78.0 percent of transit stations complied with the Americans with Disabilities Act (ADA), which requires agencies to provide accommodations for individuals with disabilities at public transit facilities. The number of accessible stations has increased since 2000. In 2014, 97.0 percent of bus stations and 88.6 percent of light rail stations were compliant with the ADA.

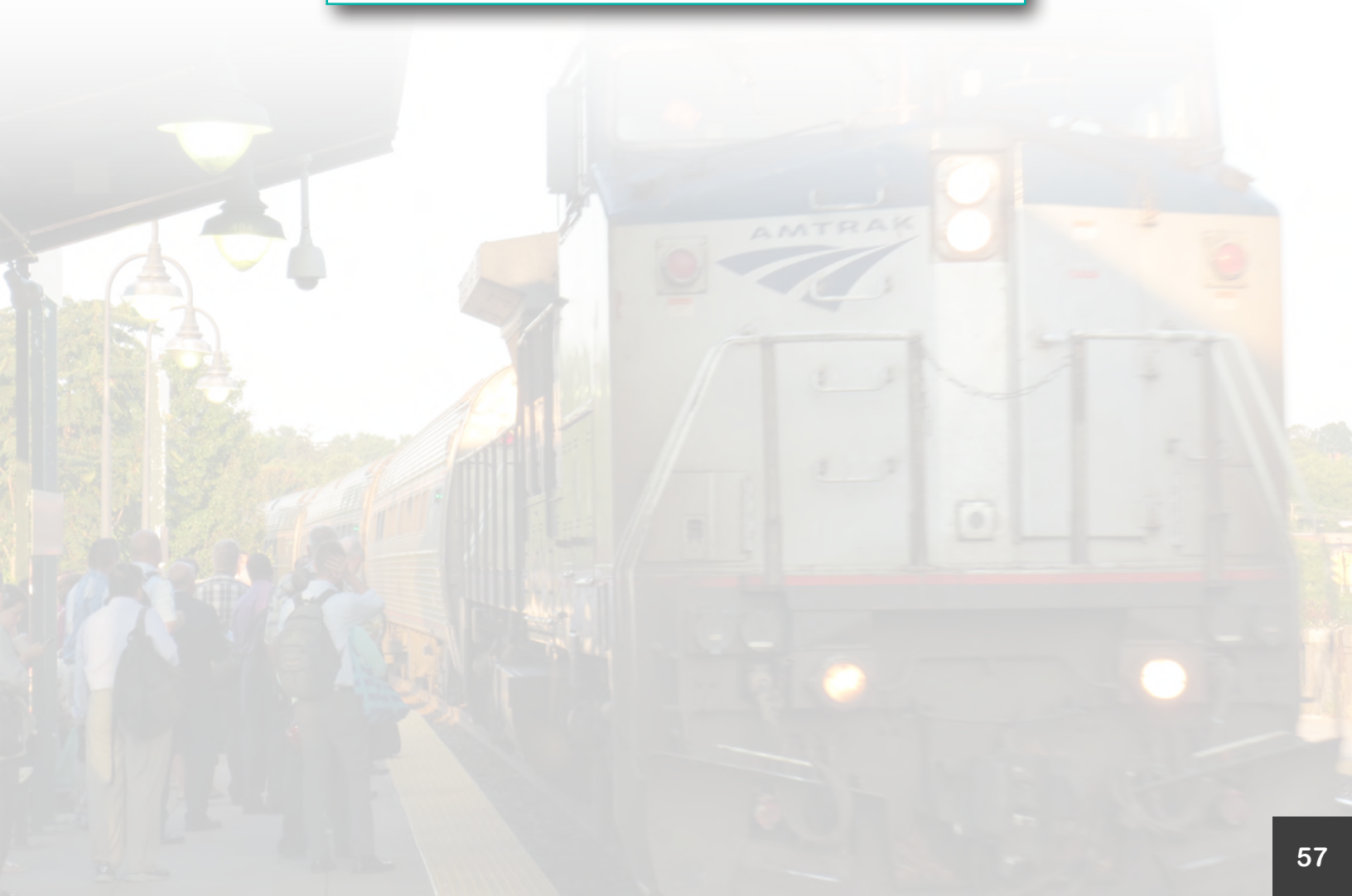
Passenger Rail

Amtrak is the primary operator of intercity passenger rail service in the United States. Amtrak operated over 21,300 route miles in 2014 and more than 500 stations that served 46 states and Washington, DC. Amtrak's fleet of rail cars and locomotives decreased by 32.7 and 25.4 percent, respectively, between 2000 and 2010 due to an aging fleet. However, between 2010 and 2014, the fleet has grown as Amtrak began replacing and adding to its fleet as part of a decade-long improvement effort.

Table 3-9 Passenger Rail System: 2000, 2010, and 2014

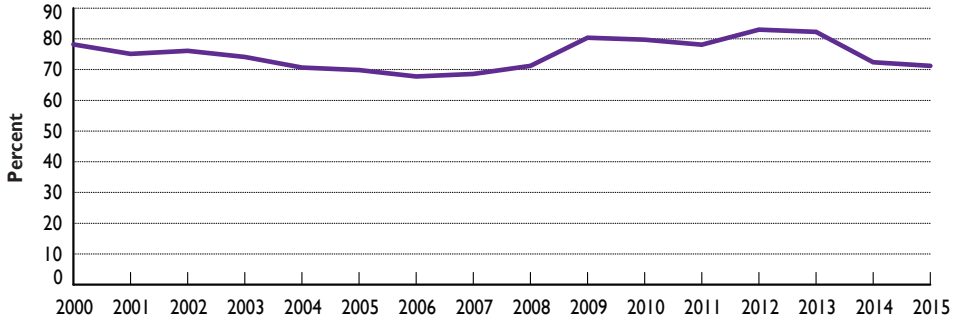
Amtrak	2000	2010	2014
System mileage	23,000	21,178	21,356
Locomotives	378	282	428
Passenger cars	1,894	1,274	1,419
Stations	515	512	518

SOURCES: Amtrak as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistic*, tables 1-1, 1-7 and 1-11, available at www.bts.gov as of March 2016.



In fiscal year (FY) 2015, Amtrak achieved 71.2 percent on-time performance, down 1.2 percentage points from the previous year. Delays were more likely to occur on track owned by another (host) railroad than on track owned by Amtrak. In FY2014 host railroads were responsible for 63.1 percent of delayed time, and Amtrak was responsible for 24.0 percent.

Figure 3-10 Amtrak On-Time Performance: FY2000–FY2015



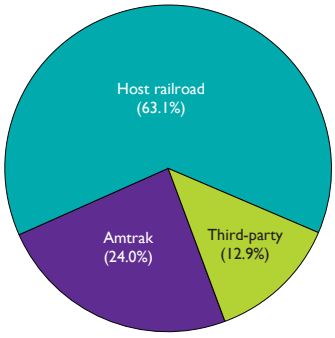
NOTES: On-time performance is a percentage measure of train performance. A train is considered on-time if it arrives at the final destination, or end-point, within an allowed number of minutes, or tolerance, of its scheduled arrival time. Trains are allowed a certain tolerance at the end-point based on the number of miles traveled:

Trip length:	Train must arrive at endpoint within:
0-250 miles	10 minutes
251-350 miles	15 minutes
351-450 miles	20 minutes
451-550 miles	25 minutes
>551 miles	30 minutes

SOURCE: Amtrak, as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-73, available at www.bts.gov as of February 2016.

Figure 3-11 Amtrak Delay by Responsible Party: FY2015

Percent of delayed time



NOTES: *Amtrak*-responsible delays include all delays that occur when operating on Amtrak-owned tracks and all delays for mechanical failure, passenger handling, holding for connections, train servicing, and mail/baggage handling when on tracks of a host railroad. *Host railroad* delays include operating delays not attributable to Amtrak when operating on tracks of a host railroad, such as track and signal related delays, power failures, freight and commuter train interference, routing delays, etc. *Third-party* delays are not attributable to Amtrak or other host railroads, such as customs and immigration, law enforcement action, weather, or waiting for scheduled departure time.

SOURCE: Amtrak, personal communication, as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-73, available at www.bts.gov as of February 2016.

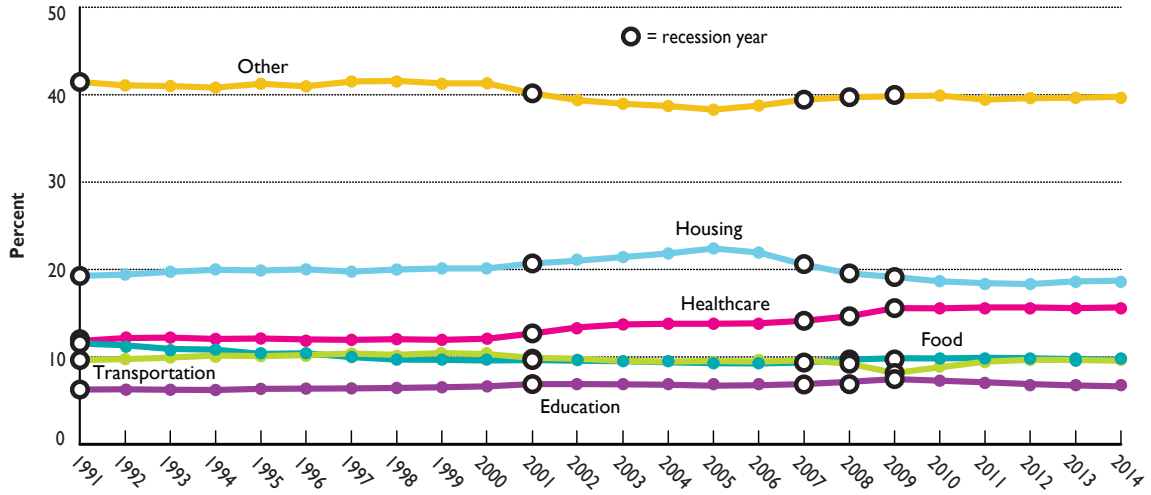
4 Economic Characteristics of Passenger Travel and Tourism

Economic Trends

In 2014 transportation contributed 9.6 percent, or $1.66 trillion, to the Nation's gross domestic product (GDP). Over the last two decades, the share of spending on transportation goods and services has remained relatively stable at about 9 to 10 percent of GDP. However, during the economic downturn in 2009, expenditures on transportation dropped below 9 percent of total GDP. Not only was there less spending and economic activity overall during this time period, but the share of total GDP spending increased for necessities, such as food and healthcare, while decreasing for transportation and nonessential goods and services. As the economy gradually improved after 2010, spending on transportation both as an amount of GDP and a share of GDP increased, showing that transportation is growing.

Figure 4-1 Percent of GDP by Spending Category: 1991–2014

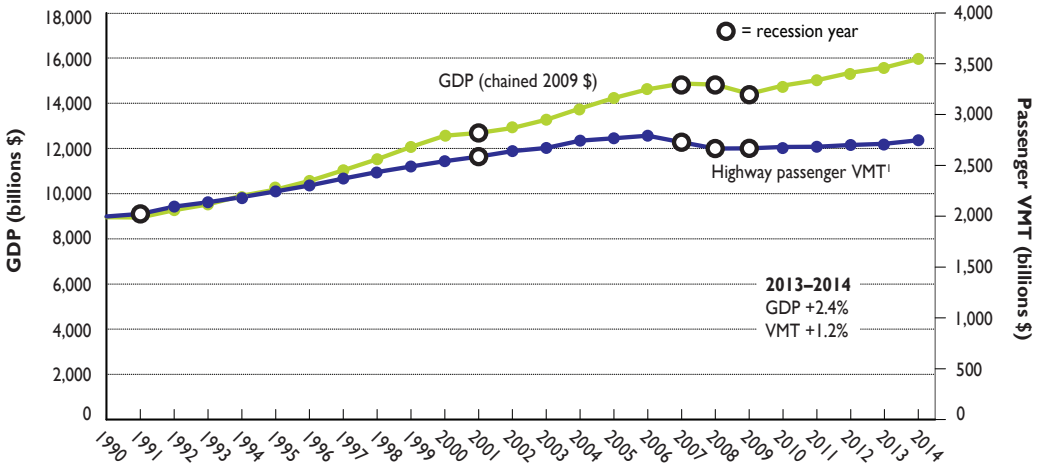
Current dollars



[1] Other includes all other categories (e.g. entertainment, personal care products and services, and payments to pension plans).

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-9, calculated based on data from U.S. Department of Commerce, Bureau of Economic Analysis, *National Income and Product Account Tables*, 1.1.5, 2.4.5, 3.11.5, 3.15.5, 4.2.5, 5.4.5, 5.5.5, and 5.7.5B, available at http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_ transportation_statistics/index.html as of February 2016.

Figure 4-2 Gross Domestic Product (GDP) and Highway Passenger Vehicle-Miles Traveled (VMT): 1990–2014



[1]Highway passenger VMT includes light-duty vehicles, motorcycles, and buses.

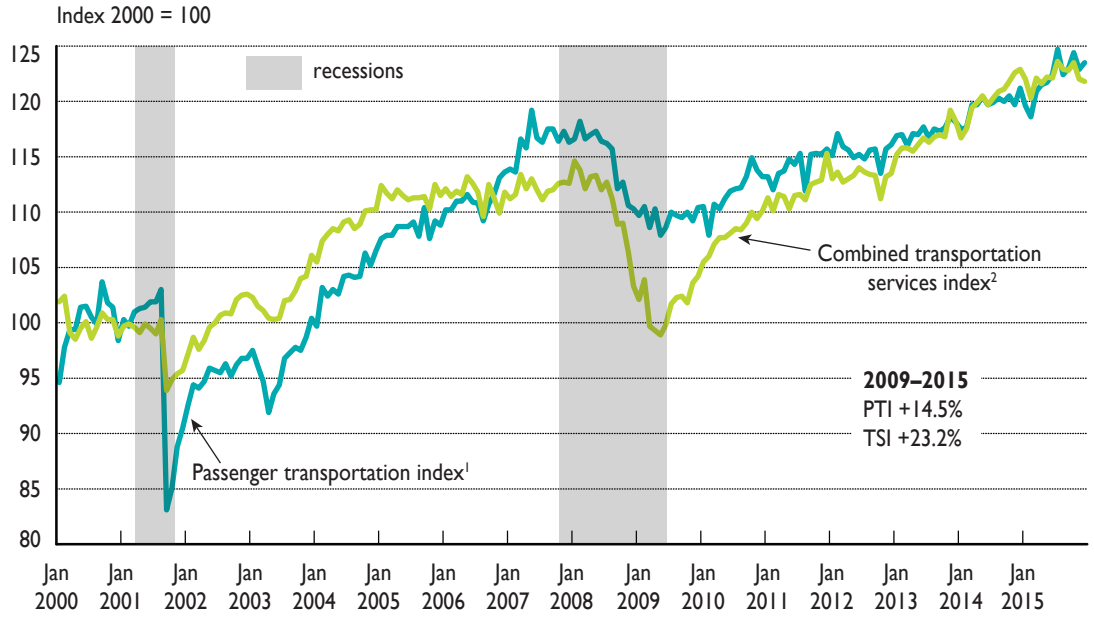
NOTE: Highway passenger VMT includes light-duty vehicles, motorcycles, and buses. VMT data are based on State highway agency estimates reported for the various functional systems and include rural and urban areas in the 50 States and the District of Columbia.

SOURCES: **GDP**—U.S. Department of Commerce, Bureau of Economic Analysis, National Economic Accounts. **Highway VMT**—U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2014* as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 1-35 and 3-10, available at www.bts.gov as of April 2016.

Use of the Nation's highways has generally grown over time but not as quickly as the economy as a whole. Overall, highway passenger vehicle-miles traveled (VMT) have steadily increased since 1990 before dropping during the recent economic recession. Between 1990 and the economy's peak of 2006, GDP and passenger VMT grew an average of 3.9 and 2.9 percent per year, respectively. When the economy slowed in 2007, discretionary travel on highways diminished, contributing to a 1.8 percent drop in passenger VMT (between 2007 and 2008). After 2009 the economy began a period of slow recovery, with passenger VMT remaining relatively unchanged until 2011. Since 2012 both the economy and highway passenger travel grew, showing the largest year-over-year increases in both GDP and passenger VMT since the recession that began in 2007 (GDP grew 2.4 percent and VMT grew 1.2 percent between 2013 and 2014).

Passenger travel by air, rail, and transit has grown over the past 15 years. One way to measure this is the passenger Transportation Service Index (TSI). The passenger TSI measures the movement of passengers, while the total TSI measures both passenger and freight movement. Since 2000 both the passenger TSI and total TSI have shown greater volumes of both goods and people movement throughout the Nation. Transportation activities dropped following 9-11 and during the most recent recession, with passenger travel falling more than total transportation after 9-11. However, during the most recent recession the passenger TSI fell less than the total TSI, which suggests passenger travel was less sensitive to the economic downturn than freight transportation. Both indexes grew during the sluggish period of economic growth to follow, with the passenger TSI reaching an all-time high in July 2015. By December 2015 the passenger TSI had risen 14.5 percent from its low point during the recession, showing an increase in demand for the for-hire passenger transportation sector.

Figure 4-3 Passenger Transportation Services Index: January 2000–December 2015



[1] The passenger Transportation Services Index (TSI) includes local transit, intercity passenger rail, and passenger air transportation, that have been weighted to yield a monthly measure of transportation services output.

[2] The combined TSI includes available data on freight traffic, as well as passenger travel, that have been weighted to yield a monthly measure of transportation services output.

NOTES: The TSI, created by the U.S. Department of Transportation, Bureau of Transportation Statistics, is a measure of the month-to month changes in the output of services provided by the for-hire transportation industries. TSI data change monthly due to the use of concurrent seasonal analysis, which results in seasonal analysis factors changing as each month's data are added.

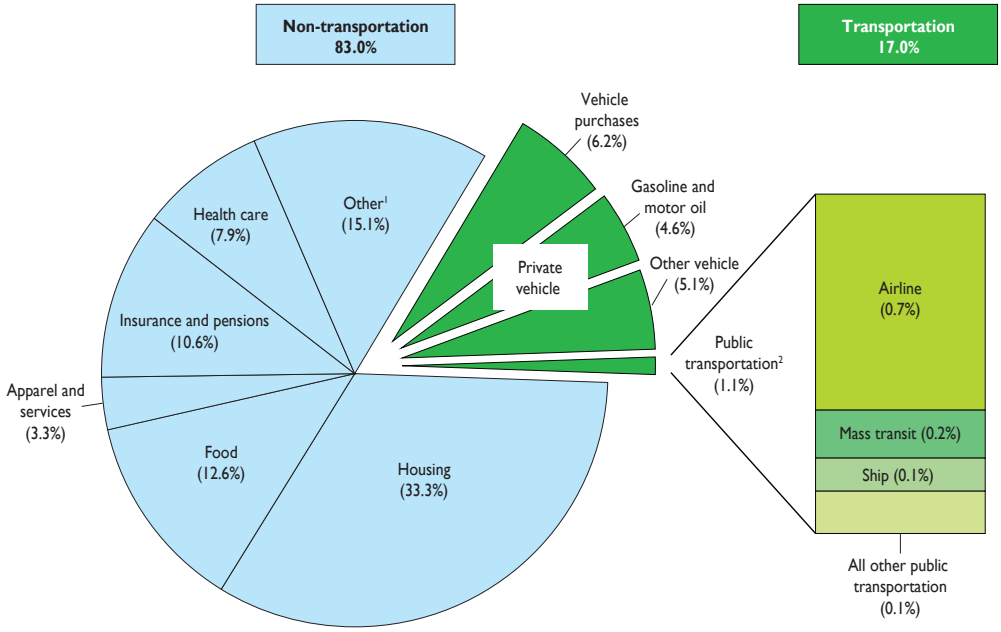
SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *Transportation Services Index*, available at www. bts. gov as of February 2016.

Spending on Transportation

In 2014 there were about 125 million households in the United States,[1] with the average household spending a larger share of its expenditures on transportation than in previous years (16.0 percent in 2010 and 17.0 percent in 2014). In 2014 the average American household spent about $9,073 on transportation, accounting for about 17.0 percent of their total household expenditures. The highest transportation cost for households was to own and operate private vehicles, including about $3,301 on vehicle purchases, $2,468 for gasoline and motor oil, and $2,723 for other vehicle expenses, such as insurance, maintenance, and repairs. The average household only spent about 1.1 percent of their expenses on public transportation.

[1] Current Population Survey, CPS 2015 Annual Social and Economic Supplement, http://www.census.gov/programs-surveys/cps/data-detail.html, as of February 2016.

Figure 4-4 Average Household Expenditures by Spending Category: 2014



	Cost (current dollars)	Share
Transportation	**$9,073**	**17.0%**
Private vehicles	$8,492	15.9%
Vehicle purchases	$3,301	6.2%
Gasoline and motor oil	$2,468	4.6%
Other vehicle expenses	$2,723	5.1%
Public transportation[2]	$581	1.1%
Airline	$370	0.7%
Mass transit	$82	0.2%
Ship	$57	0.1%
All other public transportation	$73	0.1%
Taxi on trips	$7	<0.1%
Taxi not on trips	$22	<0.1%
Intercity train	$15	<0.1%
Local trans. on out-of-town trips	$13	<0.1%
Intercity bus	$12	<0.1%
School bus	$3	<0.1%
Non-transportation	$44,421	83.0%
Total	**$53,495**	**100.0%**

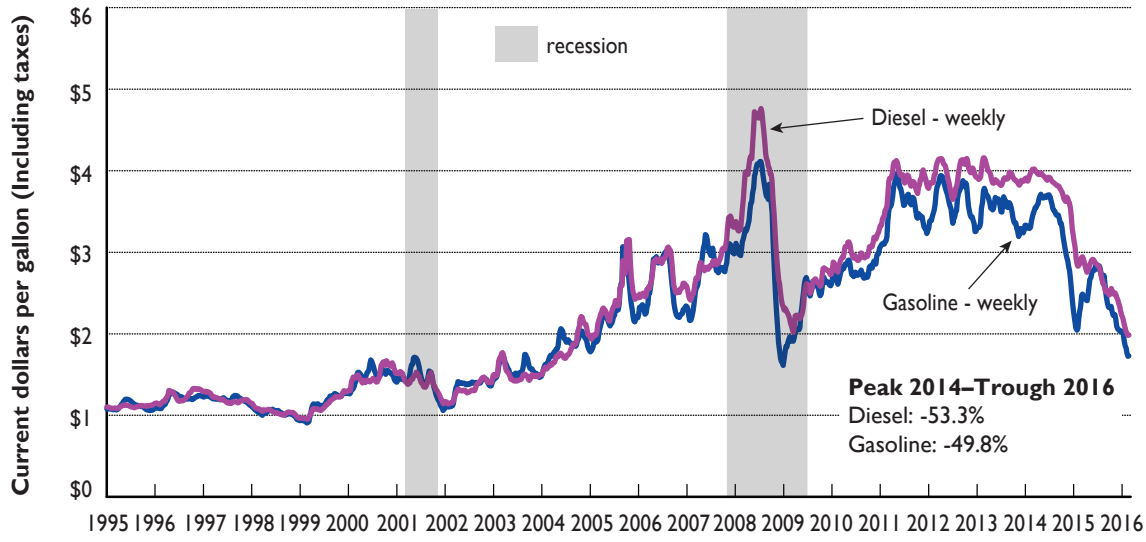
[1] Includes alcoholic beverages, entertainment, personal care products and services, reading, education, tobacco products and smoking, miscellaneous, cash contributions and others. [2] Values for public transportation are subject to very large standard errors due to the small sample size associated with some categories.

NOTE: Totals may not sum due to rounding. Average includes households without vehicles and households that may have more than one vehicle.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey, *Consumer Expenditures in 2014*, available at http://www.bls.gov/cex/ and from personal communication/public microdata sets as of February 2016.

The two past decades have generally seen steady increases in transportation prices, especially those related to travel by private automobiles. However, starting in 2014 the decline in fuel prices contributed to the decrease in the overall cost of transportation for consumers and businesses. In 2014 and 2015, gasoline and diesel prices dropped to levels not seen since 2005, after briefly falling to that level in January 2009 during the trough of the last recession. Between the price peak in 2014 and the trough in 2016, gasoline and diesel prices dropped by about 50 percent.

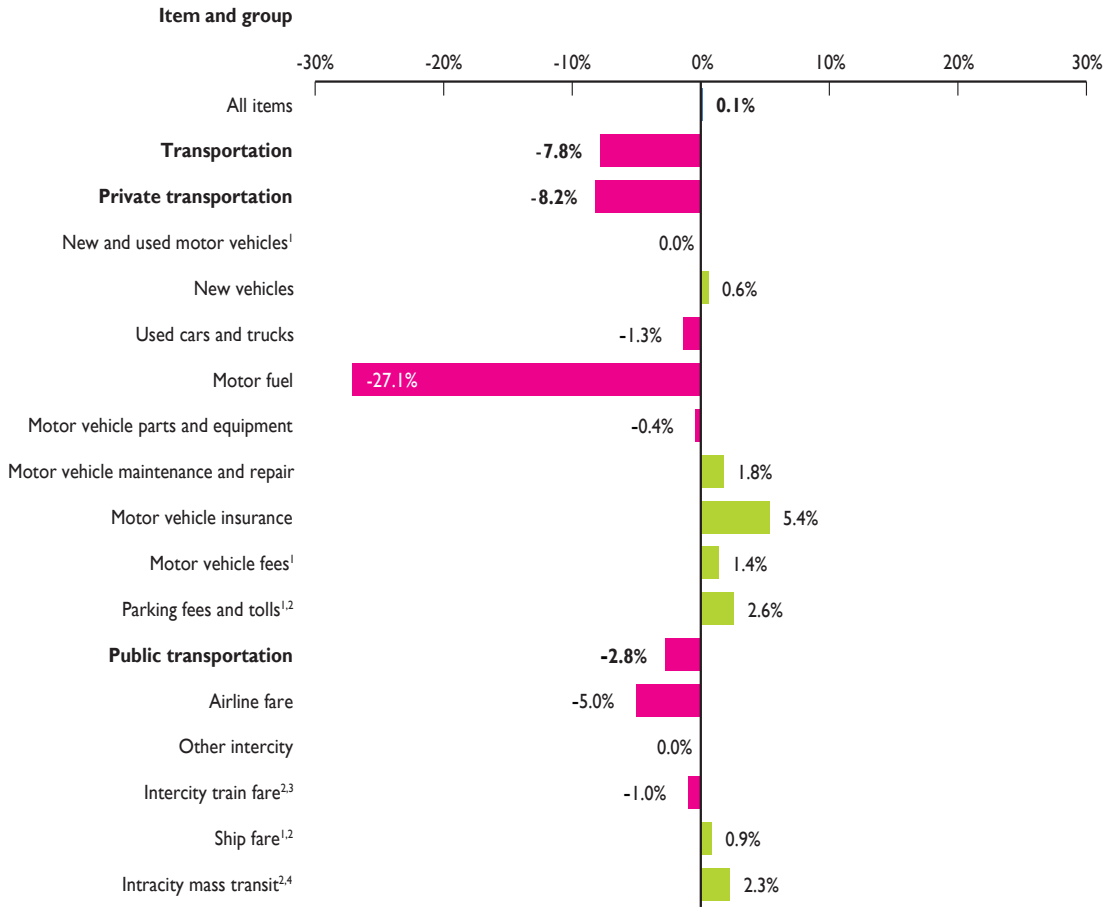
Figure 4-5 Gasoline and Diesel Retail Prices: January 1995–February 2016



NOTES: *Gasoline* prices include weekly U.S. regular all formulations retail gasoline prices. *Diesel* prices include weekly U.S. No. 2 diesel retail prices.

SOURCE: U.S. Department of Energy, Energy Information Agency, *Weekly Retail Gasoline and Diesel Prices*, available at http://www.eia.gov/ as of February 2016.

Figure 4-6 Percent Change in Consumer Prices: 2014–2015



[1] Indexes on a December 1997 = 100 base. [2] Special index based on a substantially smaller sample size. [3] Indexes on a December 1984 = 100 base. [4] Indexes on a December 2005 = 100 base.

NOTES: Based on Consumer Price Index for all urban consumers (CPI-U), U.S. city average, by detailed expenditure category and commodity and service group, uses index 1982-84=100 unless otherwise noted.

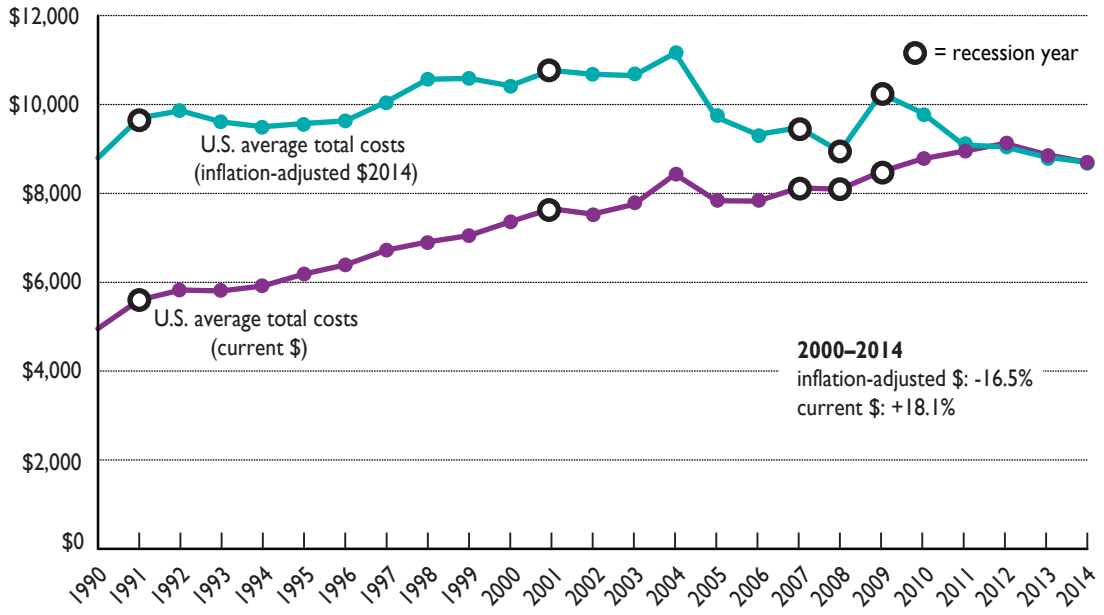
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, CPI detailed report, table 1A and 3A, data for December 2015, available at www.bls.gov/cpi/cpid1501.pdf as of February 2016.

Recent trends show a 7.8 percent drop in transportation prices between 2014 and 2015, while the overall prices for consumer goods and services increased 0.1 percent. Motor fuels led the decline this year in transportation prices, dropping 27.1 percent. The price of used cars and trucks (-1.3 percent) and motor vehicle parts and equipment (-0.4 percent) also went down. Overall, public transportation, which is defined as fares for mass transit, buses, trains, airlines, taxis, school buses for which a fee is charged, and fare for boats declined during this time period, with fares for airlines and intercity train dropping 5.0 and 1.0 percent, respectively. However, prices in other areas of transportation increased, with motor vehicle insurance, parking fees and tolls, maintenance and repair, vehicle fees, intracity mass transit (local mass transit), and ship fare becoming more expensive.

Costs of Transportation

Accounting for inflation, the average cost to own and operate an automobile has increased between 1990 and 2004 while declining over the past decade. Assuming the average vehicle is driven 15,000 miles per year, the cost of ownership (insurance, license, registration, taxes, depreciation, and finance charges) and operation (fuel, maintenance, and tires) was about $8,799 per year in 1990, $10,420 in 2000, and $8,817 in 2013, after adjusting for inflation. Due to a drop in gasoline prices, the average cost of owning and operating an automobile dropped to $8,698 per year in 2014.

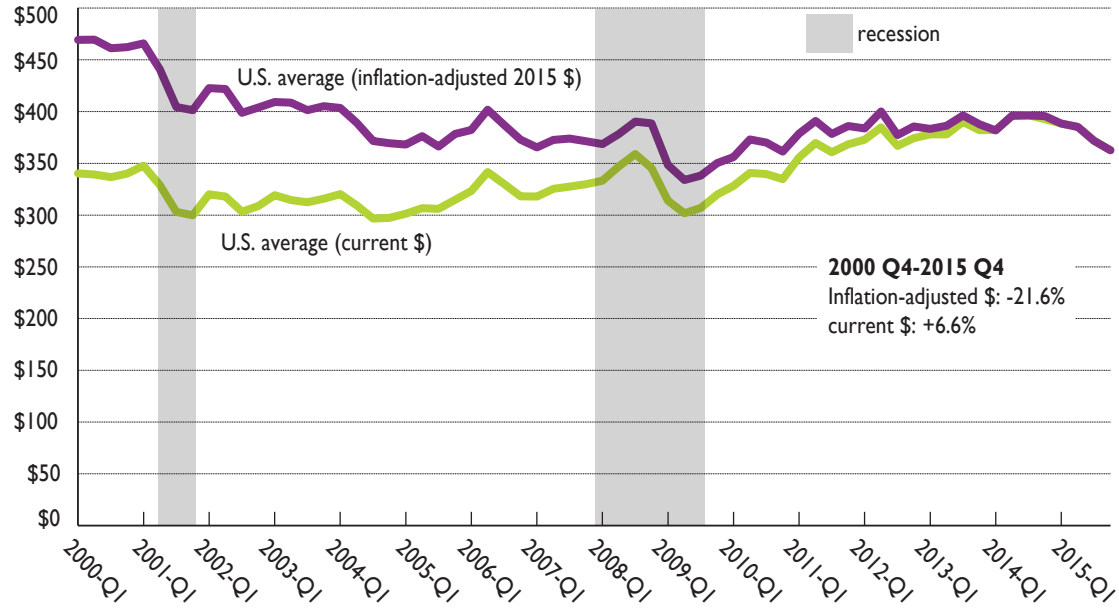
Figure 4-7 Average Total Cost of Owning and Operating an Automobile: 1990–2014



NOTES: U.S. average total costs include fixed ownership costs (insurance, license, registration, taxes, depreciation, and finance charges) plus variable operating costs (fuel, maintenance, and tires). All figures reflect the average cost of operating a vehicle 15,000 miles per year in stop and go conditions. Inflation-adjustments are based on CPI for all urban consumers (CPI-U), U.S. city average, (1982-84=100) annual average index for private transportation.

SOURCES: **Costs**—American Automobile Association, *Your Driving Costs*, available at www.aaapublicaffairs.com as of February 2016 and Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-17, available at www.bts.gov as of April 2015. **Inflation adjustments**—U.S. Department of Labor, Bureau of Labor Statistics, CPI-U, available at http://www.bls.gov/cpi/ as of February 2016.

Figure 4-8 Average Airfare for Domestic Flights: 2000 Q1–2015 Q4



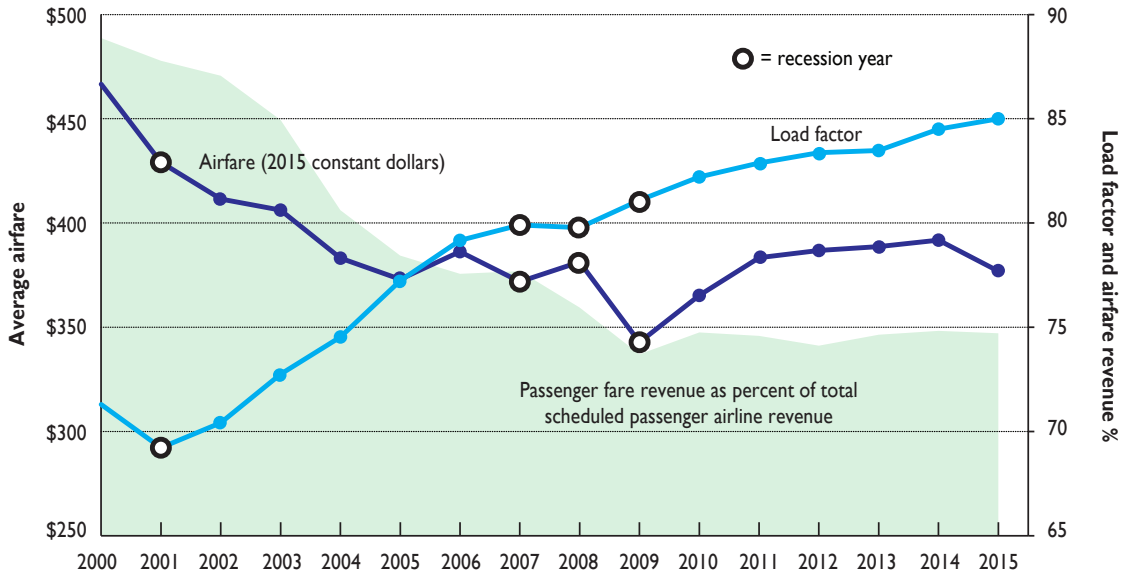
NOTES: Fares are based on the total ticket value, which consists of the price charged by the airlines plus any additional taxes and fees levied by an outside entity at the time of purchase. Fares include only the price paid at the time of the ticket purchase and do not include fees for optional services, such as baggage fees. Averages do not include frequent-flyer or "zero fares," or abnormally high reported fares. Inflation-adjusted air fares are calculated using dollars for the year of the most recent fare release (2015).

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *Origin and Destination (O&D) Survey*, available at www.bts.gov as of April 2016.

The average airfare has fluctuated over time. Although prices appear to have increased slightly since 2000 in terms of what comes out of one's wallet, airfare has decreased when accounting for inflation. Fares include only the price paid at the time of the ticket purchase and do not include fees for optional services, such as baggage fees. During the fourth quarter 2015, the average airfare of a domestic flight was $363. In current dollars, this fare is up $22 (66 percent) from fourth quarter 2000 but down approximately $100 (-21.6 percent) when accounting for inflation.

Since 2000 airlines have been transporting more passengers per mile, increasing load factor by 19.2 percent. In economic terms, air carriers are becoming more efficient, fitting more and more passengers on each plane. At the same time, faced with rising fuel prices and other costs over the last decade, airlines sought new sources of revenue in recent years, including fees on service such as baggage and reservation changes, which led to a reduction in fare revenues as a share of total scheduled passenger airline revenue. In 2000 airfare accounted for 88.9 percent of the total revenue, compared to 74.7 percent in 2015.

Figure 4-9 Load Factor and Average Airfare: 2000–2015



NOTES: Airfares are based on domestic itinerary fares and the total ticket value which consists of the price charged by the airlines plus any additional taxes and fees levied by an outside entity at the time of purchase. Load factor calculated by dividing the total revenue passenger miles by available seat miles for domestic U.S. carriers. Total scheduled passenger airline revenue is the sum of the following Schedule P12 accounts with account numbers: reservation cancellation fees (3919.1), baggage fees (3906.2), miscellaneous operating revenue (3919.2), transport-related revenue (4898) and passenger revenue (airfares) (3901).

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *T-100 Domestic Segment Data and Origin & Destination Survey and Schedule P-12*, available at www.transtats.bts.gov as of May 2016.

Economic Contribution and Output of Passenger and Tourism Travel

Satellite accounts provide a means for measuring the contribution and output of transportation to the economy. The Transportation Satellite Accounts (TSAs) show the contribution of transportation carried out by for-hire transportation firms (e.g., trucks, air carriers, railroads, and transit agencies), nontransportation industries for their own purposes (known as business-related in-house transportation), and by households through the use of a vehicle. The Travel and Tourism Satellite Accounts (TTSAs) provide a detailed picture of travel and tourism activity and its role in the U.S. economy.

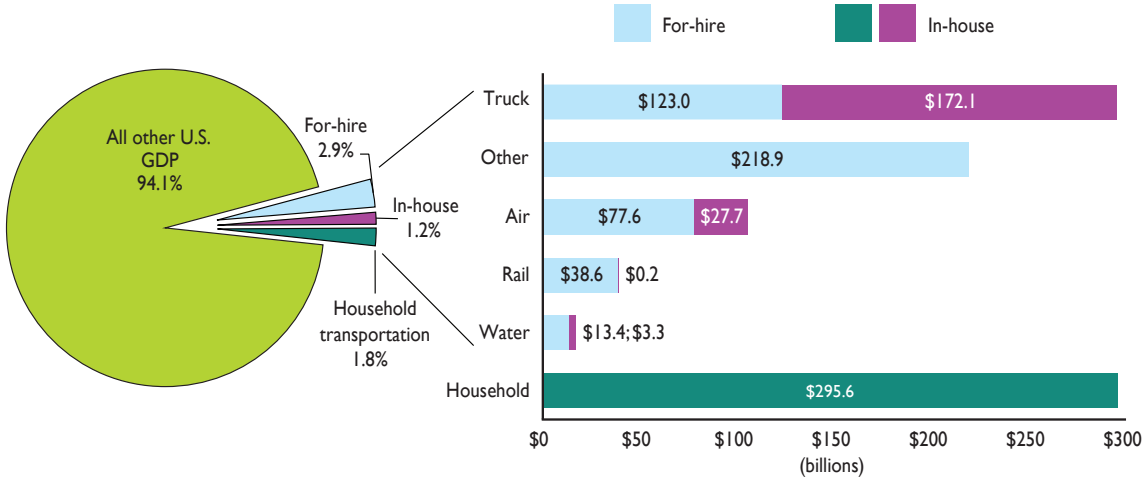
Box 4-A Transportation Satellite Accounts: 2012

The Transportation Satellite Accounts (TSAs), developed by the Bureau of Transportation Statistics (BTS), belong to the group of satellite industry accounts. Satellite industry accounts expand on the national income and product accounts and the input-output accounts and supplement these accounts by focusing on a particular aspect of economic activity. The TSAs seek to capture transportation carried out by nontransportation industries for their own purposes and transportation carried out by households through the use of an automobile.

The TSAs expand on the U.S. Input-Output (I-O) Accounts. The I-O data provide detailed information on the inputs (including transportation services) used by each industry to produce each industry's output, the goods produced by each industry, and the goods used by final consumers. For-hire transportation is one of the industries in the I-O accounts. For-hire transportation consists of the services provided by transportation firms to industries and the public on a fee-basis, such as air carriers, railroads, transit agencies, common carrier trucking companies, and pipelines. The TSAs expand the I-O accounts by showing the value of the transportation services carried out by nontransportation industries for their own purposes (known as business-related in-house transportation). The TSAs also expand .on the I-O accounts to include the value of the transportation carried out by households through the use of a household vehicle.

In 2014 transportation goods and services accounted for 8.9 percent, or $1.4 trillion, of U.S. gross domestic product. The TSAs show the importance of transportation to the national economy by mode. For-hire transportation contributed 2.9 percent to the national economy in 2012, while business-related in-house transportation contributed an additional 1.2 percent. Households contributed $295.6 billion (or an additional 1.8 percent) to the national economy through the use of private vehicles. For-hire and in-house transportation includes both freight and passenger data because the individual contributions of for-hire and in-house passenger transportation are not available.

Figure 4-10 GDP Attributed to Transportation Mode: 2012



NOTES: For-hire transportation consists of the services provided by transportation firms to industries and the public on a fee-basis. In-house transportation consists of the services provided by nontransportation industries, including households, for their use. Business in-house transportation includes privately owned and operated vehicles of all body types, used primarily on public rights of way, and the supportive services to store, maintain, and operate those vehicles. Household transportation covers transportation provided by households for their own use through the use of an automobile. Other for-hire transportation includes: pipeline, transit and ground passenger transportation, including State and local government passenger transit; sightseeing transportation and transportation support; courier and messenger services; and warehousing and storage. It should be noted that passenger travel cannot be separated from total transportation by using this estimation method. The 2012 Transportation Satellite Accounts are the latest available data based on the Bureau of Economic Analysis' benchmark input-output data.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, *Transportation Satellite Accounts*, available at www.bts.gov as of February 2016.

Table 4-1 Real Output by Transportation Related Tourism Services and Commodities: 2013 and 2014

	GDP (millions of chained 2009 dollars)		Percent change,
	2013	2014	2013 to 2014
Passenger air transportation	**118,234**	**122,269**	**3.4%**
Domestic passenger air transportation services	76,059	81,188	6.7%
International passenger air transportation services	42,161	41,100	-2.5%
All other transportation-related services and commodities	**187,814**	**188,680**	**0.5%**
Passenger rail transportation services	1,985	2,039	2.7%
Passenger water transportation services	12,448	13,410	7.7%
Intercity bus services	1,292	1,287	-0.4%
Intercity charter bus services	1,518	1,649	8.7%
Local bus and other transportation services	3,967	3,881	-2.2%
Taxicab services	3,713	3,838	3.4%
Scenic and sightseeing transportation services	2,934	2,972	1.3%
Automotive rental and leasing	33,002	31,980	-3.1%
Other vehicle rental and leasing	782	822	5.1%
Automotive repair services	10,835	10,996	1.5%
Parking	1,876	1,954	4.1%
Highway tolls	646	666	3.0%
Travel arrangement and reservation services	42,388	46,601	9.9%
Gasoline	68,389	65,909	-3.6%
All transportation related tourism goods and services	**306,014**	**310,894**	**1.6%**

NOTE: Individual categories may not add to subtotals due to inflation adjustment of the numbers. *The U.S. Travel and Tourism Satellite Accounts* (TTSA) measure the economic activity associated with the broader travel and tourism industry. The TTSA can also be used to show how economic activity in passenger-related travel and tourism services is changing.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Travel and Tourism Satellite Accounts for 1998-2014*, dated June 2015, available at www.bea.gov as of February 2016.

Between 2013 and 2014, real spending (output) on transportation-related tourism goods and services increased by 1.6 percent, to $310.9 billion, reflecting growth in tourism travel. In 2014 passengers spent $122.3 billion on air travel and $65.9 billion on gasoline purchases. Categories with the largest percent growth between 2013 and 2014 were travel arrangement and reservation services (9.9 percent), intercity charter bus services (8.7 percent), and passenger water transportation services (7.7 percent).

Employment and Occupations in Passenger Travel

In 2014 the entire transportation-related labor force employed 13.1 million people, occupying about 9.4 percent of the labor force in the national economy. In the for-hire transportation sector, which provides transportation services for a fee, transit and ground passenger transportation employs the largest number of employees, occupying about 467,000 jobs in 2014. Air passenger transportation employed the second largest number of jobs (444,000) followed by rail transportation (236,000). Employment in nearly all for-hire transportation industries increased between 2000 and 2014, except air transportation, which dropped by 27.7 percent, attributing to the 5.8 percent overall decline in the transportation-related labor force.

Table 4-2 Employment in For-Hire Transportation and Selected Transportation-Related Industries: 2000, 2010 and 2014

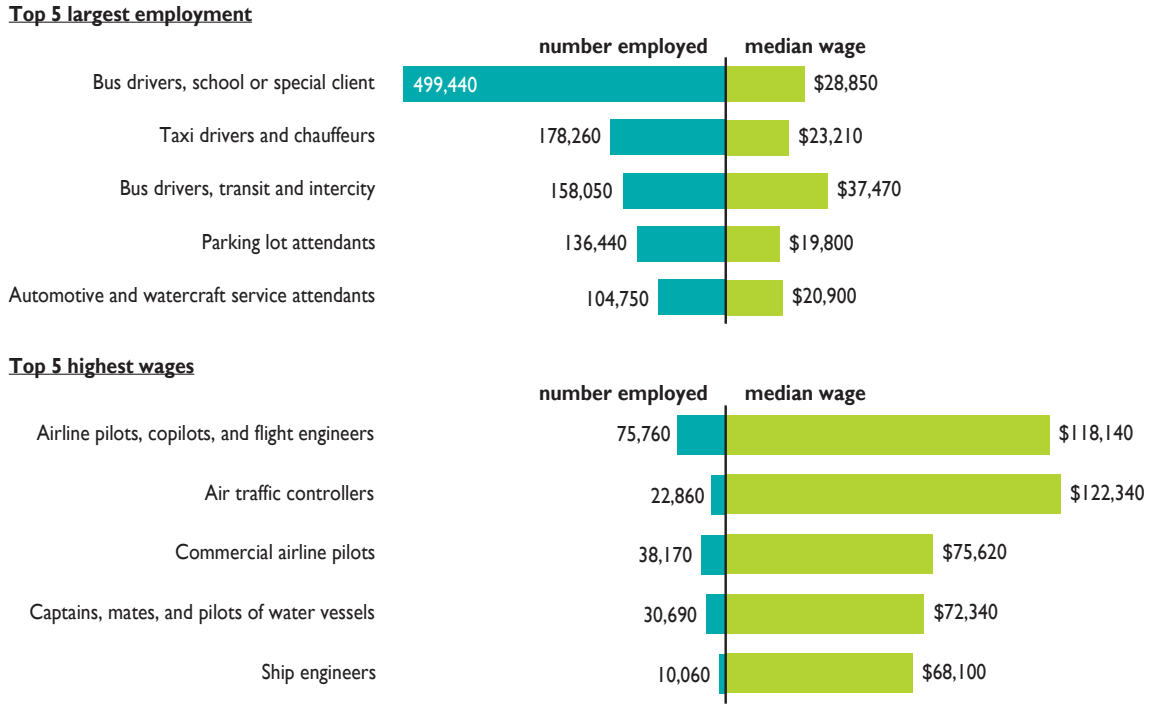
	Annual average employment (thousands)			Percent change
	2000	2010	2014	2000 to 2014
TOTAL U.S. labor force[1]	**132,024**	**130,361**	**138,958**	**5.3%**
Transportation related labor force[2]	**13,907**	**12,086**	**13,100**	**-5.8%**
Transportation share of total U.S. labor force	**10.5**	**9.3**	**9.4**	**-10.5%**
Transportation and warehousing (48-49)[3]	**4,410**	**4,191**	**4,661**	**5.7%**
Air transportation (481)	614	458	444	-27.7%
Rail transportation (482)	232	216	236	1.9%
Water transportation (483)	56	62	67	20.2%
Transit and ground passenger transportation (485)	372	430	467	25.4%
Scenic and sightseeing transportation (487)	28	27	31	11.3%
Support activities for transportation (488)	537	543	626	16.4%
Other transportation related industries				
Motor vehicle parts dealers (441)	1,847	1,629	1,862	0.8%
Gasoline stations (447)	936	819	881	-5.8%
Automotive equipment rental and leasing (5321)	208	161	189	-9.2%
Travel arrangement and reservation services (5615)	299	186	196	-34.2%
Other ambulatory health care services (6219)	173	251	278	60.7%
Automotive repair and maintenance (8111)	888	801	868	-2.3%

[1]Excludes farm employment. [2]Includes employment in the transportation and warehousing sector and select industries in transportation-related manufacturing, other transportation related industries, postal service, and government as provided fully in NTS Table 3-23. [3]Does not include postal service.

NOTES: Details may not add to totals due to independent rounding. Annual average employment data was compiled by North American Industry Classification System (NAICS) codes.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics Data, *National Employment Hours and Earnings* as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-23, available at www.bts.gov as of February 2016.

Figure 4-11 Employment and Wages for Select Occupations in Passenger Travel: 2014



NOTES: Data was compiled by Transportation and Material Moving Occupations (SOC 53) and sorted by OES detailed occupational groups (to the six-digit level). Total employment includes the estimated total occupational employment for the nation, excluding self-employed. Annual mean wage is the estimated mean hourly wage of an occupation multiplied by 2,080 hours. Actual annual wages for many occupations may vary based on numerous factors.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Occupational Employment Statistics (OES) Survey* as cited in U.S. DOT, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-24, available at www.bts.gov, as of February 2016.

Various occupations support the movement of people. In 2014 the largest occupations by total employment in passenger transportation sector were school or special client bus drivers (499,440), taxi drivers and chauffeurs (178,260), and transit and intercity bus drivers (158,050). However, although occupying a large number of jobs, many of these workers make a relatively low annual wage. Additionally, many of these occupations, such as taxi drivers and parking lot attendants, may work part-time or in more than one job, skewing their actual salary from what is shown in the data. In 2014 airplane pilots and flight engineers made the highest salaries, bringing in a median wage of $118,140 per year.

5 Safety, Energy, and Environmental Impacts of Passenger Travel

The number of passenger transportation fatalities has declined in recent decades. Compared to 1990, there were about 12,500 fewer fatalities in 2014—94.6 percent of this reduction is attributable to highway travel. Highway safety enhancements, which include human factors, roadway design and maintenance, and advanced safety technologies, have contributed significantly to this decline. However, early estimates indicate an uptick in highway deaths for 2015, with preliminary data showing a 7.7 percent increase in fatalities—a marked departure from what had been a general downward trend.

Table 5-1 Fatalities by Selected Passenger Transportation Mode: 1990, 2000, 2010, and 2014

	1990	2000	2010	2014
TOTAL passenger fatalities[a]	**45,948**	**42,989**	**34,020**	**33,392**
Air, total	**866**	**764**	**476**	**439**
U.S. air carrier	39	92	2	0
Commuter carrier	6	5	0	0
On-demand air taxi	51	71	17	20
General aviation	770	596	457	419
Highway passenger, total[b]	**43,894**	**41,191**	**32,469**	**32,018**
Passenger car occupants	24,092	20,699	12,491	11,926
Motorcyclists	3,244	2,897	4,518	4,586
Light truck occupants	8,601	11,526	9,782	9,096
Bus occupants	32	22	44	44
Pedestrians	6,482	4,763	4,302	4,884
Pedalcyclists	859	693	623	726
Other	584	591	709	756
Rail passenger, total	**202**	**220**	**215**	**220**
Train accidents	0	2	4	3
Highway-rail grade crossing[c]	74	72	74	60
Trespassers	117	135	131	149
Other incidents	11	11	6	8
Transit, total[d]	**339**	**295**	**221**	**236**
Transit, non-rail[e]	110	98	100	101
Transit, rail[f]	229	197	120	135
Water passenger, total	**876**	**716**	**759**	**624**
Passenger vessel[g]	11	15	87	14
Recreational boatin[g]	865	701	672	610

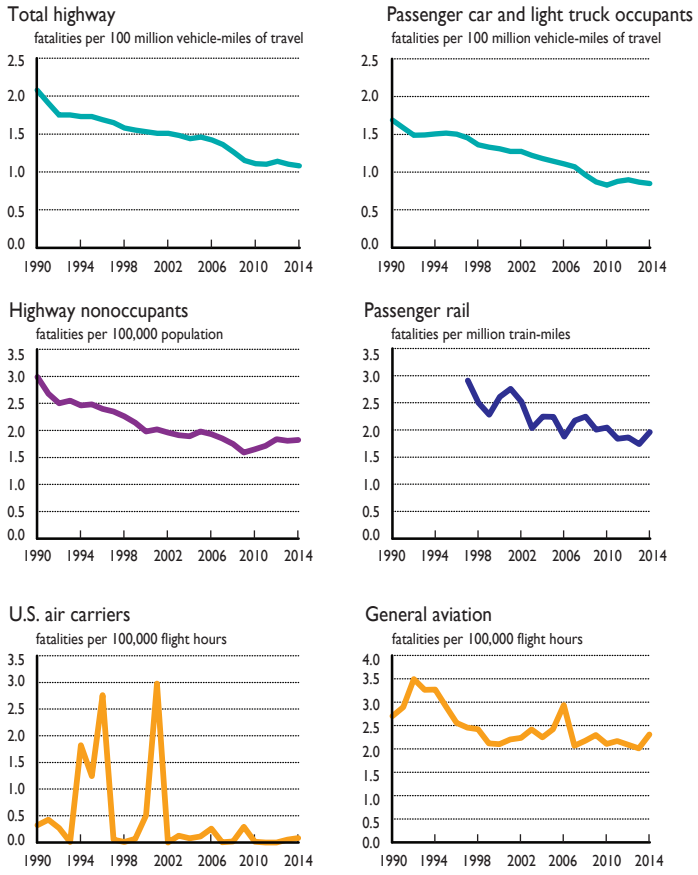
[a]May include fatalities double counted under Highway and Passenger rail. To reduce double counting, Total fatalities excludes Transit, rail fatalities, which are assumed to be included under Passenger rail. [b]Excludes large truck occupants. [c]Includes passenger train collisions with vehicles and people at all public and private highway-rail grade crossings. [d]Transit data prior to 2002 are not comparable with later years due to a change in the reporting system. [e]Includes aerial tramway, bus, bus rapid transit, commuter bus, demand response, demand taxi, ferryboat, jitney, publico, trolleybus, and vanpool. [f]Includes Alaska Railroad, cable car, commuter rail, heavy rail, hybrid rail, inclined plane, light rail, monorail/automated guideway transit, and streetcar. [g]Data for 2002 and on include passenger ships, research vessels, and schoolships. Data prior to 2002 were tabulated using a different reporting system and are not directly comparable with later years.

SOURCES: **Air**—National Transportation Safety Board. **Highway**—National Highway Traffic Safety Administration. **Railroad**—Federal Railroad Administration. **Transit**—Federal Transit Administration. **Waterborne**—U.S. Coast Guard. **Recreational boating**—U.S. Coast Guard, Office of Boating Safety. As cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-1, available at www.bts.gov as of June 2016.

Fatalities

Between 1990 and 2014, the highway fatality rate, measured by deaths per 100 million vehicle-miles of travel, declined 48.1 percent. The number of passenger car and light-truck occupant fatalities fell 49.6 percent during this period. Measuring by fatalities per capita, the nonoccupant fatality rate declined 39.1 percent. During this same period, the general aviation fatality rate, measured by fatalities per 100,000 flight hours, decreased by 51.3 percent, while the fatality rate for air carriers remained stable and low. Between 1997 and 2014, the passenger rail fatality rate, measured by deaths per million train-miles, decreased by 32.6 percent.

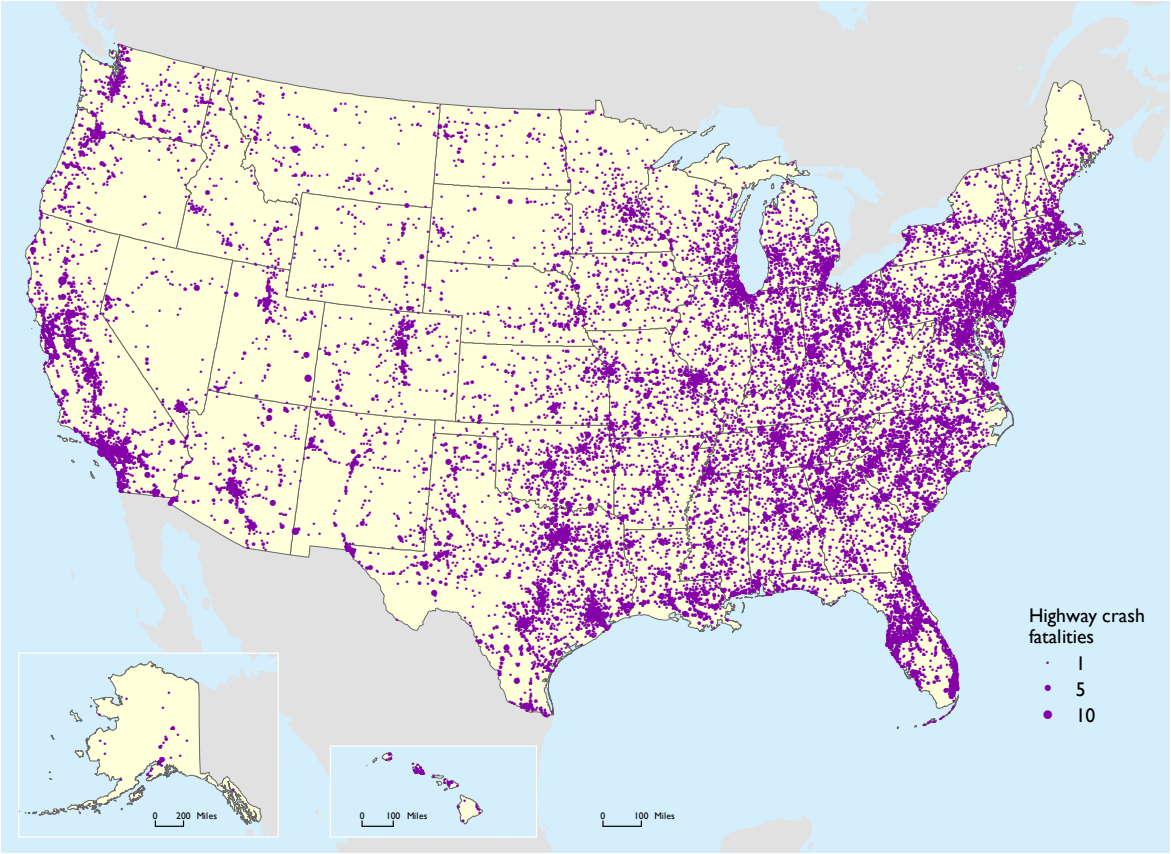
Figure 5-1 Fatality Rates for Selected Transportation Modes: 1990–2014



NOTES: Graphs with same color trend lines have identical scales. *Nonoccupant* includes pedestrian and riders of nonmotorized bicycles and other pedal-powered vehicles and is measured on a per capita basis because exposure based estimates are not available. Air carrier fatalities resulting from the Sept. 11, 2001 terrorist acts include only onboard fatalities. Passenger rail data for years before 1997 are not available.

SOURCE: **Highway and Air**–Calculated by U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics (BTS) based upon multiple sources as cited in USDOT, BTS, *National Transportation Statistic*, tables 2-9, 2-14, 2-17, 2-19, 2-21, and 2-23, available at www.bts.gov as of April 2016. Rail–USDOT, Federal Railroad Administration, Office of Safety Analysis, table 1-13, available at safetydata.fra.dot.gov/OfficeofSafety as of April 2016.

5-2 Highway Crash Fatalities: 2014



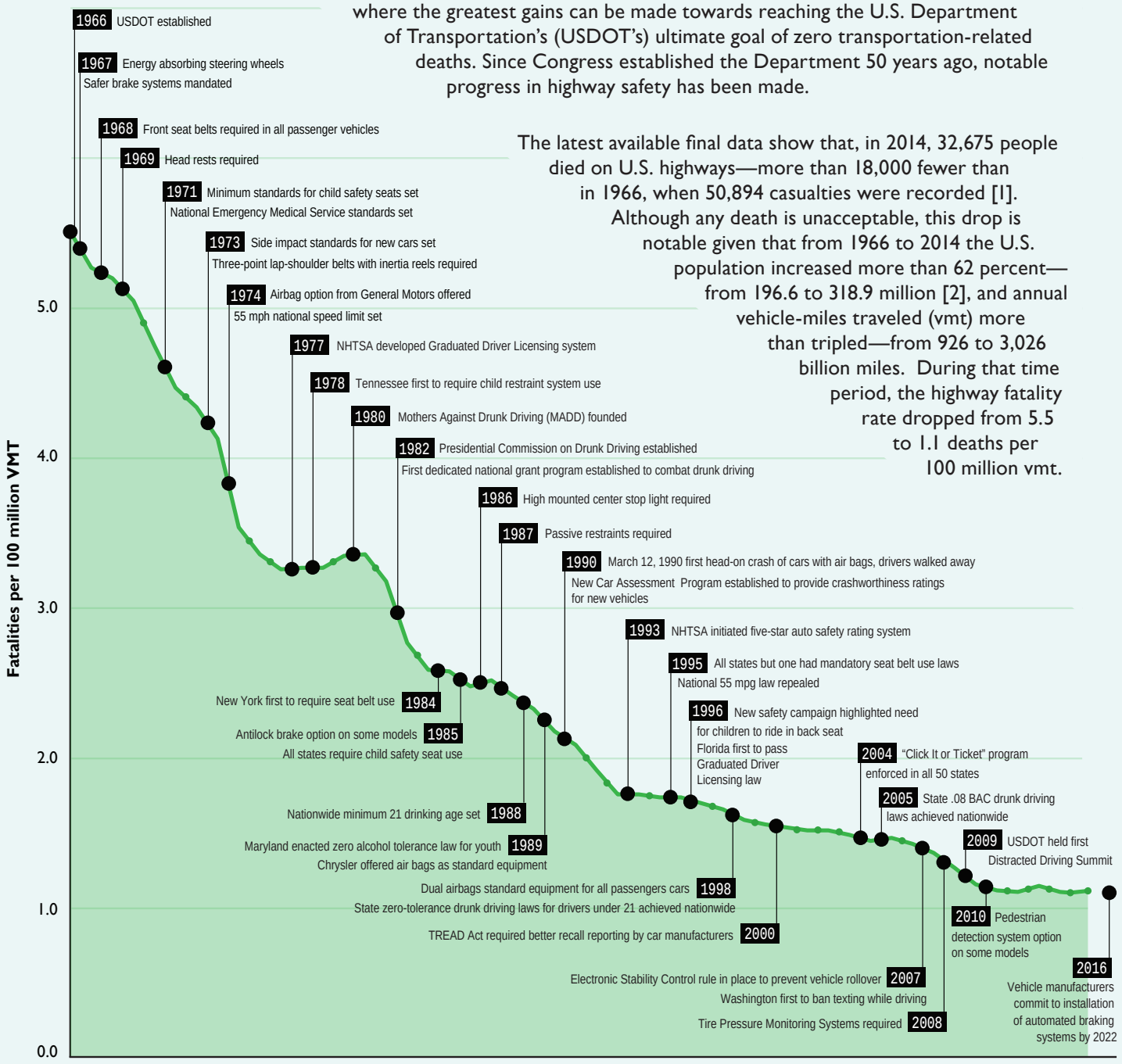
SOURCE: U.S. Department of Transportation, National Highway Traffic Safety Administration, *Fatality Analysis Reporting System*, available at www-fars.nhtsa.dot.gov as of February 2016.

Highway fatalities in 2014 were concentrated along the major corridors in the highly populated areas of California, Florida, Illinois, Texas, and throughout the populous Northeast region from New England, near Boston, MA, down to the Middle Atlantic region, near Washington, DC. In addition, fatalities were also highly concentrated along major highway corridors and around urban areas in the South Atlantic region.

A Half Century of Highway Safety Innovations–1966 to 2016

Historically, highway fatalities have comprised about 95 percent of all transportation-related deaths in the United States, and it is on roads and highways where the greatest gains can be made towards reaching the U.S. Department of Transportation's (USDOT's) ultimate goal of zero transportation-related deaths. Since Congress established the Department 50 years ago, notable progress in highway safety has been made.

The latest available final data show that, in 2014, 32,675 people died on U.S. highways—more than 18,000 fewer than in 1966, when 50,894 casualties were recorded [1]. Although any death is unacceptable, this drop is notable given that from 1966 to 2014 the U.S. population increased more than 62 percent—from 196.6 to 318.9 million [2], and annual vehicle-miles traveled (vmt) more than tripled—from 926 to 3,026 billion miles. During that time period, the highway fatality rate dropped from 5.5 to 1.1 deaths per 100 million vmt.



Final data not available for 2015–2016, but preliminary 2015 data show a 7.7% increase in fatalities over the 2014 total.

Using 1966 as the base year, this graph plots the cumulative effect of safety innovations, over time, on annual highway fatalities per 100 million vehicle-miles traveled.

1966—A Pivotal Year for Highway Safety

Fifty years ago, on September 9, 1966, in answer to an alarming growth in annual highway-related deaths, President Lyndon Johnson signed both the National Traffic and Motor Vehicle Safety Act and the Highway Safety Act into law [3]. And on October 15, 1966, Congress established the USDOT with a multimodal mission to "Serve the United States by ensuring a fast, safe, efficient, accessible and convenient transportation system ..." [4]. This legislation also established the agency that 4 years later would become the National Highway Traffic Safety Administration (NHTSA).

Although these actions firmly established the Federal Government's responsibility for setting and enforcing transportation safety standards for all modes of transportation, the greatest impact would be on highway safety.

A Snowball Effect

Since 1966 there has been a dramatic drop in highway deaths. Many factors are responsible for this decrease—both regulatory and social:

• Safer vehicle designs and new safety technologies, such as seat belts, air bags, and electronic stability control, combined with programs to increase the use of seat belts and other safety equipment. NHTSA estimates that these technologies saved more than 600,000 lives from 1960 through 2012—nearly 28,000 in 2012 alone, of which more than half were saved by seat belts [5].

• Safer roads, including major new infrastructure, such as the Interstate Highway System and gradual improvements to existing roads, such as guardrails, lighting, and rumble strips.

• Behavioral safety programs, such as high-visibility enforcement and child occupant protection crusades, have encouraged more people to buckle up, use appropriate child safety seats, and to drive sober.

• More comprehensive and standardized emergency medical services, more effective transport and trauma treatment, and developments in medicine that made injuries more survivable [5].

While it is not possible to pin an exact number of lives saved to a particular safety factor, regulatory or otherwise, it is possible to show the cumulative effect of these innovations over time.

The 1960s

The decade of the 60s would see highway fatalities increase 47.1 percent, from 36,399 deaths in 1960 to 53,543 deaths in 1969. In near parallel, vehicle-miles traveled increased 47.8 percent, from 719 to 1,062 billion miles during that same time period. The number of highway fatalities would continue to increase well into the 1970s, until the effects of new regulations and social reforms finally kicked in.

The 1970s

From 1970 through 1979, nearly a half million lives (498,356) were lost on U.S. roads. In 1972 U.S. highways would claim 54,589 lives—the highest number ever recorded. But as the decade closed, highway deaths per 100 million vmt had dropped from 4.7 in 1970 to 3.3 in 1979, even as vehicle-miles traveled increased by 37.8 percent. Still, the 51,093 lives lost in 1979 nearly matched the 52,627 lost in 1970 [6].

The 1980s

Finally, the decade of the 80s would show a notable drop in highway deaths, with 5,500 fewer lives lost in 1989 than in 1980 (45,582 v. 51,091). Even more remarkable, this drop occurred in the face of a 37.6 percent increase in vehicle-miles traveled and a population that grew by nearly 20 million, pushing down the number of lives lost from 3.4 to 2.2 per 100 million vmt.

The 1990s

At first glance the drop in the annual number of lives lost at the beginning of the decade (44,599) versus those lost at the end of the decade (41,717) might seem unremarkable. But from 1990 through 1999 the U.S. population increased by more than 23 million, while the rate of lives lost on U.S. highways continued to fall, from 2.1 to 1.6 per 100 million vmt—a nearly 72 percent drop from the 5.5 deaths per 100 million vmt recorded in 1966.

A New Century

The first years of the 21st century saw the highway fatality rate per 100 million vmt drop nearly 30 percent, falling from 1.5 deaths per 100 million vmt in 2000 to 1.1 by 2014 [7]. By 2004 the .08 blood alcohol limit and the "Click It or Ticket" campaign were enforced nationwide. Distracted driving emerged as a new challenge, and intelligent transportation systems, electronic stability controls, and the advent of self-driving cars ushered in a new era of innovations designed to mitigate the effects of human error.

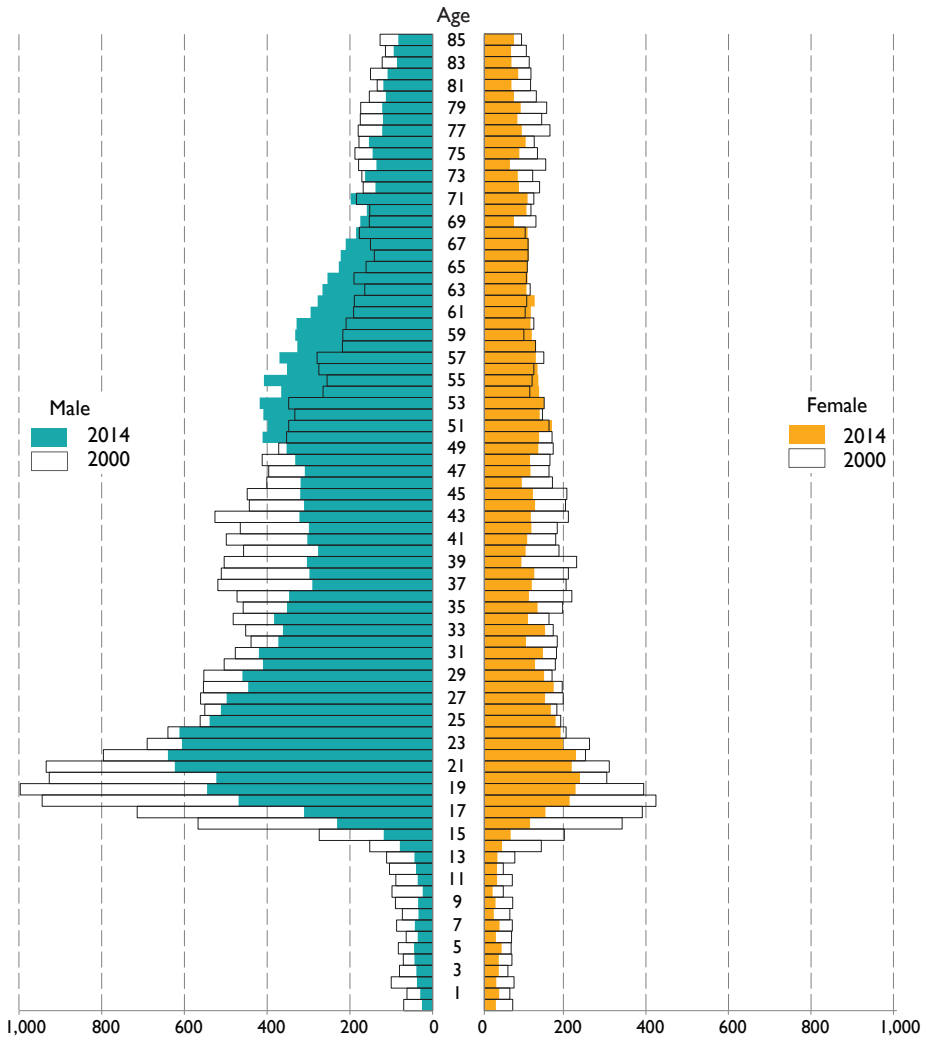
Getting to Zero

A number of active safety systems are now available or are under development: forward collision warning, active braking, rear-view backup cameras, parking assist, lane departure, and blind spot warning—all technologies aimed at reducing or eliminating the effects of human error. In addition to these systems, connected and automated vehicle technologies are poised to play prominent roles in further reducing highway fatalities.

References

[1] U.S. Department of Transportation, National Highway Traffic Safety Administration, press release, *Traffic Fatalities Fall in 2014, but Early Estimates Show 2015 Trending Higher*, Nov. 24, 2015, www.nhtsa.gov as of May 25, 2016.
[2] U.S. Department of Commerce, Bureau of the Census, Population Estimates, www.census.gov as of May 25, 2016.
[3] U.S. Congress, Library of Congress, 112th Congress Senate Report 112-083, http://thomas.loc.gov as of May 25, 2016.
[4] U.S. Department of Transportation, mission statement, www.transportation.gov as of May 25, 2016.
[5] U.S. Department of Transportation, National Highway Traffic Safety Administration, *Lives Saved by Vehicle Safety Technologies and Associated Federal Motor Vehicle Safety Standards, 1960 to 2012*, January 2015, www.its.dot.gov as of May 25, 2016.
[6] U.S. Department of Transportation, National Highway Traffic Safety Administration, Office of Highway Policy Information, *Highway Statistics Series*, www.fhwa.dot.gov as of May 25, 2016.
[7] U.S. Department of Transportation, National Highway Traffic Safety Administration, *Traffic Safety Facts 2014*, www-nrd.nhtsa.dot.gov as of May 25, 2016.

Figure 5-3 Number of Highway Fatalities by Age and Gender: 2000 and 2014



SOURCE: U.S. Department of Transportation, National Highway Traffic Safety Administration, *Fatality Analysis Reporting System*, available at ftp.nhtsa.dot.gov as of February 2016.

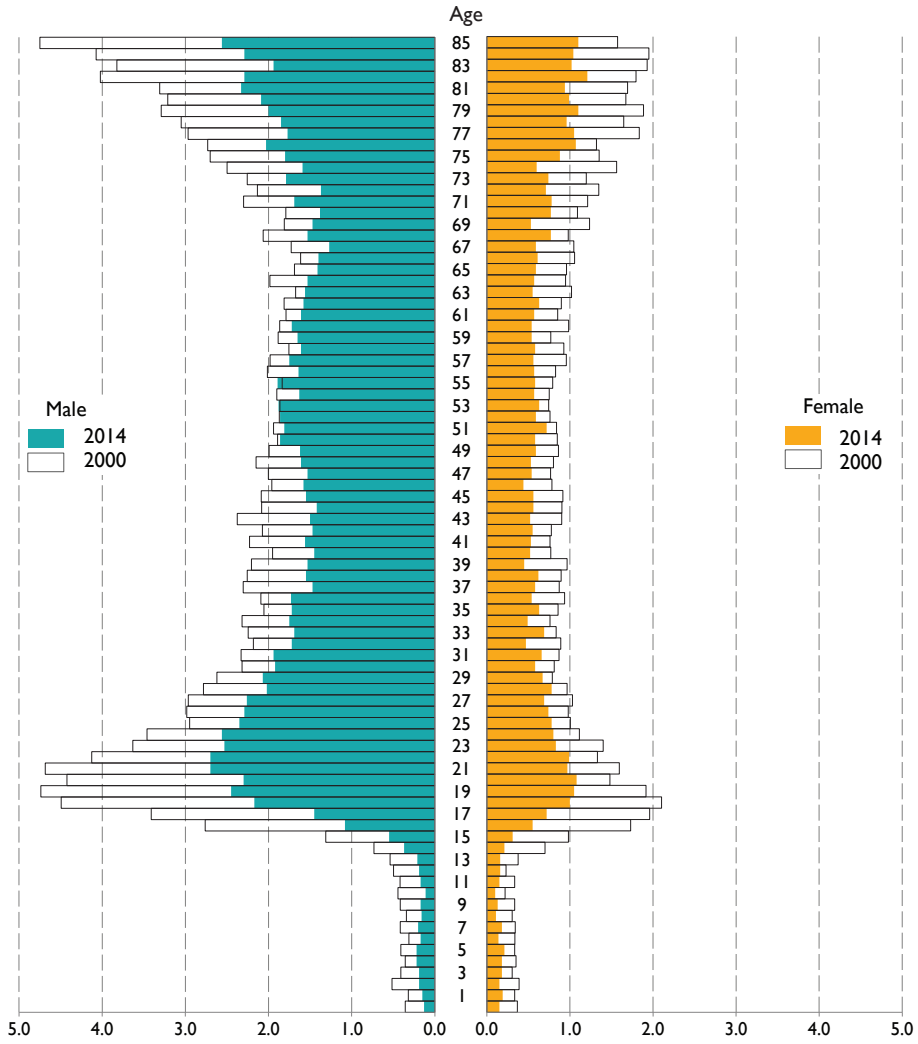
As in 2000, the number of males killed on U.S. highways exceeded the number of female fatalities for most age groups in 2014. Overall, males comprised 68.3 percent of highway fatalities in 2000 and 71.5 percent in 2014. Persons under the age of 30 continued to have the highest fatality numbers in 2014, although deaths for that age group have declined significantly. The number of highway fatalities for males in their mid-40s to late 60s (i.e., today's baby boomers[1]) was higher in 2014 than it was for the men who were in the same age group in 2000. Compared to their 2000 cohorts, the 2014 baby boomers comprised a larger share of the population and drove more miles—factors that likely contributed to the higher number of fatalities.

[1] baby boomer refers to persons born in the United States between the mid-1940s and mid-1960s.

Since 2000 there has been a considerable decrease in highway fatalities per capita across all age groups for both genders. The greatest numbers of fatalities per capita in both 2000 and 2014 were among males between the ages of 18 and 22 and over the age of 80. Female fatalities per capita in both 2000 and 2014 peaked for those between the ages of 16 and 21 and also for those over the age of 80. The 2000 rates were again higher.

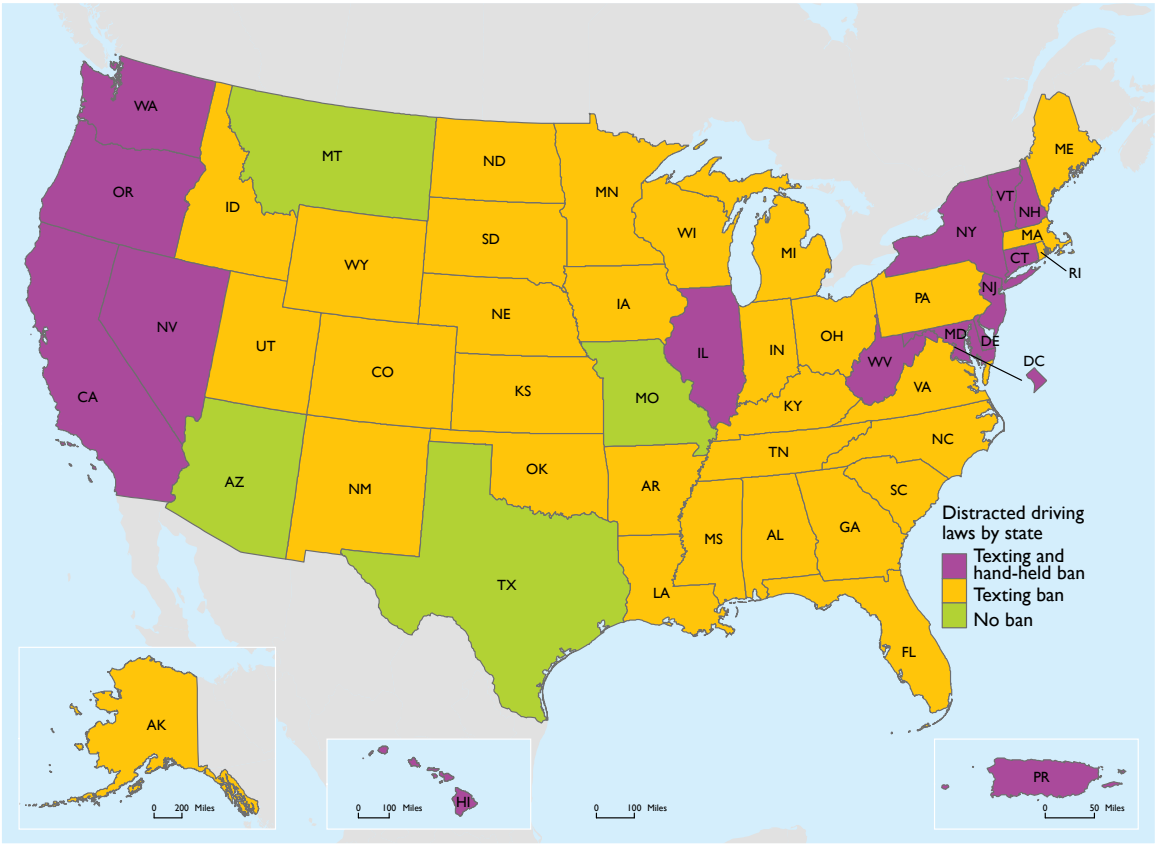
Figure 5-4 Rate of Highway Fatalities by Age and Gender: 2000 and 2014

Fatalities per 10,000 persons



SOURCE: *Fatality Data*–U.S. Department of Transportation, National Highway Traffic Safety Administration, *Fatality Analysis Reporting System*, available at ftp.nhtsa.dot.gov as of February 2016. *Population Data*–U.S. Department of Commerce, U.S. Census Bureau, available at www.census.gov as of February 2016.

Figure 5-5 State Laws on Distracted Driving Ban on Hand-Held Devices and Texting While Driving: February 2016



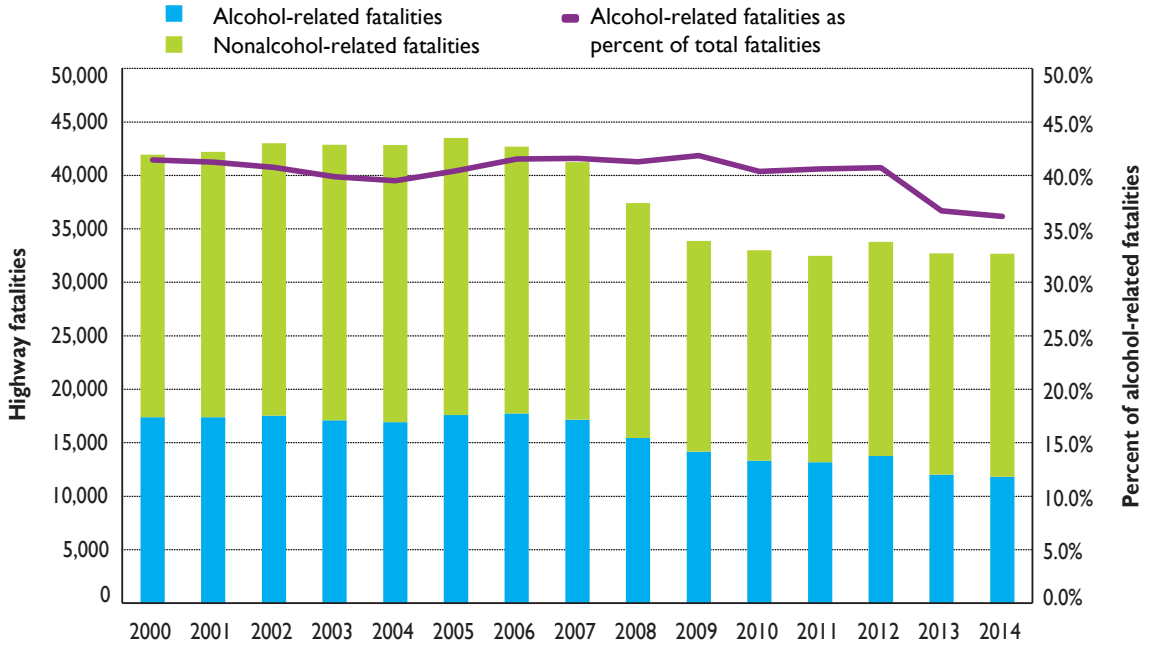
NOTES: A primary law means that an officer can ticket the driver for the offense without any other traffic violation taking place. A secondary law means an officer can only issue a ticket if a driver has been pulled over for another violation (like speeding). Hand-held Cell Phone Use: 14 states, D.C., Puerto Rico, Guam and the U.S. Virgin Islands prohibit all drivers from using hand-held cell phones while driving. All are primary enforcement laws—an officer may cite a driver for using a hand-held cell phone without any other traffic offense taking place. Text Messaging: Washington was the first state to pass a texting ban in 2007. Currently, 46 states, D.C., Puerto Rico, Guam and the U.S. Virgin Islands ban text messaging for all drivers.

SOURCE: U.S. Department of Transportation, National Highway Traffic Safety Administration, *State Laws on Distracted Driving*, available at http://www.distraction.gov/stats-research-laws/state-laws.html as of February 2016.

The National Highway Traffic Safety Administration estimates that 9.9 percent of highway fatalities in 2014 involved drivers who were distracted by such activities as using a cell phone, texting, eating or drinking, using navigation systems or a map, or grooming themselves. In 2015 primary laws banning texting for all drivers became effective in Oklahoma and Mississippi. As of February 2016, 46 states and the District of Columbia had laws banning texting while driving, and 14 states and the District of Columbia prohibit driver use of handheld cell phones.

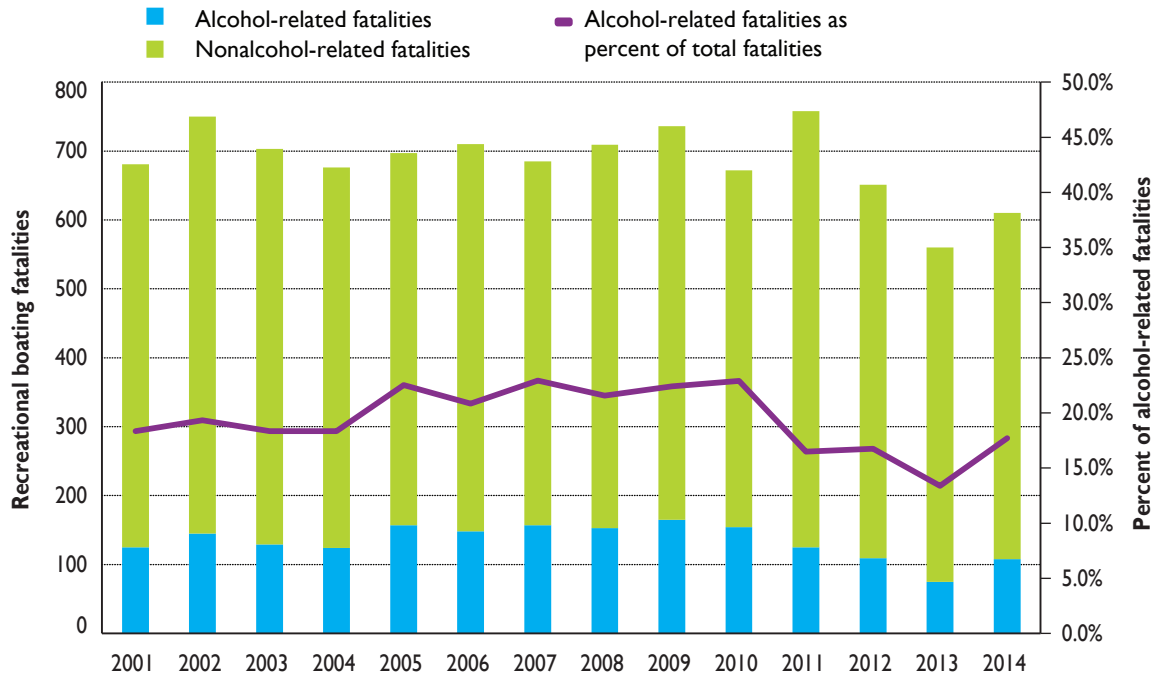
Alcohol-related highway crashes accounted for 11,819 deaths in 2014, down 32.0 percent from 2000. The percent of alcohol-related fatalities also decreased from 41.4 percent in 2000 to 36.2 percent in 2014.

Figure 5-6 Number and Percent of Alcohol-Related v. Nonalcohol-Related Highway Fatalities: 2000–2014



SOURCE: U.S. Department of Transportation, National Highway Traffic Safety Administration, *Fatality Analysis Reporting System* as cited in USDOT, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-20, available at www.bts.gov as of March 2016.

Figure 5-7 Number and Percent of Alcohol-Related v. Nonalcohol-Related Recreational Boating Fatalities: 2001–2014



SOURCE: U.S. Department of Homeland Security, U.S. Coast Guard, Office of Boating Safety, *Boating Statistics* available at www.uscgboating.org/statistics as of March 2016.

Alcohol can also impair a boater's judgment, balance, vision, and reaction time. The U.S. Coast Guard reported 108 alcohol-related recreational boating fatalities in 2014, representing 17.7 percent of all recreational boating fatalities.

Box 5-A Fatality Definition by Mode

Mode (Source)	Definition	Citation
Air	*Fatal injury* means any injury which results in death within 30 days of the accident.	49 CFR 830.2
Hazardous Material	Fatalities must be reported as soon as practical, but no later than 12 hours after the incident and death resulting from injury must be reported within one year of the date of incident	49 CFR 171.15 and 49 CFR 171.16
Highway	*Fatality* means any injury which results in the death of a person at the time of the motor vehicle accident or within 30 days of the accident.	49 CFR 390.5
Pipeline	*Fatalities* reported as soon as practical but not more than 30 days after detection of an incident.	49 CFR 191.3 and 195.50
Railroad	*Fatality* means the death of a person within 24 hours of an accident. Also if an injured person dies within 180 days from the date of the injury.	49 CFR 840.2 and FRA Guide for Preparing Accident/Incident Reports
Rail Transit	A *fatality* at the scene; or where an individual is confirmed dead within 30 days of a rail transit-related incident;	49 CFR 659.33
Recreational Boating	Fatalities means a person dies within 24 hours of the accident. 10 days of the occurrence or death if an earlier report is not required	33 CFR 173 and 174

Injuries

Compared to 1990, there were 27.9 percent fewer passenger transportation injuries in 2014. As for fatalities, the majority of passenger transportation injuries are highway-related, accounting for 99.0 percent of all injuries in 2014. Much of the decrease in highway-related injuries occurred between 2000 and 2010, when the number of injuries declined 27.5 percent. Injuries among passenger-car occupants were down 45.6 percent from 1990 to 2014, but up 3.1 percent from 2010 to 2014.

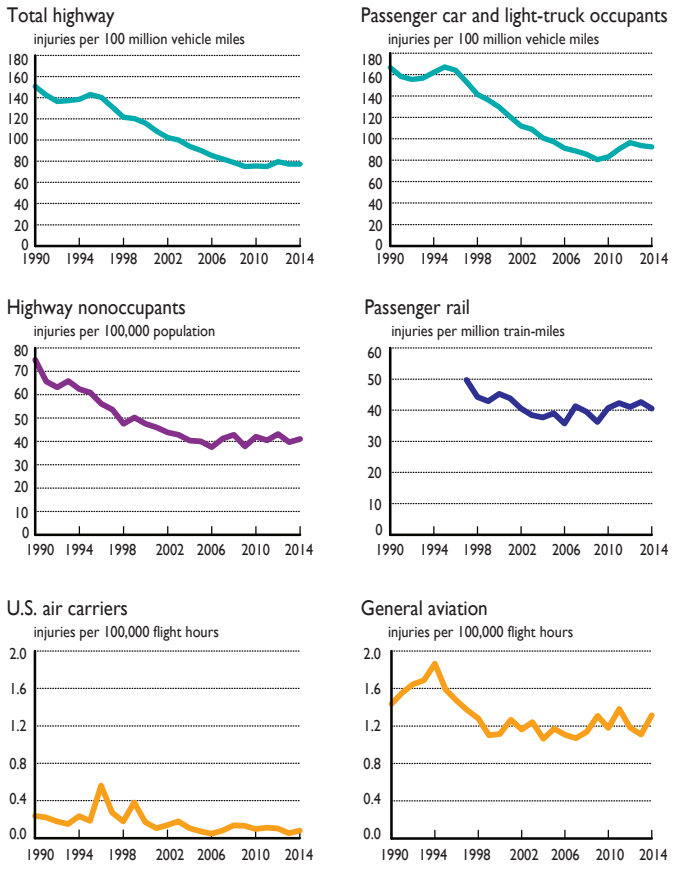
Table 5-2 Injured Persons by Selected Passenger Transportation Mode: 1990, 2000, 2010, and 2014

	1990	2000	2010	2014
TOTAL passenger injuries[a]	**3,239,000**	**3,209,000**	**2,244,000**	**2,335,000**
Air, total	**485**	**359**	**278**	**267**
U.S. air carrier	29	31	17	14
Commuter carrier	11	7	2	0
On-demand air taxi	36	12	3	15
General aviation	409	309	256	238
Highway passenger, total[b]	**3,189,000**	**3,158,000**	**2,219,000**	**2,311,000**
Passenger car occupants	2,376,000	2,052,000	1,253,000	1,292,000
Motorcyclists	84,000	58,000	82,000	92,000
Truck occupants, light	505,000	887,000	733,000	782,000
Bus occupants	33,000	18,000	17,000	14,000
Pedestrians	105,000	78,000	70,000	65,000
Pedalcyclists	75,000	51,000	52,000	50,000
Other	11,000	15,000	13,000	10,000
Rail passenger, total	**4,872**	**3,812**	**4,280**	**4,554**
Train accidents	241	150	57	85
Highway-rail grade crossing[c]	131	120	222	186
Trespassers	70	52	80	58
Other incidents	4,430	3,490	3,921	4,225
Transit, total[d]	**54,556**	**56,697**	**25,222**	**24,045**
Transit, non-rail[e]	40,834	42,713	16,697	16,532
Transit, rail[f]	13,722	13,984	8,436	7,513
Water passenger, total	**3,834**	**4,451**	**3,363**	**3,015**
Passenger vessel[g]	12	96	210	337
Recreational boating	3,822	4,355	3,153	2,678

[a]May include injuries double counted under Highway and Passenger rail. To reduce double counting, Total injuries excludes Transit, rail injuries, which are assumed to be included under Passenger rail. [b]Excludes large truck occupants. Individual categories may not sum to total because injuries are rounded estimates. [c]Includes passenger train collisions with vehicles and people at all public and private highway-rail grade crossings. [d]Transit data prior to 2002 are not comparable with later years due to a change in the reporting system. [e]Includes aerial tramway, bus, bus rapid transit, commuter bus, demand response, demand taxi, ferryboat, jitney, publico, trolleybus, and vanpool. [f]Includes Alaska Railroad, cable car, commuter rail, heavy rail, hybrid rail, inclined plane, light rail, monorail/automated guideway transit, and streetcar. [g]Data for 2002 and on include passenger ships, research vessels, and schoolships. Data prior to 2002 were tabulated using a different reporting system and are not directly comparable with later years.

SOURCES: **Air**—National Transportation Safety Board. **Highway**—National Highway Traffic Safety Administration. **Railroad**—Federal Railroad Administration. **Transit**—Federal Transit Administration. **Waterborne**—U.S. Coast Guard. **Recreational boating**—U.S. Coast Guard, Office of Boating Safety. As cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-2, available at www.bts.gov as of June 2016.

Figure 5-8 Injury Rates for Select Transportation Modes: 1990–2014



NOTES: Graphs with same color trend lines have identical scales. Light-duty vehicles includes passenger car and light truck occupants. Air includes serious injuries only. Nonoccupant includes pedestrians and riders of nonmotorized bicycles and other pedal-powered vehicles and is measured on a per capita basis because exposure based estimated are not available. Passenger rail data for years before 1997 are not available.

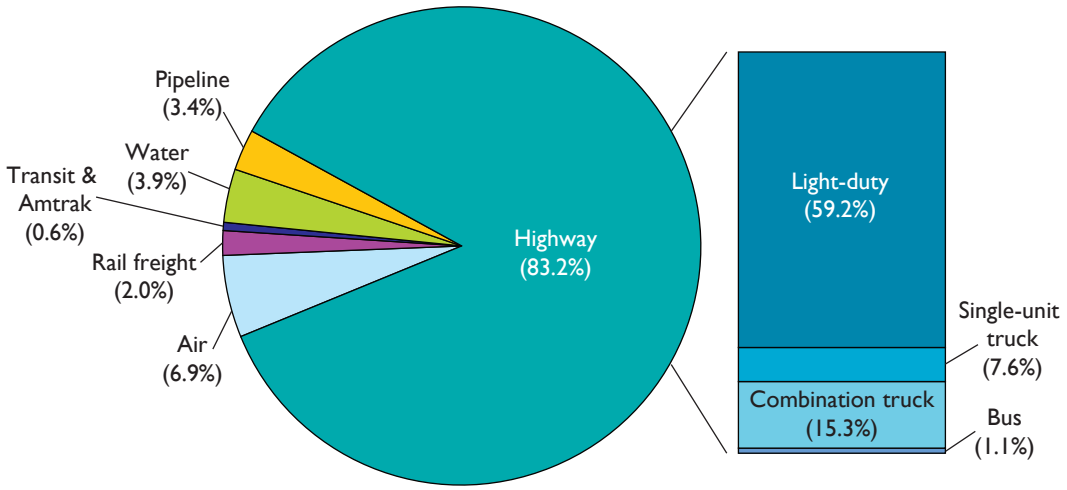
SOURCES: **Highway and Air**–Calculated by U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics (BTS) based upon multiple sources as cited in USDOT, BTS, *National Transportation Statistic*, tables 2-9, 2-14, 2-17, 2-19, 2-21, and 2-23, available at www.bts.gov as June 2016. **Rail**–USDOT, Federal Railroad Administration, Office of Safety Analysis, table 1-13, available at safetydata.fra.dot.gov/OfficeofSafety as of June 2016.

The 2014 total highway injury rate was about half the 1990 rate. Injuries for passenger car and light-truck occupants were down 44.4 percent during this period. Measured by injuries per capita, highway nonoccupant injuries per capita declined 45.2 percent. The U.S. air carrier injury rate remained low and stable. While the general aviation injury rate decreased by 8.4 percent over this same period, it remained 10 times higher than that of air carriers. Between 1997 and 2014, the passenger rail injury rate, measured by deaths per million train-miles, decreased by 18.4 percent.

Passenger Travel and Energy

In 2013 transportation used about 26 quadrillion Btu of energy, making it the second largest sector for fuel and electricity consumption. Highway use continues to dominate transportation fuel consumption, accounting for 83.2 percent of total energy use. Light-duty vehicles (consisting of passenger cars, light trucks, vans, and sport utility vehicles) accounted for the largest share of energy use at 59.2 percent.

Figure 5-9 Energy Use by Transportation Mode: 2013
Total = 26 quadrillion Btu



SOURCES: Calculated by the Bureau of Transportation Statistics based on data from **Air**–Bureau of Transportation Statistics. **Rail Freight**–Association of American Railroads. **Transit**–Federal Transit Administration. **Amtrak**–National Railroad Passenger Corporation (Amtrak), personal communication with Energy Management Department and Government Affairs Department. **Water**–U.S. Department of Energy, Energy Information Administration and U.S. Department of Transportation, Federal Highway Administration. **Pipeline**–U.S. Department of Energy, Energy Information Administration. **Highway**–Federal Highway Administration as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-6, available at http://www.bts.gov as of March 2016.

Table 5-3 Fuel and Electricity Consumption by Transportation Mode: 2000, 2010, and 2014

Units vary by mode

	2000	2010	2014	Percent Change, 2000–2014 Number	Percent
Air					
Certificated carriers[a]					
Jet fuel (million gallons)	13,904	11,057	10,321	-3,583	-25.8%
General aviation[b]					
Aviation gasoline (million gallons)	333	221	197	-136	-40.8%
Jet fuel (million gallons)	972	1,435	1,370	398	40.9%
Highway					
Gasoline, diesel and other fuels (million gallons)					
Light duty vehicle[c]	126,213	123,466	126,644	430	0.3%
Bus	1,112	1,921	2,233	1,121	100.8%
Transit					
Electricity (million kWh)	5,382	6,414	6,673	1,291	24.0%
Motor fuel (million gallons)					
Diesel[d]	591	633	542	-48	-8.2%
Gasoline and other nondiesel fuels[e]	24	98	108	85	358.8%
Compressed natural gas	44	126	138	94	215.6%
Amtrak					
Electricity (million kWh)	470	559	U	U	U
Distillate / diesel fuel (million gallons)	95	63	U	U	U
Water					
Residual fuel oil (million gallons)	6,410	5,143	3,847	-2,563	-40.0%
Distillate / diesel fuel oil (million gallons)	2,261	2,003	1,593	-668	-29.6%
Gasoline (million gallons)	1,124	1,167	1,419	295	26.2%

KEY: kWh = kilowatt-hour; U = unavailable.

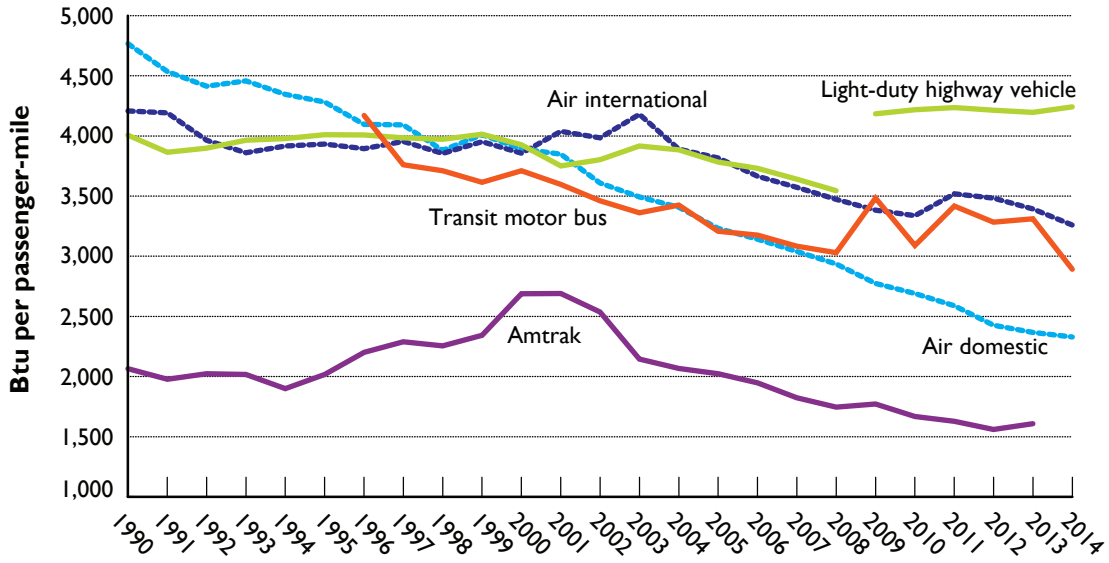
[a]Domestic operations only. [b]General aviation includes fuel used in air taxi operations, but not commuter operations. [c]Light duty vehicle includes all passenger cars, light trucks, vans and sport utility vehicles. [d]Diesel includes diesel and bio-diesel. [e]Gasoline and all other nondiesel fuels include gasoline, liquefied petroleum gas, liquefied natural gas, methane, ethanol, bunker fuel, kerosene, grain additive, hydrogen, and other fuel.

SOURCES: **Air**-Bureau of Transportation Statistics. **Highway**-Federal Highway Administration. Transit-Federal Transit Administration. **Amtrak**-National Railroad Passenger Corporation (Amtrak), personal communication with Energy Management Department and Government Affairs Department. **Water (Residual and distillate / diesel fuel oil)**-U.S. Department of Energy, Energy Information Administration. **Water (Gasoline)**-U.S. Department of Transportation, Federal Highway Administration as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-5, available at http://www.bts.gov as of March 2016.

Certified air carriers experienced the largest total decrease in fuel consumption, consuming about 3.6 billion fewer gallons of jet fuel in 2014 than in 2000. Additionally, water modes powered by residual fuel oil also showed a large decrease, declining by nearly 2.6 billion gallons during the same period. This is likely due to many factors, including the economic recession, a shift to larger vessels, and increases in fuel efficiency. General aviation gasoline showed the largest percent decrease in fuel consumption from 2000 to 2014, declining by 40.8 percent. The shift from piston powered to jet fuel powered turbine engines is likely a factor that contributed to this reduction. Consistent with increases in vehicle-miles traveled, light-duty highway vehicles used about 430 million more gallons of gasoline in 2014 than in 2000.

However, some transportation modes, such as transit, have showed increases in energy consumption. This is likely attributable to several factors, such as increases in transit use as well as additional vehicles and extended transit facilities, routes, and services as shown in table 3-9 in chapter 3.

Figure 5-10 Energy Intensity of Passenger Modes: 1990–2014



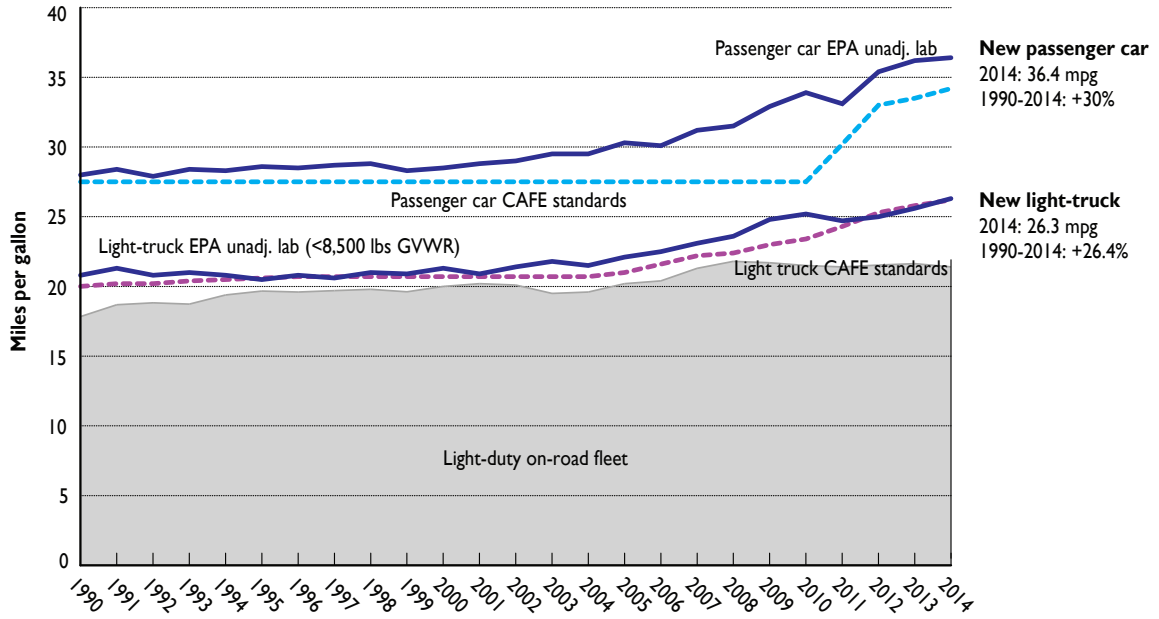
KEY: Btu = Britsh thermal unit

NOTES: Light-duty highway includes passenger cars, light trucks, vans, and sport utility vehicles. Highway data for 2007-2014 were calculated using a new methodology and are not comparable to previous years. A change in vehicle occupancy rates derived from National Household Travel Surveys results in a shift of highway passenger-miles between 2008 and 2009. Energy Intensity (Btu per passenger-mile) = Energy Use (Btu) / passenger-miles; Energy Use calculated by using fuel and electricity usage and converting to energy by using BTS conversion rates. The following conversion rates were used: Diesel =138,700 Btu/gallon. Compressed natural gas = 22,500 Btu/gallon. Bio-Diesel = 126,200 Btu/gallon. Liquefied natural gas = 84,800 Btu/gallon. Gasoline = 125,000 Btu/gallon. Liquefied petroleum gas = 91,300 Btu/gallon. Methanol = 64,600 Btu/gallon. Ethanol = 84,600 Btu/gallon. Bunker fuel = 149,700 Btu/gallon. Kerosene = 135,000 Btu/gallon. Grain additive = 120,900 Btu/gallon. Electricity 1KWH = 3,412 Btu, negating electrical system losses. This table includes approximate electrical system losses, and thus the conversion factor is multiplied by 3.

SOURCES: Highway–Federal Highway Administration. **Air**–Bureau of Transportation Statistics. **Amtrak**–National Railroad Passenger Corporation (Amtrak), personal communication with Energy Management Department and Government Affairs Department and Association of American Railroads. **Transit**–Federal Transit Administration as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics,* table 4-21, 4-22, 4-24, and 4-16, available at www.bts.gov as of March 2016.

The energy intensities of passenger modes, or the energy used per passenger-mile, generally have declined over time except for those of light-duty highway vehicles. After light-duty highway vehicles, transit motor buses typically use the most energy per passenger-mile (although this can vary), followed by certificated air carriers and Amtrak.

Figure 5-11 Average Fuel Efficiency of U.S. Passenger Cars and Light Trucks: 1990–2014



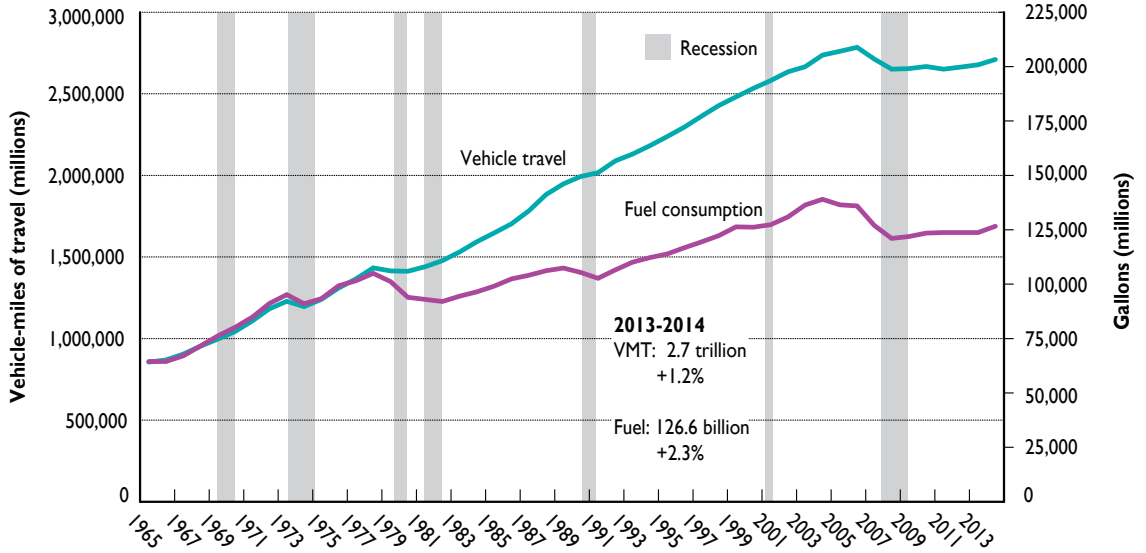
KEY: CAFE = Corporate Average Fuel Economy; GVWR = Gross vehicle weight rating.

NOTES: New vehicle fuel efficiency and CAFE standards assume 55% city and 45% highway-miles. Beginning with model year 2008, Light truck manufacturers have the option to comply with the existing standard values or the new revised standard values based upon each manufacturer unique vehicle fleet characteristics. In model years 2008-2010, the values shown for CAFE standards for Light truck are the standard values applicable under the existing CAFE program.

SOURCE: New vehicle fuel efficiency (based on model year production) and CAFE standards: National Highway Traffic Safety Administration as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-23, available at www.bts.gov as of February 2016.

The average fuel efficiency of the total U.S. passenger-car and light-truck fleet improved by 30.0 and 26.4 percent, respectively, since 1990 as new vehicle efficiency increased. Stricter CAFE standards for fuel efficiency in passenger cars and light trucks have pushed automakers to produce vehicles with better fuel efficiency. The fuel efficiency of new passenger cars rose by 30 percent, from 28.0 mpg in 1990 to 36.4 mpg in 2014. New light trucks, which include vehicles such as pickup trucks, minivans, and SUVs, increased 26.4 percent from 20.8 mpg in 1990 to 26.3 mpg in 2014.

Figure 5-12 Vehicle-Miles of Travel and Fuel Use by Personal Vehicles: 1965–2014



NOTES: Includes passenger cars, light trucks and motorcycles. The definition of a light-duty vehicle was changed after 2006, affecting the vehicle types incuded in the personal vehicle category.

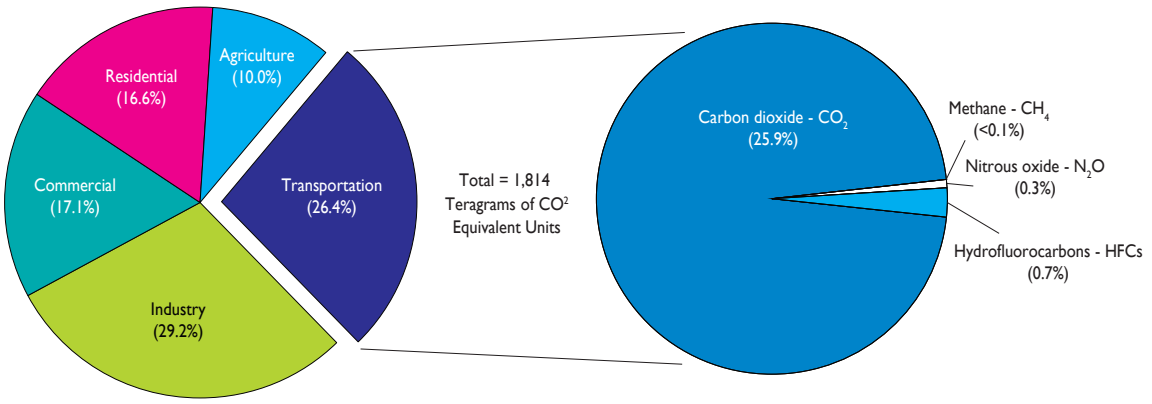
SOURCE: U.S. Department of Transportation, Federal Highway Administration as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-5 and 1-35, available at https:/bts.gov/ as of March 2016.

The Corporate Average Fuel Economy (CAFE) standards were enacted by Congress in 1975. Before 1975 personal vehicle travel and fuel use typically moved in similar trajectories. Fuel economy improvements after 1975 broke this close connection as the amount of fuel used per vehicle-mile of travel steadily decreased. The gap widened further as higher miles per gallon vehicles came to dominate the on-road fleet. Also, economic cycles can influence passenger travel, which, in turn, influences overall fuel use. Economic downturns generally lead to slower growth in vehicle-miles traveled, resulting in slower increases in fuel consumption or even reductions. However, between 2013 and 2014 both vehicle travel and fuel consumption grew to comparable levels seen before the recession in 2007, increasing by 1.2 percent to 2.7 trillion miles and 2.3 percent to 126.6 billion gallons.

Passenger Travel and Air Emissions

The transportation sector is the second largest producer of greenhouse gas (GHG) emissions, accounting for 26.4 percent of total GHG emissions in 2014. Carbon Dioxide (CO_2), which is produced by the combustion of fossil fuels in internal combustion engines, is the predominant GHG emitted by the transportation sector.

Figure 5-13 Transportation-Related Greenhouse Gas Emissions: 2014

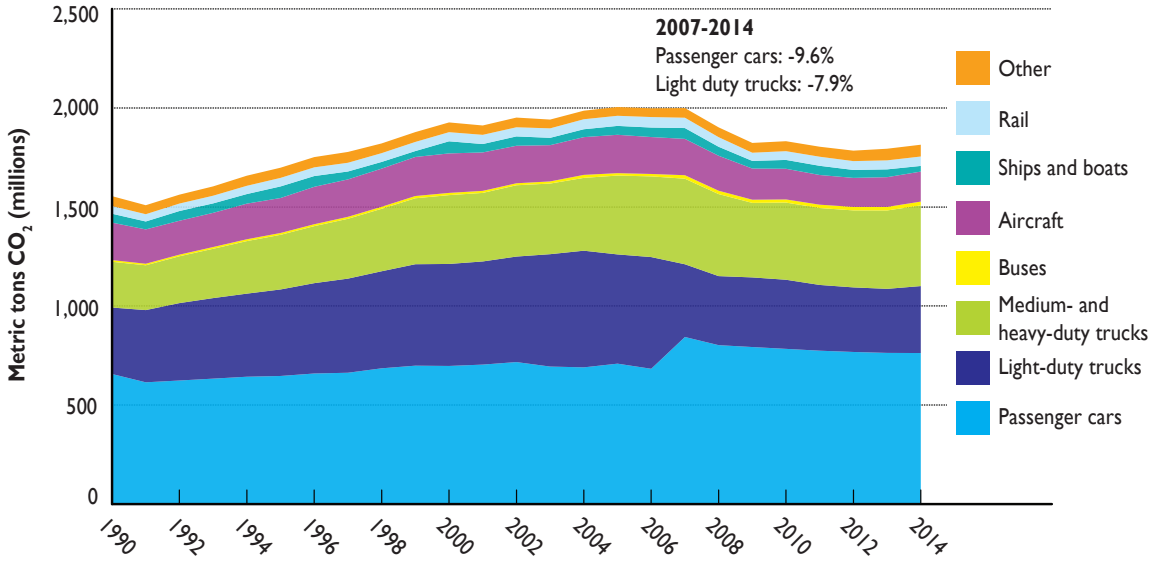


NOTE: Percents may not add to 100 due to rounding. Transportation includes only fossil and renewable fuels consumed directly. Non-transportation includes the residential, commercial, and industrial sectors, which include only fossil fuels consumed directly, and electric utilities, which includes all fuels (fossil, nuclear, geothermal, hydro, and other renewables) used by electric utilities. Most renewable fuels are not included.

SOURCE: U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (2014), tables 2-12 and 2-13, available at http://epa.gov/climatechange/emissions/usinventoryreport.html as of July 2016.

GHG emissions generally track transportation energy use because fossil fuels are the primary source of transportation energy. Passenger cars use the largest share of fuel and emit the largest share of CO_2. The other largest CO_2 emitters that support passenger travel are light-duty trucks, aircraft, ships and boats, other, rail, and buses. Total transportation CO_2 emissions peaked in 2007 and have since steadily declined. By 2014, CO_2 emission levels for all transportation modes decreased by 9.2 percent compared to 2007. From 2007 to 2014, CO_2 emissions from passenger cars and light duty trucks declined by 9.6 and 7.9 percent, respectively.

Figure 5-14 CO_2 GHG Emissions by Mode: 1990–2014



NOTES: Other greenhouse gas emissions are from motorcycles, pipelines, and lubricants. International bunker fuel emissions (not included in the total) result from the combustion of fuels purchased in the United States but used for international aviation and maritime transportation. U.S. Total, all modes; Aircraft; and Ships and boats include emissions data for only domestic activity only as do all other data shown. International emissions from bunker fuels purchased in the United States are not included. Alternative-fuel vehicle emissions are allocated to the specific vehicle types in which they were classified (i.e., passenger cars, light-duty trucks, all other trucks, and buses). CO_2 emissions from the individual modes of other, rail, ships and boats, and aircraft include a portion of total CO_2 emissions due to passenger travel since passenger travel could not be segregated from total CO_2 emissions. The U.S. Environmental Protection Agency (EPA) changed the definitions of passenger cars and light trucks in 2007. Many vehicles formerly classified as light trucks, but designated predominantly for passenger transportation, were reclassified as passenger cars, causing an apparent jump in passenger car emissions that were offset by a compensating drop in light-truck emissions.

SOURCE: U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (2014), table 2-13, available at http://epa.gov/climatechange/emissions/usinventoryreport.html as of July 2016.

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