

# Pocket Guide to Transportation 2020

MAJOR TRENDS

INFRASTRUCTURE

MOVING PEOPLE

MOVING GOODS

SAFETY

PERFORMANCE

ECONOMY

ENVIRONMENT

GLOSSARY



Free Copy - Not Meant for Sale



Printed on paper containing recycled post  
consumer waste paper.



U.S. Department of Transportation  
**Office of the Secretary of Transportation**  
Bureau of Transportation Statistics

# Pocket Guide to Transportation 2020



U.S. Department of Transportation  
**Office of the Secretary of Transportation**  
Bureau of Transportation Statistics

# ACKNOWLEDGMENTS

**U.S. Department of  
Transportation**

**Bureau of  
Transportation  
Statistics**

Patricia Hu  
*Director*

Rolf Schmitt  
*Deputy Director*

**Produced under the  
direction of:**

Michael J. Sprung  
*Director, Office of  
Transportation Analysis*

Sonya Smith-Pickel  
*Project Manager*

William H. Moore  
(Spatial Front)  
*Editor*

Alpha Wingfield  
*Visual Information  
Specialist*

**Major Contributors:**

Demi Riley  
(Spatial Front)

**Contributors:**

Steve Beningo  
Matthew Chambers  
Chester Ford  
Long Nguyen  
Daniel Palumbo  
(Spatial Front)  
Kelsey Taylor

# ABOUT THE *POCKET GUIDE TO TRANSPORTATION*

The Bureau of Transportation Statistics' *Pocket Guide to Transportation* is a quick reference guide that provides transportation statistics at your fingertips. It provides key information and highlights major trends on the U.S. transportation system.

This year features an updated *Pocket Guide* mobile and web app to highlight the most recent up-to-date statistics. Download now to access all the popular features of the classic *Pocket Guide* (available for most devices and phones on the App Store and on Google Play).

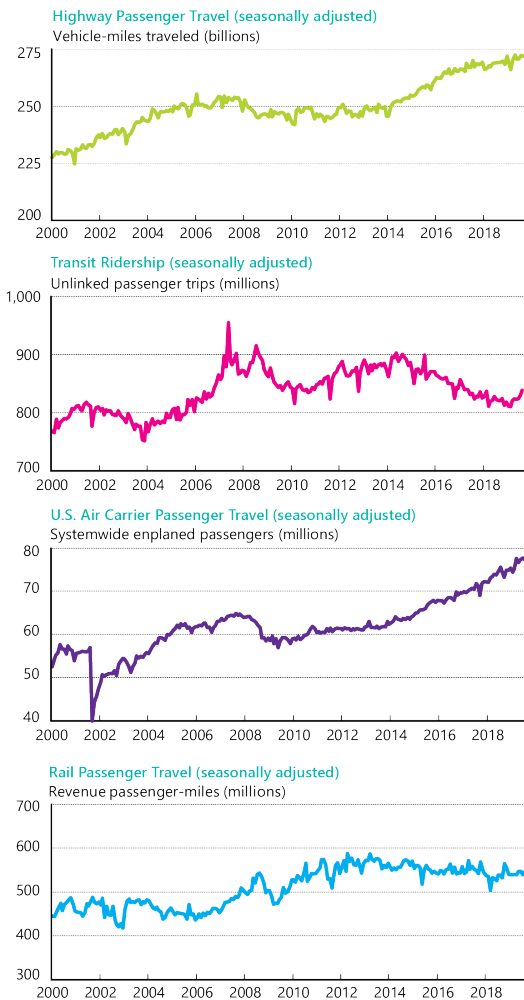
BTS welcomes comments and suggestions for improving this product.

## CONTENTS

|                     |    |
|---------------------|----|
| Major Trends.....   | iv |
| Infrastructure..... | 1  |
| Moving People.....  | 7  |
| Moving Goods.....   | 19 |
| Safety.....         | 27 |
| Performance .....   | 35 |
| Economy .....       | 41 |
| Environment .....   | 49 |
| Glossary .....      | 58 |

## Major Trends

### Moving People: January 2000–August 2019

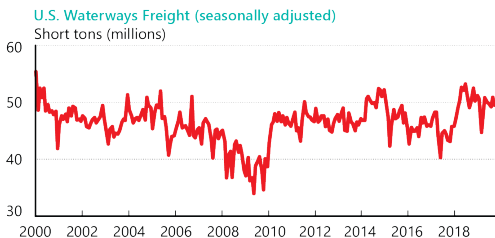
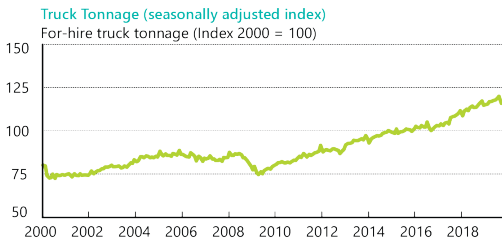
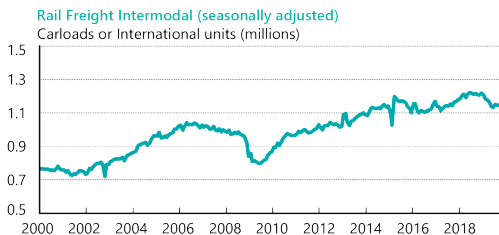
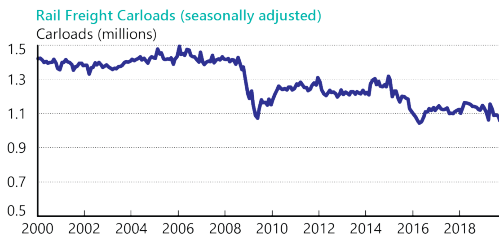


**Notes:** Graph scales are not comparable. Seasonally adjusted data measure the real differences in data trends by adjusting for seasonal factors, such as the change in the number of days, weekends, holidays, or other seasonal activity in a month, such as vacation travel.

**Source:** **Seasonally adjusted transportation data** - U.S. Department of Transportation, Bureau of Transportation Statistics, available at [www.bts.gov](http://www.bts.gov) as of November 2019.

## Major Trends

Moving Freight: January 2000–September 2019



**Notes:** Graph scales are not comparable. **Rail freight intermodal** - Rail intermodal traffic includes shipping containers and truck trailers moved on rail cars. **U.S. waterways freight** - Includes tonnage carried on internal U.S. waterways.

**Source:** Seasonally adjusted transportation data - U.S. Department of Transportation, Bureau of Transportation Statistics, available at [www.bts.gov](http://www.bts.gov) as of November 2019.



# 1 INFRASTRUCTURE

The U.S. transportation system consists of a network of roads, bridges, airports, railroads, transit systems, ports, waterways, and pipelines that connect the Nation to the rest of the world.

## 1-1 Transportation Network Length miles

| Mode                             | 2007      | 2017      |
|----------------------------------|-----------|-----------|
| <b>Highway</b>                   |           |           |
| Public roads                     | 4,032,126 | 4,165,349 |
| Public road lanes <sup>a</sup>   | 8,457,353 | 8,765,578 |
| <b>Pipeline</b>                  |           |           |
| Gas distribution                 | 2,025,731 | 2,223,657 |
| Gas transmission and gathering   | 321,108   | 318,802   |
| <b>Rail</b>                      |           |           |
| Class I freight railroad         | 94,313    | 93,058    |
| Amtrak                           | 21,708    | 21,407    |
| <b>Transit</b>                   |           |           |
| Commuter rail <sup>b</sup>       | 7,135     | 7,815     |
| Heavy rail <sup>b</sup>          | 1,623     | 1,653     |
| Light rail <sup>b,c</sup>        | 1,341     | 2,030     |
| <b>Water</b>                     |           |           |
| Navigable waterways <sup>d</sup> | 25,000    | 25,000    |

<sup>a</sup>Measured in lane-miles. <sup>b</sup>Measured in directional route-miles. <sup>c</sup>Light Rail was revised beginning in 2011 and includes light rail, street car rail, and hybrid rail. <sup>d</sup>Estimated length of domestic waterways.

**Sources: Highway, Pipeline, Rail, Transit, Water**—U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 1-1, 1-6, and 1-10, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of November 2019.



## 1-2 Transportation Facilities

number

| Mode                               | 2007    | 2017    |
|------------------------------------|---------|---------|
| <b>Air</b>                         |         |         |
| Certificated airports <sup>a</sup> | 565     | 526     |
| General aviation airports          | 19,776  | 19,129  |
| <b>Highway</b>                     |         |         |
| Bridges                            | 599,765 | 615,002 |
| <b>Pipeline</b>                    |         |         |
| LNG facilities                     | U       | 151     |
| <b>Rail</b>                        |         |         |
| Amtrak stations                    | 508     | 527     |
| Transit rail                       |         |         |
| Commuter rail stations             | 1,182   | 1,262   |
| Heavy rail stations                | 1,042   | 1,054   |
| Light rail stations <sup>b</sup>   | 773     | 885     |
| <b>Water</b>                       |         |         |
| Ports <sup>c</sup>                 | 192     | 186     |
| Cargo handling docks <sup>d</sup>  | e       | 8,239   |
| Lock chambers                      | 257     | 239     |

<sup>a</sup>Certificated airports serve air carrier operations with aircrafts seating more than nine passengers. <sup>b</sup>Light rail was revised beginning in 2011 and includes light rail, street car rail, and hybrid rail. <sup>c</sup>Ports handling over 250,000 short tons. <sup>d</sup>Data for 2007 and 2017 are not comparable due to changes in data coverage. <sup>e</sup>2007 cargo handling docks number is omitted because it is not comparable to 2017 number due to a change in data collection methodology.

**Key:** LNG = liquified natural gas; U = Data are unavailable.

**Sources:** **Air, Highway, Rail**—U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 1-3, 1-7, and 1-28, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of November 2019. **Pipeline**—U.S. Department of Transportation, Pipeline and Hazardous Materials Administration, available at [www.phmsa.dot.gov](http://www.phmsa.dot.gov) as of November 2019. **Transit**—U.S. Department of Transportation, National Transit Database, available at [www.transit.dot.gov/ntd/](http://www.transit.dot.gov/ntd/) as of November 2019. **Water**—U.S. Army Corps of Engineers, Navigation Data Center, *Transportation Facts and Information*, available at <http://www.navigationdatacenter.us/> as of November 2019.

## 1-3 Transportation Vehicles

number

| Mode                            | 2007        | 2017        |
|---------------------------------|-------------|-------------|
| <b>Air</b>                      |             |             |
| Air carrier aircraft            | 7,732       | 7,141       |
| General aviation aircraft       | 231,607     | 211,757     |
| <b>Highway</b>                  |             |             |
| Light-duty vehicle <sup>a</sup> | 235,678,150 | 250,553,248 |
| Truck                           | 10,752,019  | 12,229,216  |
| Motorcycle                      | 7,138,476   | 8,715,204   |
| <b>Rail</b>                     |             |             |
| Class I freight locomotive      | 24,143      | 26,547      |
| Class I freight car             | 460,172     | 306,268     |
| Amtrak locomotive               | 270         | 419         |
| Amtrak car                      | 1,164       | 1,405       |
| <b>Transit rail</b>             |             |             |
| Commuter rail <sup>b</sup>      | 6,279       | 7,129       |
| Heavy rail <sup>b</sup>         | 11,222      | 10,705      |
| Light rail <sup>b, c</sup>      | 1,802       | 2,557       |
| <b>Water</b>                    |             |             |
| Nonsel-propelled vessel         | 31,654      | 33,128      |
| Self-propelled vessel           | 9,041       | 9,411       |
| Oceangoing vessel               | 220         | 176         |
| Recreational boat               | 12,875,568  | 11,961,568  |

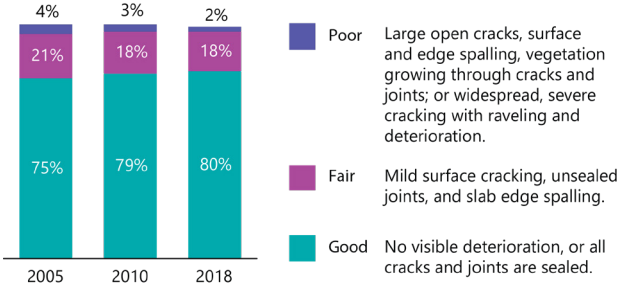
<sup>a</sup>Includes passenger cars, light trucks, vans, and sport utility vehicles.

<sup>b</sup>Includes revenue vehicles available for maximum service. <sup>c</sup>Light rail was revised beginning in 2011.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-11, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of April 2019.

## 1-4 Airport Runway Pavement Condition

percent of NPIAS runways

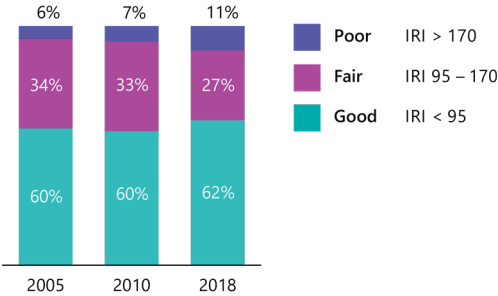


**Note:** National Plan of Integrated Airport Systems (NPIAS) airports include commercial service airports, reliever airports, and selected general aviation airports.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-25, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of November 2019.

## 1-5 National Highway System Pavement Condition

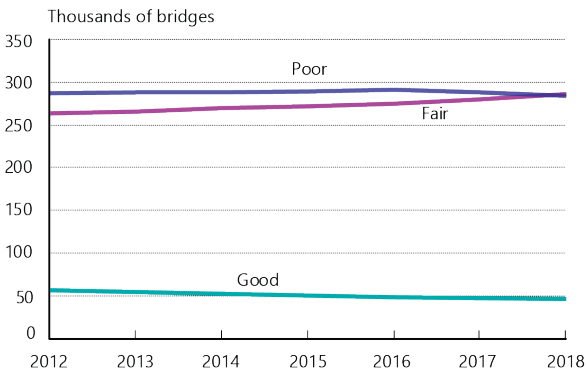
percent of NHS facility miles



**Notes:** Pavement condition is measured by the International Roughness Index (IRI), which takes a longitudinal profile of pavement roughness based on one-way facility centerline miles. A lower IRI indicates smoother highway conditions and a higher IRI indicates rougher highway conditions.

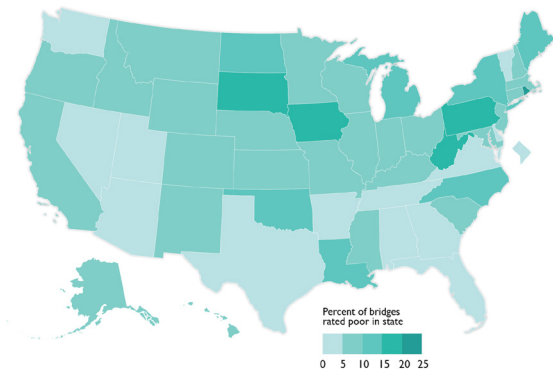
**Source:** U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, table HM-47, available at [www.fhwa.dot.gov/policyinformation/statistics.cfm](http://www.fhwa.dot.gov/policyinformation/statistics.cfm) as of January 2019.

## 1-6 Condition of Highway Bridges: 2012–2018



**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 1-28, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of April 2019.

## 1-7 Bridges Rated in Poor Condition by State: 2018



**Source:** U.S. Department of Transportation, Federal Highway Administration, *National Bridge Inventory*, available at [www.fhwa.dot.gov/bridge/deficient.cfm](http://www.fhwa.dot.gov/bridge/deficient.cfm) as of April 2019.



## 2 MOVING PEOPLE

The U.S. transportation system makes personal mobility possible. Every day people use the transportation system to get to and from work, school, and shopping and for recreational, social, and personal purposes.

### 2-1 Vehicle-Miles Traveled millions

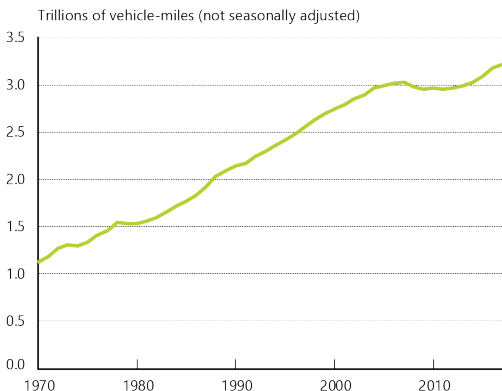
| Mode                                    | 2007      | 2017      |
|---|-----------|-----------|
| <b>Air</b>                              |           |           |
| U.S. air carrier, domestic <sup>a</sup> | 6,733     | 6,337     |
| <b>Highway</b>                          |           |           |
| Light-duty vehicle <sup>b</sup>         | 2,691,034 | 2,877,378 |
| Motorcycle                              | 21,396    | 20,149    |
| Truck                                   | 304,178   | 297,593   |
| Bus                                     | 14,516    | 17,227    |
| <b>Passenger rail</b>                   |           |           |
| Amtrak <sup>c</sup>                     | 267       | 316       |
| Commuter rail <sup>c</sup>              | 325       | 376       |
| Heavy rail <sup>c</sup>                 | 657       | 708       |
| Light rail <sup>c,d</sup>               | 84        | 131       |

<sup>a</sup>Measured in revenue aircraft-miles. <sup>b</sup>Includes passenger cars, light trucks, vans, and sport utility vehicles. <sup>c</sup>Measured in passenger car-miles.

<sup>d</sup>Light rail was revised beginning in 2011 and includes light rail, streetcar rail, and hybrid rail.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-35, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of June 2019.

## 2-2 Highway Travel: 1970–2017



**Note:** Data for 2007 and later years may not be comparable to previous years due to changes in methodology.

**Source:** U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, available at [www.fhwa.dot.gov/policyinformation/statistics/cfm](http://www.fhwa.dot.gov/policyinformation/statistics/cfm) as of March 2019.

## 2-3 Passenger-Miles Traveled

millions

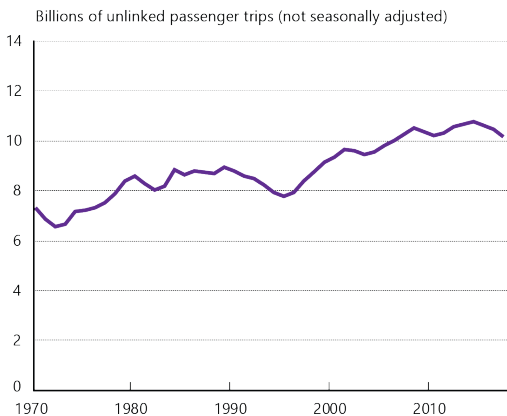
| Mode                            | 2007      | 2017      |
|---------------------------------|-----------|-----------|
| <b>Air</b>                      |           |           |
| U.S. air carrier, domestic      | 607,564   | 693,818   |
| <b>Highway</b>                  |           |           |
| Light-duty vehicle <sup>a</sup> | 4,341,984 | 4,816,223 |
| Motorcycle                      | 27,173    | 23,382    |
| Truck                           | 304,178   | 297,593   |
| Bus                             | 307,753   | 365,220   |
| <b>Passenger rail</b>           |           |           |
| Amtrak <sup>b</sup>             | 5,783     | 6,563     |
| Commuter rail                   | 11,137    | 12,321    |
| Heavy rail                      | 16,138    | 17,702    |
| Light rail <sup>c</sup>         | 1,930     | 2,795     |

<sup>a</sup> Includes passenger cars, light trucks, vans, and sport utility vehicles. <sup>b</sup> Measured in revenue passenger-miles. <sup>c</sup> Light rail was revised beginning in 2011 and includes light rail, streetcar rail, and hybrid rail.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-40, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of June 2019.



## 2-4 Transit Ridership: 1970–2017



**Note:** Includes bus, commuter rail, demand response, heavy rail, light rail, trolley bus, ferry boat, aerial tramway, automated guideway, cable car, inclined plane, monorail, and other.

**Source:** American Public Transportation Association, *Public Transportation Fact Book*, Appendix, available at [www.apta.com/Pages/default.aspx/](http://www.apta.com/Pages/default.aspx/) as of June 2019.

## 2-5 Daily Passenger Travel

|  | 2001 | 2009 | 2017 <sup>a</sup> |
|--|------|------|-------------------|
| <b>Travel per person</b>                   |      |      |                   |
| Daily person trips                         | 4.1  | 3.8  | 3.4               |
| Daily person-miles                         | 36.9 | 36.1 | 36.1              |
| <b>Travel per driver</b>                   |      |      |                   |
| Daily vehicle trips                        | 3.4  | 3.0  | 2.7               |
| Daily vehicle-miles of travel              | 32.7 | 29.0 | 25.8              |
| <b>Average commute</b>                     |      |      |                   |
| Length in miles                            | 12.1 | 11.8 | 11.5              |
| Travel time in minutes                     | 23.3 | 23.9 | 26.6              |
| <b>Percent of work trips by usual mode</b> |      |      |                   |
| Private vehicles                           | 90.8 | 89.4 | 87.5              |
| Public transit <sup>b</sup>                | 5.1  | 5.1  | 6.9               |
| Walk                                       | 2.8  | 2.8  | 2.9               |
| Other <sup>c</sup>                         | 1.3  | 2.7  | 2.7               |

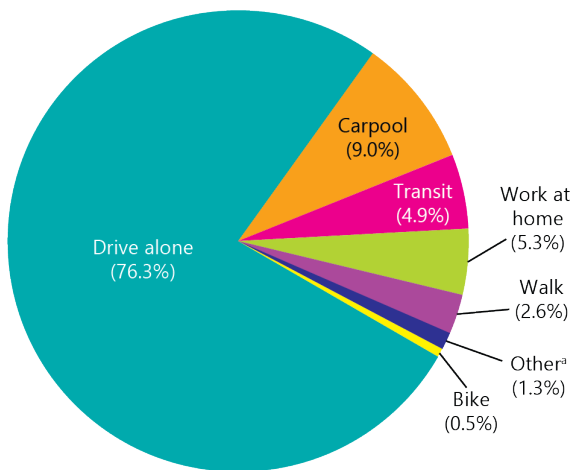
<sup>a</sup>The 2017 National Household Travel Survey includes a different methodology compared to previous years, such as an address-based sample, including more urban and cell phone only households. <sup>b</sup>Public transit includes local bus, commuter bus, commuter train, subway, trolley, and streetcar. <sup>c</sup>“Other” includes travel modes not specifically cited, such as motorcycle, taxi, bike, truck, and other.

**Note:** The usual mode is defined as the means of transportation normally used to go to work in the week prior to the travel day.

**Source:** U.S. Department of Transportation, Federal Highway Administration, *2017 National Household Travel Survey*, Summary of Travel Trends, available at [nhts.ornl.gov/](https://nhts.ornl.gov/) as of September 2018.

## 2-6 Commute Mode Share: 2018

percent of workers age 16 and older

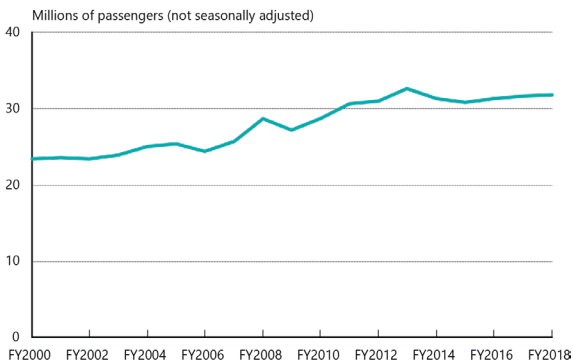


<sup>a</sup> Includes motorcycle, taxi, and other means.

**Notes:** Percents may not add to 100 due to rounding. *The American Community Survey* asks for the mode usually used by the respondent to get to work. For more than one mode of transportation, respondents select the mode used for most of the distance traveled.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-41, available at [www.bts.gov](http://www.bts.gov) as of October 2019.

## 2-7 Amtrak Ridership: FY2000–FY2018



**Source:** U.S. Department of Transportation, Federal Railroad Administration, available at [safetydata.fra.dot.gov/officeofsafety/default.aspx/](https://safetydata.fra.dot.gov/officeofsafety/default.aspx/) as of May 2019.

## 2-8 Top 10 Amtrak Stations: FY2018

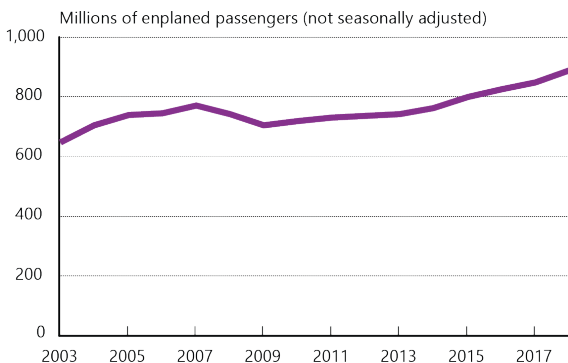
by passengers

| Rank | Station                   | FY '17–FY '18 change | Millions of passengers |
|------|---------------------------|----------------------|------------------------|
| 1    | New York Penn Station, NY | ▼ -5.2%              | 9.9                    |
| 2    | Washington, DC            | ▼ -3.6%              | 5.0                    |
| 3    | Philadelphia 30th St, PA  | ▲ 0.1%               | 4.4                    |
| 4    | Chicago, IL               | ▼ -2.8%              | 3.3                    |
| 5    | Boston South Station, MA  | ▼ -2.2%              | 1.5                    |
| 6    | Los Angeles, CA           | ▼ -15.7%             | 1.4                    |
| 7    | Sacramento, CA            | ▼ -0.1%              | 1.1                    |
| 8    | Baltimore, MD             | ▼ -3.5%              | 1.0                    |
| 9    | Albany-Rensselaer, NY     | ▼ -1.6%              | 0.8                    |
| 10   | Providence, RI            | ▲ 1.7%               | 0.8                    |

**Note:** Includes passenger boardings and alightings.

**Source:** Amtrak, *National Fact Sheet and State Fact Sheet*, available at [www.amtrak.com/home.html](http://www.amtrak.com/home.html) as of April 2019.

## 2-9 U.S. Air Carrier Passenger Traffic: 2003–2018



**Note:** Includes passenger enplanements on scheduled services only (domestic and international flights).

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, Office of Airline Information, T-100 Market data, available at [www.bts.gov](http://www.bts.gov) as of November 2019.

## 2-10 Top 10 U.S. Airports: 2018 by enplaned passengers

| Rank | Airport               | '17-'18 change | Millions of passengers |
|------|-----------------------|----------------|------------------------|
| 1    | Atlanta, GA           | ▲ 3.2%         | 51.9                   |
| 2    | Los Angeles, CA       | ▲ 3.6%         | 42.7                   |
| 3    | Chicago O'Hare, IL    | ▲ 3.4%         | 39.9                   |
| 4    | Dallas/Fort Worth, TX | ▲ 3.1%         | 32.8                   |
| 5    | Denver, CO            | ▲ 5.2%         | 31.4                   |
| 6    | New York JFK, NY      | ▲ 3.6%         | 30.6                   |
| 7    | San Francisco, CA     | ▲ 3.5%         | 27.8                   |
| 8    | Seattle, WA           | ▲ 6.2%         | 24.0                   |
| 9    | Las Vegas, NV         | ▲ 2.1%         | 23.7                   |
| 10   | Orlando, FL           | ▲ 7.6%         | 23.2                   |

**Note:** Includes passenger enplanements on U.S. carrier scheduled domestic and international service and foreign carrier scheduled international service to and from the United States.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-44, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019.

## 2-11 Top 10 World Airports: 2018

by enplaned, deplaned, and in-transit passengers

| Rank | Airport                     | '17-'18 change | Millions of passengers |
|------|-----------------------------|----------------|------------------------|
| 1    | Atlanta, USA                | ▲ 3.3%         | 107.4                  |
| 2    | Beijing, China              | ▲ 5.4%         | 101.0                  |
| 3    | Dubai, United Arab Emirates | ▲ 1.0%         | 89.1                   |
| 4    | Los Angeles, USA            | ▲ 3.5%         | 87.5                   |
| 5    | Tokyo Haneda, Japan         | ▲ 4.4%         | 86.5                   |
| 6    | Chicago O'Hare, USA         | ▲ 4.3%         | 83.3                   |
| 7    | London LHR, United Kingdom  | ▲ 2.7%         | 80.1                   |
| 8    | Hong Kong, China            | ▲ 2.6%         | 74.5                   |
| 9    | Shanghai PVG, China         | ▲ 5.7%         | 74.0                   |
| 10   | Paris CDG, France           | ▲ 4.0%         | 72.2                   |

**Note:** Preliminary data for passengers enplaned, deplaned, and passengers in transit.

LHR = London Heathrow Airport;

PVG = Shanghai Pudong Airport;

CDG = Charles de Gaulle Airport

**Source:** Airports Council International, available at [www.aci.aero/](http://www.aci.aero/) as of September 2019.

## 2-12 Incoming Land Border Person Crossings: 1995–2018



**Note:** Excludes drivers and passengers in commercial trucks.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *Border Crossing Entry Data*, available at [www.bts.gov/content/border-crossing-entry-data/](http://www.bts.gov/content/border-crossing-entry-data/) as of November 2019.

## 2-13 Top 5 Land Ports of Entry: 2018

by incoming person crossings

### U.S. - Mexico ports of entry

| Rank | Port            | '17-'18 change | Millions of person crossings |
|------|-----------------|----------------|------------------------------|
| 1    | San Ysidro, CA  | ▲ 7.8%         | 34.7                         |
| 2    | El Paso, TX     | ▲ 1.8%         | 29.6                         |
| 3    | Otay Mesa, CA   | ▼ -1.5%        | 16.8                         |
| 4    | Laredo, TX      | ▲ 6.2%         | 15.1                         |
| 5    | Brownsville, TX | ▲ 1.0%         | 13.0                         |

### U.S. - Canada ports of entry

| Rank | Port                      | '17-'18 change | Millions of person crossings |
|------|---------------------------|----------------|------------------------------|
| 1    | Buffalo-Niagara Falls, NY | ▲ 2.3%         | 11.5                         |
| 2    | Blaine, WA                | ▲ 4.3%         | 8.5                          |
| 3    | Detroit, MI               | ▼ -0.4%        | 6.8                          |
| 4    | Port Huron, MI            | ▲ 0.7%         | 3.1                          |
| 5    | Champlain-Rouses Pt., NY  | ▼ -0.9%        | 2.7                          |

**Note:** Excludes drivers and passengers in commercial trucks.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *Border Crossing Entry Data*, available at [www.bts.gov/content/border-crossing-entry-data/](http://www.bts.gov/content/border-crossing-entry-data/) as of November 2019.





## 3 MOVING GOODS

The freight transportation network links natural resources, manufacturing facilities, labor markets, and customers across the Nation and with international trading partners.

### 3-1 Freight Shipments Within the U.S. by Mode

Value of shipments (billions of constant 2012 dollars)

| Mode                        | 2012          | 2018          | 2045          |
|-----------------------------|---------------|---------------|---------------|
| Truck                       | 12,216        | 12,975        | 24,001        |
| Rail                        | 721           | 782           | 1,629         |
| Water                       | 431           | 545           | 872           |
| Air and truck-air           | 674           | 593           | 3,208         |
| Pipeline                    | 1,325         | 1,533         | 1,901         |
| Multiple modes <sup>a</sup> | 2,122         | 2,265         | 4,970         |
| Other <sup>b</sup>          | 241           | 215           | 484           |
| <b>Total</b>                | <b>17,729</b> | <b>18,907</b> | <b>37,064</b> |

Weight of shipments (millions of tons)

| Mode                        | 2012          | 2018          | 2045          |
|-----------------------------|---------------|---------------|---------------|
| Truck                       | 10,700        | 11,920        | 16,415        |
| Rail                        | 1,797         | 1,782         | 2,250         |
| Water                       | 658           | 838           | 942           |
| Air and truck-air           | 7             | 6             | 26            |
| Pipeline                    | 3,031         | 3,346         | 4,766         |
| Multiple modes <sup>a</sup> | 418           | 504           | 800           |
| Other <sup>b</sup>          | 342           | 221           | 273           |
| <b>Total</b>                | <b>16,952</b> | <b>18,616</b> | <b>25,472</b> |

Ton miles of shipments (billions of ton miles)

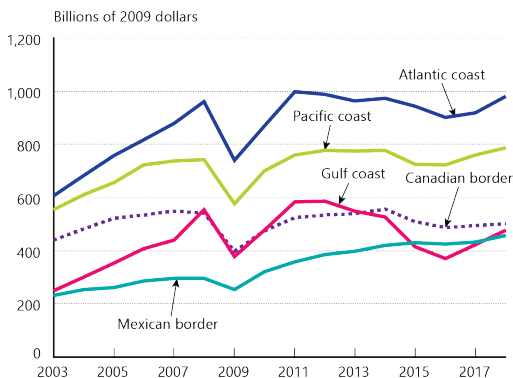
| Mode                        | 2012         | 2018         | 2045         |
|-----------------------------|--------------|--------------|--------------|
| Truck                       | 1,886        | 2,070        | 3,274        |
| Rail                        | 1,461        | 1,431        | 1,760        |
| Water                       | 323          | 361          | 418          |
| Air and truck-air           | 6            | 6            | 21           |
| Pipeline                    | 857          | 979          | 1,414        |
| Multiple modes <sup>a</sup> | 339          | 398          | 765          |
| Other <sup>b</sup>          | 7            | 3            | 16           |
| <b>Total</b>                | <b>4,879</b> | <b>5,251</b> | <b>7,668</b> |

<sup>a</sup>Includes mail. <sup>b</sup>Includes other, unknown, and imported crude oil with no domestic mode.

**Notes:** Details may not add to totals due to rounding. Includes domestic trade and the domestic portion of imports and exports.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics and Federal Highway Administration, Freight Analysis Framework, Version 4.5.1, available at [www.bts.gov/faf](http://www.bts.gov/faf) as of November 2019.

## 3-2 U.S. Trade by Coasts and Borders: 2003–2017



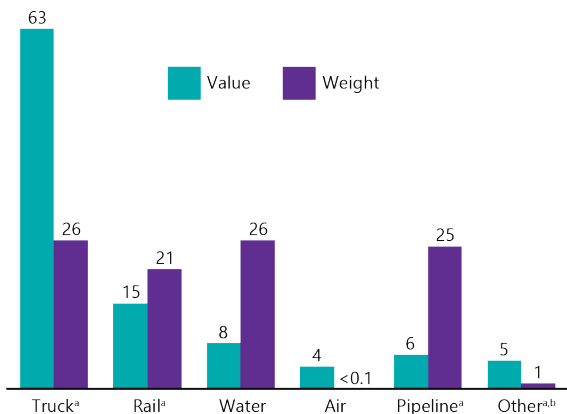
**Note:** Includes U.S.-international merchandise trade only.

**Sources: Value**— U.S. Department of Commerce, Census Bureau, Foreign Trade Division, HS Port-Level Data (Washington, DC: annual issues) as of July 2019.

**Implicit GDP Deflator**— Organization for Economic Co-operation and Development, GDP Implicit Price Deflator in United States [USAGDPDEFAISMEI], retrieved from FRED, Federal Reserve Bank of St. Louis; available at [fred.stlouis-fed.org/series/USAGDPDEFAISMEI](https://fred.stlouis-fed.org/series/USAGDPDEFAISMEI), available at [www.bea.gov](http://www.bea.gov) as of July 2019.

### 3-3 U.S. Trade with Canada and Mexico by Mode: 2018

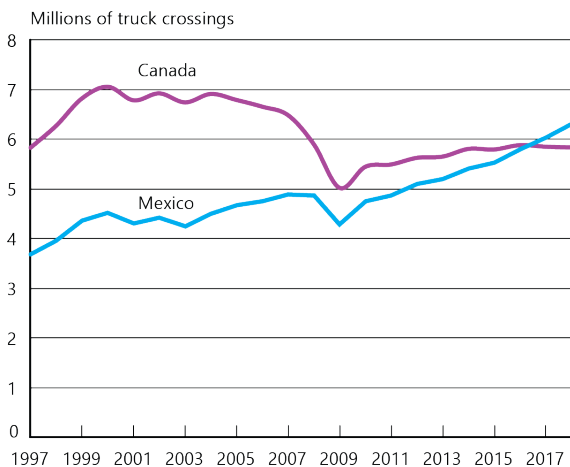
Percent of freight trade



<sup>a</sup> Export weights for land modes are estimated by the Bureau of Transportation Statistics using value-to-weight ratios derived from import data. <sup>b</sup> Includes mail, other, unknown, and shipments through Foreign Trade Zones.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, North American Transborder Freight Data, special tabulation, available at [www.bts.gov/transborder](http://www.bts.gov/transborder) as of May 2019.

### 3-4 Incoming Truck Border Crossings: 1997–2018

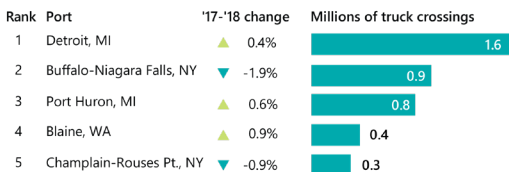


**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, Border Crossing Entry Data, available at [data.transportation.gov/](https://data.transportation.gov/) as of November 2019.

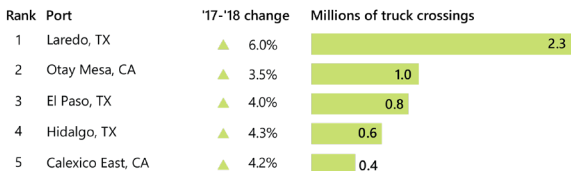
## 3-5 Top 5 Truck Ports of Entry: 2018

by incoming truck crossings

### U.S. - Canada ports of entry



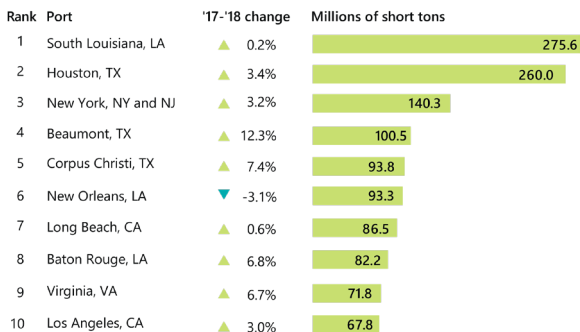
### U.S. - Mexico ports of entry



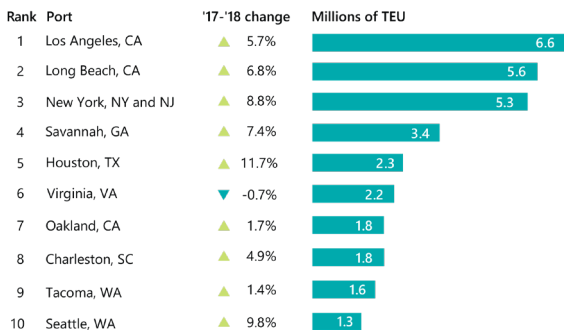
**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, Border Crossing Entry Data, available at [data.transportation.gov/](https://data.transportation.gov/) as of November 2019.

## 3-6 Top 10 U.S. Water Ports: 2018

### by short tons



### by TEUs



**Key:** TEU = twenty-foot equivalent unit.

**Note:** Includes domestic and foreign waterborne trade. Excludes foreign empty TEUs.

**Sources:** U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, personal communication, as of November 2019.

### 3-7 Top 10 World Container Ports: 2018

TEUs, including full and empty containers

| Rank | Port            | '17-'18 change | Millions of TEU |
|------|-----------------|----------------|-----------------|
| 1    | Shanghai        | ▲ 4.4%         | 42.0            |
| 2    | Singapore       | ▲ 8.7%         | 36.6            |
| 3    | Ningbo-Zhoushan | ▲ 6.9%         | 26.4            |
| 4    | Shenzhen        | ▲ 2.1%         | 25.7            |
| 5    | Guangzhou       | ▲ 7.6%         | 21.9            |
| 6    | Busan           | ▲ 5.5%         | 21.7            |
| 7    | Hong Kong       | ▼ -5.6%        | 19.6            |
| 8    | Qingdao         | ▲ 5.5%         | 19.3            |
| 9    | Tianjin         | ▲ 6.2%         | 16.0            |
| 10   | Dubai           | ▼ -2.9%        | 15.0            |
| 17   | Los Angeles     | ▲ 1.3%         | 9.5             |
| 20   | Long Beach      | ▲ 3.7%         | 8.1             |











**Key:** TEU = twenty-foot equivalent unit.



**Source:** United Nations Conference on Trade and Development, Review of Maritime Transport, available at [unctad.org/en/Pages/Home.aspx](http://unctad.org/en/Pages/Home.aspx) as of November 2019.



## 3-8 Top 10 U.S. International Trade Gateways: 2017

by value of shipments

| Rank | Port                     | Mode  | '16-'17 change | Billions of dollars |
|------|--------------------------|---|----------------|---------------------|
| 1    | Los Angeles, CA          |  | ▲ 2.4%         | 214.8               |
| 2    | Laredo, TX               |  | ▲ 7.7%         | 208.0               |
| 3    | New York/New Jersey, NY  |  | ▲ 3.1%         | 193.0               |
| 4    | New York JFK Airport, NY |  | ▼ -0.6%        | 182.8               |
| 5    | Long Beach, CA           |  | ▲ 12.7%        | 169.3               |
| 6    | Chicago, IL              |  | ▲ 11.4%        | 159.9               |
| 7    | Detroit, MI              |  | ▲ 2.6%         | 133.5               |
| 8    | Houston, TX              |  | ▲ 16.9%        | 130.7               |
| 9    | Los Angeles Airport, CA  |  | ▲ 11.7%        | 113.0               |
| 10   | Savannah, GA             |  | ▲ 8.7%         | 89.9                |

**Key:**  = airport,  = land port,  = water port.

**Notes:** Air gateways include a low level (generally less than 3% of the total value) of freight shipped through small user-fee airports located in the same area as the gateways listed. Air gateways not identified by airport name (e.g., Chicago, IL) include major airport(s) in the area and small regional airports.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-51, available at [www.bts.gov](http://www.bts.gov) as of November 2018.

## 4 SAFETY

Transportation safety is the top priority of the U.S. Department of Transportation.

### 4-1 Transportation Fatalities by Mode

| Mode                                      | 2008          | 2017          | 2018          |
|---|---------------|---------------|---------------|
| <b>Air</b>                                | <b>568</b>    | <b>347</b>    | <b>393</b>    |
| U.S. air carrier                          | 3             | 0             | 1             |
| Commuter carrier                          | 0             | 0             | 0             |
| On-demand air taxi                        | 69            | 16            | 12            |
| General aviation                          | 496           | 331           | 381           |
| <b>Highway</b>                            | <b>37,423</b> | <b>37,473</b> | <b>36,560</b> |
| Passenger car occupants                   | 14,646        | 13,477        | 12,775        |
| Motorcyclists                             | 5,312         | 5,229         | 4,985         |
| Light-truck occupants                     | 10,816        | 10,186        | 9,922         |
| Heavy-truck occupants                     | 682           | 878           | 885           |
| Bus occupants                             | 67            | 43            | 43            |
| Pedestrians                               | 4,414         | 6,075         | 6,283         |
| Pedalcyclists                             | 718           | 806           | 857           |
| Other                                     | 768           | 779           | 810           |
| <b>Pipeline</b>                           | <b>8</b>      | <b>20</b>     | <b>8</b>      |
| <b>Rail</b>                               | <b>804</b>    | <b>817</b>    | <b>831</b>    |
| Train Accidents                           | 27            | 7             | 8             |
| Highway-rail grade crossing <sup>a</sup>  | 290           | 271           | 262           |
| Trespassers                               | 457           | 504           | 532           |
| Other                                     | 30            | 35            | 29            |
| <b>Transit<sup>b</sup></b>                | <b>192</b>    | <b>239</b>    | <b>251</b>    |
| <b>Water</b>                              | <b>854</b>    | <b>709</b>    | <b>684</b>    |
| Freight vessel and Industrial/Other       | 80            | 43            | 25            |
| Passenger vessel and Recreational boating | 774           | 666           | 659           |

<sup>a</sup>Individual modes don't add up to totals due to double counting in highway, rail, and transit grade crossings. <sup>b</sup>Includes transit employee, contract worker, passenger, people waiting or leaving (revenue facility occupant), and other fatalities for all modes reported to the National Transit Database. Excludes commuter rail (reporting under FRA jurisdiction). Other transit fatalities are assumed to be counted under Highway or Rail categories.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-1, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019.

## 4-2 Transportation Injuries by Mode

| Mode   | 2008             | 2017             | 2018          |
|--|------------------|------------------|---------------|
| <b>Air</b>                                   | <b>293</b>       | <b>229</b>       | <b>272</b>    |
| U.S. air carrier                             | 20               | 19               | 25            |
| Commuter carrier                             | 2                | 0                | 0             |
| On-demand air taxi                           | 12               | 4                | 17            |
| General aviation                             | 259              | 206              | 230           |
| <b>Highway<sup>a</sup></b>                   | <b>2,356,000</b> | <b>2,745,000</b> | <b>U</b>      |
| Passenger car occupants <sup>a</sup>         | 1,308,000        | 1,529,000        | U             |
| Motorcyclists <sup>a</sup>                   | 96,000           | 89,000           | U             |
| Light-truck occupants <sup>a</sup>           | 773,000          | 937,000          | U             |
| Heavy-truck occupants <sup>a</sup>           | 24,000           | 40,000           | U             |
| Bus occupants <sup>a</sup>                   | 16,000           | 12,000           | U             |
| Pedestrians <sup>a</sup>                     | 69,000           | 71,000           | U             |
| Pedalcyclists <sup>a</sup>                   | 52,000           | 50,000           | U             |
| Other <sup>a</sup>                           | 18,000           | 17,000           | U             |
| <b>Pipeline</b>                              | <b>56</b>        | <b>38</b>        | <b>90</b>     |
| <b>Rail</b>                                  | <b>9,062</b>     | <b>8,871</b>     | <b>8,196</b>  |
| Train Accidents                              | 321              | 316              | 202           |
| Highway-rail grade crossing <sup>b</sup>     | 990              | 844              | 840           |
| Trespassers                                  | 432              | 510              | 483           |
| Other  | 7,319            | 7,201            | 6,671         |
| <b>Transit<sup>c</sup></b>                   | <b>24,644</b>    | <b>22,829</b>    | <b>22,522</b> |
| <b>Water</b>                                 | <b>3,887</b>     | <b>3,084</b>     | <b>2,967</b>  |
| Freight vessel and<br>Industrial/Other       | 355              | 244              | 254           |
| Passenger vessel and<br>Recreational boating | 3,532            | 2,840            | 2,713         |

<sup>a</sup>2017 and 2018 Crash Reporting Sampling System (CRSS) estimates for injuries are not comparable with 2008 and earlier National Automotive Sampling System, General Estimates System (NASS GES) estimates because of different sampling designs. <sup>b</sup>Excludes injuries involving motor vehicles at public highway-rail grade crossings, which are assumed to be counted under Highway categories. <sup>c</sup>Includes transit employee, contract worker, passenger, people waiting or leaving (revenue facility occupant), and other injuries for all modes reported to the National Transit Database. Excludes commuter rail (reporting under Federal Railroad Administration jurisdiction). Other transit injuries are assumed to be counted under Highway or Rail categories.

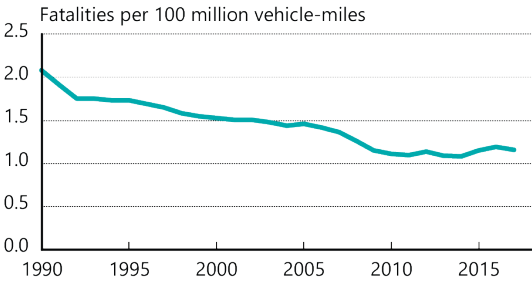
**Notes:** Highway numbers are estimates rather than actual counts. The estimates are calculated from data obtained from a nationally representative sample of crashes. National Highway Traffic Safety Administration (NHTSA) redesigned the nationally representative sample of police-reported traffic crashes, which estimates the number of police-reported injury and property-damage-only crashes in the United States. The new system, CRSS, replaced the NASS GES in 2016 and has a different sample design. Thus, the 2017 and 2018 persons injured estimates are not comparable to earlier estimates.

**Key:** U = Data are unavailable.

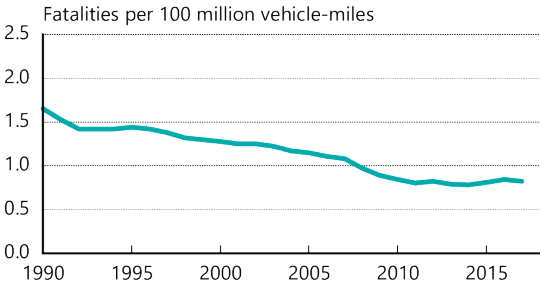
**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-2, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of November 2019.

### 4-3 Fatality Rates by Mode

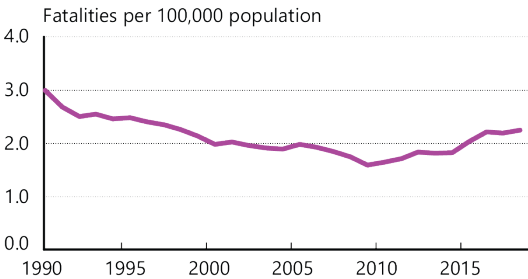
Highway: 1990–2018



Passenger car and light-truck occupants: 1990–2018



Highway nonoccupants: 1990–2018

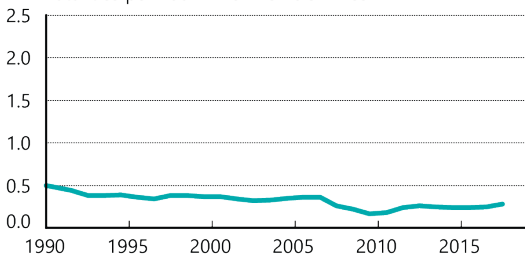


continued on next page

## 4-3 Fatality Rates by Mode (continued)

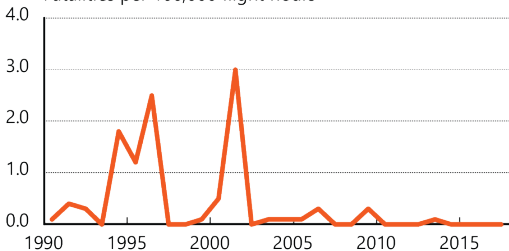
### Large-truck occupants: 1990–2018

Fatalities per 100 million vehicle-miles



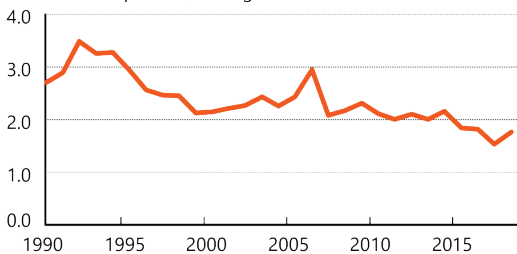
### U.S. air carriers: 1990–2018

Fatalities per 100,000 flight hours



### General aviation: 1990–2018

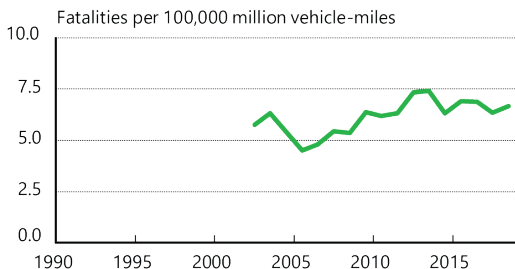
Fatalities per 100,000 flight hours



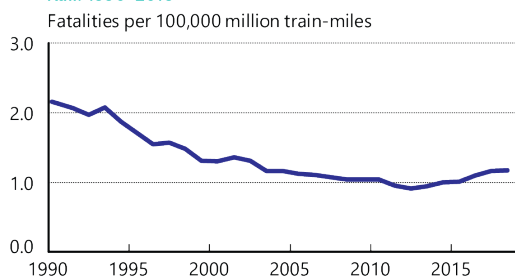
continued on next page

## 4-3 Fatality Rates by Mode (continued)

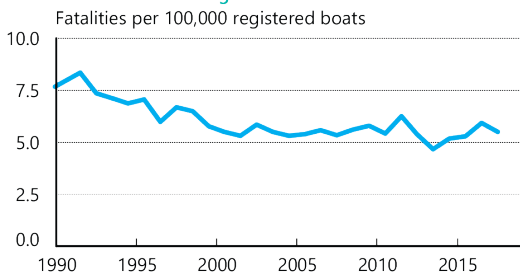
### Transit: 1990–2018



### Rail: 1990–2018



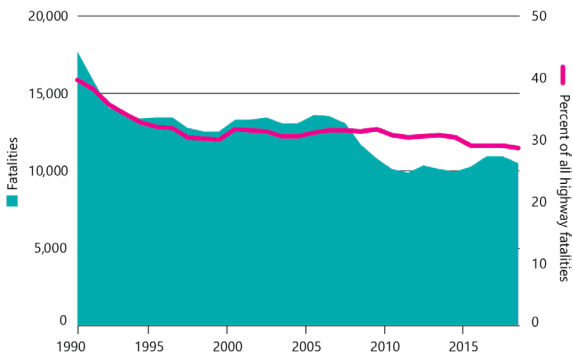
### Recreational boating: 1990–2018



**Notes:** Graphs with same color trend lines have identical scales. Transit fatality rate not available prior to 2002.

**Sources:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 2-9, 2-14, 2-17, 2-19, 2-21, 2-23, 2-47, and 3-10 available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019. **Transit** - U.S. Department of Transportation, Federal Transit Administration, NTD Safety & Security Time Series Data, available at [www.transit.dot.gov/ntd](http://www.transit.dot.gov/ntd) as of October 2019. **Rail** - U.S. Department of Transportation, Federal Railroad Administration, table 1.12, available at [safetydata.fra.dot.gov/](http://safetydata.fra.dot.gov/) as of October 2019.

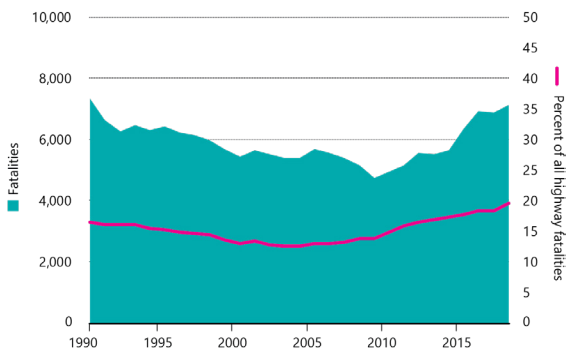
## 4-4 Alcohol-Impaired Driving Fatalities: 1990–2018



**Note:** Includes fatalities occurring in any crash involving a driver with a blood alcohol concentration (BAC) of 0.08 grams per deciliter or higher.

**Source:** U.S. Department of Transportation, National Highway Traffic Safety Administration, *Traffic Safety Facts: 2018 Fatal Motor Vehicle Crashes: Overview* as of October 2019.

## 4-5 Pedestrian and Bicyclist Fatalities: 1990–2018



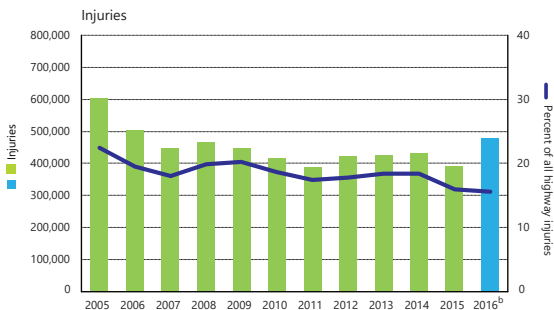
**Note:** Includes pedestrians and riders of nonmotorized bicycles and other pedal-powered vehicles.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-1, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019.

## 4-6 Distracted Driving Fatalities and Injuries: 2005–2018



**Note:** Distracted driving fatality data for 2010 and on are not comparable with previous years due to changes in methodology.



<sup>a</sup>Distracted driving fatality data for 2010 and on are not comparable with previous years due to changes in methodology. <sup>b</sup>2016 Crash Reporting Sampling System (CRSS) estimates for injuries are not comparable with 2015 and earlier National Automotive Sampling System, General Estimates System (NASS GES) estimates because of different sampling designs.

**Note:** Distracted driving involves any activity that could divert a person's attention away from the primary task of driving, such as texting, using a cell phone, eating and drinking, grooming, using a navigation system, adjusting a radio, etc.

**Source:** U.S. Department of Transportation, National Highway Traffic Safety Administration, available at [www.nhtsa.gov](http://www.nhtsa.gov) as of October 2019.

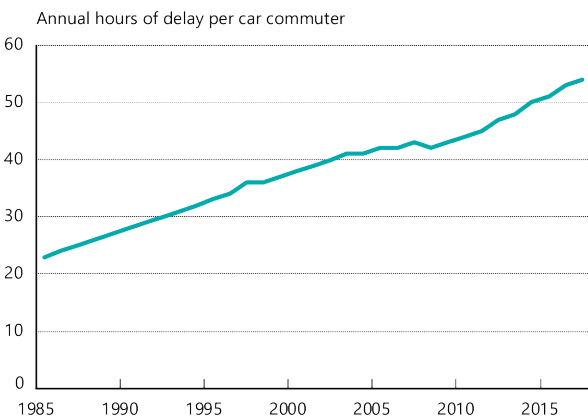




## 5 PERFORMANCE

The physical capacity of the U.S. transportation system has not kept pace with growth in travel and commerce. The resulting congestion and delays have significant impacts on passengers and freight shippers.

### 5-1 Road Congestion: 1985–2017



**Notes: Annual hours of delay per car commuter** - The extra time spent during the year traveling at congested speeds rather than free-flow speeds by private vehicle drivers and passengers who typically travel in the peak periods.

The methodology to calculate congestion performance measures was updated to reflect more comprehensive data collection using INRIX data for each of the 494 U.S. urban areas. The congestion estimates for all study years are recalculated every time the methodology is altered to provide a consistent data trend. For a detailed explanation of the updated methodology, see the *Urban Mobility Report* at [mobility.tamu.edu/ums/report/](http://mobility.tamu.edu/ums/report/).

**Source:** Texas A&M Transportation Institute, *Urban Mobility Report*, available at [mobility.tamu.edu/umr/report/](http://mobility.tamu.edu/umr/report/) as of September 2019.

## 5-2 Top 10 Metropolitan Area Congestion Rankings: 2018

by calendar year average minutes of congestion

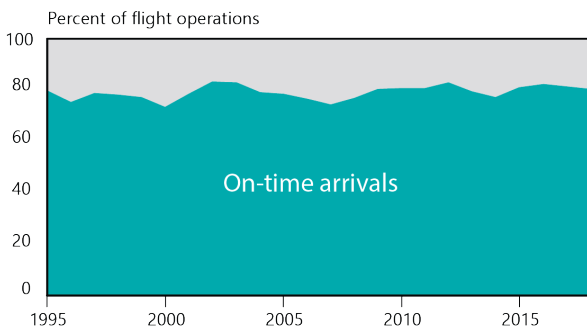
| Rank | Urban area                | Minutes of delay |
|------|---------------------------|------------------|
| 1    | Los Angeles, CA           | 528              |
| 2    | Washington, DC            | 429              |
| 3    | Seattle, WA               | 428              |
| 4    | San Francisco, CA         | 416              |
| 5    | New York, NY              | 408              |
| 6    | Portland, OR              | 400              |
| 7    | Baltimore, MD             | 376              |
| 8    | Denver, CO                | 359              |
| 9    | Miami, FL                 | 348              |
| 10   | Houston, TX               | 340              |
|      | <b>Average of 52 MSAs</b> | <b>256</b>       |

**Key:** MSA = Metropolitan Statistical Area

**Notes:** **Minutes of delay** - the amount of time when freeways operate at less than 90 percent of free-flow freeway speeds. Calculated by calendar year for an average duration of daily congestion.

**Source:** U.S. Department of Transportation, Federal Highway Administration, *Urban Congestion Report*, personal communication, as of April 2019.

## 5-3 U.S. Airline On-time Performance: 1995–2018

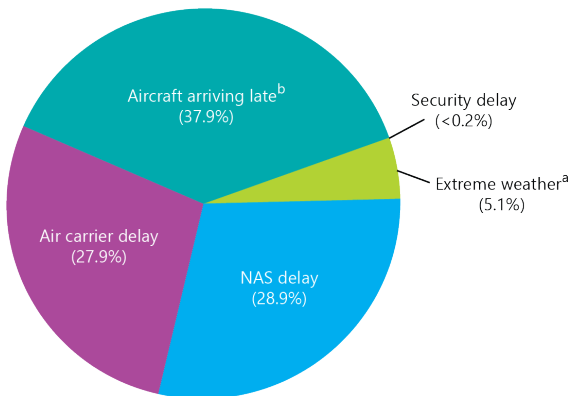


**Note:** Flights arriving at the gate within 15 minutes of scheduled arrival time are on time.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *Airline On-Time Performance*, available at [www.bts.gov](http://www.bts.gov) as of March 2019.

## 5-4 U.S. Major Airport Delays by Cause: 2018

percent of delayed time



<sup>a</sup>Includes weather events that prevent flying. Other weather delays that slow operations are included under other categories. <sup>b</sup>Delay resulting from a previous flight with the same aircraft arriving late.

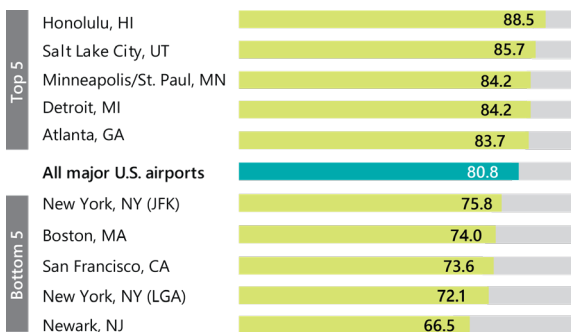
**Key:** NAS = Delays attributable to the national aviation system (NAS) that refer to a broad set of conditions, such as non-extreme weather, airport operations, heavy traffic volume, and air traffic control.

**Note:** Percents may not add to 100 due to rounding.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *Airline On-Time Performance*, available at [transtats.bts.gov](http://transtats.bts.gov) as of March 2019.

## 5-5 U.S. Major Airport Performance Rankings: 2018

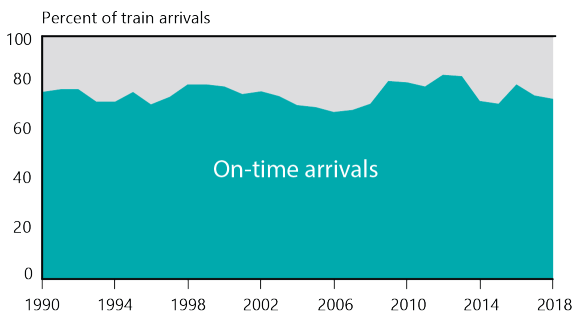
by percent of on-time arrivals



**Note:** Flights arriving at the gate within 15 minutes of scheduled arrival time are on time.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *Airline On-Time Performance*, available at [transtats.bts.gov](http://transtats.bts.gov) as of May 2019.

## 5-6 Amtrak On-time Performance: FY1990–FY2018



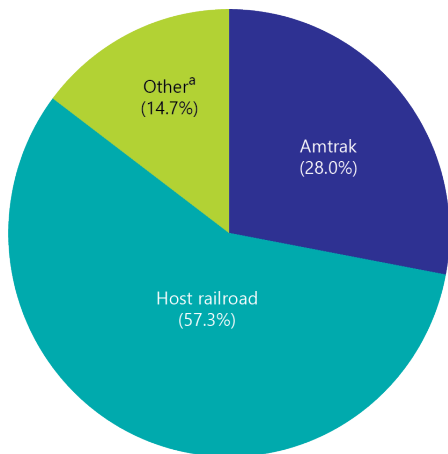
**Note:** On-time performance is a percentage measure of train performance. A train is considered on-time if it arrives at the final destination, or end-point, within an allowed number of minutes, or tolerance, of its scheduled arrival time. Trains are allowed a certain tolerance at the end-point based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

| Trip length   | Train arrives 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:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-73, available at [transtats.bts.gov](https://transtats.bts.gov) as of May 2019.

## 5-7 Amtrak Delays by Cause: FY2018

percent of delayed time



<sup>a</sup>Delays not attributable to Amtrak or other host railroads, such as customs and immigration, law enforcement action, weather, or waiting for scheduled departure time.

**Note:** Percents may not add to 100 due to rounding.

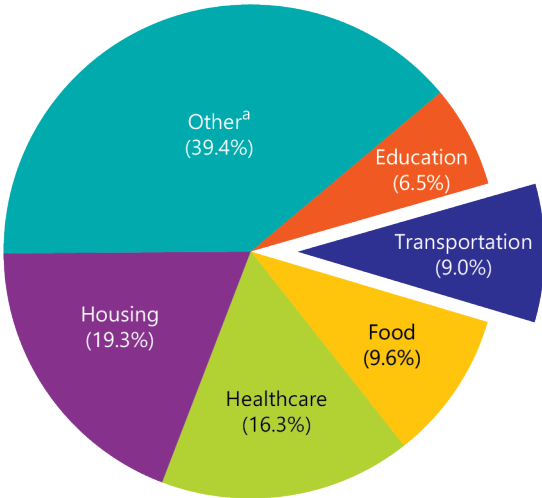
**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-73, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of May 2019.



# 6 ECONOMY

Transportation is a major sector of the U.S. economy. The transportation system moves people and goods, employs millions of workers, generates revenue, and consumes resources and services provided by other sectors.

## 6-1 U.S. GDP by Spending Category: 2018 percent of GDP



<sup>a</sup>Includes all other categories (e.g., entertainment, personal care products and services, and payments to pension plans).

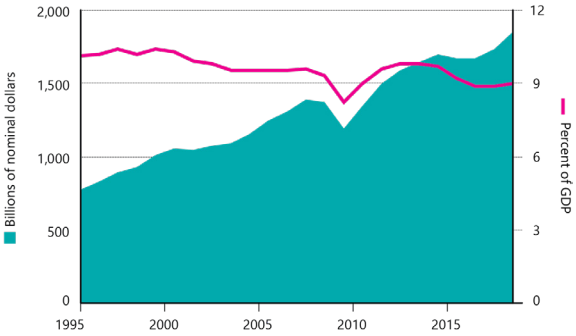
**Key:** GDP = gross domestic product.

**Note:** Percents may not add to 100 due to rounding.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-9, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019.



## 6-2 U.S. Transportation Spending: 1995–2018



**Key:** GDP = gross domestic product.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-9, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019.

## 6-3 Transportation-Related Final Demand

billions of chained 2012 dollars

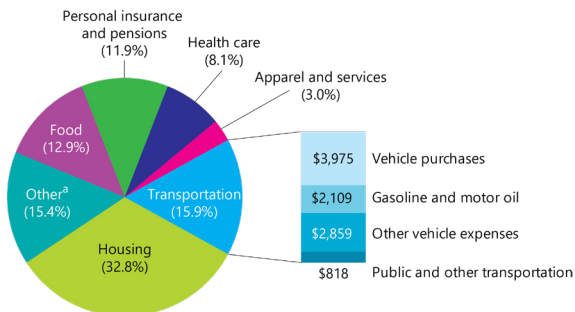
| Category   | 2008          | 2018          |
|--|---------------|---------------|
| <b>Personal consumption of transportation</b>      | <b>1,124</b>  | <b>1,386</b>  |
| Motor vehicles and parts                           | 373           | 533           |
| Motor vehicle fuels, lubricants, and fluids        | 406           | 421           |
| Transportation services                            | 344           | 432           |
| <b>Gross private domestic investment</b>           | <b>166</b>    | <b>295</b>    |
| Transportation structures                          | 11            | 15            |
| Transportation equipment                           | 155           | 280           |
| <b>Government transportation-related purchases</b> | <b>317</b>    | <b>320</b>    |
| Federal purchases                                  | 37            | 40            |
| State and local purchases                          | 258           | 267           |
| Defense-related purchases                          | 22            | 14            |
| <b>Exports ( + )</b>                               | <b>296</b>    | <b>367</b>    |
| <b>Imports ( - )</b>                               | <b>383</b>    | <b>542</b>    |
| <b>Total transportation-related final demand</b>   | <b>1,506</b>  | <b>1,849</b>  |
| <b>U.S. GDP</b>                                    | <b>15,605</b> | <b>18,638</b> |

**Notes:** Data may not add to totals due to rounding. Transportation-related final demand measures the size of transportation functions in relation to the gross domestic product (GDP). It includes the transportation portion of the four components of the GDP: personal consumption, gross private domestic investment, government purchases, and net exports of goods and services.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-4, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019.

## 6-4 Household Expenses by Category: 2018

percent of average annual household expenses

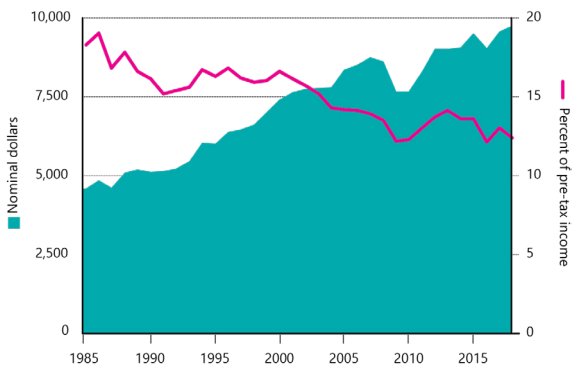


<sup>a</sup> Includes alcoholic beverages, cash contributions, education, entertainment, personal care products and services, reading, tobacco products and smoking supplies, and other miscellaneous items.

**Note:** Percents may not add to 100 due to rounding.

**Source:** U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey*, available at [www.bls.gov/cex](http://www.bls.gov/cex) as of November 2018.

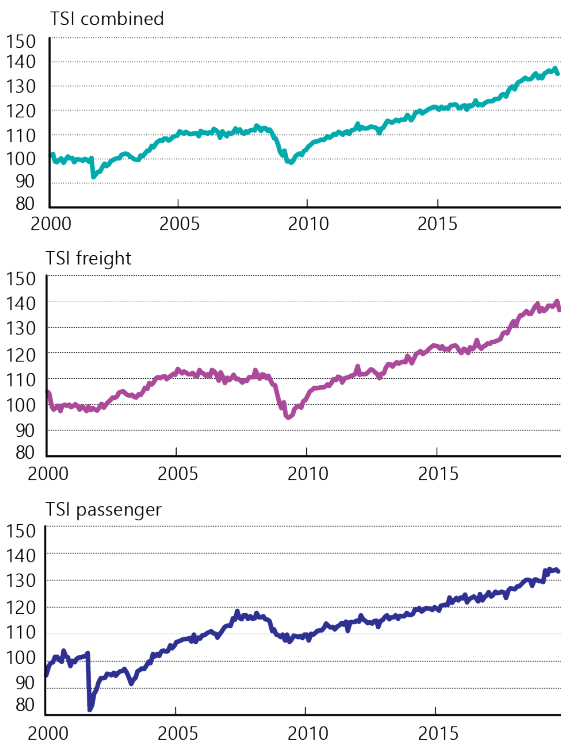
## 6-5 Household Transportation Expenses: 1985–2018



**Source:** U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey*, available at [www.bls.gov/cex](http://www.bls.gov/cex) as of October 2019.

## 6-6 Transportation Services Index: Jan. 2000–Sept. 2019

chain-type index: 2000 = 100, seasonally adjusted



**Notes:** **TSI Combined** - 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. **TSI Freight** - Includes freight railroad services (including rail-based intermodal shipments, such as containers on flat cars), inland waterway traffic, pipeline movements (including principally petroleum and petroleum products and natural gas), and air freight. **TSI Passenger** - The passenger transportation services index consists of local mass transit, intercity passenger rail, and passenger air transportation.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, available at [www.bts.gov](http://www.bts.gov) as of November 2019.

## 6-7 Employment in Transportation-Related Industries

thousands

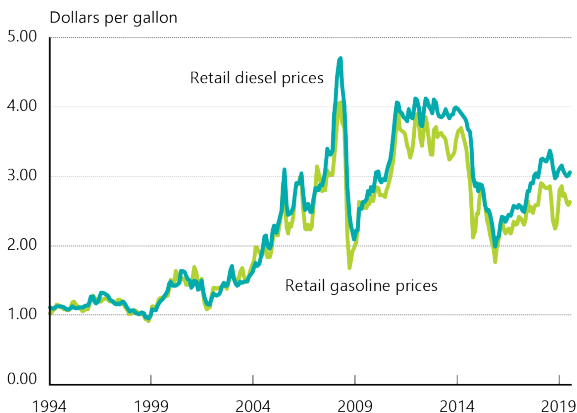
| Category  | 2008           | 2018           |
|---|----------------|----------------|
| <b>For-hire transportation and warehousing</b>          | <b>4,513</b>   | <b>5,419</b>   |
| Air   | 491            | 501            |
| Rail  | 231            | 214            |
| Water   | 67             | 65             |
| Truck   | 1,389          | 1,492          |
| Transit and ground passenger                            | 423            | 488            |
| Pipeline  | 42             | 49             |
| Scenic and sightseeing                                  | 28             | 34             |
| Support activities                                      | 592            | 712            |
| Couriers and messengers                                 | 573            | 725            |
| Warehousing and storage                                 | 677            | 1,140          |
| <b>Transportation-related manufacturing<sup>a</sup></b> | <b>1,938</b>   | <b>2,001</b>   |
| <b>Other transportation-related industries</b>          | <b>5,112</b>   | <b>5,614</b>   |
| Postal service  | 747            | 609            |
| <b>Government employment<sup>b</sup></b>                | <b>895</b>     | <b>865</b>     |
| <b>Total transportation-related labor force</b>         | <b>13,233</b>  | <b>14,508</b>  |
| <b>U.S. labor force</b>                                 | <b>137,241</b> | <b>149,074</b> |

<sup>a</sup>Includes transportation equipment; petroleum products; tires; rubber; plastics; search, detection, navigation, guidance, aeronautical, and nautical systems; and instrument manufacturing. <sup>b</sup>Fiscal year data for federal, state, and local personnel.

**Notes:** Annual averages based on NAICS data. Details may not add to totals due to rounding.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-23, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of August 2019.

## 6-8 Motor Vehicle Fuel Prices: Apr. 1994 – Oct. 2019



**Notes:** Retail gasoline prices include average nominal monthly prices of U.S. regular all formulations retail gasoline. Retail diesel prices include average nominal monthly prices of U.S. No. 2 retail diesel prices.

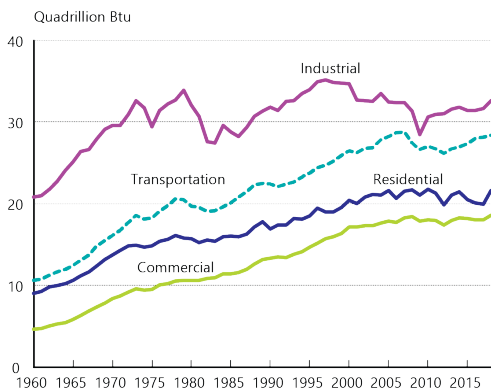
**Source:** U.S. Department of Energy, Energy Information Administration, available at [www.eia.doe.gov](http://www.eia.doe.gov) as of November 2019.



## 7 ENVIRONMENT

The U.S. transportation system is a major consumer of energy and has consequences for the human and natural environment.

### 7-1 Energy Consumption by Sector: 1960–2018



**Key:** Btu = British thermal unit.

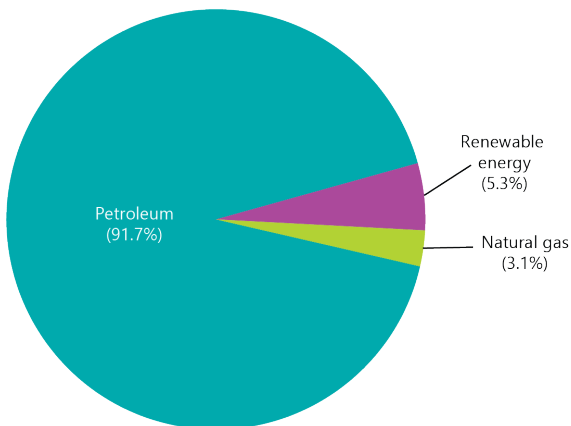
**Note:** Includes primary energy consumption, electricity retail sales, and electrical system energy losses.

**Source:** U.S. Department of Energy, U.S. Energy Information Administration, *Monthly Energy Review*, available at [www.eia.gov/totalenergy/data/monthly](http://www.eia.gov/totalenergy/data/monthly) as of October 2019.



## 7-2 Transportation Energy Consumption by Source: 2018

percent of Btu consumed

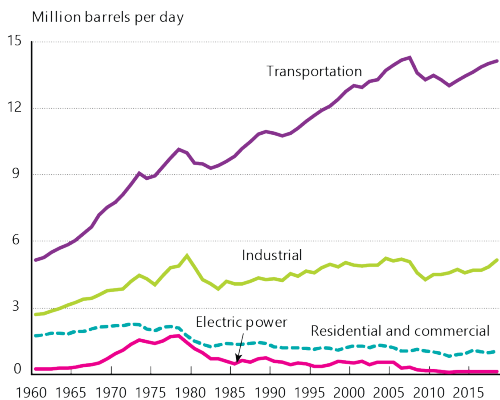


**Key:** Btu = British thermal unit.

**Notes:** Includes primary energy consumed. Excludes electricity retail sales and electrical system energy losses. Percents may not add to 100 due to rounding.

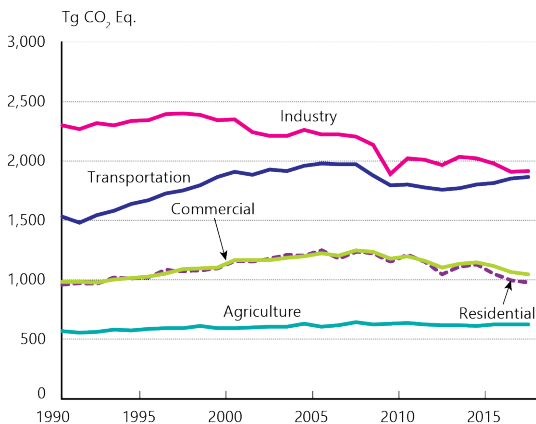
**Source:** U.S. Department of Energy, U.S. Energy Information Administration, *Monthly Energy Review*, available at [www.eia.gov/totalenergy/data/monthly](http://www.eia.gov/totalenergy/data/monthly) as of October 2019.

## 7-3 Petroleum Consumption by Sector: 1960–2018



**Source:** U.S. Department of Energy, U.S. Energy Information Administration, *Monthly Energy Review*, available at [www.eia.gov/totalenergy/data/monthly](http://www.eia.gov/totalenergy/data/monthly) as of October 2019.

## 7-4 Greenhouse Gas Emissions by Sector: 1990–2017



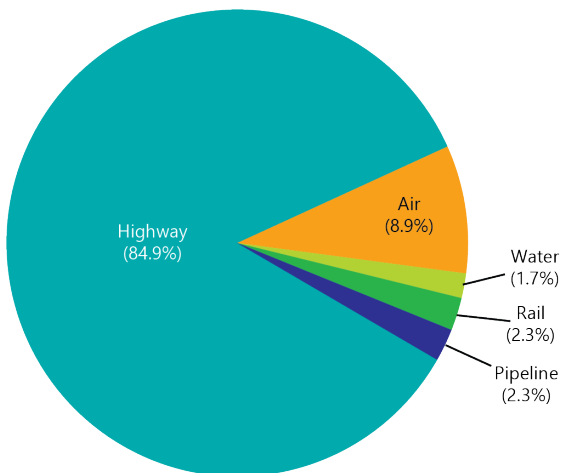
**Key:** Tg CO<sub>2</sub> Eq. = teragrams of carbon dioxide equivalent. Teragram = 1 million metric tons.

**Notes:** Electric power sector emissions are distributed across sectors. Emissions include CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub>.

**Source:** U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017 Report Tables*, [www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017](http://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017) as of October 2019.

## 7-5 Greenhouse Gas Emissions by Transportation Mode: 2017

Percent of Tg CO<sub>2</sub> Eq.



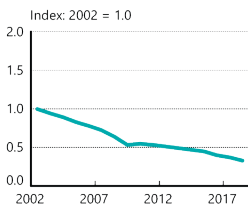
**Key:** Tg CO<sub>2</sub> Eq. = teragrams of carbon dioxide equivalent. Teragram = 1 million metric tons.

**Notes:** Percents may not add to 100 due to rounding. Does not include international bunker fuels.

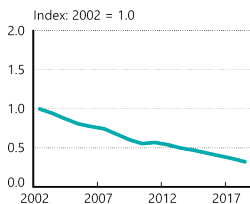
**Source:** U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017 Report Tables*, available at [www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017](http://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017) as of October 2019.

## 7-6 Highway Vehicle Air Pollutant Emissions: 2002–2018

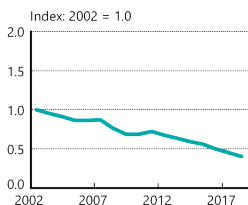
### Carbon monoxide



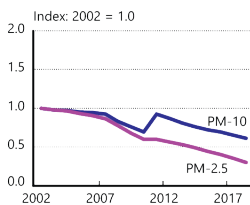
### Nitrogen oxide



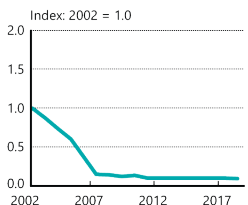
### Volatile organic compounds



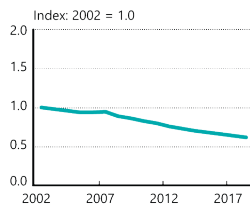
### Particulate matter



### Sulfur dioxide



### Ammonia

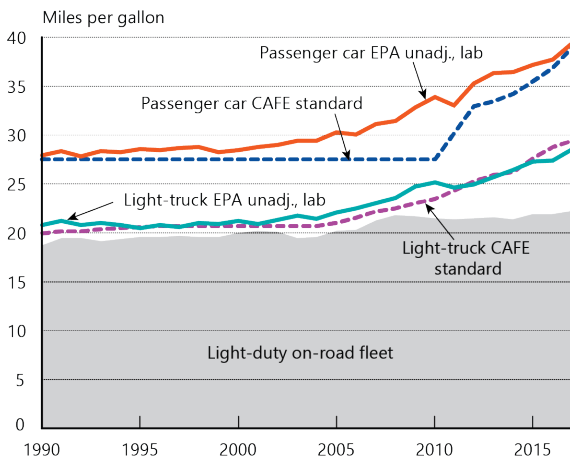


**Key:** PM-10 = airborne particulates of less than 10 microns; PM-2.5 = airborne particulates of less than 2.5 microns.

**Notes:** Indices are calculated using data on highway vehicle emissions only. Particulate matters include PM without condensibles.

**Sources:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 4-45 through 4-50, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019.

## 7-7 Fuel Economy of Light-Duty Vehicles: 1990–2017

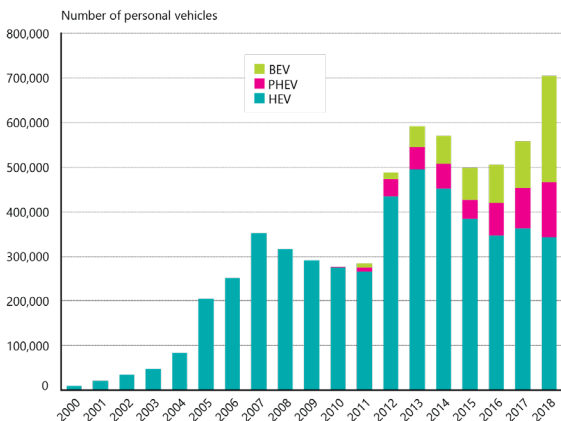


**Key:** CAFE = Corporate Average Fuel Economy; EPA = Environmental Protection Agency.

**Notes:** New fleet data and CAFE standards are for vehicle model years. On-road fleet data include passenger cars and light trucks and are estimated using average miles traveled per gallon of fuel consumed for each calendar year. 2017 EPA unadjusted lab data are preliminary.

**Source:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-23, available at [www.bts.gov/nts](http://www.bts.gov/nts) as of October 2019.

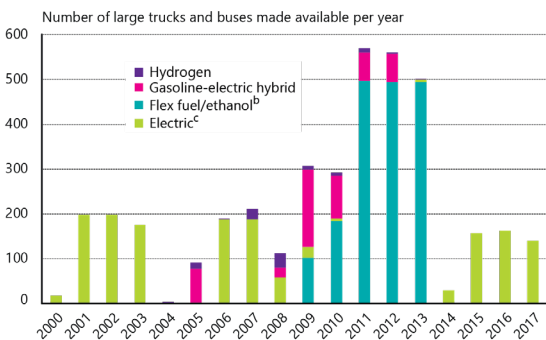
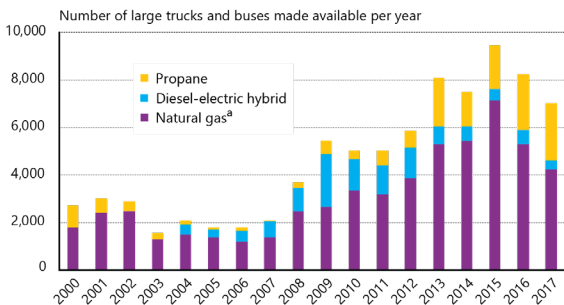
## 7-8 Sales of Hybrid, Plug-in Hybrid, and Battery Electric Vehicles: 2000–2018



**Key:** BEV = Battery electric-only vehicles, PHEV = Plug-in hybrid electric vehicle, HEV = Hybrid electric vehicle

**Source:** Oak Ridge National Laboratory, *Transportation Energy Data Book*, Annual Issues, available at [tedb.ornl.gov](http://tedb.ornl.gov) as of November 2019.

## 7-9 Alternative Fuel Vehicles by Fuel Type, Large Trucks and Buses: 2000–2017



**Notes:** <sup>a</sup>Includes compressed natural gas (CNG) and liquified natural gas (LNG). Includes the total number of heavy duty vehicles that were manufactured or converted by vehicle suppliers (companies or organizations) in the associated calendar year. <sup>b</sup>Flex fuel/ethanol vehicles are capable of running on E85, unblended gasoline, or any ethanol-gasoline blends in between. <sup>c</sup>Excludes gasoline-electric and diesel-electric hybrids.

**Source:** U.S. Department of Energy, Energy Information Administration, Alternative Fuel Vehicle Data, Supplier Database, available at [www.eia.gov/renewable/afv/](http://www.eia.gov/renewable/afv/) as of June 2019.



# GLOSSARY

**Air carrier:** Certificated provider of scheduled and nonscheduled services.

**Alternative fueled vehicle:** A vehicle designed to operate on an alternative fuel (e.g., compressed natural gas, propane, electricity). The vehicle can be either a dedicated vehicle designed to operate exclusively on alternative fuel or a non-dedicated vehicle designed to operate on alternative fuel and/or traditional fuel.

**Chained dollars:** A method of adjusting to real dollar amounts to account for both changes in price-levels and the composition of output over time. This is completed by using a chain-weighted type index, or average weights in successive time periods, to get a comparable time series of data.

**Class I railroad:** Railroads earning adjusted annual operating revenues for three consecutive years of \$250,000,000 or more, based on 1991 dollars with an adjustment factor applied to subsequent years.

**Commuter rail:** Urban/suburban passenger train service for short-distance travel between a central city and adjacent suburbs run on tracks of a traditional railroad system. Does not include heavy or light rail transit service.

**Demand response transit:** A nonfixed-route, nonfixed-schedule form of transportation that operates in response to calls from passengers or their agents to the transit operator or dispatcher.

**Directional route-miles:** The sum of the mileage in each direction over which transit vehicles travel while in revenue service.

**Enplanements:** Total number of revenue passengers boarding aircraft.

**For-hire:** Refers to a vehicle operated on behalf of or by a company that provides services to external customers for a fee. It is distinguished from private transportation services, in which a firm transports its own freight and does not offer its transportation services to other shippers.

**General aviation:** Civil aviation operations other than those air carriers holding a Certificate of Public Convenience and Necessity. Types of aircraft used in general aviation range from corporate, multi-engine jets piloted by a professional crew to amateur-built, single-engine, piston-driven, acrobatic planes.

**Gross domestic product:** The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the suppliers may be either U.S. residents or residents of foreign countries.

**Heavy-rail transit:** High-speed transit rail operated on rights-of-way that exclude all other vehicles and pedestrians.

**Hybrid electric vehicle:** Hybrid electric vehicles combine features of internal combustion engines and electric motors. Unlike 100% electric vehicles, hybrid vehicles do not need to be plugged into an external source of electricity to be recharged. Most hybrid vehicles operate on gasoline.

**International Roughness Index (IRI):** A scale for pavement roughness based on the simulated response of a generic motor vehicle to the roughness in a single wheel path of the road surface.

**Lane-miles:** One mile of one lane of road.

**Light-duty vehicle:** Includes passenger cars, light trucks, vans, pickup trucks, and sport/utility vehicles regardless of wheelbase.

**Light-rail transit:** Urban transit rail operated on a reserved right-of-way that may be crossed by roads used by motor vehicles and pedestrians.

**Nominal dollars:** A market value that does not take inflation into account and reflects prices and quantities that is current during the period being measured.

**Nonself-propelled vessels:** Includes dry cargo, tank barges, and railroad car floats that operate in U.S. ports and waterways.

**Oceangoing vessels:** Includes U.S. flag, privately-owned merchant fleet of oceangoing, self-propelled, cargo-carrying vessels of 1,000 gross tons or greater.

**Particulates:** Carbon particles formed by partial oxidation and reduction of hydrocarbon fuel. Also included are trace quantities of metal oxides and nitrides originating from engine wear, component degradation, and inorganic fuel additives.

**Passenger-mile:** One passenger transported one mile. For example, one vehicle traveling 3 miles carrying 5 passengers generates 15 passenger miles.

**Personal communication:** Involves contacting the source for data if not publicly available.

**Plug-in hybrid electric vehicles:** Plug-in hybrids use the electric battery as the primary energy source by relying on battery power for propulsion for a limited range (15-40 miles) before switching to internal combustion propulsion (thus reducing gasoline consumption).

**Reliever airports:** Airports designated by the Federal Aviation Administration to relieve congestion at commercial service airports and to provide improved general aviation access to the overall community.

**Seasonally adjusted:** Measures the real differences in data trends by adjusting for seasonal factors such as the change in the number of days, weekends, holidays, or other seasonal activity in a month such as vacation travel.

**Self-propelled vessels:** Includes dry cargo vessels, tankers, and offshore supply vessels, tugboats, pushboats, and passenger vessels, such as excursion/sightseeing boats, combination passenger and dry cargo vessels, and ferries.

**Short ton:** A unit of weight equal to 2,000 pounds.

**Structurally deficient:** Structural deficiencies are characterized by deteriorated conditions of significant bridge elements and reduced load-carrying capacity.

**Real dollars:** A method of adjusting nominal dollars to account for price level changes over time. It reflects purchasing power in a given period.

**Tg CO<sub>2</sub> Eq.:** Teragrams of carbon dioxide equivalent, a metric measure used to compare the emissions from various greenhouse gases based on their global warming potential.

**Ton-mile:** A unit of measure equal to movement of one ton over one mile.

**Transportation Services Index:** BTS' monthly measure indicating the relative change in the volume of services over time performed by the for-hire transportation sector. Change is shown relative to a base year, which is given a value of 100. The TSI covers the activities of for-hire freight carriers, for-hire passenger carriers, and a combination of the two. See [www.bts.gov](http://www.bts.gov) for a detailed explanation.

**Transportation Services Index Combined:** The combined Transportation Services Index (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.

**Transportation Services Index Freight:** The freight TSI measures the output of the for-hire freight transportation industry and consists of data from for-hire trucking, rail, inland waterways, pipelines and air freight.

**Transportation Services Index Passenger:** The passenger TSI includes local transit, intercity passenger rail, and passenger air transportation, that have been weighted to yield a monthly measure of transportation services output.

**Unlinked passenger trip:** 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.

**Vehicle-mile:** One vehicle traveling one mile.

Text **USDOT BTSPG** to  
**468311** to download the  
*Pocket Guide to Transportation* app



Download on the  
App Store

GET IT ON  
Google Play

or search:  
**BTS Pocket Guide**



U.S. Department of Transportation  
Office of the Secretary of Transportation  
Bureau of Transportation Statistics

Statistics published in this Pocket Guide to Transportation come from many different sources. Some statistics are based on samples and are subject to sampling variability. Statistics may also be subject to omissions and errors in reporting, recording, and processing.

<https://www.bts.gov/pocketguide>

For additional copies of this guide or information about the Bureau of Transportation Statistics and its products and services, contact:

<https://doi.org/10.21949/1503901>

#### Product Orders

Internet: <http://www.bts.gov>

Mail: Product Orders  
Bureau of Transportation Statistics  
ATTN: Product Orders  
1200 New Jersey Avenue, SE, Room  
E34 457  
Washington, DC 20590

Photos provided by Adobe and BTS Stock Photos

#### Information Service

Phone: 202 366 DATA  
Email: [answers@dot.gov](mailto:answers@dot.gov)

January 2020