



Bureau of Transportation Statistics

Transportation **S**tatistics **A**nnual **R**eport

2008



United States Department of Transportation
Research and Innovative Technology Administration
Bureau of Transportation Statistics

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Preface

Congress requires the Bureau of Transportation Statistics (BTS) of the Research and Innovative Technology Administration (RITA) to report on transportation statistics to the President and Congress. This *Transportation Statistics Annual Report* is the 14th such report prepared in response to this congressional mandate, laid out in 49 U.S.C. 111 (1). In addition to presenting the state of transportation statistics, the report focuses on transportation indicators pertinent to the Strategic Plan of the U.S. Department of Transportation; and the 13 topics specified in the Safe, Accountability, Flexible, Efficient Transportation Equity Act: a Legacy for Users, under 49 U.S.C. 111 (c) (5).

The BTS online publication, *National Transportation Statistics* (NTS), a companion to this annual report, has more comprehensive and longer time-series data than could be accommodated here. NTS, which BTS updates quarterly, is available at www.bts.gov.

Summary

The *Transportation Statistics Annual Report* presents transportation data and information that the Bureau of Transportation Statistics (BTS), a component of the U.S. Department of Transportation's Research and Innovative Technology Administration (RITA), has selected in accordance with the 13 topics specified in the Department's legislative mandate—the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU). Where possible, the figures and tables cover the 10 most recent years for which data are available. BTS has expanded and restructured this year's report.

Chapter 1 highlights environmental stewardship and transportation security, and contains a summary of the 2007 Commodity Flow Survey. Chapter 2 explores transportation infrastructure, safety, congestion, and global connectivity. These groupings reflect the intermodal/multimodal nature of the U.S. transportation system, which is a complex system of systems. For the reader's convenience, chapter 3 examines the modal systems that comprise the U.S. transportation system, including civil aviation, motor vehicle highway system, marine transportation system, railroad network, and transit. Chapter 4 describes the economic and social impact of the U.S. transportation system.

The legislative mandate, SAFETEA-LU¹, also requires BTS to document the methods used to obtain the report's statistical information, ensure its quality, and make recommendations for improving transportation statistical information. In chapter 5, the major BTS program offices respond to this requirement. This chapter identifies the guidelines that apply to federal data quality and the statistics included in this report. Further, this chapter focuses on closing data gaps and improving the ways in which transportation statistics are collected, compiled, analyzed and published.

Appendix A includes a list of acronyms used throughout the report. Appendix B provides a glossary. Appendix C includes the ferry routes and terminal maps for New York, NY, San Francisco, CA, and Seattle, WA, as well as maps highlighting alternative fueling stations. Appendix D provides a snapshot of the U.S. demographics factors—such as population, labor force, and economic conditions—that influence travel patterns and goods movement (1 of the 13 topics).

For your convenience, the table on the following page lists each topic required in the law. Congress modified and expanded this list in its 2005 establishment of RITA and reauthorization of BTS.

¹ *Safe, Accountable, Flexible, Efficient Transportation Equity Act: a Legacy for Users*, 49 U.S.C. 111.

Thirteen Topics as Specified in the SAFETEA-LU Legislation

(49 U.S.C. 111 (c) (5))

Topics
<ul style="list-style-type: none">• Productivity in various parts of the transportation sector
<ul style="list-style-type: none">• Traffic flows for all modes of transportation
<ul style="list-style-type: none">• Other elements of the Intermodal Transportation Database established under subsection (e) of 49 U.S.C. 111
<ul style="list-style-type: none">• Travel times and measures of congestion
<ul style="list-style-type: none">• Vehicle weights and other vehicle characteristics
<ul style="list-style-type: none">• Demographic, economic, and other variables influencing traveling behavior (including choice of transportation mode) and goods movement
<ul style="list-style-type: none">• Transportation costs for passenger travel and goods movement
<ul style="list-style-type: none">• Availability and use of mass transit (including number of passengers served by each mass transit authority) and other forms of for-hire passenger travel
<ul style="list-style-type: none">• Frequency of vehicle and transportation facility repairs and other interruptions of transportation service
<ul style="list-style-type: none">• Safety and security for travelers, vehicles, and transportation systems
<ul style="list-style-type: none">• Consequences of transportation for the human and natural environment
<ul style="list-style-type: none">• The extent, connectivity, and condition of the transportation system, building on the National Transportation Atlas Database developed under subsection (g) of 49 U.S.C. 111
<ul style="list-style-type: none">• Transportation-related variables that influence the domestic economy and global competitiveness

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Chapter 1

Annual Highlights

Environmental Stewardship

In the United States, transportation accounted for 28 percent of greenhouse gas (GHG) emissions in 2006¹. Since 1995, GHG emissions related to transportation have grown 28 percent². During the same period, vehicle-miles traveled (VMT) increased by 591,420 million miles (24 percent) (Table 2-3-1: *U.S. Vehicle-Miles*). However, the estimated VMT in 2008 shows a decline³. Fuel efficiency has been relatively flat for the U.S. vehicle fleet over this period⁴, increasing 1.3 miles per gallon (6 percent) for passenger cars and 0.7 miles per gallon (4 percent) for other two-axle, four-tire vehicles (Table 1-1-3: *Average Fuel Efficiency of U.S. Passenger Cars and Light Trucks*).

Transportation and Carbon Dioxide (CO₂) Emissions

In the United States, the predominant GHG emitted is CO₂, which accounted for 85 percent of the global warming potential (GWP) of all human-produced emissions. CO₂'s role in transportation of GHGs is higher still, accounting for about 96 percent of GWP emissions.⁵

Transportation Compared to Other Sectors' CO₂ Emissions

The transportation sector now produces the most CO₂ emissions in the United States (Table 1-1-2: *U.S. Energy-Related Carbon Dioxide Emissions by End-Use Sector*). That share has grown from 32 percent in 1995 to 34 percent in 2007. Over that period, the total growth of CO₂ emissions from the transportation sector was 19 percent. In 1999, the transportation sector overtook the industrial sector as the largest source as industrial emissions remained comparatively flat. A recent decline has the industrial sector producing 5 percent less CO₂ in 2007 than in 1995. Increases

¹ U.S. Environmental Protection Agency, *Trends in Greenhouse Gas Emissions*, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006, Washington, D.C.: April 2008, p. 2-21, available at <http://www.epa.gov/climatechange/emissions/usgginventory.html> as of July 30, 2008.

² U.S. Environmental Protection Agency, *Trends in Greenhouse Gas Emissions*, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006, Washington, D.C.: April 2008, p. 2-21, available at <http://www.epa.gov/climatechange/emissions/usgginventory.html> as of July 30, 2008.

³ U. S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, *Traffic Volume Trends*, Washington, D.C.: August 2008, available at <http://www.fhwa.dot.gov/ohim/tvtw/08augvt/08augvt.pdf> as of Oct. 24, 2008.

⁴ U.S. Environmental Protection Agency, *Trends in Greenhouse Gas Emissions*, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006, Washington, D.C.: April 2008, p. 2-21, available at <http://www.epa.gov/climatechange/emissions/usgginventory.html> as of July 30, 2008.

⁵ U.S. Environmental Protection Agency, *Greenhouse Gas Emissions from the U.S. Transportation Sector: 1990-2003*, Washington, D.C.: March 2006, p. 3, available at <http://www.epa.gov/oms/climate/420r06003.pdf> as of July 30, 2008.

for residential sources (20 percent) and commercial sources (28 percent) are comparable to the increase for the transportation sector (Table 1-1-2: *U.S. Energy-Related Carbon Dioxide Emissions by End-Use Sector*).

CO₂ Emission by Mode of Transport

In 2006, passenger cars contributed about one-third (34 percent) of the transportation-induced CO₂ emissions (Table 1-1-1: *Carbon Dioxide Emissions by Mode*). Light-duty trucks (28 percent), medium- and heavy-duty trucks (21 percent), and aircraft (9 percent) made up the bulk of the remaining transportation-induced CO₂ emissions. Emissions from trucks of all sizes increased from 42 percent in 1995 to 49 percent of the total transportation CO₂ emissions in 2006. Serving as the backbone of many public transit systems, buses account for less than 1 percent of CO₂ emissions.

The growth in on-road transportation CO₂ between 1995 and 2006 is attributed mostly to light-duty trucks increasing 27 percent and medium- and heavy-duty trucks increasing 48 percent. Passenger cars CO₂ also increased, but at a much slower rate: 4.9 percent. Nonroad sources produced 16 percent of all transportation CO₂ emissions in 2006. The largest nonroad source, aircraft, produced almost 9 percent of total transportation CO₂. Aircraft CO₂ declined 2.3 percent during the 1995-2006 period.

Transportation and Other GHG Emissions

Two other naturally occurring GHGs, nitrous oxide (N₂O) and methane (CH₄), have seen growth in human-source emissions, although these two only account for 2 percent of all transportation sector GHGs. Other synthetic GHGs emitted from transportation sources include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), and hydrochlorofluorocarbons (HCFCs), all principally used for air conditioning and refrigeration⁶.

⁶ U.S. Environmental Protection Agency, *Greenhouse Gas Emissions from the U.S. Transportation Sector: 1990-2003*, Washington, D.C.: March 2006, p. 4, available at <http://www.epa.gov/oms/climate/420r06003.pdf> as of July 30, 2008.

TABLE 1-1-1 Carbon Dioxide Emissions by Mode: 1995–2006

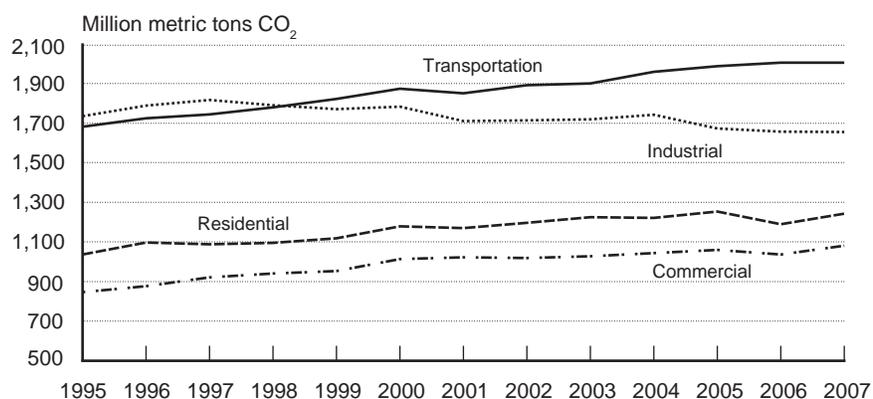
Millions of metric tons, domestic activities only

	Passenger cars	Light-duty trucks	All other trucks	Buses	Aircraft	Ships and boats	Rail	Other	Total, all modes
1995	604.9	405.0	271.2	9.0	174.6	55.5	42.2	51.3	1,613.8
1996	613.3	419.9	280.3	9.3	183.0	53.2	43.0	51.6	1,653.5
1997	611.0	433.2	301.2	9.8	181.9	37.6	43.1	54.5	1,672.3
1998	630.7	444.1	309.7	9.9	184.3	30.8	43.5	49.0	1,702.0
1999	644.8	464.6	326.1	11.1	189.9	30.8	45.0	49.6	1,761.9
2000	643.5	466.0	341.5	10.9	196.4	61.0	45.1	49.1	1,813.7
2001	647.9	470.3	340.6	10.0	186.6	43.2	45.4	46.4	1,790.3
2002	662.6	483.2	354.8	9.6	178.0	60.8	44.9	49.2	1,843.3
2003	642.1	518.8	351.2	10.5	174.7	33.6	46.6	44.4	1,821.9
2004	640.0	540.8	364.1	14.7	177.0	42.1	49.2	43.1	1,871.1
2005	658.4	501.9	391.9	11.8	181.2	45.6	49.8	44.1	1,884.7
2006	634.5	514.9	401.3	12.1	170.6	42.4	51.0	44.1	1,870.9

NOTES: In previous editions of TSAR, this table was reported in short tons instead of metric tons. This change was made to match Environmental Protection Agency and other sources that report carbon dioxide emissions. *Other* carbon dioxide 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. Thus, *aircraft* and *ships and boats* data included in U.S. total emissions involve only domestic activities of these modes as do all other data shown. *Aircraft* emissions consist of emissions from all jet fuel (less bunker fuels) and aviation gas consumption. Alternative-fuel vehicle emissions are allocated to the specific vehicle types in which they were classified (i.e., passenger cars, light-duty trucks, and other trucks and buses).

SOURCE: U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (Washington, DC: Annual Issues), table 2-15, available at <http://epa.gov/climatechange/emissions/usinventoryreport.html> as of August 2008 and personal communication.

FIGURE 1-1-2 U.S. Energy-Related Carbon Dioxide Emissions by End-Use Sector: 1995–2007



SOURCE: U.S. Department of Energy, Energy Information Administration, *U.S. Carbon Dioxide Emissions from Energy Sources 2007 Flash Estimate* (Washington, DC: May 2008), available at <http://www.eia.doe.gov/oiaf/1605/flash/flash.html> as of July 2008.

TABLE 1-1-2 U.S. Energy-Related Carbon Dioxide Emissions by End-Use Sector: 1995–2007

Million metric tons CO₂

	Residential	Commercial	Industrial	Transportation
1995	1,037	846	1,735	1,682
1996	1,097	877	1,789	1,725
1997	1,088	921	1,817	1,744
1998	1,095	941	1,791	1,779
1999	1,118	953	1,770	1,823
2000	1,179	1,013	1,783	1,873
2001	1,170	1,023	1,710	1,851
2002	1,196	1,018	1,714	1,891
2003	1,224	1,027	1,719	1,901
2004	1,222	1,043	1,742	1,959
2005	1,254	1,059	1,673	1,988
2006	1,190	1,036	1,657	2,005
2007	1,242	1,080	1,655	2,006

SOURCE: U.S. Department of Energy, Energy Information Administration, *U.S. Carbon Dioxide Emissions from Energy Sources 2007 Flash Estimate* (Washington, DC: May 2008), available at <http://www.eia.doe.gov/oiaf/1605/flash/flash.html> as of July 2008.

TABLE 1-1-3 Average Fuel Efficiency of U.S. Passenger Cars and Light Trucks: 1995–2007

Miles per gallon

	Average U.S. passenger car fuel efficiency (calendar year)		New vehicle fuel efficiency (model year)				CAFE standards (model year)	
	Passenger car	Other 2-axle 4-tire vehicle	Passenger car	Domestic	Imported	Light truck (<8,500 lbs GVWR)	Passenger car	Light truck
1995	21.1	17.3	28.6	27.7	30.3	20.5	27.5	20.6
1996	21.2	17.2	28.5	28.1	29.6	20.8	27.5	20.7
1997	21.5	17.2	28.7	27.8	30.1	20.6	27.5	20.7
1998	21.6	17.2	28.8	28.6	29.2	21.0	27.5	20.7
1999	21.4	17.0	28.3	28.0	29.0	20.9	27.5	20.7
2000	21.9	17.4	28.5	28.7	28.3	21.3	27.5	20.7
2001	22.1	17.6	28.8	28.7	29.0	20.9	27.5	20.7
2002	22.0	17.5	29.0	29.1	28.8	21.4	27.5	20.7
2003	22.2	16.2	29.5	29.1	29.9	21.8	27.5	20.7
2004	22.5	16.2	29.5	29.9	28.7	21.5	27.5	20.7
2005	22.1	17.7	30.3	30.5	29.9	22.1	27.5	21.0
2006	22.4	18.0	30.1	30.3	29.7	22.5	27.5	21.6
2007	U	U	31.2	30.6	32.1	23.0	27.5	22.2

KEY: CAFE = Corporate Average Fuel Economy, GVWR = Gross vehicle weight rating, U = Data are unavailable.

NOTES: *New vehicle fuel efficiency* and *CAFE standards* assume 55% city and 45% highway-miles. The fuel efficiency figures for light duty vehicles represent the sales-weighted harmonic average of the combined passenger car and light truck fuel economies.

SOURCES: **Average U.S. passenger car fuel efficiency:** Federal Highway Administration, **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, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-23, available at http://www.bts.gov/publications/national_transportation_statistics/ as of August 2008.

TABLE 1-1-4 Transportation Air Pollutant Emissions from On-Road Mobile Sources: 1995–2007

Millions of short tons

	Carbon monoxide			Nitrogen oxides		
	All sources	Transportation, total	Transportation (percent of total)	All sources	Transportation, total	Transportation (percent of total)
1995	126.78	83.88	66	24.96	8.88	36
1996	128.86	78.61	61	24.79	8.73	35
1997	117.91	75.85	64	24.71	8.79	36
1998	115.38	73.24	63	24.35	8.62	35
1999	114.54	68.71	60	22.84	8.37	37
2000	114.47	68.06	59	22.60	8.39	37
2001	106.26	63.48	60	21.55	7.77	36
2002	111.06	60.60	55	21.14	7.87	37
2003	106.24	56.47	53	20.33	7.38	36
2004	101.43	52.35	52	19.52	6.90	35
2005	96.62	48.22	50	18.71	6.41	34
2006	92.13	44.73	49	17.69	5.97	34
2007	88.25	41.61	47	17.03	5.56	33
	Volatile organic compounds			Sulfur dioxide		
	All sources	Transportation, total	Transportation (percent of total)	All sources	Transportation, total	Transportation (percent of total)
1995	22.04	6.75	31	18.62	0.34	2
1996	20.87	6.22	30	18.39	0.30	2
1997	19.53	5.99	31	18.84	0.30	2
1998	18.78	5.86	31	18.94	0.30	2
1999	18.27	5.68	31	17.54	0.30	2
2000	17.51	5.33	30	16.35	0.26	2
2001	17.11	4.95	29	15.93	0.25	2
2002	21.16	4.92	23	14.78	0.25	2
2003	20.77	4.64	22	14.76	0.21	1
2004	20.37	4.36	21	14.74	0.18	1
2005	19.98	4.08	20	14.71	0.15	1
2006	19.16	3.88	20	13.51	0.12	1
2007	18.42	3.60	20	12.93	0.09	1

NOTE: Data include emissions by highway vehicles only.**SOURCE:** U.S. Environmental Protection Agency, Clearinghouse for Inventories and Emissions Factors (CHIEF), *Current Emission Trends Summaries*, available at <http://www.epa.gov/ttn/chief/trends/index.html> as of August 2008.

TABLE 1-1-5 Miles of Highway Sound Walls Constructed: 1995–2004

Miles	Type I barriers	Type II barriers	All other types
1995	95	32	6
1996	37	15	2
1997	70	31	1
1998	116	23	1
1999	31	18	5
2000	67	11	4
2001	95	18	19
2002	63	13	2
2003	78	4	7
2004	88	14	3

NOTES: Forty-five miles of barriers, while assigned a year of construction, cannot be assigned a cost. California did not provide data for the years 1999–2004, and therefore these years may not be comparable with previous years.

A *Type I barrier* is built on a new highway project or a physically altered existing highway.

A *Type II barrier* is built to abate noise along an existing highway (often referred to as retrofit abatement) and is not mandatory.

All other types of barriers are nonfederally funded.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, *Highway Traffic Noise Barrier Construction Trends* (Washington, DC: May 2006), tables 1 and 3 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-52, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 1-1-6 Population Affected by High Decibel Noise at Airports: 1995–2005

	People affected (thousands)	Percent of U.S. resident population	U.S. resident population (millions)
1995	1,700	0.64	266.3
1996	1,500	0.56	269.4
1997	1,300	0.48	272.6
1998	1,100	0.40	275.9
1999	680	0.24	279.0
2000	440	0.16	282.2
2001	411	0.14	285.1
2002	294	0.10	287.9
2003	289	0.10	290.8
2004	208	0.07	293.7
2005	148	0.05	296.4

NOTES: Noise-level contours are graphical representations of noise levels on a map, similar to elevation contours on a topographic map. Noise-level contours are lines that join points of equal sound levels. Areas between given noise-level contour lines would have a noise level between the two contour values. The U.S. Department of Transportation, Federal Aviation Administration has identified DNL 65 dB as the highest threshold of airport noise exposure that is normally compatible with indoor and outdoor activity associated with a variety of land uses, including residential, recreational, schools, and hospitals. Estimates are for areas surrounding airport property of 250 of the largest civil airports with jet operations in the United States. They exclude exposure to aircraft noise within an airport boundary.

SOURCES: Exposure: Federal Aviation Administration, **Population:** United States Census Bureau, as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-53, available at http://www.bts.gov/publications/national_transportation_statistics as of October 2008.

TABLE 1-1-7 Wetlands Converted for Transportation by Federal-Aid Highway Projects and Acreage Mitigated: 2000–2006

	Acres impacted	Acres mitigated	Acres gained (net)	Mitigation ratio
2000	2,041	7,671	5,630	3.8:1
2001	1,905	4,017	2,112	2.1:1
2002	1,942	5,198	3,256	2.7:1
2003	1,278	3,431	2,153	2.7:1
2004	847	1,763	916	2.1:1
2005	1,139	3,741	2,602	3.3:1
2006	591	1,414	823	2.4:1

NOTES: These data cover wetlands acreage affected by Federal-Aid Highway projects, approximately 24% of the total mileage of the U.S. public roads. These data are collected by states using varying collection methodologies. The mitigation ratio equals acres mitigated to acres impacted.

SOURCES: 2000–2004: U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), *Federal Highway Administration Wetland Mitigation Performance Measure for Federal-Aid Highway Projects Fiscal Year 2004*. **2005–2006:** USDOT, FHWA, personal communication as of August 2007.

TABLE 1-1-8 Volume of Oil Spills from Facilities by Sources: 1995–2005

Thousands of gallons

	Airports/ aircraft	Offshore	Onshore	Pipelines	Railroads/ rails	Tank trucks	Other vehicles	Other facilities	Unknown	Total
1995	2	12	116	78	44	0	0	20	9	281
1996	2	227	192	988	1	3	1	24	11	1,449
1997	1	13	175	267	4	4	1	92	12	569
1998	1	25	106	204	0	11	1	16	32	396
1999	0	11	426	39	1	13	1	45	47	583
2000	2	11	256	99	0	11	1	13	8	401
2001	1	31	192	8	1	U	12	140	64	450
2002	0	63	142	0	0	U	4	0	79	288
2003	0	36	35	0	0	U	0	0	3	74
2004	0	10	62	0	0	U	0	0	1	74
2005	0	1	2	0	0	U	0	0	111	113

KEY: U = Data are unavailable.

NOTES: *Other vehicles* include passenger cars, 4-wheel drives and ATVs. The drop in total spills from 2002 to 2005 reflects the implementation of a new database following a massive breakdown of the main Coast Guard Oil spill database (MSIS) in November 2001. The new system (MISLE) only counts the spill if it is investigated.

In 2005, facilities accounted for 66% of all spills, largely the result of an *Unknown* facility spill that occurred on the Kentucky River in January 2005, spilling 110,000 gallons of crude oil.

Numbers may not add to totals due to rounding.

SOURCE: American Petroleum Institute, *Oil Spills in U.S. Waters*, available at <http://www.api.org/> as of November 2007.

Security Preparedness and Response

Energy Security

Energy security has received special attention as the average retail gasoline prices rose 119 percent, from \$1.86 in January 2005 to \$4.11 in June 2008 (Figure 1-2-5: *Fuel Prices*)¹. The rate of increase of the number of vehicles on the road, as indicated by vehicle registrations, was about the same as the increase in motor fuel consumption—both are associated with increases in CO₂ emissions. Transportation CO₂ emissions from 1990 to 2006 increased 25 percent, about the same as the population increase of 23 percent². The biggest factor boosting CO₂ emissions is vehicle miles-traveled, which increased 57 percent since 1987³.

Fuel Efficiency

In December 2007, the *Energy Independence and Security Act of 2007* was signed, which requires that the Corporate Average Fuel Economy (CAFE) reach 35 miles per gallon by the year 2020. This requirement applies to light trucks as well as passenger automobiles. Currently, the law requires a minimum CAFE standard of 27.5 miles per gallon (mpg) for passenger vehicles and 22.2 mpg for light trucks (Table 1-1-3: *Average Fuel Efficiency of U.S. Passenger Cars and Light Trucks*).

As with automobiles, aircraft and aircraft engines have become more efficient—a 70 percent improvement in fuel efficiency in the last 30 years⁴. According to the Federal Aviation Administration, U.S. airlines have committed to another 30 percent improvement by 2025.

Energy Prices

Since 1995, U.S. transportation use of energy has increased about 22 percent (Table 1-2-1: *U.S. Petroleum Use by the Transportation Sector*). The transportation sector now accounts for about 69 percent of total U.S. petroleum use in 2007, up from 66 percent in 1995.

Fuel prices have been rising since 2003 for all modes of transportation, putting pressure on carriers to cut costs and raise rates (Table 1-2-6: *Sales Price of Transportation Fuel to End-Users*). Carriers pass fuel-price increases onto shippers and consumers through rate increases or fuel surcharges.

¹ U.S. Department of Energy, Energy Information Administration (EIA). *U.S. All Grades All Formulations Retail Gasoline Prices (Cents per Gallon)*, available at http://tonto.eia.doe.gov/dnav/pet/hist/mg_tt_usm.htm as of Oct. 19, 2008.

² U.S. Department of Commerce, Bureau of Census, *Statistical Abstract of the United States 2001*, available at <http://www.census.gov/prod/2002pubs/01statab/pop.pdf> as of July 30, 2008.

³ U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2006*, available at <http://www.fhwa.dot.gov/policy/ohim/hs06/hm/mvfvm.htm> as of July 30, 2008.

⁴ Air Transport Association of America, Inc., *ATA Letter to Chairman Dingell and Chairman Boucher Addressing Climate Change*, available at <http://www.airlines.org/> as of Sept. 15, 2008.

Alternative Fuels

There are 5,748 alternative fueling stations (AFSs) in the United States (Appendix C: *Alternative Fueling Stations: Total*). The types of fuels for which AFS data are collected include biodiesel (BD), compressed natural gas (CNG), 85% ethanol (E85), propane (LPG), hydrogen (H), electric, and liquefied natural gas (LNG) fueling stations⁵. LPG accounts for 37 percent of stations, followed by E85 (30 percent), CNG (13 percent), BD (11 percent), and electric (8 percent)⁶.

California leads the nation with 864 AFSs, followed by Texas with 593, and Minnesota with 385, and Illinois with 262 (Appendix C: *Alternative Fueling Stations: Total*). South Carolina (73) and North Carolina (66) have the most BD stations (Appendix C: *Alternative Fueling Stations: Biodiesel*). California (184) and New York (92) are home to the most CNG stations. In addition, California accounts for 376 of the nation's 439 electric stations (Appendix C: *Alternative Fueling Stations: Electric*). E85 stations are concentrated in the upper Midwest, with Minnesota (353) and Illinois (181) having the greatest number of stations (Appendix C: *Alternative Fueling Stations: 85% Ethanol (E85)*). Texas (484) and California (199) account for nearly one-third of the LPG stations in the United States (Appendix C: *Alternative Fueling Stations: Propane (LPG)*).

Alternative fuels have the potential to lessen the U.S. transportation system's environmental impact and improve the nation's energy security.

Transportation Security

Transportation security has received heightened national attention in the post-9/11 environment. Airports, border crossings, seaports, transportation service providers, and transit agencies across the country have taken steps to ensure the safety and security of cargos and passengers. The nation's seaports have been rapidly adopting the new Transportation Worker Identification Credential (TWIC) technology. The TWIC helps ensure that only authorized personnel gain access to the secure areas of maritime facilities and vessels (Table 1-2-8: *Transportation Worker Identification Credential Program*).

The number of international piracy incidents and armed robberies at sea are down from a record high set in 2000 (Table 1-2-9: *International Piracy and Armed Robbery at Sea*). For the past 3 years, the number of East African incidents has increased, especially in the waters surrounding Somalia. However, in 2007, the South China Sea still accounted for the majority of incidents reported.

⁵ U.S. Department of Energy, Advance Fuels and Advance Vehicles Data Center, *Alternative Fueling Station Total Counts by State and Fuel Type* (Washington, DC: Dec. 19, 2008), available at http://www.afdc.energy.gov/afdc/fuels/stations_counts.html as of Dec. 19, 2008.

⁶ U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics calculations based upon U.S. Department of Energy, Advance Fuels and Advance Vehicles Data Center, *Alternative Fueling Station Total Counts by State and Fuel Type* (Washington, DC: Dec. 19, 2008), available at http://www.afdc.energy.gov/afdc/fuels/stations_counts.html as of Dec. 19, 2008.

TABLE 1-2-1 Energy Consumption by the Transportation Sector: 1995–2007

Quadrillion Btu

	Energy consumption (all sectors)	Total transportation consumption	Transportation as percent of total energy consumption	Total primary consumption	Natural gas	Petroleum products	Electricity	Electrical system energy losses
1995	91.17	23.85	26.16	23.79	0.72	22.95	0.017	0.04
1996	94.18	24.44	25.95	24.38	0.74	23.57	0.017	0.04
1997	94.77	24.75	26.12	24.70	0.78	23.81	0.017	0.04
1998	95.18	25.26	26.54	25.20	0.67	24.42	0.017	0.04
1999	96.82	25.95	26.80	25.89	0.68	25.10	0.017	0.04
2000	98.98	26.55	26.83	26.49	0.67	25.68	0.018	0.04
2001	96.33	26.28	27.28	26.22	0.66	25.41	0.020	0.04
2002	97.86	26.85	27.44	26.79	0.70	25.91	0.019	0.04
2003	98.21	27.00	27.49	26.93	0.63	26.06	0.023	0.05
2004	100.35	27.90	27.80	27.82	0.60	26.92	0.025	0.06
2005	100.51	28.36	28.22	28.28	0.63	27.31	0.026	0.06
2006	99.86	28.86	28.90	28.78	0.63	27.67	0.025	0.05
2007	101.60	29.10	28.64	29.01	0.67	27.72	0.026	0.06

KEY: Btu = British thermal unit.

NOTES: *Total transportation consumption* is the sum of primary consumption, electricity, and electrical system energy losses categories. *Total primary consumption* is the sum of natural gas, and petroleum categories. *Natural gas* is consumed in the operation of pipelines, primarily in compressors, and small amounts consumed as vehicle fuel.

Petroleum products includes most nonutility use of fossil fuels to produce electricity and small amounts (about 0.1 quadrillion Btu per year since 1990) of renewable energy in the form of ethanol blended into motor gasoline.

Electrical system energy losses are incurred in the generation, transmission, and distribution of electricity plus plant use and unaccounted for electrical system energy losses.

SOURCE: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2007*, tables 2.1a and 2.1e, available at <http://www.eia.doe.gov> as of July 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-4, available at <http://www.bts.gov/> as of January 2009.

TABLE 1-2-2 Energy Consumption by Mode of Transportation: 1995–2006

Trillion Btu, domestic activities only

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Air												
Certificated carriers												
Jet fuel	1,711	1,773	1,831	1,869	1,944	2,007	1,859	1,735	1,749	1,852	1,873	1,819
General aviation												
Aviation gasoline	35	35	35	37	42	40	34	33	33	33	44	42
Jet fuel	76	82	87	110	131	131	124	127	126	166	196	212
Highway												
Gasoline, diesel, and other fuels												
Passenger car and motorcycle	8,534	8,677	8,762	8,988	9,187	9,159	9,219	9,458	9,456	9,451	9,701	9,400
Other 2-axle 4-tire vehicle	5,701	5,919	6,173	6,308	6,607	6,617	6,690	6,903	7,595	7,927	7,359	7,583
Single-unit 2-axle 6-tire or more truck	1,278	1,305	1,328	946	1,300	1,326	1,341	1,290	1,110	1,120	1,188	1,230
Combination truck	2,743	2,801	2,816	3,489	3,403	3,560	3,538	3,673	3,303	3,355	3,840	3,386
Bus	134	137	142	144	159	154	142	139	134	189	155	159
Transit												
Electricity	17	17	17	17	18	19	19	19	19	20	20	20
Motor fuel												
Diesel	94	96	99	103	106	109	103	100	99	101	101	102
Gasoline and other nondiesel fuels	8	8	7	7	6	6	6	7	6	7	7	9
Compressed natural gas	1	2	3	5	6	8	9	11	14	16	17	20
Rail, Class I (in freight service)												
Distillate / diesel fuel	483	496	496	497	515	513	515	517	531	563	568	581
Amtrak												
Electricity	1	1	1	1	1	1	1	U	U	U	U	U
Distillate / diesel fuel	9	10	10	10	10	11	10	U	U	U	U	U
Water												
Residual fuel oil	881	853	750	841	874	960	810	726	580	702	775	861
Distillate / diesel fuel oil	324	345	357	360	336	314	284	288	307	297	278	264
Gasoline	133	124	123	120	137	141	124	135	138	126	158	155
Pipeline												
Natural gas	722	734	775	655	665	662	644	688	610	584	602	603

KEY: Btu = British thermal unit, U = Data are unavailable.

NOTES: *Certificated carriers* are domestic operations only. *General aviation* includes fuel used in air taxi operations, but not commuter operations.

The following conversion rates were used:

Jet fuel = 135,000 Btu/gallon

Aviation gasoline = 120,200 Btu/gallon

Compressed natural gas = 138,700 Btu/gallon

Distillate fuel = 138,700 Btu/gallon

Automotive gasoline = 125,000 Btu/gallon

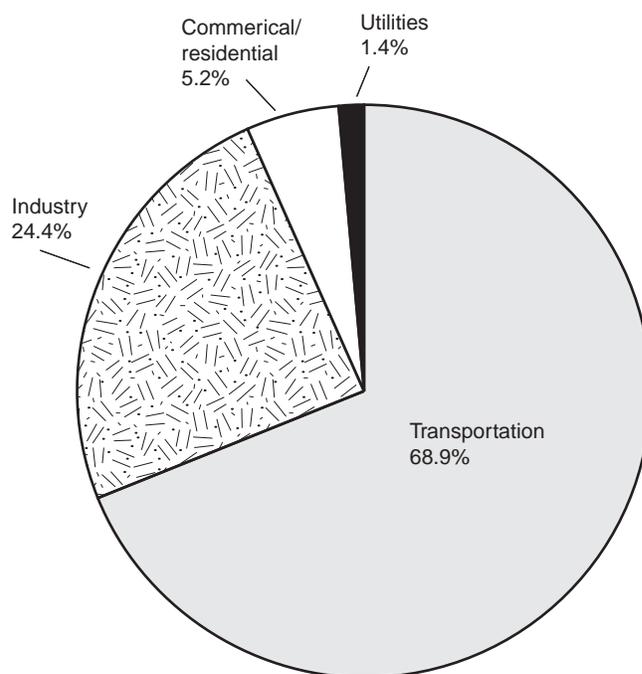
Residual fuel oil = 149,700 Btu/gallon

Diesel motor fuel = 138,700 Btu/gallon

Natural gas = 1,031 Btu/ft³

Electricity 1kWh = 3,412 Btu, negating electrical system losses. To include approximate electrical system losses, multiply this conversion factor by 3.

SOURCES: **Air:** Federal Aviation Administration, **Highway:** Federal Highway Administration, **Transit:** American Public Transportation Association, **Rail:** Association of American Railroads, **Water:** Energy Information Administration and Federal Highway Administration, **Pipeline:** U. S. Department of Energy as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-6, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

FIGURE 1-2-3 Percentage of Total U.S. Petroleum Use by Sector: 2007

SOURCES: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review*, tables 5.13a - 5.13d, available at <http://www.eia.doe.gov/emeu/aer/contents.html> as of July 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-3, available at http://www.bts.gov/publications/national_transportation_statistics/ as of July 2008.

TABLE 1-2-3 U.S. Petroleum Use by Sector: 1995–2007

Millions of barrels per day

	Transportation	Industry	Commerical/ residential	Utilities	Total	Transportation as a percentage of total
1995	11.7	4.6	1.1	0.3	17.7	65.8
1996	11.9	4.8	1.2	0.4	18.3	65.1
1997	12.1	5.0	1.2	0.4	18.6	65.0
1998	12.4	4.8	1.1	0.6	18.9	65.7
1999	12.8	5.0	1.2	0.5	19.5	65.4
2000	13.0	4.9	1.3	0.5	19.7	66.1
2001	12.9	4.9	1.3	0.6	19.6	65.8
2002	13.2	4.9	1.2	0.4	19.8	66.8
2003	13.3	4.9	1.3	0.5	20.0	66.5
2004	13.7	5.2	1.3	0.5	20.7	66.2
2005	14.0	5.1	1.2	0.5	20.8	67.2
2006	14.2	5.1	1.1	0.3	20.7	68.6
2007	14.3	5.1	1.1	0.3	20.7	68.9

NOTES: 2005–2007 data are preliminary, except for Utilities. Data may not add to total because of independent rounding.

SOURCES: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review*, tables 5.13a - 5.13d, available at <http://www.eia.doe.gov/emeu/aer/contents.html> as of July 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-3, available at http://www.bts.gov/publications/national_transportation_statistics/ as of July 2008.

TABLE 1-2-4 Energy Intensity by Passenger Mode: 1995–2006

Btu per passenger-mile

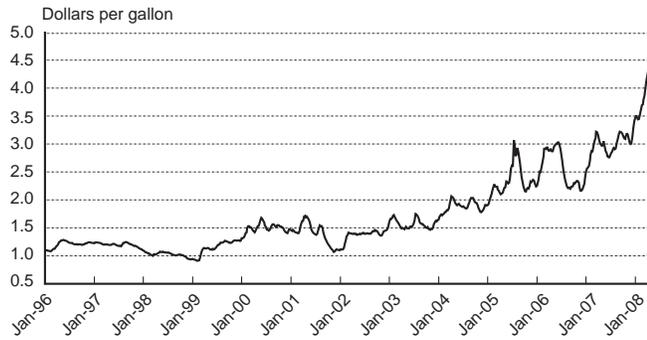
	Passenger cars	Light-duty trucks	Transit buses	Aircraft (domestic)	Amtrak
1995	3,721	4,538	4,155	4,382	1,838
1996	3,688	4,541	4,196	4,183	2,153
1997	3,657	4,564	4,228	4,166	2,200
1998	3,637	4,569	4,133	4,123	2,138
1999	3,672	4,612	4,044	4,049	2,107
2000	3,589	4,509	4,147	3,883	2,134
2001	3,597	3,985	3,698	3,890	2,100
2002	3,600	4,121	3,550	3,596	U
2003	3,570	4,452	3,514	3,496	U
2004	3,509	4,452	3,572	3,410	U
2005	3,585	4,077	3,393	3,222	U
2006	3,525	4,016	3,262	3,098	U

KEY: Btu = British thermal unit, U = Data are unavailable.

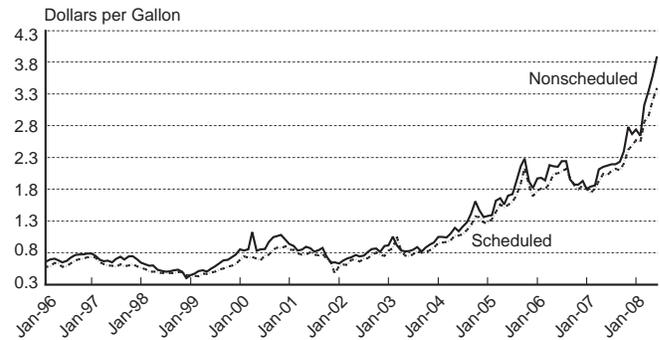
SOURCES: **Aircraft:** Bureau of Transportation Statistics, **Passenger cars and Light-duty trucks:** Federal Highway Administration, **Transit buses:** American Public Transportation Association, **Amtrak:** Amtrak as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 4-20, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

FIGURE 1-2-5 Fuel Prices

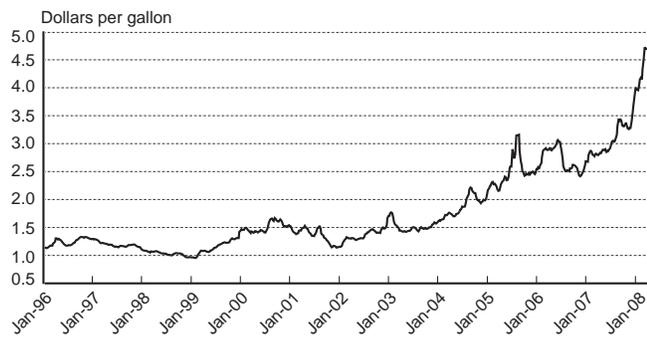
Retail Gasoline Prices
(weekly data, not seasonally adjusted)



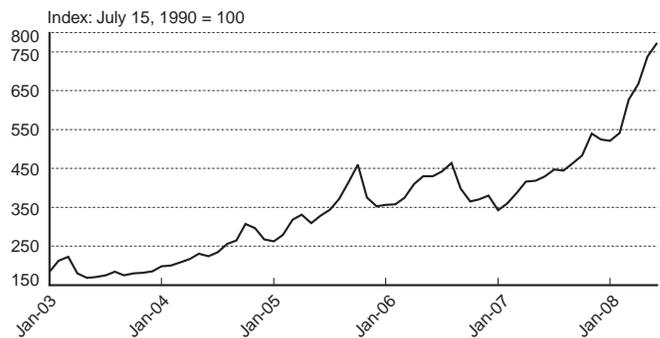
Jet Fuel Prices
(monthly data, not seasonally adjusted)



Retail On-Highway Diesel Prices
(weekly data, not seasonally adjusted)



Railroad Fuel Prices
(monthly data, not seasonally adjusted)



NOTES: The data depicted above all end in June 2008. Data for *railroad fuel prices* begin in January 2003, fuel price data for other fuels begin in January 1996.

Changes in motor fuel prices impact the behavior of both producers and consumers, and affect the demand for transportation in terms of level and modal mix. In the United States, retail *gasoline prices* follow world crude oil prices more closely than retail *diesel prices*. Changes in motor fuel prices affect the profit margin of transportation firms, particularly trucking firms.

Jet fuel prices reported to the Bureau of Transportation Statistics differ from producer prices. Reports to BTS show the cost per gallon of fuel used by an airline during the month rather than the price charged by a producer on a single day. Fuel costs for scheduled airline services reflect contractual and storage advantages available to large buyers, while fuel costs for nonscheduled airline services reflect economic conditions for smaller buyers. Jet fuel prices also reflect seasonality due to both the seasonality of aviation and because jet fuel has similar refining requirements to heating oil.

The *railroad fuel price*, which include federal excise taxes, transportation, and handling expenses, represent the average monthly price for fuels purchased by freight railroads during each month.

SOURCES: **Retail gasoline and on-highway diesel prices:** U.S. Department of Energy, Energy Information Administration, available at http://tonto.eia.doe.gov/dnav/pet/pet_pri_gnd_a_epmr_pte_cpgal_w.htm as of July 2008, **Jet fuel prices:** U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Office of Airline Information, available at <http://www.bts.gov/oai> as of July 2008, **Railroad fuel prices:** Association of American Railroads, *Index of Monthly Railroad Fuel Prices* (Washington, DC: monthly issues), available at <http://www.aar.org/IndustryInformation/IndustryStatistics/RailCostIndexes.aspx> as of July 2008.

TABLE 1-2-6 Sales Price of Transportation Fuel to End-Users: 1995–2007

Dollars/gallon (in current dollars), annual average

	Aviation fuel (excluding taxes)		Highway fuel (including taxes)				Railroad fuel
	Aviation gasoline	Jet fuel kerosene	Gasoline, premium	Gasoline, regular	Gasoline, all types	Diesel No. 2 (excluding taxes)	Diesel
1995	1.01	0.54	1.34	1.15	1.21	0.56	0.60
1996	1.12	0.65	1.41	1.23	1.29	0.68	0.68
1997	1.13	0.61	1.42	1.23	1.29	0.64	0.68
1998	0.98	0.45	1.25	1.06	1.12	0.49	0.57
1999	1.06	0.54	1.36	1.17	1.22	0.58	0.55
2000	1.31	0.90	1.69	1.51	1.56	0.94	0.87
2001	1.32	0.78	1.66	1.46	1.53	0.84	0.86
2002	1.29	0.72	1.56	1.36	1.44	0.76	0.73
2003	1.49	0.87	1.78	1.59	1.64	0.94	0.89
2004	1.82	1.21	2.07	1.88	1.92	1.24	1.07
2005	2.23	1.74	2.49	2.30	2.34	1.79	1.51
2006	2.68	2.00	2.81	2.59	2.64	2.10	1.92
2007	2.85	2.17	3.03	2.80	2.85	2.27	U

KEY: U = Data are unavailable.

NOTES: All costs are yearly average. *Aviation gasoline*, *jet fuel kerosene*, and *diesel no. 2* include sales to end-users (those sales made directly to the ultimate consumer, including bulk customers in agriculture, industry, and utilities). Prices for *gasoline*, premium and regular, are the average retail price.

SOURCES: **Aviation fuel** and **Highway fuel:** Energy Information Administration, **Railroad fuel:** Association of American Railroads as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-8, available at http://www.bts.gov/publications/national_transportation_statistics/ as of July 2008.

TABLE 1-2-7 Prohibited Items Intercepted at Airport Screening Checkpoints: 2002–2007

	2002	2003	2004	2005	2006	2007
Total prohibited items	3,775,345	6,114,612	7,089,599	15,887,596	13,711,759	6,516,022
Firearms	927	683	650	2,217	2,075	1,416
Knives	1,036,697	1,961,849	2,058,652	1,822,752	1,607,125	1,056,687
Box cutters	32,788	20,991	22,350	21,315	15,999	11,908
Other cutting instruments	1,846,207	2,973,413	3,567,731	3,276,691	163,419	101,387
Clubs and bats	11,131	25,139	28,813	20,531	12,296	9,443
Incendiaries	79,341	494,123	693,649	398,830	113,700	89,623
Other	768,254	638,414	717,754	10,345,260	11,797,145	5,245,558

NOTES: 2002 data are April through December.

The large increase in 2005 and decrease in 2007 was primarily due to the prohibition of lighters on board from April 2005 to August 2007. Fluctuations in counts can be attributed to changes in definitions and regulations governing prohibited items.

SOURCE: U.S. Department of Homeland Security, Transportation Security Administration, Office of Transportation Security Policy, personal communication as of October 2008.

TABLE 1-2-8 Transportation Worker Identification Credential (TWIC) Program

As of date	Pre-Enrollments (cumulative)	Enrollments (cumulative)	As of date	Pre-Enrollments (cumulative)	Enrollments (cumulative)
1/10/2008	100,518	43,069	5/15/2008	366,267	292,487
1/17/2008	108,766	48,873	5/23/2008	379,574	309,472
1/24/2008	122,490	58,719	5/29/2008	385,969	317,199
1/31/2008	135,466	69,155	6/6/2008	397,350	331,042
2/7/2008	148,064	78,387	6/12/2008	404,555	339,661
2/14/2008	161,662	91,447	6/19/2008	412,527	350,115
2/21/2008	175,875	104,649	6/26/2008	421,218	361,306
2/28/2008	190,447	120,148	7/3/2008	429,255	371,949
3/6/2008	209,265	138,197	7/10/2008	435,754	380,348
3/13/2008	226,314	154,043	7/17/2008	448,825	391,269
3/20/2008	242,876	170,472	7/24/2008	453,318	402,573
3/27/2008	258,197	185,213	7/31/2008	460,239	414,337
4/4/2008	276,919	203,984	8/7/2008	470,235	426,654
4/18/2008	304,238	230,273	8/14/2008	483,105	440,145
4/24/2008	318,739	244,470	8/21/2008	496,144	454,521
5/1/2008	336,446	260,608	8/27/2008	509,041	469,877
5/8/2008	353,187	277,176	9/4/2008	519,717	483,241
As of the week of 09/04/08:					
No. of TWIC Cards Printed				430,055	
No. of TWIC Cards Activated				304,159	
Avg. Enrollment Time				9.06 mins	
No. of Enrollment Centers Open				148	

NOTES: The Transportation Worker Identification Credential (TWIC) is a common identification credential for all personnel requiring unescorted access to secure areas of facilities and vessels regulated by the Maritime Transportation Security Act and all mariners holding Coast Guard-issued credentials. The Transportation Security Administration will issue workers a tamper-resistant "Smart Card" containing the worker's biometric (fingerprint template) to allow for a positive link between the card itself and the individual.

The enrollment process consists of the following components: optional pre-enrollment, in-person enrollment, security threat assessment and notification of the results, and issuance of the TWIC to the applicant. The security threat assessment includes checks against criminal history records, terrorist watch lists, and immigration status. A robust appeals and waivers process is offered to applicants who may be initially determined to be ineligible to hold a TWIC.

Applicants may pre-enroll online to enter all of the biographic information required for the threat assessment and make an appointment at the enrollment center to complete the process (although appointments are not required). Then, applicants must visit the enrollment center where they will pay the enrollment fee, complete a TWIC Application Disclosure Form, provide biographic information and a complete set of fingerprints, and sit for a digital photograph. The applicant must bring identity verification documents to enrollment and non-US citizen applicants must also bring along documentation to verify that they meet the immigration status requirements. These documents are scanned into the electronic enrollment record. There will be a total of 149 enrollment centers nationwide, as well as employer-sponsored mobile enrollment capabilities deployed on a case-by-case basis. The applicant will be notified by email or phone, as specified during enrollment, when his/her credential is available at the enrollment center. The applicant must return to the same enrollment center to pick up his/her TWIC.

For additional information, please visit <http://www.tsa.gov/twic>.

SOURCE: U.S. Department of Homeland Security, Transportation Security Administration, personal communications, September 2008.

TABLE 1-2-9 International Piracy and Armed Robbery at Sea

Number of incidents

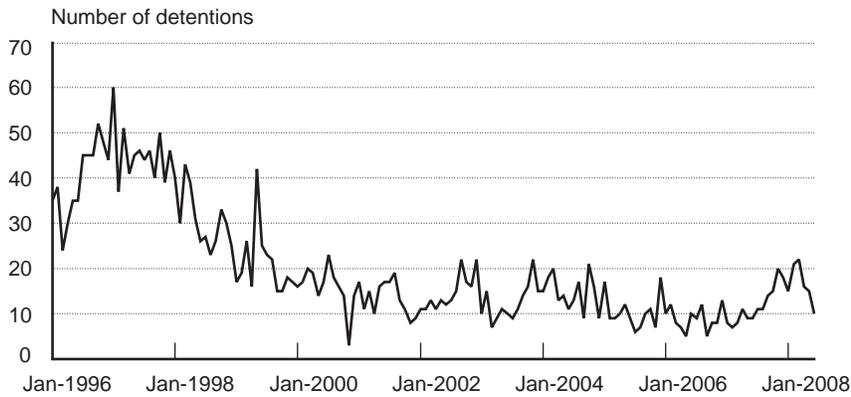
	Malacca Strait	Indian Ocean	East Africa	West Africa	South America	Mediterranean Sea	South China Sea	Total
1998	6	25	19	22	38	2	94	210
1999	37	51	16	36	29	4	136	309
2000	112	109	29	33	41	2	140	471
2001	58	86	22	58	23	2	120	370
2002	34	66	23	47	67	3	140	383
2003	36	96	22	67	72	1	154	452
2004	60	41	13	57	46	0	113	330
2005	20	51	47	23	26	0	97	266
2006	22	53	31	31	31	1	66	240
2007	12	40	60	60	25	3	67	282

NOTES: Incidents include attempts and threatening actions. Details may not add to totals because of missing categories.

SOURCE: International Maritime Organization, *Reports on Acts of Piracy and Armed Robbery Against Ships: Annual Report*, available at <http://www.imo.org/home.asp> as of July 2008.

FIGURE 1-2-10 Vessel Detentions: January 1996–June 2008

Monthly data, not seasonally adjusted



SOURCE: U.S. Department of Homeland Security, U.S. Coast Guard, *IMO Reportable Detentions* (Washington, DC: Monthly issues), available at <http://homeport.uscg.mil/> as of July 2008.

TABLE 1-2-10 Vessel Detentions: January 2007–June 2008

	Vessel detention
January 2007	8
February 2007	7
March 2007	8
April 2007	11
May 2007	9
June 2007	9
July 2007	11
August 2007	11
September 2007	14
October 2007	15
November 2007	20
December 2007	18
January 2008	15
February 2008	21
March 2008	22
April 2008	16
May 2008	15
June 2008	10

NOTES: The U.S. Coast Guard identifies vessels not in compliance with international conventions through examinations and boardings. If a vessel is not compliant, appropriate action is taken to eliminate any threat that vessel may pose to U.S. waters, ports, and citizens.

Examples of threats can include: oil leaks, improper repairs to lifeboats, inability to demonstrate proficiency in a fire drill, or failure to maintain document control.

SOURCE: U.S. Department of Homeland Security, U.S. Coast Guard, *IMO Reportable Detentions* (Washington, DC: Monthly issues), available at <http://homeport.uscg.mil/> as of July 2008.

Commodity Flow Survey

The Commodity Flow Survey (CFS) is one of the flagship programs of the Bureau of Transportation Statistics. The CFS is conducted in partnership with the U.S. Census Bureau as a component of the Economic Census. It is conducted on a 5-year cycle, with surveys conducted in 1993, 1997, 2002, and most recently in 2007. This survey is the primary source of national- and state-level data on domestic freight shipments by American establishments in mining, manufacturing, wholesale, auxiliaries, and selected retail industries. Data are provided on the types, origins and destinations, values, weights, modes of transport, distance shipped, and ton-miles of commodities shipped. The CFS is a shipper-based survey and represents the only publicly available source of commodity flow data for the highway mode. In addition, the CFS also provides one of the most comprehensive data series on the shipment of hazardous materials and exports.

Analysts and researchers in both the public and private sectors use data from the CFS for a variety of purposes:

- analyzing trends in goods movement over time;
- conducting national and regional economic analysis;
- developing models and analytical tools for policy analyses, management, and investment decisions;
- forecasting future demand for goods movement and associated infrastructure and equipment needs;
- establishing benchmarks for estimating national accounts; and
- analyzing and mapping spatial patterns of commodity and vehicle flows.

The Bureau of Transportation Statistics, in partnership with the U.S. Census Bureau, completed data collection for the 2007 Commodity Flow Survey during the spring of 2008. As a result of consultations with data users and stakeholders and an extensive research effort, BTS and the Census Bureau implemented significant improvements in the survey design and data products. Highlighted accomplishments from these efforts include:

- expanded coverage of shipping industries and geography;
- formal pretesting leading to improved forms and data collection procedures;
- a precanvass operation to increase sample efficiency;
- improved data processing, including editing and imputation procedures and an expanded quality assurance program;
- improved sample design that restored sample size to 100,000 establishments (50,000 in 2002) and incorporated both national- and state-level reliability constraints for the first time;

- enhanced mileage calculation processing and software, most notably in the areas of modal rules for problematic shipments, rules for file return, dual usage of identical zip code file, and summary statistics; and
- planned improvements to future data products and dissemination methods (including future use of new nondisclosure methodology).

2007 Commodity Flow Survey

According to preliminary estimates, American businesses made shipments valuing \$11.8 trillion, totaling 13.0 billion tons, and contributing 3.5 trillion ton-miles on the nation's transportation infrastructure (Table 1-3-1: *Shipment Characteristics by Mode of Transportation for the United States*). Trucking continues to dominate as the modal choice for freight shipments, accounting for 71 percent of the value and 76 percent of the tons of all commodity shipments.

Processing of the 2007 CFS data continued through 2008 with preliminary estimates from the survey released in December 2008. These preliminary estimates will be followed by the scheduled release of final data products in December 2009. All 2007 CFS data products, as well as those from previous surveys, are available at www.bts.gov/publications/commodity_flow_survey/. For the first time, data products from the 2002 and 2007 surveys will also reside on the U.S. Census Bureau's American FactFinder – an Internet data dissemination and analysis tool available at <http://factfinder.census.gov/>.

Table 1-3-1 Shipment Characteristics by Mode of Transportation for the United States: 2007

Estimates are based on preliminary data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive

Mode of transportation	2007 value (million \$)	2007 tons (thousands)	2007 ton-miles ¹ (millions)	2007 average miles per shipment
All modes	11,831,503	13,016,610	3,490,806	580
Single modes	9,554,880	12,087,756	2,953,076	213
Truck²	8,363,657	8,957,687	1,390,102	187
For-hire truck	4,764,442	4,029,016	1,011,018	527
Private truck	3,599,215	4,928,670	379,084	82
Rail	387,567	1,928,530	1,294,921	691
Water	106,905	423,282	175,973	330
Shallow draft	95,420	381,566	163,571	284
Great Lakes	705	13,261	4,830	S
Deep draft	10,779	28,455	S	390
Air (included truck and air)	209,611	3,525	4,014	1,299
Pipeline³	487,140	774,732	S	S
Multiple modes	1,938,884	626,539	489,767	915
Parcel, USPS or courier	1,597,931	36,029	29,535	914
Truck and rail	197,748	213,411	188,547	1,053
Truck and water	31,112	74,421	48,870	1,347
Rail and water	7,744	44,979	30,444	2,608
Other multiple modes	104,350	257,698	192,372	2,190
Other and unknown modes	337,739	302,315	47,964	149

KEY: S = Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹ Ton-miles estimates are based on estimated distances traveled along a modeled transportation network.

² "Truck" as a single mode includes any shipment that was made by private truck only, by for-hire truck only, or by a combination of private and for-hire truck.

³ Estimates for pipeline exclude shipments of crude petroleum.

NOTE: These data are preliminary and are subject to change; they will be superseded by data released in later reports. Value-of-shipment estimates have not been adjusted for price changes.

More information on sampling error, confidentiality protection, nonsampling error, sample design, and definitions may be found at <http://www.census.gov/cfs>.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics and U.S. Department of Commerce, U.S. Census Bureau, 2007 Economic Census: Transportation Commodity Flow Survey, Preliminary Release, December 2008.

Chapter 2

Transportation System

Infrastructure

Pipelines showed the largest increase in system mileage from 2005 to 2006 of any components of the transportation system. Hazardous liquid pipeline mileage increased 6.2 percent, and gas pipeline mileage increased 6.7 percent.

The number of U.S. airports increased by 358, rising from 19,983 in 2006 to 20,341 in 2007. However, the number of certificated airports¹ declined from 604 in 2006 to 565 in 2007 (Table 2-1-5: *Number of U.S. Airports*).

The value of the nation's transportation capital stocks (the value of infrastructure and conveyances) increased 6.8 percent from 2006 to 2007, to \$6.3 trillion (Table 2-1-4: *Transportation Capital Stock by Selected Modes*). The largest increase was in the value of public highways and streets, increasing \$277 billion to \$2.6 trillion in total value.

The number of structurally deficient and functionally obsolete bridges in the United States declined from 2006 to 2007, with 1,624 fewer structurally deficient bridges and 513 fewer functionally obsolete bridges (Table 2-1-9 *Condition of U.S. Highway Bridges*).

Class 1 railroads increased the number of crossties replaced by 9.7 percent, from 13.4 million in 2005 to 14.7 million in 2006 (Table 2-1-13: *Crossties Replaced or Added by U.S. Class 1 Railroads*). Railroads also increased the tons of rails replaced by 38,272 (9 percent) (Table 2-1-12: *Rail Replaced or Added by U.S. Class 1 Railroads*). In addition, railroads placed 1,080 new or rebuilt locomotives into service, representing 4.6 percent of the fleet, as well as 76,528 new or rebuilt freight cars, representing 5.7 percent of the fleet (Table 2-1-14: *New and Rebuilt Locomotive and Freight Cars*).

¹ Airports serving any: (1) scheduled passenger-carrying operations of an air carrier operating aircraft designed for more than 9 passenger seats; and (2) unscheduled passenger-carrying operations of an air carrier operating aircraft designed for at least 31 passenger seats.

TABLE 2-1-1 Transportation System Mileage Within the United States: 1995–2006

Miles

	Rail			Transit rail			Navigable waterways	Pipeline	
	Highway	Class I	Amtrak	Commuter rail	Heavy rail	Light rail		Hazardous liquid	Gas
1995	3,912,226	108,264	24,000	4,160	1,458	568	26,000	181,912	1,277,600
1996	3,919,652	105,779	25,000	3,682	1,478	638	26,000	177,535	1,323,600
1997	3,945,872	102,128	25,000	4,417	1,527	659	26,000	179,873	1,331,800
1998	3,906,290	100,570	22,000	5,172	1,527	676	26,000	178,648	1,351,200
1999	3,917,243	99,430	23,000	5,191	1,540	802	26,000	177,463	1,340,300
2000	3,936,222	99,250	23,000	5,209	1,558	834	26,000	176,996	1,369,300
2001	3,948,335	97,817	23,000	5,209	1,572	897	26,000	158,248	1,373,500
2002	3,966,485	100,125	23,000	6,831	1,572	960	26,000	160,990	1,411,400
2003	3,974,107	99,126	22,675	6,809	1,597	996	26,000	159,889	1,424,200
2004	3,981,512	97,662	22,256	6,875	1,596	1,187	26,000	161,670	1,462,300
2005	3,995,635	95,830	22,007	7,118	1,622	1,188	26,000	159,512	1,437,500
2006	4,016,741	94,942	21,708	6,972	1,623	1,280	26,000	169,346	1,534,300

NOTES: *Highway* includes all public road and street mileage in the 50 states and the District of Columbia. Beginning in 1998, approximately 43,000 miles of Bureau of Land Management Roads are excluded. *Class I* rail data represent miles of road owned (aggregate length of road, excluding yard tracks, sidings, and parallel lines). Portions of Class I freight railroads, Amtrak, and commuter rail networks share common trackage. *Amtrak* data represent nondirectional route-miles operated. Some Amtrak service is operated on the right-of-way owned by Amtrak, but the majority of route miles are on right-of-way owned by Class I Freight railroads or commuter rail networks. *Transit* system length is measured in directional route-miles. Directional route-miles is the distance in each direction over which public transportation vehicles travel while in revenue service. Directional route-miles are computed with regard to direction of service, but without regard to the number of traffic lanes or rail tracks existing in the right-of-way. Beginning in 2002, directional route-mileage data for the commuter and light rail modes include purchased transportation.

Navigable waterways are estimated sums of all domestic waterways, which include rivers, bays, channels, and the inner route of the Southeast Alaskan Islands, but does not include the Great Lakes or deep ocean traffic. The Waterborne Commerce Statistics Center considers 12,000 miles as commercially significant inland shallow-draft waterways in 2007. *Hazardous liquid pipeline* includes trunk and gathering lines for crude-oil pipeline. *Gas pipeline* mileage includes transmission, gathering, and distribution.

SOURCES: **Highway:** Federal Highway Administration, **Rail:** Association of American Railroads and Amtrak, **Transit:** Federal Transit Administration, **Navigable Waterways:** U.S. Army Corps of Engineers, **Pipeline:** Office of Pipeline Safety and American Gas Association as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-1, available at http://www.bts.gov/publications/national_transportation_statistics as of January 2009.

TABLE 2-1-2 Number of Air Carriers, Railroads, Interstate Motor Carriers, Marine Vessel Operators, and Pipeline Operators: 1995–2006

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Air carriers	96	96	96	96	94	91	87	83	80	83	82	98
Major air carriers	11	12	13	13	13	15	15	15	14	14	17	21
Other air carriers	85	84	83	83	81	76	72	68	66	69	65	77
Railroads	541	553	550	559	555	560	571	552	549	556	560	559
Class I railroads	11	10	9	9	9	8	8	7	7	7	7	7
Other railroads	530	543	541	550	546	552	563	545	542	549	553	552
Interstate motor carriers	346,000	379,000	417,000	477,486	517,297	560,393	592,909	600,104	674,314	677,317	679,744	U
Marine vessel operators	1,381	1,348	1,311	1,235	1,174	1,114	1,063	877	798	767	733	682
Pipeline operators	2,367	2,327	2,281	2,236	2,238	2,157	2,135	2,186	2,216	2,240	2,166	2,297
Hazardous liquid	197	205	216	219	215	220	220	218	235	278	302	324
Natural gas transmission	975	971	957	889	885	844	837	919	947	941	968	992
Natural gas distribution	1,444	1,397	1,365	1,375	1,393	1,363	1,341	1,331	1,311	1,344	1,352	1,325

NOTES: *Air carrier* groups are categorized based on their annual operating revenues as major, national, large regional, and medium regional. The thresholds were last adjusted July 1, 1999, and the threshold for major air carriers is currently \$1 billion. The other air carrier category contains all national, large regional, and medium regional air carriers. *Interstate motor carrier* figures are for the fiscal year, October through September. The Federal Motor Carrier Safety Administration deletes motor carriers from the Motor Carrier Management Information System (MCMIS) when they receive an official notice of a change in status. This most often occurs when a safety audit or compliance review is attempted. As a result, inactive carriers may be included in the MCMIS.

There is some overlap among the operators for the pipeline modes so the total number of pipeline operators is lower than the sum for the three pipeline modes.

SOURCES: **Air:** Bureau of Transportation Statistics, **Railroads:** Association of American Railroads, **Motor Carriers:** Federal Motor Carrier Safety Administration, **Marine:** U.S. Army Corps of Engineers, **Pipeline:** Office of Pipeline Safety as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-2, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 2-1-3 Number of U.S. Aircraft, Vehicles, and Other Conveyances: 1995–2006

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Air												
Air carrier	7,411	7,478	7,616	8,111	8,228	8,055	8,497	8,194	8,176	8,186	8,225	U
General aviation (active fleet)	188,089	191,129	192,414	204,710	219,464	217,533	211,446	211,244	209,606	219,319	224,092	221,942
Highway, total (registered vehicles)												
Passenger car	128,386,775	129,728,341	129,748,704	131,838,538	132,432,044	133,621,420	137,633,467	135,920,677	135,669,897	136,430,651	136,568,083	135,399,945
Motorcycle	3,897,191	3,871,599	3,826,373	3,879,450	4,152,433	4,346,068	4,903,056	5,004,156	5,370,035	5,767,934	6,227,146	6,686,147
Other 2-axle 4-tire vehicle	65,738,322	69,133,913	70,224,082	71,330,205	75,356,376	79,084,979	84,187,636	85,011,305	87,186,663	91,845,327	95,336,839	99,124,775
Truck, single-unit 2-axle 6-tire or more	5,023,670	5,266,029	5,293,358	5,734,925	5,762,864	5,926,030	5,703,501	5,650,619	5,848,523	6,161,028	6,395,240	6,649,337
Truck, combination	1,695,751	1,746,586	1,789,968	1,997,345	2,028,562	2,096,619	2,154,174	2,276,661	1,908,365	2,010,335	2,086,759	2,169,670
Bus	685,503	694,781	697,548	715,540	728,777	746,125	749,548	760,717	776,550	795,274	807,053	821,959
Transit												
Motor bus	67,107	71,678	72,770	72,142	74,228	75,013	76,075	76,190	77,328	81,033	82,027	(P) 83,080
Light rail cars	1,048	1,114	1,078	1,076	1,180	1,327	1,371	1,448	1,482	1,622	1,645	(P) 1,801
Heavy rail cars	10,166	10,243	10,228	10,296	10,362	10,311	10,718	10,849	10,754	10,858	11,110	(P) 11,062
Trolley bus	695	675	655	646	657	652	600	616	672	597	615	(P) 609
Commuter rail cars and locomotives	5,164	5,240	5,426	5,536	5,550	5,498	5,572	5,724	5,959	6,228	6,392	(P) 6,403
Demand response	29,352	30,804	32,509	29,646	31,884	33,080	34,661	34,699	35,954	37,078	41,958	(P) 43,509
Other	2,809	2,996	3,807	4,706	5,076	5,360	5,792	5,581	6,141	6,406	7,080	(P) 8,741
Rail												
Class I, Freight cars	583,486	570,865	568,493	575,604	579,140	560,154	499,860	477,751	467,063	473,773	474,839	475,415
Class I, Locomotive	18,812	19,269	19,684	20,261	20,256	20,028	19,745	20,506	20,774	22,015	22,779	23,732
Nonclass I freight cars	84,724	87,364	116,108	121,659	126,762	132,448	125,470	130,590	124,580	120,169	120,195	120,688
Car companies and shippers freight cars	550,717	582,344	585,818	618,404	662,934	688,194	688,806	691,329	687,337	693,978	717,211	750,404
Amtrak, Passenger train car	1,722	1,730	1,728	1,962	1,992	1,894	2,084	2,896	1,623	1,211	1,186	1,191
Amtrak, Locomotive	313	299	332	345	329	378	401	372	442	276	258	319
Water												
Nonself-propelled vessels	31,360	32,811	33,011	33,509	33,387	33,152	33,042	32,381	31,335	31,296	32,052	32,211
Self-propelled vessels	8,281	8,293	8,408	8,523	8,379	8,202	8,546	8,621	8,648	8,994	8,976	8,898
Oceangoing steam and motor ships ^a	512	509	495	473	470	461	454	443	416	412	357	286
Recreational boats	11,734,710	11,877,938	12,312,962	12,565,930	12,738,271	12,782,143	12,876,346	12,854,054	12,794,616	12,781,476	12,942,414	12,746,126

KEY: U = Data are unavailable, P = Data are preliminary.

^a Beginning in 2006, vessels are reported if they are greater than 10,000 deadweight tons; prior to 2006, boats of greater than 1,000 deadweight tons were reported.

NOTES: *Air Carrier* are those aircraft carrying passengers or cargo for hire under 14 CFR 121 and 14 CFR 135. The number of aircraft is the monthly average of the number of aircraft reported in use for the last three months of the year. *General aviation* data includes air taxi aircraft. *Other transit* includes aerial tramway, automated guideway transit, cablecar, ferry boat, inclined plane, monorail, and vanpool. *Nonself-propelled vessels* include dry-cargo barges, tank barges, and railroad-car floats.

Self-propelled vessels include dry-cargo and/or passenger, offshore supply vessels, railroad-car ferries, tankers, and towboats. *Recreational boats* include those that are required to be numbered in accordance with Chapter 123 of Title 46 U.S.C.

SOURCES: **Air Carrier:** Aerospace Industries Association, **General Aviation:** Federal Aviation Administration, **Highway:** Federal Highway Administration, **Transit:** American Public Transportation Association, **Rail:** Association of American Railroads and Amtrak, **Water:** U.S. Army Corps of Engineers and U.S. Coast Guard as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-11, available at http://www.bts.gov/publications/national_transportation_statistics as of January 2009.

TABLE 2-1-4 Transportation Capital Stock by Mode: 1995–2007

Current dollars (billions)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Public highways and streets	1,074.1	1,127.4	1,211.1	1,254.9	1,337.2	1,437.3	1,500.4	1,568.5	1,595.5	1,835.2	2,058.9	2,357.4	2,634.1
Consumer motor vehicles	842.2	875.1	899.4	950.4	1,020.8	1,092.2	1,156.0	1,213.5	1,256.1	1,326.4	1,372.0	1,381.4	1,401.9
In-house transportation	391.2	428.2	459.2	496.1	547.8	587.6	603.6	612.3	638.2	660.4	693.9	736.6	754.5
Other publicly owned transportation	U	U	215.0	229.5	245.2	266.5	280.4	305.7	325.4	378.9	420.9	480.0	532.4
Railroad transportation	246.8	254.3	254.8	260.1	262.7	266.9	272.3	273.4	279.6	284.3	292.0	301.7	312.6
Air transportation	118.0	128.6	140.8	157.6	173.4	195.7	215.6	223.5	229.6	236.3	240.9	243.0	244.7
Other privately owned transportation	97.1	97.8	98.4	100.5	102.2	105.2	106.2	103.9	102.5	104.6	106.7	111.5	113.6
Pipeline transportation	57.8	60.1	62.9	65.0	69.2	73.7	76.7	81.8	83.4	101.6	111.7	119.5	127.9
Commercial truck transportation	52.2	54.7	59.9	63.6	66.4	68.1	66.4	65.8	65.5	68.8	78.7	89.0	95.0
Water transportation	32.3	33.6	35.7	37.1	38.3	39.4	40.0	42.3	44.5	46.8	49.3	53.5	57.3
Private ground passenger transportation	25.1	26.7	27.4	29.0	31.7	33.9	35.1	34.8	35.8	37.5	39.4	42.1	44.0
Total	2,936.8	3,086.5	3,464.6	3,643.8	3,894.9	4,166.5	4,352.7	4,525.5	4,656.1	5,080.8	5,464.4	5,915.7	6,318.0

KEY: U = Data are unavailable.

NOTES: Data include only privately owned capital stock unless otherwise noted. Capital stock data are reported after deducting depreciation. *Consumer motor vehicles* are considered consumer durable goods. *In-house transportation* includes transportation services provided within a firm whose main business is not transportation. For example, grocery companies often use their own truck fleets to move goods from their warehouses to their retail outlets. *Other publicly owned transportation* includes publicly owned airway, waterway, and transit structures but does not include associated equipment. *Other privately owned transportation* includes sightseeing, couriers and messengers, and transportation support activities, such as freight transportation brokers. Data may not add to total because of independent rounding.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, *Fixed Asset Tables*, tables 3.1ES, 7.1B, 8.1, and Nonresidential Detailed Estimates, available at <http://www.bea.gov/> as September 2008.

TABLE 2-1-5 Number of U.S. Airports: 1995–2007

	Total, airports	Public use			Private use			Certificated, total	Civil	Military
		Total	Runways (percent)		Total	Runways (percent)				
			Lighted	Paved		Lighted	Paved			
1995	18,224	5,415	74.3	73.3	12,809	6.4	33.0	667	572	95
1996	18,292	5,389	74.5	73.7	12,903	6.4	32.9	671	577	94
1997	18,345	5,357	74.6	74.0	12,988	6.4	33.0	660	566	94
1998	18,770	5,352	74.8	74.2	13,418	6.3	33.2	660	566	94
1999	19,098	5,324	76.1	74.2	13,774	6.7	31.8	655	565	90
2000	19,281	5,317	75.9	74.3	13,964	7.2	32.0	651	563	88
2001	19,356	5,294	76.2	74.6	14,062	8.0	32.4	635	560	75
2002	19,572	5,286	76.1	74.5	14,286	8.3	32.4	633	558	75
2003	19,581	5,286	76.2	74.5	14,295	8.6	32.7	628	555	73
2004	19,820	5,288	76.3	74.5	14,532	9.0	32.8	599	542	57
2005	19,854	5,270	76.7	74.8	14,584	9.2	33.1	575	U	U
2006	19,983	5,233	77.1	75.2	14,757	9.5	33.2	604	U	U
2007	20,341	5,221	U	U	14,839	U	U	565	U	U

KEY: U = Data are unavailable.

NOTES: Includes civil and joint-use civil-military airports, heliports, STOL (short takeoff and landing) ports, and seaplane bases in the United States and its territories. Publicly owned facilities are open for public use with no prior authorization or permission. *Certificated* airports serve any— (1) scheduled passenger-carrying operations of an air carrier operating aircraft designed for more than 9 passenger seats; and (2) unscheduled passenger-carrying operations of an air carrier operating aircraft designed for at least 31 passenger seats.

SOURCES: U.S. Department of Transportation, Federal Aviation Administration, *Administrator's Fact Book* (various editions), available at <http://www.faa.gov/> as of September 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-3, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 2-1-6 U.S. Airport Runway Pavement Conditions: 1999–2008

Percent, except as noted

	NPIAS airports (number)	Condition			Commercial service airports (number)	Condition		
		Good	Fair	Poor		Good	Fair	Poor
1999	3,344	72	23	5	547	78	20	2
2000	3,361	73	22	5	546	79	19	2
2001	3,364	73	22	5	546	79	19	2
2002	3,358	71	24	5	536	79	19	2
2003	3,346	75	21	4	510	80	18	2
2004	3,356	75	21	4	513	82	16	2
2005	3,357	75	21	4	517	79	19	2
2006	3,365	77	19	4	517	79	18	3
2007	3,372	78	19	3	514	80	18	2
2008	3,356	79	18	3	522	81	17	2

KEY: NPIAS = National Plan of Integrated Airport Systems.

NOTES: The U.S. Department of Transportation, Federal Aviation Administration's (FAA's) *National Plan of Integrated Airport Systems* is composed of all commercial service airports, all reliever airports, and selected general aviation airports. It does not include over 1,000 publicly owned public-use landing areas, privately owned public-use airports, and other civil landing areas not open to the general public. NPIAS airports account for almost all enplanements. In 2007, there were about 16,400 non-NPIAS airports. *Commercial service airports* are defined as public airports receiving scheduled passenger service, and having at least 2,500 enplaned passengers per year.

SOURCE: Federal Aviation Administration, personal communication as of September 2008 as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-24, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 2-1-7 Airport, Ferry, and Intercity Rail Passenger Intermodal Connectivity

Number of connections

	48 contiguous states	Alaska & Hawaii	Total
Airports	434	237	671
With intermodal connections	149	9	158
Without intermodal connections	285	228	513
Percent with connections	34.3%	3.8%	23.5%
Intercity Rail Stations	505	22	527
With intermodal connections	274	7	281
Without intermodal connections	231	15	246
Percent with connections	54.3%	31.8%	53.3%
Passenger Ferry Terminals	254	42	296
With intermodal connections	111	10	121
Without intermodal connections	143	32	175
Percent with connections	43.7%	23.8%	40.9%
Airports, Ferry Terminals and Intercity Rail Stations	1193	301	1494
With intermodal connections	534	16	550
Without intermodal connections	516	243	759
Percent with connections	44.8%	5.3%	36.8%

NOTES: Data for *airports* and *intercity rail stations* was collected during 2006 and 2007, with *ferry terminal* data collected in 2008. Updating and collection of data for other modes is ongoing.

When facilities of more than one mode are co-located, the facility for each mode is counted separately for purposes of total facilities.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Intermodal Passenger Connectivity Database*, December 2008.

TABLE 2-1-8 Rural and Urban Roads in Poor or Mediocre Condition by Functional Class: 1995–2006

Percentage of mileage in roadway class

	Rural				Urban				
	Interstates	Other principal arterials	Minor arterials	Collectors	Interstates	Other freeways and expressways	Other principal arterials	Minor arterials	Collectors
1995	27.0	12.0	12.7	18.0	37.2	14.6	27.1	20.3	26.5
1996	23.0	7.3	10.5	17.0	36.9	12.1	25.9	19.9	26.3
1997	22.7	6.5	9.0	20.1	36.0	12.0	26.7	20.2	26.6
1998	20.6	6.1	7.9	21.8	34.9	12.0	31.3	17.9	20.9
1999	16.3	4.5	6.8	31.2	30.4	10.6	30.6	36.9	39.6
2000	14.4	4.0	7.0	21.2	28.2	10.9	30.0	26.0	32.1
2001	13.6	3.7	6.9	20.4	28.2	10.2	29.3	26.4	31.9
2002	12.3	3.4	5.8	19.5	28.2	10.3	29.7	26.6	32.8
2003	11.4	3.5	6.1	19.2	26.8	10.7	29.0	27.9	34.0
2004	12.4	4.2	6.5	18.8	24.9	9.7	27.8	28.8	34.8
2005	11.2	3.6	5.4	18.5	22.8	7.8	27.4	27.5	33.5
2006	10.0	3.3	5.9	17.9	21.5	6.5	25.6	26.9	34.9

NOTES: Data are for the 50 states and the District of Columbia. The terms *poor* and *mediocre* as used here are Federal Highway Administration (FHWA) pavement condition criteria term categories for quantitative International Roughness Index and Present Serviceability Ratings. For additional information, see U.S. Department of Transportation, Federal Highway Administration, *Status of the Nation's Highways, Bridges, and Transit: 2002 Conditions and Performance Report*, exhibit 3-3, available at <http://www.fhwa.dot.gov/policy> as of August 2005.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics* (Washington, DC: Annual issues), tables HM-63 and HM-64 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-26, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 2-1-9 Condition of U.S. Highway Bridges: 1990–2007

Number of bridges	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total all bridges	572,205	574,036	572,197	573,716	576,460	581,135	581,863	582,751	582,976	585,542	589,674	589,685	590,887	591,940	593,813	595,363	597,340	599,766
Urban	108,770	112,363	115,312	117,488	121,141	122,537	124,950	127,633	128,312	130,339	133,384	133,401	135,339	135,415	137,598	142,408	146,041	151,171
Rural	463,435	461,673	456,885	456,228	455,319	458,598	456,913	455,118	454,664	455,203	456,290	456,284	455,548	456,525	456,215	452,955	451,299	448,595
Structurally deficient bridges, total	137,865	134,534	118,698	111,980	107,683	104,317	101,518	98,475	93,072	88,150	86,678	83,595	81,261	79,775	77,752	75,923	73,784	72,520
Urban	16,847	17,032	16,323	15,932	15,692	15,205	15,094	14,846	14,073	12,967	13,079	12,705	12,503	12,316	12,175	12,600	12,585	12,951
Rural	121,018	117,502	102,375	96,048	91,991	89,112	86,424	83,629	78,999	75,183	73,599	70,890	68,758	67,459	65,577	63,323	61,199	59,569
Functionally obsolete bridges, total	100,355	97,593	80,393	80,000	79,832	80,950	81,208	77,410	79,500	81,900	81,510	81,439	81,537	80,990	80,567	80,412	80,317	79,804
Urban	30,266	30,842	26,243	26,511	27,024	27,487	28,087	26,865	27,588	29,065	29,398	29,383	29,675	29,886	30,298	31,391	32,292	33,139
Rural	70,089	66,751	54,150	53,489	52,808	53,463	53,121	50,545	51,912	52,835	52,112	52,056	51,862	51,104	50,269	49,021	48,025	46,665

NOTES: Data for 1990, 1992, 1997–99, and 2001 are as of December of those years; data for 1991 and 1994–96 are as of June of those years; data for 1993 are as of September of that year; data for 2000 are as of August of that year; data for 2002–06 are as of July of those years. Definitions for the terms *Structurally deficient* and *Functionally obsolete* can be found on pages 14 and 15 in Chapter 3 of the Federal Highway Administration, *2006 Conditions and Performance Report*; the following is a link to Chapter 3 of the report: <http://www.fhwa.dot.gov/policy/2006cpr/pdfs/chap3.pdf>. U.S. totals include the 50 states, the District of Columbia, and Puerto Rico.

Table includes: rural-interstate, principal arterial, minor arterial, major collector, and local roads; urban-interstate, other freeways or expressways, other principal arterial, minor arterial, collector, and local roads. Data for 1990, 1992, 1997–99, 2001, and 2007 are as of December of those years; data for 1991 and 1994–96 are as of June of those years; data for 1993 are as of September of that year; data for 2000 are as of August of that year; data for 2002–06 are as of July of those years.

SOURCES: 1990–2000: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics; based on data from Federal Highway Administration, Office of Bridge Technology, *National Bridge Inventory Database*, personal communication, Aug. 14, 2001, 2001–2007: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics; based on data from Federal Highway Administration, Office of Bridge Technology, National Bridge Inventory Database, *Count of Bridges by Highway System*, available at <http://www.fhwa.dot.gov/bridge/briab.htm> as of Mar. 30 2007 as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-27, available at http://www.bts.gov/publications/national_transportation_statistics/ as of September 2008.

TABLE 2-1-10 U.S. Waterway Facilities: 2000–2006

	Commercial facilities total	Commercial facilities			Locks
		Great Lakes	Inland	Ocean	
2000	9,310	763	2,376	6,171	230
2001	9,309	754	2,367	6,188	230
2002	9,188	754	2,367	6,067	230
2003	9,164	754	2,361	6,049	230
2004	9,172	754	2,361	6,057	212
2005	9,399	754	2,321	6,324	212
2006	9,584	754	2,321	6,509	212

NOTES: *Commercial facilities* is the total of Great Lakes, Inland, and Ocean facilities. Only federal and state governments own locks. Therefore, locks are not included in commercial facilities.

SOURCE: U.S. Army Corps of Engineers, *The U.S. Waterway System—Transportation Facts* (Alexandria, VA: annual releases), Geographic Distribution of U.S. Waterway Facilities, available at <http://www.iwr.usace.army.mil/ndc/factcard/fc07/factcard.htm> as of August 2008.

TABLE 2-1-11 Number of Stations Served by Amtrak and Rail Transit: FY 1995–2007

	Amtrak	Rail transit
1995	530	2,382
1996	542	2,325
1997	516	2,391
1998	508	2,524
1999	510	2,567
2000	515	2,595
2001	512	2,621
2002	515	2,784
2003	514	2,797
2004	517	2,909
2005	518	2,936
2006	503	2,975
2007	497	2,997

NOTES: *Rail transit* is the sum of commuter rail, heavy rail, and light rail. In several large urban areas, Amtrak and commuter rail stations are shared. Starting in 2001, stations serving the Alaska Railroad are included in the rail transit total. *Rail transit* data for 2002 and later years include service both directly operated and purchased. Prior to 2002, data only include directly operated service.

SOURCES: **Rail Transit:** Federal Transit Administration, **Passenger Rail:** National Railroad Passenger Corporation (Amtrak) as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-7, available at http://www.bts.gov/publications/national_transportation_statistics/ as of August 2008.

TABLE 2-1-12 Rail Replaced or Added by U.S. Class I Railroads: 1995–2006

Thousands of tons

	Rail replaced	Rail added
1995	657.6	61.3
1996	803.3	68.7
1997	642.7	113.8
1998	679.0	204.8
1999	769.3	213.4
2000	726.1	196.3
2001	660.1	197.0
2002	635.5	125.2
2003	632.6	139.4
2004	591.4	45.1
2005	424.0	48.4
2006	462.3	38.8

SOURCES: 1995–1999: Association of American Railroads, *Railroad Ten-Year Trends, 1990–2000* (Washington, DC: 2000). **2000–2006:** Association of American Railroads, *Analysis of Class I Railroads* (Washington, DC: 2001–2007).

TABLE 2-1-13 Crossties Replaced or Added by U.S. Class I Railroads: 1995–2006

Millions of crossties

	Crossties replaced	Crossties added
1995	12.1	0.7
1996	13.4	0.8
1997	11.9	1.5
1998	10.4	1.8
1999	10.8	1.3
2000	10.8	0.7
2001	11.4	0.5
2002	13.1	0.3
2003	13.2	0.5
2004	13.3	0.5
2005	13.4	0.9
2006	14.7	0.8

SOURCES: 1995–1999: Association of American Railroads, *Railroad Ten-Year Trends, 1990–2000* (Washington, DC: 2000). **2000–2006:** Association of American Railroads, *Analysis of Class I Railroads* (Washington, DC: 2001–2007).

TABLE 2-1-14 New and Rebuilt Locomotives and Freight Cars: 1995–2006

	Locomotives	Percent of fleet	Freight cars	Percent of fleet
1995	1,129	6.0	66,052	5.4
1996	821	4.3	59,993	4.8
1997	811	4.1	51,963	4.1
1998	1,061	5.2	83,076	6.3
1999	865	4.3	77,901	5.7
2000	721	3.6	58,245	4.2
2001	755	3.8	35,475	2.7
2002	778	3.8	18,832	1.4
2003	621	3.0	33,155	2.6
2004	1,126	5.1	47,843	3.7
2005	911	4.0	70,154	5.3
2006	1,080	4.6	76,528	5.7

NOTES: *Locomotive* data are for Class I railroads only. *Freight car* data cover Class I railroads, other railroads, and private car owners.

SOURCE: Association of American Railroads, *Railroad Facts 2007* (Washington, DC: 2007), pp. 49, 51, and 55 as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-7, available at http://www.bts.gov/publications/national_transportation_statistics/ as of August 2008.

Safety Overview

In 2007, the highway mode accounted for most of the total transportation accidents (99.5 percent), fatalities (94.5 percent), and injuries (94.3 percent) (Tables 2-2-1, 2-2-4, and 2-2-5). General aviation accounts for the majority of air accidents, fatalities, and injuries.

The number of transportation fatalities decreased for the second consecutive year, at a rate of 4.4 percent from 2006 to 2007. The number of highway fatalities decreased 3.9 percent (Table 2-2-1: *Transportation Fatalities by Mode*). The fatality rate of 1.41 per 100 million vehicle-miles traveled is the lowest in U.S. history¹. Transportation-related occupational fatalities decreased 10 percent, accounting for 40.7 percent of all occupational fatalities (Table 2-2-3: *Transportation-Related Occupational Fatalities*).

Within the highway grouping, all reporting categories except two saw a decline. Passenger-car occupant deaths decreased 7.8 percent, and light truck occupant deaths decreased 2.7 percent. Motorcyclist deaths increased 6.6 percent, and the number of bus occupant deaths increased by 10, to 37 (Table 2-2-1: *Transportation Fatalities by Mode*). Passenger car occupants (38.4 percent), light truck occupants (28.8 percent), motorcyclists (12.0 percent), and pedestrians struck by highway vehicles (10.8 percent) account for 9 out of 10 transportation fatalities (Table 2-2-2: *Distribution of Transportation Fatalities*).

The majority of hazardous materials (Hazmat) incidents occurred in the highway mode (86 percent). Air (8 percent) and rail (4 percent) accounted for most of the remainder of Hazmat incidents (Table 2-2-6: *Hazardous Materials Transportation Incidents*). The most common materials involved in Hazmat incidents were paints and paint-related materials.

¹ United States Department of Transportation, Federal Highway Administration; *Roads Can Be Safer, Top Federal Highway Official Says*; FHWA 16-08, available at <http://www.fhwa.dot.gov/pressroom/fhwa0816.htm> as of Nov. 25, 2008.

TABLE 2-2-1 Transportation Fatalities by Mode: 1995–2007

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Air	964	1,093	724	671	681	764	1,166	616	699	637	603	771	535
U.S. air carrier	168	380	8	1	12	92	531	0	22	14	22	50	1
Commuter carrier	9	14	46	0	12	5	13	0	2	0	0	2	0
On-demand air taxi	52	63	39	45	38	71	60	35	42	64	18	16	43
General aviation	735	636	631	625	619	596	562	581	633	559	563	703	491
Highway	41,817	42,063	42,013	41,501	41,717	41,945	42,196	43,005	42,884	42,836	43,510	42,708	41,059
Passenger car occupants	22,423	22,505	22,199	21,194	20,862	20,699	20,320	20,569	19,725	19,192	18,512	17,925	16,520
Motorcyclists	2,227	2,161	2,116	2,294	2,483	2,897	3,197	3,270	3,714	4,028	4,576	4,837	5,154
Truck occupants, light	9,568	9,932	10,249	10,705	11,265	11,526	11,723	12,274	12,546	12,674	13,037	12,761	12,413
Truck occupants, large	648	621	723	742	759	754	708	689	726	766	804	805	802
Bus occupants	33	21	18	38	59	22	34	45	41	42	58	27	37
Pedestrians	5,584	5,449	5,321	5,228	4,939	4,763	4,901	4,851	4,774	4,675	4,892	4,795	4,654
Pedalcyclists	833	765	814	760	754	693	732	665	629	727	786	772	698
Other	501	609	573	540	596	591	581	642	729	732	845	786	781
Pipeline	21	53	10	21	22	38	7	12	12	23	16	19	15
Hazardous liquid pipeline	3	5	0	2	4	1	0	1	0	5	2	0	4
Gas pipeline	18	48	10	19	18	37	7	11	12	18	14	19	11
Railroad	1,146	1,039	1,063	1,008	932	937	971	951	865	891	884	903	845
Highway-rail grade crossing	579	488	461	431	402	425	421	357	334	371	359	369	335
Railroad (mostly trespassers)	567	551	602	577	530	512	550	594	531	520	525	534	510
Transit	274	264	275	286	299	295	267	280	234	248	236	227	214
Highway-rail grade crossing	17	7	12	26	21	20	13	24	21	29	23	21	27
Transit	257	257	263	260	278	275	254	256	213	219	213	206	187
Waterborne	1,016	906	989	1,033	928	888	828	857	807	759	777	797	769
Commercial vessel-related	53	55	48	69	58	53	53	66	54	48	45	48	52
Not related to vessel	134	142	120	149	136	134	94	41	50	35	35	39	32
Recreational boating	829	709	821	815	734	701	681	750	703	676	697	710	685

NOTES: The actual number of deaths for passengers on trains from 1996-2006 was: 1996 (12), 1997 (6), 1998 (4), 1999 (14), 2000 (4), 2001 (3), 2002 (7), 2003 (3), 2004 (3), 2005 (16), 2006 (2), 2007 (5).

Caution is needed in comparing fatalities across modes because of different definitions. For example, rail and transit fatalities include incident-related (not just moving vehicle related) fatalities, such as fatalities from falls in transit stations or railroad employee fatalities from a fire in a workshed, while fatalities at airports not caused by moving aircraft or fatalities from accidents in automobile repair shops are not counted.

SOURCES: **Air:** National Transportation Safety Board, **Highway:** National Highway Traffic Safety Administration, **Pipeline:** Office of Pipeline Safety, **Railroad:** Federal Railroad Administration, **Transit:** Federal Transit Administration, **Waterborne:** U.S. Coast Guard as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-1, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 2-2-2 Distribution of Transportation Fatalities: 2007

Category	Number of fatalities	Percent
Passenger car occupants	16,520	38.4
Light-truck occupants	12,413	28.8
Motorcyclists	5,154	12.0
Pedestrians struck by highway vehicles	4,654	10.8
Heavy-truck occupants	802	1.9
Pedalcyclists struck by motor vehicle	698	1.6
Recreational boating	685	1.6
Other and unknown motor vehicle occupants	629	1.5
General aviation	(P) 491	1.1
Railroad trespassers (excluding grade crossing)	469	1.1
Other nonoccupants struck by motor vehicles	152	0.4
Grade crossings, not including motor vehicles	73	0.2
Waterborne, commercial vessel-related	52	0.1
Air taxi	(P) 43	0.1
Bus occupants	37	0.1
Private grade crossings, with motor vehicles	37	0.1
Waterborne, not related to vessel casualties	32	0.1
Heavy-rail transit	30	0.1
Railroad employees, contractors, and volunteers on duty	22	0.1
Light-rail transit	20	0.0
Gas transmission and distribution pipeline	11	0.0
Passengers on railroad trains	4	0.0
Hazardous liquid pipeline	4	0.0
Air carriers	1	0.0
Total fatalities	43,033	100.0
Other counts, redundant with above		
Heavy-truck occupants and nonoccupants	U	
Public grade crossings, with motor vehicles	263	
Commuter rail	70	

KEY: U = Data are unavailable; P = Preliminary.

NOTE: See table 2-2-1 for detailed notes.

SOURCES: **Air:** National Transportation Safety Board, **Highway:** National Highway Traffic Safety Administration, **Pipeline:** Office of Pipeline Safety, **Railroad:** Federal Railroad Administration, **Transit:** Federal Transit Administration, **Waterborne:** U.S. Coast Guard as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-4, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 2-2-3 Transportation-Related Occupational Fatalities: 1995–2007

	All occupational fatalities	Transportation-related fatalities, total	Highway	Nonhighway	Aircraft	Pedestrians struck by vehicle	Water vehicle	Railway
1995	6,275	2,587	1,346	387	283	388	87	82
1996	6,202	2,601	1,346	374	324	353	119	74
1997	6,238	2,605	1,393	377	261	367	109	93
1998	6,055	2,645	1,442	388	224	413	112	60
1999	6,054	2,618	1,496	352	228	377	102	56
2000	5,920	2,573	1,365	399	280	370	84	71
2001	5,915	2,524	1,409	326	247	383	90	62
2002	5,534	2,385	1,373	323	194	356	71	64
2003	5,575	2,364	1,353	347	211	337	69	43
2004	5,764	2,490	1,398	338	231	378	91	50
2005	5,734	2,493	1,437	340	149	391	88	83
2006	5,840	2,459	1,356	345	217	379	96	65
2007	5,488	2,234	1,311	292	167	342	69	48

NOTES: Numbers may not add to totals because transportation categories may include subcategories not shown separately.

Highway includes collisions between vehicles/mobile equipment moving in the same or opposite directions, such as in an intersection; between moving and standing vehicles/mobile equipment at the side of a roadway; or a vehicle striking a stationary object. Also includes noncollisions, e.g., jack-knifed or overturned vehicle/mobile equipment—no collision; ran off highway—no collision; struck by shifting load; sudden start or stop; not elsewhere classified.

Nonhighway refers to farms and industrial premises. Includes collisions between vehicles/mobile equipment; vehicles/mobile equipment striking a stationary object. Also includes noncollisions such as a fall from a moving vehicle/mobile equipment, fall from and struck by vehicle/mobile equipment, overturned vehicle/mobile equipment, and loss of control of vehicle/mobile equipment. *Pedestrian struck by vehicle* includes workers struck by vehicle/mobile equipment in roadway, on side of road, in a parking lot, or nonroad area.

Water vehicle includes collisions, explosions, fires, fall from or on ship/boat, and sinking/capsized water vehicles involved in transportation. Does not include fishing boats. *Railway* includes collisions between railway vehicles, railway vehicle and other vehicle, railway vehicle and other object, and derailment.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Census of Fatal Occupational Injuries*, available at <http://www.bls.gov/iif/osh-cfoi1.htm> as of August 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-7, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 2-2-4 Injured Persons by Transportation Mode: 1995-2007

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Air	452	467	417	369	406	357	368	337	367	303	304	290	295
U.S. air carrier	25	77	43	30	67	29	19	24	31	20	14	9	15
Commuter carrier	17	2	1	2	2	7	4	0	1	0	0	1	0
On-demand air taxi	14	22	23	10	15	12	24	16	12	17	23	16	20
General aviation	396	366	350	327	322	309	321	297	323	266	267	264	260
Highway	3,465,000	3,483,000	3,348,000	3,192,000	3,236,000	3,189,000	3,033,000	2,926,000	2,889,000	2,788,000	2,699,000	2,575,000	2,491,000
Passenger car occupants	2,469,000	2,458,000	2,341,000	2,201,000	2,138,000	2,052,000	1,927,000	1,805,000	1,756,000	1,643,000	1,573,000	1,475,000	1,379,000
Motorcyclists	57,000	55,000	53,000	49,000	50,000	58,000	60,000	65,000	67,000	76,000	87,000	88,000	103,000
Truck occupants, light	722,000	761,000	755,000	763,000	847,000	887,000	861,000	879,000	889,000	900,000	872,000	857,000	841,000
Truck occupants, large	30,000	33,000	31,000	29,000	33,000	31,000	29,000	26,000	27,000	27,000	27,000	23,000	23,000
Bus occupants	19,000	20,000	17,000	16,000	22,000	18,000	15,000	19,000	18,000	16,000	11,000	10,000	12,000
Pedestrians	86,000	82,000	77,000	69,000	85,000	78,000	78,000	71,000	70,000	68,000	64,000	61,000	70,000
Pedalcyclists	67,000	58,000	58,000	53,000	51,000	51,000	45,000	48,000	46,000	41,000	45,000	44,000	43,000
Other	14,000	15,000	17,000	13,000	11,000	15,000	18,000	13,000	15,000	17,000	18,000	18,000	18,000
Pipeline	64	127	77	81	108	81	61	49	71	60	47	32	43
Hazardous liquid pipeline	11	13	5	6	20	4	10	0	5	16	2	2	10
Gas pipeline	53	114	72	75	88	77	51	49	66	44	45	30	33
Railroad	14,440	12,558	11,767	11,459	11,700	11,643	10,985	11,103	9,254	9,187	9,501	8,694	9,368
Highway-rail grade crossing	1,894	1,610	1,540	1,303	1,396	1,219	1,157	999	1,034	1,094	1,051	1,068	1,047
Railroad	12,546	10,948	10,227	10,156	10,304	10,424	9,828	10,104	8,220	8,093	8,450	7,626	8,321
Transit	57,196	55,288	56,132	55,990	55,325	56,697	53,945	19,260	18,235	18,982	18,131	18,327	U
Highway-rail grade crossing	195	184	126	58	159	123	74	108	117	153	194	172	U
Transit	57,001	55,104	56,006	55,932	55,166	56,574	53,871	19,152	18,118	18,829	17,937	18,155	U
Waterborne	6,165	6,064	5,737	5,321	4,992	5,112	5,008	4,856	4,666	4,066	4,095	5,245	4,335
Vessel-related	154	254	120	130	152	150	210	192	227	198	140	177	167
Not related to vessel casualties	1,870	1,368	1,062	579	525	607	524	602	551	505	504	594	495
Recreational boating	4,141	4,442	4,555	4,612	4,315	4,355	4,274	4,062	3,888	3,363	3,451	4,474	3,673

KEY: U = data are unavailable.

NOTES: Air injuries include all injuries classified as serious. U.S. air carriers includes all carriers who operate under 14 CFR 121, all scheduled and nonscheduled service. Since Mar. 20, 1997, 14 CFR 121 includes only aircraft with 10 or more seats formerly operated under 14 CFR 135. This change makes it difficult to compare pre-1997 data for 14 CFR 121 and 14 CFR 135 with more recent years' data. Commuter carriers include all scheduled service operating under 14 CFR 135. Since Mar. 20, 1997, 14 CFR 121 includes only aircraft with 10 or more seats formerly operated under 14 CFR 135. This change makes it difficult to compare pre-1997 data for 14 CFR 121 and 14 CFR 135 with more recent years' data. On-demand air taxi includes all nonscheduled service operating under 14 CFR 135. General aviation includes all operations other than those operating under 14 CFR 121 and 14 CFR 135.

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TABLE 2-2-4 Injured Persons by Transportation Mode: 1995–2007 (continued)

Highway numbers are not actual counts, but estimates of the actual counts. The estimates are calculated from a nationally representative sample of crashes collected through NHTSA's General Estimates System (GES). Estimates should be rounded to the nearest 1,000. Estimates less than 500 indicate that the sample size was too small to produce a meaningful estimate and should be rounded to 0.

Large trucks are defined as trucks over 10,000 pounds gross vehicle weight rating, including single-unit trucks and truck tractors. Light trucks are defined as trucks of 10,000 pounds gross vehicle weight rating or less, including pickups, vans, truck-based station wagons, and utility vehicles.

Other highway includes occupants of other unknown vehicle types and other nonmotorists.

Railroad includes Amtrak. Figures include those injuries resulting from train accidents, train incidents, and nontrain incidents. Injury figures also include occupational illness.

Injuries occurring at highway-rail crossings, listed under railroad, result from freight and passenger rail operations including commuter rail. Highway-rail grade crossing injuries, except train occupants, are counted under highway.

The Federal Railroad Administration defines a grade crossing as a location where a public highway, road, street, or private roadway, including associated sidewalks and pathways, crosses one or more railroad tracks at grade. The Federal Transit Administration defines two types of grade crossings: (1) At grade, mixed, and cross traffic crossings, meaning railway right-of-way over which other traffic moving in the same direction or other cross directions may pass. This includes city street right-of-way; (2) At grade with cross traffic crossings, meaning railway right-of-way over which no other traffic may pass, except to cross at grade-level crossings. This can include median strip rights-of-way with grade level crossings at intersecting streets.

Transit includes motor bus, commuter rail, heavy rail, light rail, demand response, van pool, and automated gateway. Transit injuries include those resulting from all reportable incidents, not just from accidents, of Directly Operated (DO) modes only. The drop in the number of injuries in 2002 and subsequently is due largely to a change in definitions by the Federal Transit Administration. Only injuries requiring immediate medical treatment away from the scene now qualify as reportable. Previously, any injury was reportable.

Injuries occurring at *highway-rail* crossings, listed under transit, result from operations of public transit rail modes including commuter rail. Data for injuries at light rail crossings are: 1995 (179); 1996 (171); 1997 (92); 1998 (42); 1999 (148); 2000 (111); 2001 (54); 2002 (76); 2003 (68); 2004 (76); 2005 (80); 2006 (119).

Vessel-related injuries include those involving damage to vessels, such as collisions or groundings. Injuries not related to vessel casualties include those from falls overboard or from accidents involving onboard equipment.

Vessel-related and Not related to vessel casualties data for 1995-1997 come from the Marine Safety Management Information System. Between 1998 and 2001 the U.S. Coast Guard phased in a new computer system to track safety data, the Marine Information for Safety and Law Enforcement System. During that period data come from combining entries in the Marine Safety Management Information System with entries in the Marine Information for Safety and Law Enforcement System. Data for 2002 and later come from the Marine Information for Safety and Law Enforcement System. Data for prior years come from other sources and may not be directly comparable.

SOURCES: Air: National Transportation Safety Board, **Highway:** National Highway Traffic Safety Administration, **Railroad:** Federal Railroad Administration, **Transit:** Federal Transit Administration, **Waterborne:** United States Coast Guard as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-2, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 2-2-5 Transportation Accidents by Mode: 1995–2007

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Air	2,179	2,046	1,991	2,040	2,043	1,985	1,852	1,823	1,869	1,717	1,781	1,607	1,722
U.S. air carrier	36	37	49	50	51	56	46	41	54	30	40	33	26
Commuter carrier	12	11	16	8	13	12	7	7	2	4	6	3	3
On-demand air taxi	75	90	82	77	74	80	72	60	74	66	65	53	62
General aviation	2,056	1,908	1,844	1,905	1,905	1,837	1,727	1,715	1,739	1,617	1,670	1,518	1,631
Highway	6,699,000	6,770,000	6,624,000	6,335,000	6,279,000	6,394,000	6,323,000	6,316,000	6,328,000	6,181,000	6,159,000	5,973,000	6,024,000
Passenger car	5,593,685	5,598,699	5,423,286	5,146,124	4,915,734	4,926,243	4,831,842	4,802,056	4,746,620	4,557,453	4,498,869	4,341,825	4,299,795
Motorcycle	66,354	66,224	61,451	54,477	57,322	68,783	73,342	76,004	79,131	85,557	100,686	101,499	119,980
Truck, light	2,749,596	2,880,782	2,900,896	2,866,729	3,079,617	3,207,738	3,254,105	3,272,326	3,345,367	3,370,062	3,381,985	3,355,388	3,394,363
Truck, large	362,883	378,335	421,377	391,807	452,444	437,861	409,372	416,477	436,161	399,156	423,016	367,949	393,660
Bus	58,847	57,185	53,376	53,385	62,591	55,594	54,264	57,958	57,674	52,148	50,427	51,560	56,190
Pipeline	349	381	346	389	339	380	341	331	370	443	491	405	400
Hazardous liquid pipeline	188	194	171	153	167	146	130	147	131	144	139	118	114
Gas pipeline	161	187	175	236	172	234	211	184	239	299	352	287	286
Railroad	7,092	6,700	6,262	6,083	6,257	6,485	6,260	5,815	5,994	6,459	6,319	5,905	5,399
Highway-rail grade crossing	4,633	4,257	3,865	3,508	3,489	3,502	3,237	3,077	2,977	3,079	3,058	2,937	2,752
Railroad	2,459	2,443	2,397	2,575	2,768	2,983	3,023	2,738	3,017	3,380	3,261	2,968	2,647
Transit	25,683	25,166	24,924	23,937	23,310	24,261	23,891	13,968	7,793	7,842	8,151	8,851	9,938
Highway-rail grade crossing	127	134	119	106	140	148	101	190	125	178	148	141	174
Transit	25,556	25,032	24,805	23,831	23,170	24,113	23,790	13,778	7,668	7,664	8,003	8,710	9,764
Waterborne	13,368	13,286	13,551	13,828	13,457	13,143	11,377	11,713	10,601	9,866	9,946	10,367	U
Vessel-related	5,349	5,260	5,504	5,767	5,526	5,403	4,958	6,008	5,163	4,962	4,977	5,400	U
Recreational boating	8,019	8,026	8,047	8,061	7,931	7,740	6,419	5,705	5,438	4,904	4,969	4,967	5,191

KEY: U = data are unavailable.

NOTES: U.S. air carriers includes all carriers who operate under 14 CFR 121, all scheduled and nonscheduled service. Since Mar. 20, 1997, 14 CFR 121 includes only aircraft with 10 or more seats formerly operated under 14 CFR 135. This change makes it difficult to compare pre-1997 data for 14 CFR 121 and 14 CFR 135 with more recent years' data. Commuter carriers include all scheduled service operating under 14 CFR 135. Since Mar. 20, 1997, 14 CFR 121 includes only aircraft with 10 or more seats formerly operated under 14 CFR 135. This change makes it difficult to compare pre-1997 data for 14 CFR 121 and 14 CFR 135 with more recent years' data. On-demand air taxi includes all nonscheduled service operating under 14 CFR 135. General aviation includes all operations other than those operating under 14 CFR 121 and 14 CFR 135.

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TABLE 2-2-5 Transportation Accidents by Mode: 1995–2007 (continued)

For *Highway* totals the U.S. Department of Transportation, National Highway Traffic Safety Administration uses the term "crash" instead of accident in its highway safety data. Highway crashes often involve more than one motor vehicle, hence "total highway crashes" is smaller than the sum of the components. Estimates of highway crashes are rounded to the nearest thousand in the source document.

Highway numbers are not actual counts, but estimates of the actual counts. The estimates are calculated from a nationally representative sample of crashes collected through NHTSA's General Estimates System (GES). Estimates should be rounded to the nearest 1,000. Estimates less than 500 indicate that the sample size was too small to produce a meaningful estimate and should be rounded to 0.

Large trucks are defined as trucks over 10,000 pounds gross vehicle weight rating, including single-unit trucks and truck tractors. *Light trucks* are defined as trucks of 10,000 pounds gross vehicle weight rating or less, including pickups, vans, truck-based station wagons, and utility vehicles.

Railroad total includes Amtrak. Accidents and incidents resulting from freight and passenger rail operations including commuter rail. *Highway-rail grade crossing* total includes accidents and incidents occurring at highway-rail crossings resulting from freight and passenger rail operations including commuter rail. *Railroad* includes only train accidents.

The Federal Railroad Administration defines a grade crossing as a location where a public highway, road, street, or private roadway, including associated sidewalks and pathways, crosses one or more railroad tracks at grade. The Federal Transit Administration defines two types of grade crossings: (1) At grade, mixed, and cross traffic crossings, meaning railway right-of-way over which other traffic moving in the same direction or other cross directions may pass. This includes city street right-of-way; (2) At grade with cross traffic crossings, meaning railway right-of-way over which no other traffic may pass, except to cross at grade-level crossings. This can include median strip rights-of-way with grade level crossings at intersecting streets.

Transit accident figures include collisions with vehicles, objects, and people, derailments / vehicles going off the road of Directly Operated (DO) modes only. Accident figures do not include fires and personal casualties. The drop in the number of accidents in 2002 is due largely to a change in definitions by the Federal Transit Administration, particularly the definition of injuries. Only injuries requiring immediate medical treatment away from the scene now qualify as reportable. Previously, any injury was reportable. *Highway-rail grade crossing* for transit includes accidents occurring at highway-rail grade crossings resulting from operations of public transit rail modes including commuter rail. Data for light rail crossings are: 1995 (98); 1996 (97); 1997 (66); 1998 (66); 1999 (103); 2000 (106); 2001 (54); 2002 (112); 2003 (66); 2004 (107); 2005 (81); 2006 (74). Transit only includes accidents occurring at highway-rail grade crossings resulting from operations of public transit rail modes excluding commuter rail.

SOURCES: **Air:** National Transportation Safety Board, **Highway:** National Highway Traffic Safety Administration, **Railroad:** Federal Railroad Administration, **Transit:** Federal Transit Administration, **Waterborne:** United States Coast Guard, **Pipeline:** Office of pipeline safety, as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 2-3, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 2-2-6 Hazardous Materials Transportation Incidents: 1990–2007

	1990	1995	2000	2004	2005	2006	2007
Highway	7,297	12,869	15,063	12,977	13,460	17,151	16,860
Accident related	261	257	329	283	322	305	298
Injuries	311	296	164	156	179	192	155
Fatalities	8	7	16	10	24	6	10
Rail	1,279	1,155	1,058	753	745	704	745
Accident related	48	50	62	46	51	44	52
Injuries	73	71	82	121	693	24	53
Fatalities	0	0	0	3	10	0	0
Air	297	817	1,419	995	1,654	2,411	1,551
Accident related	0	0	3	0	9	7	7
Injuries	39	33	5	12	78	2	8
Fatalities	0	0	0	0	0	0	0
Water	7	12	17	15	69	68	61
Accident related	0	0	0	0	0	0	0
Injuries	0	0	0	0	0	15	3
Fatalities	0	0	0	0	0	0	0
Pipeline							
Liquid	180	188	146	144	139	117	114
Injuries	7	11	4	16	2	2	10
Fatalities	3	3	1	5	2	0	4
Natural gas distribution	110	97	154	176	171	141	153
Injuries	52	43	59	41	39	26	36
Fatalities	6	16	22	18	14	16	9
Natural gas transmission	89	64	80	123	181	146	132
Injuries	17	10	18	3	7	5	7
Fatalities	0	2	15	0	0	3	2

NOTES: Accident related excludes human errors, package failures, and unreported cases. *Water data* are for incidents involving packaged materials only and do not include incidents where the vessel is the container (e.g., a barge or oil tanker). Nonpipeline reporting requirements changed in 2002.

In previous years, carriers were exclusively responsible for reporting hazardous materials release incidents. In 2005, PHMSA expanded the reporting requirement to include the person in physical possession of a hazardous material at the time an incident occurs during transport. Nonrelease incidents involving cargo tanking and undeclared shipments of hazardous materials.

Pipeline data are derived from three unique data sets, and a comprehensive total for pipeline incidents is not applicable.

SOURCES: **Highway, Rail, Air, and Water:** USDOT, Pipeline and Hazardous Materials Safety Administration (PHMSA), *Hazardous Materials Information System Database*, available at <http://hazmat.dot.gov/pubs/inc/data/2007/2007frm.htm> as of August 2008, **Pipeline:** USDOT, PHMSA, Office of Pipeline Safety, *Pipeline Statistics*, available at <http://ops.dot.gov/stats/stats.htm> as of July 2008.

TABLE 2-2-7 Top 20 Hazardous Material Incidents: 2007

Rank	Hazardous materials	Incidents
1	Paint or paint-related material	2,784
2	Flammable liquids, NOS	1,092
3	Paint-related material (including paint thinning, drying, removing or reducing compound)	979
4	Paint (including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base)	731
5	Corrosive Liquids, NOS	666
6	Fire extinguishers (containing a compressed gas)	601
7	Isopropanol	528
8	Sodium hydroxide, solution	517
9	Resin solution, flammable	497
10	Corrosive liquid, basic, inorganic	448
11	Printing ink, flammable	436
12	Corrosive liquid, acidic, inorganic	381
13	Hydrochloric acid, solution	349
14	Biological substance, Category B	288
15	Adhesives (containing a flammable liquid)	264
16	Potassium hydroxide, solution	251
17	Gasoline	244
18	Methanol	240
19	Alcohols, NOS	225
20	Sulfuric acid	221

KEY: NOS = Not Otherwise Specified.

NOTES: Due to multiple commodities being involved in a single incident, the totals above may not correspond to the totals in other reports. Reporting requirements and Form 5800.1 were changed as of Jan. 1, 2005. Reportable incidents now include all undeclared hazardous materials shipments and specification cargo tanks that receive damage to their lading retention systems while hauling hazardous materials.

SOURCE: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, *Hazardous Materials Information System*, available at <http://hazmat.dot.gov/pubs/inc/hmisframe.htm> as of July 2008.

Improving Congestion

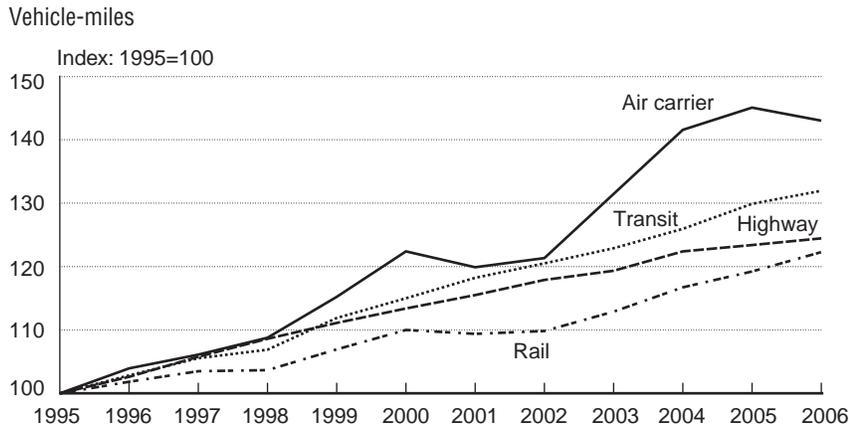
The most recent data show continuing increases in highway congestion for many urban areas in the United States. Congestion in the United States, as measured by the Travel Time Index (TTI), increased for the largest urban areas from 1.36 in 2004 to 1.38 in 2005 (Table 2-3-4: *Travel Time Index by Metro Area*). From 1982 to 2005, congestion for all urban areas increased 17 percent, while congestion for very large urban areas increased 21 percent. Average hours of delay also increased. From 2004 to 2005, very large urban areas experienced an average of three additional annual hours of delay per traveler, representing a 5.9 percent annual increase (Table 2-3-5: *Average Hours of Annual Delay per Traveler*).

Only moderate changes occurred in vehicle miles-traveled and passenger miles-traveled from 2005 to 2006, with two exceptions, light truck passenger-miles increased 4.6 percent and transit car passenger-miles increased 5.0 percent (Table 2-3-1: *U.S. Vehicle-Miles*, Table 2-3-2: *U.S. Passenger-Miles*). Railroads were the only mode exhibiting a large change in freight ton-miles, increasing 6.9 percent from 2005 to 2006 (Table 2-3-3: *Index of Ton-Miles of Freight*).

In 2007, average wait times for passengers increased at both the U.S.-Canada border (from 8.3 minutes to 12.6 minutes) and the U.S.-Mexico border (from 21.6 minutes to 27.8 minutes) The average wait time for commercial vehicles at the U.S.-Canada border increased from 7.5 minutes to 8.3 minutes, but the average wait time at the U.S.-Mexico border decreased from 12.6 minutes to 11.9 minutes (Table 2-3-7: *Average Daytime Wait Times for Commercial Vehicles at Selected U.S. Surface Border Gateways*).

The St. Lawrence Seaway experienced an increase in total downtime hours, from 62.4 hours in 2006 to 73.7 hours in 2007, as a result of a large increase in weather-related downtime, from 19.1 hours to 39.7 hours (Table 2-3-8: *St. Lawrence Seaway U.S. Locks Downtime by Cause*).

FIGURE 2-3-1 Index of U.S. Vehicle-Miles: 1995–2006



SOURCES: **Air Carrier:** Bureau of Transportation Statistics, **Highway:** Federal Highway Administration, **Transit:** American Public Transit Association, **Rail:** Amtrak and Association of American Railroads as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-32, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

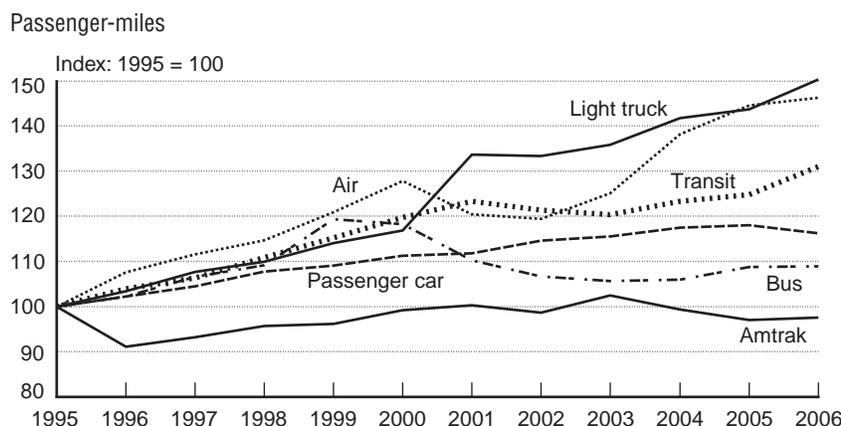
TABLE 2-3-1 U.S. Vehicle-Miles: 1995–2006

Millions

	Air carrier, large certificated, domestic, all services	Highway	Transit (car-miles)	Rail (train-miles)
1995	4,629	2,422,696	3,550	490
1996	4,811	2,485,848	3,650	499
1997	4,911	2,561,695	3,746	507
1998	5,035	2,631,522	3,794	508
1999	5,332	2,691,056	3,972	524
2000	5,664	2,746,925	4,081	539
2001	5,548	2,797,287	4,196	536
2002	5,616	2,855,508	4,277	538
2003	6,085	2,890,450	4,363	553
2004	6,552	2,964,788	4,471	572
2005	6,714	2,989,430	4,611	584
2006	6,619	3,014,116	4,684	599

NOTES: Transit rail modes are measured in car-miles. Car-miles measure individual vehicle-miles in a train—the movement of 1 vehicle the distance of 1 mile. This differs from a train-mile which is the movement of a train, which can consist of multiple vehicles (cars), the distance of 1 mile. 2006 transit data are preliminary.

SOURCES: **Air Carrier:** Bureau of Transportation Statistics, **Highway:** Federal Highway Administration, **Transit:** American Public Transit Association, **Rail:** Amtrak and Association of American Railroads as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-32, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

FIGURE 2-3-2 Index of U.S. Passenger-Miles: 1995–2006

SOURCES: *Air Carrier:* Bureau of Transportation Statistics, *Highway:* Federal Highway Administration, *Transit:* American Public Transportation Association, *Rail:* Amtrak and Association of American Railroads as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-37, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 2-3-2 U.S. Passenger-Miles: 1995–2006

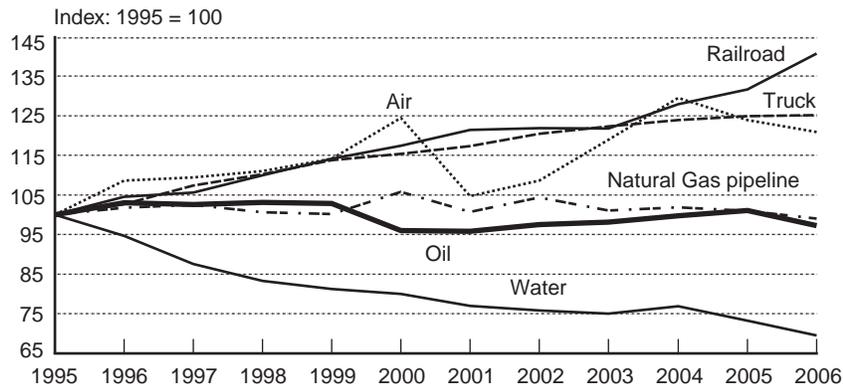
Millions

	Air, certificated, domestic, all services	Passenger car	Light truck	Bus	Transit	Amtrak
1995	403,888	2,286,887	1,256,146	136,104	39,808	5,545
1996	434,652	2,337,068	1,298,299	139,136	41,378	5,050
1997	450,612	2,389,065	1,352,675	145,060	42,339	5,166
1998	463,262	2,463,828	1,380,557	148,558	44,128	5,304
1999	488,357	2,494,870	1,432,625	162,445	45,857	5,330
2000	516,129	2,544,457	1,467,664	160,919	47,666	5,498
2001	486,506	2,556,481	1,678,853	150,042	49,070	5,559
2002	482,310	2,620,389	1,674,792	145,124	48,324	5,468
2003	505,158	2,641,885	1,706,103	143,801	47,903	5,503
2004	557,893	2,685,827	1,780,771	144,188	49,073	5,558
2005	583,689	2,699,305	1,804,848	147,992	49,680	5,391
2006	590,633	2,658,621	1,887,997	148,285	52,154	5,358

NOTES: *Passenger car* does not include motorcycle data. *Light truck* includes pickup trucks, sport utility vehicles, and vans. *Bus* and *demand response* are included in both *Bus* and *Transit*, which results in some double counting. *Amtrak* does not include contract commuter passengers. The data above may not be consistent with other sources, particularly data that are revised on an irregular or frequent basis.

SOURCES: *Air carrier:* Bureau of Transportation Statistics, *Highway:* Federal Highway Administration, *Transit:* American Public Transportation Association, *Rail:* Amtrak and Association of American Railroads as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-37, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

FIGURE 2-3-3 Index of U.S. Ton-Miles of Freight: 1995–2006



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, special tabulation.

TABLE 2-3-3 Ton-Miles of Freight: 1995–2006

Billions

	Air	Truck	Railroad	Water	Oil and oil products pipeline	Natural gas pipeline	Total
1995	13	1,034	1,317	808	601	332	4,104
1996	14	1,062	1,377	765	619	337	4,174
1997	14	1,111	1,391	707	617	340	4,179
1998	14	1,140	1,448	673	620	334	4,229
1999	15	1,176	1,504	656	618	332	4,301
2000	16	1,193	1,546	646	577	351	4,329
2001	13	1,213	1,599	622	576	334	4,358
2002	14	1,246	1,606	612	586	346	4,409
2003	15	1,265	1,604	606	590	335	4,415
2004	16	1,282	1,684	621	600	338	4,541
2005	16	1,292	1,734	591	608	335	4,575
2006	15	1,294	1,853	562	585	329	4,638

NOTES: Data may not add to total because of independent rounding.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, special tabulation.

The Travel Time Index (TTI) is the ratio of peak period travel time to free-flow travel time. It expresses the average amount of extra time it takes to travel in the peak period relative to free-flow travel. A value of 1.35, for example, indicates a 20-minute free-flow trip requires 27 minutes during the peak period.

TABLE 2-3-4 Travel Time Index by Metro Area: 1982 to 2005

Travel time index

Urban areas	1982	1995	2004	2005
Very large				
Atlanta, GA	1.10	1.25	1.32	1.34
Boston, MA-NH-RI	1.08	1.20	1.27	1.27
Chicago, IL-IN	1.12	1.31	1.44	1.47
Dallas-Fort Worth-Arlington, TX	1.05	1.16	1.31	1.35
Detroit, MI	1.13	1.26	1.30	1.29
Houston, TX	1.19	1.19	1.32	1.36
Los Angeles-Long Beach-Santa Ana, CA	1.25	1.44	1.48	1.50
Miami, FL	1.11	1.26	1.37	1.38
New York-Newark, NY-NJ-CT	1.10	1.24	1.36	1.39
Philadelphia, PA-NJ-DE-MD	1.12	1.18	1.27	1.28
Phoenix, AZ	1.15	1.17	1.27	1.31
San Francisco-Oakland, CA	1.15	1.35	1.38	1.41
Washington, DC-VA-MD	1.12	1.32	1.37	1.37
Large				
Baltimore, MD	1.07	1.20	1.29	1.30
Buffalo, NY	1.03	1.04	1.08	1.08
Cincinnati, OH-KY-IN	1.04	1.16	1.18	1.18
Cleveland, OH	1.03	1.11	1.10	1.09
Columbus, OH	1.03	1.15	1.20	1.19
Denver-Aurora, CO	1.09	1.22	1.30	1.33
Indianapolis, IN	1.08	1.24	1.23	1.22
Kansas City, MO-KS	1.02	1.07	1.08	1.08
Las Vegas, NV	1.06	1.25	1.31	1.30
Milwaukee, WI	1.05	1.13	1.13	1.13
Minneapolis-St. Paul, MN	1.04	1.18	1.24	1.26
New Orleans, LA	1.11	1.16	1.15	1.15
Oklahoma City, OK	1.02	1.07	1.09	1.09
Orlando, FL	1.10	1.27	1.30	1.30
Pittsburgh, PA	1.06	1.10	1.10	1.09
Portland, OR-WA	1.07	1.20	1.27	1.29
Providence, RI-MA	1.03	1.08	1.17	1.16
Riverside-San Bernardino, CA	1.03	1.19	1.35	1.35
Sacramento, CA	1.06	1.21	1.32	1.32
San Antonio, TX	1.04	1.10	1.23	1.23
San Diego, CA	1.07	1.22	1.41	1.40
San Jose, CA	1.13	1.25	1.32	1.34
Seattle, WA	1.07	1.30	1.28	1.30
St. Louis, MO-IL	1.07	1.18	1.16	1.16
Tampa-St. Petersburg, FL	1.20	1.30	1.29	1.28
Virginia Beach, VA	1.07	1.16	1.18	1.18
Medium				
Akron, OH	1.02	1.06	1.08	1.07
Albany-Schenectady, NY	1.02	1.04	1.08	1.08
Albuquerque, NM	1.05	1.16	1.16	1.17
Allentown-Bethlehem, PA-NJ	1.06	1.14	1.14	1.14
Austin, TX	1.07	1.18	1.29	1.31
Birmingham, AL	1.04	1.09	1.15	1.15
Bridgeport-Stamford, CT-NY	1.06	1.16	1.21	1.22

(continued on next page)

TABLE 2-3-4 Travel Time Index by Metro Area: 1982 to 2005 (continued)

Charlotte, NC-SC	1.07	1.13	1.25	1.23
Dayton, OH	1.07	1.12	1.11	1.10
El Paso, TX-NM	1.02	1.07	1.16	1.17
Fresno, CA	1.05	1.11	1.12	1.12
Grand Rapids, MI	1.03	1.09	1.11	1.10
Hartford, CT	1.03	1.08	1.11	1.11
Honolulu, HI	1.11	1.21	1.20	1.22
Jacksonville, FL	1.07	1.20	1.22	1.21
Louisville, KY-IN	1.11	1.17	1.23	1.23
Memphis, TN-MS-AR	1.04	1.11	1.14	1.13
Nashville-Davidson, TN	1.09	1.13	1.17	1.17
New Haven, CT	1.03	1.08	1.10	1.11
Omaha, NE-IA	1.04	1.11	1.16	1.16
Oxnard-Ventura, CA	1.03	1.12	1.22	1.24
Raleigh-Durham, NC	1.04	1.11	1.17	1.18
Richmond, VA	1.04	1.09	1.09	1.09
Rochester, NY	1.02	1.05	1.07	1.07
Salt Lake City, UT	1.05	1.19	1.21	1.19
Sarasota-Bradenton, FL	1.10	1.15	1.19	1.19
Springfield, MA-CT	1.04	1.06	1.06	1.06
Toledo, OH-MI	1.02	1.07	1.10	1.09
Tucson, AZ	1.10	1.13	1.22	1.23
Tulsa, OK	1.03	1.07	1.09	1.09
Small				
Anchorage, AK	1.06	1.06	1.07	1.07
Bakersfield, CA	1.01	1.04	1.08	1.09
Beaumont, TX	1.02	1.03	1.05	1.05
Boulder, CO	1.04	1.09	1.09	1.10
Brownsville, TX	1.02	1.04	1.07	1.06
Cape Coral, FL	1.07	1.15	1.12	1.12
Charleston-North Charleston, SC	1.08	1.14	1.18	1.17
Colorado Springs, CO	1.02	1.07	1.12	1.14
Columbia, SC	1.02	1.04	1.07	1.07
Corpus Christi, TX	1.03	1.04	1.05	1.06
Eugene, OR	1.04	1.04	1.08	1.10
Laredo, TX	1.02	1.06	1.09	1.09
Little Rock, AK	1.02	1.04	1.07	1.07
Pensacola, FL-AL	1.03	1.08	1.11	1.11
Salem, OR	1.02	1.07	1.09	1.09
Spokane, WA	1.02	1.05	1.05	1.04
85-Area Average	1.11	1.22	1.29	1.30
Very Large Area Average	1.14	1.29	1.36	1.38
Large Area Average	1.07	1.18	1.24	1.24
Medium Area Average	1.05	1.12	1.16	1.16
Small Area Average	1.03	1.07	1.09	1.09

NOTES: Travel Time Index - The ratio of travel time in the peak period to the travel time at free-flow conditions. A value of 1.35 indicates a 20 minute free-flow trip takes 27 minutes in the peak. Free-flow speeds (60 mph on freeways and 35 mph on principal arterials) are used as comparison threshold.

Very Large Urban Areas—over 3 million population. *Large Urban Areas*—over 1 million and less than 3 million population. *Medium Urban Areas*—over 500,000 and less than 1 million population. *Small Urban Areas*—less than 500,000 population.

SOURCE: Texas A&M University, Texas Transportation Institute, 2007 Urban Mobility Report (College Station, TX: 2005), available at <http://tti.tamu.edu/> as of September 2007 as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-64, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 2-3-5 Average Hours of Annual Delay per Traveler: 1982 to 2005

Hours				
Urban areas	1982	1995	2004	2005
Very Large				
Atlanta, GA	26	70	63	60
Boston, MA-NH-RI	12	30	45	46
Chicago, IL-IN	15	33	44	46
Dallas-Fort Worth-Arlington, TX	10	34	51	58
Detroit, MI	25	51	56	54
Houston, TX	30	32	52	56
Los Angeles-Long Beach-Santa Ana, CA	45	71	70	72
Miami, FL	16	35	49	50
New York-Newark, NY-NJ-CT	12	30	42	46
Philadelphia, PA-NJ-DE-MD	16	27	37	38
Phoenix, AZ	35	33	42	48
San Francisco-Oakland, CA	24	56	56	60
Washington, DC-VA-MD	16	53	60	60
Large				
Baltimore, MD	11	33	43	44
Buffalo, NY	3	6	11	11
Cincinnati, OH-KY-IN	5	26	27	27
Cleveland, OH	3	16	14	13
Columbus, OH	4	27	34	33
Denver-Aurora, CO	16	37	46	50
Indianapolis, IN	19	53	46	43
Kansas City, MO-KS	3	17	16	17
Las Vegas, NV	10	37	39	39
Milwaukee, WI	7	22	20	19
Minneapolis-St. Paul, MN	6	34	40	43
New Orleans, LA	16	20	18	18
Oklahoma City, OK	5	17	22	21
Orlando, FL	18	54	56	54
Pittsburgh, PA	11	19	17	16
Portland, OR-WA	13	33	37	38
Providence, RI-MA	3	12	29	29
Riverside-San Bernardino, CA	5	28	47	49
Sacramento, CA	14	35	40	41
San Antonio, TX	6	19	38	39
San Diego, CA	12	35	59	57
San Jose, CA	23	51	51	54
Seattle, WA	13	52	42	45
St. Louis, MO-IL	12	38	31	33
Tampa-St. Petersburg, FL	24	41	46	45
Virginia Beach, VA	14	27	30	30
Medium				
Akron, OH	2	9	11	10
Albany-Schenectady, NY	3	8	16	16
Albuquerque, NM	11	30	30	33
Allentown-Bethlehem, PA-NJ	9	21	22	22
Austin, TX	12	32	44	49
Birmingham, AL	8	21	33	33
Bridgeport-Stamford, CT-NY	9		28	31
Charlotte, NC-SC	12	23	47	45
Dayton, OH	10	22	19	17
El Paso, TX-NM	3	10	22	24
Fresno, CA	12	17	19	20

(continued on next page)

**TABLE 2-3-5 Average Hours of Annual Delay per Traveler: 1982 to 2005
(continued)**

Grand Rapids, MI	6	19	24	24
Hartford, CT	4	13	19	19
Honolulu, HI	14	26	22	24
Jacksonville, FL	16	40	41	39
Louisville, KY-IN	18	34	44	42
Memphis, TN-MS-AR	6	23	29	30
Nashville-Davidson, TN	20	35	40	40
New Haven, CT	5	13	18	19
Omaha, NE-IA	5	19	26	25
Oxnard-Ventura, CA	4	21	35	39
Raleigh-Durham, NC	8	26	35	35
Richmond, VA	6	22	20	20
Rochester, NY	3	7	10	10
Salt Lake City, UT	8	32	29	27
Sarasota-Bradenton, FL	15	19	26	25
Springfield, MA-CT	7	10	10	11
Toledo, OH-MI	2	12	17	15
Tucson, AZ	24	23	39	42
Tulsa, OK	8	14	19	19
Small				
Anchorage, AK	10	9	10	10
Bakersfield, CA	2	7	12	14
Beaumont, TX	4	6	11	11
Boulder, CO	7	16	16	16
Brownsville, TX	2	4	8	8
Cape Coral, FL	9	28	24	24
Charleston-North Charleston, SC	15	28	32	31
Colorado Springs, CO	4	12	22	27
Columbia, SC	4	11	16	16
Corpus Christi, TX	5	7	10	10
Eugene, OR	6	7	12	14
Laredo, TX	2	7	11	12
Little Rock, AK	4	10	17	17
Pensacola, FL-AL	5	16	24	25
Salem, OR	3	12	14	14
Spokane, WA	3	10	8	8
85-Area Average	16	36	42	44
Very Large Area Average	21	43	51	54
Large Area Average	11	30	36	37
Medium Area Average	9	21	27	28
Small Area Average	6	13	17	17

NOTES: *Annual Delay per Traveler* - Extra travel time for peak-period travel during the year divided by the number of travelers who begin a trip during the peak period (6 to 9 a.m. and 4 to 7 p.m.). Free-flow speeds (60 mph on freeways and 35 mph on principal arterials) are used as the comparison threshold.

Very Large Urban Areas—over 3 million population. *Large Urban Areas*—over 1 million and less than 3 million population. *Medium Urban Areas*—over 500,000 and less than 1 million population. *Small Urban Areas*—less than 500,000 population.

SOURCE: Texas A&M University, Texas Transportation Institute, 2007 Urban Mobility Report (College Station, TX: 2005), available at <http://tti.tamu.edu/> as of September 2007 as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-65, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 2-3-6 Average Daytime Wait Times for Passengers at Selected U.S. Surface Border Gateways: 2003–2007
Minutes

	2003	2004	2005	2006	2007
United States–Canada border					
Blaine-Pacific Highway, WA	11.5	9.1	13.4	19.5	30.6
Blaine-Peace Arch, WA	21.1	13.7	16.1	22.3	29.5
Sumas, WA	6.4	7.0	6.3	11.2	18.9
Port Huron-Bluewater Bridge, MI	7.7	6.7	5.3	9.7	18.2
Calais-Ferry Point, ME	14.9	3.9	5.0	10.6	17.0
Highgate Springs, VT	6.8	3.5	4.5	8.9	14.0
Champlain, NY	4.1	7.5	7.4	11.0	11.6
Sweetgrass, MT	8.1	4.9	7.5	7.6	10.7
Detroit-Ambassador Bridge, MI	4.7	3.3	2.4	6.2	10.3
Derby Line, VT	3.4	1.3	0.7	3.1	9.8
Buffalo/Niagara Falls-Lewiston Bridge, NY	7.8	10.0	3.8	7.5	9.4
Detroit-Windsor Tunnel, MI	6.8	4.9	3.6	4.7	9.4
Sault Ste. Marie, MI	8.0	5.8	5.1	9.9	7.8
Pembina, ND	2.9	3.9	2.8	3.7	6.0
Buffalo/Niagara Falls-Rainbow Bridge, NY	3.6	6.2	0.6	2.1	4.0
Jackman, ME	3.4	2.2	3.6	2.4	3.7
Buffalo/Niagara Falls-Peace Bridge, NY	5.5	5.9	0.5	1.3	2.8
Average	7.5	5.9	5.2	8.3	12.6
United States-Mexico border					
San Ysidro, CA	42.3	36.1	46.3	53.2	57.8
Calexico-West, CA	21.9	25.1	36.7	41.8	50.6
El Paso-Bridge of the Americas (BOTA), TX	35.4	23.8	16.7	30.2	43.9
Otay Mesa, CA	27.8	24.1	34.0	40.9	41.8
Nogales-Deconcini, AZ	27.0	33.0	31.3	37.0	40.9
El Paso-Paso Del Norte (PDN), TX	17.2	16.0	12.0	22.6	40.7
San Luis, AZ	23.9	21.3	21.7	38.7	40.5
Nogales-Mariposa, AZ	21.2	28.6	26.0	34.3	36.9
Laredo-Bridge II, TX	16.6	19.4	19.3	25.8	35.0
Calexico-East, CA	9.1	14.0	22.8	27.6	34.2
Laredo-Bridge I, TX	12.8	18.4	23.2	26.9	31.3
El Paso-Ysleta, TX	17.1	16.8	14.4	21.5	30.3
Hidalgo/Pharr-Hidalgo, TX	21.6	17.2	19.3	24.6	29.8
Brownsville-B&M, TX	13.2	11.0	12.1	16.2	27.5
Brownsville-Gateway, TX	12.8	11.0	11.8	16.0	26.3
Andrade, CA	3.9	7.1	7.4	19.8	26.3
Douglas, AZ	10.8	13.7	9.9	13.7	23.6
Hidalgo/Pharr-Pharr, TX	12.6	12.3	11.9	17.8	23.0
Brownsville-Veterans International, TX	12.0	9.5	8.7	12.4	22.6
Tecate, CA	17.2	17.5	17.8	25.6	21.9
Progreso, TX	4.5	5.8	6.4	10.9	19.0
Eagle Pass-Bridge I, TX	7.7	7.7	9.9	14.8	17.2
Del Rio, TX	11.1	10.9	8.2	11.0	15.6
Eagle Pass-Bridge II, TX	6.8	6.1	7.2	13.3	14.6
Presidio, TX	6.0	0.9	0.4	4.9	13.6
Roma, TX	4.5	4.3	5.9	8.1	11.1
Brownsville-Los Indios, TX	6.0	4.7	4.4	6.1	10.8
Santa Teresa, NM	4.1	2.1	0.1	2.3	10.4
Rio Grande City, TX	3.9	3.9	6.9	9.0	8.8
Average	14.5	14.6	15.6	21.6	27.8

NOTES: Wait times for private vehicles are recorded hourly. Daytime hours (between 8:00 a.m. and 6:00 p.m.) are generally the busiest portion of the day and are representative of typical delays encountered by the majority of vehicles. Wait times can, however, vary considerably by crossing, time of day, and day of the week, and the actual delays that occur on occasion may be substantially longer than the averages represented above.

SOURCE: U.S. Department of Homeland Security, U.S. Customs and Border Protection, personal communication, August 2008.

TABLE 2-3-7 Average Daytime Wait Times for Commercial Vehicles at Selected U.S. Surface Border Gateways: 2003–2007

Minutes	2003	2004	2005	2006	2007
United States–Canada border					
Port Huron-Bluewater Bridge, MI	26.8	25.2	9.4	12.8	18.4
Blaine-Pacific Highway, WA	18.7	15.0	18.5	18.1	17.7
Calais-Ferry Point, ME	14.7	3.9	4.9	10.5	16.9
Sweetgrass, MT	4.8	6.8	10.8	9.9	13.5
Detroit-Windsor Tunnel, MI	3.6	4.0	3.3	4.4	9.3
Detroit-Ambassador Bridge, MI	16.1	14.8	2.9	4.5	8.9
Sault Ste. Marie, MI	6.7	5.1	5.0	9.9	8.0
Pembina, ND	5.6	5.4	6.9	11.5	7.7
Sumas, WA	11.0	7.6	7.5	7.1	7.6
Houlton, ME	3.3	5.3	2.4	3.2	7.1
Highgate Springs, VT	4.5	4.6	4.8	7.9	6.7
Derby Line, VT	6.1	5.6	3.4	3.1	4.6
Buffalo/Niagara Falls-Peace Bridge, NY	10.0	12.5	3.5	1.5	2.6
Champlain, NY	3.7	11.6	5.8	12.4	1.5
Jackman, ME	1.3	1.3	1.9	1.1	1.2
Buffalo/Niagara Falls-Lewiston Bridge, NY	12.1	7.2	1.2	2.3	1.0
Average	9.3	8.5	5.8	7.5	8.3
United States–Mexico border					
Otay Mesa, CA	15.9	15.5	25.9	45.1	42.5
Laredo-World Trade Bridge, TX	17.2	20.5	24.5	32.9	39.0
Nogales-Mariposa, AZ	10.4	18.2	19.2	23.9	17.4
Calexico-East, CA	7.9	6.6	7.5	23.3	16.3
Hidalgo/Pharr, Pharr, TX	7.8	8.8	12.1	18.6	15.6
El Paso-Ysleta, TX	8.3	11.0	12.4	8.6	14.3
Laredo-Colombia Solidarity, TX	4.9	3.7	6.6	11.9	13.0
Progreso, TX	0.7	0.8	1.9	6.6	11.3
Brownsville-Veterans International, TX	8.8	10.0	7.8	10.2	10.0
El Paso-Bridge of the Americas (BOTA), TX	6.1	5.9	11.3	13.0	8.4
Del Rio, TX	3.0	2.6	1.9	3.3	5.4
Tecate, CA	5.0	6.1	5.7	11.4	2.9
Brownsville-Los Indios, TX	1.5	1.3	1.2	1.9	2.4
Santa Teresa, NM	1.4	1.1	0.0	0.5	1.6
Rio Grande City, TX	3.1	2.5	2.5	2.5	1.5
Presidio, TX	1.6	0.5	0.0	0.1	0.3
Eagle Pass-Bridge I, TX	1.6	U	0.0	0.0	0.0
Average	6.2	7.3	8.3	12.6	11.9

KEY: U = Data are unavailable.

NOTES: Wait times for commercial vehicles are recorded hourly. Daytime hours (between 8:00 a.m. and 6:00 p.m.) are generally the busiest portion of the day and are representative of typical delays encountered by the majority of vehicles. Wait times can, however, vary considerably by crossing, time of day, and day of the week, and the actual delays that occur on occasion may be substantially longer than the averages represented above.

SOURCE: U.S. Department of Homeland Security, U.S. Customs and Border Protection, personal communication, August 2008.

TABLE 2-3-8 St. Lawrence Seaway U.S. Locks Downtime by Cause: 1995–2007

Hours of downtime, unless otherwise noted

	Weather related	Vessel incident	All other causes	Total downtime hours	Weather (percent-age of total)	System availability (percentage)
1995	88.5	32.6	16.7	137.8	64.2	99.0
1996	143.4	38.3	5.9	187.6	76.4	97.0
1997	65.2	31.2	35.6	132.0	49.4	98.0
1998	43.2	43.3	12.1	98.6	43.8	98.5
1999	2.0	46.3	1.3	49.6	4.0	99.2
2000	53.7	27.8	2.6	84.1	63.9	98.7
2001	56.8	45.1	8.9	110.8	51.3	98.3
2002	41.1	16.9	5.1	63.1	65.1	99.1
2003	57.6	15.9	0.0	73.5	78.4	98.9
2004	43.8	15.0	7.2	66.0	66.4	99.0
2005	16.9	12.1	6.0	35.0	48.3	99.5
2006	19.1	34.5	8.8	62.4	30.6	99.1
2007	39.7	23.6	10.4	73.7	53.9	98.9

NOTES: *Weather-related* causes include poor visibility, high wind, and ice. *All other causes* includes lock equipment malfunction, civil interference, pilotage, and water level/flow. These data pertain only to the two U.S. locks (Snell and Eisenhower) on the St. Lawrence Seaway between the Port of Montreal and Lake Ontario. Canada operates another five locks along this portion of the Seaway. In addition, Canada operates locks at the Welland Canal along the Seaway. *System availability* does not include the time when the locks are closed for the winter, typically from late December to late March.

SOURCES: **1995–2001:** U.S. Department of Transportation, Saint Lawrence Seaway Development Corp. (SLSDC), *Annual Reports* (Washington, DC: Various years), available at <http://www.greatlakes-seaway.com>. **2002–2007:** SLSDC, personal communication, as of August 2008.

Global Connectivity Overview

Globally, the United States imported \$1.95 trillion and exported \$1.16 trillion of goods in 2007. U.S. exports increased at a faster pace than imports—exports were 12.1 percent higher in 2007 than in 2006, compared to a 5.3 percent growth in imports¹. Transportation-related goods reflect this pattern. The value of exports of transportation-related goods increased 15 percent, while imports increased 2 percent (Table 2-4-1: *U.S. International Trade in Transportation-Related Goods*). The United States is a net exporter of aviation, maritime, and railway goods. However, the United States had a significant trade deficit in vehicles, which results in an overall deficit for transportation-related goods (Table 2-4-2: *U.S. Trade in Transportation-Related Goods by Commodity*).

Of the \$3.1 trillion in total U.S. trade, 45 percent moved by vessel, 25 percent by air, and 30 percent by surface and other modes². U.S. maritime container exports increased 16.4 percent, whereas imports decreased 0.5 percent from 2006 to 2007 (Table 2-4-12: *U.S.-International Maritime Container Volumes*). For the first time in recent years, the deficit in the U.S. maritime container trade balance declined.

Surface transportation trade between the United States and its North American Free Trade Agreement (NAFTA) partners, Canada and Mexico, was 4.9 percent higher in 2007 than in 2006, reaching \$797 billion. This 4.9 percent increase is lower than the 8.9 percent increase in U.S.–NAFTA trade in 2006 compared to 2005³. About 88 percent of the \$909 billion in U.S. merchandise trade by value with Canada and Mexico moved via land modes in 2007. Surface transportation consists largely of freight movements by truck, rail, and pipeline. Besides the land movements, there were \$74 billion of vessel movements and \$38 billion of air movements between the United States and its NAFTA partners in 2007⁴.

In 2007, the number of passenger crossings by personal vehicle into the United States decreased by 8 percent (Table 2-4-8: *Passenger Crossings Into the United States by Personal Vehicles From Mexico and Canada*). Specifically, passenger crossings on the Canadian and Mexican Borders were down 8.2 and 7.5 percent, respectively. Vehicle crossings on the Canadian Border were down slightly in 2007 compared to 2006, with personal vehicle traffic (29.8 million in 2007) entering the United States down 0.9 percent and truck traffic (6.6 million in 2007) down 1.4 percent (Table 2-4-5: *Incoming Truck Crossings to the United States From Mexico and Canada*). On the Mexican Border, comparing 2007 with 2006, personal vehicle traffic (81.8 million in 2007) dropped by 7.4 percent, while truck traffic (4.9 million in 2007) increased by 2.6 percent

¹ U.S. International Trade Commission, *Interactive Tariff and Trade Data Web*, available at <http://dataweb.usitc.gov/> as of Nov. 25, 2008.

² U.S. Department of Transportation (USDOT), Research and Innovative Technology (RITA), Bureau of Transportation Statistics (BTS), *TransBorder Data*, available at <http://www.bts.gov/programs/international/transborder/> as of Nov. 25, 2008.

³ U.S. Department of Transportation (USDOT), Research and Innovative Technology (RITA), Bureau of Transportation Statistics (BTS), *TransBorder Data*, available at <http://www.bts.gov/programs/international/transborder/> as of Nov. 25, 2008.

⁴ USDOT/RITA/BTS, *Border Crossing Data*, available at http://www.bts.gov/programs/international/border_crossing_entry_data/ as of Nov. 25, 2008.

(Table 2-4-5: *Incoming Truck Crossings to the United States From Mexico and Canada*). Further, passenger crossings into the United States by train decreased by 5 percent (Table 2-4-10: *Passenger Crossings Into the United States by Train From Mexico and Canada*). However, passenger crossings by bus into the United States increased by 5.8 percent from 2006 to 2007 (Table 2-4-9: *Passenger Crossings Into the United States by Bus From Mexico and Canada*). In addition, the total number of pedestrian crossings into the United States increased by 6.8 percent from 2006 to 2007 (Table 2-4-11: *Pedestrian Crossings Into the United States From Mexico and Canada*). All of the increase occurred on the Mexican border; a 7.1 percent increase in pedestrians crossing the Mexican Border entirely accounted for this increase. On the Canadian Border, pedestrian crossings decreased slightly by 1.2 percent.

TABLE 2-4-1 U.S.-International Trade in Transportation-Related Goods: 1995–2007

Millions of current dollars

	Imports	Exports	Total	U.S. trade balance
1995	110,781	80,092	190,873	-30,689
1996	115,504	89,959	205,463	-25,545
1997	126,927	103,818	230,745	-23,109
1998	140,054	114,971	255,025	-25,083
1999	166,552	111,469	278,021	-55,083
2000	185,027	105,430	290,457	-79,597
2001	183,002	106,860	289,862	-76,142
2002	190,881	108,744	299,625	-82,137
2003	194,863	107,796	302,659	-87,067
2004	211,112	118,749	329,861	-92,363
2005	219,522	137,214	356,736	-82,308
2006	236,270	164,870	401,140	-71,400
2007	239,903	188,858	428,761	-51,045

NOTES: *Transportation-related goods* are motor vehicles and parts, aircraft and spacecraft and parts, railway vehicles and parts, and ships and boats. Data may not add to total because of independent rounding. *Trade balance* is equal to exports minus imports. All dollar amounts are in current dollars. These data have not been adjusted for inflation because there is no specific deflator available for transportation-related goods. In addition, it is difficult to control for trading partners' inflation rates as well as currency exchange fluctuations when adjusting the value of internationally traded goods and services for inflation.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, calculations based on data from U.S. Department of Commerce, U.S. International Trade Commission, *Interactive Tariff and Trade DataWeb*, available at <http://dataweb.usitc.gov/> as of August 2008.

TABLE 2-4-2 U.S. Trade in Transportation-Related Goods by Commodity: 2007

Millions of current dollars

	Overall	Trade Balance
Vehicles other than railway	321,461	-107,473
Aircraft, spacecraft, and parts	97,796	54,108
Ships, boats, and floating structures	5,083	1,237
Railway locomotives and parts	4,421	1,083
Total, transportation-related goods	428,761	-51,045
Total, all commodities	3,116,407	-790,991

NOTES: These data have not been adjusted for inflation because there is no specific deflator available for transportation-related goods. In addition, it is difficult to control for trading partners' inflation rates as well as currency exchange fluctuations when adjusting the value of internationally traded goods and services for inflation. *Trade balance* is equal to exports minus imports.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, calculations based on data from U.S. Department of Commerce, U.S. International Trade Commission, *Interactive Tariff and Trade DataWeb*, available at <http://dataweb.usitc.gov/> as of August 2008.

TABLE 2-4-3 U.S.-International Trade in Transportation-Related Services: 1995–2007

Millions of current dollars

	Imports	Exports	Total	Trade balance
1995	41,697	44,990	86,687	3,293
1996	43,212	46,496	89,708	3,284
1997	47,097	47,874	94,971	777
1998	50,334	45,702	96,036	-4,632
1999	55,454	46,701	102,155	-8,753
2000	65,699	50,490	116,189	-15,209
2001	61,315	46,368	107,683	-14,947
2002	58,376	46,241	104,617	-12,135
2003	65,694	47,307	113,001	-18,387
2004	78,879	55,808	134,687	-23,071
2005	88,086	62,251	150,337	-25,835
2006	92,763	68,359	161,122	-24,404
2007	95,536	77,172	172,708	-18,364

NOTES: *Transportation-related services* include passenger fares and other transportation. It excludes receipts and payments for travel services, which includes purchases of goods and services (e.g., food, lodging, recreation, gifts, entertainment, and any incidental expense on a foreign visit). *Trade balance* is equal to exports minus imports. These data have not been adjusted for inflation because there is no specific deflator available for transportation-related services.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, calculations based on data from U.S. Department of Commerce, Bureau of Economic Analysis, *International Transactions Accounts Data*, table 3a, available at <http://www.bea.gov/international/index.htm> as of August 2008.

FIGURE 2-4-4a U.S. Surface Trade With Canada: January 1996–May 2008

Monthly data, not seasonally adjusted

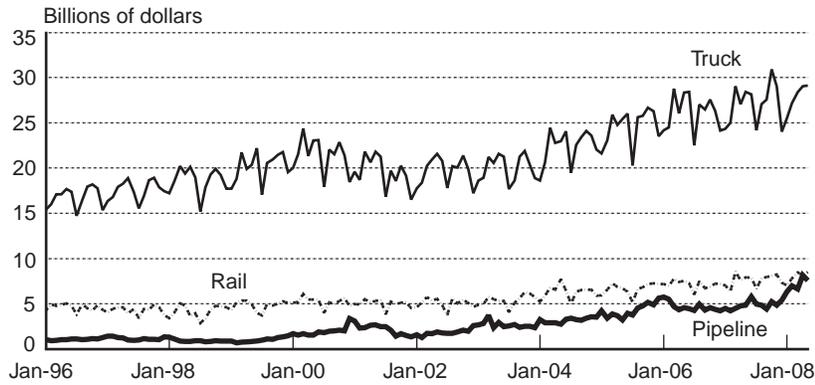
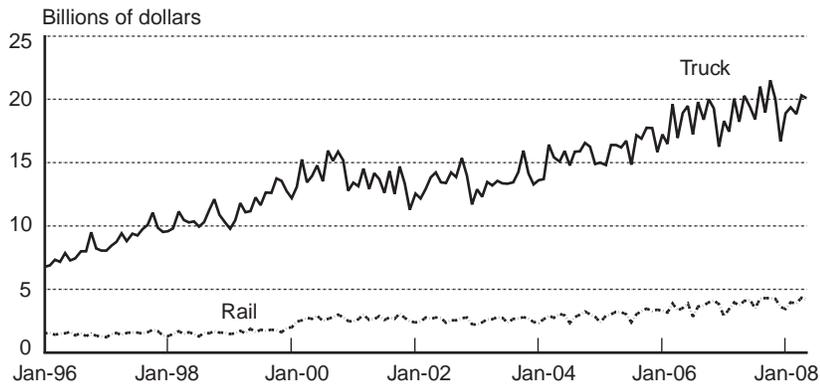


FIGURE 2-4-4b U.S. Surface Trade With Mexico: January 1996–May 2008

Monthly data, not seasonally adjusted



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *TransBorder Freight Data*, available at <http://www.bts.gov/ntda/tbscd/prod.html> as of August 2008.

TABLE 2-4-4 U.S. Surface Trade With Canada and Mexico: January 2007–May 2008

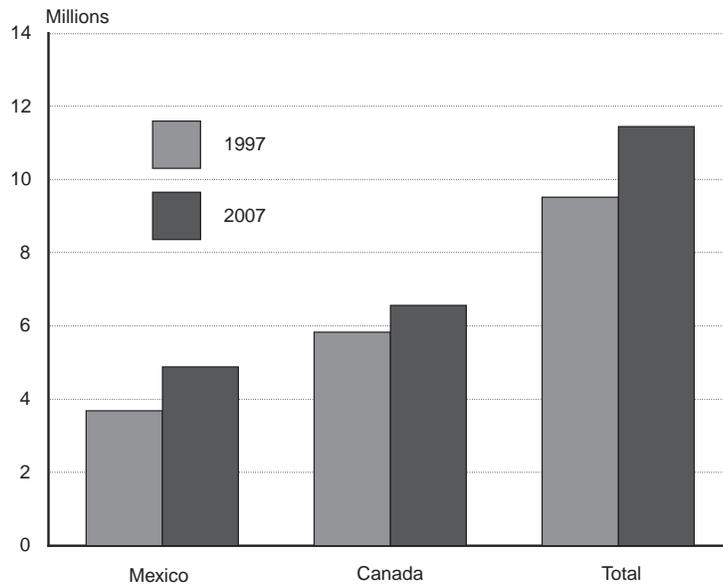
Millions of dollars

	U.S. - Canada Trade			U.S. - Mexico Trade		
	Truck	Rail	Pipeline	Truck	Rail	Pipeline
January 2007	24,331	7,046	4,505	18,264	2,851	88
February 2007	24,990	6,349	4,214	17,441	3,437	39
March 2007	29,044	8,531	4,504	20,058	3,953	80
April 2007	27,069	7,624	4,770	18,213	3,702	59
May 2007	28,425	7,906	4,841	20,265	4,078	58
June 2007	28,135	7,883	5,786	19,379	4,159	77
July 2007	24,194	6,660	4,983	18,397	3,481	58
August 2007	27,064	7,820	4,860	20,994	4,262	62
September 2007	27,570	7,980	4,438	18,930	4,309	78
October 2007	30,889	8,065	5,225	21,485	4,303	56
November 2007	29,029	8,239	4,848	19,998	4,249	96
December 2007	24,006	7,356	5,376	16,661	3,617	206
January 2008	25,507	7,016	6,337	18,876	3,441	87
February 2008	27,171	7,802	6,996	19,363	3,978	96
March 2008	28,374	8,461	6,642	18,814	3,886	100
April 2008	29,043	8,185	8,169	20,299	4,325	86
May 2008	29,120	8,523	7,584	20,078	4,162	160

NOTES: Surface freight is useful in monitoring the value and modal patterns of trade with Canada and Mexico, which are the United States's North American Free Trade Agreement (NAFTA) partners. Overall, Canada is the largest U.S. trading partner and Mexico ranks third. Surface modes include not only truck, rail, and pipeline, but also government mail and other miscellaneous modes.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *TransBorder Freight Data*, available at <http://www.bts.gov/ntda/tbscd/prod.html> as of August 2008.

FIGURE 2-4-5 Incoming Truck Crossings to the United States From Mexico and Canada: 1997 and 2007



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.transtats.bts.gov/> as of August 2008.

TABLE 2-4-5 Incoming Truck Crossings to the United States From Mexico and Canada: 1996–2007

Number

	Mexico	Canada	Total
1996	3,254,084	5,431,096	8,685,180
1997	3,689,665	5,826,974	9,516,639
1998	3,946,543	6,270,934	10,217,477
1999	4,358,721	6,817,447	11,176,168
2000	4,525,579	7,048,128	11,573,707
2001	4,304,959	6,776,909	11,081,868
2002	4,426,593	6,915,973	11,342,566
2003	4,238,045	6,728,228	10,966,273
2004	4,503,688	6,903,882	11,407,570
2005	4,675,897	6,783,944	11,459,841
2006	4,759,679	6,649,249	11,408,928
2007	4,882,500	6,559,263	11,441,763

NOTE: Data do not include privately owned pickup trucks.

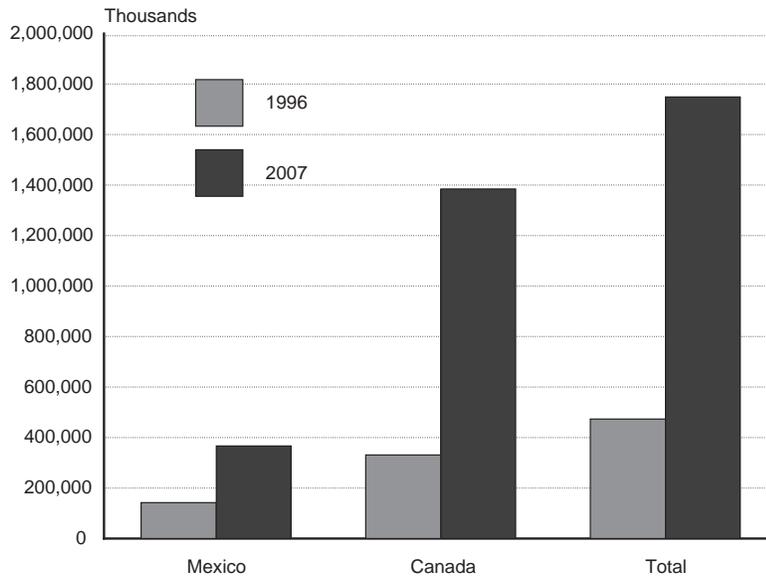
SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.transtats.bts.gov/> as of August 2008.

TABLE 2-4-6 Incoming Train Crossings to the United States From Mexico and Canada: 1995–2007

Number	Mexico	Canada	Total
1995	9,432	31,021	40,453
1996	7,509	31,457	38,966
1997	7,678	32,863	40,541
1998	5,681	35,435	41,116
1999	6,019	32,930	38,949
2000	7,108	33,447	40,555
2001	7,469	33,577	41,046
2002	7,757	32,822	40,579
2003	7,774	34,137	41,911
2004	7,844	33,267	41,111
2005	9,458	32,807	42,265
2006	10,166	32,526	42,692
2007	10,648	30,362	41,010

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.bts.gov/itt/> as of September 2008.

FIGURE 2-4-7 Incoming Full Rail Containers to the United States From Mexico and Canada: 1996 and 2007



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.bts.gov/itt/> as of September 2008.

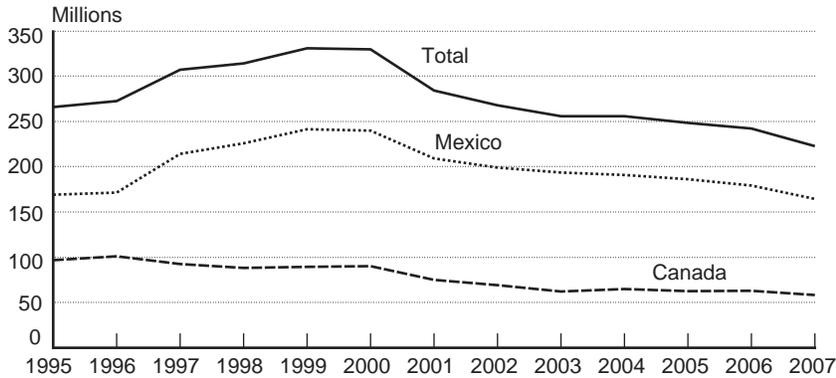
TABLE 2-4-7 Incoming Full Rail Containers to the United States From Mexico and Canada: 1996–2007

	Mexico	Canada	Total
1996	142,236	329,983	472,219
1997	156,064	464,081	620,145
1998	175,490	903,584	1,079,074
1999	226,014	1,150,936	1,376,950
2000	266,235	1,215,439	1,481,674
2001	266,572	1,331,382	1,597,954
2002	269,550	1,386,143	1,655,693
2003	266,469	1,402,388	1,668,857
2004	305,748	1,484,634	1,790,382
2005	335,611	1,458,016	1,793,627
2006	383,253	1,408,391	1,791,644
2007	365,436	1,382,886	1,748,322

NOTES: A container is any conveyance entering the United States used for commercial purposes, full or empty. Data here apply only to the number of full rail containers arriving at a surface port and include containers moving as in-bond shipments.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.bts.gov/itt/> as of September 2008.

FIGURE 2-4-8 Passenger Crossings Into the United States by Personal Vehicles From Mexico and Canada: 1995–2007



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.bts.gov/itt/> as of September 2008.

TABLE 2-4-8 Passenger Crossings Into the United States by Personal Vehicles From Mexico and Canada: 1995–2007

Thousands

	Mexico	Canada	Total
1995	169,152	96,807	265,959
1996	171,522	101,071	272,593
1997	214,355	92,647	307,002
1998	226,013	88,283	314,296
1999	241,522	89,369	330,892
2000	239,795	90,047	329,842
2001	209,106	74,971	284,077
2002	199,021	68,987	268,007
2003	193,697	62,137	255,834
2004	190,937	64,848	255,785
2005	186,067	62,501	248,569
2006	179,255	62,986	242,241
2007	164,534	58,248	222,782

NOTES: *Passengers in personal vehicles* (privately owned vehicles) include persons arriving by private automobile, pickup truck, motorcycle, recreational vehicle, taxi, ambulance, hearse, tractor, snow-mobile, and other motorized private ground vehicles.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.bts.gov/itt/> as of September 2008.

TABLE 2-4-9 Passenger Crossings Into the United States by Bus From Mexico and Canada: 1995–2007

Thousands

	Mexico	Canada	Total
1995	1,571	3,530	5,101
1996	1,944	3,870	5,814
1997	2,773	4,124	6,897
1998	3,639	3,970	7,608
1999	3,358	4,367	7,726
2000	3,466	4,873	8,339
2001	3,367	4,456	7,823
2002	3,926	4,213	8,139
2003	3,747	3,780	7,527
2004	3,389	3,890	7,279
2005	3,170	3,855	7,025
2006	3,187	3,499	6,686
2007	3,389	3,685	7,074

NOTE: *Passengers in buses* include both driver(s) and passengers.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.bts.gov/itt/> as of September 2008.

TABLE 2-4-10 Passenger Crossings Into the United States by Train From Mexico and Canada: 1995–2007

Thousands

	Mexico	Canada	Total
1995	13	227	240
1996	11	214	225
1997	12	249	261
1998	13	246	259
1999	16	249	265
2000	18	270	288
2001	19	254	273
2002	15	255	270
2003	12	235	247
2004	13	223	236
2005	18	236	254
2006	22	245	266
2007	20	233	254

NOTE: *Passengers in trains* includes both passengers and crew.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.bts.gov/itt/> as of September 2008.

TABLE 2-4-11 Pedestrian Crossings Into the United States From Mexico and Canada: 1995–2007

Thousands

	Mexico	Canada	Total
1995	32,836	698	33,534
1996	34,109	608	34,717
1997	43,911	550	44,461
1998	44,462	598	45,060
1999	48,213	588	48,801
2000	47,090	585	47,675
2001	51,501	750	52,251
2002	50,278	1,082	51,360
2003	48,664	937	49,601
2004	48,084	826	48,910
2005	45,830	605	46,435
2006	46,251	534	46,785
2007	49,539	429	49,968

NOTES: *Pedestrian crossings* include persons arriving on foot or by certain conveyances (e.g., bicycles, mopeds, or wheel chairs).

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Border Crossing/Entry Data*, available at <http://www.bts.gov/itt/> as of September 2008.

**TABLE 2-4-12 U.S.-International Maritime Container Volumes:
1995–2007**

Millions of TEU

	Exports	Imports	Container balance (exports minus imports)
1995	6.4	6.8	-0.34
1996	6.5	6.9	-0.41
1997	7.1	7.8	-0.71
1998	6.6	8.9	-2.28
1999	6.6	10.0	-3.36
2000	6.9	11.1	-4.24
2001	6.8	11.3	-4.42
2002	6.8	12.9	-6.10
2003	7.4	13.9	-6.51
2004	8.0	15.8	-7.76
2005	8.7	17.4	-8.68
2006	9.0	18.6	-9.64
2007	10.5	18.5	-8.08

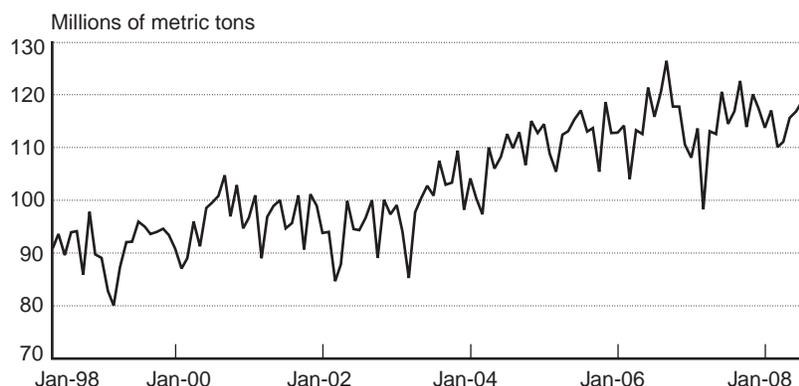
KEY: TEU = Twenty-foot Equivalent Unit.

SOURCES: 1995–1996: U.S. Department of Transportation, Maritime Administration, *Journal of Commerce*, Port Import/Export Reporting Service (PIERS) data system, available at <http://www.marad.dot.gov/> as of August 2007 as compiled by U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics.

1997–2007: U.S. Department of Transportation, Maritime Administration, *U.S. Waterborne Foreign Container Trade by U.S. Custom Ports*, (Washington, DC: annual releases), available at http://www.marad.dot.gov/MARAD_statistics as of July 2008.

FIGURE 2-4-13 U.S. Foreign Waterborne Freight: January 1998–June 2008

Tonnage of U.S. Waterborne Imports and Exports (monthly, not seasonally adjusted)



SOURCES: April 1998–December 2005: U.S. Department of Transportation, Maritime Administration, *U.S. Foreign Waterborne Transportation Statistics Data*, September 2006. **January 2006–present:** U.S. Department of Commerce, U.S. Census Bureau, *Foreign Trade Statistics*, available at <http://www.census.gov/foreign-trade/statistics/index.html> as of August 2008.

TABLE 2-4-13 U.S. Foreign Waterborne Freight: January 2007–June 2008

	Metric tons (thousands)
January 2007	113,601
February 2007	98,219
March 2007	113,051
April 2007	112,550
May 2007	120,493
June 2007	114,422
July 2007	116,822
August 2007	122,559
September 2007	113,863
October 2007	120,019
November 2007	117,414
December 2007	113,686
January 2008	116,958
February 2008	110,072
March 2008	111,066
April 2008	115,603
May 2008	116,779
June 2008	118,578

NOTES: Import and export tonnage helps identify the volume of cargo flowing through U.S. ports and the resulting vessel traffic on U.S. coastal waters. It also helps identify needs for intermodal truck and rail traffic. Most U.S. coastal ports handle both foreign and domestic cargoes.

A metric ton is equal to 2,204.6 pounds.

SOURCES: April 1998–December 2005: U.S. Department of Transportation, Maritime Administration, *U.S. Foreign Waterborne Transportation Statistics Data*, September 2006. **January 2006–present:** U.S. Department of Commerce, U.S. Census Bureau, *Foreign Trade Statistics*, available at <http://www.census.gov/foreign-trade/statistics/index.html> as of August 2008.

Chapter 3

Modal Indicators

Aviation Overview

BTS collects annual data on the inventory of the aircraft fleets of U.S. large certificated air carriers. An example of one list derived from these data is Table 3-1-1: *Average Age of U.S. Commercial Aircraft*. BTS also collects data showing U.S. airline on-time performance over time.

U.S. airline on-time performance in 2007, as reported to BTS, dipped to the lowest level since 2000. Although annual data are currently unavailable, on-time performance improved in 2008 through October (Table 3-1-2: *Major U.S. Air Carrier On-Time Performance*).

Since June of 2003, BTS has collected U.S. airline delay information by cause of delay (Table 3-1-3: *Airline Delays by Cause*). Note that the relatively small percentage of Extreme Weather delays are due to actual or forecasted severe meteorological conditions, such as a blizzard, hurricane, or tornado—delays caused by less severe weather conditions are attributed to the National Aviation System. The late arrival of inbound aircraft from a previous flight has been the leading cause of late flights for the last 3 years.

Since 2005, airline fares have generally been rising. Airline fares in 2006 surpassed the former high of 2000-2001. Airline fares rose to an all-time high in 2008 (Table 3-1-5: *Comparison of Air Travel Price Indexes*).

Enplaned passengers at U.S. airports steadily grew each year from 1995 until 2001. The events of 9/11 combined with the recession of 2001 caused a drop in passengers. The data show that enplanements did not surpass the year 2000 until 4 years later in 2004. Enplanements continued to rise through 2007 (Table 3-1-4: *Domestic Enplanements at U.S. Airports*).

TABLE 3-1-1 Average Age of U.S. Commercial Aircraft: 1995–2006

In years

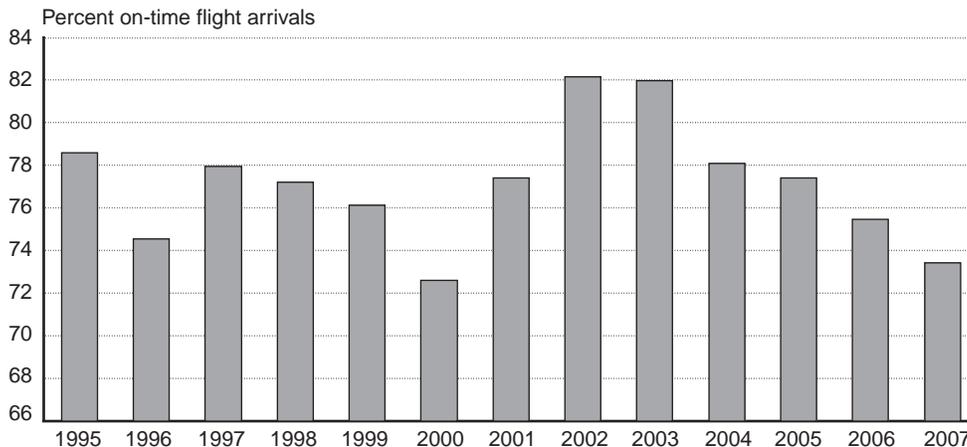
	All commercial aircraft	Major airlines aircraft	Major airlines share of commercial aircraft (%)
1995	12.4	11.3	76.1
1996	13.2	12.3	72.5
1997	13.5	12.4	78.7
1998	13.6	12.3	77.8
1999	12.9	11.8	78.5
2000	12.8	11.8	78.8
2001	12.3	11.6	82.9
2002	11.7	11.7	77.8
2003	11.0	11.7	72.9
2004	10.8	11.1	74.9
2005	11.3	11.3	81.5
2006	11.8	12.1	75.0

NOTES: Large Certificated Air Carriers include Major, National, Large Regional, and Medium Regional airlines. Average aircraft age is based on the year that an aircraft was delivered to the original owner from the manufacturer and does not reflect the age of the engines or other parts that may have been replaced more recently. *Commercial aircraft* are aircraft of air carriers providing scheduled or nonscheduled passenger or freight service, including commuter and air taxi on-demand services. *Major airlines* includes only airlines with total operating revenues greater than \$1 billion annually. In 2006, they were Abx Air, AirTran Airways, Alaska Airlines, American Airlines, America West Airlines, American Eagle Airlines, ATA Airlines, Atlantic Southeast Airlines, Comair, Continental Air Lines, Delta Air Lines, Expressjet Airlines, Federal Express, JetBlue Airways, Mesa Airlines, Northwest Airlines, Skywest Airlines, Southwest Airlines, United Air Lines, United Parcel Service, and US Airways.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, calculations using data from the United States Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Form 41, Schedule B-43, 1995–2006.

FIGURE 3-1-2 Major U.S. Air Carrier On-Time Performance: 1995–2007

Percent on-time flight arrivals



SOURCES: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Airline On-Time Tables*, Table 1 - Summary of Airline On-Time Performance Year-to-date through December 2007, available at http://www.bts.gov/programs/airline_information/airline_ontime_tables as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-62, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 3-1-2 Major U.S. Air Carrier On-Time Performance: 1995–2007

Thousands of flights

	Late departures	Late arrivals	Cancellations	Diversions	On-time flight arrivals (%)	Total operations
1995	828	1,039	92	10	78.6	5,327
1996	974	1,220	129	14	74.5	5,352
1997	847	1,084	98	12	77.9	5,412
1998	870	1,070	145	13	77.2	5,385
1999	937	1,153	154	14	76.1	5,528
2000	1,132	1,356	187	14	72.6	5,683
2001	954	1,104	231	13	77.4	5,968
2002	717	868	65	8	82.1	5,271
2003	834	1,058	101	11	82.0	6,489
2004	1,188	1,421	128	14	78.1	7,129
2005	1,279	1,466	134	14	77.4	7,141
2006	1,425	1,616	122	16	75.4	7,142
2007	1,572	1,803	161	17	73.4	7,453

NOTES: *Late departures* are flights departing 15 minutes or more after the scheduled departure time. *Late arrivals* are flights arriving 15 minutes or more after the scheduled arrival time. Late departures and arrivals are strongly seasonal and are affected by weather in winter and summer months and by heavy demand in summer. *Cancellations* are flights that were not operated, but were listed in a carrier's computer reservation system within 7 calendar days of the scheduled departure. *Diversions* are flights that left from the scheduled departure airport, but flew to a nondestination point. Diverted flights may or may not ultimately reach their scheduled destination.

In 2006 and 2007, 20 air carriers reported on-time performance data, including all major U.S. passenger carriers (carriers with at least 1 percent of total domestic scheduled-service passenger revenues) and other carriers that reported voluntarily. The number of carriers reporting in previous years is as follows: 2005 (20); 2004 (19); 2003 (18); 2002 (10); 2001 (12); 2000 (11); 1999 (10); 1998 (10); 1997 (10); 1996 (10); and 1995 (10).

SOURCES: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Airline On-Time Tables*, Table 1 - Summary of Airline On-Time Performance Year-to-date through December 2007, available at http://www.bts.gov/programs/airline_information/airline_ontime_tables as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-62, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 3-1-3 Airline Delays by Cause: 2003–2007

Year	Number of scheduled operations	Number of delayed flights	Average minutes of delay	Percentage of delay minutes due to:				
				Carrier	Extreme weather	National Aviation System	Security	Late aircraft
2003	6,488,540	1,057,804	48.9	26.7	5.9	36.2	0.3	30.9
2004	7,129,270	1,421,393	51.4	25.8	6.9	33.5	0.3	33.6
2005	7,140,595	1,466,066	52.2	28.0	6.2	31.4	0.2	34.2
2006	7,141,922	1,615,538	54.0	27.8	5.6	29.4	0.3	37.0
2007	7,455,458	1,804,029	56.0	28.6	5.7	27.9	0.2	37.6

NOTES: On-time performance data is currently collected for 20 large carriers.

A flight is considered delayed when it arrived 15 or more minutes later than scheduled. Average minutes are calculated for delayed flights only. When multiple causes are assigned to one delayed flight, each cause is prorated based on delayed minutes for which it is responsible. The numbers above are rounded and may not add up to the total. Additional information is available at <http://www.bts.gov/help/aviation/index.html>.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Airline Service Quality Performance 234*, available at http://www.transtats.bts.gov/OT_Delay/OT_DelayCause1.asp as of August 2008.

TABLE 3-1-4 Domestic Enplanements at U.S. Airports: 1995–2007

Thousands of passengers

	Total enplanements	Large hubs	Medium hubs	Small hubs	Nonhubs
1995	526,055	392,602	85,929	33,561	13,963
1996	558,184	417,340	89,019	37,123	14,702
1997	568,616	426,246	90,780	36,299	15,291
1998	588,335	442,402	91,756	37,675	16,502
1999	610,629	458,665	96,395	38,645	16,924
2000	639,754	479,570	102,082	40,121	17,980
2001	595,365	413,634	124,588	42,834	14,309
2002	575,059	401,697	119,734	40,054	13,574
2003	593,132	424,621	109,493	43,546	15,473
2004	652,413	447,501	135,364	51,812	17,736
2005	690,136	473,367	143,749	53,292	19,727
2006	690,766	475,208	142,139	55,008	18,410
2007	712,627	488,299	147,068	57,501	19,760

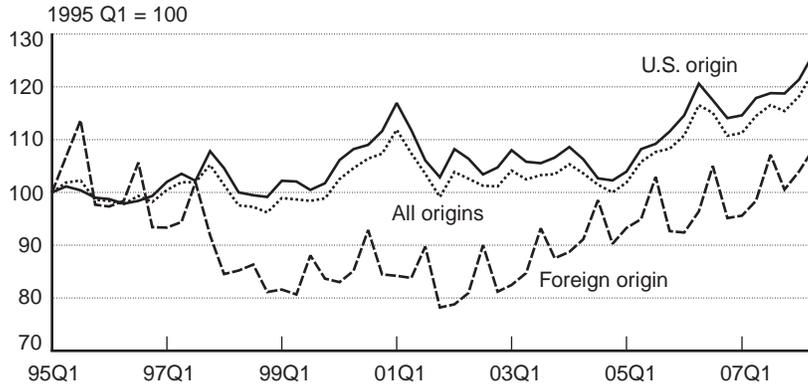
NOTES: Data are for all scheduled and nonscheduled service by large certificated U.S. air carriers at all domestic airports served within the 50 states, the District of Columbia, and other U.S. areas designated by the Federal Aviation Administration (FAA). Not all scheduled service is actually performed. Moreover, for several years, total performed departures exceed total scheduled departures because nonscheduled departures are included in the totals. Prior to 1993, all scheduled and some nonscheduled enplanements for certificated air carriers were included; no enplanements were included for air carriers offering charter service only.

Air traffic hubs are designated as geographical areas based on the percentage of total passengers enplaned in the area. Under this designation, a hub may have more than one airport in it. (This definition of hub should not be confused with the definition used by the airlines in describing their "hub-and-spoke" route structures). Individual communities fall into four hub classifications as determined by each community's percentage of total enplaned revenue passengers in all services and all operations of U.S. certificated route carriers within the 50 states, the District of Columbia, and other U.S. areas. Hub designation is based on passenger boardings at individual airports as designated by the FAA. Classifications are based on the percentage of total enplaned revenue passengers for each year according to the following: 1 percent or more = large, 0.25 to 0.9999 percent = medium, 0.05 to 0.249 percent = small, less than 0.05 = nonhub.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-34, available at http://www.bts.gov/publications/national_transportation_statistics/ as of August 2008.

The Air Travel Price Index (ATPI) is a measure of the change over time in the prices paid by air travelers, based on actual fares paid by travelers, not published fares.

FIGURE 3-1-5 Comparison of Air Travel Price Indexes (ATPI): 1st quarter 1995–2nd quarter 2008



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Air Travel Price Index*, available at <http://www.bts.gov/> as of November 2008.

TABLE 3-1-5 Comparison of Air Travel Price Indexes (ATPI): 1st quarter 2007–2nd quarter 2008

Not seasonally adjusted, domestic carriers only
1995 Q1 = 100

Quarter	ATPI All-origins	ATPI U.S.-origin	ATPI Foreign-origin
2007 Q1	111.23	114.55	95.60
2007 Q2	114.42	117.83	98.35
2007 Q3	116.49	118.79	107.09
2007 Q4	115.40	118.70	100.52
2008 Q1	118.20	121.40	103.98
2008 Q2	123.02	126.33	108.30

NOTES: The Bureau of Transportation Statistics computes the *Air Travel Price Index* values using the Fisher Index formula. *U.S. origin only* measures change in the cost of itineraries originating in the United States, whether the destinations are domestic or international. *Foreign origin only* measures change in the cost of itineraries with a foreign origin and a U.S. destination. *All origins* combines the U.S.- and foreign-origin itineraries.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Air Travel Price Index*, available at <http://www.bts.gov/> as of November 2008.

Motor Vehicle Highway System Overview

The percentage of trucks subjected to roadside inspection and subsequently taken out of service dropped for the third straight year, reaching 22.3 percent in 2007 (Table 3-2-3: *Roadside Truck Inspections*).

The median age of trucks on our nation's highways has shown a slight increase over the past 4 years, reaching 7.3 years in 2007. The median age of cars has been increasing since the mid-1990s, reaching 9.2 years in 2007 (Table 3-2-1: *Median Age of Automobiles and Trucks in Operation in the United States*).

In 2007, the total cost of operating an automobile over the highway system increased to 54 cents per mile from 52 cents per mile in 2006 (Table 3-2-2: *Average Cost per Mile of Owning and Operating an Automobile*).

TABLE 3-2-1 Median Age of Automobiles and Trucks in Operation in the United States: 1995–2007

	Cars	Light trucks	All trucks
1995	7.7	7.4	7.6
1996	7.9	7.5	7.7
1997	8.1	7.3	7.8
1998	8.3	7.1	7.6
1999	8.3	6.9	7.2
2000	8.3	6.7	6.9
2001	8.3	6.1	6.8
2002	8.4	6.6	6.8
2003	8.6	6.5	6.7
2004	8.9	6.4	6.6
2005	9.0	6.6	6.8
2006	9.2	6.8	6.9
2007	9.2	7.1	7.3

NOTES: *Light Trucks* are 14,000 lbs and under (gross vehicle weight classes 1-3). Median age is as of July 1st of each year.

SOURCE: The R.L. Polk Co., available at <http://usa.polk.com/News/LatestNews/> as of August 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-25, available at http://www.bts.gov/publications/national_transportation_statistics/.

TABLE 3-2-2 Average Cost per Mile of Owning and Operating an Automobile: 1995–2007

Current dollars

	Variable costs	Fixed costs	Total costs
1995	0.10	0.32	0.42
1996	0.10	0.33	0.43
1997	0.11	0.34	0.45
1998	0.11	0.35	0.46
1999	0.11	0.36	0.47
2000	0.12	0.37	0.49
2001	0.14	0.37	0.51
2002	0.12	0.38	0.50
2003	0.13	0.39	0.52
2004	0.13	0.44	0.56
2005	0.15	0.37	0.52
2006	0.15	0.38	0.52
2007	0.17	0.37	0.54

NOTES: Data may not add to total because of independent rounding. Data are the cost per mile based on 15,000 miles per year and a composite of three current model American automobiles. *Variable costs* include fuel, maintenance, and tires. Fuel costs are based on a late year average price per gallon of regular unleaded gasoline. *Fixed costs* (ownership costs) include insurance, license, registration, taxes, depreciation, and finance charges.

SOURCE: American Automobile Association, *Your Driving Costs* (Heathrow, FL: Annual issues), available at <http://www.aaaexchange.com/Main/> as of June 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-14, available at http://www.bts.gov/publications/national_transportation_statistics as of September 2008.

A roadside inspection is an examination of individual commercial motor vehicles and drivers to determine if they are in compliance with the Federal Motor Carrier Safety Regulations or Hazardous Materials Regulations. If a serious violation is detected, the driver is issued an out-of-service order. The violation must then be corrected before the driver or vehicle may return to service.

TABLE 3-2-3 Roadside Truck Inspections: 1995–2007

Thousands

	Trucks inspected	Trucks taken out of service	Inspected trucks taken out of service (%)
1995	1,840	417	22.7
1996	2,039	437	21.4
1997	2,148	439	20.4
1998	1,763	448	25.4
1999	1,862	453	24.3
2000	1,928	457	23.7
2001	2,072	486	23.5
2002	2,173	498	22.9
2003	2,165	495	22.8
2004	2,253	532	23.6
2005	2,203	515	23.4
2006	2,413	553	22.9
2007	2,383	531	22.3

NOTES: Trucks are taken out of service (OOS) when inspectors find serious violations that warrant the issuance of a vehicle OOS order. There may be data inconsistencies across the 1995-2006 time series. The Bureau of Transportation Statistics obtained the data at different times (see Sources) and was unable to verify the consistency of the entire data series prior to publication.

SOURCES: **1995–1998:** U.S. Department of Transportation (USDOT), Federal Motor Carrier Safety Administration (FMCSA), *Motor Carrier Management Information System*. **1999–2000:** USDOT, FMCSA, personal communication, Aug. 11, 2003. **2001–2007:** USDOT, FMCSA, *Roadside Inspection Activity Summary* by Inspection Type, available at <http://ai.volpe.dot.gov/siteguide/data.asp> as of July 2008.

Marine Transportation System Overview

In the past year, the Marine Transportation System (MTS) has undergone significant changes. A fundamental shift in U.S. trading patterns has played a significant role. In 2007, favorable exchange rates buoyed U.S. exports, making them comparatively less expensive. Conversely, U.S. imports have slowed as the U.S. dollar has lost value against foreign currencies. In 2007, the container balance decreased, instead of increasing, for the first time in recent years (Table 2-4-12: *U.S.-International Maritime Container Volumes*). The container trade remains highly seasonal, fluctuating between lows in January and peaks in October (Figure 2-4-13: *U.S. Foreign Waterborne Freight*).

Port developments increased along the Atlantic and Gulf Coast, including new marine terminals in Jacksonville, FL, Jasper County, SC, Houston, TX, and Portsmouth, VA, among others in development or coming online. Ocean facilities account for the only growth in the number of commercial facilities. The number of Great Lakes, inland, and lock facilities remained the same (Table 2-1-10: *U.S. Waterway Facilities*).

Vessel capacity continues to rise as vessels grow in size, especially for combinations (Table 3-3-2: *Average Capacity of Vessels Calling at U.S. Ports by Type*). About 40 percent of U.S. flag vessels are more than 25-years old; dry barges and towboats account for 78 percent of this age group (Table 3-3-3: *U.S. Flag Vessels by Type and Age*). Vessel calls by tankers and gas carriers have increased, while combination carrier callings declined. Tankers account for 34 percent of vessel calls followed closely by containerships (31.1 percent) then distantly by dry bulk carriers (17.3 percent) (Table 3-3-5: *Vessels Calls at U.S. Ports*).

Ports along the U.S. Atlantic and Gulf Coast have gained market share. More specifically, the ports of Norfolk, Houston, and Savannah have double-digit average annual growth rates. However, the Pacific Coasts ports, above all the ports of Los Angeles and Long Beach (LA/LB), still account for the majority of U.S. container imports (Table 3-3-4: *Top 10 U.S. Maritime Container Ports*). In 2007, the ports of LA/LB handled 37 percent of the total U.S. container volumes. Miami, Port Canaveral, and Fort Lauderdale are the leading cruise departure ports. Notably, in the 2007 season, New Orleans regained many of the cruise passengers lost in the aftermath of Hurricane Katrina (Table 3-3-1: *North America Cruise Passengers by Departure Port*).

TABLE 3-3-1 North America Cruise Passengers by Departure Port: 2003–2007

Thousands

Departure port	2003	2004	2005	2006	2007	Percent change, 2003–2007	Percent change, 2006–2007
Miami, FL	1,867	1,683	1,771	1,890	1,890	1.2	0
Port Canaveral, FL	1,114	1,230	1,234	1,396	1,298	16.5	(7.0)
Fort Lauderdale, FL	1,100	1,237	1,199	1,145	1,289	17.2	12.6
Los Angeles, CA	516	434	615	583	624	20.9	7.0
New York, NY	432	548	370	536	575	33.1	7.3
San Juan, PR	579	677	581	555	534	(7.8)	(3.8)
Galveston, TX	377	433	531	616	529	40.3	(14.1)
Vancouver, Canada	466	436	434	402	462	(0.9)	14.9
Seattle, WA	165	291	337	382	386	133.9	1.0
Honolulu, HI	173	170	236	316	382	120.8	20.9
Long Beach, CA	171	401	363	380	370	116.4	(2.6)
Tampa, FL	419	399	408	461	368	(12.2)	(20.2)
San Diego, CA	93	173	234	180	341	266.7	89.4
New Orleans, LA	297	396	308	75	258	(13.1)	244.0
Mobile, AL	0	29	88	99	130	NA	31.3
Jacksonville, FL	6	114	137	128	130	2,066.7	1.6
Whittier, AK	0	88	96	109	113	NA	3.7
Seward, AK	152	75	68	69	76	(50.0)	10.1
Cape Liberty, NJ	0	0	147	123	65	NA	(47.2)
Baltimore, MD	57	105	67	60	62	8.8	3.3
Boston, MA	69	73	80	62	52	(24.6)	(16.1)
Charleston, SC	32	39	41	47	44	37.5	(6.4)
San Francisco, CA	52	85	89	91	42	(19.2)	(53.8)
Oakland, CA	0	2	0	0	33	NA	NA
Norfolk, VA	15	48	45	25	31	106.7	24.0
Philadelphia, PA	25	30	50	52	30	20.0	(42.3)
Houston, TX	13	91	99	60	27	107.7	(55.0)
Other	159	131	119	129	148	(6.9)	14.7
Total	8,349	9,418	9,747	9,971	10,289	23.2	3.2

KEY: NA = Not applicable.

SOURCE: U.S. Department of Transportation, Maritime Administration, *U.S. Water Transportation Statistical Snapshot* (Washington, DC: May 2008), available at http://www.marad.dot.gov/marad_statistics/ as of July 2008.

TABLE 3-3-2 Average Capacity of Vessels Calling at U.S. Ports by Type: 1998–2007

Deadweight tons (DWT) per call

	Combination	Tanker	Dry bulk	Container	Roll-on/roll-off vessels	Gas carriers	General cargo	All vessels
1998	82,895	68,670	41,740	36,243	19,898	29,954	21,409	45,289
1999	88,433	67,723	41,833	36,586	18,662	31,402	22,331	45,117
2000	89,462	67,551	41,694	37,784	18,456	31,397	22,857	45,646
2001	87,873	69,313	42,142	39,656	20,445	33,438	23,416	47,034
2002	84,459	69,412	42,876	42,158	20,376	32,099	23,496	47,625
2003	84,016	72,387	42,685	43,168	20,270	37,818	23,655	49,557
2004	84,699	70,690	42,972	43,610	20,191	39,145	24,542	49,125
2005	87,151	72,056	43,276	44,593	19,838	41,411	25,101	50,083
2006	86,344	71,831	44,746	46,598	19,751	40,738	25,446	50,672
2007	93,617	72,222	45,270	47,720	19,635	40,462	25,572	51,658

NOTES: Calls are by oceangoing vessels of 10,000 DWT or greater at U.S. ports, excluding Great Lakes ports. 1998 is the first year for which data are available. Beginning in 2002, chemical tanker data are no longer reported separately and are, instead, included in tanker data; historical data were adjusted for consistency. See *Glossary* for an explanation of the vessel types.

SOURCES: 1998–2001: U.S. Department of Transportation, Maritime Administration, Office of Statistical and Economic Analysis, *Vessel Calls at U.S. Ports Snapshot* (Washington, DC: annual releases). **2002–2007:** U.S. Department of Transportation, Maritime Administration, Office of Policy and Plans, *U.S. Water Transportation Statistical Snapshot 2008* (Washington, DC), available at http://www.marad.dot.gov/marad_statistics as of July 2008.

TABLE 3-3-3 U.S. Flag Vessels by Type and Age: 2006

Number

Vessel types	Age group (years)					
	< 6	6–10	11–15	16–20	21–25	> 25
Dry cargo	123	103	75	127	96	421
Tanker	14	10	2	3	21	40
Towboat	362	336	172	132	690	3,581
Passenger	53	88	101	148	110	328
Offshore support/crewboats	237	277	103	55	359	685
Dry barge	3,955	6,006	2,913	1,949	3,629	9,204
Tank/liquid barge	833	496	386	84	293	2,155
Total	5,577	7,316	3,752	2,498	5,198	16,414

NOTES: *Total* excludes a small number of boats whose ages are unknown. Data includes vessels available for operation. Age is based on the year vessels were built or rebuilt. *Passenger* includes passenger excursion/sightseeing, combination passenger and dry-cargo vessels, and ferries.

SOURCE: U.S. Army Corps of Engineers, *Waterborne Transportation Lines of the United States, Volume 1*, National Summaries, table 4 (New Orleans, LA: annual issues) as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-31, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 3-3-4 Top 10 U.S. Maritime Container Ports: 2001–2007

Thousands of TEU

Port	2001	2002	2003	2004	2005	2006	2007	Percent change, 2001–2007	Average annual growth rate, 2001–2007 (%)
Los Angeles/Long Beach, CA	6,624	7,243	7,755	8,639	9,327	10,460	10,662	61.0	8.3
New York, NY	2,355	2,627	2,803	3,163	3,417	3,651	3,893	65.3	8.7
Seattle/Tacoma, WA	1,436	1,619	1,746	1,990	2,502	2,306	2,409	67.8	9.0
Savannah, GA	813	1,014	1,124	1,290	1,491	1,588	2,017	148.1	16.4
Norfolk, VA	885	982	1,093	1,206	1,325	1,414	1,568	77.1	10.0
Oakland, CA	963	979	1,064	1,197	1,378	1,398	1,423	47.7	6.7
Charleston, SC	1,159	1,197	1,250	1,421	1,522	1,507	1,401	20.9	3.2
Houston, TX	783	851	933	1,098	1,250	1,276	1,394	77.9	10.1
Port Everglades, FL	417	370	423	500	587	635	686	64.6	8.7
Miami, FL	717	752	764	795	778	746	673	-6.2	-1.1
Total top 10 ports	16,153	17,634	18,955	21,299	23,577	24,982	26,126	61.7	8.3
Total all ports¹	18,117	19,729	21,289	23,851	26,092	27,631	29,020	60.2	8.2
Top 10, percent of total	89.2	89.4	89.0	89.3	90.4	90.4	90.0		

¹ The statistics include both government and non-government shipments by vessel into and out of U.S. foreign trade zones, the 50 states, District of Columbia, and Puerto Rico.

NOTES: TEU = Twenty-foot Equivalent Unit. One twenty-foot container equals one TEU while one forty-foot container equals two TEU. The data in this table include only loaded containers in U.S. international maritime activity. It includes U.S. imports, exports, and transshipments. Therefore, the trade levels will be greater than those reported from U.S. international trade statistics, which excludes transshipments. The statistics exclude postal and military shipments.

SOURCE: U.S. Department of Transportation, Maritime Administration, *U.S. Waterborne Foreign Container Trade by U.S. Custom Ports* (Washington, DC: annual releases), available at http://www.marad.dot.gov/marad_statistics/ as of July 2008.

TABLE 3-3-5 Vessel Calls at U.S. Ports: 2002–2007

Number of 10,000 deadweight (DWT) or greater vessel calls

Type	2002	2003	2004	2005	2006	2007	Percent change, 2002–2007
Tanker	17,320	18,503	19,316	20,118	21,231	21,724	25.4
D/Hull	10,045	11,905	14,055	15,869	17,747	19,026	89.4
Product	10,949	10,998	11,572	12,217	13,282	13,277	21.3
D/Hull	5,770	6,578	7,712	8,799	10,252	10,811	87.4
Crude	6,371	7,505	7,744	7,901	7,949	8,447	32.6
D/Hull	4,275	5,327	6,343	7,070	7,495	8,215	92.2
Container	17,138	17,287	18,279	18,542	19,591	19,863	15.9
Dry Bulk	11,112	10,271	11,631	11,406	12,508	11,040	-0.6
Ro-Ro	5,632	5,191	5,317	5,663	6,318	6,077	7.9
Vehicle	3,605	3,113	3,065	3,652	4,182	4,084	13.3
Gas	739	926	916	969	961	917	24.1
LNG	89	164	173	203	213	202	127
Combination	761	666	459	414	334	235	-69.1
General	3,894	3,915	3,967	3,935	4,054	3,948	1.4
All types	56,596	56,759	59,885	61,047	64,997	63,804	12.7

NOTES: D/Hull = Double Hull. See *Glossary* for an explanation of vessel types.

SOURCE: U.S. Department of Transportation, Maritime Administration, *Vessel Calls at U.S. Ports Snapshot, 2007* (Washington, DC: May 2008), p. 1, available at http://www.marad.dot.gov/marad_statistics/ as of August 2008.

Rail Overview

The most dramatic change in the passenger rail industry in recent years has been the increase in ridership, which followed sharp increases in fuel prices.

While passenger rail travel is highly seasonal, it is possible to measure ridership changes by comparing the same month from the current year to that of the previous years. Amtrak ridership increased significantly in early 2008, as shown by the increases from the same months in 2007 (Table 3-4-5: *Amtrak Ridership (Monthly)*). Ridership in the first 6 months of 2008 increased 10.9 percent over the same period in 2007. Ridership in May 2008 was Amtrak's highest monthly ridership over the past 17 years.

This occurred in the context of a longer term increase in ridership. From 1996 to 2004, the number of passengers increased 28 percent. This was followed by a slight decrease of 3 percent between 2004 and 2006. Ridership has since resumed its upward trend and, as discussed above, the final tally for 2008 will likely set a new annual ridership record (Table 3-4-6: *Amtrak Ridership (Annual)*).

New York, NY, Washington, DC, Philadelphia, PA, Chicago, IL, and Los Angeles, CA, are among the top 5 busiest Amtrak stations (Table 3-4-1: *Top 25 Busiest Amtrak Stations*). While three of these stations are in the Northeast Corridor, stations in the Midwest and Pacific Coast round out the top five.

In recent years, the on-time performance of Amtrak's system has slightly decreased (Table 3-4-3: *Amtrak Trains Arriving On-Time*). Amtrak's total hours of delay have continued to increase, mostly where Amtrak operates on a host railroad's tracks, as is the norm on Amtrak's long-distance routes and many regional corridors. (Table 3-4-4: *Amtrak Hours of Delay by Cause*).

The average age of Amtrak's locomotives and passenger cars continues to rise from lows in 2000 and 2001, respectively (Table 3-4-2: *Average Age of Amtrak Locomotive and Train Car Fleets*).

Rail movement of freight leveled off after increasing for several quarters (Table 3-4-9: *Rail Freight Revenue Ton-Miles*). Average line haul speeds for freight shipments increased slightly during 2007 compared to the same quarters the previous year (Table 3-4-8: *Rail Freight Average Speeds, Revenue Ton-Miles, and Terminal Dwell Times*).

TABLE 3-4-1 Top 25 Busiest Amtrak Stations: Fiscal Year 2007

Tickets

Station	Tickets from	Tickets to	Total ridership
New York, NY	4,034,057	3,993,919	8,027,976
Washington, DC	2,066,154	2,042,415	4,108,569
Philadelphia, PA	1,838,794	1,835,461	3,674,255
Chicago, IL	1,385,424	1,389,227	2,774,651
Los Angeles, CA	733,471	730,818	1,464,289
Boston, MA	567,565	586,613	1,154,178
Baltimore, MD	485,904	491,475	977,379
Sacramento, CA	491,816	479,123	970,939
San Diego, CA	443,920	423,536	867,456
Albany-Rensselaer, NY	385,562	388,896	774,458
Wilmington, DE	351,099	353,288	704,387
New Haven, CT	320,389	319,892	640,281
Newark, NJ	314,717	311,136	625,853
Irvine, CA	310,515	312,777	623,292
BWI Airport, MD	293,613	294,232	587,845
Seattle, WA	297,289	287,464	584,753
Providence, RI	280,539	285,162	565,701
Portland, OR	267,077	265,568	532,645
Emeryville, CA	241,597	241,180	482,777
Milwaukee, WI	235,643	236,109	471,752
Harrisburg, PA	233,361	231,563	464,924
Fullerton, CA	213,152	212,317	425,469
Solana Beach, CA	220,624	204,165	424,789
Lancaster, PA	209,600	210,924	420,524

SOURCE: National Railroad Passenger Corporation (Amtrak), *National Fact Sheet: FY 2007: 25 Busiest Stations* (Washington, DC: February 2008), available at <http://www.amtrak.com/> as of July 2008.

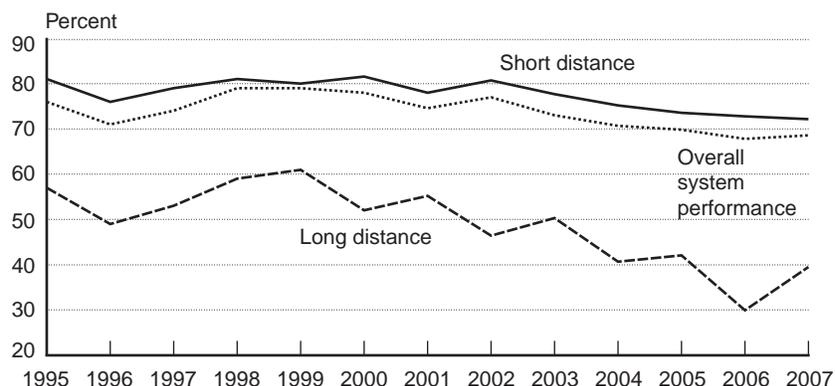
TABLE 3-4-2 Average Age of Amtrak Locomotive and Train Car Fleets: Fiscal Years: 1995–2007

Years

	Locomotives	Passenger cars and other rolling stock
1995	13.9	21.8
1996	14.4	20.7
1997	12.0	19.8
1998	12.6	21.1
1999	12.8	22.2
2000	11.2	19.4
2001	13.9	18.5
2002	13.7	20.4
2003	14.8	21.4
2004	15.7	22.4
2005	16.4	23.3
2006	17.5	22.5
2007	18.5	22.2

NOTE: Roadrailleurs are not considered rolling stock for the purpose of these calculations.

SOURCE: National Railroad Passenger Corporation (Amtrak), personal communication as of August 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-30, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

FIGURE 3-4-3 Amtrak Trains Arriving On-Time: 1995–2007


SOURCES: 1995–1999: National Railroad Passenger Corporation (Amtrak), *Amtrak Annual Report* (Washington, DC: annual issues). 2000–2007: Amtrak, personal communication, September 2008 as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-67, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 3-4-3 Amtrak Trains Arriving On-Time: 1995–2007

Fiscal year	System on-time performance	Short distance (<400 miles)	Long distance (≥400 miles)
1995	76	81	57
1996	71	76	49
1997	74	79	53
1998	79	81	59
1999	79	80	61
2000	78	82	52
2001	75	78	55
2002	77	81	46
2003	73	78	50
2004	71	75	41
2005	70	74	42
2006	68	73	30
2007	69	72	40

NOTES: *Short distance* includes all Amtrak Northeast Corridor and Empire Service (New York State) trains. Amtrak provides on-time performance data in percentages. Amtrak revised its methodology for collecting and calculating on-time performance data in 2001. This resulted in minor changes in short-distance, long-distance, and system on-time performance percentages starting in 2001 compared with previous years.

SOURCES: 1995–1999: National Railroad Passenger Corporation (Amtrak), *Amtrak Annual Report* (Washington, DC: annual issues). 2000–2007: Amtrak, personal communication, September 2008 as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-67, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 3-4-4 Amtrak Hours of Delay by Cause: 2000–2007

	Amtrak	Host railroad	Other	Total
2000	23,337	43,881	3,176	70,396
2001	27,822	52,273	3,741	83,837
2002	26,575	55,090	4,266	85,932
2003	25,711	57,346	5,355	88,413
2004	28,328	61,256	5,577	95,162
2005	25,549	64,097	5,613	95,259
2006	23,968	71,387	6,166	101,522
2007	22,902	72,565	6,187	101,655

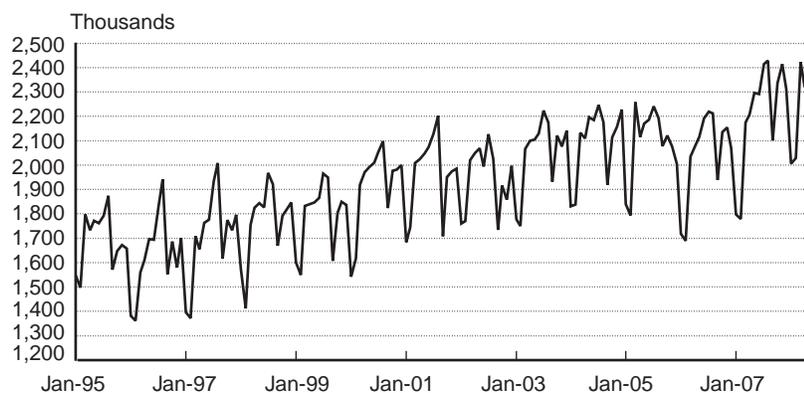
NOTES: Data may not add to total because of independent rounding. Data not collected prior to 2000. *Amtrak* includes all delays when operating on Amtrak-owned tracks and delays for equipment or engine failure, passenger handling, holding for connections, train servicing, and mail/baggage handling when on tracks of a host railroad.

Host railroad includes all 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, and routing delays. *Other* includes delays not attributable to Amtrak or host railroads, such as customs and immigrations, law enforcement action, weather, or waiting for scheduled departure time.

SOURCE: Amtrak, personal communication, June 2008, as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-67, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

FIGURE 3-4-5 Amtrak Ridership (Monthly): January 1995–June 2008

Number of Passengers (monthly data, not seasonally adjusted)



SOURCE: U.S. Department of Transportation, Federal Railroad Administration, Office of Safety Analysis, table 1.02, available at <http://safetydata.fra.dot.gov/OfficeofSafety/> as of September 2008.

TABLE 3-4-5 Amtrak Ridership Monthly: January 2007–June 2008

	Number of passengers (thousands)
January 2007	1,797
February 2007	1,779
March 2007	2,174
April 2007	2,207
May 2007	2,296
June 2007	2,291
July 2007	2,414
August 2007	2,429
September 2007	2,101
October 2007	2,336
November 2007	2,414
December 2007	2,312
January 2008	2,005
February 2008	2,029
March 2008	2,424
April 2008	2,320
May 2008	2,577
June 2008	2,560

NOTES: Amtrak serves more than 500 stations in 46 states and operates over a network of more than 21,000 track miles. Ridership is highly seasonal, July and August are the peak ridership months. In 2000, Amtrak introduced a high-speed rail service in the northeast United States, which helped increase ridership.

SOURCE: U.S. Department of Transportation, Federal Railroad Administration, Office of Safety Analysis, table 1.02, available at <http://safetydata.fra.dot.gov/OfficeofSafety/> as of September 2008.

**TABLE 3-4-6 Amtrak Ridership (Annual):
1995–2007**

Thousands of revenue passengers

	Passengers
1995	20,349
1996	19,700
1997	20,200
1998	21,246
1999	21,544
2000	22,985
2001	23,525
2002	23,321
2003	24,595
2004	25,215
2005	25,076
2006	24,548
2007	26,551

SOURCES: 1995–1997: Association of American Railroads, *Railroad Facts* (Washington, DC: annual issues). **1998–2007:** U.S. Department of Transportation, Federal Railroad Administration, Office of Safety, Operational Data Tables, table 1.02, available at <http://safetydata.fra.dot.gov/officeofsafety/> as of July 2008.

**TABLE 3-4-7 Average Loaded U.S. Railcar
Weight: 1995–2006**

	Tons per carload
1995	65.3
1996	66.6
1997	63.4
1998	64.1
1999	63.4
2000	62.6
2001	64.0
2002	63.3
2003	62.3
2004	61.3
2005	61.0
2006	60.9

NOTE: Average railcar weight is total tons divided by total carloads transported.

SOURCE: Association of American Railroads, *Railroad Facts 2007* (Washington, DC: 2007), p. 37.

Line-haul speed is a shipper-related indicator of the performance of the railroad industry. The average speed is the over-the-rail train speed and does not include terminal dwell time, time for local pickup and delivery, and the time shipments spend in storage yards.

TABLE 3-4-8 Rail Freight Average Speeds, Revenue Ton-Miles, and Terminal Dwell Times

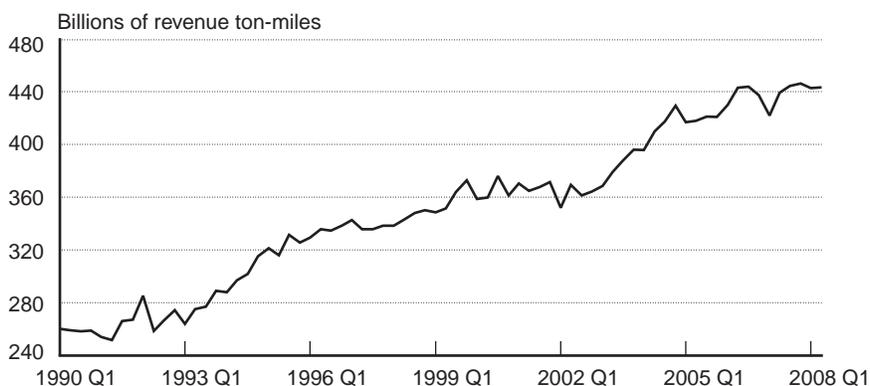
Quarter	Average line-haul speed (mph)	Revenue ton-miles (billions)	Average terminal dwell time (hours)
1999 Q3	23.0	364.0	U
1999 Q4	23.3	372.8	U
2000 Q1	24.2	358.6	U
2000 Q2	23.9	359.7	U
2000 Q3	23.8	376.0	U
2000 Q4	24.0	361.3	U
2001 Q1	24.4	370.4	U
2001 Q2	24.0	364.6	U
2001 Q3	24.3	367.7	U
2001 Q4	24.8	371.3	U
2002 Q1	25.4	352.0	U
2002 Q2	25.6	369.1	U
2002 Q3	24.9	361.2	U
2002 Q4	25.2	364.2	U
2003 Q1	24.7	368.4	U
2003 Q2	24.3	379.2	U
2003 Q3	23.7	387.6	U
2003 Q4	23.6	396.0	U
2004 Q1	23.2	395.6	U
2004 Q2	22.3	409.8	27.0
2004 Q3	22.5	417.3	26.4
2004 Q4	22.1	429.3	27.3
2005 Q1	21.7	416.7	27.5
2005 Q2	21.6	417.8	26.3
2005 Q3	21.7	421.0	25.9
2005 Q4	20.8	420.6	27.2
2006 Q1	21.4	429.8	25.9
2006 Q2	21.4	442.7	24.6
2006 Q3	21.7	443.6	23.9
2006 Q4	22.1	437.2	24.0
2007 Q1	21.8	421.8	24.3
2007 Q2	21.6	439.1	23.2
2007 Q3	22.0	444.3	23.4
2007 Q4	22.5	446.0	23.8

KEY: U = Data are unavailable.

SOURCES: **Average line-haul speed and terminal dwell time:** U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, calculations using data reported by Class I railroads to the Association of American Railroads for posting at <http://www.railroadpm.org/>, and Surface Transportation Board (STB), *Statistics of Class I Railroads in the United States*, table 8, available at <http://www.stb.dot.gov/> as of August 2008. **Revenue ton-miles:** STB, *Quarterly Selected Earnings Report*, available at <http://www.stb.dot.gov/> as of August 2008.

FIGURE 3-4-9 Rail Freight Revenue Ton-Miles: 1st quarter 1990–2nd quarter 2008

Quarterly data, not seasonally adjusted



SOURCES: 1990–1996: Association of American Railroads, *Railroad Revenues, Expenses, and Income. Class I Railroads in the United States*, R&E Series. **1997–2008:** Surface Transportation Board, Office of Economics, Environmental Analysis and Administration, *Quarterly Selected Earnings Report*, available at <http://www.stb.dot.gov/> as of August 2008.

**TABLE 3-4-9 Rail Freight Revenue Ton-Miles:
1st quarter 2007–2nd quarter 2008**

	Revenue ton-miles (billions)
2007 Q1	421.8
2007 Q2	439.1
2007 Q3	444.3
2007 Q4	446.0
2008 Q1	442.5
2008 Q2	443.0

SOURCES: 1990–1996: Association of American Railroads, *Railroad Revenues, Expenses, and Income. Class I Railroads in the United States*, R&E Series. **1997–2008:** Surface Transportation Board, Office of Economics, Environmental Analysis and Administration, *Quarterly Selected Earnings Report*, available at <http://www.stb.dot.gov/> as of August 2008.

Transit Overview

Overall, public transit ridership has grown to record levels (Figure/Table 3-5-4: *Public Transit Ridership*). While the number of unlinked trips stayed about the same, passenger-miles advanced by 4.8 percent compared to the prior year (Table 3-5-6: *Transit Unlinked Trips by Type of Service*, Table 3-5-5: *Transit Passenger-Miles by Type of Service*).

Much of the increase in unlinked trips came from the three rail modes (commuter rail, light rail, and heavy rail subway) that, combined, generated about 15 percent more trips. Transit bus ridership, which accounted for 53 percent of unlinked transit trips in 2006, was slightly up (Table 3-5-6: *Transit Unlinked Trips by Type of Service*). With new commuter rail operations starting in northern California and New Mexico in 2006, new light rail service starting in North Carolina, and new routes added to several existing systems, passenger-miles for these two modes were up by over 9 percent each (Table 3-5-5: *Transit Passenger-Miles by Type of Service*).

New York City's Metropolitan Transportation Authority is by far the most active transit agency in the United States, handling over 2.8 billion unlinked passenger trips in 2006, dwarfing the nearly 500 million trips handled by each of the transit authorities in Chicago, IL, and Los Angeles, CA. The Washington, DC, Metropolitan Area Transit Authority, with 409 million trips, and the Boston Area's Massachusetts Bay Transit Authority, with 380 million trips, round out the 5 largest agencies. The 6.5 billion unlinked trips generated by the top 20 transit agencies represent about two-thirds of the nation's transit ridership (Table 3-5-3: *Top 20 Transit Agencies by Unlinked Passenger Trips*).

TABLE 3-5-1 Average Age of Urban Transit Vehicles: 1995–2007

	Heavy-rail passenger cars	Commuter-rail passenger coaches	Light-rail vehicles	Full-size transit buses	Vans	Ferryboats
1995	19.3	21.4	16.8	8.6	3.1	23.4
1996	20.2	24.1	16.0	8.7	3.1	25.3
1997	21.1	21.6	15.9	8.5	3.0	25.4
1998	22.0	19.4	15.7	8.5	2.9	25.8
1999	22.5	17.5	15.7	8.4	3.1	25.1
2000	22.9	16.9	16.1	8.1	3.1	25.6
2001	21.7	18.1	16.4	7.8	3.3	24.7
2002	20.0	20.1	16.3	7.5	4.9	26.8
2003	19.0	20.5	15.6	7.3	3.4	27.1
2004	19.8	17.9	15.5	7.2	3.4	25.6
2005	20.8	18.6	14.5	7.6	3.4	25.6
2006	21.6	18.6	15.3	7.4	3.1	21.7
2007	21.6	18.9	16.1	6.2	3.1	20.3

NOTES: Full-size transit buses have more than 35 seats. Data are for directly operated service vehicles only.

SOURCE: Federal Transit Administration, National Transit Database, as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-28a, available at http://www.bts.gov/publications/national_transportation_statistics as of July 2008.

TABLE 3-5-2 Interruptions of Service by Type of Transit: 1995–2000 & 2001–2007

Number per 100,000 revenue vehicle-miles

	Motor bus	Light rail	Heavy rail	Commuter rail	Demand response
1995	38	33	4	4	4
1996	38	27	4	3	4
1997	37	21	3	3	5
1998	38	15	7	3	5
1999	38	17	7	3	5
2000	37	15	6	3	5
2001	27	14	3	2	4
2002	24	14	5	1	3
2003	22	14	3	1	4
2004	21	13	4	0	3
2005	22	15	5	1	3
2006	23	14	8	1	3
2007	22	14	7	1	3

NOTES: Data from 1995-2000 and 2001-2007 are not comparable due to a methodology change. *Interruptions of service* include major and minor mechanical failures. Since 2001, if the vehicle operator was able to fix the problem and return the vehicle to service without assistance, the incident has not been considered an interruption of service.

For definitions of service types, please see the *Glossary*.

SOURCES: U.S. Department of Transportation (USDOT), Research and Innovative Technology Administration, Bureau of Transportation Statistics, calculations based on various data. **Revenue vehicle-miles:** USDOT, Federal Transit Administration (FTA), National Transit Database, *2007 National Transit Summaries and Trends*, available at <http://www.ntdprogram.gov/> as of December 2008. **1995–2007 interruptions of service:** USDOT, FTA, National Transit Database, *2007 Data Tables*, Revenue Vehicle Maintenance Performance, table 16, available at <http://www.ntdprogram.gov/ntdprogram/data.htm> as of December 2008.

TABLE 3-5-3 Top 20 Transit Agencies by Unlinked Passenger Trips: FY 2006

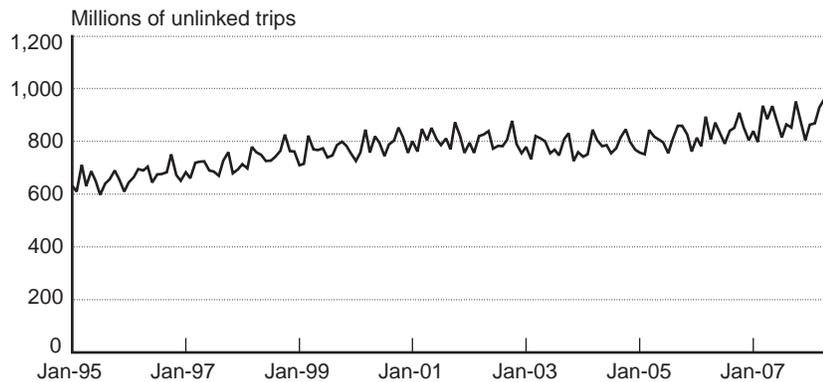
Rank	Agency	Number of unlinked trips (thousands)
1	MTA New York City Transit (NYCT)	2,803,464
2	Chicago Transit Authority (CTA)	494,729
3	Los Angeles County Metropolitan Trip Authority (LACMTA)	482,816
4	Washington Metropolitan Area Transit Authority (WMATA)	408,988
5	Massachusetts Bay Transportation Authority (MBTA)	380,261
6	Southeastern Pennsylvania Transportation Authority (SEPTA)	323,051
7	New Jersey Transit Corporation (NJTransit)	255,294
8	San Francisco Municipal Railway (MUNI)	210,848
9	Metropolitan Atlanta Rapid Transit Authority (MARTA)	138,403
10	Miami-Dade Transit (MDT)	107,094
11	Maryland Transit Administration (MTA)	107,024
12	King County Department of Transportation (King County Metro)	106,274
13	San Francisco Bay Area Rapid Transit District (BART)	103,654
14	Metropolitan Transit Authority of Harris County, Texas (Metro)	102,478
15	Tri-County Metropolitan Transportation District of Oregon (TriMet)	101,575
16	MTA Long Island Railroad (MTA LIRR)	99,520
17	MTA Bus Company (MTABUS)	99,169
18	Denver Regional Transportation District (RTD)	86,571
19	Port Authority Trans-Hudson Corporation (PATH)	78,283
20	Metro-North Commuter Railroad Company (MTA-MNCR)	77,071
Total, top 20 agencies		6,566,567
Total, all agencies		10,017,000
Top 20 agencies, percent of all agencies		65.55%

NOTES: Data may not add to total because of independent rounding.

According to the American Public Transportation Association (APTA), an *unlinked transit trip* is a trip on one transit vehicle. A person riding one vehicle from origin to destination takes one unlinked trip; a person who transfers to a second vehicle takes two unlinked trips; a person who transfers to a third vehicle takes three unlinked trips. A linked trip includes all segments on all vehicles used to travel from origin to destination.

SOURCE: American Public Transportation Association, *2008 Public Transportation Factbook* (Washington, D.C.: June 2008), tables 3 and 5, available at <http://www.apta.com/research/stats/index.cfm> as of July 2008.

FIGURE 3-5-4 Public Transit Ridership: January 1995–June 2008



SOURCE: American Public Transportation Association, *Quarterly Transit Ridership Report* (Washington, DC: quarterly releases), available at <http://www.apta.com/research/stats/ridership/> as of October 2008.

TABLE 3-5-4 Public Transit Ridership: January 2007–June 2008

	Ridership (in millions)
January 2007	838
February 2007	797
March 2007	935
April 2007	884
May 2007	933
June 2007	877
July 2007	815
August 2007	864
September 2007	851
October 2007	950
November 2007	871
December 2007	803
January 2008	862
February 2008	867
March 2008	928
April 2008	960
May 2008	952
June 2008	921

NOTES: Public transportation includes transit bus, transit rail, commuter rail, trolleys, and several demand-responsive services. According to the American Public Transportation Association (APTA), an *unlinked transit passenger trip* is a trip on one transit vehicle regardless of the type of fare paid or transfer presented. A person riding only one vehicle from origin to destination takes one unlinked passenger trip; a person who transfers to a second vehicle takes two unlinked passenger trips; a person who transfers to a third vehicle takes three unlinked passenger trips. APTA estimates that the number of people riding transit on an average weekday is 45 percent of the number of unlinked transit passenger trips.

SOURCE: American Public Transportation Association, *Quarterly Transit Ridership Report* (Washington, DC: quarterly releases), available at <http://www.apta.com/research/stats/ridership/> as of October 2008.

TABLE 3-5-5 Transit Passenger-Miles by Type of Service: 1995–2006

Millions

	Bus	Transit rail			Demand response	Other	Total
		Heavy	Commuter	Light			
1995	18,818	10,559	8,244	860	607	720	39,808
1996	19,096	11,530	8,351	957	656	788	41,378
1997	19,604	12,056	8,038	1,035	754	852	42,339
1998	20,360	12,284	8,704	1,128	735	917	44,128
1999	21,205	12,902	8,766	1,206	813	965	45,857
2000	21,241	13,844	9,402	1,356	839	984	47,666
2001	22,022	14,178	9,548	1,437	855	1,030	49,070
2002	21,841	13,663	9,504	1,432	853	1,031	48,324
2003	21,262	13,606	9,559	1,476	930	1,069	47,903
2004	21,377	14,354	9,719	1,576	962	1,084	49,073
2005	21,825	14,418	9,473	1,700	1,058	1,206	49,678
P2006	22,821	14,721	10,361	1,866	1,078	1,307	52,154

KEY: P = Preliminary.

NOTES: *Demand response* (also known as dial-a-ride or paratransit) is comprised of passenger cars, vans, or small buses operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations. *Other* includes modes such as automated guideway, Alaska Railroad, cable car, ferryboat, inclined plane, monorail, trolleybus, and vanpool. Data may not add to total because of independent rounding.

SOURCE: American Public Transportation Association, *2008 Public Transportation Factbook* (Washington, D.C.: June 2008), table 6, available at <http://www.apta.com/research/stats/> as of July 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-37, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 3-5-6 Transit Unlinked Trips by Type of Service: 1995–2007

Millions of unlinked trips

	Bus	Transit rail			Other	Total
		Heavy	Commuter	Light		
1995	4,579	2,034	344	249	298	7,503
1996	4,506	2,157	352	259	291	7,564
1997	4,602	2,430	357	259	306	7,954
1998	4,754	2,393	381	273	315	8,115
1999	4,992	2,521	396	289	326	8,524
2000	5,040	2,632	413	316	319	8,720
2001	5,215	2,728	418	334	312	9,007
2002	5,268	2,688	414	337	311	9,017
2003	5,147	2,667	410	338	315	8,876
2004	5,094	2,748	414	350	331	8,937
2005	5,226	2,808	423	381	338	9,176
2006	5,894	2,927	441	407	330	9,999
2007	5,278	3,460	458	418	334	9,948

NOTES: *Other* includes vanpool, demand response, ferryboats, inclined planes, monorail, jitney, publico, Alaska Railroad, aerial tramway, and trolley buses. Data may not add to total because of independent rounding.

For definitions of service types, please see the *Glossary*.

SOURCE: U.S. Department of Transportation, Federal Transit Administration, *National Transit Summaries and Trends* (Washington, D.C.: annual reports), available at <http://www.ntdprogram.gov/ntdprogram/data.htm> as of December 2008.

Chapter 4

U.S. Transportation System Economic and Social Impact

TABLE 4-1 Transit Rail Stations That Are ADA-Compliant by Service Type: 1995–2006

Number

	Commuter rail	Heavy rail	Light rail	Other rail	ADA-compliant stations	Total number of stations	ADA-compliant stations (percent)
1995	322	237	168	2	729	2,573	28.3
1996	356	245	233	2	836	2,617	31.9
1997	388	256	265	2	911	2,643	34.5
1998	500	258	290	2	1,050	2,675	39.3
1999	533	284	351	2	1,170	2,728	42.9
2000	552	340	384	2	1,278	2,777	46.0
2001	583	359	408	5	1,355	2,807	48.3
2002	624	366	458	9	1,457	2,786	52.3
2003	643	416	466	12	1,537	2,799	54.9
2004	666	428	589	12	1,695	2,911	58.2
2005	686	459	596	12	1,753	2,948	59.5
2006	712	479	635	12	1,838	2,987	61.5

KEY: ADA = Americans with Disabilities Act.

NOTES: *Other rail* includes monorail and (for 2001-2006 only) Alaska Railroad. Table does not include station data for automated guideway, jitney, and inclined plane transit services. Data may not add to total because of independent rounding.

ADA-compliant stations are those that are fully compliant with the ADA. Under the ADA, many older stations have elevators and were given time, some to year 2020, to remodel or be replaced. In addition, they were given time to add ramps, tile strips along the platform, and communication equipment for full ADA compliance.

SOURCES: 1994–2001: U.S. Department of Transportation (USDOT), Federal Transit Administration (FTA), personal communication, May 2005. **2002–2006:** USDOT, FTA, *National Transit Database Data Tables*, Annual Reports, table 21, available at <http://www.ntdprogram.gov/>, as of July 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-9, available at http://www.bts.gov/publications/national_transportation_statistics/ as of April 2008.

TABLE 4-2 Buses That Are ADA-Compliant: 1995–2007

Number	Total number of buses	ADA-compliant buses	ADA-compliant buses (percent)
1995	57,322	35,381	61.7
1996	57,369	38,316	66.8
1997	58,975	40,932	69.4
1998	60,830	46,278	76.1
1999	63,618	51,213	80.5
2000	65,324	54,585	83.6
2001	67,379	58,785	87.2
2002	68,418	64,407	94.1
2003	68,596	65,375	95.3
2004	68,789	67,454	98.1
2005	69,504	67,049	96.5
2006	70,227	68,880	98.1
2007	73,397	71,968	98.1

KEY: ADA = Americans with Disabilities Act.

SOURCE: U.S. Department of Transportation, Federal Transit Administration, *National Transit Summaries and Trends* (Annual Issues), p. 57, available at <http://www.ntdprogram.gov/ntdprogram/data.htm> as of Feb. 11, 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-8, available at http://www.bts.gov/publications/national_transportation_statistics/ as of December 2008.

TABLE 4-3 Households Without a Vehicle: 2007

Thousands	All households	65 or older
Number of households without a vehicle	9,803	3,361
Percentage of all households	8.7	14.6

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, *American Community Survey* (Washington, DC: Annual issues), Table B25045, available at <http://www.census.gov/acs/www/index.html> as of October 2008.

TABLE 4-4 How People Get to Work: 2007

	Percentage of workers	Number of workers (thousands)
Drives self	76.1	105,955
Carpool	10.4	14,488
Mass transportation	4.9	6,801
Works at home	4.1	5,677
Walks only	2.8	3,954
Taxicab, motorcycle, or other means	1.2	1,721
Bicycle	0.5	665
Total	100	139,260

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, *American Community Survey*, (Washington, DC: Annual issues), available at: <http://www.census.gov/acs/www/index.html> as of October 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-38, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

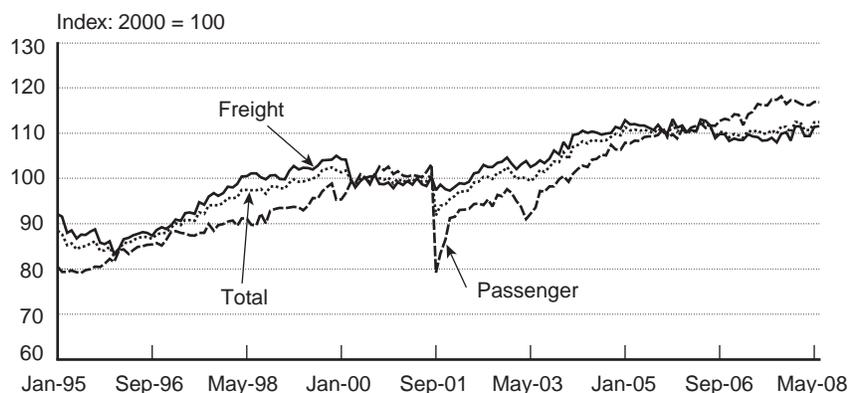
TABLE 4-5 Departure Time to Work

	2003		2007	
	Number of households (thousands)	Percentage of households	Number of households (thousands)	Percentage of households
5:00 a.m. to 5:29 a.m.	4,164	3.3	4,909	3.7
5:30 a.m. to 5:59 a.m.	5,992	4.8	6,634	5.0
6:00 a.m. to 6:29 a.m.	10,980	8.8	12,072	9.0
6:30 a.m. to 6:59 a.m.	13,484	10.8	13,953	10.4
7:00 a.m. to 7:29 a.m.	18,806	15.1	19,797	14.8
7:30 a.m. to 7:59 a.m.	17,577	14.1	17,537	13.1
8:00 a.m. to 8:29 a.m.	13,658	11.0	14,504	10.9
8:30 a.m. to 8:59 a.m.	6,830	5.5	7,237	5.4
9:00 a.m. to 9:59 a.m.	7,284	5.8	8,148	6.1
10:00 a.m. to 10:59 a.m.	3,097	2.5	3,620	2.7
11:00 a.m. to 11:59 a.m.	1,502	1.2	1,656	1.2
12:00 p.m. to 3:59 p.m.	8,551	6.9	9,234	6.9
4:00 p.m. to 11:59 p.m.	8,233	6.6	8,871	6.6
12:00 a.m. to 4:59 a.m.	4,466	3.6	5,409	4.0
Total	124,624	100	133,583	100

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, *American Community Survey*, (Washington, DC: Annual issues), Table S0801, available at <http://www.census.gov/acs/www/index.html> as of September 2008.

FIGURE 4-6 Transportation Services Index (TSI): January 1995–June 2008

Monthly, seasonally adjusted



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Transportation Services Index*, available at <http://www.bts.gov/> as of August 2008.

The Transportation Services Index (TSI) is a monthly measure of the volume of services performed by the for-hire transportation sector. The TSI tells us how the output of transportation services has increased or decreased from month to month.

TABLE 4-6 Transportation Services Index (TSI): January 2007–June 2008

Index: 2000 = 100

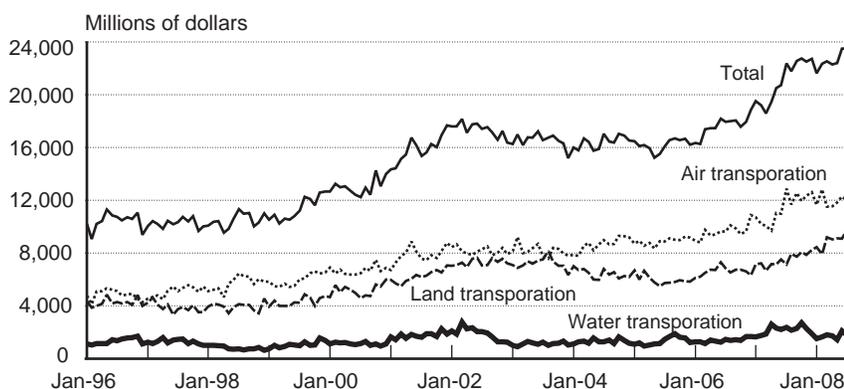
	TSI total	TSI freight	TSI passenger
January 2007	109.52	108.51	114.03
February 2007	109.02	108.54	111.75
March 2007	110.52	109.77	114.17
April 2007	110.30	109.32	114.71
May 2007	110.58	109.16	116.48
June 2007	109.92	108.36	116.25
July 2007	109.95	108.42	116.17
August 2007	110.69	109.00	117.44
September 2007	109.89	107.98	117.38
October 2007	111.48	109.82	118.17
November 2007	111.40	110.23	116.44
December 2007	110.15	108.36	117.27
January 2008	112.48	111.44	117.14
February 2008	112.40	111.52	116.53
March 2008	110.69	109.38	116.17
April 2008	110.68	109.36	116.20
May 2008	112.42	111.42	116.92
June 2008	112.48	111.51	116.87

NOTE: March 2008–June 2008 data are preliminary.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Transportation Services Index*, available at <http://www.bts.gov/> as of August 2008.

FIGURE 4-7 State and Local Expenditures on Nonroadway Transportation Construction: January 1996–June 2008

Monthly data, seasonally adjusted



SOURCE: U.S. Department of Commerce, Bureau of the Census, *Construction Spending*, available at <http://www.census.gov/const/www/c30index.html> as of October 2008.

TABLE 4-7 State and Local Expenditures on Nonroadway Transportation Construction: January 2007–June 2008

Monthly data, seasonally adjusted (millions of dollars)

	Total	Air transportation	Land transportation	Water transportation
January 2007	19,508	10,718	7,152	1,638
February 2007	19,189	10,219	7,217	1,753
March 2007	18,567	10,049	6,648	1,871
April 2007	19,465	9,696	7,163	2,605
May 2007	20,489	11,026	7,145	2,318
June 2007	20,701	10,972	7,524	2,204
July 2007	22,370	12,875	7,137	2,358
August 2007	21,777	11,671	7,944	2,162
September 2007	22,550	12,549	7,722	2,279
October 2007	22,733	11,942	8,074	2,717
November 2007	22,497	12,340	7,864	2,292
December 2007	22,726	12,601	8,242	1,883
January 2008	21,620	11,656	8,439	1,525
February 2008	22,352	12,809	7,909	1,634
March 2008	22,528	11,521	9,195	1,812
April 2008	22,286	11,547	9,023	1,716
May 2008	22,389	11,843	9,125	1,421
June 2008	23,475	12,276	9,086	2,113

NOTES: Expenditure refers to the value of work done on construction projects underway during a given period time, regardless of when work on each individual project was started or when payment was made to the contractors.

Public expenditures on transportation construction is a measurement of growth of system capacity. Construction includes new buildings, infrastructure, renovations, site preparation, and other materials and structures involved in construction. Maintenance of existing facilities and structures is not included.

Construction expenditures on completely new routes and terminals are direct additions to system capacity. Construction expenditures (including renovations, expansions, conversions, etc.) on existing transportation infrastructure may improve maintenance and system management, safety, and other attributes that increase capacity.

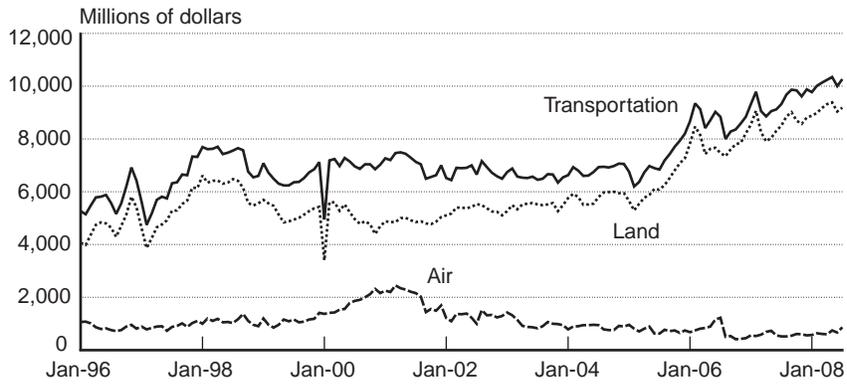
Details may not add to totals due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Construction Spending*, available at <http://www.census.gov/const/www/c30index.html> as of October 2008.

FIGURE 4-8 Private Expenditures on Transportation-Related Construction: January 1996–June 2008

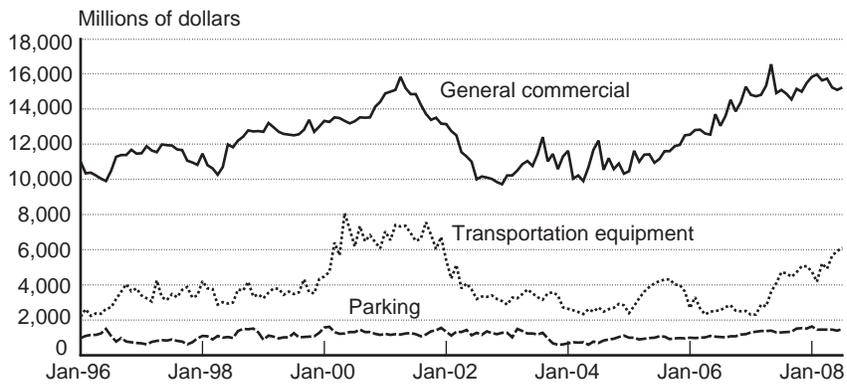
Private Expenditures on Transportation Infrastructure Construction

Monthly data, seasonally adjusted annual rate



Private Expenditures on Transportation-Related Construction

Monthly data, seasonally adjusted annual rate



SOURCE: U.S. Department of Commerce, Bureau of the Census, *Construction Spending*, available at <http://www.census.gov/const/www/c30index.html> as of October 2008.

TABLE 4-8 Private Expenditures on Transportation-Related Construction: January 2007–June 2008

Monthly data, seasonally adjusted (millions of dollars)

	Private expenditures on transportation infrastructure construction			Private expenditures on transportation-related construction		
	Total transportation	Air	Land	Transportation equipment	Parking	General commercial
January 2007	9,319	561	8,538	2,288	1,291	14,799
February 2007	9,789	528	9,058	2,312	1,325	14,716
March 2007	9,047	585	8,244	2,878	1,369	14,792
April 2007	8,854	692	7,899	2,773	1,365	15,323
May 2007	9,049	729	8,030	3,606	1,402	16,544
June 2007	9,115	558	8,301	4,086	1,294	14,902
July 2007	9,313	515	8,505	4,712	1,301	15,072
August 2007	9,675	522	8,850	4,646	1,313	14,845
September 2007	9,862	548	9,014	4,453	1,330	14,530
October 2007	9,830	608	8,696	4,714	1,514	15,136
November 2007	9,607	600	8,570	5,051	1,538	14,970
December 2007	9,875	554	8,813	5,047	1,506	15,471
January 2008	9,776	574	8,881	4,762	1,631	15,813
February 2008	10,013	631	8,980	4,177	1,460	15,953
March 2008	10,130	612	9,167	5,208	1,462	15,606
April 2008	10,236	595	9,320	4,914	1,458	15,716
May 2008	10,338	737	9,378	5,657	1,458	15,224
June 2008	9,998	660	9,043	5,914	1,399	15,072

NOTES: Expenditure refers to the value of work done on construction projects underway during a given period time, regardless of when work on each individual project was started or when payment was made to the contractors.

Total transportation is the sum of air, land, and water transportation expenditure. Expenditure on water is not separately presented because of lack of monthly estimates. Air and land transportation are defined the same as for state and local public expenditures.

General commercial warehousing includes commercial warehouses, storage warehouses, and distribution buildings. Transportation equipment manufacturing includes construction related to transportation equipment-producing industries. Parking includes commercial parking lots and garages.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Construction Spending*, available at <http://www.census.gov/const/www/c30index.html> as of October 2008.

TABLE 4-9 Passenger and Freight Expenditures: 1995–2004

Millions (current dollars)

	Passenger and freight transportation expenditures, total	Passenger transportation expenditures, total	Highway	Intercity bus	Air	Rail	Water
1995	945,316	693,889	602,089	1,800	83,681	4,132	3,988
1996	1,010,079	747,346	650,609	1,900	87,929	4,576	4,231
1997	1,071,632	798,216	693,762	2,200	95,312	4,701	4,440
1998	1,098,126	837,566	724,725	2,200	102,819	4,786	5,237
1999	1,188,252	914,032	792,738	2,200	110,110	4,954	6,230
2000	1,287,038	995,747	861,747	2,400	120,987	5,316	7,697
2001	1,296,037	1,010,043	887,422	2,400	108,791	5,560	8,270
2002	1,300,203	1,013,152	898,294	2,400	100,573	5,634	8,652
2003	1,362,963	1,064,204	944,894	2,300	104,422	5,833	9,055
2004	1,448,699	1,117,709	997,717	2,100	104,354	6,199	9,438

	Freight transportation expenditures, total	Highway	Air	Rail	Water	Oil pipeline	Other
1995	251,427	140,774	10,901	34,342	25,162	27,346	12,902
1996	262,733	149,784	11,843	34,903	23,980	28,774	13,449
1997	273,416	159,798	12,984	35,349	23,761	27,093	14,431
1998	260,560	148,222	13,259	35,295	24,767	23,750	15,267
1999	274,220	155,982	14,374	35,893	26,667	25,329	15,975
2000	291,291	165,539	15,838	36,282	30,925	26,057	16,651
2001	285,994	162,985	15,107	36,579	29,574	25,678	16,072
2002	287,051	164,332	15,749	36,921	28,643	25,318	16,088
2003	298,759	168,596	16,325	38,268	34,191	25,194	16,184
2004	330,990	186,045	17,707	42,160	40,612	27,622	16,844

NOTES: *Air passenger* includes aircraft and operating costs, plus domestic and international air passenger federal excise taxes. *Rail passenger* includes federal operating subsidies and capital grants for Amtrak and the Northeast Corridor. *Water passenger* includes international. *Air freight* includes domestic and international. *Other* includes shipping, receiving, and traffic clerks.

SOURCE: Eno Transportation Foundation Inc., *Transportation in America, Twentieth Edition* (Washington, DC: 2006), pp. 32-34.

Government transportation revenues consist of money collected by governments from transportation user charges and taxes to finance transportation programs. The following types of receipts are excluded: 1) revenues collected from users of the transportation system that are directed to the general fund and used for nontransportation purposes, 2) nontransportation general fund revenues that are used to finance transportation programs, and 3) proceeds from borrowing.

TABLE 4-10 Federal, State, and Local Government Transportation Revenues: FY 1995–2006

Chained 2000 dollars (billions)			
	Federal	State and local	Total
1995	34.5	72.5	107.0
1996	34.5	73.4	107.8
1997	34.7	75.2	109.9
1998	42.2	78.4	120.6
1999	54.7	80.3	135.0
2000	47.1	80.9	128.1
2001	42.1	80.2	122.4
2002	43.5	81.0	124.6
2003	42.3	78.6	120.9
2004	40.3	78.5	118.8
2005	42.2	78.7	120.9
2006	41.1	77.2	118.3

Current dollars (billions)			
	Federal	State and local	Total
1995	30.5	64.1	94.5
1996	31.2	66.4	97.6
1997	32.0	69.3	101.3
1998	39.4	73.3	112.7
1999	52.6	77.2	129.7
2000	47.1	80.9	128.1
2001	43.2	82.3	125.5
2002	45.9	85.5	131.4
2003	46.4	86.3	132.8
2004	46.3	90.0	136.3
2005	51.3	95.6	146.9
2006	52.2	98.2	150.5

NOTES: Data may not add to total because of independent rounding. To eliminate the effects of inflation over time, the Bureau of Transportation Statistics converted current dollars to chained 2000 dollars.

Local government receipts from motor fuel, motor vehicle, and toll highway charges are not included in 2006.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Government Transportation Financial Statistics 2008*, available at http://www.bts.gov/publications/government_transportation_financial_statistics/.

Government transportation revenues consist of money collected by governments from transportation user charges and taxes to finance transportation programs. The following types of receipts are excluded: 1) revenues collected from users of the transportation system that are directed to the general fund and used for nontransportation purposes, 2) nontransportation general fund revenues that are used to finance transportation programs and 3) proceeds from borrowing.

TABLE 4-11 Federal Government Transportation Revenues by Mode: FY 2006

	Chained 2000 dollars (billions)	Percentage of total
Highway	30.80	75.02
Air	8.75	21.32
Water	1.44	3.52
Pipeline	0.05	0.11
General support	<u>0.02</u>	<u>0.04</u>
Total	41.1	100.0

NOTES: Data may not add to total and percentages may not add to 100 because of independent rounding. To eliminate the effects of inflation over time, the Bureau of Transportation Statistics converted current dollars to chained 2000 dollars. Revenue is attributed to the mode from which it is collected, so money dedicated to transit from the highway trust fund is considered highway revenue.

Local government receipts from motor fuel, motor vehicle, and toll highway charges are not included in 2006.

SOURCE: U. S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Government Transportation Financial Statistics 2008*, available at http://www.bts.gov/publications/government_transportation_financial_statistics/.

Federal transportation expenditures consist of federal government direct spending only, excluding grants to state and local governments. State and local expenditures include outlays of the state and local governments funded by all sources of funds, including transportation revenues, grants, and borrowing.

TABLE 4-12 Federal, State, and Local Government Transportation Expenditures: FY 1995–2006

	Chained 2000 dollars (billions)		
	Federal	State and local	Total
1995	22.5	139.6	162.1
1996	22.1	142.7	164.8
1997	21.7	147.6	169.3
1998	22.7	152.3	175.0
1999	21.8	167.9	189.8
2000	21.1	165.3	186.4
2001	29.6	176.4	205.9
2002	33.9	178.2	212.1
2003	38.8	177.9	216.7
2004	34.2	172.9	207.1
2005	28.8	171.3	200.1
2006	28.2	128.5	156.7

	Current dollars (billions)		
	Federal	State and local	Total
1995	19.9	123.4	143.3
1996	20.0	129.2	149.1
1997	20.0	136.0	156.0
1998	21.2	142.4	163.5
1999	21.0	161.4	182.3
2000	21.1	165.3	186.4
2001	30.3	180.9	211.2
2002	35.8	188.0	223.8
2003	42.7	195.4	238.1
2004	39.3	198.4	237.6
2005	35.0	208.0	243.1
2006	35.8	163.6	199.4

NOTES: Data may not add to total and percentages may not add to 100 because of independent rounding. To eliminate the effects of inflation over time, the Bureau of Transportation Statistics converted current dollars to chained 2000 dollars. To avoid double counting, federal expenditures exclude grants to state and local governments.

Local government outlays for highway are not included in 2006.

SOURCE: U. S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Government Transportation Financial Statistics 2008*, available at http://www.bts.gov/publications/government_transportation_financial_statistics/.

Federal transportation expenditures consist of federal government direct spending only, excluding grants to state and local governments.

TABLE 4-13 Federal Government Transportation Expenditures by Mode: FY 2006

	Chained 2000 dollars (billions)	Percentage of total
Highway	2.3	8.29
Transit	0.1	0.23
Railroads	1.2	4.26
Air	17.9	63.63
Water	5.2	18.42
Pipeline	0.1	0.18
General Support	1.4	4.97
Total	28.2	100.00

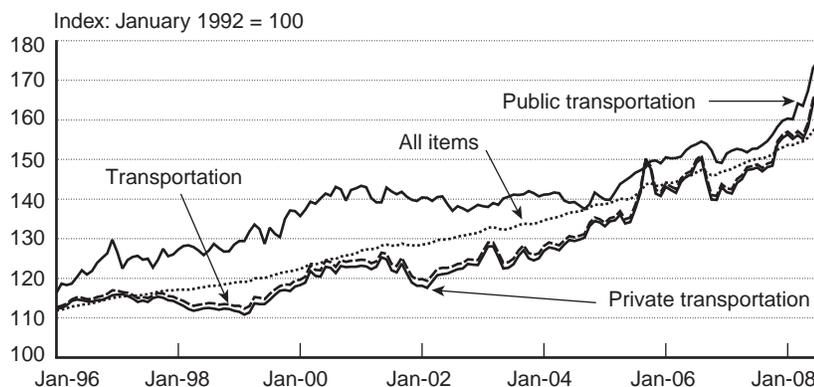
NOTES: Percentages may not add to 100 because of independent rounding. To eliminate the effects of inflation over time, the Bureau of Transportation Statistics converted current dollars to chained 2000 dollars.

SOURCE: U. S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Government Transportation Financial Statistics 2008*, available at http://www.bts.gov/publications/government_transportation_financial_statistics/.

FIGURE 4-14 Prices Paid by U.S. Households for Transportation Services: January 1996–June 2008

Monthly data, seasonally adjusted

Consumer price indices for transportation, U.S. city average



SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Price Index*, available at <http://www.bls.gov/cpi/> as of August 2008.

TABLE 4-14 Prices Paid by U.S. Households for Transportation Services: January 2007–June 2008

Index: January 1992 = 100

	All items	Transportation	Private transportation	Public transportation
January 2007	147.2	142.8	141.7	151.5
February 2007	147.6	142.5	141.4	152.2
March 2007	148.3	145.1	144.1	152.7
April 2007	148.8	146.0	145.1	152.4
May 2007	149.5	148.1	147.3	151.8
June 2007	149.9	148.3	147.5	152.7
July 2007	150.2	148.7	148.0	152.8
August 2007	150.2	147.9	147.0	153.6
September 2007	150.8	148.9	148.0	154.7
October 2007	151.2	149.4	148.4	156.2
November 2007	152.5	154.7	153.9	158.3
December 2007	153.1	156.2	155.5	159.8
January 2008	153.7	157.1	156.3	160.4
February 2008	153.7	156.0	155.2	160.1
March 2008	154.2	157.1	156.1	164.2
April 2008	154.6	156.1	155.1	163.5
May 2008	155.6	159.3	158.2	167.4
June 2008	157.2	165.3	164.2	173.1

NOTES: The Consumer Price Index (CPI) for a specific item is a weighted average of the prices for the individual components. The weights are determined by the expenditure shares of the individual components based on a survey of consumer expenditure during the base year(s). The CPI base year price is then normalized to 100. For some items, BLS establishes weights using several years of consumer expenditure surveys in order to smooth the effects of short-term price shocks and of the business cycle. Weights formed using several years will give a more accurate measure of typical consumer expenditure patterns.

Private transportation is a weighted average of the prices for new and used motor vehicles, motor fuels, motor vehicle parts and equipments, motor vehicle maintenance and repair, motor vehicle insurance, and motor vehicle fees (state and local registration and license fees, parking, and other fees).

Public transportation is a weighted average of the prices for airline fares, intercity bus fares, intercity train fares, ship fares, intracity transportation (intracity mass transit, taxi fares, and car and van pools), and other public transportation.

The base period of the original index is 1982–84. The new reference point, January 1992 = 100, has been set by dividing the values of the original index by the value of January 1992 in the original index. This process changes the reference point, and not the base period of the index because the weight structure of the index did not change.

The Consumer Price Index (CPI) tracks the price of a market basket of goods and services purchased by U.S. households over time. Both monthly and annual changes are reported in the tables for the CPI in order to facilitate comparison with other series.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Price Index*, available at <http://www.bls.gov/cpi/> as of August 2008.

TABLE 4-15 Average Household Transportation Expenditures: 1995–2006

Current dollars

	Vehicle purchases	Gasoline and motor oil	Other vehicle expenses	Public transportation	Total
1995	2,693	1,293	1,979	396	6,361
1996	2,820	1,310	2,025	467	6,621
1997	2,732	1,330	2,206	421	6,689
1998	2,989	1,415	2,202	450	7,056
1999	3,320	1,349	2,262	407	7,337
2000	3,418	1,291	2,281	427	7,417
2001	3,561	1,328	2,317	393	7,600
2002	3,665	1,366	2,370	378	7,779
2003	3,732	1,333	2,331	385	7,781
2004	3,397	1,598	2,365	441	7,801
2005	3,544	2,013	2,339	448	8,344
2006	3,421	2,227	2,355	505	8,508

NOTES: Data are based on survey results and may not add to total because of independent rounding. *Public transportation* includes fares for mass transit, buses, trains, airlines, taxis, school buses, and boats for which a fee is charged.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey*, available at <http://www.bls.gov/cex> as of August 2008.

TABLE 4-16 Average Passenger Fares: 1995–2006

Current dollars

	Air carrier, domestic, scheduled service	Class I, intercity bus	Transit, all modes (unlinked)	Commuter rail	Amtrak, intercity rail
1995	106.66	20.10	0.88	3.13	39.92
1996	110.37	22.85	0.93	3.25	43.31
1997	114.10	20.83	0.90	3.30	45.26
1998	114.34	23.14	0.91	3.29	44.75
1999	114.98	26.16	0.90	3.30	46.85
2000	121.27	29.46	0.93	3.32	49.61
2001	111.60	30.27	0.92	3.44	51.58
2002	101.94	30.11	0.89	3.49	55.15
2003	103.75	U	0.97	3.79	50.68
2004	103.59	U	1.02	3.90	50.71
2005	106.27	U	1.02	4.08	51.17
2006	113.25	U	1.12	4.22	56.45

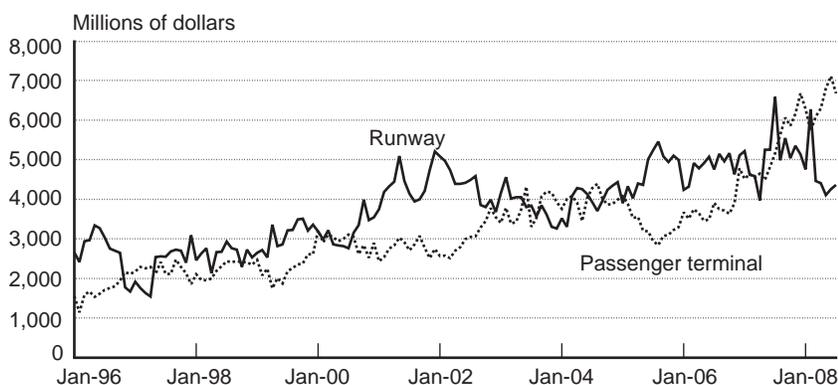
KEY: U = Data are unavailable.

NOTES: *Class I bus* includes regular route intercity service. Air carrier average passenger fare is scheduled service passenger revenue divided by scheduled revenue enplanements for large certificated carriers, including both passenger boarding and a change in flight number for the same aircraft where the passenger may remain on board.

SOURCES: **Air Carrier and Bus:** Bureau of Transportation Statistics, **Transit and Commuter Rail:** American Public Transportation Association, **Intercity Rail:** Amtrak and Association of American Railroads as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-15a, available at http://www.bts.gov/publications/national_transportation_statistics as of January 2009.

FIGURE 4-17 State and Local Expenditures on Air Transportation Construction: January 1996–June 2008

Monthly data, seasonally adjusted



SOURCE: U.S. Department of Commerce, Bureau of the Census, *Construction Spending*, available at <http://www.census.gov/const/www/c30index.html> as of October 2008.

TABLE 4-17 State and Local Expenditures on Air Transportation Construction: January 2007–June 2008

Monthly data, seasonally adjusted (millions of dollars)

	Runway	Passenger terminals
January 2007	5,217	4,512
February 2007	4,624	4,637
March 2007	4,588	4,551
April 2007	3,973	4,645
May 2007	5,249	4,488
June 2007	5,251	4,814
July 2007	6,588	5,164
August 2007	4,984	5,625
September 2007	5,546	6,061
October 2007	5,040	5,855
November 2007	5,346	6,156
December 2007	5,133	6,671
January 2008	4,754	6,285
February 2008	6,271	5,724
March 2008	4,456	6,091
April 2008	4,408	6,288
May 2008	4,105	6,797
June 2008	4,257	7,108

NOTES: Expenditure refers to the value of work done on construction projects underway during a given period time, regardless of when work on each individual project was started or when payment was made to the contractors.

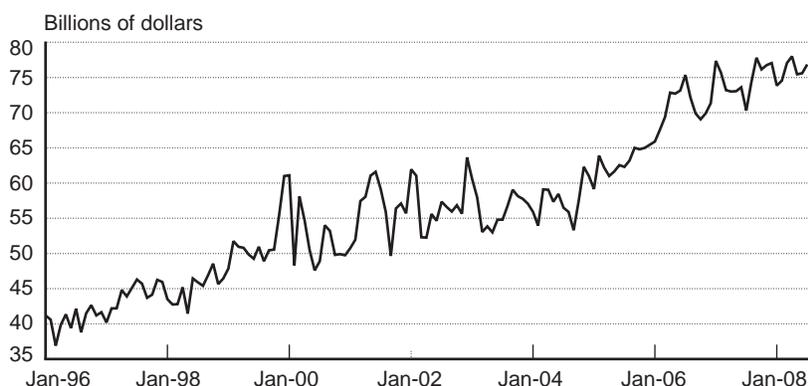
Runways include pavement and lighting. Other categories such as air freight terminals, air traffic towers, hangars, and other related facilities and structures are included for the air transportation total, but are not included in the monthly state and local estimates.

Details may not add to totals due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Construction Spending*, available at <http://www.census.gov/const/www/c30index.html> as of October 2008.

FIGURE 4-18 State and Local Expenditures on Highways and Streets Construction: January 1996–June 2008

Monthly data, seasonally adjusted



SOURCE: U.S. Department of Commerce, Bureau of the Census, *Construction Spending*, available at <http://www.census.gov/const/www/c30index.html> as of October 2008.

TABLE 4-18 Federal, State, and Local Expenditures on Highways and Streets Construction: January 2007–June 2008

Monthly data, seasonally adjusted (millions of dollars)

	Total public expenditures	Federal	State and local
January 2007	77,903	547	77,356
February 2007	76,247	537	75,710
March 2007	73,735	570	73,166
April 2007	74,049	1,043	73,007
May 2007	73,933	873	73,060
June 2007	74,463	859	73,604
July 2007	71,064	800	70,264
August 2007	75,130	817	74,313
September 2007	78,577	790	77,787
October 2007	76,936	806	76,129
November 2007	77,462	725	76,738
December 2007	77,871	847	77,025
January 2008	74,601	769	73,833
February 2008	75,397	845	74,552
March 2008	77,906	881	77,025
April 2008	78,826	846	77,980
May 2008	76,355	923	75,432
June 2008	76,407	814	75,593

NOTES: Expenditure refers to the value of work done on construction projects underway during a given period time, regardless of when work on each individual project was started or when payment was made to the contractors.

Construction includes new buildings, renovations, mechanical and electrical installations, site preparation, and other materials and structures incidental to construction. Maintenance is not included.

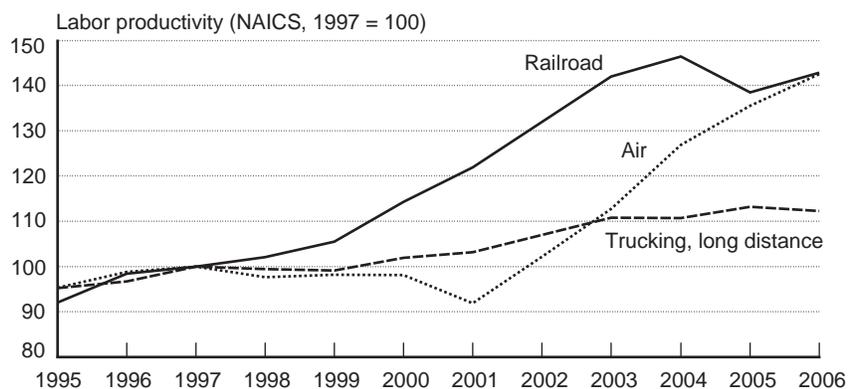
Highways and streets are the largest component of public transportation infrastructure spending. Pavement is the largest part of that spending, accounting for about 70 percent of state and local roadway expenditures.

The sum of details may not add to totals due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Construction Spending*, available at <http://www.census.gov/const/www/c30index.html> as of October 2008.

FIGURE 4-19 Labor Productivity of the For-Hire Transportation Industries: 1995–2006

Output per hour worked



SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Industry Productivity*, available at: <http://www.bls.gov/lpc/>, as of July 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 3-24a and 3-25b, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

TABLE 4-19 Labor Productivity of the For-Hire Transportation Industries: 1995–2006

	SIC categories (Index: 1997 = 100)			NAICS categories (Index: 1997 = 100)		
	Trucking, except local	Bus carriers, Class I	Petroleum pipeline	Railroad	Trucking, long distance	Air
1995	95	88	86	92	95	95
1996	99	85	97	98	97	99
1997	100	100	100	100	100	100
1998	98	84	102	102	99	98
1999	99	108	108	106	99	98
2000	99	90	105	114	102	98
2001	U	U	U	122	103	92
2002	U	U	U	132	107	102
2003	U	U	U	142	111	113
2004	U	U	U	146	111	127
2005	U	U	U	138	113	136
2006	U	U	U	143	112	142

KEY: U = Data are unavailable.

NOTES: Output per hour worked is based on the number of paid hours. Labor productivity measures quality-adjusted ton- and passenger-miles per hour. Quality adjustment corrects for differences in services and handling, e.g., the difference between flying first class and coach or differences in the handling requirements and revenue generation of high- and low-value commodities. Railroad includes line-haul railroads primarily engaged in transportation of passengers and cargo over a long distance within a rail network. Trucking comprises establishments engaged in providing long-distance general freight trucking, usually between metropolitan areas that may cross North American country borders. Air includes establishments that provide scheduled and nonscheduled air transportation of passengers and cargo using aircraft, e.g., airplanes and helicopters.

These productivity measures capture railroad, long-distance trucking, and air transportation as defined by the North American Industry Classification System (NAICS), whereas those for trucking except local, bus, and petroleum pipeline are defined by the Standard Industrial Classification (SIC) system. At the time this report was prepared, the Bureau of Labor Statistics did not have plans to continue estimating productivity measures for petroleum pipeline, trucking, and bus carriers because of a lack of reliable data.

SIC categories were converted to a 1997=100 index from a 1987=100 index, by the Bureau of Transportation Statistics

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Industry Productivity*, available at: <http://www.bls.gov/lpc/>, as of July 2008 as reported in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, tables 3-24a and 3-25b, available at http://www.bts.gov/publications/national_transportation_statistics/ as of October 2008.

Multifactor productivity measures the changes in output per unit of combined input and is a measure of the efficiency with which inputs are utilized. Inputs include labor, capital services, and intermediate purchases. Examples of nonlabor inputs include rail cars and airplanes, as well as fuel.

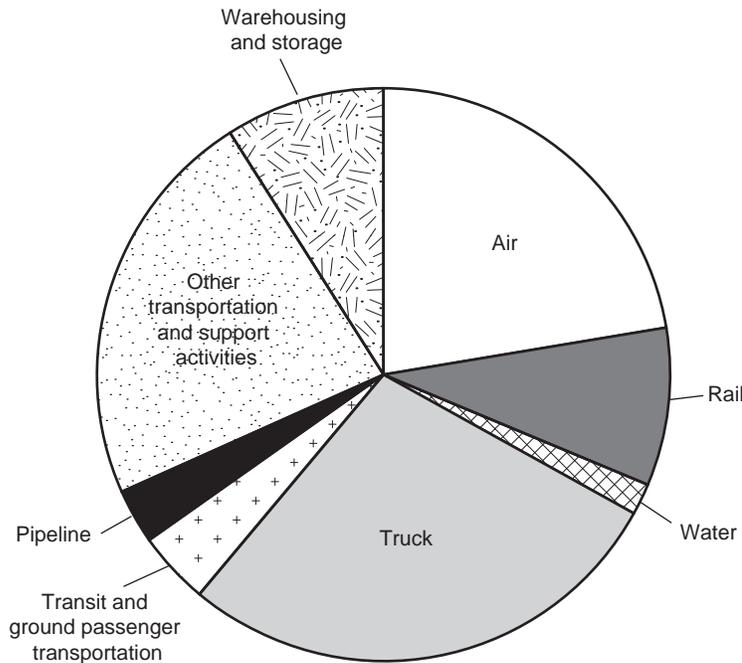
TABLE 4-20 Multifactor Productivity: 1995–2006

Index: 1995 = 100

	Railroad transportation	Air transportation	Business sector (all industries)
1995	100.0	100.0	100.0
1996	103.6	103.2	101.7
1997	103.6	103.6	102.7
1998	102.4	102.7	104.0
1999	104.7	101.9	105.3
2000	107.0	100.1	106.7
2001	107.8	95.7	106.8
2002	109.6	103.4	108.6
2003	114.8	107.5	111.4
2004	119.4	114.3	114.2
2005	114.8	119.5	116.1
2006	117.9	123.8	116.7

NOTES: Source data are indexes with base years of 1997 (air), 2000 (business), and 1997 (rail). The Bureau of Transportation Statistics reindexed these data so that 1995 is the base year for all.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Multifactor Productivity*, available at <http://www.bls.gov/mfp/> as of August 2008.

FIGURE 4-21 U.S. Gross Domestic Product Attributed to For-Hire Transportation Services: 2006


SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, *Industry Economic Accounts*, available at <http://www.bea.gov/> as of July 2008.

TABLE 4-21 U.S. Gross Domestic Product Attributed to For-Hire Transportation Services: 1995–2006

Chained 2000 Dollars (billions)

	U.S. Gross Domestic Product (GDP), total	For-hire transportation services, total	Transit and ground passenger transportation				Pipeline	Other transportation and support activities	Warehousing and storage	
			Air	Rail	Water	Truck				
1995	8,032	242.7	38.1	25.3	6.0	80.8	12.0	7.4	55.8	18.0
1996	8,329	255.1	45.1	25.2	6.7	83.8	12.0	7.4	56.4	18.8
1997	8,704	266.6	47.5	23.6	7.3	87.7	13.9	6.9	59.7	20.8
1998	9,067	275.8	48.7	24.4	7.0	91.0	14.3	6.9	62.6	22.0
1999	9,470	287.4	52.9	24.8	6.4	91.9	14.7	7.7	66.2	23.4
2000	9,817	301.6	57.7	25.5	7.2	92.8	14.5	8.7	70.2	25.0
2001	9,891	293.6	57.0	24.8	6.8	87.9	14.5	8.3	69.4	24.4
2002	10,049	300.2	62.8	24.4	5.6	87.5	14.6	9.6	70.6	25.6
2003	10,301	306.2	67.2	25.7	5.4	88.9	14.3	9.3	70.3	26.9
2004	10,676	334.1	75.5	26.1	6.1	97.3	15.4	10.6	77.4	28.3
2005	11,004	348.0	80.2	25.8	6.1	101.4	14.9	11.3	80.4	31.7
2006	11,319	366.2	82.5	32.9	6.5	103.5	15.1	11.4	83.8	33.2

NOTE: Details may not sum to totals due to the nature of chained dollar calculations.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, *Industry Economic Accounts*, available at <http://www.bea.gov/> as of July 2008.

TABLE 4-22 U.S. Gross Domestic Product Attributed to Transportation-Related Final Demand: 1995–2007

Chained 2000 dollars (billions)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
U.S. Gross Domestic Product (GDP), total	8,031.7	8,328.9	8,703.5	9,066.9	9,470.3	9,817.0	9,890.7	10,048.8	10,301.0	10,675.8	10,989.5	11,294.8	11,523.9
Domestic transportation-related final demand, total	892.8	932.5	991.1	1,048.3	1,095.9	1,089.5	1,098.7	1,100.7	1,098.8	1,120.2	1,138.3	1,136.2	1,148.4
Total transportation in GDP (percent)	11.1	11.2	11.4	11.6	11.6	11.1	11.1	11.0	10.7	10.5	10.4	10.1	10.0
Personal consumption of transportation, total	658.6	690.8	730.7	781.3	832.1	853.5	872.1	891.1	905.9	922.1	925.2	915.8	930.4
Motor vehicles and parts	272.3	285.4	304.7	339.0	372.4	386.5	405.8	429.0	442.1	450.8	449.9	437.9	446.7
Gasoline and oil	154.5	157.9	162.8	170.3	176.3	175.7	178.3	181.9	183.2	186.7	187.4	184.2	184.5
Transportation services	231.8	247.5	263.2	272.0	283.4	291.3	288.0	280.2	280.6	284.6	287.9	293.7	299.2
Gross private domestic investment, total	124.6	130.2	142.5	152.9	174.2	167.4	149.4	132.1	119.4	136.5	155.5	166.6	146.9
Transportation structures	4.0	4.8	6.6	7.5	6.5	6.6	6.6	6.1	5.6	5.9	6.0	7.1	7.5
Transportation equipment	120.6	125.4	135.9	145.4	167.7	160.8	142.8	126.0	113.8	130.6	149.5	159.5	139.4
Exports (+), total	142.1	149.4	170.7	181.2	181.0	179.0	171.6	170.7	164.6	178.8	193.5	212.5	235.0
Imports (-), total	189.0	195.5	214.0	232.5	264.5	288.0	280.1	285.2	290.7	312.3	324.4	343.8	348.9
Government transportation-related purchases, total	156.5	157.6	161.2	165.4	173.1	177.6	185.7	192.0	199.6	195.1	188.5	185.1	185.0
Federal purchases	18.0	18.5	18.8	19.6	19.4	19.2	20.6	25.0	27.1	25.4	25.3	25.9	24.9
State and local purchases	128.8	129.4	133.7	137.0	144.3	149.4	155.8	157.3	158.5	155.7	150.4	147.6	144.9
Defense-related purchases	9.7	9.7	8.7	8.8	9.4	9.0	9.3	9.7	14.0	14.0	12.8	11.6	15.2

NOTES: Data may not add to totals due to independent rounding. *Total domestic transportation-related final demand* is the sum of total personal consumption of transportation, total gross private domestic investment, net exports of transportation-related goods and services, and total government-related purchases. *Federal purchases* and *state and local purchases* are the sum of consumption expenditures and gross investments. *Defense-related purchases* are the sum of the transportation of material and travel. In 1995 and 1996, private investment in structures includes values for railroads only.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, *National Income Product Accounts Tables*, tables 1.1.6, 2.3.6, 3.11.6, 3.15.6, 4.2.6, 5.4.6B, and 5.5.6, available at <http://www.bea.gov> as of September 2008 as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-2b, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

TABLE 4-23 Employment in For-Hire Transportation and Selected Transportation-Related Industries: 1995–2007

Thousands (NAICS basis)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
U.S. labor force, total	117,298	119,708	122,776	125,930	128,993	131,785	131,826	130,341	129,999	131,435	133,703	136,086	137,623
Transportation-related labor force, total	12,450	12,192	12,998	13,268	13,546	13,638	13,473	13,117	12,934	12,971	13,109	13,205	13,212
Transportation and warehousing (48-49)	3,838	3,935	4,027	4,168	4,300	4,410	4,372	4,224	4,185	4,249	4,361	4,470	4,536
Air transportation (481)	511	526	542	563	586	614	615	564	528	515	501	487	493
Rail transportation (482)	233	225	221	225	229	232	227	218	218	226	228	228	234
Water transportation (483)	51	51	51	51	52	56	54	53	55	56	61	63	64
Truck transportation (484)	1,249	1,282	1,308	1,354	1,392	1,406	1,387	1,339	1,326	1,352	1,398	1,436	1,441
Transit and ground passenger transportation (485)	328	339	350	363	371	372	375	381	382	385	389	399	410
Pipeline transportation (486)	54	51	50	48	47	46	45	42	40	38	38	39	40
Scenic and sightseeing transportation (487)	22	23	25	25	26	28	29	26	27	27	29	28	29
Support activities for transportation (488)	430	446	473	497	518	537	539	525	520	535	552	571	583
Postal service (491)	850	867	866	881	890	880	873	842	809	782	774	770	762
Couriers and messengers (492)	517	540	546	568	586	605	587	561	562	557	571	582	583
Warehousing and storage (493)	444	452	462	474	494	514	514	517	528	558	595	638	659
Transportation-related manufacturing													
Petroleum and coal products manufacturing (324)	140	137	136	135	128	123	121	118	114	112	112	113	113
Tire manufacturing (32621)	87	86	84	87	87	87	82	76	72	70	67	60	59
Rubber and plastic hoses and belting manufacturing (32622)	27	27	28	29	30	30	29	28	28	28	29	28	27
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument manufacturing (334511)	158	158	159	163	161	149	150	148	145	151	157	158	159
Transportation equipment manufacturing (336)	1,979	1,975	2,028	2,078	2,089	2,057	1,939	1,830	1,775	1,767	1,772	1,769	1,711
Other transportation-related industries													
Highway, street, and bridge construction (2373)	278	288	294	308	336	340	346	346	340	347	351	348	345
Motor vehicle and motor vehicle parts and supplies merchant wholesalers (4231)	335	343	350	354	360	356	347	346	342	341	344	348	350
Transportation equipment and supplies merchant wholesalers (42386)	32	33	35	37	40	39	36	34	32	32	33	33	34
Petroleum and petroleum products merchant wholesalers (4247)	126	124	123	122	123	119	114	111	106	101	100	100	100
Motor vehicle parts dealers (441)	1,627	1,686	1,723	1,741	1,797	1,847	1,855	1,879	1,883	1,902	1,919	1,910	1,913
Gasoline stations (447)	922	946	956	961	944	936	925	896	882	876	871	864	861
Automotive equipment rental and leasing (5321)	171	180	184	189	199	208	208	195	193	197	199	199	195
Travel arrangement and reservation services (5615)	281	294	302	304	297	299	285	252	235	226	224	226	227
Other ambulatory health care services (6219)	143	154	164	171	173	173	180	187	195	200	206	217	229
Automotive repair and maintenance (8111)	738	781	811	828	864	888	904	900	894	891	886	887	888
Parking lots and garages (81293)	75	78	82	85	89	93	96	96	100	102	103	108	110

(continued on next page)

TABLE 4-23 Employment in For-Hire Transportation and Selected Transportation-Related Industries: 1995–2007 (continued)

Government employment, total	644	99	647	629	642	604	611	610	605	600	602	599	592
U.S. Department of Transportation (U.S. DOT)	101	99	98	99	100	58	60	65	59	57	56	54	54
State and Local Highway	543	N	548	530	543	546	552	545	546	543	546	545	538

NOTES: *Total U.S. labor force* excludes farm employment. *Transportation and warehousing* total does not include postal service. *Tire manufacturing* includes tire retreading. *Transportation equipment and supplies merchant wholesalers* do not include motor vehicle wholesalers. *Government employment* does not include all government agencies (e.g., the National Transportation Safety Board). The *U.S. Department of Transportation* was created in 1966. Data are for fiscal year and include permanent civilians as well as temporary employees and military. The United States Coast Guard (USCG) and the Transportation Security Administration (TSA) were transferred to the Department of Homeland Security in 2003. *State and Local Highway* is full-time equivalent employment. Due to a change in the reference period, from October to March, the October 1996 *Annual Survey of Government Employment and Payroll* was not conducted.

SOURCES: **All Data Except Government:** Bureau of Labor Statistics, **U.S. DOT:** Office of the Secretary of Transportation, **State and Local:** U.S. Census Bureau, as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 3-19b, available at http://www.bts.gov/publications/national_transportation_statistics/ as of January 2009.

Chapter 5

State of Transportation Statistics

The legislative mandate for the Bureau of Transportation (BTS), which is part of the U.S. Department of Transportation's Research and Innovative Technology Administration, requires annual submission of the *Transportation Statistics Annual Report* to the President and Congress. The report must include data and information on the 13 topics presented in the summary, document the methods utilized to obtain the report's statistical information as well as ensure its quality, and make recommendations for improving transportation statistical information. The latter two items are the subject of this chapter.

Information Quality

BTS obtained the data in this report from many sources, including other federal agencies, private industry, and trade associations. Data based on surveys are subject to sampling variability. Data from all sources may be subject to omissions and errors in reporting, recording, and processing. The sources cited for each table often provide additional information about the definitions, methodologies, and statistical reliability.

Under Office of Management Budget (OMB) directives, data collected by federal agencies are subject to guidelines, policies, and practices for disseminating statistics to the public.

Because federal agencies are subject to these guidelines, BTS relies heavily on federal sources for the data contained within this report. Federal agencies, both within and outside of the U.S. Department of Transportation (U.S. DOT), collect, compile, analyze, and publish transportation data. A partial list of these organizations is included in box A. In some cases, these agencies compile and disseminate data submitted or reported by state and local governments and/or by private industry on transportation operations, planning, financing, or management. Furthermore, some federal agencies conduct surveys or otherwise directly collect data on specific matters, either through their own auspices or through partnerships with other entities. In addition, other agencies produce data or information relevant to transportation, even though transportation is not their primary focus.

OMB chairs an interagency statistical policy committee, comprised of the heads of 13 statistical agencies in the federal government, including BTS. This group develops and distributes these statistical policies and guidelines for best practices to these and other agencies involved in statistics.

In response to its legislative mandates, BTS has developed guidelines for good statistical practices in the transportation field. Specific topics covered include planning data systems, collecting data, processing data, dissemination of information, and evaluation of information quality. These guidelines apply to all information, including compilations containing data from other sources, appearing in BTS publications. Box B discusses various federal statistical quality manuals and guidelines pertinent to transportation data.

Agencies also often have their own specific requirements and guidelines in addition to government-wide guidance. For example, they may issue guidelines for data reporting by state

agencies, localities, and transportation providers. Such guidance may contribute to greater uniformity, comparability, and quality of the resulting data even though it comes from multiple providers.

In many, but by no means all cases, source agencies document the methods used in collecting, compiling, and assuring the quality of the data they produce. In many cases, the cited agencies publish source and accuracy statements. The BTS website for *National Transportation Statistics*, a web-based companion document to this report, summarizes much of this information with respect to particular data series (*National Transportation Statistics*, Appendix E—Data Source and Accuracy Statements, http://www.bts.gov/publications/national_transportation_statistics/).

Box A

Selected Federal Agencies that Collect or Compile Transportation Data

Multimodal Data (including economic data)

- Bureau of Economic Analysis, USDOC
- Bureau of Labor Statistics, USDOL
- Bureau of Transportation Statistics (Research and Innovative Technology Administration), USDOT
- Customs and Border Protection, USDHS
- U.S. Census Bureau, USDOC

Aviation Data

- Bureau of Transportation Statistics (Research and Innovative Technology Administration), USDOT
- Federal Aviation Administration, USDOT
- Office of Aviation and International Affairs, USDOT
- National Transportation Safety Board

Hazardous Materials

- Data Pipeline and Hazardous Materials Administration, USDOT
- U.S. Census Bureau, USDOC
- Bureau of Transportation Statistics (Research and Innovative Technology Administration), USDOT

Highway Data

- Federal Highway Administration, USDOT
- Federal Motor Carrier Safety Administration, USDOT
- Federal Transit Administration, USDOT
- National Highway Traffic Safety Administration, USDOT

Maritime and Inland Waterways Data

- Maritime Administration, USDOT
- Federal Maritime Commission
- Saint Lawrence Seaway Development Corporation, USDOT
- U.S. Army Corps of Engineers
- U.S. Coast Guard, USDHS

Pipeline Data

- Pipeline and Hazardous Materials Administration, USDOT

Railroad Data

- Federal Railroad Administration, USDOT
- Surface Transportation Board, USDOT

Transit Data

- Federal Transit Administration, USDOT

Other Agencies Collecting Data Related to Transportation

- Agricultural Marketing Service, USDA
- Environmental Protection Agency
- Energy Information Administration, USDOE

KEY: USDHS—U.S. Department of Homeland Security; USDA—U.S. Department of Agriculture; USDOC—U.S. Department of Commerce; USDOE—U.S. Department of Energy; USDOL—U.S. Department of Labor; USDOT—U.S. Department of Transportation

Box B

Information Quality Guidelines for Federal Transportation Data

As a federal statistical agency, the Bureau of Transportation Statistics (BTS) has its own statistical standards and participates with other agencies to improve statistical information quality. Under an array of guidelines, other federal agencies collect, compile, and disseminate statistical data. The following are key guidelines and statistical information quality documents:

- *BTS Statistical Standards Manual*—covers all aspects of RITA/BTS statistical practice: (http://www.bts.gov/programs/statistical_policy_and_research/bts_statistical_standards_manual/index.html).
- *Guide to Good Statistical Practice in the Transportation Field*—includes the DOT guidelines for statistical information and additional BTS guidance for good statistical practice: (http://www.bts.gov/publications/guide_to_good_statistical_practice_in_the_transportation_field/).
- *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*—Federal Register Notice, vol. 67, no. 36, Feb. 22, 2002, Part IX – Office of Management and Budget: (http://www.bts.gov/publications/federal_register_notice/pdf/volume_67_number_36.pdf).
- *Guidelines of the Federal Statistical Organizations*—an approach to guidelines for statistical information adopted by the Interagency Council on Statistical Policy (ICSP): (http://www.bts.gov/publications/federal_register_notice/pdf/volume_67_number_107.pdf).
- *DOT Report for Implementing OMB's Information Dissemination Quality Guidelines* —is the DOT implementation of the OMB information quality guidelines and correction procedures. The DOT guidelines permit its agencies to issue their own guidelines, if these guidelines are consistent with the overall DOT guidelines: (<http://docketsinfo.dot.gov/ombfinal092502.pdf>).
- *Standards and Guidelines for Statistical Surveys*—adopted September 2006: (http://www.whitehouse.gov/omb/inforeg/statpolicy/standards_stat_surveys.pdf).
- *Title V—Confidential Information Protection and Statistical Efficiency Act of 2002*—effective Dec. 17, 2002: (http://www.whitehouse.gov/omb/inforeg/cipsea/cipsea_statute.pdf).

On March 7, 2008, the Office of Management and Budget released Statistical Policy Directive No. 4: Release and Dissemination of Statistical Products Produced by Federal Statistical Agencies: (http://www.whitehouse.gov/omb/fedreg/2008/030708_directive-4.pdf).

Improving Transportation Statistics

The Bureau of Transportation Statistics (BTS) program offices have taken steps to close data gaps or improve the ways in which they collect, compile, analyze, and publish data.

Freight Data

The North American TransBorder Freight Data Program provides users with data and information on shipments transported between the United States and Canada, and between the United States and Mexico. These data are an extract of the official foreign trade statistics collected by the U.S. Bureau of the Census. The program maintains the data and publishes subsets of the data electronically.

The North American TransBorder Freight Data provide U.S.-Canada and U.S.-Mexico merchandise trade data by commodity type, mode of transportation (rail, truck, pipeline, water, air, and other), and geographic detail for U.S. exports to and imports from Canada and Mexico. Since April 1993, the program has made the data available via the Internet at <http://www.bts.gov/programs/international/transborder/>.

BTS made two major changes to the TransBorder Freight Data Program in 2007. First, beginning in January 2007, the program added a new combination of U.S. port entry/exit and commodity data (at the two-digit Harmonized Tariff System level), which provides users with details on North American freight transportation not previously available.

Also in 2007, in response to customer feedback and advances in technology, the TransBorder Freight data interface was significantly improved. BTS developed a powerful online data access tool, which now provides fast queries and accurate analytical results to the user.

The new TransBorder query system produces:

- ***Detailed Statistics*** – that provides users with the ability to make queries of the following data elements:
 - U.S. State
 - Trading partner
 - Customs port
 - Mode of transportation
 - Value or weight
 - Imports, exports, or total trade
 - Commodity (at the two digit Harmonized Tariff System level)
 - Year
 - Month

- **Fast Facts** – provides users with fast and simple annual and monthly trade and transportation facts such as the top 10 ports, top U.S. states and top commodities in terms of trade value or weight for different modes of transportation.

The Commodity Flow Survey (CFS) represents the primary source of national and state-level data on domestic freight shipments by U.S. establishments in mining, manufacturing, wholesale, auxiliaries, and selected retail industries. CFS data provide the type, origin and destination, value, weight, mode of transport, distance shipped, and ton-miles of commodities shipped. Conducted every 5 years as part of the Economic Census, the CFS is a shipper-based survey. It provides a modal picture of national freight flows and represents the only publicly available source of commodity flow data for the highway mode. In addition, the CFS also provides one of the most comprehensive data series on the shipment of hazardous materials and exports.

During the spring of 2008, BTS, in partnership with the U.S. Census Bureau, completed data collection for the 2007 CFS. BTS and the Census Bureau previously conducted the CFS in 1993, 1997, and 2002. In response to data users and stakeholders' consultations and an extensive research effort, BTS and the Census Bureau implemented significant improvements in the survey design, collection instruments, and data products. Examples include an expansion of coverage in both geography and industry, addition of items on intermodal freight shipments and third-party logistics usage, and overall improvement in the data content, products, and means of dissemination. Processing of the 2007 CFS data continued through 2008 with BTS releasing the preliminary estimates from the survey in December 2008, to be followed by the release of final data products in December 2009. All 2007 CFS data products, as well as those from previous surveys, are available via the Internet at http://www.bts.gov/publications/commodity_flow_survey/ and via the U.S. Census Bureau's American Fact Finder—<http://factfinder.census.gov/>.

The Federal Highway Administration (FHWA) is conducting the planning and design work for Version 3 of the Freight Analysis Framework (FAF3). The FHWA will base the FAF3, in part, on data from the 2007 CFS. Furthermore, FAF3 integrates data from a variety of sources to estimate freight transportation activity among states, regions, and major international gateways. Based on the 2002 CFS, the current FAF provides estimates for 2002, quinquennial forecasts from 2010 through 2035, and annual provisional estimates (2007 released in April 2008). A searchable web-based database is also under development that, when completed, will provide improved access to the FAF data. All of the FAF data products are available via the Internet at http://www.ops.fhwa.dot.gov/freight/freight_analysis/faf.

This year the Committee on the Marine Transportation System (CMTS) launched the Marine Transportation System (MTS) Data Inventory, <http://marapps.dot.gov/mts/>, which is a web-based product of the CMTS Data Collection and Information Management Integrated Action Team (IAT). The MTS Data Inventory includes marine transportation-related data and information that federal agencies either produce or use. The Maritime Administration leads the IAT, whose membership from within the U.S. DOT includes the Maritime Administration, Saint Lawrence Seaway Development Corp., Federal Highway Administration, Bureau of Transportation Statistics, Federal Railroad Administration, and Pipeline and Hazardous Materials Safety Administration. In addition, the team includes federal agencies from the U.S. Departments of Defense, Homeland

Security, Commerce, Energy, Labor, Interior, Agriculture, State as well as the Environmental Protection Agency, and the Federal Maritime Commission.

Passenger Data

During 2008, BTS issued a final rule improving the data collected to document the on-time performance of airlines. The new rule took effect on Oct. 1, 2008. BTS added provisions to include more details on tarmac delays for cancelled and diverted flights. When an airline diverts a flight, it will now report the name of the diversion airport and all ground times, incoming and outgoing, at the diversion airport, even if the airline cancels a flight at the diversion airport.

The final rule also requires that an airline record all ground time as a delay when a flight is cancelled after leaving the gate and then returning. In the past, BTS only collected the number of airline flight cancellations from the airlines. BTS did not collect the tarmac delays—the time spent away from the gate. Now, the rule establishes a uniform practice for recording when a flight leaves the gate, returns to the gate, and then departs a second time. Delay statistics now reflect both departures. More specifically, BTS records the second departure as the actual departure time when compared to the scheduled departure time and records the total taxi-out times.

BTS has continued developing an e-filing data collection process. BTS now collects the majority of T-100 traffic data for Alaskan carriers using this new method. E-filing offers secure data transfer with little or no additional work on the part of the airlines. Upon receipt at BTS, it also reduces the manual processing of the data. Several large U.S. carriers have voluntarily begun test submissions involving their large data transfers. BTS envisions that most, if not all, airlines will file their T-100 traffic data using this more secure and efficient way by the end of 2009.

The Passenger Intermodal Connectivity Database offers data on the scheduled public transportation modes serving individual passenger transportation terminals in the United States. BTS developed this database to serve as a baseline measurement of the intermodal connections that are available in the U.S. passenger transportation system. Since the passage of the Intermodal Surface Transportation Act (ISTEA) in 1991, all U.S. DOT authorizing legislation has encouraged the development of intermodal links. Therefore, establishment of a baseline measurement for passenger intermodal connectivity will provide one way to measure U.S. progress.

BTS compiled the data in phases, by mode, for the Passenger Intermodal Connectivity Database. The initial phase of the Passenger Intermodal Connectivity Database, which includes data on 1,220 passenger terminals—547 intercity rail stations and 673 scheduled service airline airports—became available in 2007. Late in 2008, BTS added data covering 296 ferry terminals with scheduled passenger service. Also during 2008, data collection began on commuter rail stations, which will be the next mode added to the database during 2009¹. Data for heavy rail (subway), light rail (streetcar), and intercity bus stations will complete the database in future years.

¹ In some locations, commuter rail systems use the same right-of-way and stations as the intercity rail system (Amtrak and the Alaska Railroad). As a result, some stations served by commuter rail are already included in the database since intercity rail serves them.

BTS has been collecting the data on modes serving each terminal from numerous public sources including databases at the U.S. DOT, published brochures and timetables from carriers and transit agencies, and information from a range of transportation websites. These databases are available via the Internet for downloading as spreadsheets at <http://www.transtats.bts.gov/>. BTS has issued Special Reports using this data examining the degree of connectivity at intercity rail stations, airports, and ferry terminals. These reports are available at http://www.bts.gov/publications/bts_special_report/.

The Passenger Intermodal Connectivity Database includes the following categories of data for each terminal record:

- terminal name, address, zip code, and metropolitan area status;
- latitude and longitude;
- number of modes serving;
- status of service for ferry (intercity and transit), bus (intercity, transit, code share/supplemental), rail (intercity, commuter, heavy rail, and light rail), and air modes;
- terminal website; and
- data sources.

In accordance with Section 1801(e) of the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)*, BTS established and will maintain a national ferry database containing information on ferry routes, vessels, passengers and vehicles carried, funding sources, and other operational details.

The National Census of Ferry Operators (NCFO) database is available via the Internet at <http://www.bts.gov>. The NCFO database is a collection of summary tables that provide operational ferry data from a nationwide census of ferry operators conducted in 2000 and 2006. The 2008 survey is currently underway. The NCFO database contains data from other sources of ferry data such as the U.S. Coast Guard and the U.S. Army Corps of Engineers. BTS collects numerous detailed data elements describing the services that ferry operators provide as part of this effort. The NCFO utilizes a relational database throughout the data collection and processing that provides for the reporting of the information at various levels, such as by operator, route segment, terminal, or vessel.

The database of existing ferry operations includes the United States and its possessions, encompassing the 50 states, Puerto Rico, the U.S. Virgin Islands, and the Commonwealth of the Northern Mariana Islands. In addition to ferry operators providing domestic service within the United States and among its possessions, foreign operators providing international services to or from at least one U.S. terminal are also included.

The 2008 NCFO includes some additional response categories for existing items on vessel characteristics, route characteristics, and terminal characteristics. For example, BTS asks operators whether a vessel is currently in service, if it is passenger only, which vessel sails a trip segment, and how many trips the vessel makes in one day. In addition, BTS asks operators to select the proximity to other transit modes and to provide information on other businesses operating at their terminals. This additional information will enhance the ability to perform multiple imputation of missing passenger-boarding data and will provide more detail on interconnectivity with other transit modes. In early 2009, BTS plans to release a summary report based on a 2008 website survey. A summary report of the 2006 survey findings is available at:

http://www.bts.gov/publications/bts_special_report/.

BTS will conduct the next the NCFO in 2010. BTS is working with the Maritime Security Program of the U.S. Department of Homeland Security to include questions on security screening procedures used by terminal and ferry operators.

The Federal Highway Administration (FHWA), Office of Highway Policy and Information, is conducting the National Household Travel Survey (NHTS) in 2008. It is the foremost official national source of information on travel by the American public. Since 1969, the NHTS has provided an inventory on daily travel by all modes, purposes, distances, travel times, occupancy, and a host of other travel data. NHTS provides an important contribution to understanding transportation issues of congestion, safety, highway finance, economic impacts, air quality, and fuel use. The study also contributes to the understanding of social travel trends that affect measurements for transportation modeling, policy, and program evaluation. The 2008 NHTS includes additional information on the flexibility of work schedules, telecommuting, home deliveries from Internet shopping, hybrid and alternative fuel vehicles, commercial licensed vehicles, interstate and toll use, disabilities affecting mobility, and schoolchildren travel. With 40 years of data, the NHTS adds a wealth of information to help understand the complex nature of travel behavior.

The 2008 NHTS is the largest travel survey in the world. The study encompasses a national and add-on sample, which combined will yield data from 150,000 households. The national component covers all 50 states plus the District of Columbia. It employs a dual frame sample design that includes both landline and cellular phones. The frames generate 25,000 households for landline and 1,250 for cell-only households. The second component—the add-on program—represents a collection of state and metropolitan supplemental samples. Twenty areas are participating in the 2008 add-on program, resulting in data from an additional 125,000 households.

The combined sample of over 150,000 households will integrate and optimize the national survey with the add-on sample.

Below is a list of the 20 2008 NHTS add-on program participants:

- | | |
|------------------------------|---------------------------|
| 1. California DOT | 11. Omaha, NE |
| 2. Chittenden County, VT | 12. Piedmont Regional, NC |
| 3. Florida DOT | 13. Tucson, AZ |
| 4. Georgia DOT | 14. South Carolina DOT |
| 5. Indiana DOT | 15. South Dakota DOT |
| 6. Iowa DOT | 16. Tennessee DOT |
| 7. Cedar Rapids Regional, IA | 17. Texas DOT |
| 8. Phoenix, AZ | 18. Vermont DOT |
| 9. New York State DOT | 19. Virginia DOT |
| 10. North Carolina DOT | 20. Wisconsin DOT |

The NHTS launched its data collection efforts in March of 2008. The data collection will continue for over a full year until the first week of May 2009. The NHTS provides a full year of travel data to allow for day-of-week and month-of-year analyses of travel demand. In the fall of 2009, FHWA expects to make a microdata file publicly available for travel behavior modelers, policy analysts, and scholars.

Geospatial Information

The RITA/BTS Geospatial Information Program is the lead program for geospatial activities within the U.S. DOT. To emphasize this geospatial role, the U.S. DOT appointed the BTS Program Manager as the first Geospatial Information Officer. The Program is the U.S. DOT lead for National Spatial Data Infrastructure (NSDI). NSDI activities include representing DOT in the Federal Geographic Data Committee (FGDC) and OMB e-Gov initiatives, such as the Geospatial Line of Business, as well as leading the development of transportation data content standards for the Geospatial One-stop.

The Geospatial Information Program has worked with U.S. DOT partners to fill geospatial data gaps. Over the past 5 years, the Program and its partners have developed geospatial data for fixed guideway transit lines and stations, multimodal transfer facilities, Metropolitan Planning Organization boundaries, Environmental Protection Agency nonattainment area boundaries, road bridges from the National Bridge Inventory, highway weigh-in-motion stations, highway automated traffic recorder stations, highway hazardous materials routes, ferry routes, and alternative fueling stations. In 2009, the BTS Program will collaborate with the Federal Railroad Administration to develop a geospatial database of rail bridges.

The Geospatial Information Program annually produces the National Transportation Atlas Databases (NTAD). NTAD is a set of nationwide geospatial databases of transportation facilities, transportation networks, and associated infrastructure. These datasets include geospatial information for transportation modal networks and intermodal terminals, as well as the related attribute information for these features. Each database, as prescribed by the FGDC, provides metadata documentation. These data support research, analysis, and decisionmaking across all modes of

transportation. They are most useful at the national level, but have major applications at regional, state, and local levels throughout the transportation community. U.S. DOT partners and other federal government agencies provide the data used to compile NTAD. Congress originally mandated the Geospatial Information Program to produce NTAD in the Intermodal Surface Transportation Efficiency Act of 1991. The mandate has continued in each subsequent transportation authorization.

The Geospatial Information Program develops GIS applications to assist transportation analysts in performing complex geospatial analyses. For example, the GeoMiler application helps estimate freight travel by computing mileages along likely routes for the nearly 5 million freight shipments in the 2007 Commodity Flow Survey (CFS), the nation's largest survey of freight movement. The CFS uses these computations in estimating modal ton-miles of freight—a key measure for understanding the use and performance of our nation's freight transportation system. The Geospatial Information Program developed GeoMiler using current GIS technology to assign routes and calculate mileage from the true origin to the true destination of each shipment reported in the CFS, even when more than one mode is used. While developed for use in processing the CFS, multimodal freight movement at all geographic levels may use the tool's integrated core GIS technology and its modeling approach.

Economic Data

The publication of the Transportation Services Index (TSI) in March 2004 marked the entry of the RITA/BTS into the company of federal statistical agencies that produce a monthly U.S. economic indicator. The index consists of three measures:

- Freight transportation service,
- Passenger transportation service, and a
- Combined total of both freight and passenger services.

Currently, the Freight index consists of data from for-hire trucking, rail, inland waterways, pipelines, and airfreight. The Passenger index consists of data from air, local transit, and intercity rail. In addition, as part of ongoing research, BTS is exploring other modal data series to incorporate into the TSI. More specifically, BTS has been evaluating the addition of Federal Highway Administration's vehicle miles of travel (VMT). Based on the outcome of this research, BTS will decide whether to incorporate highway VMT with the passenger data to create a more comprehensive passenger index. BTS used economic and statistical techniques to present the output of the different transportation modes in comparable terms, while adjusting to correct for the seasonal nature of transportation. Using 2000 as a base year with an index value of 100, the overall TSI has ranged from a value of 66 at the beginning of 1990 to approximately 112 at the end of 2007, reflecting an increase of nearly 70 percent over 17 years.

BTS has undertaken research on how the pattern of change in the TSI compared with the growth of Gross Domestic Product (GDP) and with other measures of the business activity. The Passenger TSI has grown over time, despite a sharp drop at the time of the terrorist acts of Sept. 11,

2001, and its growth tends to coincide with growth in the Gross Domestic Product (GDP). The Freight TSI has grown over time as well, though it has grown more slowly than GDP. It tends to move ahead of GDP – that is, it begins to increase its rate of growth before GDP does, and it tends to decrease before GDP declines or slows down. In 2008, BTS made no annual revisions to the TSI, which follows the annual revisions in 2007 due to resource constraints. However, BTS plans to complete an annual revision in 2009.

Transportation Research Board

RITA, through its program offices, participates in multiple activities of the National Academy of Sciences' (NAS') Transportation Research Board (TRB). The TRB is a division of the National Research Council that promotes innovation and progress in transportation through research.

Through an agreement with the NAS, RITA utilizes the TRB to support and carry out administrative and management activities of the National Cooperative Freight Research Program (NCFRP). In 2005, Congress established the NCFRP in the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)*. The NCFRP carries out applied research with the objective of improving the efficiency, reliability, safety, and security of the nation's freight system. Since the program began, BTS and other RITA staff have participated in the identification and selection of 18 NCFRP projects amounting to almost 6 million in funding.

During the past year, BTS staff participated in many TRB committee activities involving areas associated with freight and travel data, hazardous materials, maritime activities, survey methodology, and international and state transportation topics. The Research and Innovative Technology Administration's University Transportation Center sponsored a TRB workshop on *Research Issues in Freight Transportation – Congestion and System Performance* in fiscal year 2008. Other TRB workshops and conferences attended and/or sponsored by RITA involved topics such as *Data for Goods Movement Impacts on Air Quality Workshop* and *North American Freight Flows Conference: Understanding Changes and Improving Data Sources*. These workshops and conferences are in addition to staff involvement and attendance at the TRB Annual and midyear meetings, which involve standing committee meetings as well as workshops and presentations.

Appendices

Appendix A: List of Acronyms

AAR	Association of American Railroads
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ATPI	Air Travel Price Index
ATTI	Air Travel Time Index
ATTVI	Air Travel Time Variability Index
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
BTS	Bureau of Transportation Statistics
Btu	British thermal unit
CBP	U.S. Customs and Border Protection
CFS	Commodity Flow Survey
CO	carbon monoxide
CO ₂	carbon dioxide
CPI	Consumer Price Index
CPSC	Consumer Product Safety Commission
DHS	U.S. Department of Homeland Security
DOC	U.S. Department of Commerce
DOE	U.S. Department of Energy
DOL	U.S. Department of Labor
DOT	U.S. Department of Transportation
dwt	deadweight tons
EIA	Energy Information Administration
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	fiscal year
GDP	Gross Domestic Product
GHG	greenhouse gas
GIS	geographic information systems
GVWR	gross vehicle weight rating
HMIS	Hazardous Materials Information System

ISTEA	Intermodal Surface Transportation Efficiency Act
ITS	intelligent transportation system
MARAD	Maritime Administration
MFP	multifactor productivity
MISLE	Marine Information and Safety Law Enforcement
mmtc	million metric tons of carbon
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organization
MSA	metropolitan statistical area
NAICS	North American Industry Classification System
NEI	National Emissions Inventory
NEISS	National Electronic Injury Surveillance System
NHTS	National Household Travel Survey
NHTSA	National Highway Traffic Safety Administration
NO _x	nitrogen oxides
NPIAS	National Plan of Integrated Airport Systems
NTAD	National Transportation Atlas Database
NTD	National Transit Database
NTS	<i>National Transportation Statistics</i> report
NTSB	National Transportation Safety Board
O&D	origin and destination
OECD	Organization for Economic Cooperation and Development
OOS	out of service
OPEC	Organization of Petroleum Exporting Countries
PM-2.5	particulate matter of 2.5 microns in diameter or smaller
PM-10	particulate matter of 10 microns in diameter or smaller
pmt	passenger-miles of travel
quads	quadrillions
RITA	Research and Innovative Technology Administration
rpm	revenue passenger-mile
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users
SCTG	Standard Classification of Transported Goods
SE	standard error
SIC	Standard Industrial Classification
STOL	short take-off and landing
SUV	sport utility vehicle
TEA-21	Transportation Equity Act for the 21st Century
TEU	20-foot equivalent container unit
TgCO ₂ Eq	teragrams of carbon dioxide equivalent
TSAR	<i>Transportation Statistics Annual Report</i>
TRB	Transportation Research Board
TSI	Transportation Services Index

TTI	Texas Transportation Institute
TTI	Travel Time Index
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDOT	U.S. Department of Transportation
VIUS	Vehicle Inventory and Use Survey
vmt	vehicle-miles of travel
VOC	volatile organic compounds

Appendix B: Glossary

14 CFR 121 (air): *Code of Federal Regulations*, Title 14, part 121. Prescribes rules governing the operation of domestic, flag, and supplemental air carriers and commercial operators of large aircraft.

14 CFR 135 (air): *Code of Federal Regulations*, Title 14, part 135. Prescribes rules governing the operations of commuter air carriers (scheduled) and on-demand air taxi (unscheduled).

ACCIDENT (aircraft): As defined by the National Transportation Safety Board, an occurrence incidental to flight in which, as a result of the operation of an aircraft, any person (occupant or nonoccupant) receives fatal or serious injury or any aircraft receives substantial damage.

ACCIDENT (automobile): See Crash (highway).

ACCIDENT (gas): 1) An event that involves the release of gas from a pipeline or of liquefied natural gas (LNG) or other gas from an LNG facility resulting in personal injury necessitating in-patient hospitalization or a death; or estimated property damage of \$50,000 or more to the operator or others, or both, including the value of the gas that escaped during the accident; 2) an event that results in an emergency shutdown of an LNG facility; or 3) an event that is significant in the judgment of the operator even though it did not meet the criteria of (1) or (2).

ACCIDENT (hazardous liquid or gas): Release of hazardous liquid or carbon dioxide while being transported, resulting in any of the following: 1) an explosion or fire not intentionally set by the operator; 2) loss of 50 or more barrels of hazardous liquid or carbon dioxide; 3) release to the atmosphere of more than 5 barrels a day of

highly volatile liquids; 4) death of any person; 5) bodily harm resulting in one or more of the following—a) the loss of consciousness, b) the necessity of carrying a person from the scene, c) the necessity for medical treatment, d) disability that prevents the discharge of normal duties; and 6) estimated damage to the property of the operators and/or others exceeding \$50,000.

ACCIDENT (highway-rail grade-crossing): An impact between on-track railroad equipment and an automobile, bus, truck, motorcycle, bicycle, farm vehicle, or pedestrian or other highway user at a designated crossing site. Sidewalks, pathways, shoulders, and ditches associated with the crossing are considered to be part of the crossing site.

ACCIDENT (rail): A collision, derailment, fire, explosion, act of God, or other event involving operation of railroad on-track equipment (standing or moving) that results in railroad damage exceeding an established dollar threshold.

ACCIDENT (recreational boating): An occurrence involving a vessel or its equipment that results in 1) a death; 2) an injury that requires medical treatment beyond first aid; 3) damage to a vessel and other property, totaling more than \$500 or resulting in the complete loss of a vessel; or 4) the disappearance of the vessel under circumstances that indicate death or injury. Federal regulations (33 CFR 173–4) require the operator of any vessel that is numbered or used for recreational purposes to submit an accident report.

ACCIDENT (transit): An incident involving a moving vehicle, including another vehicle, an object, person (except suicides), or a derailment/left roadway.

AIR CARRIER: The commercial system of air transportation comprising large certificated air carriers, small certificated air carriers, commuter air carriers, on-demand air taxis, supplemental air carriers, and air travel clubs.

AIR TAXI: An aircraft operator who conducts operations for hire or compensation in accordance with 14 CFR 135 (for safety purposes) or FAR Part 135 (for economic regulations or reporting purposes) in an aircraft with 30 or fewer passenger seats and a payload capacity of 7,500 pounds or less. An air taxi operates on an on-demand basis and does not meet the flight schedule qualifications of a commuter air carrier (see below).

AIRPORT: A landing area regularly used by aircraft for receiving or discharging passengers or cargo.

ALTERNATIVE FUELS: The Energy Policy Act of 1992 defines alternative fuels as methanol, denatured ethanol, and other alcohol; mixtures containing 85 percent or more (but not less than 70 percent as determined by the Secretary of Energy by rule to provide for requirements relating to cold start, safety, or vehicle functions) by volume of methanol, denatured ethanol, and other alcohols with gasoline or other fuels. Includes compressed natural gas, liquid petroleum gas, hydrogen, coal-derived liquid fuels, fuels other than alcohols derived from biological materials, electricity, or any other fuel the Secretary of Energy determines by rule is substantially not petroleum and would yield substantial energy security and environmental benefits.

AMTRAK: Operated by the National Railroad Passenger Corporation, this rail system was created by the Rail Passenger Service Act of 1970 (Public Law 91-518, 84 Stat. 1327) and given the responsibility for the operation of intercity, as distinct from suburban, passenger trains between points designated by the Secretary of Transportation.

ARTERIAL HIGHWAY: A major highway used primarily for through traffic.

ASPHALT: A dark brown to black cement-like material containing bitumen as the predominant constituent. The definition includes crude asphalt and finished products such as cements, fluxes, the asphalt content of emulsions, and petroleum distillates blended with asphalt to make cutback asphalt. Asphalt is obtained by petroleum processing.

AVAILABLE SEAT-MILES (air carrier): The aircraft-miles flown in each interairport hop multiplied by the number of seats available on that hop for revenue passenger service.

AVERAGE HAUL: The average distance, in miles, one ton is carried. It is computed by dividing ton-miles by tons of freight originated.

AVERAGE PASSENGER TRIP LENGTH (bus/rail): Calculated by dividing revenue passenger-miles by the number of revenue passengers.

AVIATION GASOLINE (general aviation): All special grades of gasoline used in aviation reciprocating engines, as specified by American Society of Testing Materials Specification D910 and Military Specification MIL-G5572. Includes refinery products within the gasoline range marketed as or blended to constitute aviation gasoline.

BARREL (oil): A unit of volume equal to 42 U.S. gallons.

BRITISH THERMAL UNIT (Btu): The quantity of heat needed to raise the temperature of 1 pound (approximately 1 pint) of water by 1 °F at or near 39.2 °F.

BULK CARRIER (water): A ship with specialized holds for carrying dry or liquid commodities, such as oil, grain, ore, and coal, in unpackaged bulk form. Bulk carriers may be designed to carry a single bulk product (crude oil tanker) or accommodate several bulk product types (ore/

bulk/oil carrier) on the same voyage or on a subsequent voyage after holds are cleaned.

BUS: Large motor vehicle used to carry more than 10 passengers, including school buses, intercity buses, and transit buses.

CAR-MILE (rail): The movement of a railroad car a distance of one mile. An empty or loaded car-mile refers to a mile run by a freight car with or without a load. In the case of intermodal movements, the designation of empty or loaded refers to whether the trailers or containers are moved with or without a waybill.

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY (air carrier): A certificate issued by the U.S. Department of Transportation to an air carrier under Section 401 of the Federal Aviation Act authorizing the carrier to engage in air transportation.

CERTIFICATED AIR CARRIER: An air carrier holding a Certificate of Public Convenience and Necessity issued by the U.S. Department of Transportation to conduct scheduled services interstate. These carriers may also conduct non-scheduled or charter operations. Certificated air carriers operate large aircraft (30 seats or more or a maximum load of 7,500 pounds or more) in accordance with FAR Part 121. See also Large Certificated Air Carrier.

CERTIFICATED AIRPORTS: Airports that service air carrier operations with aircraft seating more than 30 passengers.

CHAINED DOLLARS: A measure used to express real prices, defined as prices that are adjusted to remove the effect of changes in the purchasing power of the dollar. Real prices usually reflect buying power relative to a reference year. The “chained-dollar” measure is based on the average weights of goods and services in successive pairs of years. It is “chained” because the second year in each pair, with its weights, becomes the first year of the next pair. Prior to

1996, real prices were expressed in constant dollars, a weighted measure of goods and services in a single year. See also Constant Dollars and Current Dollars.

CLASS I RAILROAD: A carrier that has an annual operating revenue of \$250 million or more after applying the railroad revenue deflator formula, which is based on the Railroad Freight Price Index developed by the U.S. Department of Labor, Bureau of Labor Statistics. The formula is the current year’s revenues multiplied by the 1991 average index or current year’s average index.

COASTWISE TRAFFIC (water): Domestic traffic receiving a carriage over the ocean or the Gulf of Mexico (e.g., between New Orleans and Baltimore, New York and Puerto Rico, San Francisco and Hawaii, Alaska and Hawaii). Traffic between Great Lakes ports and seacoast ports, when having a carriage over the ocean, is also considered coastwise.

COLLECTOR (highway): In rural areas, routes that serve intracounty rather than statewide travel. In urban areas, streets that provide direct access to neighborhoods and arterials.

COMBINATION TRUCK: A power unit (truck tractor) and one or more trailing units (a semi-trailer or trailer).

COMMERCIAL BUS: Any bus used to carry passengers at rates specified in tariffs; charges may be computed per passenger (as in regular route service) or per vehicle (as in charter service).

COMMERCIAL SERVICE AIRPORT: Airport receiving scheduled passenger service and having 2,500 or more enplaned passengers per year.

COMMUTER AIR CARRIER: Different definitions are used for safety purposes and for economic regulations and reporting. For safety analysis, commuter carriers are defined as air

carriers operating under 14 CFR 135 that carry passengers for hire or compensation on at least five round trips per week on at least one route between two or more points according to published flight schedules, which specify the times, days of the week, and points of service. On March 20, 1997, the size of the aircraft subject to 14 CFR 135 was reduced from 30 to fewer than 10 passenger seats. (Larger aircraft are subject to the more stringent regulations of 14 CFR 121.) Helicopters carrying passengers or cargo for hire, however, are regulated under CFR 135 whatever their size. Although, in practice, most commuter air carriers operate aircraft that are regulated for safety purposes under 14 CFR 135 and most aircraft that are regulated under 14 CFR 135 are operated by commuter air carriers, this is not necessarily the case.

For economic regulations and reporting requirements, commuter air carriers are those carriers that operate aircraft of 60 or fewer seats or a maximum payload capacity of 18,000 pounds or less. These carriers hold a certificate issued under section 298C of the Federal Aviation Act of 1958, as amended.

COMMUTER RAIL (transit): Urban passenger train service for short-distance travel between a central city and adjacent suburb. Does not include rapid rail transit or light rail service.

CONSTANT DOLLARS: Dollar value adjusted for changes in the average price level by dividing a current dollar amount by a price index. See also Chained Dollars and Current Dollars.

CRASH (highway): An event that produces injury and/or property damage, involves a motor vehicle in transport, and occurs on a trafficway or while the vehicle is still in motion after running off the trafficway.

CRUDE OIL: A mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs and remains liquid at atmospheric

pressure after passing through surface-separating facilities.

CURRENT DOLLARS: Dollar value of a good or service in terms of prices current at the time the good or service is sold. See also Chained Dollars and Constant Dollars.

DEADWEIGHT TONNAGE (water): The carrying capacity of a vessel in long tons (2,240 pounds). It is the difference between the number of tons of water a vessel displaces "light" and the number of tons it displaces when submerged to the "load line."

DEMAND-RESPONSE VEHICLE (transit): A nonfixed-route, nonfixed-schedule vehicle that operates in response to calls from passengers or their agents to the transit operator or dispatcher.

DIESEL FUEL: A complex mixture of hydrocarbons with a boiling range between approximately 350 and 650 °F. Diesel fuel is composed primarily of paraffins and naphthenic compounds that auto-ignite from the heat of compression in a diesel engine. Diesel is used primarily by heavy-duty road vehicles, construction equipment, locomotives, and by marine and stationary engines.

DOMESTIC FREIGHT (water): All waterborne commercial movement between points in the United States, Puerto Rico, and the Virgin Islands, excluding traffic with the Panama Canal Zone. Cargo moved for the military in commercial vessels is reported as ordinary commercial cargo; military cargo moved in military vessels is omitted.

DOMESTIC OPERATIONS (air carrier): All air carrier operations having destinations within the 50 United States, the District of Columbia, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands.

DOMESTIC PASSENGER (water): Any person traveling on a public conveyance by water between points in the United States, Puerto Rico, and the Virgin Islands.

DRY CARGO BARGES (water): Large flat-bottomed, nonself-propelled vessels used to transport dry-bulk materials such as coal and ore.

ENERGY EFFICIENCY: The ratio of energy inputs to outputs from a process, for example, miles traveled per gallon of fuel (mpg).

ENPLANED PASSENGERS (air carrier): See Revenue Passenger Enplanements.

FATAL CRASH (highway): A police-reported crash involving a motor vehicle in transport on a trafficway in which at least 1 person dies within 30 days of the crash as a result of that crash.

FATAL INJURY (air): Any injury that results in death within 30 days of the accident.

FATALITY: For purposes of statistical reporting on transportation safety, a fatality is considered a death due to injuries in a transportation crash, accident, or incident that occurs within 30 days of that occurrence.

FATALITY (rail): 1) Death of any person from an injury within 30 days of the accident or incident (may include nontrain accidents or incidents); or 2) death of a railroad employee from an occupational illness within 365 days after the occupational illness was diagnosed by a physician.

FATALITY (recreational boating): All deaths (other than deaths by natural causes) and missing persons resulting from an occurrence that involves a vessel or its equipment.

FATALITY (transit): A transit-caused death confirmed within 30 days of a transit incident. Incidents include collisions, derailments, personal casualties, and fires associated with tran-

sit agency revenue vehicles, transit facilities on transit property, service vehicles, maintenance areas, and rights-of-way.

FATALITY (water): All deaths and missing persons resulting from a vessel casualty.

FERRYBOAT (transit): Vessels that carry passengers and/or vehicles over a body of water. Generally steam or diesel-powered, ferryboats may also be hovercraft, hydrofoil, and other high-speed vessels. The vessel is limited in its use to the carriage of deck passengers or vehicles or both, operates on a short run on a frequent schedule between two points over the most direct water routes other than in ocean or coastwise service, and is offered as a public service of a type normally attributed to a bridge or tunnel.

FOSSIL FUELS: Any naturally occurring organic fuel formed in the Earth's crust, such as petroleum, coal, and natural gas.

FREIGHT REVENUE (rail): Revenue from the transportation of freight and from the exercise of transit, stopoff, diversion, and reconsignment privileges as provided for in tariffs.

FREIGHTERS (water): General cargo carriers, full containerships, partial containerships, roll on/roll off ships, and barge carriers.

GAS TRANSMISSION PIPELINES: Pipelines installed for the purpose of transmitting gas from a source or sources of supply to one or more distribution centers, or to one or more large volume customers; or a pipeline installed to interconnect sources of supply. Typically, transmission lines differ from gas mains in that they operate at higher pressures and the distance between connections is greater.

GASOLINE: A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to produce a fuel suitable for use in spark ignition engines. Motor gasoline includes both leaded

or unleaded grades of finished motor gasoline, blending components, and gasohol. Leaded gasoline is no longer used in highway motor vehicles in the United States.

GENERAL AVIATION: 1) All civil aviation operations other than scheduled air services and nonscheduled air transport operations for taxis, commuter air carriers, and air travel clubs that do not hold Certificates of Public Convenience and Necessity. 2) All civil aviation activity except that of air carriers certificated in accordance with Federal Aviation Regulations, Parts 121, 123, 127, and 135. The types of aircraft used in general aviation range from corporate multi-engine jet aircraft piloted by professional crews to amateur-built single-engine piston-driven acrobatic planes to balloons and dirigibles.

GENERAL ESTIMATES SYSTEM (highway): A data-collection system that uses a nationally representative probability sample selected from all police-reported highway crashes. It began operation in 1988.

GROSS DOMESTIC PRODUCT (U.S.): The total output of goods and services produced by labor and property located in the United States, valued at market prices. As long as the labor and property are located in the United States, the suppliers (workers and owners) may be either U.S. residents or residents of foreign countries.

GROSS VEHICLE WEIGHT RATING (truck): The maximum rated capacity of a vehicle, including the weight of the base vehicle, all added equipment, driver and passengers, and all cargo.

HAZARDOUS MATERIAL: Any toxic substance or explosive, corrosive, combustible, poisonous, or radioactive material that poses a risk to the public's health, safety, or property, particularly when transported in commerce.

HEAVY RAIL (transit): An electric railway with the capacity to transport a heavy volume of pas-

senger traffic and characterized by exclusive rights-of-way, multicar trains, high speed, rapid acceleration, sophisticated signaling, and high-platform loading. Also known as "subway," "elevated (railway)," or "metropolitan railway (metro)."

HIGHWAY-RAIL GRADE CROSSING (rail): A location where one or more railroad tracks are crossed by a public highway, road, street, or a private roadway at grade, including sidewalks and pathways at or associated with the crossing.

HIGHWAY TRUST FUND: A grant-in-aid type fund administered by the U.S. Department of Transportation, Federal Highway Administration. Most funds for highway improvements are apportioned to states according to formulas that give weight to population, area, and mileage.

HIGHWAY-USER TAX: A charge levied on persons or organizations based on their use of public roads. Funds collected are usually applied toward highway construction, reconstruction, and maintenance.

INCIDENT (hazardous materials): Any unintentional release of hazardous material while in transit or storage.

INCIDENT (train): Any event involving the movement of a train or railcars on track equipment that results in a death, a reportable injury, or illness, but in which railroad property damage does not exceed the reporting threshold.

INCIDENT (transit): Collisions, derailments, personal casualties, fires, and property damage in excess of \$1,000 associated with transit agency revenue vehicles; all other facilities on the transit property; and service vehicles, maintenance areas, and rights-of-way.

INJURY (air): See Serious Injury (air carrier/general aviation).

INJURY (gas): Described in U.S. Department of Transportation Forms 7100.1 or 7100.2 as an injury requiring “in-patient hospitalization” (admission and confinement in a hospital beyond treatment administered in an emergency room or out-patient clinic in which confinement does not occur).

INJURY (hazardous liquid pipeline): An injury resulting from a hazardous liquid pipeline accident that results in one or more of the following: 1) loss of consciousness, 2) a need to be carried from the scene, 3) a need for medical treatment, and/or 4) a disability that prevents the discharge of normal duties or the pursuit of normal duties beyond the day of the accident.

INJURY (highway): Police-reported highway injuries are classified as follows:

Incapacitating Injury: Any injury, other than a fatal injury, that prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred. Includes severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconsciousness at or when taken from the accident scene, and inability to leave the accident scene without assistance. Exclusions include momentary unconsciousness.

Nonincapacitating Evident Injury: Any injury, other than a fatal injury or an incapacitating injury, evident to observers at the scene of the accident. Includes lumps on head, abrasions, bruises, minor lacerations, and others. Excludes limping.

Possible Injury: Any injury reported or claimed that is not evident. Includes, among others, momentary unconsciousness, claim of injuries not obvious, limping, complaint of pain, nausea, and hysteria.

INJURY (highway-rail grade crossing): 1) An injury to one or more persons other than railroad employees that requires medical treatment; 2) an injury to one or more employees that requires medical treatment or that results in restriction of work or motion for one or more days, or one or more lost work days, transfer to another job, termination of employment, or loss of consciousness; 3) any occupational illness affecting one or more railroad employees that is diagnosed by a physician.

INJURY (rail): 1) Injury to any person other than a railroad employee that requires medical treatment, or 2) injury to a railroad employee that requires medical treatment or results in restriction of work or motion for one or more workdays, one or more lost workdays, termination of employment, transfer to another job, loss of consciousness, or any occupational illness of a railroad employee diagnosed by a physician.

INJURY (recreational boating): Injury requiring medical treatment beyond first aid as a result of an occurrence that involves a vessel or its equipment.

INJURY (transit): Any physical damage or harm to a person requiring medical treatment or any physical damage or harm to a person reported at the time and place of occurrence. For employees, an injury includes incidents resulting in time lost from duty or any definition consistent with a transit agency’s current employee injury reporting practice.

INJURY (water): All personal injuries resulting from a vessel casualty that require medical treatment beyond first aid.

INLAND AND COASTAL CHANNELS: Includes the Atlantic Coast Waterways, the Atlantic Intracoastal Waterway, the New York State Barge Canal System, the Gulf Coast Waterways, the Gulf Intracoastal Waterway, the Mississippi River System (including the Illinois Waterway), the Pacific Coast Waterways, the

Great Lakes, and all other channels (waterways) of the United States, exclusive of Alaska, that are usable for commercial navigation.

INTERCITY CLASS I BUS: As defined by the Bureau of Transportation Statistics, an interstate motor carrier of passengers with an average annual gross revenue of at least \$1 million.

INTERCITY TRUCK: A truck that carries freight beyond local areas and commercial zones.

INTERNAL TRAFFIC (water): Vessel movements (origin and destination) that take place solely on inland waterways located within the boundaries of the contiguous 48 states or within the state of Alaska. Internal traffic also applies to carriage on both inland waterways and the water on the Great Lakes; carriage between offshore areas and inland waterways; and carriage occurring within the Delaware Bay, Chesapeake Bay, Puget Sound, and the San Francisco Bay, which are considered internal bodies of water rather than arms of the ocean.

INTERSTATE HIGHWAY: Limited access, divided highway of at least four lanes designated by the Federal Highway Administration as part of the Interstate System.

JET FUEL: Includes kerosene-type jet fuel (used primarily for commercial turbojet and turbo-prop aircraft engines) and naphtha-type jet fuel (used primarily for military turbojet and turbo-prop aircraft engines).

LAKELIKE OR GREAT LAKES TRAFFIC: Waterborne traffic between U.S. ports on the Great Lakes system. The Great Lakes system is treated as a separate waterways system rather than as a part of the inland system.

LARGE CERTIFICATED AIR CARRIER: An air carrier holding a certificate issued under section 401 of the Federal Aviation Act of 1958, as amended, that: 1) operates aircraft designed to have a maximum passenger capacity of more

than 60 seats or a maximum payload capacity of more than 18,000 pounds, or 2) conducts operations where one or both terminals of a flight stage are outside the 50 states of the United States, the District of Columbia, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands. Large certificated air carriers are grouped by annual operating revenues: 1) majors (more than \$1 billion in annual operating revenues), 2) nationals (between \$100 million and \$1 billion in annual operating revenues), 3) large regionals (between \$20 million and \$99,999,999 in annual operating revenues), and 4) medium regionals (less than \$20 million in annual operating revenues).

LARGE REGIONALS (air): Air carrier groups with annual operating revenues between \$20 million and \$99,999,999.

LARGE TRUCK: Trucks over 10,000 pounds gross vehicle weight rating, including single-unit trucks and truck tractors.

LIGHT-DUTY VEHICLE: A vehicle category that combines light automobiles and trucks.

LIGHT RAIL: A streetcar-type vehicle operated on city streets, semi-exclusive rights-of-way, or exclusive rights-of-way. Service may be provided by step-entry vehicles or by level boarding.

LIGHT TRUCK: Trucks of 10,000 pounds gross vehicle weight rating or less, including pickups, vans, truck-based station wagons, and sport utility vehicles.

LOCOMOTIVE: Railroad vehicle equipped with flanged wheels for use on railroad tracks, powered directly by electricity, steam, or fossil fuel, and used to move other railroad rolling equipment.

MAJORS (air): Air carrier groups with annual operating revenues exceeding \$1 billion.

MEDIUM REGIONALS (air): Air carrier groups with annual operating revenues less than \$20 million.

MERCHANDISE TRADE EXPORTS: Merchandise transported out of the United States to foreign countries whether such merchandise is exported from within the U.S. Customs Service territory, from a U.S. Customs bonded warehouse, or from a U.S. Foreign Trade Zone. (Foreign Trade Zones are areas, operated as public utilities, under the control of U.S. Customs with facilities for handling, storing, manipulating, manufacturing, and exhibiting goods.)

MERCHANDISE TRADE IMPORTS: Commodities of foreign origin entering the United States, as well as goods of domestic origin returned to the United States with no change in condition or after having been processed and/or assembled in other countries. Puerto Rico is a Customs district within the U.S. Customs territory, and its trade with foreign countries is included in U.S. import statistics. U.S. import statistics also include merchandise trade between the U.S. Virgin Islands and foreign countries even though the Islands are not officially a part of the U.S. Customs territory.

METHYL-TERTIARY-BUTYL-ETHER (MTBE): A colorless, flammable, liquid oxygenated hydrocarbon that contains 18.15 percent oxygen. It is a fuel oxygenate produced by reacting methanol with isobutylene.

MINOR ARTERIALS (highway): Roads linking cities and larger towns in rural areas. In urban areas, roads that link but do not penetrate neighborhoods within a community.

MOTORBUS (transit): A rubber-tired, self-propelled, manually steered bus with a fuel supply onboard the vehicle. Motorbus types include intercity, school, and transit.

MOTORCYCLE: A two- or three-wheeled motor vehicle designed to transport one or two people, including motor scooters, minibikes, and mopeds.

NATIONALS (air): Air carrier groups with annual operating revenues between \$100 million and \$1 billion.

NATURAL GAS: A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in porous geologic formations beneath the Earth's surface, often in association with petroleum. The principal constituent is methane.

NONOCCUPANT (Automobile): Any person who is not an occupant of a motor vehicle in transport (e.g., bystanders, pedestrians, pedalcyclists, or an occupant of a parked motor vehicle).

NONSCHEDULED SERVICE (air): Revenue flights not operated as regular scheduled service, such as charter flights, and all nonrevenue flights incident to such flights.

NONSELF-PROPELLED VESSEL (water): A vessel without the means for self-propulsion. Includes dry cargo barges and tanker barges.

NONTRAIN INCIDENT: An event that results in a reportable casualty, but does not involve the movement of ontrack equipment and does not cause reportable damage above the threshold established for train accidents.

NONTRESPASSERS (rail): A person lawfully on any part of railroad property used in railroad operations or a person adjacent to railroad premises when injured as the result of railroad operations.

NONVESSEL-CASUALTY-RELATED DEATH (water): A death that occurs onboard a commercial vessel but not as a result of a vessel casualty, such as a collision, fire, or explosion.

OCCUPANT (highway): Any person in or on a motor vehicle in transport. Includes the driver, passengers, and persons riding on the exterior of a motor vehicle (e.g., a skateboard rider holding onto a moving vehicle). Excludes occupants of parked cars unless they are double parked or motionless on the roadway.

OCCUPATIONAL FATALITY: Death resulting from a job-related injury.

OPERATING EXPENSES (air): Expenses incurred in the performance of air transportation, based on overall operating revenues and expenses. Does not include nonoperating income and expenses, nonrecurring items, or income taxes.

OPERATING EXPENSES (rail): Expenses of furnishing transportation services, including maintenance and depreciation of the plant used in the service.

OPERATING EXPENSES (transit): The total of all expenses associated with operation of an individual mode by a given operator. Includes distributions of “joint expenses” to individual modes and excludes “reconciling items,” such as interest expenses and depreciation. Should not be confused with “vehicle operating expenses.”

OPERATING EXPENSES (truck): Includes expenditures for equipment maintenance, supervision, wages, fuel, equipment rental, terminal operations, insurance, safety, and administrative and general functions.

OPERATING REVENUES (air): Revenues from the performance of air transportation and related incidental services. Includes 1) transportation revenues from the carriage of all classes of traffic in scheduled and nonscheduled services, and 2) nontransportation revenues consisting of federal subsidies (where applicable) and services related to air transportation.

OTHER FREEWAYS AND EXPRESSWAYS (highway): All urban principal arterials with limited access but not part of the Interstate system.

OTHER PRINCIPAL ARTERIALS (highway): Major streets or highways, many of multi-lane or freeway design, serving high-volume traffic corridor movements that connect major generators of travel.

OTHER RAIL REVENUE: Includes revenues from miscellaneous operations (i.e., dining- and bar-car services), income from the lease of road and equipment, miscellaneous rental income, income from nonoperating property, profit from separately operated properties, dividend income, interest income, income from sinking and other reserve funds, release or premium on funded debt, contributions from other companies, and other miscellaneous income.

OTHER REVENUE VEHICLES (transit): Other revenue-generating modes of transit service, such as cable cars, personal rapid transit systems, monorail vehicles, inclined and railway cars, not covered otherwise.

OTHER 2-AXLE 4-TIRE VEHICLES (truck): Includes vans, pickup trucks, and sport utility vehicles.

PASSENGER CAR: A motor vehicle designed primarily for carrying passengers on ordinary roads, includes convertibles, sedans, and station wagons.

PASSENGER-MILE: 1) Air: One passenger transported 1 mile; passenger-miles for 1 interairport flight are calculated by multiplying aircraft-miles flown by the number of passengers carried on the flight. The total passenger-miles for all flights is the sum of passenger-miles for all interairport flights. 2) Auto: One passenger

traveling 1 mile; e.g., 1 car transporting 2 passengers 4 miles results in 8 passenger-miles. 3) Transit: The total number of miles traveled by transit passengers; e.g., 1 bus transporting 5 passengers 3 miles results in 15 passenger-miles.

PASSENGER REVENUE: 1) Rail: Revenue from the sale of tickets. 2) Air: Revenues from the transport of passengers by air. 3) Transit: Fares, transfer, zone, and park-and-ride parking charges paid by transit passengers. Prior to 1984, fare revenues collected by contractors operating transit services were not included.

PASSENGER VESSELS (water): A vessel designed for the commercial transport of passengers.

PEDALCYCLIST: A person on a vehicle that is powered solely by pedals.

PEDESTRIAN: Any person not in or on a motor vehicle or other vehicle. Excludes people in buildings or sitting at a sidewalk cafe. The National Highway Traffic Safety Administration also uses an “other pedestrian” category to refer to pedestrians using conveyances and people in buildings. Examples of pedestrian conveyances include skateboards, nonmotorized wheelchairs, rollerskates, sleds, and transport devices used as equipment.

PERSON-MILES: An estimate of the aggregate distances traveled by all persons on a given trip based on the estimated transportation-network-miles traveled on that trip.

PERSON TRIP: A trip taken by an individual. For example, if three persons from the same household travel together, the trip is counted as one household trip and three person trips.

PERSONAL CASUALTY (transit): 1) An incident in which a person is hurt while getting on or off a transit vehicle (e.g., falls or door incidents), but not as a result of a collision, derailment/left roadway, or fire. 2) An incident in which a person is hurt while using a lift to get

on or off a transit vehicle, but not as a result of a collision, derailment/left roadway, or fire. 3) An incident in which a person is injured on a transit vehicle, but not as a result of a collision, derailment/left roadway, or fire. 4) An incident in which a person is hurt while using a transit facility. This includes anyone on transit property (e.g., patrons, transit employees, trespassers), but does not include incidents resulting from illness or criminal activity.

PETROLEUM (oil): A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oils, petroleum products, natural gas plant liquids, and non-hydrocarbon compounds blended into finished petroleum products.

PROPERTY DAMAGE (transit): The dollar amount required to repair or replace transit property (including stations, right-of-way, bus stops, and maintenance facilities) damaged during an incident.

PUBLIC ROAD: Any road under the jurisdiction of and maintained by a public authority (federal, state, county, town or township, local government, or instrumentality thereof) and open to public travel.

RAPID RAIL TRANSIT: Transit service using railcars driven by electricity usually drawn from a third rail, configured for passenger traffic, and usually operated on exclusive rights-of-way. It generally uses longer trains and has longer station spacing than light rail.

REVENUE: Remuneration received by carriers for transportation activities.

REVENUE PASSENGER: 1) Air: Person receiving air transportation from an air carrier for which remuneration is received by the carrier. Air carrier employees or others, except ministers of religion, elderly individuals, and handicapped individuals, receiving reduced rate charges (less than the applicable tariff) are considered non-

revenue passengers. Infants, for whom a token fare is charged, are not counted as passengers. 2) Transit: Single-vehicle transit rides by initial-board (first-ride) transit passengers only. Excludes all transfer rides and all nonrevenue rides. 3) Rail: Number of one-way trips made by persons holding tickets.

REVENUE PASSENGER ENPLANEMENTS (air): The total number of passengers boarding aircraft. Includes both originating and connecting passengers.

REVENUE PASSENGER LOAD FACTOR (air): Revenue passenger-miles as a percentage of available seat-miles in revenue passenger services. The term is used to represent the proportion of aircraft seating capacity that is actually sold and utilized.

REVENUE PASSENGER-MILE: One revenue passenger transported one mile.

REVENUE PASSENGER TON-MILE (air): One ton of revenue passenger weight (including all baggage) transported one mile. The passenger weight standard for both domestic and international operations is 200 pounds.

REVENUE TON-MILE: One short ton of freight transported one mile.

REVENUE VEHICLE-MILES (transit): One vehicle (bus, trolley bus, or streetcar) traveling one mile, while revenue passengers are on board, generates one revenue vehicle-mile. Revenue vehicle-miles reported represent the total mileage traveled by vehicles in scheduled or unscheduled revenue-producing services.

ROLL ON/ROLL OFF VESSEL (water): Ships that are designed to carry wheeled containers or other wheeled cargo and use the roll on/roll off method for loading and unloading.

RURAL HIGHWAY: Any highway, road, or street that is not an urban highway.

RURAL MILEAGE (highway): Roads outside city, municipal district, or urban boundaries.

SCHEDULED SERVICE (air): Transport service operated on published flight schedules.

SCHOOL BUS: A passenger motor vehicle that is designed or used to carry more than 10 passengers, in addition to the driver, and, as determined by the Secretary of Transportation, is likely to be significantly used for the purpose of transporting pre-primary, primary, or secondary school students between home and school.

SCHOOL BUS-RELATED CRASH: Any crash in which a vehicle, regardless of body design and used as a school bus, is directly or indirectly involved, such as a crash involving school children alighting from a vehicle.

SELF-PROPELLED VESSEL: A vessel that has its own means of propulsion. Includes tankers, containerships, dry bulk cargo ships, and general cargo vessels.

SERIOUS INJURY (air carrier/general aviation): An injury that requires hospitalization for more than 48 hours, commencing within 7 days from the date when the injury was received; results in a bone fracture (except simple fractures of fingers, toes, or nose); involves lacerations that cause severe hemorrhages, or nerve, muscle, or tendon damage; involves injury to any internal organ; or involves second- or third-degree burns or any burns affecting more than 5 percent of the body surface.

SMALL CERTIFICATED AIR CARRIER: An air carrier holding a certificate issued under section 401 of the Federal Aviation Act of 1958, as amended, that operates aircraft designed to have a maximum seating capacity of 60 seats or

fewer or a maximum payload of 18,000 pounds or less.

STATE AND LOCAL HIGHWAY EXPENDITURES: Disbursements for capital outlays, maintenance and traffic surfaces, administration and research, highway law enforcement and safety, and interest on debt.

SUPPLEMENTAL AIR CARRIER: An air carrier authorized to perform passenger and cargo charter services.

TANKER: An oceangoing ship designed to haul liquid bulk cargo in world trade.

TON-MILE (truck): The movement of one ton of cargo the distance of one mile. Ton-miles are calculated by multiplying the weight in tons of each shipment transported by the miles hauled.

TON-MILE (water): The movement of one ton of cargo the distance of one statute mile. Domestic ton-miles are calculated by multiplying tons moved by the number of statute miles moved on the water (e.g., 50 short tons moving 200 miles on a waterway would yield 10,000 ton-miles for that waterway). Ton-miles are not computed for ports. For coastwise traffic, the shortest route that safe navigation permits between the port of origin and destination is used to calculate ton-miles.

TRAIN LINE MILEAGE: The aggregate length of all line-haul railroads. It does not include the mileage of yard tracks or sidings, nor does it reflect the fact that a mile of railroad may include two or more parallel tracks. Jointly-used track is counted only once.

TRAIN-MILE: The movement of a train, which can consist of many cars, the distance of one mile. A train-mile differs from a vehicle-mile, which is the movement of one car (vehicle) the distance of one mile. A 10-car (vehicle) train traveling 1 mile is measured as 1 train-mile and 10 vehicle-

miles. Caution should be used when comparing train-miles to vehicle-miles.

TRANSIT VEHICLE: Includes light, heavy, and commuter rail; motorbus; trolley bus; van pools; automated guideway; and demand responsive vehicles.

TRANSSHIPMENTS: Shipments that enter or exit the United States by way of a U.S. Customs port on the northern or southern border, but whose origin or destination is a country other than Canada or Mexico.

TRESPASSER (rail): Any person whose presence on railroad property used in railroad operations is prohibited, forbidden, or unlawful.

TROLLEY BUS: Rubber-tired electric transit vehicle, manually steered and propelled by a motor drawing current, normally through overhead wires, from a central power source.

TRUST FUNDS: Accounts that are designated by law to carry out specific purposes and programs. Trust Funds are usually financed with earmarked tax collections.

TUG BOAT: A powered vessel designed for towing or pushing ships, dumb barges, pushed-towed barges, and rafts, but not for the carriage of goods.

U.S.-FLAG CARRIER OR AMERICAN FLAG CARRIER (air): One of a class of air carriers holding a Certificate of Public Convenience and Necessity, issued by the U.S. Department of Transportation and approved by the President, authorizing scheduled operations over specified routes between the United States (and/or its territories) and one or more foreign countries.

UNLEADED GASOLINE: See Gasoline.

UNLINKED PASSENGER TRIPS (transit): The number of passengers boarding public transportation vehicles. A passenger is counted each

time he/she boards a vehicle even if the boarding is part of the same journey from origin to destination.

URBAN HIGHWAY: Any road or street within the boundaries of an urban area. An urban area is an area including and adjacent to a municipality or urban place with a population of 5,000 or more. The boundaries of urban areas are fixed by state highway departments, subject to the approval of the Federal Highway Administration, for purposes of the Federal-Aid Highway Program.

VANPOOL (transit): Public-sponsored commuter service operating under prearranged schedules for previously formed groups of riders in 8- to 18-seat vehicles. Drivers are also commuters who receive little or no compensation besides the free ride.

VEHICLE MAINTENANCE (transit): All activities associated with revenue and nonrevenue (service) vehicle maintenance, including administration, inspection and maintenance, and servicing (e.g., cleaning and fueling) vehicles. In addition, it includes repairs due to vandalism or to revenue vehicle accidents.

VEHICLE-MILES (highway): Miles of travel by all types of motor vehicles as determined by the states on the basis of actual traffic counts and established estimating procedures.

VEHICLE-MILES (transit): The total number of miles traveled by transit vehicles. Commuter rail, heavy rail, and light rail report individual car-miles, rather than train-miles for vehicle-miles.

VEHICLE OPERATIONS (transit): All activities associated with transportation administration, including the control of revenue vehicle movements, scheduling, ticketing and fare collection, system security, and revenue vehicle operation.

VESSEL CASUALTY (water): An occurrence involving commercial vessels that results in 1) actual physical damage to property in excess of \$25,000; 2) material damage affecting the seaworthiness or efficiency of a vessel; 3) stranding or grounding; 4) loss of life; or 5) injury causing any person to remain incapacitated for a period in excess of 72 hours, except injury to harbor workers not resulting in death and not resulting from vessel casualty or vessel equipment casualty.

VESSEL-CASUALTY-RELATED DEATH (water): Fatality that occurs as a result of an incident that involves a vessel or its equipment, such as a collision, fire, or explosion. Includes drowning deaths.

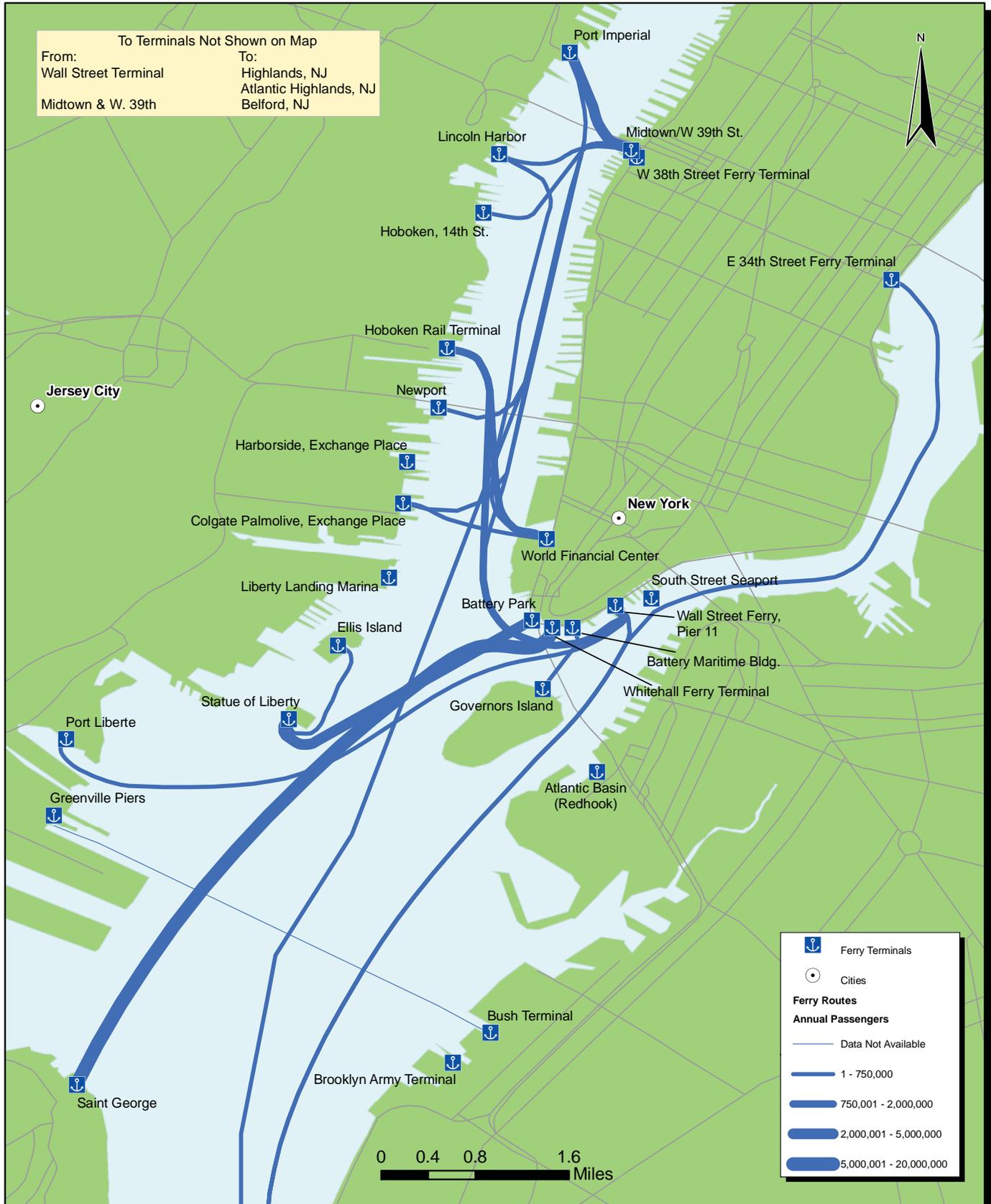
WATERBORNE TRANSPORTATION: Transport of freight and/or people by commercial vessels under U.S. Coast Guard jurisdiction.

Appendix C: Maps



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Ferry Terminals and Passenger Routes: New York, NY



Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, National Census of Ferry Operators, 2000, 2006.



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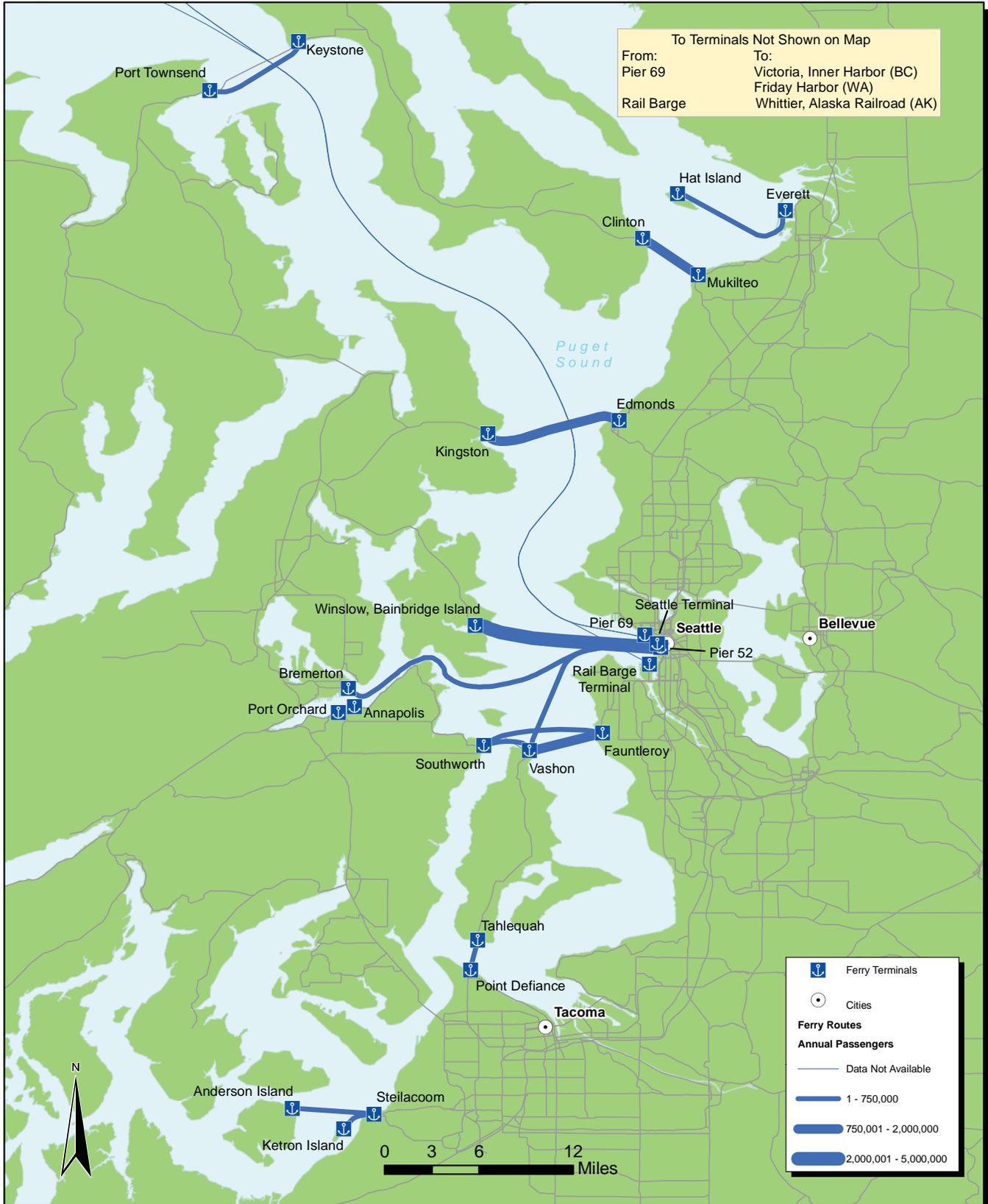
Ferry Terminals and Passenger Routes: San Francisco, CA



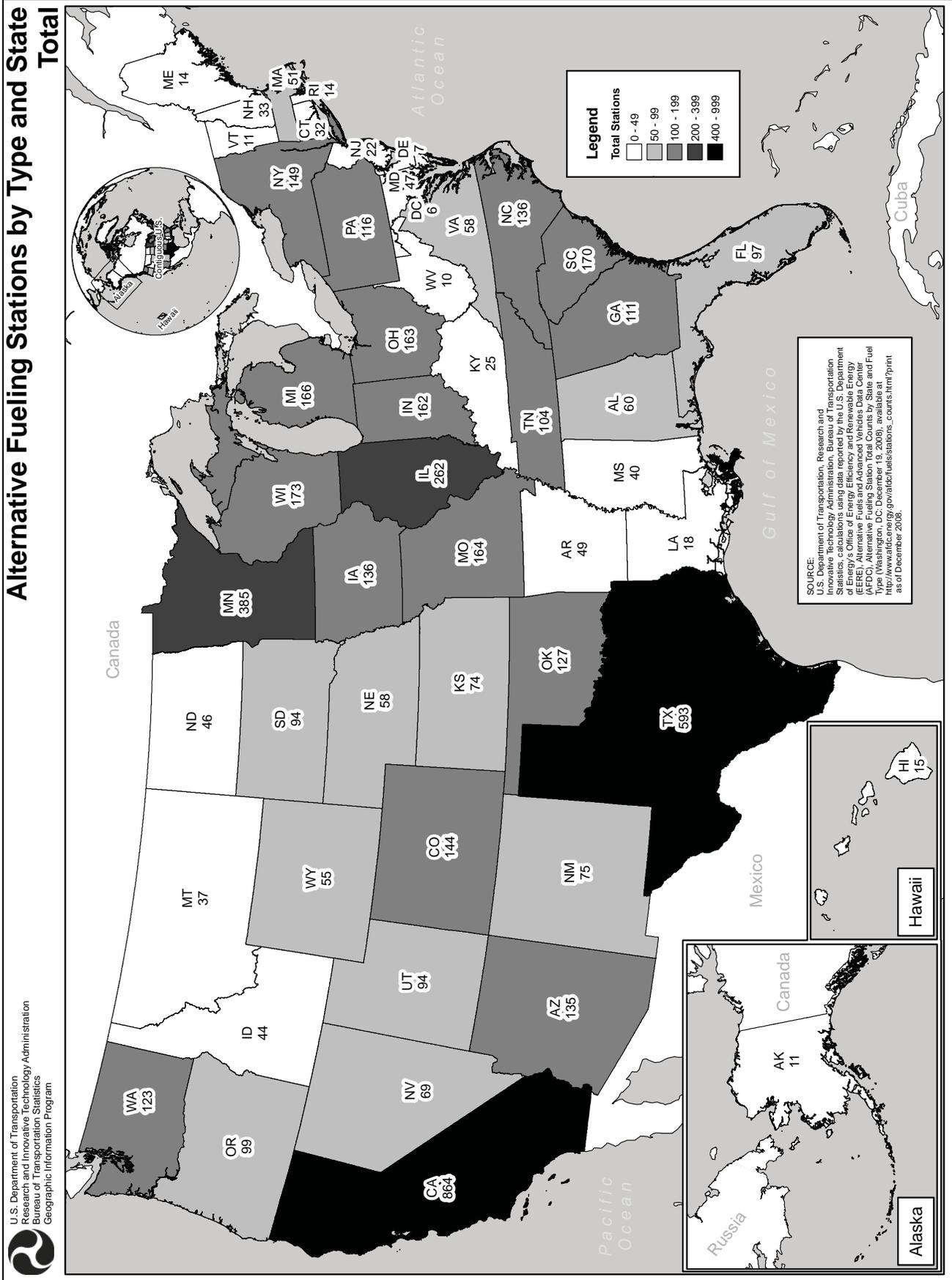
Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, National Census of Ferry Operators, 2000, 2006.



Ferry Terminals and Passenger Routes: Seattle, WA

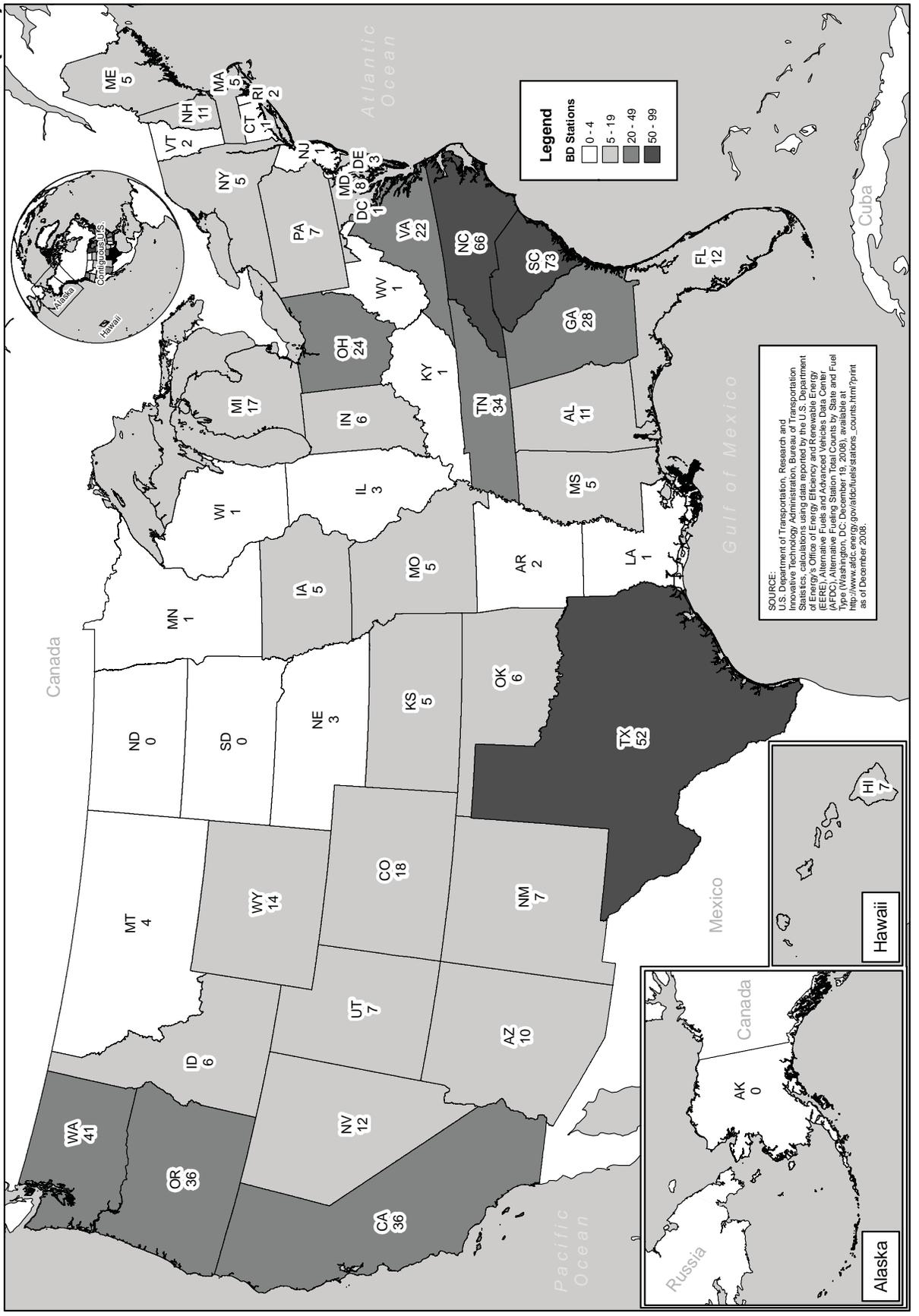


Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, National Census of Ferry Operators, 2000, 2006.



Alternative Fueling Stations by Type and State Biodiesel (BD)

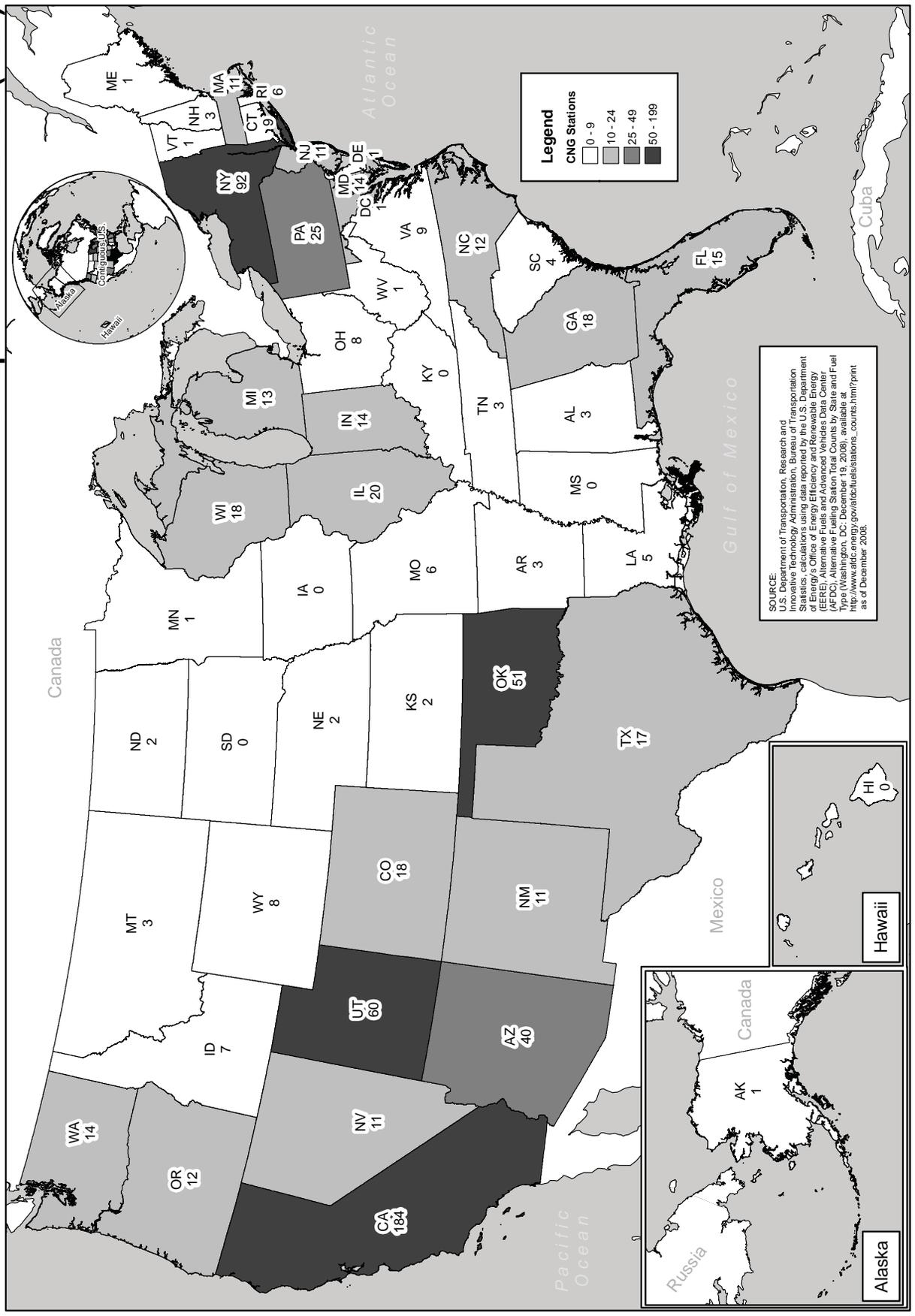
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SOURCE:
 U.S. Department of Transportation, Research and
 Innovative Technology Administration, Bureau of Transportation
 Statistics, calculations using data reported by the U.S. Department
 of Energy's Office of Energy Efficiency and Renewable Energy
 (EERE), Alternative Fuels and Advanced Vehicles Data Center
 (AFDC), Alternative Fueling Station Counts by State and Fuel
 Type, December 2008, http://www.afdc.energy.gov/afdc/stations_counts.html#print
 as of December 2008.

Alternative Fueling Stations by Type and State Compressed Natural Gas (CNG)

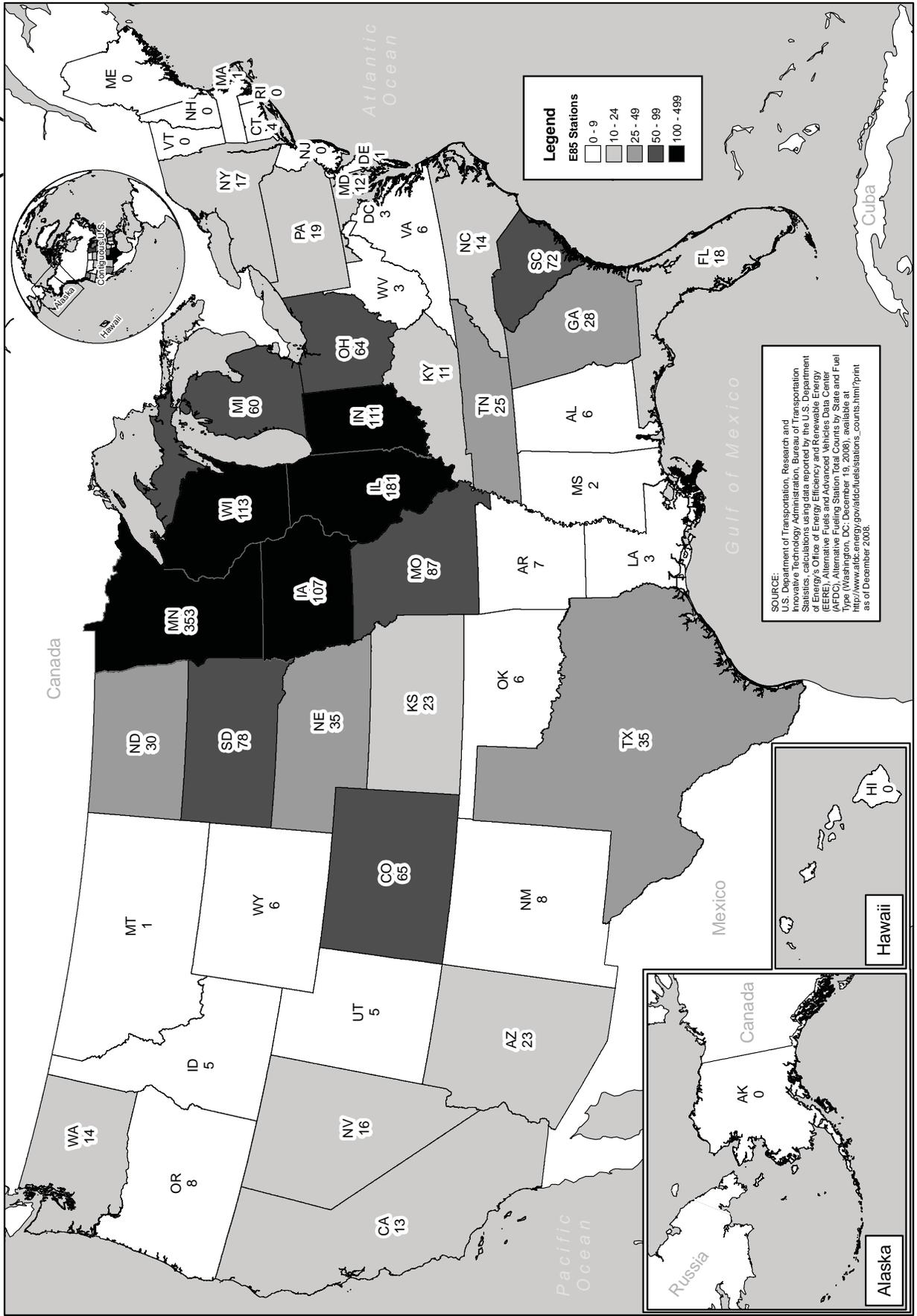
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SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Office of Energy Efficiency and Renewable Energy (EERE), Alternative Fuels and Advanced Vehicles Data Center (AFDC), Alternative Fueling Station Total Counts by State and Fuel Type (Washington, DC: December 19, 2008), available at http://www.afdc.energy.gov/afdc/fuelingstations_counts.html?print as of December 2008.

Alternative Fueling Stations by Type and State 85% (E85) Ethanol

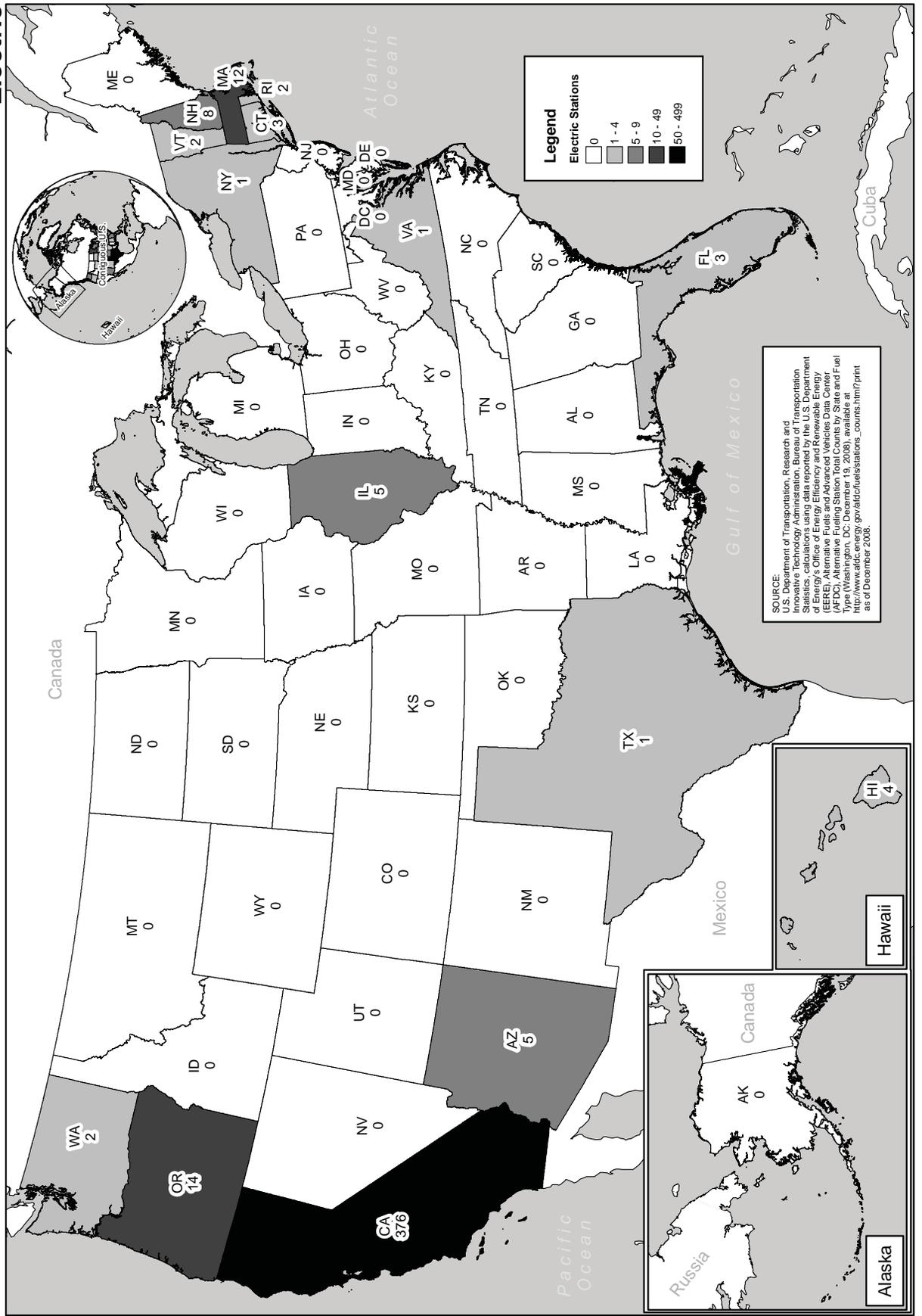
U.S. Department of Transportation
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Bureau of Transportation Statistics
Geographic Information Program



SOURCE:
U.S. Department of Transportation, Research and
Innovative Technology Administration, Bureau of Transportation
Statistics, Office of Energy Efficiency and Renewable Energy
(EERE), Alternative Fuels and Advanced Vehicles Data Center
(AFDC), Alternative Fueling Station Total Counts by State and Fuel
Type (Washington, DC: December 19, 2008), available at
http://www.afdc.energy.gov/afdc/fuels/stations_counts.html?print
as of December 2008.

Alternative Fueling Stations by Type and State Electric

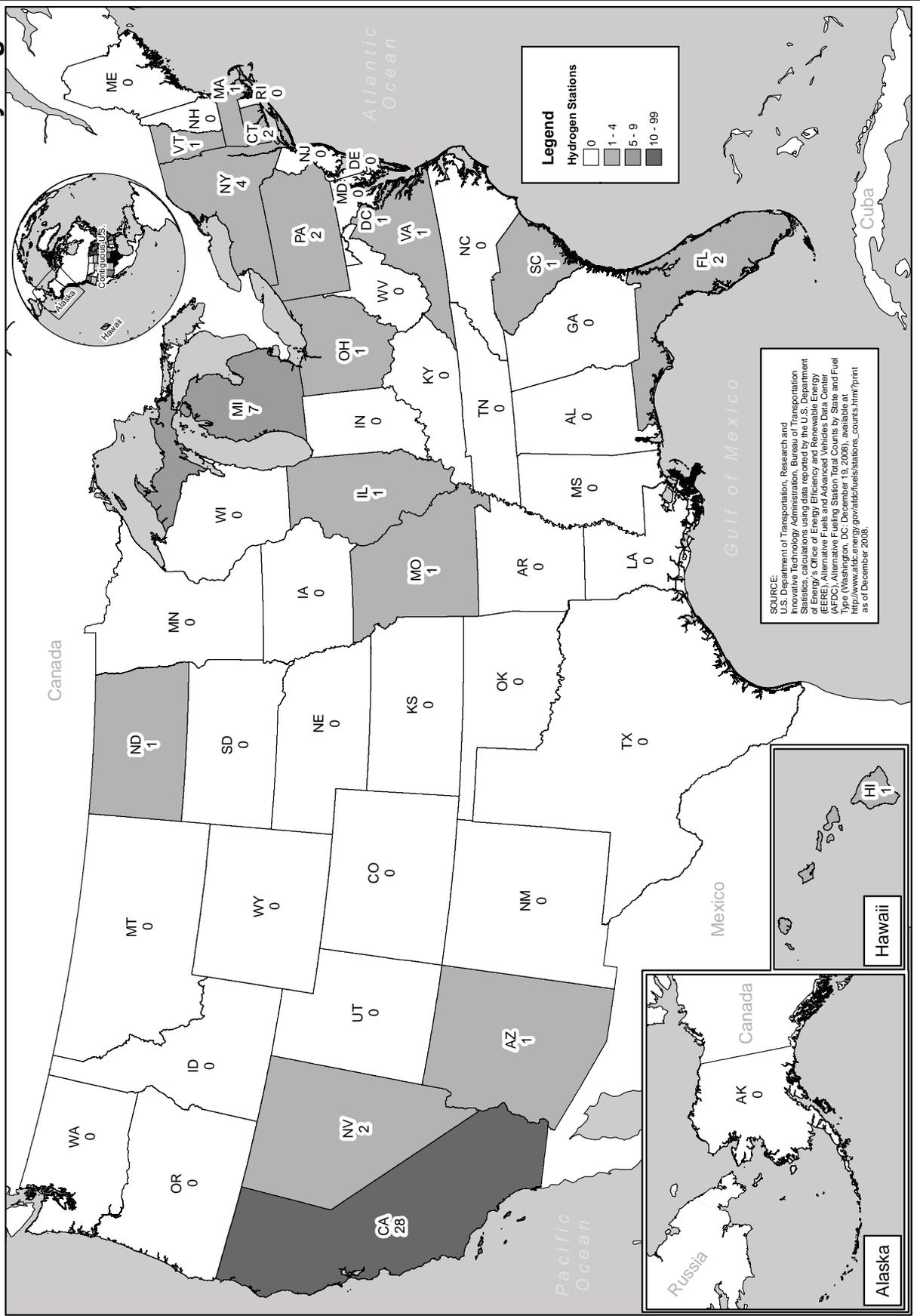
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SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Office of Energy Efficiency and Renewable Energy (EERE), Alternative Fuels and Advanced Vehicles Data Center (AFDC), Alternative Fueling Station Total Counts by State and Fuel Type (Washington, DC: December 19, 2009), available at http://www.afdc.energy.gov/afdc/fuelstations_counts.html#print as of December 2008.

Alternative Fueling Stations by Type and State Hydrogen

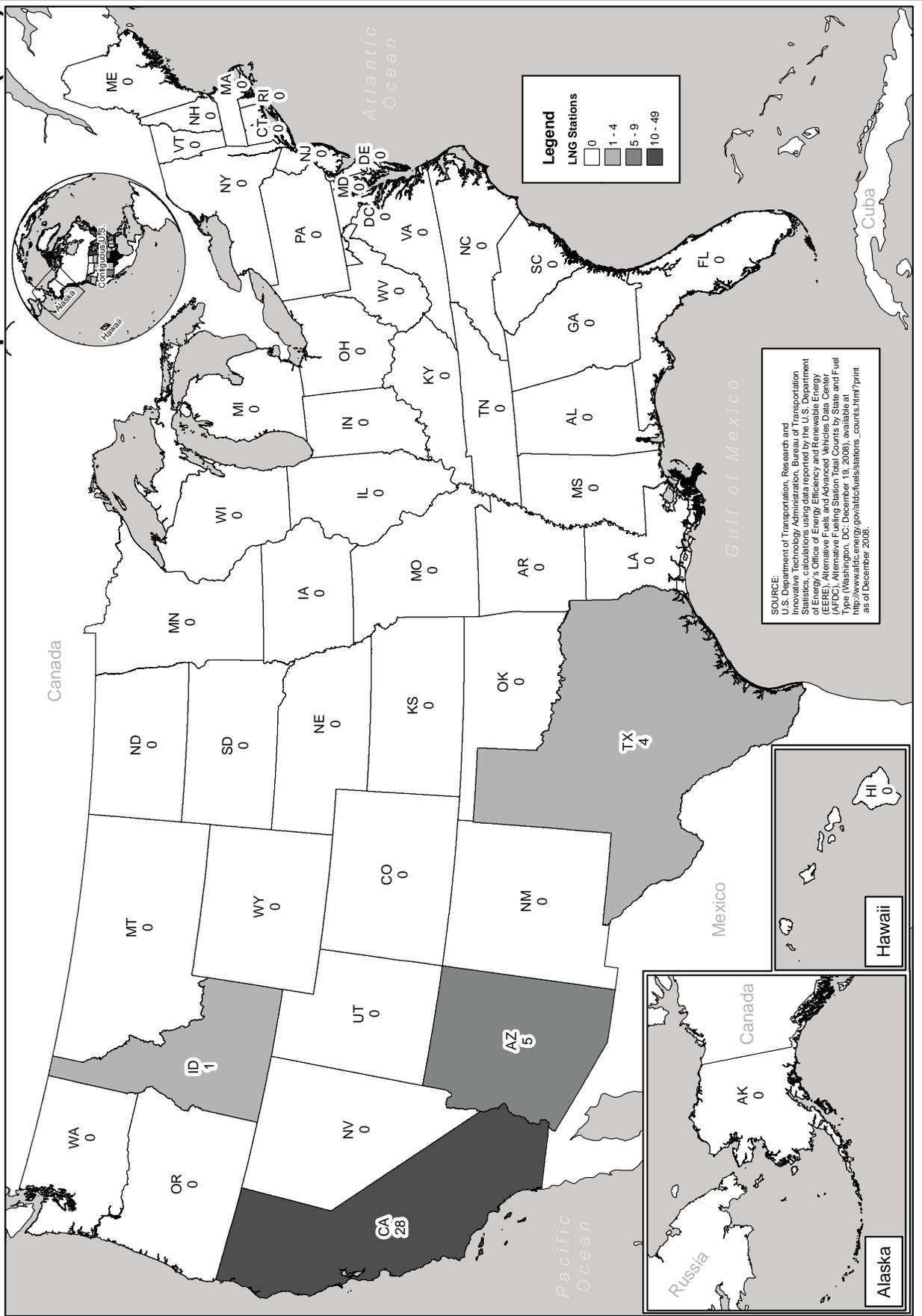
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SOURCE:
U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Office of Energy Efficiency and Renewable Energy (EERE), Alternative Fuels and Advanced Vehicles Data Center (AFDC), Alternative Fueling Station Total Counts by State and Fuel Type (Washington, DC: December 19, 2008), available at http://www.afdc.energy.gov/afdc/fuelingstations_counts.htm (print as of December 2008).

Alternative Fueling Stations by Type and State Liquefied Natural Gas (LNG)

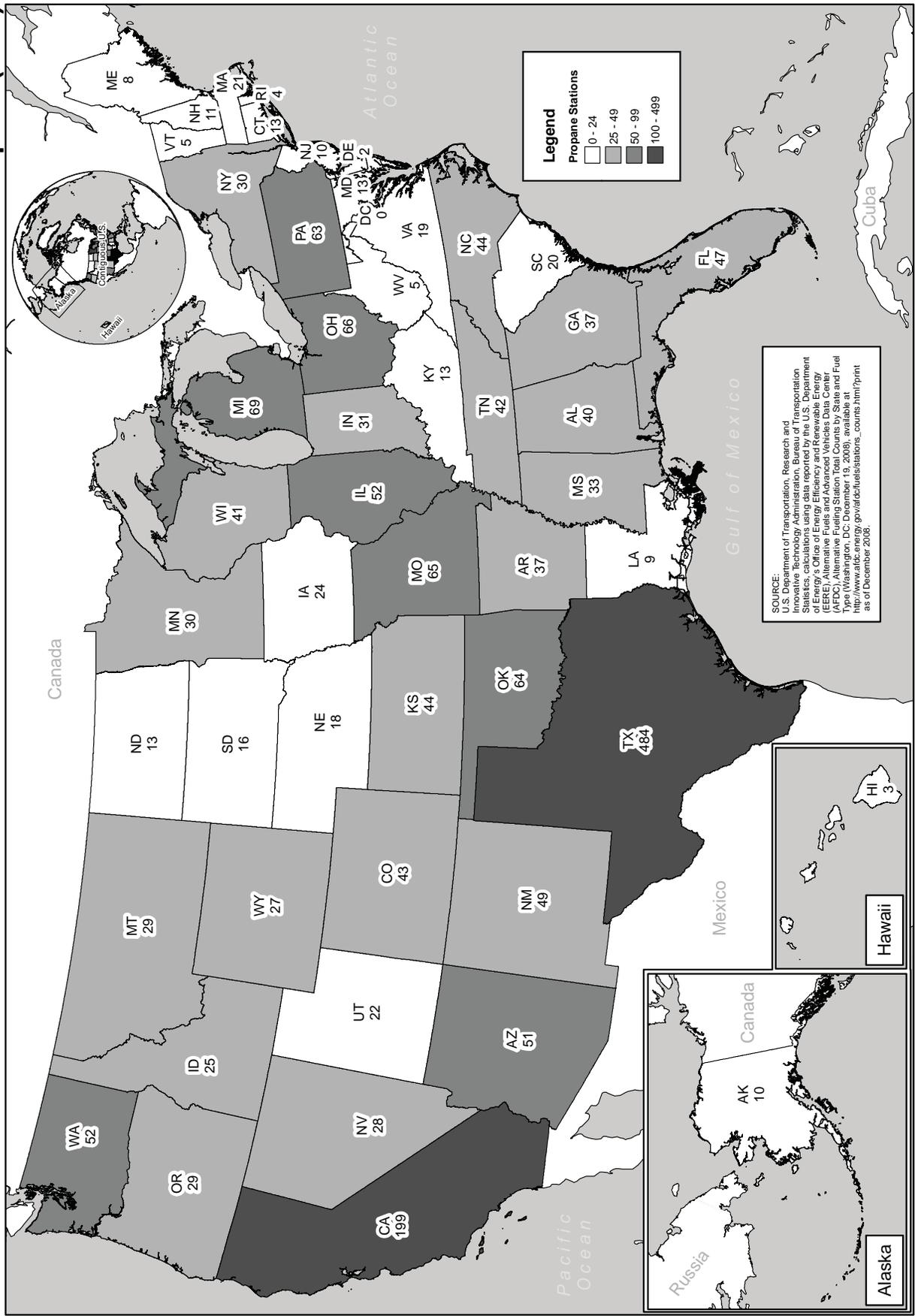
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SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, calculations using data reported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE), Alternative Fuels and Advanced Vehicles Data Center (AFVDC), Alternative Fueling Station Total Counts by State and Fuel Type (Washington, DC: December 19, 2008), available at http://www.afvdc.gov/afvdc/stations_counts.html, print as of December 2008.

Alternative Fueling Stations by Type and State Propane (LPG)

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Appendix D: Social and Economic Characteristics of the United States

	1980	1985	1990	1995	2000	2005	2006	2007
Total U.S. Resident Population (thousands)	226,546	237,924	248,791	266,278	282,194	295,896	298,755	301,621
Population by age (thousands)								
Under 18	63,754	62,623	63,949	69,464	72,361	73,432	73,668	73,902
18-24 years	30,022	28,902	26,961	25,482	27,312	29,206	29,313	29,492
25-34 years	37,082	41,696	43,174	42,052	39,847	39,955	40,182	40,591
35-44 years	25,634	31,691	37,444	42,711	45,184	43,776	43,555	43,161
45-54 years	22,800	22,460	25,062	31,480	37,997	42,447	43,227	43,875
55-64 years	21,703	22,135	21,116	21,320	24,416	30,334	31,557	32,712
65 and over	25,550	28,415	31,084	33,769	35,078	36,746	37,253	37,888
Population by sex (thousands)								
Male	110,053	115,730	121,284	130,215	138,470	145,649	147,160	148,659
Female	116,493	122,194	127,507	136,063	143,724	150,247	151,595	152,962
Population in Metropolitan areas (millions)								
Large (over 1 million)	119	U	139	147	149	160	161	164
Medium (250,000-999,999)	41	U	41	44	56	59	60	59
Small (less than 250,000)	17	U	18	19	28	28	28	28
Population in Regions (millions)								
Northeast	49.1	49.9	50.8	52.3	54	55	55	55
South	75.4	81.4	85.5	93.2	101	107	109	110
Midwest	58.9	58.8	59.7	62.5	64	66	66	66
West	43.2	47.8	52.8	58.3	63	68	69	70
Immigrants admitted (thousands)	531	570	1,536	720	841	1,122	1,266	1,052
Gross domestic product (billions of chained \$ 2000)	5,162	6,054	7,113	8,032	9,817	10,990	11,295	11,524
Civilian labor force (thousands)	106,940	115,461	125,840	132,304	142,583	149,320	151,428	153,124
Participation rate of men (%)	77.4	76.3	76.4	75	74.8	73.3	73.5	73.2
Participation rate of women (%)	51.5	54.5	57.5	58.9	59.9	59.3	59.4	59.3
Unemployment rate (% of labor force)	7.1	7.2	5.6	5.6	4.0	5.1	4.6	4.6
Households (thousands)	80,776	86,789	93,347	98,990	104,705	113,343	114,384	116,011
Average size of households	2.76	2.69	2.63	2.65	2.62	2.57	2.57	2.56
Median household income (constant \$ 2007)	42,429	43,402	46,049	46,034	50,557	49,202	49,568	50,233
Average household expenditures (constant \$ 2007)	U	45,265	45,024	43,896	45,809	49,271	49,776	U

KEY: U = Data are unavailable.

NOTES: *Resident population* estimates are as of July 1. New *metropolitan* area definitions were published by the Office of Budget and Management (OMB) in 2003. These definitions were applied to population data by the Census Bureau beginning with the data from the 2000 Census. A new term, core based statistical areas (CBSAs), collectively refers to metropolitan and micropolitan statistical areas. A metropolitan statistical area is defined as having at least one urbanized area of 50,000 or more inhabitants. A micropolitan statistical area is defined as having at least one urban cluster of more than 10,000 but less than 50,000 inhabitants. *Number of immigrants* is based on fiscal year data ending September 30. *Average household expenditures* were converted to constant 2007 dollars using the consumer price index.

SOURCES: 1980-1995: U.S. resident population by age, sex and region: U.S. Census Bureau, *Statistical Abstract of the United States 2007* (Washington, DC: 2007). **Population by metropolitan area:** U.S. Census Bureau, Population Division, *Annual Estimates of the Population of Metropolitan and Micropolitan Statistical Areas*, table 1, available at <http://www.census.gov/popest/estimates.php> as of April 4, 2007.

2000-2007: U.S. resident population; population by age, sex, region, and metropolitan area: U.S. Census Bureau, *Population Estimates*, National, available at <http://www.census.gov/popest/estimates.php> as of Nov. 2008.

Immigrants Admitted: U.S. Department of Homeland Security, *Yearbook of Immigration Statistics*, Table 1, available at <http://www.dhs.gov/ximgtm/statistics/publications/LPR07.shtm> as of Nov. 2008.

Gross Domestic Product: U.S. Department of Commerce, Bureau of Economic Analysis, *NIPA Tables*, table 1.1.6, available at <http://www.bea.gov/national/nipaweb/SelectTable.asp?Selected=N> as of Nov. 2008.

Civilian Labor Force, Unemployment Rate, Participation of Men and Women: U.S. Department of Labor, Bureau of Labor Statistics, *Current Population Survey*, Historical Data, Table A-1 and Table AA-7, available at <http://www.bls.gov/cps/cpsatabs.htm> as of Nov. 2008.

Number of households, Average size of households: U.S. Department of Commerce, Bureau of the Census, *Families and Living Arrangements*, Detailed Tables, Table AVG-1, available at <http://www.census.gov/population/www/socdemo/hh-fam.html> as of Nov. 2008.

Median household income: U.S. Department of Labor, Bureau of the Census, *Historical Income Data*, Table H-5, available at <http://www.census.gov/hhes/www/income/income.html> as of Nov., 2008.

Average household expenditures: U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey*, Average Annual Expenditures, All Consumer Units, available at <http://www.bls.gov/data/home.htm> as of Nov. 2007.

