Freight travels over an extensive network of highways, railroads, waterways, pipelines, and airways. Existing and anticipated increases in the number of freight vehicles, vessels, and other conveyances on both public and private infrastructure are stressing system capacity, increasing maintenance requirements, and threatening system performance.

Table 3-1. Miles of Infrastructure by Transportation Mode: 1990, 2000, and 2007-2009

	1990	2000	2007	2008	2009
Public roads, route miles	3,866,926	3,951,101	4,048,523	4,059,343	NA
National Highway System (NHS)	N	161,189	163,746	164,096	NA
Interstates	45,074	46,673	46,934	47,013	NA
Other NHS	N	114,516	116,812	117,083	NA
Other	N	3,789,912	3,884,775	3,895,246	NA
Strategic Highway Corridor Network (STRAHNET)	N	62,066	62,698	62,253	NA
Interstate	N	46,675	46,937	47,013	NA
Non-Interstate	N	15,389	16,031	15,240	NA
Railroad	175,909	170,512	140,134	139,326	139,118
Class I	133,189	120,597	94,313	94,082	93,921
Regional	18,375	20,978	16,930	16,690	12,804
Local	24,337	28,937	28,891	28,554	32,393
Inland waterways					
Navigable channels	11,000	11,000	11,000	11,000	11,000
Great Lakes-St. Lawrence Seaway	2,342	2,342	2,342	2,342	2,342
Pipelines					
Oil	208,752	176,996	166,133	173,000	171,328
Gas	1,189,200	1,369,300	1,520,200	1,525,000	1,526,400

Key: Key: N = not applicable; NA = not available.

Trade with both Canada and Mexico has grown rapidly over the past decade. Trucks carried about 59 percent of the value of goods traded with these two countries.

Since 1990, road infrastructure increased slowly despite a large increase in the volume of traffic. Over the same period, rail miles declined by 21 percent while gas pipeline mileage increased by 28 percent.

Table 3-1. Miles of Infrastructure by Transportation Mode: 1990, 2000, and 2007-2009
Sources: Public Roads: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics* (Washington, DC: annual issues), tables HM-16 and HM-49, available at www.fhwa.dot.gov/policyinformation/statistics/2009/ as of August 30, 2012. **Rail:** Association of American Railroads, *Railroad Facts* (Washington, DC: annual issues). **Navigable channels:** U.S. Army Corps of Engineers, *A Citizen's Guide to the USACE*, available at www.corpsreform.org/sitepages/downloads/CitzGuideChptr1.pdf as of August 30, 2012. **Great Lakes-St. Lawrence Seaway:** The St. Lawrence Seaway Development Corporation, "The Seaway," available at www.greatlakes-seaway.com/en/seaway/facts/index.html as of August 30, 2012. **Oil pipelines: 1980-2000:** Eno Transportation Foundation, *Transportation in America*, 2002 (Washington, DC: 2002). 2001-2009: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Office of Pipeline Safety, *Pipeline Statistics*, available at www.phmsa.dot.gov/pipeline/library/data-stats as of August 30, 2012. **Gas pipelines:** American Gas Association, *Gas Facts* (Arlington, VA: annual issues).

Table 3-2. Number of U.S. Vehicles, Vessels, and Other Conveyances: 1990, 2000, and 2007-2009

	1990	2000	2007	2008	2009
Highway[1]	**-**	**-**	**254,403,081**	**255,917,664**	**254,212,610**
Truck, single-unit 2-axle 6-tire or more	-	-	8,116,672	8,288,046	8,356,097
Truck, combination	-	-	2,635,347	2,585,229	2,617,118
Truck, total	-	-	10,752,019	10,873,275	10,973,215
Trucks as percent of all highway vehicles	-	-	4.2	4.2	4.3
Rail					
Class I, locomotive	18,835	20,028	24,143	24,003	24,045
Class I, freight cars[2]	658,902	560,154	460,172	450,297	416,180
Nonclass I, freight cars[2]	103,527	132,448	120,463	109,487	108,233
Car companies and shippers freight cars[2]	449,832	688,194	805,074	833,188	839,020
Water	**39,445**	**41,354**	**40,695**	**40,301**	**40,109**
Nonself-propelled vessels[3]	31,209	33,152	31,654	31,238	31,008
Self-propelled vessels[4]	8,236	8,202	9,041	9,063	9,101

[1]Based on a new methodology, FHWA revised its annual vehicle miles travelled, number of vehicles, and fuel economy data beginning with 2007. Information on the new methodology is available at www.fhwa.dot.gov/policyinformation/statistics.cfm. Data in this table should not be compared to those in pre-2011 editions of *Freight Facts and Figures*.
[2]Beginning with 2001 data, Canadian-owned U.S. railroads are excluded. Canadian-owned U.S. railroads accounted for over 46,000 freight cars in 2000.
[3]Nonself-propelled vessels include dry-cargo barges, tank barges, and railroad-car floats.
[4]Self-propelled vessels include dry cargo, passenger, off-shore support, tankers, and towboats.

A vast number of vehicles and vessels move goods over the transportation network. The number of commercial trucks has been relatively stable in recent years, while the number of rail freight cars declined with improved utilization and the deployment of larger cars.

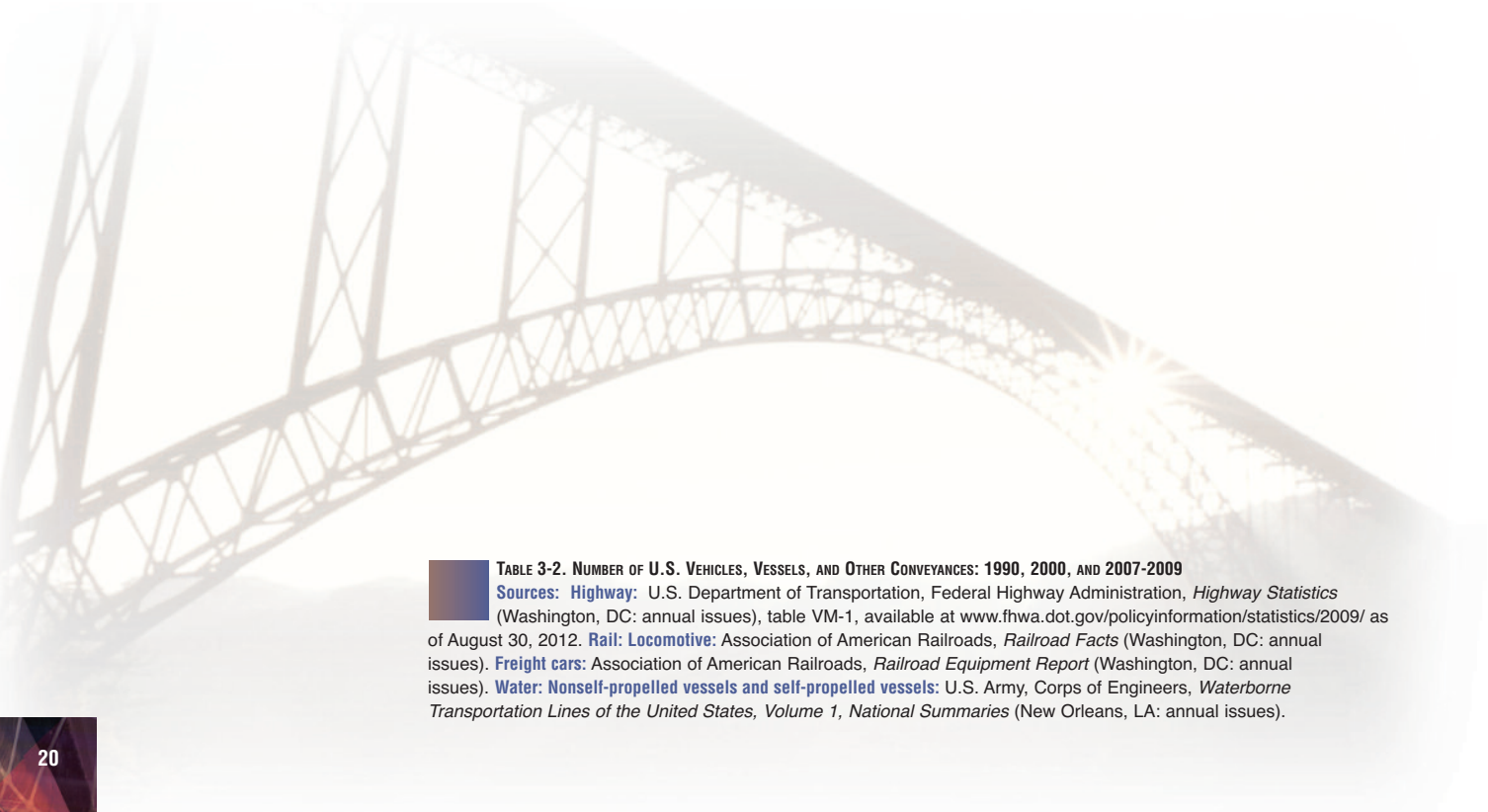
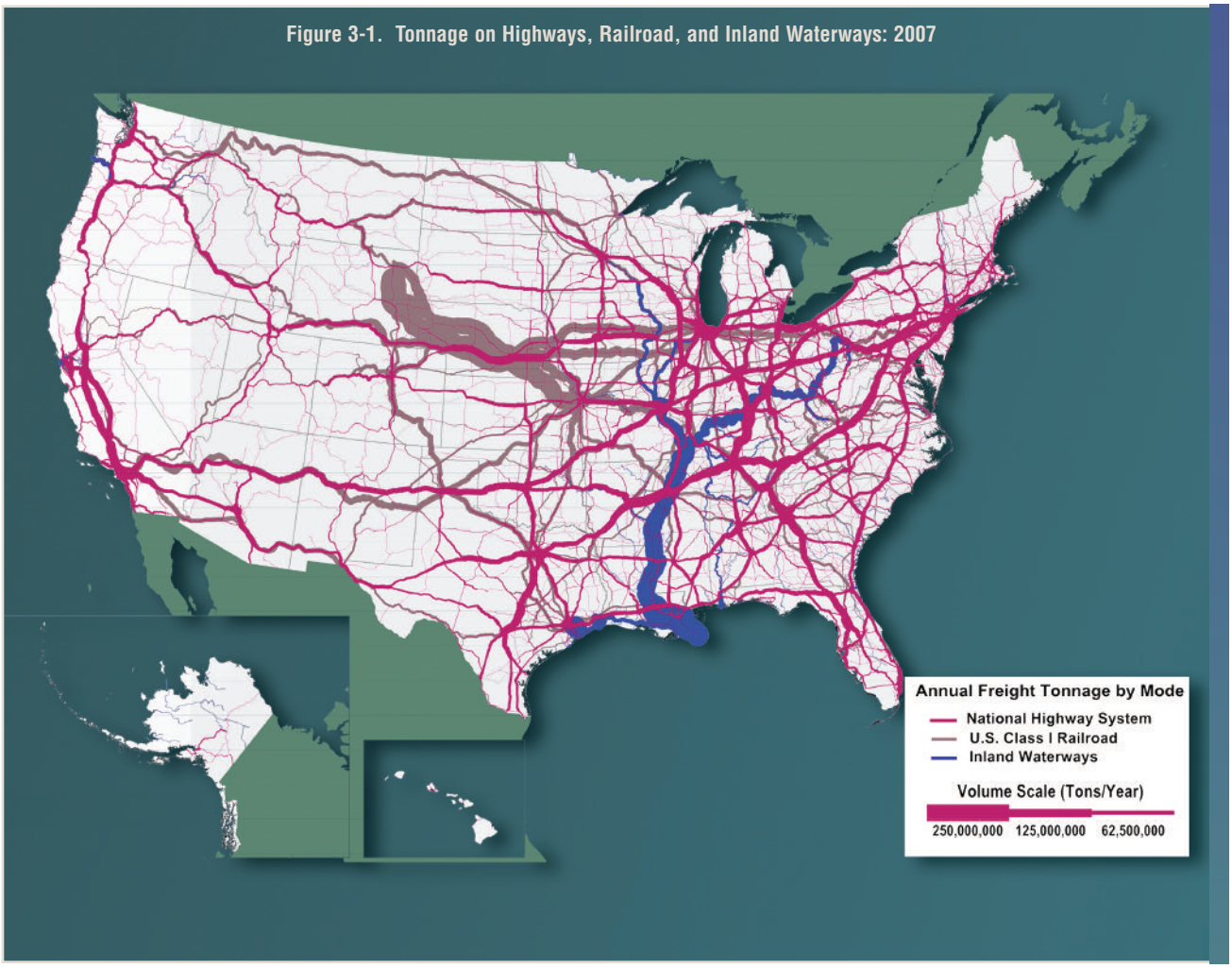


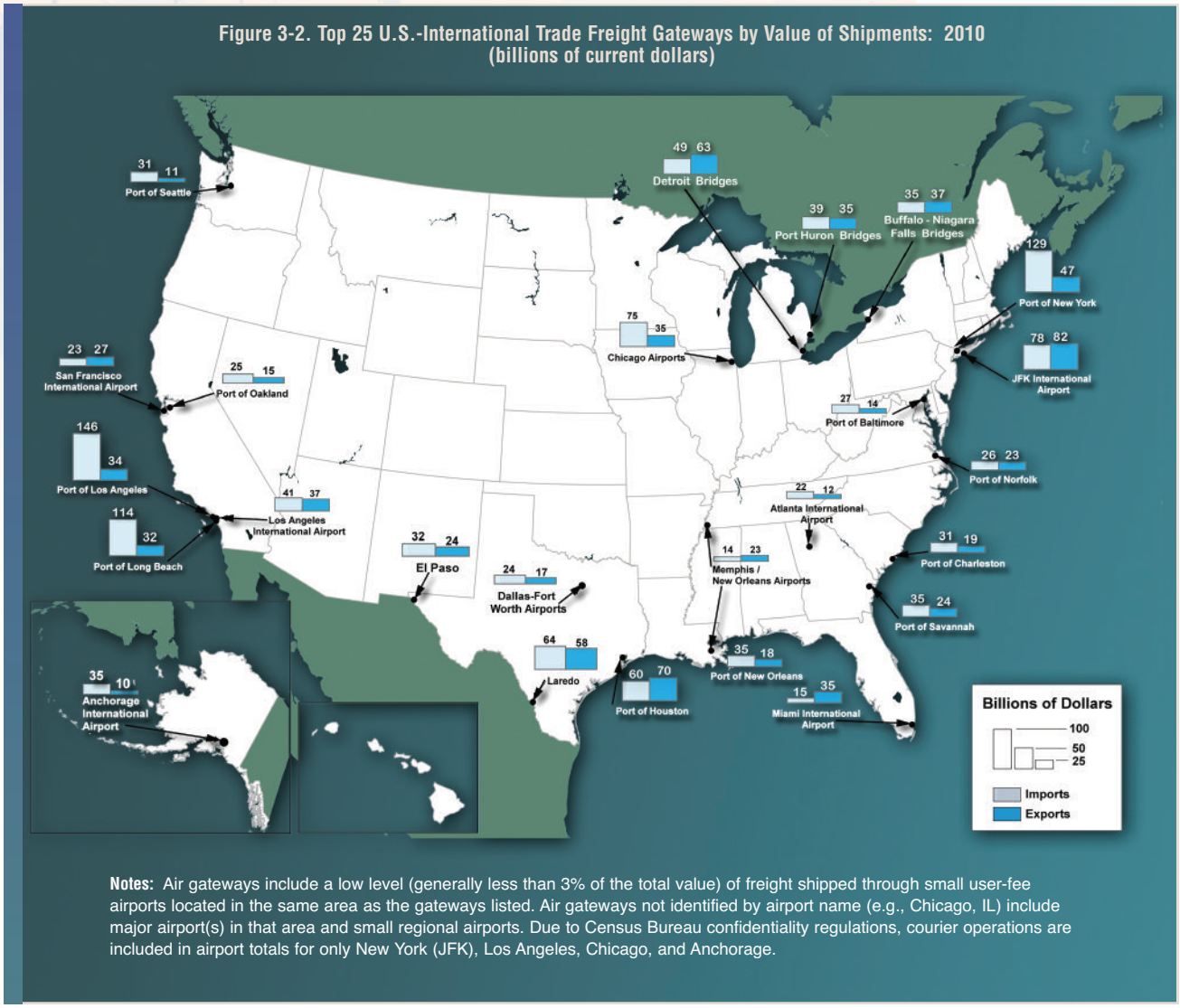
Table 3-2. Number of U.S. Vehicles, Vessels, and Other Conveyances: 1990, 2000, and 2007-2009
Sources: Highway: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics* (Washington, DC: annual issues), table VM-1, available at www.fhwa.dot.gov/policyinformation/statistics/2009/ as of August 30, 2012. **Rail: Locomotive:** Association of American Railroads, *Railroad Facts* (Washington, DC: annual issues). **Freight cars:** Association of American Railroads, *Railroad Equipment Report* (Washington, DC: annual issues). **Water: Nonself-propelled vessels and self-propelled vessels:** U.S. Army, Corps of Engineers, *Waterborne Transportation Lines of the United States, Volume 1, National Summaries* (New Orleans, LA: annual issues).



Trucks carry most of the tonnage and value of freight in the United States, but railroads and waterways carry significant volumes over long distances. Rail moves a large volume of coal between the Powder River Basin in Wyoming and the Midwest, while the principal inland waterways movement by volume occurs along the Lower Mississippi River.

Figure 3-1. Tonnage on Highways, Railroad, and Inland Waterways: 2007

Sources: Highways: U.S. Department of Transportation, Federal Highway Administration, Freight Analysis Framework, Version 3.4, 2012. **Rail:** Based on Surface Transportation Board, Annual Carload Waybill Sample and rail freight flow assignments done by Oak Ridge National Laboratory. **Inland Waterways:** U.S. Army Corps of Engineers (USACE), Annual Vessel Operating Activity and Lock Performance Monitoring System data, as processed for USACE by the Tennessee Valley Authority; and USACE, Institute for Water Resources, Waterborne Foreign Trade Data. Water flow assignments done by Oak Ridge National Laboratory.

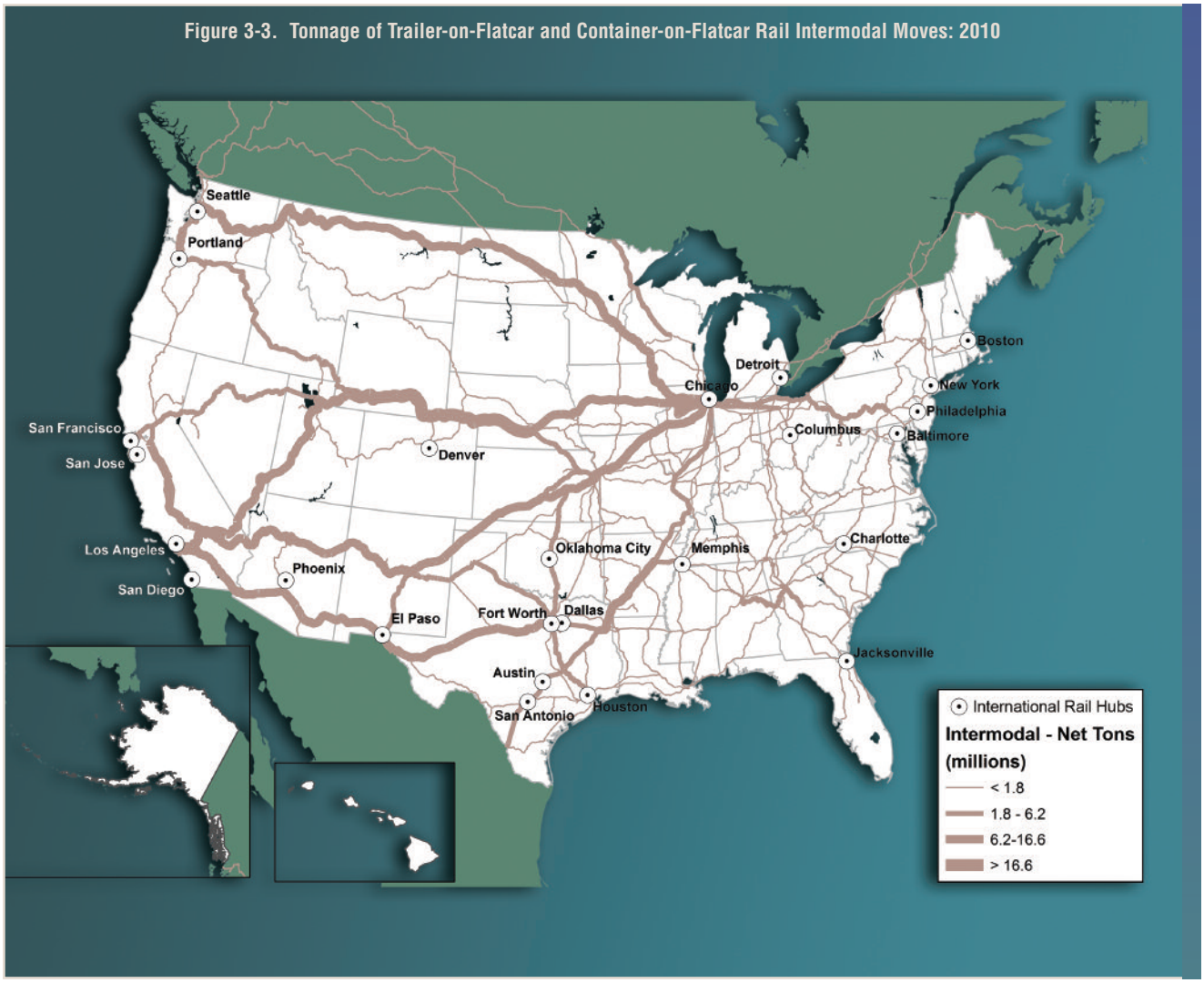


Notes: Air gateways include a low level (generally less than 3% of the total value) of freight shipped through small user-fee airports located in the same area as the gateways listed. Air gateways not identified by airport name (e.g., Chicago, IL) include major airport(s) in that area and small regional airports. Due to Census Bureau confidentiality regulations, courier operations are included in airport totals for only New York (JFK), Los Angeles, Chicago, and Anchorage.

Transportation facilities that move international trade into and out of the United States demonstrate the importance of all modes and intermodal combinations to global connectivity. The top 25 foreign-trade gateways measured by value of shipments are comprised of 11 water ports, 5 land-border crossings, and 9 air gateways.

Figure 3-2. Top 25 U.S.-International Trade Freight Gateways by Value of Shipments: 2010

Sources: Air: U.S. Department of Commerce, U.S. Census Bureau, Foreign Trade Division, *USA Trade Online*; **Land:** U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data; **Water:** U.S. Army Corps of Engineers, Navigation Data Center, personal communication, as cited in U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, table 1-51, available at www.bts.gov/publications/national_transportation_statistics/ as of October 2012.

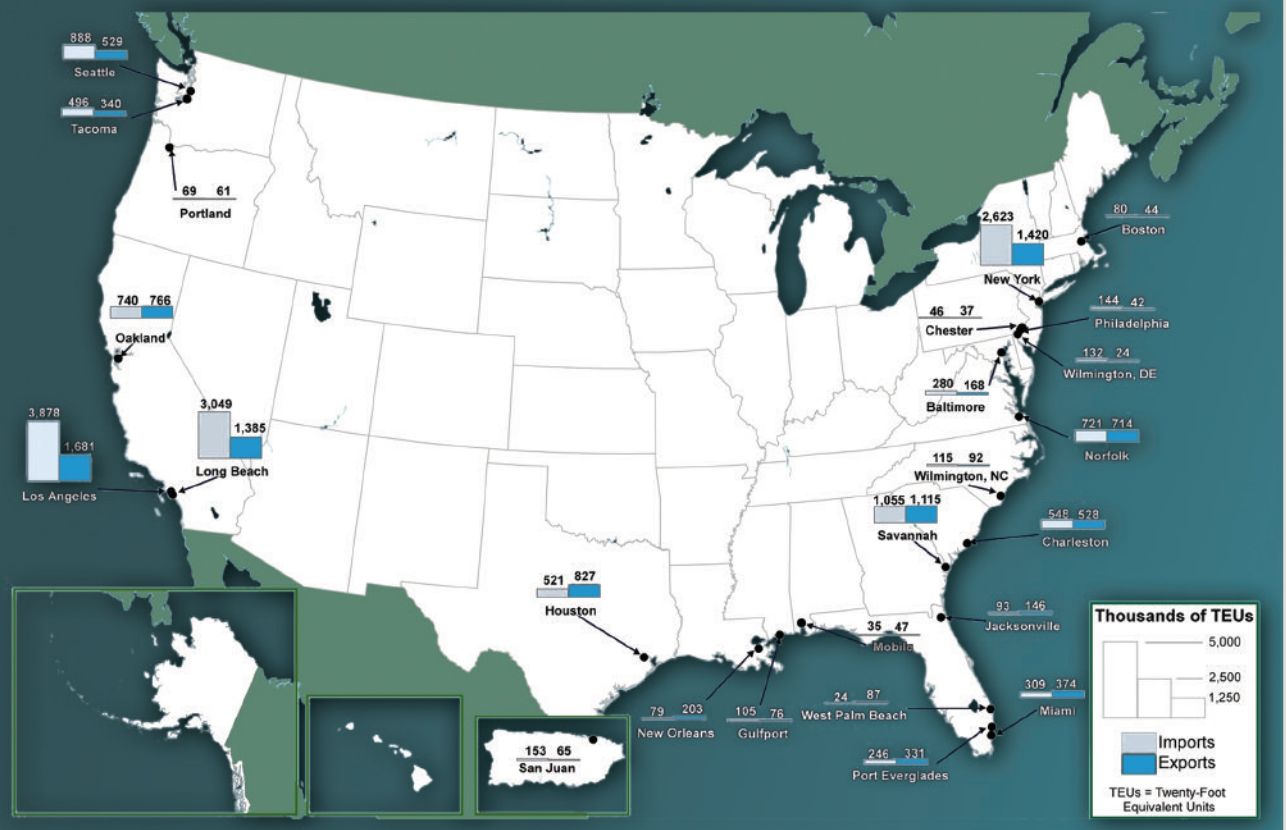


Modes of transportation frequently work together to move high-value, time-sensitive cargo. The classic forms of rail intermodal transportation are trailer-on-flatcar and container-on-flatcar, and these are spread throughout the United States. The largest concentrations are on routes between Pacific Coast ports and Chicago, southern California and Texas, and Chicago and New York.

Figure 3-3. Tonnage of Trailer-on-Flatcar and Container-on-Flatcar Rail Intermodal Moves: 2010
Source: U.S. Department of Transportation, Federal Railroad Administration, special tabulation, August 2012.

Containerized cargo has grown rapidly over the past decade and is concentrated at a few large water ports. The Ports of Los Angeles and Long Beach together handle about 38 percent of all container traffic at water ports in the United States. While container trade at these two ports increased by 54 percent between 2000 and 2010, this growth rate was slightly lower than that reported for container cargo overall.

Figure 3-4. Top 25 Water Ports by Containerized Cargo: 2010



Note: The data 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.

Figure 3-4. Top 25 Water Ports by Containerized Cargo: 2010
Source: U.S. Department of Transportation, Maritime Administration, *U.S. Waterborne Container Trade by U.S. Custom Ports*, based on data provided by Port Import/Export Reporting Service, available at www.marad.dot.gov/library_landing_page/data_and_statistics/Data_and_Statistics.htm as of August 29, 2011.

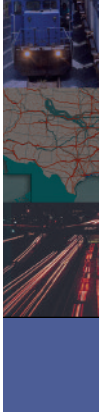


Table 3-3. Containership Calls at U.S. Ports by Vessel Size and Number of Vessels: 2005-2010

Vessel Size (TEUs)	2005	2006	2007	2008	2009	2010
Calls						
< 2,000	3,994	4,146	3,904	3,493	3,290	3,709
2,000-2,999	4,410	3,986	4,099	3,347	2,677	2,761
3,000-3,999	3,624	3,333	2,866	2,460	2,500	2,053
4,000-4,999	4,226	4,782	5,033	5,121	5,305	5,881
> 4,999	2,288	3,344	3,961	4,314	4,434	5,126
Total Calls	**18,542**	**19,591**	**19,863**	**18,735**	**18,206**	**19,530**
Vessels						
< 2,000	207	212	196	196	179	178
2,000-2,999	259	257	230	219	220	206
3,000-3,999	189	177	166	141	147	130
4,000-4,999	234	258	271	284	306	315
> 4,999	193	260	277	326	366	396
Total Vessels	**1,082**	**1,164**	**1,140**	**1,166**	**1,218**	**1,225**

Key: TEU = twenty-foot equivalent unit.

From 2005 to 2010, the number of calls by containership with capacities of 5,000 TEUs or greater has more than doubled. These large containerships accounted for 26 percent of containership calls at U.S. ports in 2010, up from 12 percent in 2005.

In 2010, 7,579 oceangoing vessels made 62,747 calls at U.S. ports, a 13 percent increase from the previous year. Tankers accounted for 35 percent of total calls, followed by containerships (31 percent) and dry bulk vessels (17 percent). Approximately 97 percent of all tankers calling at U.S. ports are double-hull vessels, a 19 percent increase from five years earlier.

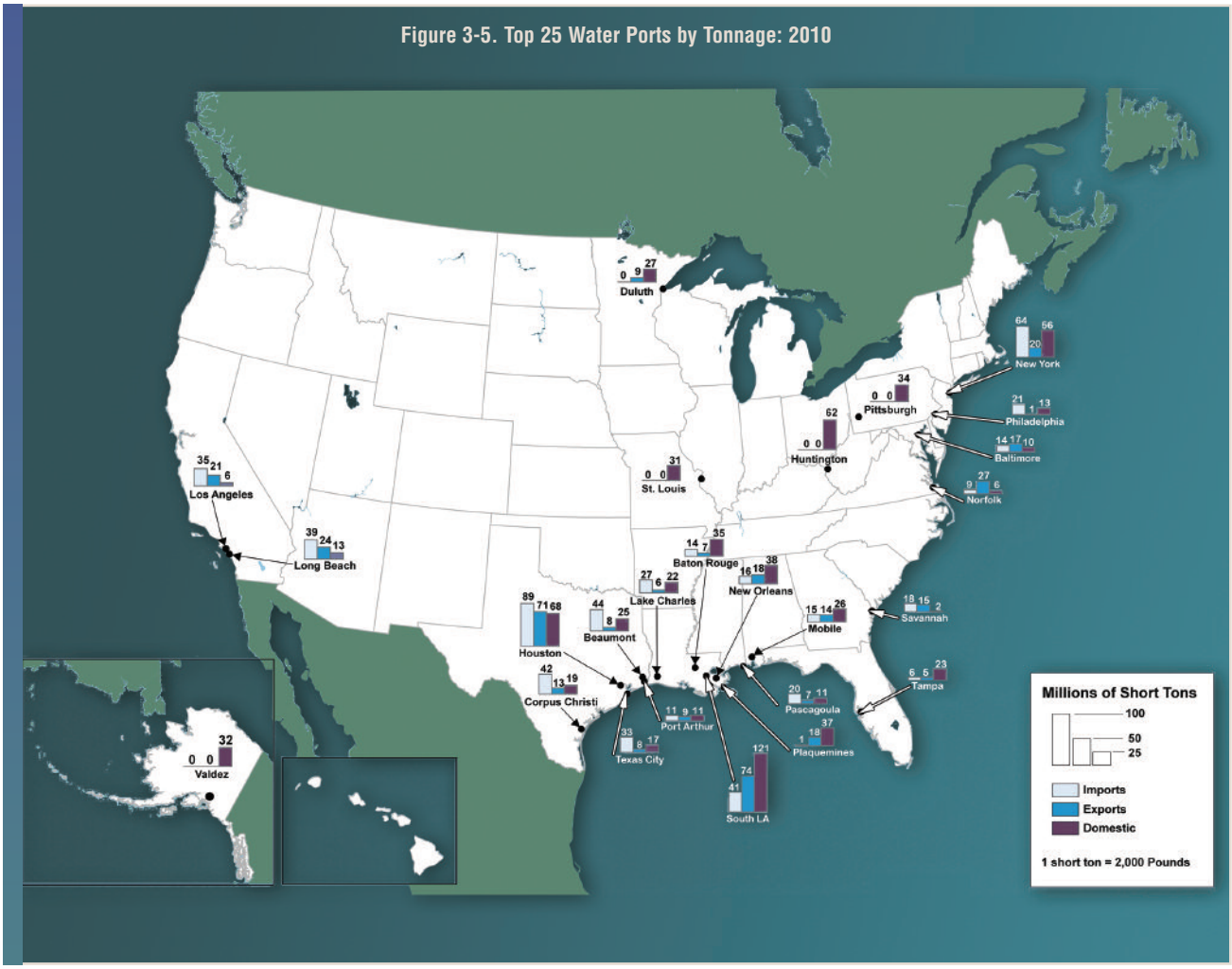
Table 3-4. Number of Vessel Calls at U.S. Ports: 2005-2010

Type	2005	2006	2007	2008	2009	2010	Percent Change, 2005-2010
Tanker	20,118	21,231	21,724	20,907	19,641	21,944	9.1
Double hull	15,869	17,747	19,026	19,036	18,631	21,265	34.0
Product	12,217	13,282	13,277	12,662	11,815	13,257	8.5
Double hull	8,799	10,252	10,811	10,952	10,887	12,622	43.4
Crude	7,901	7,949	8,447	8,245	7,826	8,687	9.9
Double hull	7,070	7,495	8,215	8,084	7,744	8,644	22.3
Container	18,542	19,591	19,863	18,735	18,206	19,530	5.3
Dry Bulk	11,406	12,508	11,040	10,363	8,587	10,716	-6.0
Roll on/Roll off	5,663	6,318	6,077	5,964	4,951	5,849	3.3
Vehicle	3,652	4,182	4,084	4,102	3,336	4,100	12.3
Gas	969	961	917	769	704	813	-16.1
Liquefied Natural Gas	203	213	202	171	201	202	-0.5
Combo	414	334	235	180	135	168	-59.4
General	3,935	4,054	3,948	3,660	3,336	3,727	-5.3
All Types	**61,047**	**64,997**	**63,804**	**60,578**	**55,560**	**62,747**	**2.8**

Key: TEU = twenty-foot equivalent unit.

Table 3-3. Containership Calls at U.S. Ports by Vessel Size and Number of Vessels: 2005-2010
Sources: Lloyd's Marine Intelligence Unit, Vessel Movements Data Files, 2005-2010 (London: Lloyd's Marine Intelligence Unit, 2005-2010); Lloyd's Marine Intelligence Unit, Seasearcher (London: Lloyd's Marine Intelligence Unit, 2011); and Clarkson Research Studies, Clarkson's Vessel Registers (London: Clarkson Research Studies, January 2011).

Table 3-4. Number of Vessel Calls at U.S. Ports: 2005-2010
Sources: Lloyd's Marine Intelligence Unit, Vessel Movements Data Files, 2005-2010 (London: Lloyd's Marine Intelligence Unit, 2005-2010); Lloyd's Marine Intelligence Unit, Seasearcher (London: Lloyd's Marine Intelligence Unit, 2011); and Clarkson Research Studies, Clarkson's Vessel Registers (London: Clarkson Research Studies, January 2011).



Although the top ports for containerized cargo are primarily on the Pacific and Atlantic Coasts, bulk cargo, such as coal, crude petroleum, and grain move through ports on the Gulf Coast and inland waterway system. The top 25 water ports by tonnage handle about two-thirds of the weight of all foreign and domestic goods moved by water.

Figure 3-5. Top 25 Water Ports by Tonnage: 2010
Source: U.S. Army Corps of Engineers, *2010 Waterborne Commerce of the United States, Part 5, National Summaries* (New Orleans, LA: 2011), table 5-2, available at www.ndc.iwr.usace.army.mil//wcsc/wcsc.htm as of June 30, 2012.

The average vessel size per call at U.S. ports increased from 50,083 deadweight tons (DWT) in 2005 to 53,592 DWT in 2010, an increase of 7 percent. The average size of containerships increased by 19 percent in terms of TEU capacity (15 percent in terms of DWT) as carriers expanded the deployment of post-panamax containerships in U.S. trades. Post-panamax refers to vessels that are larger than the width and length of the lock chambers in the Panama Canal.

Table 3-5. Average Vessel Size per Call at U.S. Ports: 2005-2010 (deadweight tons)

Type	2005	2006	2007	2008	2009	2010	Percent Change, 2005-2010
Tanker	72,056	71,831	72,222	72,281	72,066	71,131	-1.3
Double hull	76,240	75,891	76,408	75,034	73,623	72,081	-5.5
Product	37,956	37,669	36,699	36,661	37,345	37,275	-1.8
Double hull	37,799	37,934	36,994	36,936	37,303	37,195	-1.6
Crude	124,784	128,913	128,058	126,984	124,486	122,798	-1.6
Double hull	124,083	127,811	128,278	126,648	124,685	123,018	-0.9
Container	44,593	46,598	47,720	49,213	50,202	51,263	15
TEU	3,314	3,502	3,597	3,744	3,848	3,932	18.6
Dry Bulk	43,276	44,746	45,270	47,306	48,081	50,298	16.2
Roll on/Roll off	19,838	19,751	19,635	20,153	20,628	20,577	3.7
Vehicle	18,506	18,801	18,585	18,896	19,203	19,261	4.1
Gas	41,411	40,738	40,462	40,755	44,487	43,092	4.1
Cubic meters	61,410	60,037	59,369	60,159	66,986	64,433	4.9
Liquefied Natural Gas	70,374	70,962	73,703	70,097	74,465	74,445	5.8
Cubic meters	128,504	130,006	134,832	128,834	135,895	137,028	6.6
Combo	87,151	86,344	93,617	97,607	102,154	109,238	25.3
General	25,101	25,446	25,572	24,585	23,689	23,598	-6
All Types	**50,083**	**50,672**	**51,658**	**52,535**	**53,430**	**53,592**	**7.0**

Key: TEU = twenty-foot equivalent unit.

Table 3-5. Average Vessel Size per Call at U.S. Ports: 2005-2010
Sources: Lloyd's Marine Intelligence Unit, Vessel Movements Data Files, 2005-2010 (London: Lloyd's Marine Intelligence Unit, 2005-2010); Lloyd's Marine Intelligence Unit, Seasearcher (London: Lloyd's Marine Intelligence Unit, 2011); and Clarkson Research Studies, Clarkson's Vessel Registers (London: Clarkson Research Studies, January 2011).

Table 3-6. Top 25 Airports by Landed Weight of All-Cargo Operations: 2000 and 2007-2010[1]

Airport	2010 Rank	Landed weight (thousands of short tons)				
		2000	2007	2008	2009	2010
Memphis, TN (Memphis International)	1	6,318	9,772	9,750	9,464	9,772
Anchorage, AK (Ted Stevens Anchorage International)[2]	2	8,084	10,562	8,976	7,762	9,732
Louisville, KY (Louisville International-Standiford Field)	3	3,987	5,216	5,223	5,139	5,319
Miami, FL (Miami International)	4	2,929	3,715	3,494	3,176	3,453
Chicago, IL (O'Hare International)	5	2,062	2,201	2,103	1,750	2,448
Indianapolis, IN (Indianapolis International)	6	2,884	2,652	2,564	2,288	2,359
Los Angeles, CA (Los Angeles International)	7	2,892	3,431	2,876	1,884	1,977
New York, NY (John F. Kennedy International)	8	2,793	2,557	2,222	1,591	1,962
Fort Worth, TX (Dallas/Fort Worth International)	9	1,691	1,753	1,614	1,436	1,516
Newark, NJ (Newark Liberty International)	10	1,961	1,873	1,727	1,464	1,489
Oakland, CA (Metropolitan Oakland International)	11	1,811	1,811	1,742	1,341	1,324
Atlanta, GA (William B. Hartsfield International)	12	1,090	1,261	1,167	1,278	1,314
Cincinatti, OH (Cincinatti/Northern Kentucky International)[3]	13	912	97	104	564	1,216
Ontario, CA (Ontario International)	14	1,220	1,394	1,350	1,168	1,121
Honolulu, HI (Honolulu International)	15	692	1,134	1,032	1,021	1,062
Philadelphia, PA (Philadelphia International)	16	1,454	1,375	1,264	1,132	994
Houston, TX (George Bush Intercontinental)	17	480	769	754	784	763
Seattle, WA (Seattle-Tacoma International)	18	1,060	691	747	803	697
San Francisco, CA (San Francisco International)	19	1,267	1,039	775	747	652
Denver, CO (Denver International)	20	900	642	625	624	619
Phoenix, AZ (Sky Harbor International)	21	920	711	675	610	607
Portland, OR (Portland International)	22	882	713	656	545	531
Minneapolis, MN (Minneapolis-St Paul International/Wold-Chamberlain)	23	622	612	562	474	512
Chicago/Rockford, IL (Chicago/Rockford International)	24	654	737	710	564	459
Seattle, WA (King County International)	25	428	403	418	447	453
Top 25 airports[4]		**52,381**	**57,715**	**53,621**	**48,153**	**52,350**
United States, all airports[5]		**74,743**	**76,583**	**71,281**	**63,191**	**67,530**
Top 25 as % of U.S. total		**70.1**	**75.4**	**75.2**	**76.2**	**77.5**

[1]Dedicated to the exclusive transportation of cargo, all-cargo operations do not include aircraft carrying passengers that also may be carrying cargo. Aircraft landed weight is the certificated maximum gross landed weight of the aircraft as specified by the aircraft manufacturers.
[2]Anchorage includes a large share of all-cargo operations in-transit.
[3]The significant 2007 decrease in landed weight at Cincinnati/Northern Kentucky International Airport was due to a major reduction in DHL Airways' cargo operations, which have since rebounded.
[4]Airport rankings change each year. Totals represent the top 25 airports for each year, not necessarily the top 25 airports listed here for 2010.
[5]Limited to airports with an aggregate landed weight in excess of 100 million pounds (50,000 short tons) annually.
Note: 1 short ton = 2,000 pounds.

The three most important U.S. airports that handle all-cargo aircraft are Memphis, Anchorage, and Louisville. Memphis and Louisville are major hubs for FedEx and the United Parcel Service. Anchorage is a major international gateway for trade with Asia.

Table 3-6. Top 25 Airports by Landed Weight of All-Cargo Operations: 2000 and 2007-2010
Sources: U.S. Department of Transportation, Federal Aviation Administration, Air Carrier Activity Information System (ACAIS) database, All-Cargo Data, available at www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/ as of June 25, 2012.

Pipelines move large volumes of crude oil and natural gas from producing fields to markets throughout the United States. Based on FAF data, the oil and gas pipeline system moved 1.5 billion tons valued at $723 billion in 2007. Large volumes of crude oil were moved from producing fields in Texas and Louisiana.

Figure 3-6. Crude Oil Tonnage Moved by Pipeline: 2007

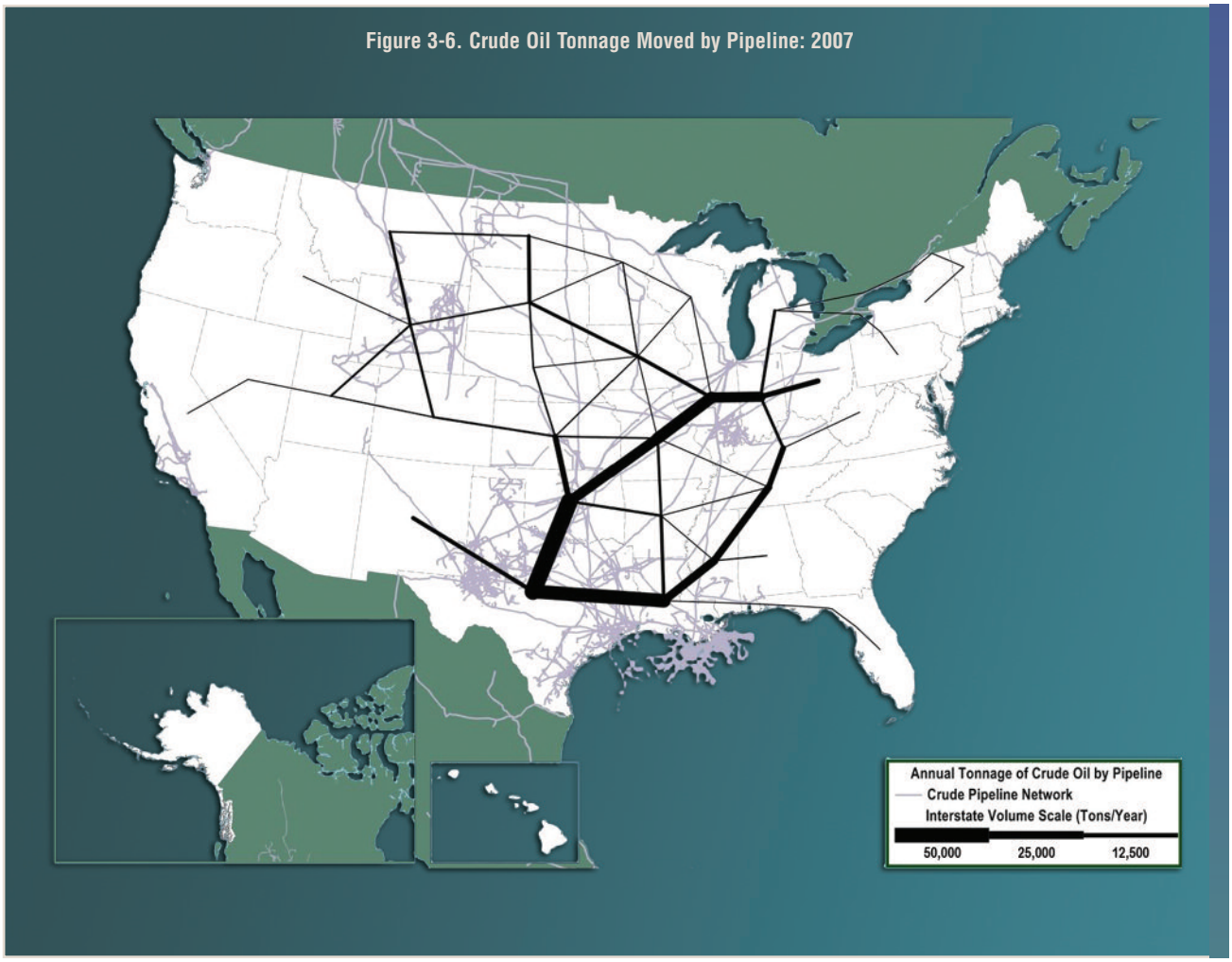
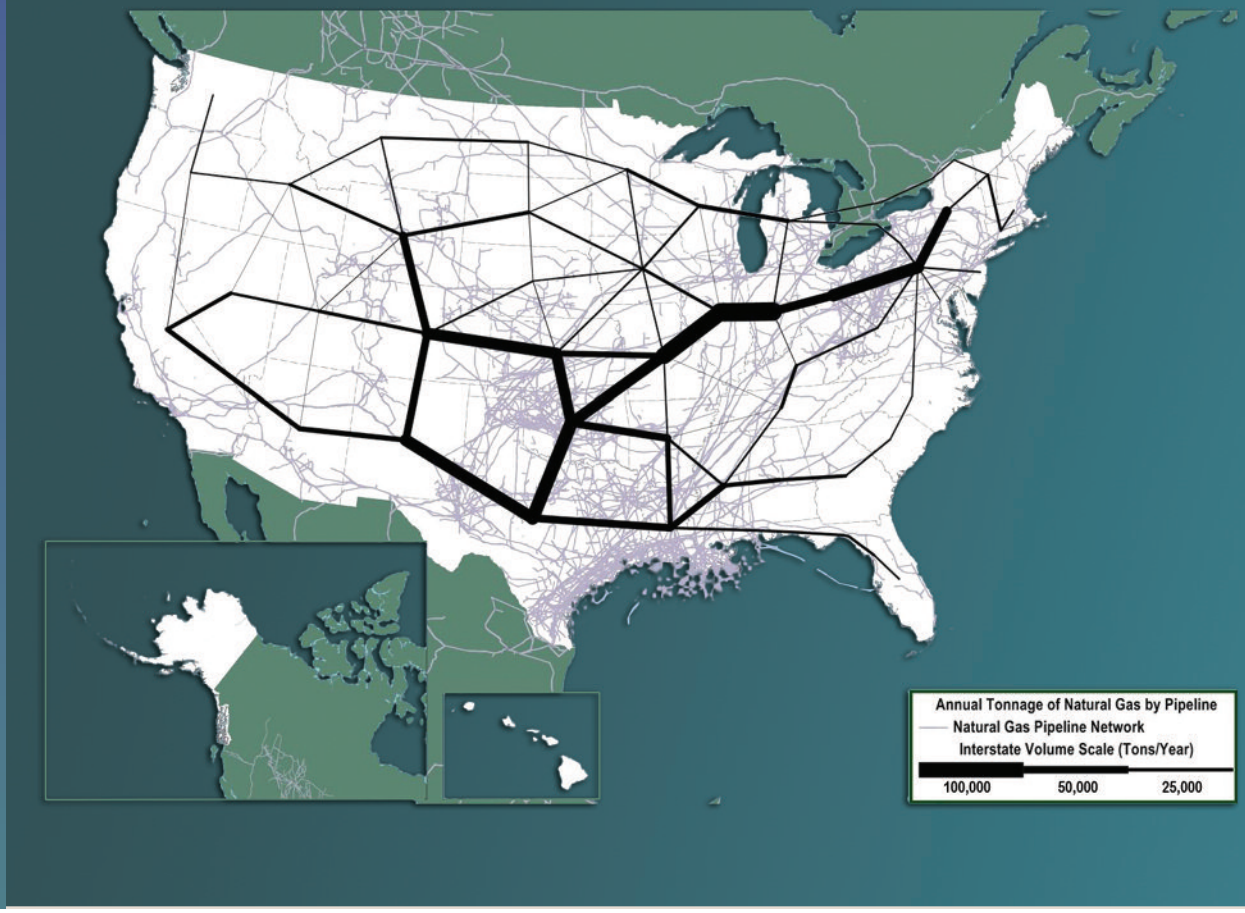


Figure 3-6. Crude Oil Tonnage Moved by Pipeline: 2007
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

Figure 3-7. Natural Gas Tonnage Moved by Pipeline: 2007

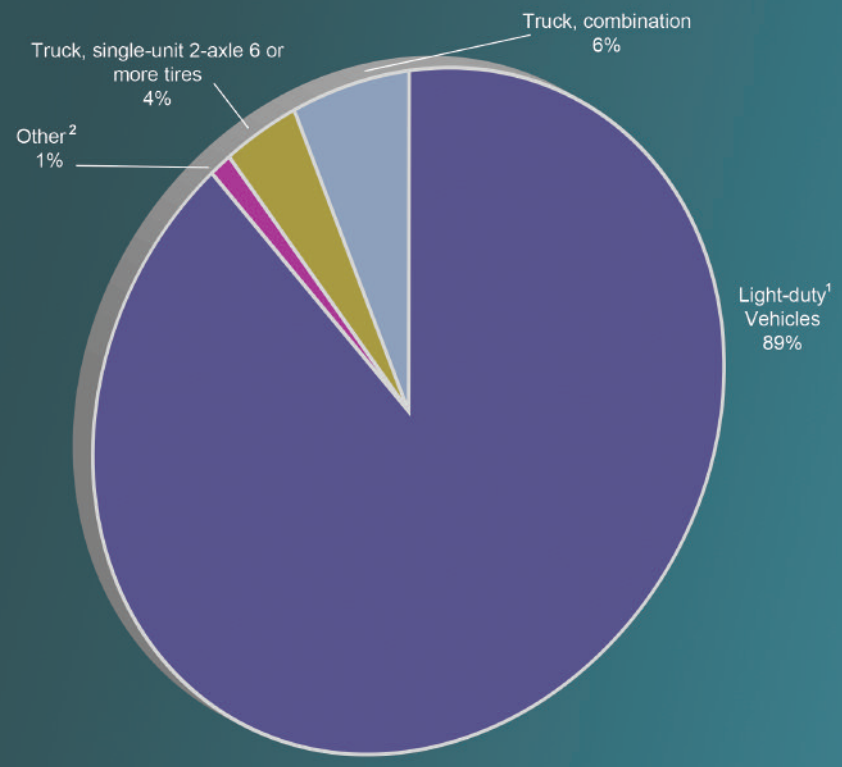


Natural gas is located in many of the same areas as crude oil. Gathering pipelines (or trunk lines) move the gas to processing plants where impurities are removed. From the processing plants, natural gas is moved to customers via an extensive and complex system of interstate/intrastate pipelines and distribution lines.

Figure 3-7. Natural Gas Tonnage Moved by Pipeline: 2007
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

Despite doubling over the past two decades, truck traffic remains a relatively small share of highway traffic as a whole. In 2010, commercial trucks accounted for about 10 percent of highway vehicle miles traveled. Truck tractors hauling semitrailers and other truck combinations accounted for approximately 59 percent of commercial truck travel, while single-unit trucks with six or more tires accounted for the remainder.

Figure 3-8. Share of Highway Vehicle Miles of Traveled by Vehicle Type: 2010



[1]Includes passenger cars, light trucks, vans and sport utility vehicles with a wheelbase equal to or less than 121 inches and large passenger cars, vans, pickup trucks, and sport utility vehicles with a wheelbase larger than 121 inches.
[2]Includes buses and motorcycles.
Notes: Based on a new methodology, FHWA revised its annual vehicle miles traveled, number of vehicles, and fuel economy data beginning with 2007. Information on the new methodology is available at www.fhwa.dot.gov/ policyinformation/statistics.cfm. Data in this figure should not be compared to those in pre-2011 editions of *Freight Facts and Figures*.

Figure 3-8. Share of Highway Vehicle Miles of Traveled by Vehicle Type: 2010
Source: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, table VM-1, available at www.fhwa.dot.gov/policyinformation/statistics/2010/ as of June 25, 2012.

Table 3-7. Trucks and Truck Miles by Average Weight: 1987, 1992, 1997, and 2002[1]

Average weight (pounds)	1987 Number (thousands)	1987 VMT (millions)	1992 Number (thousands)	1992 VMT (millions)	1997 Number (thousands)	1997 VMT (millions)	2002 Number (thousands)	2002 VMT (millions)	Percent Change, 1987 to 2002 Number	Percent Change, 1987 to 2002 VMT
Total	**3,624**	**89,972**	**4,008**	**104,987**	**4,701**	**147,876**	**5,415**	**145,624**	**49.4**	**61.9**
Light-heavy	**1,030**	**10,768**	**1,259**	**14,012**	**1,436**	**19,815**	**1,914**	**26,256**	**85.9**	**143.8**
10,001 to 14,000	525	5,440	694	8,000	819	11,502	1,142	15,186	117.6	179.2
14,001 to 16,000	242	2,738	282	2,977	316	3,951	396	5,908	63.6	115.8
16,001 to 19,500	263	2,590	282	3,035	301	4,362	376	5,161	43.2	99.3
Medium-heavy	**766**	**7,581**	**732**	**8,143**	**729**	**10,129**	**910**	**11,766**	**18.8**	**55.2**
19,501 to 26,000	766	7,581	732	8,143	729	10,129	910	11,766	18.8	55.2
Heavy-heavy	**1,829**	**71,623**	**2,017**	**82,832**	**2,536**	**117,931**	**2,591**	**107,602**	**41.7**	**50.2**
26,001 to 33,000	377	5,411	387	5,694	428	7,093	437	5,845	15.9	8.0
33,001 to 40,000	209	4,113	233	5,285	257	6,594	229	3,770	9.7	-8.4
40,001 to 50,000	292	7,625	339	9,622	400	13,078	318	6,698	9.0	-12.2
50,001 to 60,000	188	7,157	227	8,699	311	12,653	327	8,950	73.8	25.1
60,001 to 80,000	723	45,439	781	51,044	1,070	74,724	1,179	77,489	63.1	70.5
80,001 to 100,000	28	1,254	33	1,529	46	2,427	69	2,950	144.3	135.2
100,001 to 130,000	8	440	12	734	18	1,051	26	1,571	238.5	257.2
130,001 or more	4	185	5	227	6	312	6	329	43.2	77.9

Key: VMT = vehicle miles traveled.
[1]Excludes trucks with an average weight of 10,000 pounds or less.
Notes: Weight includes the empty weight of the vehicle plus the average weight of the load carried. Numbers may not add to totals due to rounding.

The nation's truck fleet has grown significantly in number and distance driven. Of trucks weighing more than 10,000 pounds registered to businesses, individuals, and organizations other than government, most growth has occurred at either end of the weight spectrum. Distance traveled has more than doubled between 1987 and 2002 for trucks weighing between 10,000 pounds and 26,000 pounds and for trucks weighing over 80,000 pounds. Trucks between 60,000 pounds and 80,000 pounds form the largest category in both number of trucks and vehicle miles traveled because in most cases 80,000 pounds is the maximum weight allowed on the highway system without special permits.

Federal and state governments are concerned about truck weight because of the damage that heavy trucks can do to roads and bridges. To monitor truck weight, approximately

Table 3-7. Trucks and Truck Miles by Average Weight: 1987, 1992, 1997, and 2002
Source: U.S. Department of Commerce, Census Bureau, *2002 Vehicle Inventory and Use Survey: United States*, EC02TV-US (Washington, DC: 2004), available at www.census.gov/prod/ec02/ec02tv-us.pdf as of August 5, 2012; U.S. Department of Commerce, Census Bureau, 1992 Truck Inventory and Use Survey: United States, TC92-T-52 (Washington, DC: 1995), available at www.census.gov/prod/ec97/97tv-us.pdf as of August 5, 2012.

185 million weighs were made in 2011, about 65 percent of which were weigh-in-motion, and 35 percent were static. Considerably less than 1 percent of weighs discover violations.

Table 3-8. Commercial Vehicle Weight Enforcement Activities: 2005-2011

	2005	2006	2007	2008	2009	2010	2011
All Weighs	**230,464,926**	**229,450,656**	**217,444,117**	**200,419,382**	**182,256,996**	**198,564,690**	**185,498,220**
Weigh-in-Motion	136,380,657	142,598,736	132,257,618	119,826,305	116,176,399	118,025,789	119,718,032
Static Weighs[1]	94,084,269	86,851,920	85,186,499	80,593,077	66,080,597	80,538,901	65,780,188
Semiportable Scales	493,574	422,860	425,731	357,502	373,073	285,484	323,936
Fixed Scales	93,038,479	85,900,007	84,213,507	79,644,702	65,182,174	79,703,573	64,922,321
Portable Scales	552,216	529,053	547,261	590,873	525,350	549,844	533,931
Violations[2]	**567,949**	**621,391**	**530,350**	**555,168**	**489,975**	**478,576**	**415,545**
Axle Weight Violations	275,442	269,758	233,563	248,813	220,631	216,735	178,209
Gross Weight Violations	118,328	149,561	126,761	120,384	116,291	114,171	84,490
Bridge Weight Violations	174,179	202,072	170,026	185,971	153,053	147,670	152,846
Permits[3]	**3,625,898**	**4,598,227**	**4,827,668**	**5,215,724**	**4,528,654**	**4,838,663**	**4,944,334**
Non-Divisible Trip Permits	2,711,500	3,399,435	3,743,323	3,693,248	3,285,801	3,510,301	3,762,553
Non-Divisible Annual Permits	233,160	250,505	332,148	322,288	298,805	303,230	320,767
Divisible Trip Permits	288,145	426,381	398,003	489,712	369,906	341,737	334,650
Divisible Annual Permits	393,093	521,906	354,194	710,476	574,142	683,395	526,364

[1]Static weighs include the total number of vehicles weighed from semiportable, portable, and fixed scales.
[2]Violations include those from axle, gross, and bridge formula weight limits.
[3]Permits issued are for divisible and non-divisible loads on a trip or on an annual basis, as well as the over-width movement of a divisible load.
Note: Incomplete data from District of Columbia (2008), Hawaii (2008, 2009, 2010, and 2011), Indiana (2005), Massachusetts (2010), New Hampshire (2011) Pennsylvania (2006), South Dakota (2006 and 2007), and Vermont (2011).

Freight moving in combination trucks depends heavily on the Interstate System. Although only one-fourth of the distance traveled by all traffic is on the Interstate System, nearly one-half of combination-truck vehicle miles of travel are made on the Interstate highways.

Table 3-9. Annual Vehicle Distance Traveled by Highway Category and Vehicle Type: 2011

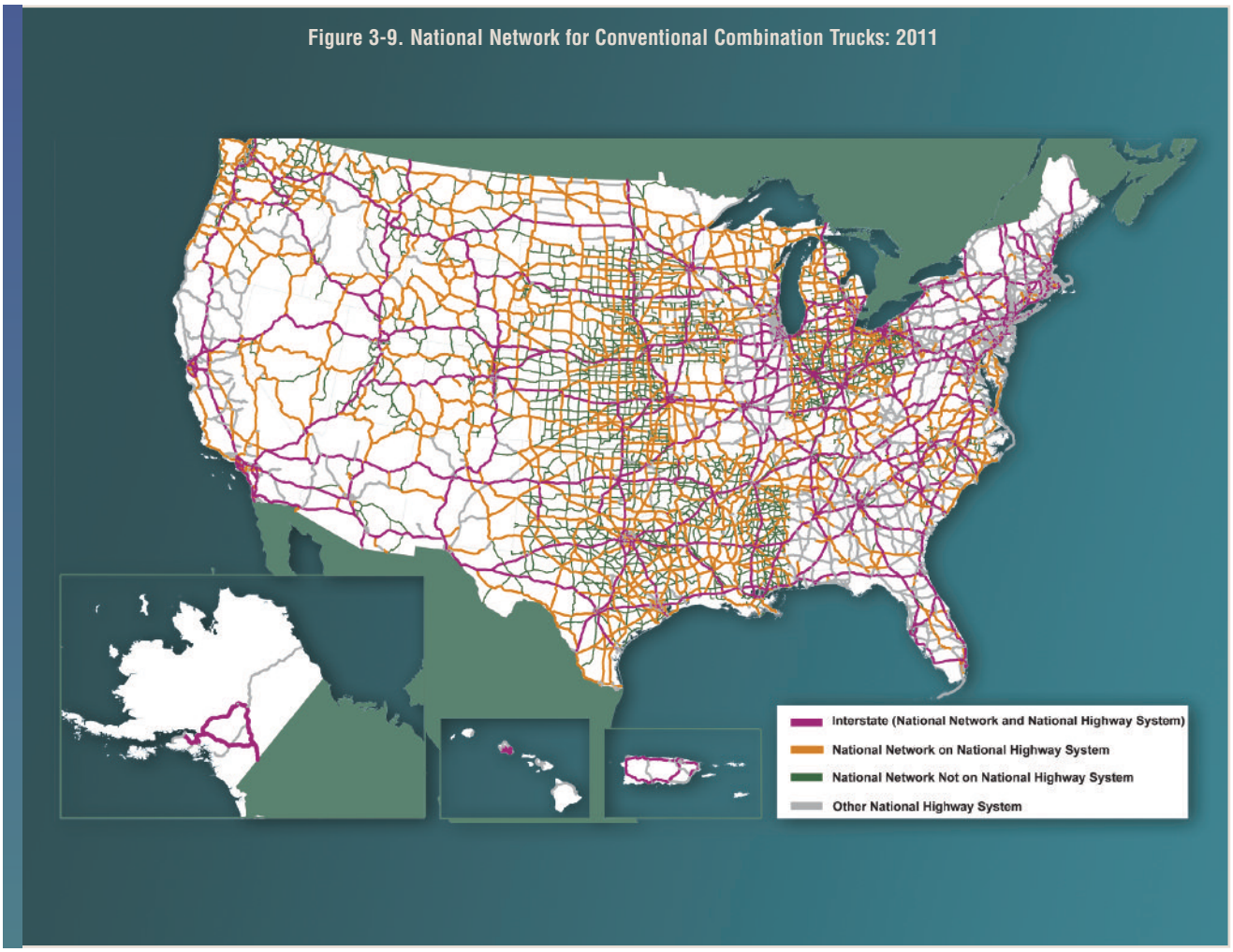
	Combination Trucks	Single-Unit Trucks[1]	Other[2]	Light-duty Vehicles[3]	Total, All Motor Vehicles
Interstate vehicle miles (millions)	85,041	25,691	7,312	605,295	723,339
Interstate percent	48.3	23.2	22.7	22.9	24.4
Non-Interstate vehicle miles (millions)	90,871	84,982	24,939	2,042,363	2,243,154
Non-Interstate percent	51.7	76.8	77.3	77.1	75.6
Total vehicle miles, all roadways	**175,911**	**110,674**	**32,251**	**2,647,659**	**2,966,494**

[1]Trucks on a single frame with at least two axles and six tires.
[2]Includes buses and motorcycles.
[3]Includes passenger cars, light trucks, vans and sport utility vehicles with a wheelbase equal to or less than 121 inches and large passenger cars, vans, pickup trucks, and sport utility vehicles with a wheelbase larger than 121 inches.
Notes: Based on a new methodology, FHWA revised its annual vehicle miles travelled, number of vehicles, and fuel economy data beginning with 2007. Information on the new methodology is available at www.fhwa.dot.gov/policyinformation/statistics.cfm. Data in this table should not be compared to those in pre-2011 editions of *Freight Facts and Figures*. Numbers may not add to totals due to rounding.

Table 3-8. Commercial Vehicle Weight Enforcement Activities: 2005-2011
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Annual State Certifications of Size and Weight Enforcement on Federal-aid Highways, as prescribed under 23 CFR Part 657, August 10, 2012.

Table 3-9. Annual Vehicle Distance Traveled by Highway Category and Vehicle Type: 2011
Source: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, Table VM-1, available at www.fhwa.dot.gov/policy/information/statistics/2010/ as of July 20, 2012.

Figure 3-9. National Network for Conventional Combination Trucks: 2011



The National Network was established by Congress in 1982 to facilitate interstate commerce and encourage regional and national economic growth by requiring states to allow conventional combination trucks on the Interstate System and portions of the Federal-aid Primary System of highways. The National Network, which is approximately 200,000 miles in length, has not changed significantly in three decades.

Figure 3-9. National Network for Conventional Combination Trucks: 2011
Source: 23 CFR Part 658, Appendix A, as of September 3, 2012.

Longer combination vehicles (LCVs) include truck tractors pulling a long semi-trailer and a short trailer (often called a Rocky Mountain Double), a long semi-trailer and a long trailer (often called a Turnpike Double) or a short semi-trailer and two trailers (called a Triple). Although all states allow conventional combinations consisting of a 28-foot semitrailer and a 28-foot trailer, only 14 states and 6 state turnpike authorities allow LCVs on at least some parts of their road networks. Allowable routes for LCVs have been frozen since 1991.

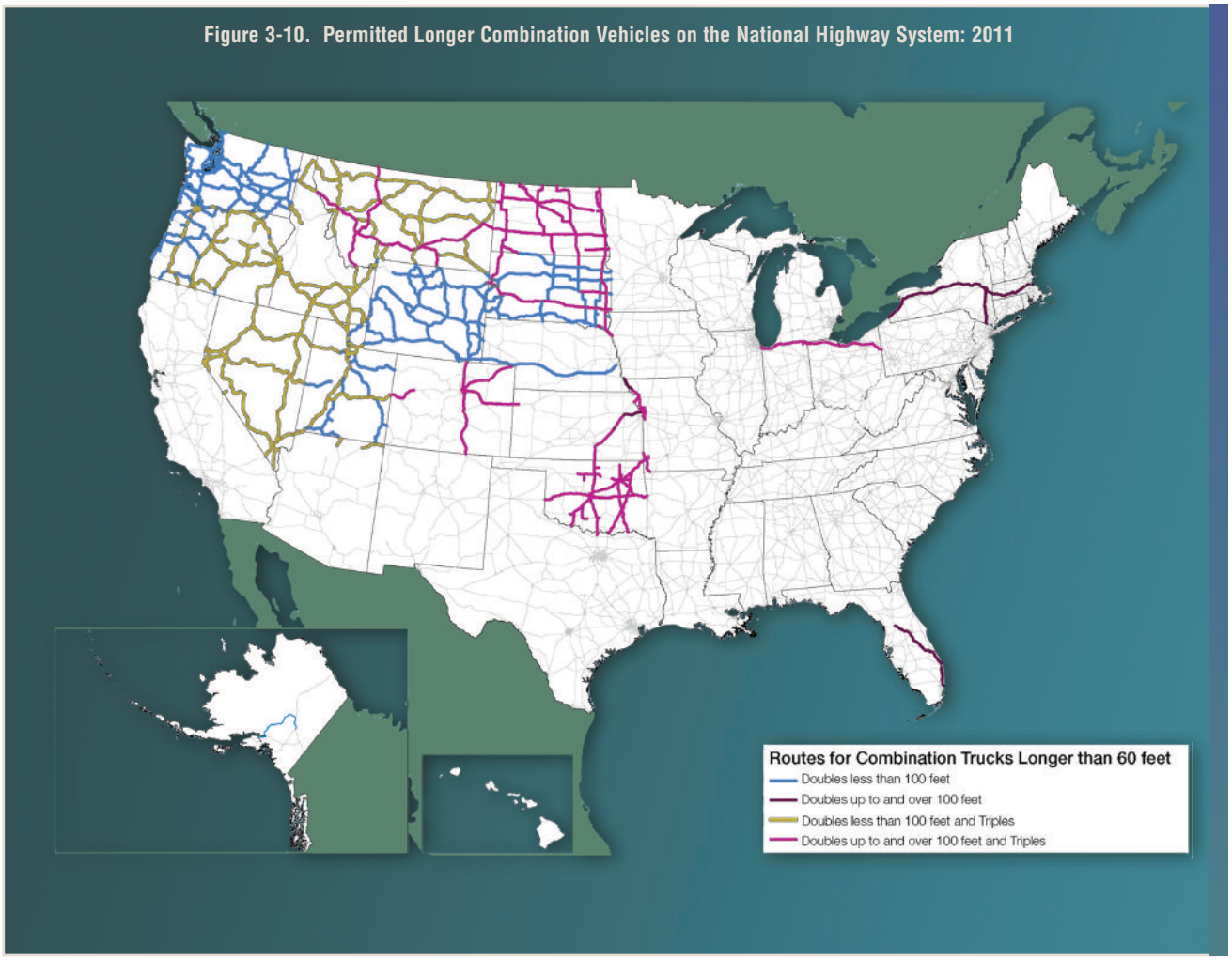


Figure 3-10. Permitted Longer Combination Vehicles on the National Highway System: 2011
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Operations and Technology Team, special tabulation, 2012.

Table 3-10. Trucks, Truck Miles, and Average Distance by Range of Operations and Jurisdictions: 2002

	Number of Trucks (thousands)	Truck Miles (millions)	Miles per Truck (thousands)
Total	**5,521**	**145,173**	**26**
Off the road	183	2,263	12
50 miles or less	2,942	42,531	15
51 to 100 miles	685	19,162	28
101 to 200 miles	244	11,780	48
201 to 500 miles	232	17,520	76
501 miles or more	293	26,706	91
Not reported	716	25,061	35
Not applicable	226	150	1
Operated in Canada	2	72	43
Operated in Mexico	2	29	19
Operated within the home base state	4,196	84,974	20
Operated in states other than the home base state	496	40,901	83
Not reported	599	19,046	32
Not applicable	226	150	1

Notes: Includes trucks registered to companies and individuals in the United States except pickups, minivans, other light vans, and sport utility vehicles. Numbers may not add to totals due to rounding.

Most trucks larger than pickups, minivans, other light vans, and sport utility vehicles typically operate close to home. About one-half of all trucks usually travel to destinations within 50 miles of their base, and three-fourths stayed within their base state. Less than 10 percent of trucks larger than pickups, minivans, other light vans, and sport utility vehicles typically travel to places more than 200 miles away, but these trucks account for 30 percent of the mileage.

Table 3-10. Trucks, Truck Miles, and Average Distance by Range of Operations and Jurisdictions: 2002
Source: U.S. Department of Commerce, Census Bureau, *2002 Vehicle Inventory and Use Survey: United States*, EC02TV-US, table 3a (Washington, DC: 2004), available at www.census.gov/prod/ec02/ec02tv-us.pdf as of August 5, 2012.

Approximately three-fourths of the miles traveled by trucks larger than pickups, minivans, and other light vans are for the movement of products that range from electronics to sand and gravel. Most of the remaining mileage is for empty backhauls and empty shipping containers.

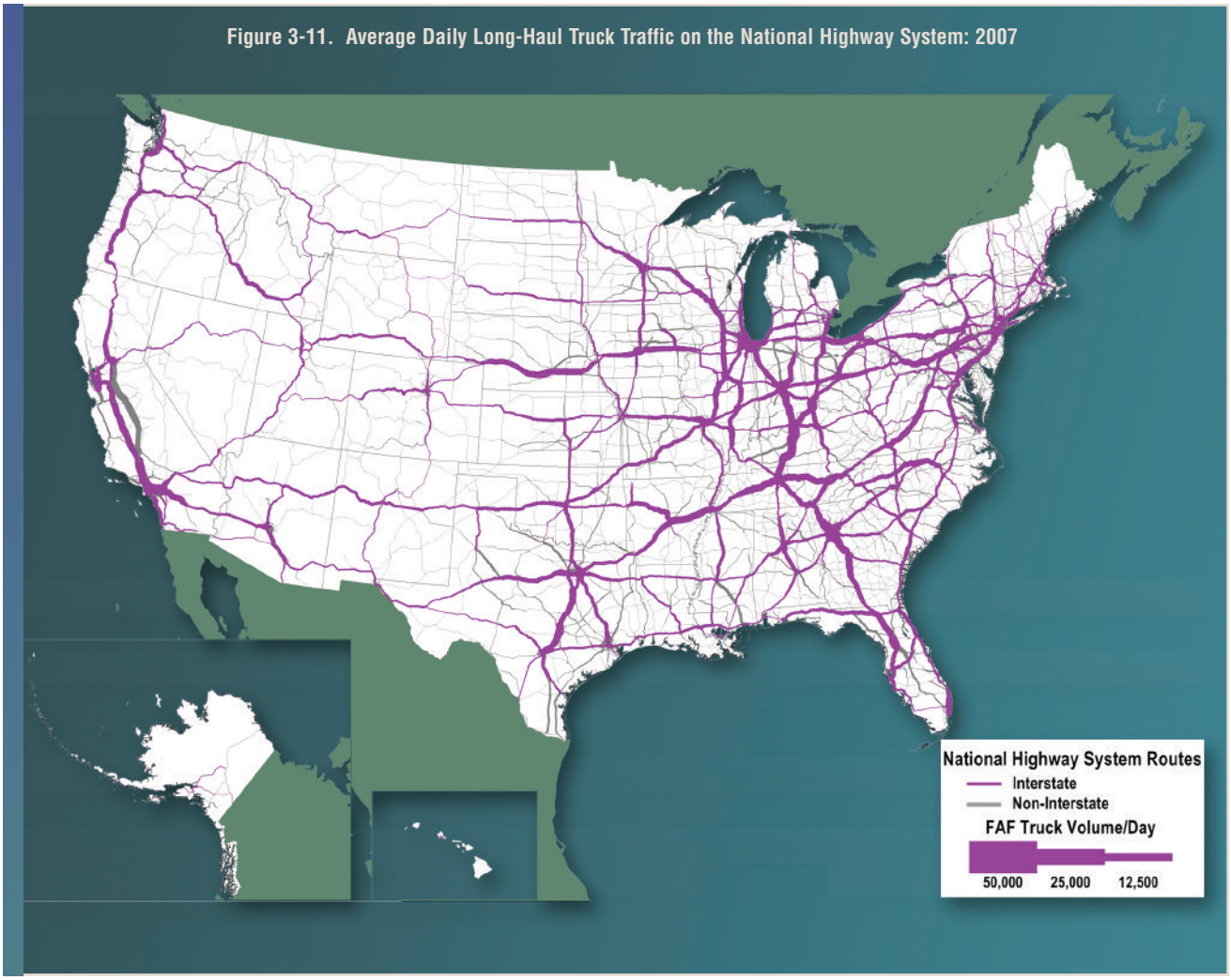
Table 3-11. Truck Miles by Products Carried: 2002

Products carried	Millions of miles
Total[1]	**145,173**
Animals and fish, live	735
Animal feed and products of animal origin	2,088
Grains, cereal	1,368
All other agricultural products	2,661
Basic chemicals	876
Fertilizers and fertilizer materials	1,666
Pharmaceutical products	305
All other chemical products and preparations	1,351
Alcoholic beverages	1,124
Bakery and milled grain products	3,553
Meat, seafood, and their preparations	3,056
Tobacco products	445
All other packaged foodstuffs	7,428
Logs and other wood in the rough	1,149
Paper or paperboard articles	3,140
Printed products	765
Pulp, newsprint, paper, paperboard	1,936
Wood products	3,561
Articles of base metal	3,294
Base metal in primary or semifinished forms	2,881
Nometallic mineral products	3,049
Tools, nonpowered	7,759
Tools, powered	6,478
Electronic and other electrical equipment	3,024
Furniture, mattresses, lamps, etc.	2,043
Machinery	3,225
Miscellaneous manufactured products	4,008
Precision instruments and apparatus	734
Textile, leather, and related articles	1,538
Vehicles, including parts	3,844
All other transportation equipment	636
Coal	301
Crude petroleum	132
Gravel or rushed stone	2,790
Metallic ores and concentrates	45
Monumental or building stone	462
Natural sands	1,089
All other nonmetallic minerals	499
Fuel oils	1,232
Gasoline and aviation turbine fuel	849
Plastic and rubber	2,393
All other coal and refined petroleum products	1,172
Hazardous waste (EPA manifest)	190
All other waste and scrape (non-EPA manifest)	2,647
Recyclable products	922
Mail and courier parcels	4,760
Empty shipping containers	794
Passengers	274
Mixed freight	14,659
Products, equipment , or materials not elsewhere classified	265
Products not specified	6,358
Not applicable[2]	150
No product carried	28,977

[1]Excludes pickups, minivans, other light vans, and sport utility vehicles.
[2]Detail lines may not add to total because multiple products/hazardous materials may be carried at the same time.
[3]Vehicles not in use. When the survey respondent had partial-year ownership of the vehicle, annual miles were adjusted to reflect miles traveled when not owned by the respondent

Table 3-11. Truck Miles by Products Carried: 2002
Source: U.S. Department of Commerce, Census Bureau, 2002 Vehicle Inventory and Use Survey: United States, EC02TV-US (Washington, DC: 2004), available at www.census.gov/prod/ec02/ec02tv-us.pdf as of August 5, 2012.

Figure 3-11. Average Daily Long-Haul Truck Traffic on the National Highway System: 2007



Long-haul freight truck traffic in the United States is concentrated on major routes connecting population centers, ports, border crossings, and other major hubs of activity. Except for Route 99 in California and a few toll roads and border connections, most of the heaviest traveled routes are on the Interstate System.

Figure 3-11. Average Daily Long-Haul Truck Traffic on the National Highway System: 2007
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

By 2040, long-haul freight truck traffic in the United States is expected to increase dramatically on the National Highway System. Forecast data indicate that truck travel may reach 590 million miles per day.

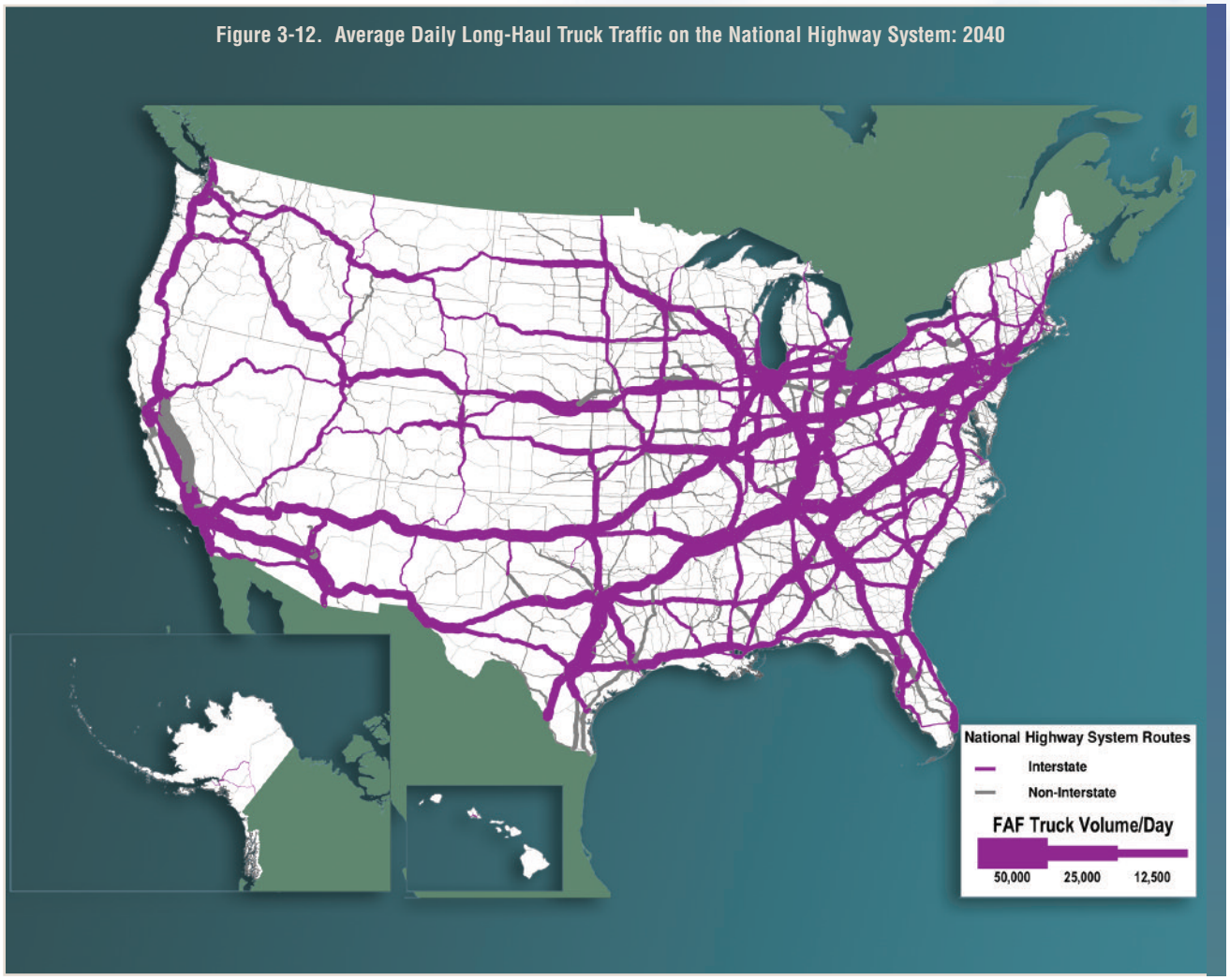
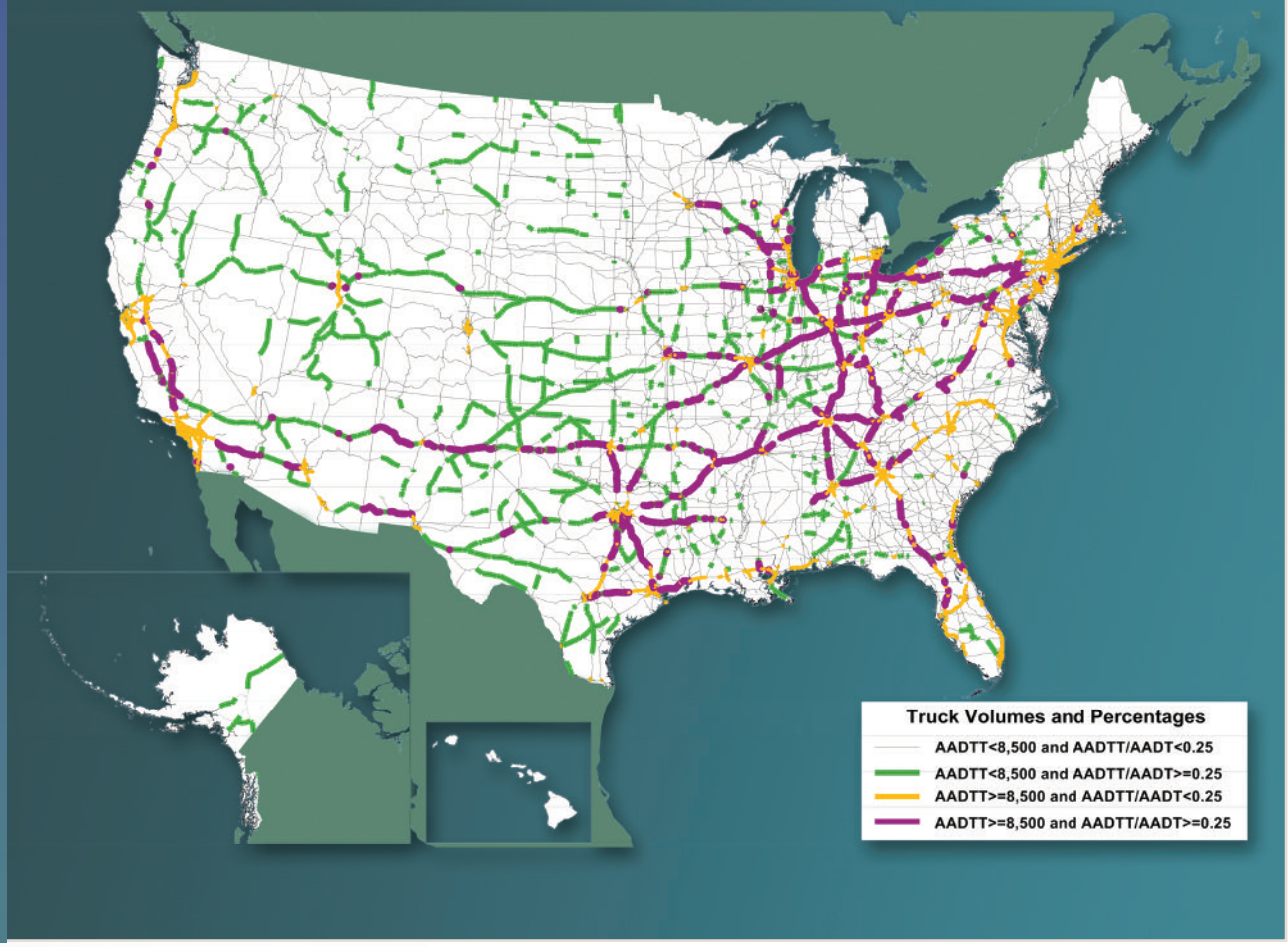


Figure 3-12. Average Daily Long-Haul Truck Traffic on the National Highway System: 2040
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

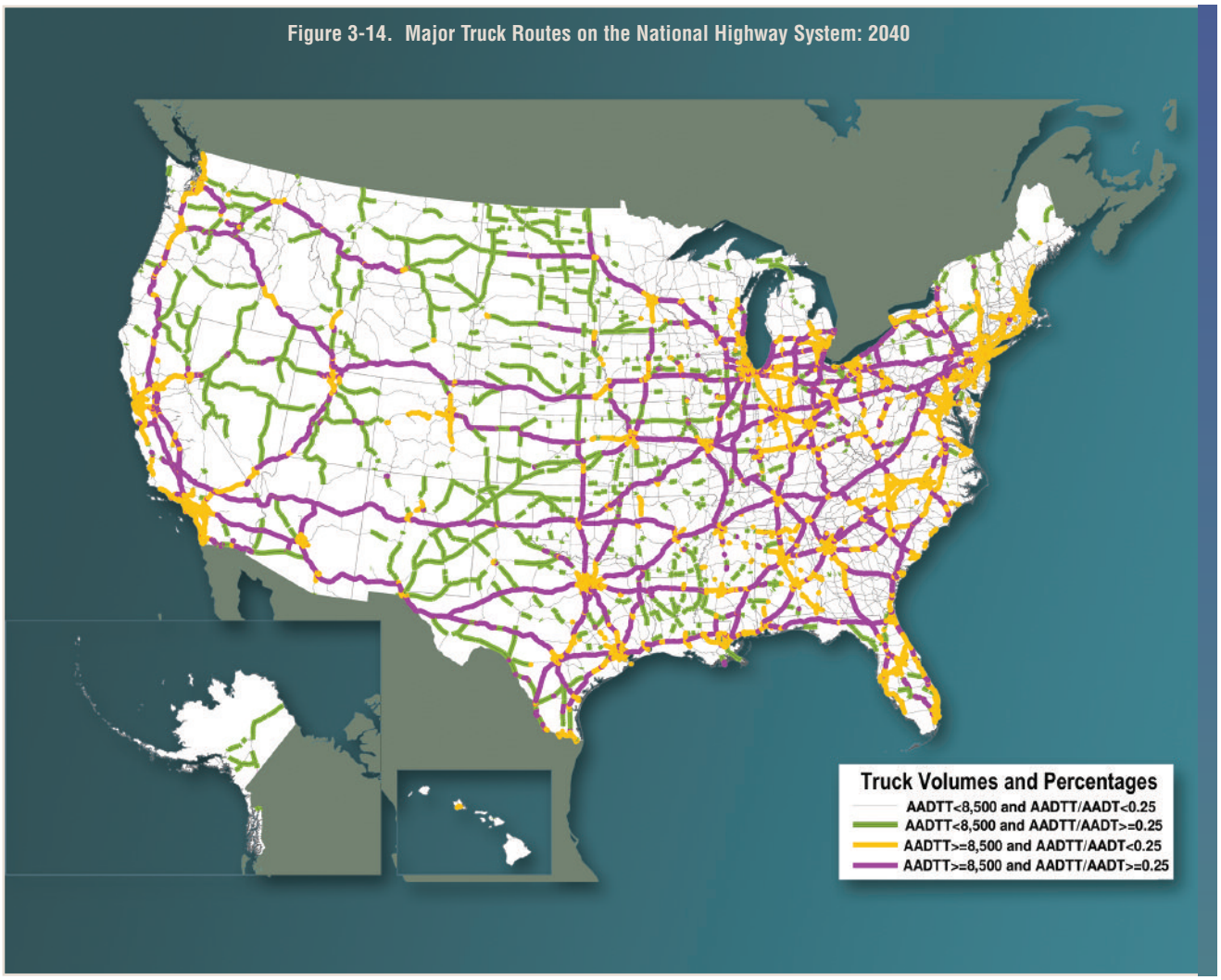
Figure 3-13. Major Truck Routes on the National Highway System: 2007



Selected routes carry a significant concentration of trucks, either as an absolute number or as a percentage of the traffic stream. Nearly 6,000 miles of the National Highway System (NHS) carry more than 8,500 trucks per day on sections where at least every fourth vehicle is a truck. With each truck carrying an average of 16 tons of cargo, 8,500 trucks per day haul approximately 50 million tons per year.

Figure 3-13. Major Truck Routes on the National Highway System: 2007
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

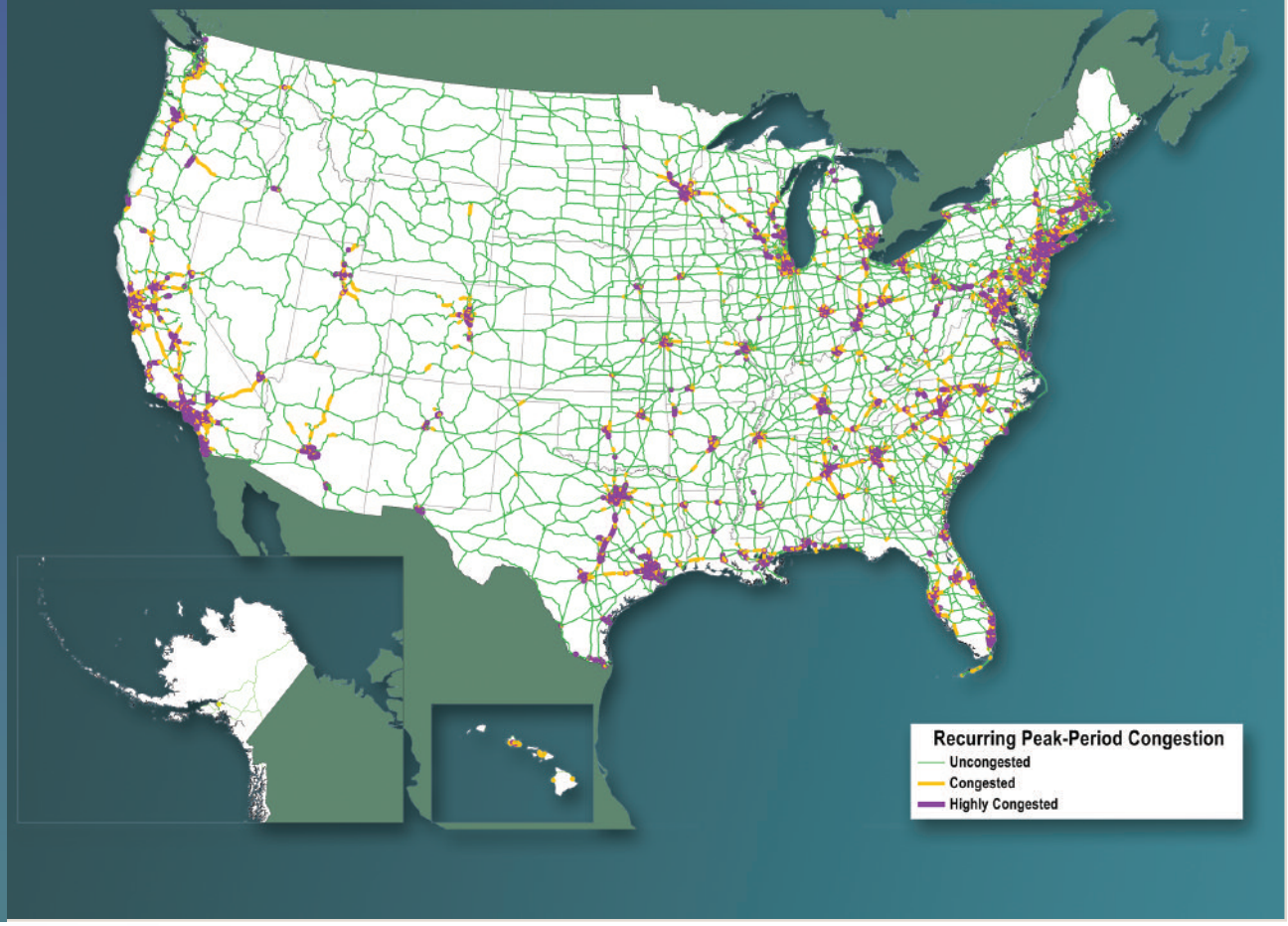
Figure 3-14. Major Truck Routes on the National Highway System: 2040



The number of NHS miles carrying large volumes and high percentages of trucks is forecast to increase dramatically by 2040. Segments with more than 8,500 trucks per day and where at least every fourth vehicle is a truck are forecast to reach 22,600 miles, an increase of more than 250 percent from 2007.

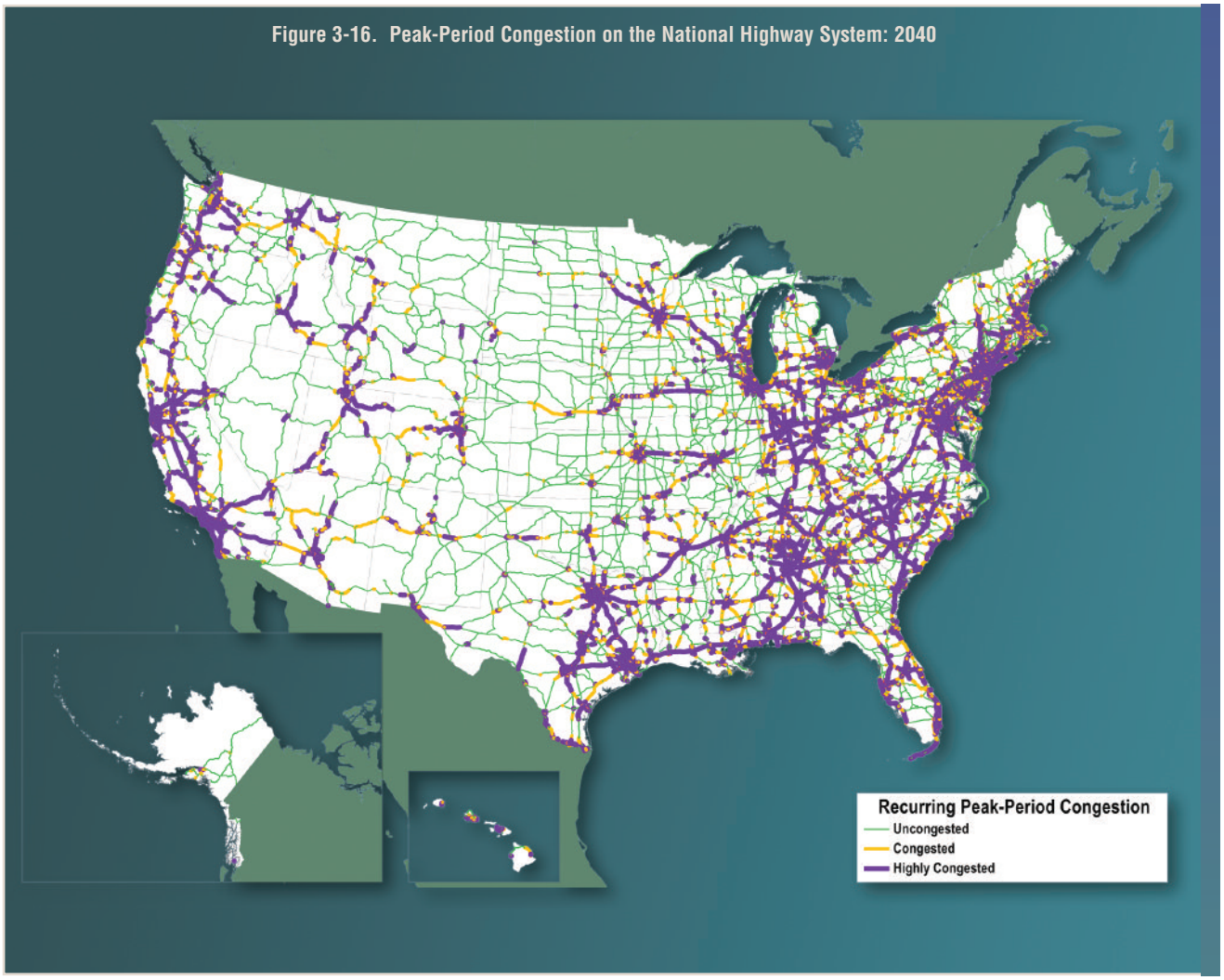
Figure 3-14. Major Truck Routes on the National Highway System: 2040
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

Figure 3-15. Peak-Period Congestion on the National Highway System: 2007



Recurring congestion caused by volumes of passenger vehicles and trucks that exceed capacity on roadways during peak periods is concentrated primarily in major metropolitan areas. In 2007, peak-period congestion resulted in traffic slowing below posted speed limits on 11,700 miles of the NHS and created stop-and-go conditions on an additional 6,700 miles.

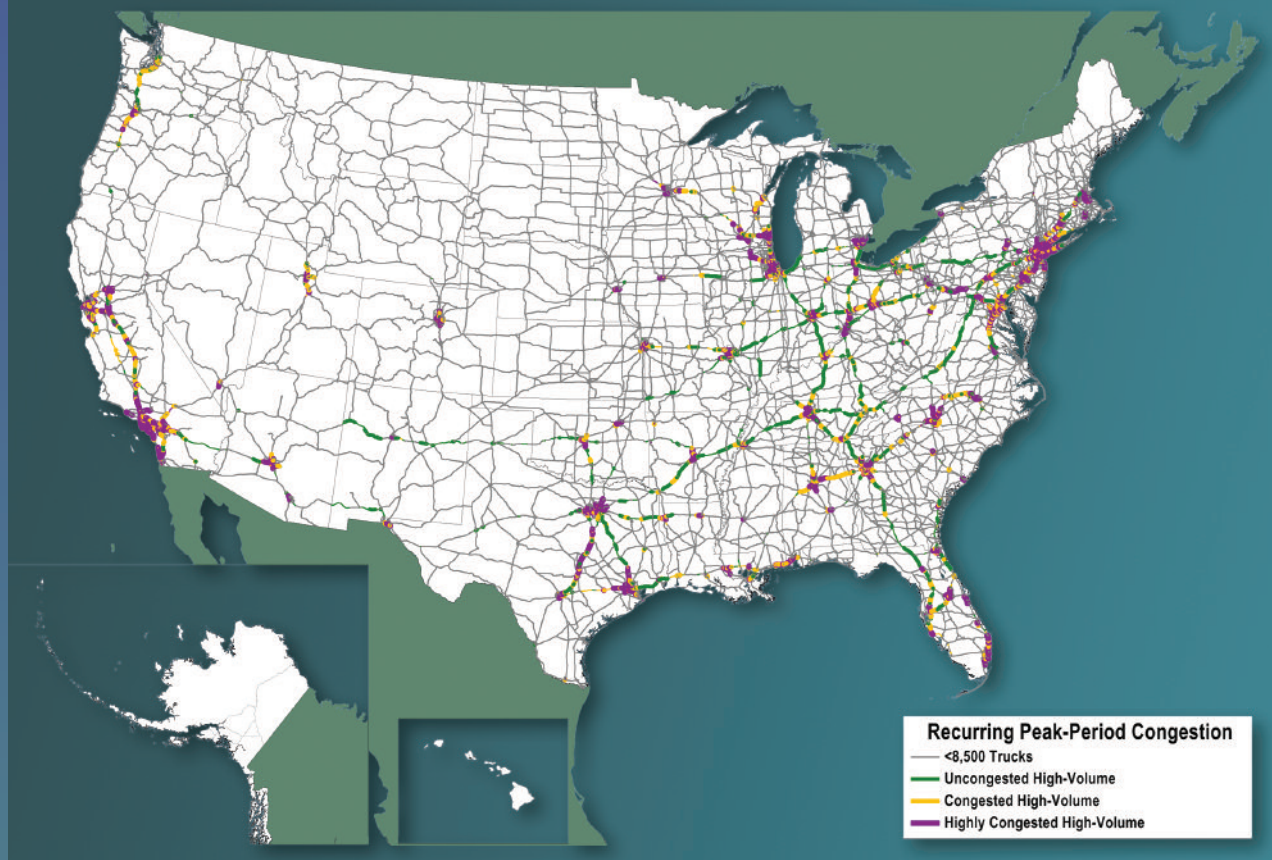
Figure 3-15. Peak-Period Congestion on the National Highway System: 2007
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System, and Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.



Assuming no changes in network capacity, increases in truck and passenger vehicle traffic are forecast to expand areas of recurring peak-period congestion to 37 percent of the NHS in 2040 compared with 11 percent in 2007. This will slow traffic on 21,000 miles of the NHS and create stop-and-go conditions on an additional 40,000 miles.

Figure 3-16. Peak-Period Congestion on the National Highway System: 2040
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System, and Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

Figure 3-17. Peak-Period Congestion on High-Volume Truck Portions of the National Highway System: 2007



Notes: High-volume truck portions of the National Highway System carry more than 8,500 trucks per day, including freight-hauling long-distance trucks, freight-hauling local trucks, and other trucks with six or more tires. Highly congested segments are stop-and-go conditions with volume/service flow rations greater than 0.95. Congested segments have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95. The volume/service flow ratio is estimated using the procedures outlined in the HPMS Field Manual, Appendix N.

Congested highways carrying a large number of trucks substantially impede interstate commerce, and trucks on those segments contribute significantly to congestion. Recurring congestion slows traffic on 4,700 miles and creates stop-and-go conditions on 3,700 miles of the NHS that carry more than 8,500 trucks per day.

Figure 3-17. Peak-Period Congestion on High-Volume Truck Portions of the National Highway System: 2007
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System, and Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

Assuming no change in network capacity, the number of NHS miles with recurring congestion and a large number of trucks is forecast to increase significantly between 2007 and 2040. On highways carrying more than 8,500 trucks per day, recurring congestion will slow traffic on close to 8,100 miles and create stop-and-go conditions on an additional 26,800 miles.

Figure 3-18. Peak-Period Congestion on High-Volume Truck Portions of the National Highway System: 2040

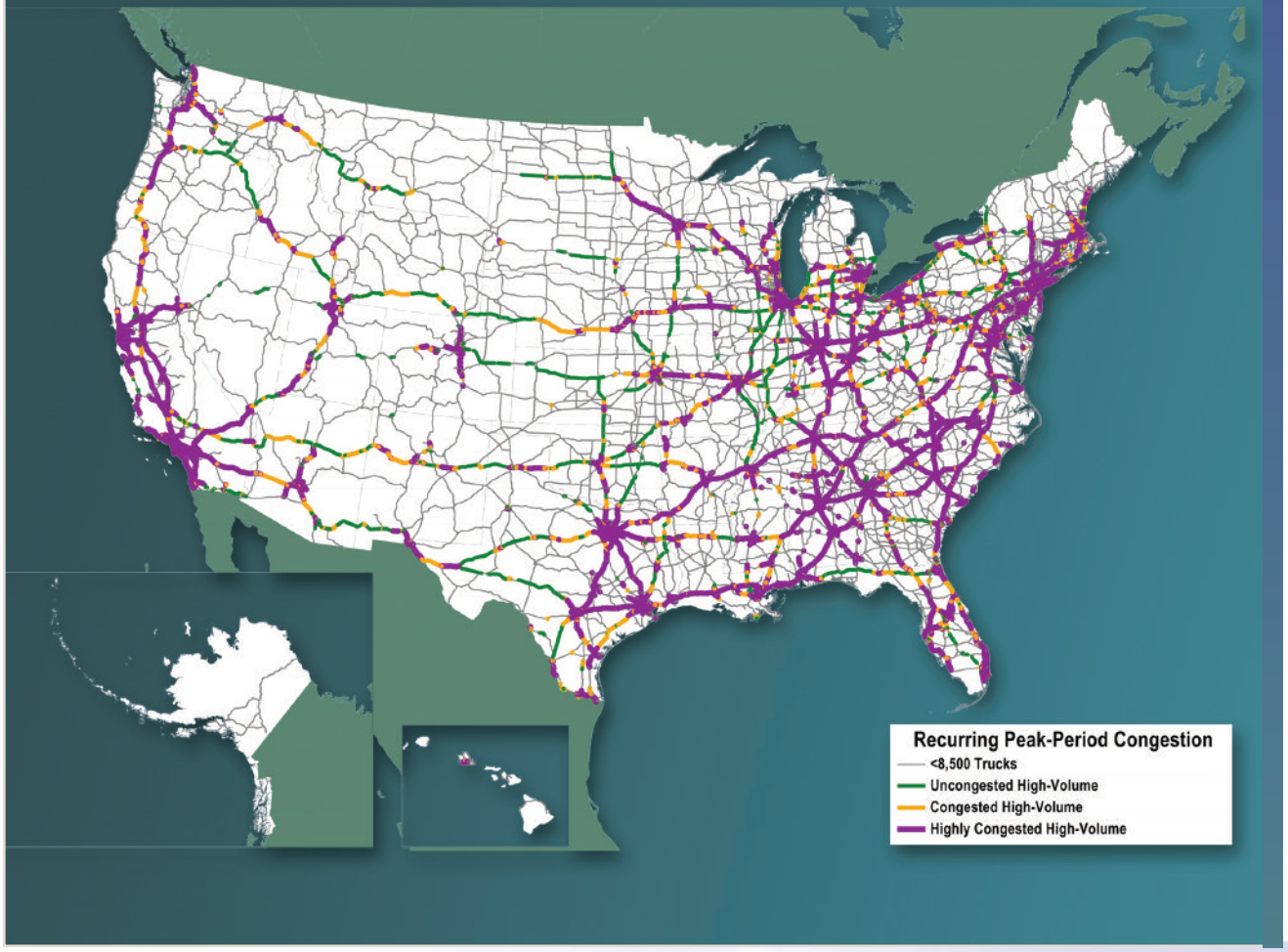
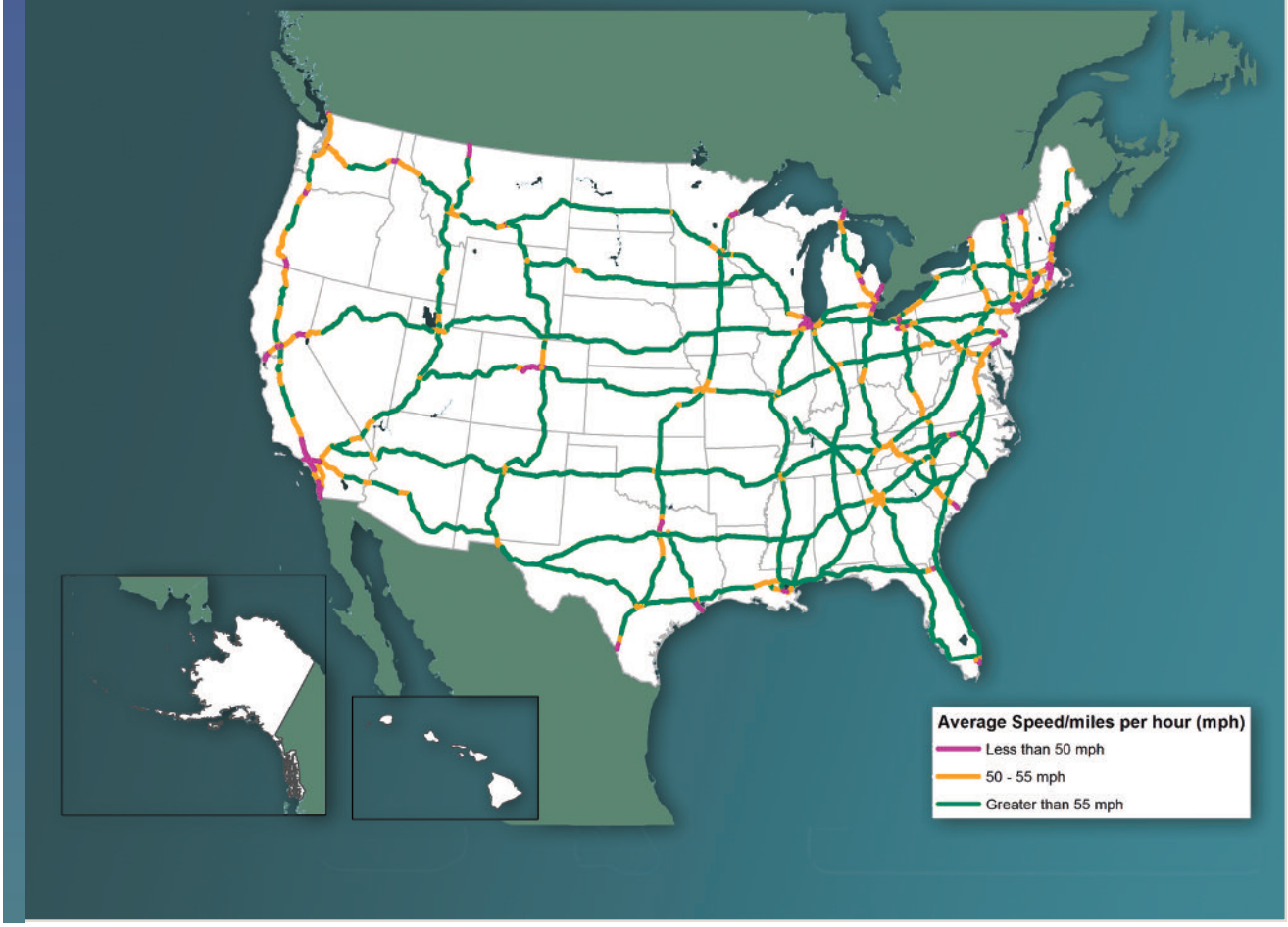


Table 3-18. Peak-Period Congestion on High-Volume Truck Portions of the National Highway System: 2040
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System, and Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

Figure 3-19. Average Truck Speeds on Selected Interstate Highways: 2011



In addition to calculating peak-period congestion from traffic volumes, as shown in other figures, the Federal Highway Administration (FHWA), in cooperation with private industry, measures the speed and travel time reliability of more than 500,000 trucks on 25 freight-significant corridors on an annual basis. Average truck speeds drop below 55 miles per hour (mph) near major urban areas, border crossings and gateways, and in mountainous terrain.

Figure 3-19. Average Truck Speeds on Selected Interstate Highways: 2011
Source: U.S. Department of Transportation, Federal Highway Administration Office of Freight Management and Operations, Freight Performance Measurement Program, 2012.

To better understand the intensity of truck congestion and reliably issues, FHWA combined truck volumes from the Freight Analysis Framework with average truck speeds measured in the Freight Performance Measurement Program. This type of information is useful to private- and public-sector freight stakeholders that wish to better understand the severity of congestion and mobility constraints experienced along the highway transportation system. Many major urban areas have Interstates with significant truck volumes that are experiencing average speeds of less than 55 mph.

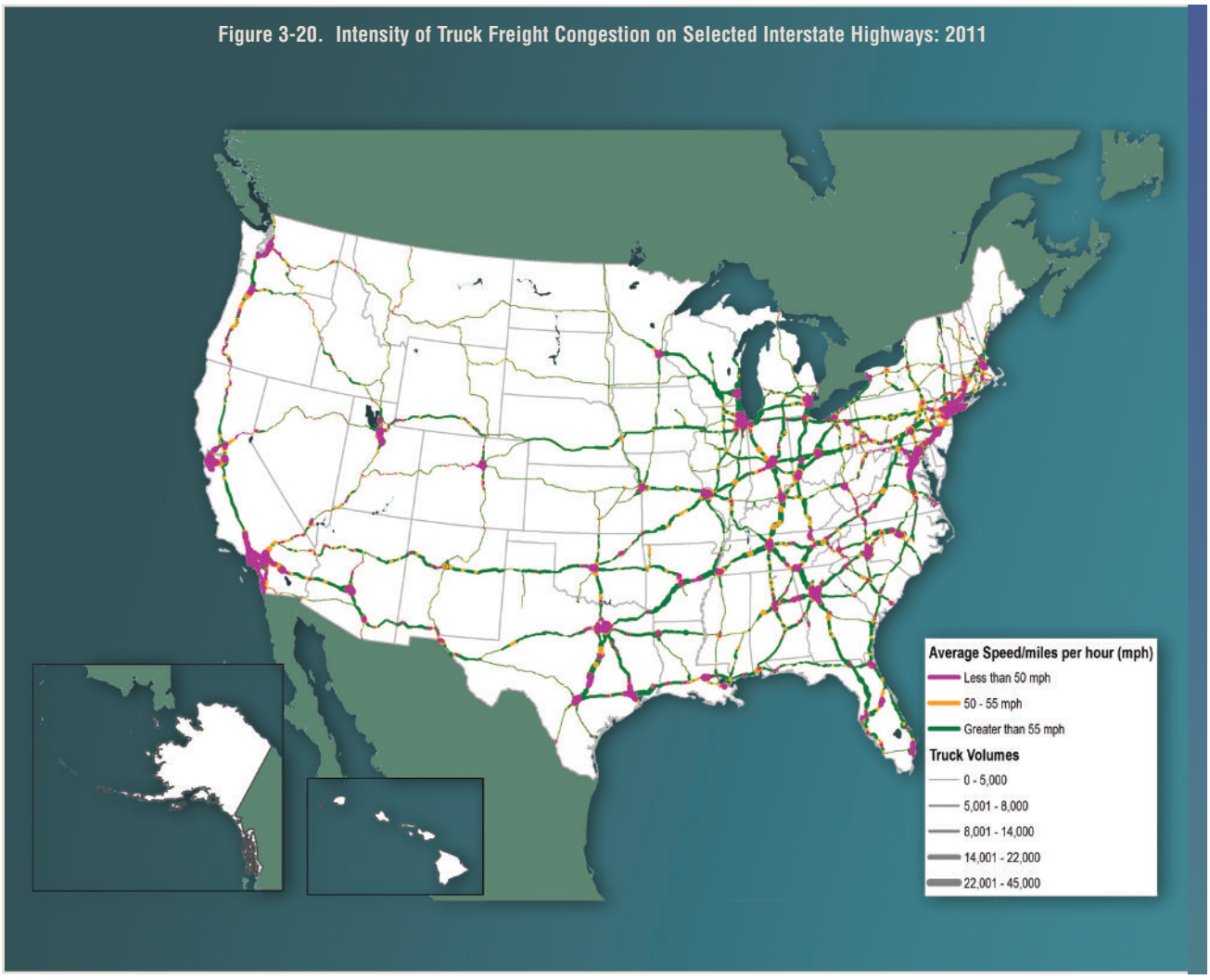


Figure 3-20. Intensity of Truck Freight Congestion on Selected Interstate Highways: 2011
Source: U.S. Department of Transportation, Federal Highway Administration Office of Freight Management and Operations, Freight Performance Measurement Program, 2012.

Table 3-12. Top 25 Truck Bottlenecks on Freight-Significant Highways: 2011

Location	Congestion Ranking	Average Speed (mph)	Peak Period Average Speed (mph)	Non-Peak Period Average Speed (mph)	Non-Peak/ Peak Ratio
Chicago, IL: I-290 at I-90/I-94	1	30.09	22.44	33.01	1.47
Fort Lee, NJ: I-95 at SR-4	2	31.29	23.86	34.76	1.46
Louisville, KY: I-65 at I-64/I-71	3	40.51	31.95	44.84	1.40
Austin , TX: I-35	4	34.87	20.69	43.37	2.10
Atlanta, GA: I-285 at I-85 (North)	5	44.69	33.74	50.20	1.49
Chicago, IL: I-90 at I-94 (North)	6	34.46	21.56	40.41	1.87
Dallas, TX: I-45 at I-30	7	40.50	31.60	44.26	1.40
Los Angeles, CA: SR-60 at SR-57	8	47.38	39.27	50.56	1.29
Cincinnati, OH: I-71 at I-75	9	46.46	37.52	50.18	1.34
Denver, CO: I-70 at I-25	10	42.25	34.40	46.10	1.34
St. Louis, MO: I-70 at I-64 (West)	11	44.21	39.17	46.35	1.18
Indianapolis, IN: I-65 at I-70 North	12	50.69	46.44	52.37	1.13
Atlanta, GA: I-75 at I-285 (North)	13	49.54	40.31	53.56	1.33
Houston, TX: I-610 at US 290	14	47.52	39.18	51.43	1.31
Houston, TX: I-10 at I-45	15	47.58	40.20	50.86	1.27
Ft. Worth, TX: I-35W at I-30	16	45.30	37.48	48.85	1.30
Houston, TX: I-45 at US-59	17	38.49	28.76	43.53	1.51
Nashville, TN: I-24 at I-440N Interchange	18	48.62	39.58	52.79	1.33
Indianapolis, IN: I-65 at I-70 South	19	50.98	47.56	52.28	1.10
Los Angeles, CA: I-710 at I-105	20	45.78	35.88	50.03	1.39
Buffalo-Niagara Falls, NY: I-90 at I-290	21	44.04	40.98	45.51	1.11
Washington , DC: I-495 at I-66	22	38.87	32.26	41.09	1.27
Philadelphia, PA: I-76 at US-30	23	36.14	29.52	38.83	1.32
Dallas, TX: US 75 at I-635	24	46.61	35.82	51.29	1.43
Houston, TX: I-45 at I-610 north	25	48.94	41.60	52.25	1.26

Key: mph = miles per hour.
Notes: FHWA monitors 250 freight-significant highway infrastructure locations on an annual basis. These locations were identified over several years through reviews of past research, available highway speed and volume datasets, and surveys of private- and public-sector stakeholders. FHWA developed a freight congestion index to rank congestion's impact on freight. The index factors in the number of trucks using a particular highway facility and the impact that congestion has on average commercial vehicle speed in each of the 250 study areas. These data represent truck travel during weekdays at all hours of the day in 2011. Average speeds below a free flow of 55 miles per hour indicate congestion.

Truck speed and travel time reliability data can be used to identify and quantify major freight truck chokepoints and bottlenecks along highways that are critical to the Nation's freight transportation system. FHWA developed a freight congestion index that ranks congestion's impact on freight movement. The index factors in both the number of trucks using a particular highway facility and the impact that congestion has on the average speed of those vehicles

On weekdays, average speeds during peak periods (between 6:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 7:00 p.m.) are typically less than those recorded during non-peak

Table 3-12. Top 25 Truck Bottlenecks on Freight-Significant Highways: 2011
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Performance Measurement Program, special tabulation, 2012.

periods. Freight traveling across urban Interstate interchanges is affected to the greatest degree by peak-period congestion. At several locations, congestion affects freight mobility during all hours of the day.

Several monitored locations have recorded significant improvements in performance from 2010 to 2011 when looking at averages over 24 hours.

Table 3-13. Largest Improvements in Average Speed for Congested Freight Highway Locations: 2011

Location	Average Speed (mph)			Peak Period Average Speed (mph)			Non-Peak Period Average Speed (mph)		
	2010	2011	Percent change, 2010 to 2011	2010	2011	Percent change, 2010 to 2011	2010	2011	Percent change, 2010 to 2011
Minneapolis-St. Paul, MN: I-35 W at 62 E-W	40.70	50.13	23.2	33.24	42.76	28.7	44.27	53.83	21.6
Houston, TX: I-10 at US 59	41.01	48.85	19.1	31.02	40.23	29.7	46.41	53.10	14.4
Houston, TX: I-10 at I-45	41.28	47.58	15.3	32.18	40.20	24.9	45.51	50.86	11.7
Chicago, IL: I-290 at I-355	47.66	54.12	13.5	43.17	52.01	20.5	49.48	54.95	11.0
Kansas City, MO: I-70 at I-670 at US71	43.70	48.36	10.7	42.33	46.98	11.0	44.20	48.88	10.6

Key: mph = miles per hour.

Table 3-13. Largest Improvements in Average Speed for Congested Freight Highway Locations: 2011
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Performance Measurement Program, special tabulation, 2012.

Delay, reliability, and similar performance measures are typically based on the difference between speed limits and actual speeds. Speed limits for trucks vary from state to state and differ from limits set for passenger vehicles in nine states.

Table 3-14. Maximum Posted Speed Limits on Rural Interstates: 2012

State	Truck	Car
Alabama	70	70
Alaska	65	65
Arizona	75	75
Arkansas	65	70
California	55	70
Colorado	75	75
Connecticut	65	65
Delaware	65	65
District of Columbia[1]	55	55
Florida	70	70
Georgia	70	70
Hawaii	60	60
Idaho	65	75
Illinois	65	65
Indiana	65	70
Iowa	70	70
Kansas	70	70
Kentucky	65[2]	65[2]
Louisiana	75	75
Maine	75	75
Maryland	65	65
Massachusetts	65	65
Michigan	60	70
Minnesota	70	70
Mississippi	70	70
Missouri	70	70
Montana	65	75
Nebraska	75	75
Nevada	75	75
New Hampshire	65	65
New Jersey	65	65
New Mexico	75	75
New York	65	65
North Carolina	70	70
North Dakota	75	75
Ohio	65	[3]65
Oklahoma	75	75
Oregon	55	65
Pennsylvania	65	65
Rhode Island	65	65
South Carolina	70	70
South Dakota	75	75
Tennessee	70	70
Texas	70[4]	75[4]
Utah	75[5]	75[5]
Vermont	65	65
Virginia	70[6]	70[6]
Washington	60	70
West Virginia	70	70
Wisconsin	65	65
Wyoming	75	75

[1]Urban Interstate.
[2]Effective July 10, 2007, the posted speed limit is 70 miles per hour (mph) in designated areas on I-75 and I-71.
[3]The posted speed limit is 70 mph on the Ohio Turnpike.
[4]In sections of I-10 and I-20 in rural West Texas, the speed limit for passenger cars and light trucks is 80 mph. For large trucks, the speed limit is 70 mph in the daytime and 65 mph at night. For cars, it is also 65 mph at night.
[5]Portions of I-15 have a posted limit of 80 mph.
[6]Effective July 1, 2010, the posted limit may be as high as 70 mph where indicated by lawfully placed signs, erected subsequent to a traffic engineering study.

Table 3-14. Maximum Posted Speed Limits on Rural Interstates: 2012
Source: Insurance Institute for Highway Safety, Maximum Posted Speed Limits for Passenger Vehicles, available at www.iihs.org/laws/speedlimits.aspx as of July 20, 2012.

Analysis has shown truck speed and reliability decrease in urban areas. FHWA uses Freight Performance Measurement Program data to measure truck speeds within 14 very large Census Metropolitan Statistical Areas. In 2011, five of the fourteen metropolitan areas had average truck speeds of less than 50 mph on their Interstates.

Table 3-15. Average Truck Speeds on Selected Metropolitan Interstates: 2011 (miles per hour)

Metropolitan Area	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Atlanta, GA	53.50	53.91	53.78	53.70
Boston, MA	47.36	48.01	47.67	46.85
Chicago, IL	51.40	50.37	50.09	51.46
Dallas, TX	54.89	55.49	55.31	55.41
Detroit, MI	48.46	49.58	49.38	49.21
Houston, TX	53.62	54.16	52.79	53.51
Los Angeles, CA	43.32	43.28	43.10	42.55
Miami, FL	56.98	56.99	57.26	56.78
New York, NY	50.47	50.90	50.37	50.73
Philadelphia, PA	47.05	46.59	47.02	47.26
Phoenix, AZ	57.13	57.01	56.91	57.62
San Francisco, CA	47.57	46.78	46.08	44.46
Seattle, WA	50.91	51.61	51.19	51.39
Washington, DC	54.97	53.94	53.66	54.35

Intercity travel-time reliability is a key freight performance measure. It influences logistics, operational strategies, and load optimization. FHWA analyzed the truck trip reliability of 22 top freight origins and destinations. Travel time between San Diego and Los Angeles

Table 3-16. Truck Trip Reliability as Indicated by Minimum and Maximum Travel Times Between Selected City-Pairs: January-March 2012

LOCATION	Northbound/ Eastbound Minimum	Northbound/ Eastbound Maximum	Maximum/ Minimum Percent Change	Southbound/ Westbound Minimum	Southbound/ Westbound Maximum	Maximum/ Minimum Percent Change
Atlanta, GA - Savannah, GA	3:55:15	4:17:30	9.46	3:56:00	4:13:33	7.44
Chicago, IL - Milwaukee, WI	1:31:00	1:54:06	25.38	1:31:00	2:22:21	56.43
Chicago, IL - Nashville, TN	7:37:53	8:07:31	6.47	7:39:03	8:09:19	6.59
Detroit, MI - Grand Rapids, MI	2:31:33	2:48:19	11.06	2:32:56	2:44:07	7.31
Houston, TX - Beaumont, TX	1:23:44	1:31:59	9.85	1:24:12	1:35:18	13.18
Houston, TX - Dallas, TX	3:42:40	4:17:48	15.78	3:43:07	4:13:14	13.50
Houston, TX - San Antonio, TX	3:06:17	3:37:32	16.78	3:06:01	3:34:27	15.29
Indianapolis, IN - Chicago, IL	3:01:07	3:23:58	12.62	3:01:12	3:25:36	13.47
Las Vegas, NV - Los Angeles, CA	4:14:04	5:18:51	25.50	4:13:51	4:46:54	13.02
Los Angeles, CA - San Francisco, CA	6:54:12	7:36:33	10.22	6:53:14	7:54:08	14.74
Miami, FL - Tampa, FL	4:30:59	5:36:42	24.25	4:33:44	5:08:28	12.69
Nashville, TN - Indianapolis, IN	4:36:32	4:59:56	8.46	4:37:15	5:06:23	10.51
New York, NY - Albany, NY	2:34:48	3:09:27	22.38	2:34:32	2:49:02	9.38
New York, NY - Buffalo, NY	7:07:44	7:24:49	3.99	7:08:00	7:47:03	9.12
New York, NY - Hartford, CT	1:53:03	2:35:56	37.93	1:51:13	2:29:56	34.81
Philadelphia, PA - New York, NY	1:48:39	2:30:31	38.53	1:50:40	2:38:12	42.95
Phoenix, AZ - Los Angeles, CA	6:13:09	7:11:22	15.60	6:18:12	6:56:05	10.02
Phoenix, AZ - Tucson, AZ	1:48:52	2:07:09	16.79	1:48:52	2:15:31	24.48
San Antonio, TX - Austin, TX	1:26:00	2:08:40	49.61	1:21:13	1:38:21	21.10
San Diego, CA - Los Angeles, CA	1:31:38	2:21:38	54.57	1:30:44	2:50:54	88.35
San Francisco, CA - Sacramento, CA	1:34:30	2:32:00	60.85	1:32:39	2:04:12	34.05
Seattle, WA - Portland, OR	2:54:37	3:30:49	20.73	2:53:40	3:30:53	21.43
Tampa, FL - Orlando, FL	1:21:05	1:41:19	24.95	1:21:05	1:51:24	37.39
Washington, DC - Baltimore, MD	0:52:40	1:10:41	34.21	0:53:25	1:13:00	36.66

Notes: Travel times are shown in hours, minutes, and seconds. The trip times were calculated between city centers using Interstate average travel speed data from the Freight Performance Measurement Program.

Table 3-15. Average Truck Speeds on Selected Metropolitan Interstates: 2011
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Performance Measurement Program, 2012.

Table 3-16. Truck Trip Reliability as Indicated by Minimum and Maximum Travel Times Between Selected City-Pairs: January-March 2012
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Performance Measurement Program, special tabulation, 2012.

Table 3-17. Average Time for Commercial Vehicles to Travel a Mile at Selected U.S.-Canada Border Crossings: 2011

Location	Direction	Average Minutes per Mile
Ambassador Bridge - Detroit, MI	Inbound	6.16
	Outbound	4.22
Port Huron, MI	Inbound	5.58
	Outbound	4.19
Peace Bridge - Buffalo, NY	Inbound	5.34
	Outbound	4.83
Lewiston-Queenston Bridge - Lewiston, NY	Inbound	4.63
	Outbound	4.46
Champlain, NY	Inbound	4.94
	Outbound	3.68
Blaine, WA	Inbound	7.75
	Outbound	6.52
Alexandria Bay, NY	Inbound	5.28
	Outbound	4.02
Pembina, ND	Inbound	5.73
	Outbound	4.62
Derby, VT	Inbound	4.63
	Outbound	3.54
Calais, ME	Inbound	5.55
	Outbound	3.77
Sumas, WA	Inbound	6.56
	Outbound	5.13
Highgate, VT	Inbound	3.58
	Outbound	2.82
Houlton, ME	Inbound	4.72
	Outbound	2.98
Sweetgrass, MT	Inbound	9.26
	Outbound	7.41
Jackman, ME	Inbound	2.85
	Outbound	3.43

Note: Travel times are shown in hours, minutes, and seconds. The trip times were calculated between city centers using Interstate average travel speed data from the Freight Performance Measurement Program.

showed the greatest change, increasing nearly 55 minutes in the northbound direction and more than 88 minutes in the southbound direction. Other city pairs also showed large differences in travel-time reliability.

Border crossings are potential bottlenecks in the freight transportation network. FHWA monitors truck crossing times at 15 U.S.-Canada border crossings. At all but two borders, transit times were longer for inbound U.S. traffic than for travel to Canada.

The U.S. Department of Transportation in partnership with the Texas Department of Transportation also measures transit times from Mexico to the Unites States at the Bridge

Table 3-17. Average Time for Commercial Vehicles to Travel a Mile at Selected U.S.-Canada Border Crossings: 2011
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, 2012.

of the Americas and the Pharr-Reynosa International Bridge. The data are collected using radio frequency identification technology installed at the start of the crossing (typically the end of the queue) and at the vehicle safety inspection station exit (the end of the crossing trip). Vehicle identification information is anonymously collected and time-stamped at each reader station, and travel time is calculated between the reader stations.

Table 3-18. Average Truck Transit Time at Selected U.S.-Mexico Border Crossings: 2011

Month	Bridge of the Americas - El Paso, Texas (minutes)	International Bridge - Pharr, Texas (minutes)
January	55	57
February	48	66
March	64	73
April	60	65
May	57	63
June	45	60
July	47	52
August	40	53
September	40	47
October	49	50
November	46	58
December	49	52

Table 3-18. Average Truck Transit Time at Selected U.S.-Mexico Border Crossings: 2011
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations; U.S. Department of Transportation, Intelligent Transportation Systems Joint Program Office; and Texas Department of Transportation, 2012.