

TABLE 2-1M. SHIPMENTS BY MODE AND WEIGHT: 2002 AND 2035 (MILLIONS OF METRIC TONNES)

		200	02		2035			
	Total	Domestic	Exports ³	Imports ³	Total	Domestic	Exports ³	Imports ³
Total	(P) 17,532	16,030	(P) 475	(P) 1,028	(P) 33,727	30,543	(P) 1,002	(P) 2,181
Truck	10,468	10,284	96	88	20,697	20,168	238	291
Rail	1,704	1,605	29	71	3,198	2,987	52	160
Water	636	539	57	40	945	793	103	49
Air, air & truck	(P) 9	3	(P) 13	(P) 4	(P) 24	9	(P) 16	(P) 9
Intermodal ¹	1,172	178	287	707	2,357	303	599	1,455
Pipeline & unknown ²	3,543	3,421	4	118	6,506	6,284	5	218

Key: P = preliminary.

Note: Numbers may not add to total due to rounding.

TABLE 2-3M. TOP COMMODITIES: 2002

Metric Tonnes (n	nillions)	Value (\$ billi	ons)
Total	(P) 17,532	Total	(P) 13,120
Coal n.e.c. ¹	2,437	Machinery	1,866
Gravel	1,858	Electronics	948
Cereal grains	1,207	Mixed freight	944
Crude petroleum	1,165	Motorized vehicles	855
Coal	1,144	Coal n.e.c. ¹	729
Nonmetal min. prods. ²	1,032	Textiles/leather	545
Gasoline	989	Pharmaceuticals	519
Waste/scrap	840	Unknown	458
Fuel oils	508	Chemical prods.	444
Natural sands	505	Misc. mfg. prods.	411

Key: P = preliminary.

'Natural gas, selected coal products, and products of petroleum refining, excluding gasoline, aviation fuel, and fuel oil.

²Nonmetallic mineral products.

Table 2-1M. Shipments by Mode and Weight: 2002 and 2035 (Millions of Metric Tonnes)

Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, 2006.

¹Intermodal includes U.S. Postal Service and courier shipments and all intermodal combinations, except air and truck.

² Pipeline and unknown shipments are combined because data on region-to-region flows by pipeline are statistically uncertain.

³ Data do not include imports and exports that pass through the United States from a foreign origin to a foreign destination by any mode.

Table 2-4M. Domestic Mode of International Shipments by Weight and Value: 2002 and 2035

	Metric Tonne	es (millions)	Value (\$ billions)		
	2002	2035	2002	2035	
Total	(P) 1,503	(P) 3,184	(P) 2,037	(P) 8,807	
Truck ¹	723	1,919	1,198	6,193	
Rail	181	360	114	275	
Water	97	152	26	49	
Air, air & truck ²	(P) 7	(P) 17	(P) 506	(P) 1,772	
Intermodal ³	20	46	52	281	
Pipeline & unknown ⁴	475	689	141	238	

Key: P = preliminary.

Note: Numbers may not add to total due to rounding. 1 ton = 0.91 metric tonne.

TABLE 2-6M. U.S. MERCHANDISE TRADE WITH CANADA AND MEXICO BY TRANSPORTATION MODE

	1	998	2	000	2004		2	005 ¹
		Weight		Weight		Weight		Weight
	Value	(millions of						
Mode	(\$ billions)	metric tonnes)						
Truck	350	NA	429	NA	453	NA	491	173
Rail	68	NA	94	NA	108	NA	116	128
Air	30	<1	45	<1	32	<1	33	<1
Water	21	166	33	176	46	222	58	232
Pipeline	11	NA	24	NA	39	NA	52	78
Other	23	NA	29	NA	34	NA	39	5
Total	503	NA	653	477	712	NA	790	616

Key: NA = not available.

'2005 data are from the U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, North American Freight Transportation (Washington, DC: 2003), tables A-1 and A-2, available at www.bts.gov as of August 12, 2006.

Notes: Individual modal totals may not sum to exact totals due to rounding. 1 ton = 0.91 metric tonne. For value, "Other" is the difference between the total and the sum of the individual modes.



¹Excludes truck moves to and from airports.

²Includes truck moves to and from airports.

³Intermodal includes U.S. Postal Service and courier shipments and all

intermodal combinations, except air and truck.

⁴Pipeline and unknown shipments are combined because data on region-to-region flows by pipeline are statistically uncertain.

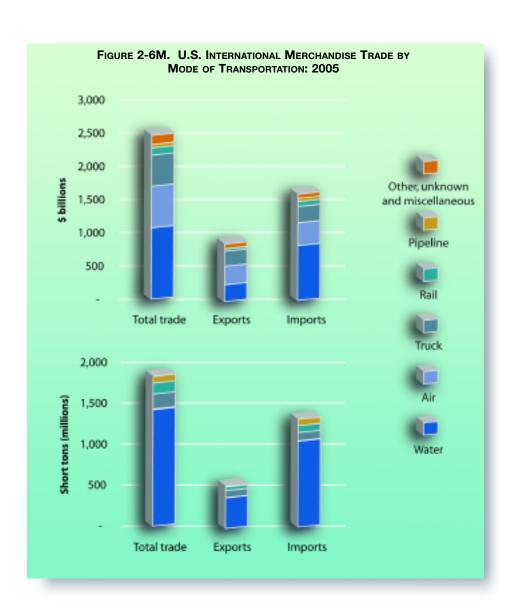


FIGURE 2-6M. U.S. INTERNATIONAL MERCHANDISE TRADE BY MODE OF TRANSPORTATION: 2005
Source: Compiled by U.S. Department of Transportation (USDOT), Research and Innovative Technology
Administration (RITA), Bureau of Transportation Statistics (BTS), August 2006. Water and air data—U.S. Department of Commerce, U.S. Census Bureau, Foreign Trade Division, U.S. Exports of Merchandise and U.S. Imports of Merchandise, December 2005. Total, truck, rail, pipeline, other and unknown data—USDOT, RITA, BTS, Transborder Freight Data 2005; and special calculation, August 2006.

TABLE 2-12M. TOP 25 AIRPORTS BY LANDED WEIGHT OF ALL-CARGO OPERATIONS¹

		Landed weight				
	2004	(thousands of metric tonnes))
Airport	Rank	2000	2001	2002	2003	2004
Anchorage, AK (Ted Stevens Anchorage International) ²	1	7,333	7,055	8,159	8,171	8,931
Memphis, TN (Memphis International)	2	5,732	6,228	8,007	7,947	8,061
Louisville, KY (Louisville International-Standiford Field)	3	3,617	3,653	3,812	3,785	3,981
Miami, FL (Miami International)	4	2,657	2,771	2,879	2,938	3,106
Los Angeles, CA (Los Angeles International)	5	2,624	2,657	2,756	2,830	2,778
New York, NY (John F. Kennedy International)	6	2,534	2,307	2,642	2,664	2,629
Chicago, IL (O'Hare International)	7	1,870	1,825	2,011	2,133	2,140
Indianapolis, IN (Indianapolis International)	8	2,616	2,862	2,121	2,065	2,099
Newark, NJ (Newark Liberty International)	9	1,779	1,628	1,595	1,664	1,601
Oakland, CA (Metropolitan Oakland International)	10	1,643	1,487	1,584	1,537	1,545
Fort Worth, TX (Dallas/Fort Worth International)	11	1,534	1,402	1,343	1,344	1,298
Philadelphia, PA (Philadelphia International)	12	1,319	1,318	1,330	1,238	1,244
Ontario, CA (Ontario International)	13	1,107	1,172	1,310	1,213	1,203
Atlanta, GA (William B. Hartsfield International)	14	989	946	1,058	1,083	1,055
Covington/Cincinnati, OH (Cincinnati/Northern Kentucky International)	15	828	889	946	996	1,035
Honolulu, HI (Honolulu International)	16	628	716	880	923	880
Phoenix, AZ (Sky Harbor International)	17	835	760	787	707	727
Dayton, OH (James M. Cox Dayton International)	18	2,026	1,310	814	712	714
Denver, CO (Denver International)	19	817	729	710	678	692
San Francisco, CA (San Francisco International)	20	1,149	918	939	1,089	671
Portland, OR (Portland International)	21	800	732	740	679	651
Houston, TX (George Bush Intercontinental)	22	435	420	437	604	632
Minneapolis, MN (Minneapolis-St Paul International/Wold Chamberlain)	23	564	532	564	624	615
Rockford, IL (Greater Rockford)	24	593	618	572	567	614
Salt Lake City, UT (Salt Lake City International)	25	682	550	529	544	563
Top 25 airports ³		47,519	45,995	48,936	48,940	49,465
United States, all airports ⁴		67,806	64,810	66,617	66,290	67,401
Top 25 as % of U.S. total		70.1%	71.0%	73.5%	73.8%	73.4%

^{&#}x27;All-Cargo operations are operations dedicated to the exclusive transportation of cargo. This does not include aircraft carrying passengers that may also be carrying cargo. Aircraft landed weight is the certificated maximum gross landed weight of the aircraft as specified by the aircraft manufacturers.

Note: 1 short ton = 0.91 metric tonne.



Landed weight

²Anchorage includes a large proportion of all-cargo operations in-transit.

³Represents top 25 airports in the reference year not necessarily the airports shown here.

⁴Limited to airports with an aggregate landed weight in excess of 45,360 metric tonnes (50,000 short tons) annually.

TABLE 2-13M. U.S. HAZARDOUS MATERIALS SHIPMENTS BY TRANSPORTATION MODE: 2002

							Average
	Valu	e	Metric to	onnes	Tonne-kilo	kilometers per	
Transportation mode	\$ Billion	Percent	(Millions)	Percent	(Billions)	Percent	shipment
TOTAL all modes	660.2	100.0	1,988.1	100.0	477.0	100.0	219
Single modes, total	644.5	97.6	1,958.2	98.5	455.4	95.5	169
Truck ¹	419.6	63.6	1,051.9	52.9	160.8	33.7	138
For-hire	189.8	28.8	407.8	20.5	95.1	19.9	459
Private ²	226.7	34.3	637.0	32.0	64.4	13.5	61
Rail	31.3	4.7	99.2	5.0	105.2	22.1	1,118
Water	46.9	7.1	207.0	10.4	103.1	21.6	S
Air	1.6	0.2	0.1	Z	0.1	Z	3,347
Pipeline ³	145.0	22.0	600.0	30.2	S	S	S
Multiple modes, total	9.6	1.5	17.0	0.9	18.2	3.8	1,366
Parcel, U.S. Postal Service or courier	4.3	0.6	0.2	Z	0.2	Z	1,347
Other	5.4	0.8	16.8	0.8	18.1	3.8	2,206
Unknown and other modes, total	6.1	0.9	12.9	0.6	3.4	0.7	92

Key: S = data are not published because of high sampling variability or other reasons; Z = zero or less than 1 unit of measure.

Truck as a single mode includes shipments that went by private truck only, for-hire truck only, or a combination of both.

Note: 1 ton = 0.91 metric tonne; 1 ton-mile = 1.46 tonne-kilometer.

TABLE 2-14M. U.S. HAZARDOUS MATERIALS SHIPMENTS BY HAZARD CLASS: 2002

		Value		Metric tonnes		Tonne-kilo	meters
Hazard Class	Description	\$ Billions	Percent	Millions	Percent	Billions	Percent
Class 1	Explosives	7.9	1.2	4.5	0.2	2.3	0.5
Class 2	Gases	73.9	11.2	193.6	9.7	54.4	11.4
Class 3	Flammable liquids	490.2	74.3	1,622.9	81.6	319.1	66.9
Class 4	Flammable solids	6.6	1.0	10.3	0.5	6.4	1.3
Class 5	Oxidizers and organic peroxides	5.5	0.8	11.5	0.6	6.2	1.3
Class 6	Toxics	8.3	1.3	7.7	0.4	6.2	1.3
Class 7	Radioactive materials	5.9	0.9	0.1	0.003	0.1	0.01
Class 8	Corrosive materials	38.3	5.8	82.3	4.1	52.9	11.1
Class 9	Miscellaneous dangerous goods	23.6	3.6	55.4	2.8	29.4	6.2
Total		660.2	100.0	1,988.1	100.0	477.0	100.0

Note: 1 ton = 0.91 metric tonne; 1 ton-mile = 1.46 tonne-kilometer.

TABLE 2-13M. U.S. HAZARDOUS MATERIALS SHIPMENTS BY TRANSPORTATION MODE: 2002
Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, U.S. Department of Commerce, U.S. Census Bureau, 2002 Economic Census, Transportation, 2002 Commodity Flow Survey, Hazardous Materials (Washington, DC: December 2004), table 1a.

TABLE 2-14M. U.S. HAZARDOUS MATERIALS SHIPMENTS BY HAZARD CLASS: 2002

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics and U.S. Department of Commerce, Census Bureau, 2002 Economic Census, Transportation, 2002 Commodity Flow Survey, Hazardous Materials (Washington, DC: December 2004), table 2a.

Private truck refers to a truck operated by a temporary or permanent employee of an establishment or the buyer/receiver of the shipment. Excludes most shipments of crude oil.



TABLE 3-1M. KILOMETERS OF INFRASTRUCTURE BY TRANSPORTATION MODE

					Percent
	1980	1990	2000	2004	change, 1980-2004
Public roads, route kilometers	6,211,806	6,223,214	6,358,681	6,433,291	3.6
National Highway System (NHS)	N	N	259,409	260,968	N
Interstates	66,176	72,540	75,113	75,377	13.9
Other NHS	N	N	184,296	185,591	N
Freight intermodal connectors 1	N	N	N	NA	N
Other	N	N	6,099,272	6,172,322	N
Strategic Highway Corridor Network (STRAHNET)	N	N	99,886	100,193	N
Interstate	N	N	75,116	75,377	N
Non-Interstate	N	N	24,766	24,816	N
Railroad	294,634 ²	283,098	274,412	225,704	-23.4
Class I	NA	214,347	194,082	156,905	NA
Regional	NA	29,572	33,761	25,172	NA
Local	NA	39,167	46,570	43,628	NA
Inland waterways					
Navigable channels	17,703	17,703	17,703	17,703	0.0
Great Lakes-St. Lawrence Seaway	3,769	3,769	3,769	3,769	0.0
Pipelines					
Oil	351,469	335,954	284,847	NA	NA
Gas	1,692,666	1,913,832	2,203,675	2,353,344	39.0

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

Note: 1 mile = 1.61 kilometers.

TABLE 3-1M. KILOMETERS OF INFRASTRUCTURE BY TRANSPORTATION MODE

Sources: Public roads: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, (Washington, DC: Annual issues), table HM-16.

Freight intermodal connectors: U.S. Department of Transportation, Federal Highway Administration, Office of Planning, National Highway System Intermodal Connectors, available at

http://www.fhwa.dot.gov/hep10/nhs/intermodalconnectors/index.html as of July 5, 2005.

Rail: Association of American Railroads, Railroad Facts (Washington, DC: various issues).

Navigable channels: U.S. Army Corps of Engineers.

Great Lakes-St. Lawrence Seaway: Great Lakes-St. Lawrence Seaway System, "Seaway Facts," available at http://www.greatlakes-seaway.com/en/aboutus/seawayfacts.html as of Jan. 26, 2006.

Oil pipelines: 1980-2002: Eno Transportation Foundation, *Transportation in America, 2002* (Washington, DC: 2002). 2003: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Office of Pipeline Safety, Pipeline Statistics, Internet site http://ops.dot.gov/stats/lpo.htm as of July 5, 2005.

Gas pipelines: American Gas Association, Gas Facts (Arlington, VA: Annual issues).]

¹Excludes intermodal connectors serving intercity bus, Amtrak, and public transit facilities.

²Excludes Class III railroads.



TABLE 3-3M. TRUCK-KILOMETERS BY PRODUCTS CARRIED: 20021

Products carried	Millions of kilometers
Total ²	233,632
Animals and fish, live	1,182
Animal feed and products of animal origin	3,360
Grains, cereal	2,202
All other agricultural products	4,283
Basic chemicals	1,410
Fertilizers and fertilizer materials	2,681
Pharmaceutical products	491
All other chemical products and preparations	2,174
Alcoholic beverages	1,808
Bakery and milled grain products	5,717
Meat, seafood, and their preparations	4,918
Tobacco products	717
All other products foodstuff	11,954
Logs and other wood in the rough	1,849
Paper or paperboard articles	5,053
Printed products	1,231
Pulp, newsprint, paper, paperboard	3,115
Wood products	5,731
Articles of base metal	5,301
Base metal in primary or semifinished forms	4,637
Nometallic mineral products	4,906
Tools, nonpowered	12,487
Tools, powered	10,425
Electronic and other electrical equipment	4,866
Furniture, mattresses, lamps, etc.	3,288
Machinery	5,190
Miscellaneous manufactured products	6,449
Precision instruments and apparatus	1,181
Textile, leather, and related articles	2,475
Vehicles, including parts	6,186
All other transportation equipment	1,024
Coal	484
Crude petroleum	212
Gravel or rushed stone	4,490
Metallic ores and concentrates	73
Monumental or building stone	744
Natural sands	1,753
All other nonmetallic minerals	802
Fuel oils	1,983
Gasoline and aviation turbine fuel	
Plastic and rubber	1,366
All other coal and refined petroleum products	3,851 1,886
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Hazardous waste (EPA manifest)	306
All other waste and scrape (non-EPA manifest)	4,261
Recyclable products Mail and courier parcels	1,484
	7,660
Empty shipping containers	1,278
Passengers Mixed freight	440
Mixed freight	23,591
Products, equipment, or materials not elsewhere classified	426
Products not specified	10,232
Not applicable ³	241
No product carried	46,634

¹ Excludes pickups, panels, minivans, sport utilities, and station wagons.

Note: 1 mile = 1.61 kilometers

Table 3-3M. Truck-Kilometers by Products Carried: 2002 Source: U.S. Department of Commerce, U.S.

Census Bureau, Vehicle Inventory and Use Survey 2002: United States (Washington, DC: 2004), available at http://www.census.gov/svsd/www/02vehinv.html as of July 6, 2005.

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 respondent had partial-year ownership of the vehicle, annual miles were adjusted to reflect miles traveled when not owned by the respondent.

TABLE 3-4M. NUMBER AND VEHICLE-KILOMETERS TRAVELED (VKT) OF TRUCKS BY AVERAGE WEIGHT (INCLUDING VEHICLE AND LOAD)1

Percent change. 1997 1987-2002 1987 1992 2002 Average weight Number Number VKT VKT Number VKT Number VKT (kilograms) (millions) (thousands) (millions) (thousands) (millions) (thousands) (millions) VKT (thousands) Number **Total** 3,624 144,796 4,008 168,960 4,701 237,983 5,415 234,359 49 62 **Light-heavy** 1,030 17,329 1,259 22,551 1,436 31,890 1,914 42,254 86 144 4,536 to 6,350 525 8,754 694 12,875 819 18,510 1,142 24,440 118 179 6,351 to 7,257 242 4,407 282 4,791 316 6,359 396 9,508 64 116 7,258 to 8,845 4,168 282 4,885 8,306 43 263 301 7.021 376 99 Medium-heavy 766 12,200 732 13,104 729 16,302 910 18,935 19 55 910 8,846 to 11,793 766 12,200 732 13,104 729 16,302 18,935 19 55 Heavy-heavy 1,829 115,266 2,017 133,305 2,536 189,791 2,591 173,169 42 50 11.794 to 14.969 377 8,708 387 9,163 428 11,414 437 9,407 16 8 14,969 to 18,144 209 6,619 233 8,505 257 10,612 229 6,067 10 -8 18,144 to 22,680 292 12,271 339 15,485 400 21,047 318 10,779 9 -12 22,680 to 27,216 11,518 227 13,999 14,404 74 25 188 311 20.362 327 27,216 to 36,287 723 73,127 781 82,147 1,070 120,256 1,179 124,707 63 71 36,288 to 45,359 144 28 2,018 33 2.460 46 3,906 69 4,747 135 45,360 to 58,967 8 708 12 1,181 18 1,691 26 2,528 238 257 58,967 or more 502 4 298 5 365 6 6 530 43 78

Notes: Weight includes the empty weight of the vehicle plus the average weight of the load carried; 1 mile = 1.61 kilometers; 1 pound = 0.45 kilogram.

	1980	1990	2000	2003	2004
Highway					
Gasoline, diesel and other fuels (million liters)	435,171	494,962	615,338	(R) 643,781	657,715
Truck, total	75,557	92,705	133,356	(R) 123,737	128,585
Single-unit 2-axle 6-tire or more truck	26,206	31,635	36,200	(R) 33,616	35,064
Combination truck	49,350	61,070	97,156	(R) 90,120	93,520
Truck (percent of total)	17.4	18.7	21.7	(R) 19.2	19.6
Rail, Class I (in freight service)					
Distillate / diesel fuel (million liters)	14,778	11,792	14,006	14,483	15,365
Water					
Residual fuel oil (million liters)	33,887	23,947	24,264	14,665	17,754
Distillate / diesel fuel oil (million liters)	5,595	7,817	8,559	8,392	8,101
Gasoline (million liters)	3,982	4,921	4,255	4,192	3,804
Pipeline					
Natural gas (million cubic meters)	17,970	18,684	18,185	(R) 16,749	16,193

Key: R = revised.

Note: 1 gallon = 3.8 liters; 1 cubic foot = 0.03 cubic meters.

TABLE 3-4M. NUMBER AND VEHICLE-KILOMETERS TRAVELED (VKT) OF TRUCKS BY AVERAGE WEIGHT (INCLUDING VEHICLE AND LOAD)1

Sources: U.S. Department of Commerce, Census Bureau, 2002 Vehicle Inventory and Use Survey: United States (Washington, DC: 2004), available at http://www.census.gov/svsd/www/02vehinv.html as of July 1, 2005; U.S. Department of Commerce, Census Bureau, 1992 Truck Inventory and Use Survey: United States (Washington, DC: 1995), available at http://www.census.gov/econ/www/viusmain.html as of July 1, 2004.

Table 5-7M. Fuel Consumption by Transportation Mode

Sources: Highway: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2004* (Washington, DC: 2005), table VM-1 and similar tables in earlier editions.

Rail: Association of American Railroads, Railroad Facts (Washington, DC: November 2005), p. 40.

Water: U.S. Department of Energy, Energy Information Administration, *Fuel Oil and Kerosene Sales 2004* (Washington, DC: 2005), tables 2, 4, and similar tables in earlier editions.

Pipeline: U.S. Department of Energy, Natural Gas Annual 2004, DOE/EIA-0131(04) (Washington, DC: December 2005), table 15 and similar tables in earlier editions.

¹Excludes trucks with an average weight of 10,000 pounds or less.

Table 5-8M. Single-Unit 2-Axle 6-Tire or More Truck Fuel Consumption and Travel

	1980	1990	2000	2003	2004
Number registered (thousands)	4,374	4,487	5,926	(R) 5,849	6,161
Vehicle-Kilometers (millions)	64,073	83,527	113,459	(R) 125,138	130,529
Fuel consumed (million liters)	26,206	31,635	36,200	(R) 33,616	35,064
Average kilometers traveled per vehicle	14,649	18,615	19,146	(R) 21,396	21,186
Average kilometers traveled per liter	2.4	2.6	3.1	(R) 3.7	3.7
Average fuel consumed per vehicle (liter)	5,992	7,050	6,109	(R) 5,748	5,691

Key: R = revised.

Note: 1 mile = 1.61 kilometers; 1 gallon = 3.8 liters.

TABLE 5-9M. COMBINATION TRUCK FUEL CONSUMPTION AND TRAVEL

	1980	1990	2000	2003	2004
Number registered (thousands)	1,417	1,709	2,097	(R) 1,908	2,010
Vehicle-kilometers traveled (millions)	110,527	151,827	217,294	(R) 225,566	233,995
Fuel consumed (million liters)	49,350	61,070	97,155	(R) 90,151	93,520
Average kilometers traveled per vehicle	78,008	88,845	103,640	(R) 118,198	116,396
Average kilometers traveled per liter	2.2	2.5	2.2	(R) 2.5	2.5
Average fuel consumed per vehicle (liters)	34,831	35,737	46,339	(R) 47,240	46,520

Key: R = revised.

Note: 1 mile = 1.61 kilometers; 1 gallon = 3.8 liters.



TABLE 5-9M. COMBINATION TRUCK FUEL CONSUMPTION AND TRAVEL

Source: U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2004 (Washington, DC: 2005), table VM-1 and similar tables in earlier editions.