



U.S. Department of Transportation
Bureau of Transportation Statistics

Transportation in the United States 2013





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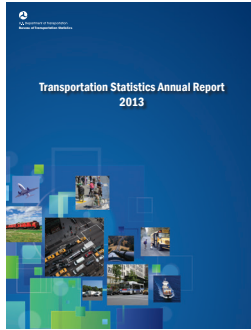
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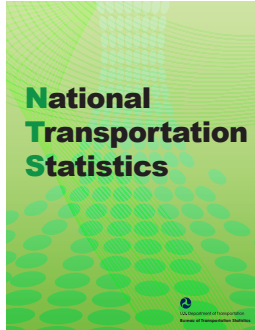
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The analysis contained in this report is taken from the BTS *Transportation Statistics Annual Report*.



National Transportation Statistics includes a comprehensive, extended time series for much of the data presented within this report.



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Overview

The transportation system of the United States connects 118.7 million households, 7.4 million business establishments, and 89 thousand governmental units with one another and the rest of the world through 4 million miles of roads, more than 19,000 public and private use airports, about 140,000 miles of freight and passenger railroads, 25,000 miles of navigable waterways, and 2 million miles of pipelines.

The estimated value of U.S. transportation assets in 2012 was \$7.7 trillion. The public owns 51.2 percent of the total transportation asset value, mostly highways and streets, but also publicly held airports, waterways, and transit facilities. Private companies own 31.2 percent of transportation assets, including railroads, pipelines, trucks, planes, and ships. Personal motor vehicles account for the remaining 17.7 percent.

The average person travels more than 13,600 miles per year, and domestic businesses ship and receive 63 tons of freight per year on average for every man, woman, and child in the United States.

The transportation sector accounts for:

- over \$1 trillion in purchases of and investments in transportation goods and services,
- \$134 billion of public expenditures on operations and maintenance of the U.S. transportation system—just more than one-third of which was spent on highways,
- nearly 12 million jobs in transportation-related industries,
- nearly \$9,000 average expenditures for each household per year,
- nearly 34,400 lives lost and over 2 million nonfatal injuries each year,
- 70.1 percent of total petroleum consumption in the United States, and
- about 1.8 billion annual metric tons of carbon dioxide emissions.

TABLE 1 Extent of the United States Transportation System

Mode	System component	2005	2012	Percent change
Highways	Roads and bridges			
	Public road and street mileage	3,995,635	4,092,730	2.4
	Lane-miles	8,371,718	8,606,003	2.8
	Bridges	595,362	607,378	2.0
	Vehicles and use			
	Motor vehicle registrations	247,421,120	253,639,386	2.5
	Person-miles traveled (millions)	4,901,211	4,273,876	-12.8
Vehicle-miles traveled (millions)	2,989,430	2,968,815	-0.7	
Air	Airports and pilots			
	Airports	19,854	19,711	-0.7
	Pilots	609,737	610,576	0.1
	Commercial aircraft and use			
	Commercial aircraft	7,686	6,911	-10.1
	Passenger enplanements	800,849,909	813,119,675	1.5
	Revenue passenger-miles (thousands)	1,022,240,392	1,127,901,276	10.3
Enplaned revenue ton-miles (thousands)	65,954,987	62,363,371	-5.4	
Transit	Vehicles and use			
	Transit vehicles	121,912	139,694	14.6
	Transit person-miles (millions)	47,125	55,506	17.8
	Unlinked trips (billions)	9	10	13.8



Mode	System component	2005	2012	Percent change
Rail	Amtrak/passenger rail and use			
	Locomotives	U	416	U
	Passenger cars	U	1,455	U
	System mileage	22,007	21,300	-3.2
	Stations	518	518	0.0
	Passengers (millions)	25	31	24.7
	Passenger-miles traveled (millions)	5,381	6,804	26.4
	Class I/freight rail and use			
	Locomotives	22,779	24,707	8.5
	Freight cars	474,839	364,025	-23.3
System mileage	95,664	95,391	-0.3	
Ton-miles (trillions)	2	2	0.8	
Water	Seaports and waterways			
	Miles of navigable waterways	26,000	25,320	-2.6
	Waterway facilities (including cargo handling docks)	9,399	8,214	-12.6
	Seaports (handling over 250,000 tons)	195	180	-7.7
	Domestic vessels			
	Barge/nonself-propelled vessels	33,152	31,550	-4.8
	Self-propelled vessels	8,976	8,927	-0.5
U.S.-flag, privately owned merchant fleet (1,000 GT or over)	231	198	-14.3	
Pipeline	Mileage			
	Gas distribution	1,962,351	2,138,444	9.0
	Natural gas transmission	300,468	303,303	0.9
	Natural gas gathering	23,754	16,729	-29.6
	Hazardous liquid or carbon dioxide systems	166,760	185,626	11.3

KEY: U = Data are unavailable

SOURCES: Various sources as cited in the U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*. Available at <http://www.bts.gov> as of October 2014.

Recent Trends

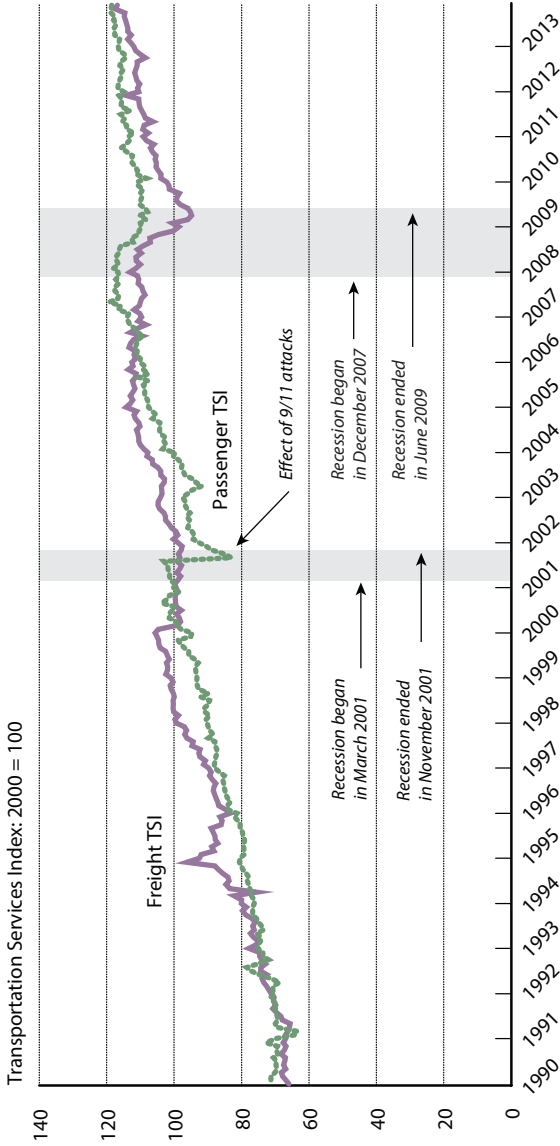
The Bureau of Transportation Statistics compiles trends and other statistics in its online publication—*National Transportation Statistics* [USDOT BTS 2014].

Among the trends:

- Lane-miles increased 0.4 percent between 2011 and 2012. Highway person-miles traveled and vehicle-miles traveled increased by 1.0 and 0.6 percent, respectively, from 2011 to 2012.
- The Nation's transportation assets were valued at approximately \$7.7 trillion in 2012, an increase of 4.1 percent over 2011 estimates. Publicly owned infrastructure and equipment accounted for the majority of transportation capital stock.
- In 2012 the value of transportation construction increased 4.0 percent over 2011 levels, reaching \$119 billion, of which 67.8 percent was spent on street and highway construction.
- The volume of freight transportation services grew 23.3 percent between April 2009 and December 2013, while the volume of passenger transportation services increased 9.3 percent between March 2009 and December 2013.



FIGURE 1 Freight and Passenger Transportation Services Index: January 1990–December 2013



SOURCE: TSI, U.S. Department of Transportation, Bureau of Transportation Statistics, Transportation Services Index (Updated monthly), available at www.bis.gov as of April 2014. **Recession Dates:** National Bureau of Economic Research, U.S. Business Cycle Expansions and Contractions, available at www.nber.org/cycles, retrieved as of January 2014.

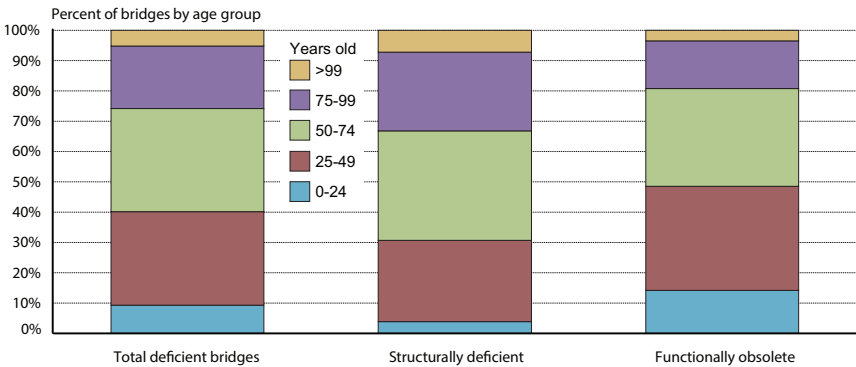
Physical Condition

With respect to the physical condition of the U.S. Transportation System:

- The condition of the U.S. transportation infrastructure is improving, but additional work is needed. The percentage of structurally deficient bridges declined from 12.3 percent in 2007 to 11 percent in 2012.
- One impact of bridge deterioration is reduced load limits. In 2013, 11.8 percent of all bridges had reduced load limits, which caused commercial vehicle operators to use smaller trucks or take circuitous routes, increasing the costs of their operations.
- Airport runways are in good condition; only 2 percent are considered poor.
- The average age of inland waterway navigation locks is more than 50 years. The oldest locks tend to have longer tow delays and more frequent service outages than newer locks.



FIGURE 2 Bridge Condition by Age Group: 2011



	Age in years (as of 12/31/2011)				
	0-24	25-49	50-74	75-99	>99
Total bridges	179,777	220,266	133,613	59,677	11,730
Total deficient bridges					
Number	13,365	44,395	49,028	29,646	7,443
Percent	7.4	20.2	36.7	49.7	63.5
Structurally deficient					
Number	2,571	18,159	24,370	17,593	4,826
Percent	1.4	8.2	18.2	29.5	41.1
Functionally obsolete					
Number	10,794	26,236	24,658	12,053	2,617
Percent	6.0	11.9	18.5	20.2	22.3

NOTES: Excludes 39 bridges with no recorded age. Bridges with a Year Built or Year Reconstructed within the past 10 years will not be assigned a deficient status. Therefore, when referring to the deficiency being calculated not using the 10-year rule, the status will be calculated without taking into consideration the year built or the year reconstructed. U.S. totals include the 50 states, the District of Columbia, and Puerto Rico. Table includes: *Rural*—interstate, principal arterial, minor arterial, major collector, minor collector and local roads; *Urban*—interstate, other freeways or expressways, other principal arterial, minor arterial, collector, and local roads. **Functionally obsolete:** does not meet current design standards (for criteria such as lane width), either because the volume of traffic carried by the bridge exceeds the level anticipated when the bridge was constructed and/or the relevant design standards have been revised.

Structurally deficient: characterized by deteriorated conditions of significant bridge elements and potentially reduced load-carrying capacity. A "structurally deficient" designation does not imply that a bridge is unsafe, but such bridges typically require significant maintenance and repair to remain in service, and would eventually require major rehabilitation or replacement to address the underlying deficiency.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *National Bridge Inventory*. Available at <https://www.fhwa.dot.gov/bridge/nbi.cfm> as of November 2013.

Moving People

With respect to the movement of people:

- All indicators show declines in personal travel for every age group, particularly among young people since the early 2000s. It is too soon to tell whether this decline is temporary or indicative of a long-term trend.
- International visitors to the United States rose from a low of 55 million in 2009 to 67 million in 2012, generating \$166 billion in export revenue—the highest in this century.
- Carpooling to work has declined since 1980, while driving alone to work has increased. Working exclusively at home has tripled from 2 million in 1980 to over 6 million in 2012.
- Transit use for the trip to work reached a low point in the mid-1990s and has since slowly regained in share. It now accounts for 5 percent of these trips, with higher levels in some metropolitan areas (e.g., New York City, San Francisco, and Washington, DC, being the highest).
- In 2011 about 9 percent of households had no vehicle. However, only 4 percent of households with a worker were without a vehicle, underscoring the critical role the personal vehicle plays in getting employees to and from work.
- In 2013, 9.7 million domestic and international flights arrived at and departed from U.S. airports; 825 million revenue passengers enplaned. Both numbers are below the 2007 peak.

Moving Goods

With respect to the movement of goods:

- In 2012 the Nation's freight system moved 53.9 million tons of goods worth \$47.5 billion each day—about 62.6 tons of freight per capita per year.
- Trucks carried the largest share of freight shipments moving less than 500 miles from point of origin. Railroads and pipelines, combined, carried over one-half of the tonnage shipped from 750 miles to 1,000 miles. Air cargo and shipments by multiple modes (e.g., shipments transferred from rail to truck) accounted for over one-half of the value of freight moved more than 2,000 miles.
- After back-to-back declines in 2008 and 2009, the tonnage and value of freight moved in 2012 surpassed the previous highs reached in 2007, by just over 4 percent each.
- The value of U.S.-international trade increased from \$2.6 trillion in 2000 to \$3.8 trillion in 2012 (adjusted for inflation using the Consumer Price Index), a 43.4 percent increase. This increase has created additional traffic between international gateways and domestic destinations.



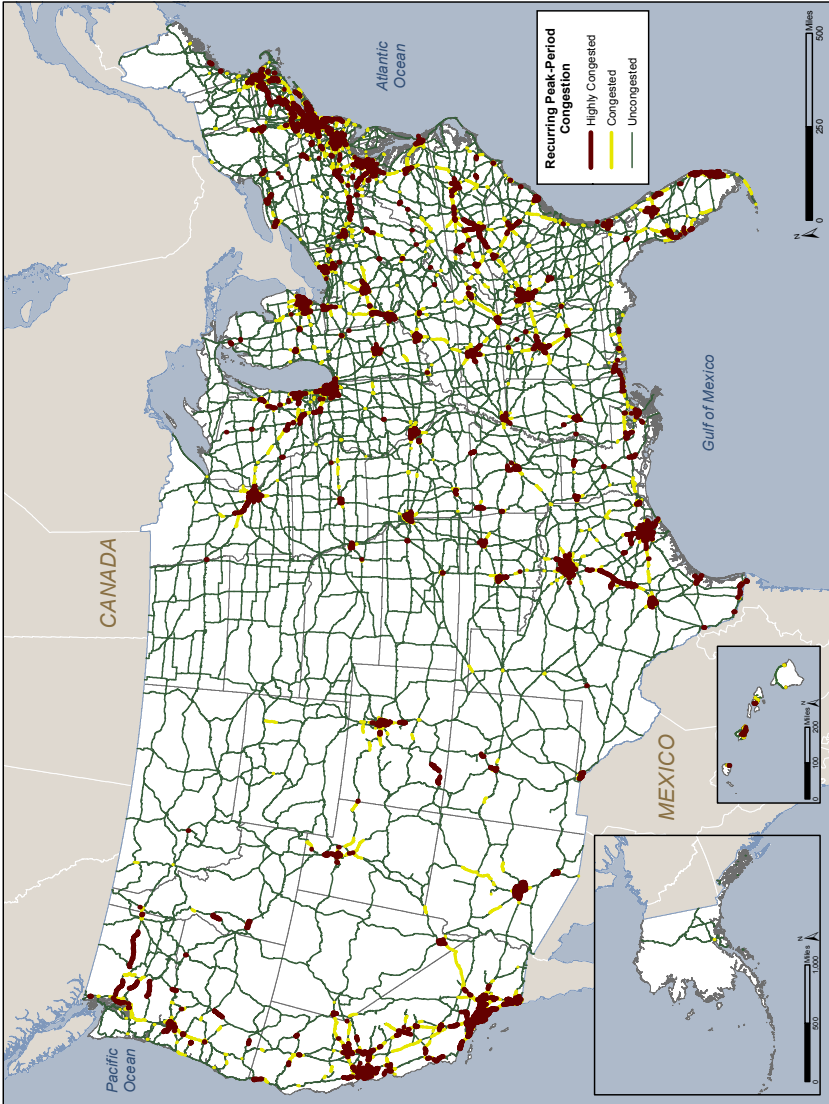
System Performance

With respect to performance of the transportation system:

- The average annual delay per commuter rose from 32 hours in 1990 to 38 hours in 2011—a 19 percent increase. The total number of hours of delay experienced by all commuters across the Nation reached 5.5 billion hours in 2011—more than twice the 1990 total.
- Urban highway congestion cost the economy \$121.2 billion in 2011, of which 22 percent, or \$27 billion, was due to the effects of congestion on truck movements.
- On average in 2012, to allow for possible congestion, travelers in major metropolitan areas had to allow at least 40 percent more travel time to ensure 95 percent on-time arrival.
- While roadway congestion is still worse than it was in 1990, significant progress has been made since 2007.
- In 2012 scheduled maintenance and unexpected delays at inland waterway locks resulted in more than 150 thousand hours of lock shutdowns to traffic. This level of service interruptions was almost twice the level in 2000.
- Almost 20 percent of domestic flights in 2013, or more than one million flights, arrived at the gate more than 15 minutes late. More than 10 percent, or 126 thousand, of those delayed flights, or 2 percent of all flights, arrived at the gate more than 2 hours late.



FIGURE 5 Peak-Period Congestion on the National Highway System: 2011



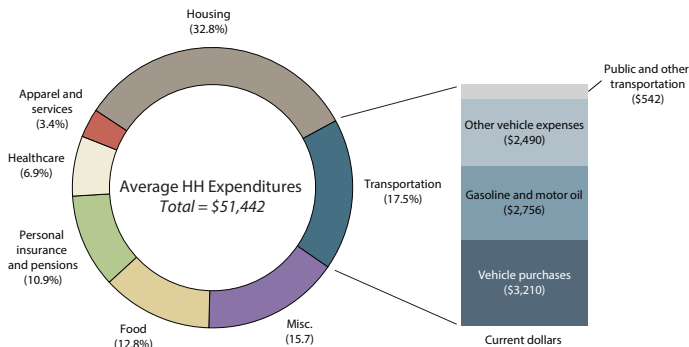
SOURCE: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2013.

Transportation and the Economy

With respect to transportation and the U.S. economy:

- Personal, business, and government purchases of transportation goods and services accounted for nearly 8.6 percent of U.S. Gross Domestic Product in 2012.
- Transportation and related sectors employed over 11.7 million workers in 2012, representing 8.8 percent of the Nation’s labor force.
- American households spent, on average, nearly \$9,000 on transportation in 2012, representing 17.5 percent of household expenditures. Transportation expenditure is the second largest household spending category, next to housing.
- In total, the public and private sectors spent \$119 billion on transportation construction in 2012, two-thirds of which was on highway infrastructure.
- The transportation revenues of federal, state, and local governments totaled \$156 billion in 2009, while government transportation expenditures totaled \$243 billion—a deficit of \$87 billion, up from \$50 billion in 1995.

FIGURE 6 Average Household (HH) Expenditures by Major Spending Category: 2012



NOTE: Percents may not add to 100 due to rounding.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey*, available at www.bls.gov/cex as of August 2014.

Transportation Safety

With respect to transportation safety:

- Transportation safety has been improving in recent decades, averaging 36 fewer fatalities and 2,830 fewer injuries per day in 2011 than in 1990.
- Over 94 percent of transportation fatalities and more than 99 percent of transportation injuries involved highway motor vehicles in 2011. In 2012, on average, 92 people were killed and 6,471 injured every day in crashes involving motor vehicles.
- Recreational boating incidents had the second highest number of fatalities in 2012 with 651 people killed, followed by general aviation with 432 fatalities. Nearly 500 people died while crossing railroad tracks or trespassing on railroad property.
- For the second consecutive year, there were no U.S. commercial airline passenger fatalities in 2012.
- Human factors, such as operating a vehicle while under the influence of alcohol or while distracted, are the most common contributing factors to transportation fatalities. Many people also fail to use safety equipment, such as seat belts or DOT-compliant motorcycle helmets.

TABLE 2 Fatalities and Injured Persons by Transportation Mode: 2011

	Fatalities	Injuries
Total	34,399	2,236,468
Air	489	362
Highway	32,479	2,217,000
Railroad	552	7,593
Transit	49	7,626
Waterborne	816	3,831
Pipeline	14	56

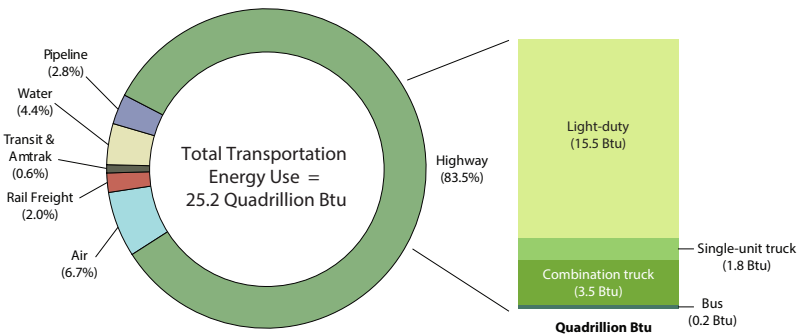
SOURCES: *Air*—National Transportation Safety Board. *Highway*—National Highway Traffic Safety Administration. *Railroad*—Federal Railroad Administration. *Transit*—Federal Transit Administration and personal communication. *Waterborne*—U.S. Coast Guard. Recreational boating—U.S. Coast Guard, Office of Boating Safety. *Pipeline*—Pipeline and Hazardous Materials Safety Administration as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, National Transportation Statistics, table 2-2 and 2-4, available at <http://www.bts.gov/> as of October 2014.

Energy and Environment

With respect to energy and the environmental aspect of transportation:

- Transportation relies almost entirely on petroleum to move people and goods. Recent trends, however, show decreasing transportation dependence on imported oil primarily due to the introduction of domestically produced ethanol in gasoline and increased domestic oil production.
- The highway mode dominates transportation energy use, accounting for 83.5 percent of the total in 2011. Personal vehicles, such as passenger cars, sport utility vehicles, minivans, and pick-up trucks, accounted for 73.7 percent of highway energy use and 61.5 percent of total transportation energy use.
- Transportation is the second largest producer of greenhouse gas emissions, accounting for 27.3 percent of the U.S. total in 2011. Since 2005 transportation-produced greenhouse gases have been decreasing because of improved energy efficiency, less vehicle travel, and increased use of biofuels.
- All transportation-related air pollutant emissions are lower than they were in 1990, resulting in improved air quality in many urban areas. The number of days that resulted in the nonattainment of at least one national air quality standard in an urban area decreased from 4,091 in 1990 to 1,012 in 2010.

FIGURE 7 Energy Use by Mode of Transportation: 2011



KEY: Btu = British thermal unit

SOURCE: Various sources as cited in U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*. Table 4-6. Available at <http://www.bts.gov> as of November 2013.

State of Transportation Statistics

- Extensive data are available on local passenger travel, but limited data exists on long-distance travel; conversely, limited data exists on local freight movement, but extensive data exists on long-distance freight movement.
- Extensive data is available on the condition and performance of highways, bridges, airports, and waterway facilities, but little data exists on the condition of privately owned railroads and pipelines.
- Extensive data is available on accidents and air emissions, but limited data exists on noise and other forms of environmental and community disruptions caused by transportation.
- Information is available about transportation's share of gross domestic product, but there is little knowledge of the impact of transportation on the Nation's economy and the quality of life for its citizens.
- Alternatives to increasingly expansive surveys, such as the use of administrative records and technology-based monitoring, are needed to develop transportation statistics. The digital revolution presents opportunities and challenges for improving transportation statistics.

The *Transportation Statistics Annual Report* describes several BTS initiatives to address the key gaps and explore opportunities for better information [USDOT BTS 2013]. Through these and other efforts, BTS will continue to strive toward achieving the vision of Abraham Lincoln who said, in reference to proposed Federal investments in transportation facilities, “Statistics will save us from doing what we do, in wrong places [LINCOLN 1848].”

References

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