AMERICA'S INTERSTATE HIGHWAY SYSTEM AT 65:

Meeting America's Transportation Needs with a Reliable, Safe & Well-Maintained National Highway Network

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Founded in 1971, TRIP ® of Washington, DC, is a nonprofit organization that researches, evaluates and distributes economic and technical data on surface transportation issues. TRIP is sponsored by insurance companies, equipment manufacturers, distributors and suppliers; businesses involved in highway and transit engineering and construction; labor unions; and organizations concerned with efficient and safe surface transportation.

Executive Summary

At sixty-five years old, an age at which many Americans are considering retirement and reduced workloads, the Interstate Highway System is deteriorating, its traffic load of cars and trucks continues to increase, and the system lacks an adequate plan for its long-term health.

The Interstate Highway System remains the workhorse of the U.S. transportation system: heavily traveled and providing the most important link in the nation's supply chain, and the primary connection between and within urban communities. The importance of the Interstate Highway System and the reliable movement of goods it provides was heightened during the response to the COVID-19 pandemic and the ongoing recovery. But, America's Interstate highways are wearing out and showing signs of their advanced age, often heavily congested, and in need of significant reconstruction, modernization and expansion.

In 2015, as part of the Fixing America's Surface Transportation (FAST) Act, the U.S. Congress asked the Transportation Research Board (TRB), a division of the National Academy of Sciences, Engineering and Medicine, to conduct a study to determine actions needed to upgrade and restore the Interstate Highway System to fulfill its role of safely and efficiently meeting the nation's future critical personal, commercial and military travel needs. In 2019, the TRB provided Congress with a report that found that the nation's Interstates are heavily congested and aging, with large portions of the system in need of major reconstruction and modernization. The report found that addressing the needs of the Interstate Highway System will require more than a doubling of current investment to adequately improve the system's condition, reliability and safety, and that the restoration of the nation's Interstate Highway System should be based on strong federal leadership of a collaborative effort with the states.

TRIP's *America's Interstate Highway System at 65* report provides the latest information on the Interstate system, including pavement conditions, bridge conditions, travel trends, traffic congestion levels, truck use, and traffic safety. It reviews the findings of the TRB Interstate report and concludes with recommended actions - based on the findings of the TRB report - to ensure that the system is able to meet the nation's transportation needs.

TRB INTERSTATE HIGHWAY SYSTEM REPORT REQUESTED BY CONGRESS

In 2015, as part of the Fixing America's Surface Transportation (FAST) Act, the U.S. Congress requested a report evaluating the condition of the Interstate Highway System and providing recommendations on actions required to restore and upgrade the System to meet the growing and shifting transportation demands of the 21st Century. The report was conducted by the Transportation Research Board (TRB), a division of the National Academies of Sciences, Engineering and Medicine. The findings of the TRB report, released in 2019, include:

- The Interstate Highway System has a persistent and growing backlog of physical and operational deficiencies as a result of age, heavy use and deferred reinvestment, and is in need of major reconstruction and modernization.

- Most roadway segments of the Interstate Highway System retain their original underlying foundations and need to be completely rebuilt from the subbase up.

- The repeated resurfacing of Interstate highways is not addressing the deterioration of roadway subbases. Repeated resurfacing – rather than addressing underlying foundational issues - provides diminishing returns as additional resurfacing results in increasingly shorter periods of pavement smoothness and is likely to result in higher lifecycle costs than periodic reconstruction.

- The modernization of the Interstate Highway System needs to include the following: reconstruction of the majority of Interstate highways and bridges, including their foundations; the upgrade of most interchanges to improve their function and safety; the addition of capacity along existing corridors, the construction of new routes and the conversion of some existing routes to Interstate standards; the modification of some urban segments to maintain connectivity while remediating economic and social disruption; and, further improvement of highway safety features.

- To address the physical and operational deficiencies identified in the TRB report, annual investment in the Interstate Highway System should be increased by approximately two-and-a-half times, from its current level of $23 billion in 2018 to $57 billion annually over the next 20 years.

- The restoration of the nation's Interstate Highway System will require strong federal leadership and a robust federal-state partnership.

INTERSTATE USE AND CHARACTERISTICS

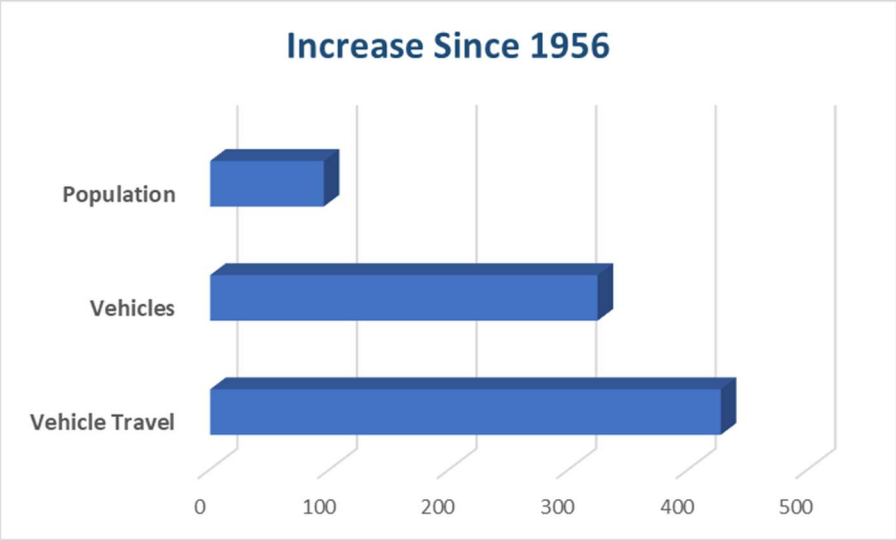
The Dwight D. Eisenhower National System of Interstate and Defense Highways, which has been called the most ambitious public works project built since the Roman Empire, is the most critical link in the nation's transportation system.

- The Interstate Highway System, which includes 2.6 percent of all roadway lane miles in the U.S., carries 26 percent of the nation's vehicle travel.

- The 48,482-mile Interstate Highway System includes 10 transcontinental routes and highways varying in length from 18 miles to more than 3,000 miles.

- Since funding of the Interstate system was approved in 1956 to 2019, annual vehicle miles of travel (VMT) in the U.S. increased by 427 percent, from 626 billion miles driven, to approximately 3.3 trillion miles driven.

- From 1956 to 2019, the number of vehicles in the nation increased by 324 percent, from 65 million vehicles to 276 million vehicles. The nation's population increased by 96 percent, from 168 million to 329 million during this time.



- Due to the COVID-19 pandemic, vehicle travel on the U.S. Interstate Highway System dropped by as much as 45 percent in April 2020 (as compared to vehicle travel during the same month the previous year) but rebounded to six percent below April 2019 (the previous pre-COVID-19 April) levels by April 2021.

INTERSTATE HISTORY

The need for a transcontinental highway system in the U.S. was recognized as early as 1919, and an initial Interstate plan was completed in the late 1930s. But it was not until Congress approved a suitable funding mechanism in 1956 that the Interstate Highway System became a reality.

- In 1919, Lieutenant Dwight D. Eisenhower participated in the U.S. Army's first transcontinental motor convoy, from Washington, DC, to San Francisco, California. The trip took 62 days, largely due to inadequate roads and highways.

- In 1954, President Eisenhower appointed a committee to draft a proposal to fund a national system of Interstate Highways. The initial proposal, subsequently dismissed by Congress, called for financing a national Interstate system through bond financing.

- Nationwide construction of the Interstate Highway System began in 1956 following the approval of the Federal-Aid Highway Act of 1956. Some segments of urban and regional highways built prior to 1956 were later incorporated into the Interstate Highway System.

- The Federal-Aid Highway Act of 1956, signed into law by President Dwight Eisenhower on June 29, 1956, called for the construction of a 41,000-mile system of Interstate highways. The Act

called for the Interstates to be paid for by taxes on motorists, such as the federal motor fuel tax, with the federal government paying 90 percent of the initial construction costs.

- The federal motor fuel tax was set at three cents-per-gallon in 1956. Last increased in 1993, the tax is currently 18.4 cents-per-gallon.

- Revenue collected from the 18.4 cents-per-gallon federal motor fuel tax and the 24.4 cents-per-gallon federal diesel fuel tax are the primary sources of funding for the federal Highway Trust Fund, which distributes funds to state and local governments for highway and bridge repairs as well as other surface transportation improvements, including public transit, pedestrian and bicycling facilities.

INTERSTATE ROAD AND BRIDGE CONDITIONS

While pavement smoothness and bridge conditions on the Interstate system are acceptable, as the aging system's foundations continue to deteriorate, most Interstate highways, bridges and interchanges will need to be reconstructed or replaced.

- Pavements on 11 percent of Interstate highways are in poor or mediocre condition, with three percent rated in poor condition and eight percent rated in mediocre condition. Another nine percent of Interstate pavements are in fair condition and the remaining 80 percent are in good condition.

- The chart below shows the states with the greatest share of their Interstate highways with pavements in poor condition. Data for all states can be found in the Appendix.

RANK	STATE	INTERSTATE PAVEMENT IN POOR CONDITION
1	Hawaii	23%
2	Delaware	9%
3	New Jersey	9%
4	Louisiana	7%
5	New York	6%
6	Colorado	6%
7	Michigan	6%
8	California	6%
9	Maryland	5%
10	Indiana	5%
11	Pennsylvania	5%
12	Washington	5%
13	South Carolina	4%
14	Arkansas	4%
15	Illinois	4%
16	Oklahoma	4%
17	Minnesota	4%
18	Alabama	4%
19	Ohio	3%
20	West Virginia	3%

- Three percent of the nation's Interstate bridges are rated in poor/structurally deficient condition, and 57 percent are rated in fair condition. A bridge is rated in poor/structurally deficient condition if there is significant deterioration of the bridge deck, supports or other major components.

- The chart below shows states with the greatest share of Interstate bridges rated poor/structurally deficient. Data for all states can be found in the Appendix.

RANK	STATE	INTERSTATE BRIDGES POOR/STRUCTURALLY DEFICIENT
1	West Virginia	13%
2	Rhode Island	12%
3	Illinois	8%
4	Massachusetts	7%
5	New York	6%
6	Michigan	6%
7	Colorado	5%
8	Maine	5%
9	Washington	5%
10	Missouri	5%
11	Idaho	4%
12	Pennsylvania	4%
13	Wyoming	3%
14	Montana	3%
15	Louisiana	3%
16	California	3%
17	Connecticut	3%
18	New Mexico	3%
19	New Jersey	3%
20	North Carolina	3%

- The intended lifespan of many of the nation's Interstate bridges at the time of their construction is 50 years, though newer bridges are often built with longer-lasting materials and techniques that allow for a longer intended lifespan. Older bridges often need significant repairs or rehabilitation or may need to be replaced to continue to provide adequate service.

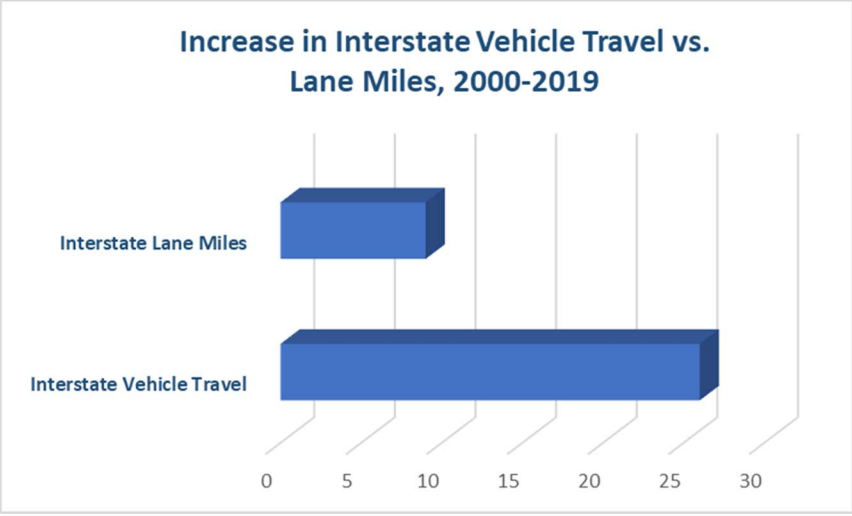
- The average age of the nation's Interstate bridges is 46 years. Fifty-four percent of the nation's Interstate bridges are at least 50 years old. The chart below shows states with the largest share of Interstate bridges 50 years old or older. Data for all states can be found in the Appendix.

RANK	STATE	Share of bridges 50+ Years
1	Wyoming	76%
2	Connecticut	74%
3	Massachusetts	73%
4	Oklahoma	68%
5	Arizona	67%
6	Ohio	66%
7	Maine	66%
8	Rhode Island	66%
9	New Hampshire	65%
10	Vermont	65%
11	Idaho	65%
12	New Jersey	63%
13	California	63%
14	Mississippi	61%
15	Kansas	61%
16	North Dakota	60%
17	Pennsylvania	60%
18	Indiana	60%
19	New Mexico	60%
20	Delaware	58%

INTERSTATE CONGESTION

Traffic congestion is increasing on the Interstate Highway System as the amount of vehicle travel far outstrips the capacity added to the system. Nearly half of the length of the nation's urban Interstates is congested.

- Travel on the nation's Interstate highways is increasing at a rate nearly triple the rate that new lane capacity is being added. From 2000 to 2019, vehicle travel on Interstate highways increased 26 percent, from 662 billion miles traveled annually to 837 billion miles. From 2000 to 2019, lane miles of Interstates increased nine percent, from 208,502 to 227,129. miles.



- Forty-seven percent of the nation's urban Interstate highways (9,046 of 19,177 miles) are considered congested because they carry traffic levels that result in significant delays during peak travel hours. The chart below shows the states with the greatest share of their urban Interstate highways considered congested. Data for all states can be found in the Appendix.

RANK	STATE	Congested Urban Interstates
1	California	87%
2	Maryland	83%
3	New Jersey	81%
4	Delaware	71%
5	Florida	70%
6	Massachusetts	68%
7	Rhode Island	65%
8	Connecticut	63%
9	Hawaii	60%
10	Washington	58%
11	Texas	58%
12	Georgia	57%
13	Colorado	57%
14	Minnesota	56%
15	New Hampshire	54%
16	Virginia	52%
17	Kentucky	51%
18	South Carolina	50%
19	Utah	49%
20	Ohio	48%

- The chart below shows the states with the greatest increase in vehicle miles of travel on their Interstate highways from 2000 to 2019. Data for all states can be found in the Appendix.

RANK	STATE	2000-19 Interstate VMT Increase
1	Nevada	69%
2	Louisiana	61%
3	North Carolina	57%
4	Utah	57%
5	Colorado	53%
6	Texas	49%
7	Mississippi	45%
8	Idaho	44%
9	Wisconsin	42%
10	Florida	41%
11	North Dakota	41%
12	South Carolina	39%
13	New Jersey	36%
14	Arkansas	35%
15	Montana	34%
16	Alabama	33%
17	Tennessee	33%
18	South Dakota	30%
19	Iowa	27%
20	Kentucky	26%

- The chart below shows the states with the busiest urban Interstates, as measured by average daily traffic per lane mile. Data for all states can be found in the Appendix.

RANK	STATE	Daily Interstate Travel Per Lane Mile
1	California	20,957
2	Maryland	20,214
3	Hawaii	17,864
4	Colorado	17,702
5	Florida	17,145
6	Texas	17,123
7	Rhode Island	16,644
8	Massachusetts	16,326
9	Washington	16,251
10	New Jersey	16,053
11	Delaware	15,956
12	Connecticut	15,514
13	Georgia	15,325
14	Virginia	15,207
15	Nevada	15,130
16	Arizona	15,016
17	Tennessee	14,718
18	Louisiana	14,452
19	Kentucky	14,404
20	Minnesota	14,236

INTERSTATE FATALITY RATES AND SAFETY

The Interstate Highway System provides a network of highways with a variety of safety designs that greatly reduce the likelihood of serious crashes. Travel on the nation's Interstate highways is more than twice as safe as travel on all other roadways.

- The Interstate Highway System, which carried 26 percent of the nation's travel in 2019, accounted for only 13 percent of the nation's traffic fatalities as a result of superior safety features.

- The features that make Interstates safer than other roads include a separation from other roads and rail lines, a minimum of four-lanes, gentler curves, paved shoulders, median barriers, and rumble strips to warn drivers when they are leaving the roadway.

- Travel on the nation's Interstate highways is nearly two and a half times as safe as travel on all other roadways. The fatality rate per 100 million vehicle miles of travel on the Interstate system in 2019 was 0.55, compared to 1.30 on non-Interstate routes.

- The chart below details states with the highest traffic fatality rates in 2019 on their Interstate highways and the fatality rate on all other roads in those states. Data for all states can be found in the Appendix.

RANK	STATE	INTERSTATE FATALITY RATE	ALL OTHER ROADS FATATLITY RATE
1	Wyoming	1.36	1.48
2	New Mexico	1.19	1.65
3	Mississippi	1.04	1.72
4	Arizona	0.87	1.54
5	Alabama	0.83	1.43
6	Texas	0.80	1.41
7	Idaho	0.80	1.39
8	Nebraska	0.76	1.28
9	Arkansas	0.75	1.58
10	Florida	0.72	1.56
11	South Carolina	0.71	2.14
12	Georgia	0.71	1.26
13	Kansas	0.70	1.48
14	Montana	0.70	1.67
15	Tennessee	0.70	1.65
16	Oklahoma	0.70	1.68
17	Missouri	0.69	1.27
18	Delaware	0.67	1.39
19	Nevada	0.66	1.18
20	Kentucky	0.55	1.90

- TRIP estimates that the Interstate Highway System saved 6,555 lives in 2019, based on an estimate of the number of additional fatalities that would have occurred had Interstate traffic been carried by other major roadways, which often have higher traffic fatality rates and may lack the safety features common to Interstate routes.

- Based on TRIP estimates, the chart below shows the states where the most lives were saved in 2019 due to the increased traffic safety provided by the Interstate Highway System. Data for all states can be found in the Appendix.

RANK	STATE	LIVES SAVED BY INTERSTATES IN 2019
1	California	765
2	Florida	454
3	Texas	449
4	Ohio	295
5	Pennsylvania	290
6	South Carolina	278
7	Illinois	267
8	Tennessee	253
9	North Carolina	234
10	Kentucky	228
11	Louisiana	225
12	Virginia	205
13	New York	202
14	Georgia	185
15	Michigan	177
16	Oregon	144
17	Arizona	142
18	Missouri	137
19	Indiana	134
20	Washington	130

INTERSTATE TRAVEL AND ECONOMIC GROWTH

The Interstate Highway System is the backbone of the nation's economy and has played a critical role in improving the country's business productivity. Since 2000, the amount of combination truck travel on Interstates has increased at a rate more than double that of total travel on the system.

- The Interstate system carried 55 percent of all large commercial truck travel in the U.S. in 2019.

- Travel by combination trucks on the Interstate Highway System increased 43 percent from 2000 to 2019, while overall vehicle travel increased 26 percent. From 2010 to 2019, travel by combination trucks on the Interstate Highway System increased 14 percent, outpacing the 10 percent rate of growth for all vehicle travel during the same period.

- Travel by combination trucks, which are the large trucks that carry the majority of freight shipped in the U.S., accounted for 12 percent of all vehicle miles of travel on the Interstate Highway System in 2019.

- The chart below shows the states with the greatest share of Interstate vehicle travel by combination trucks. Data for all states can be found in the Appendix.

RANK	STATE	Percent Interstate Vehicle Travel by Combination Trucks
1	Wyoming	30%
2	Arkansas	28%
3	Indiana	23%
4	Nebraska	22%
5	Iowa	19%
6	South Dakota	18%
7	North Dakota	18%
8	Montana	17%
9	Missouri	17%
10	West Virginia	17%
11	Illinois	17%
12	Mississippi	17%
13	Kentucky	17%
14	Maine	16%
15	Kansas	16%
16	Tennessee	16%
17	Oregon	16%
18	Idaho	15%
19	Oklahoma	15%
20	Alabama	14%

- Every year, $18.9 trillion in goods are shipped from sites in the U.S.

- Seventy-two percent of the goods shipped annually from sites in the U.S. are carried by trucks and another 14 percent are carried by courier services, which use trucks for part of the deliveries.

- The completion of the vast majority of the Interstate system by the 1980s, and the deregulation of the U.S. trucking industry, resulted in a significant improvement in the competitiveness of U.S. business. The cost of moving freight, as measured by U.S. business logistics costs, dropped from 16 percent of U.S. Gross Domestic Product (GDP) in 1980 to eight percent in 2018.

- The TRB report found that U.S. counties either on an Interstate highway or within 20 miles of an Interstate are anticipated to grow in population through 2060 at a rate approximately seven times greater than counties that are at least 20 miles from an Interstate highway (36 percent versus five percent).

- The Interstate Highway System has reduced travel times between destinations throughout the U.S. The improved mobility provided by the Interstate Highway System has given Americans greater choices about where they live, work, shop and spend their leisure time.

- Forty-nine of the 50 top truck bottlenecks identified by the American Transportation Research Institute (ATRI) in its 2021 annual list of the nation's top 100 truck bottlenecks are on Interstate Highways. The top 20 truck bottlenecks are listed below, with all 50 included in the Appendix.

RANK	STATE	Top Bottlenecks
1	NJ	Fort Lee, NJ I-95 at SR 4
2	OH	Cincinnati, OH I-71 at I-75
3	GA	Atlanta, GA I-285 at I-85 (North)
4	GA	Atlanta, GA I-20 at I-285 (West)
5	TX	Houston, TX I-45 at I-69/US 59
6	IL	Chicago, IL I-290 at I-90/I-94
7	TN	Chattanooga, TN I-75 at I-24
8	MO	St. Louis, MO I-64/I-55 at I-44
9	NY	Rye, NY I-95 at I-287
10	CA	San Bernardino, CA I-10 at I-15
11	CA	Los Angeles, CA SR 60 at SR 57
12	TX	Dallas, TX I-45 at I-30
13	TN	Nashville, TN I-24/I-40 at I-440 (East)
14	NY	Brooklyn, NY I-278 at Belt Parkway
15	TX	Austin, TX I-35
16	GA	Atlanta, GA I-75 at I-285 (North)
17	TX	Houston, TX I-45 at I-610 (North)
18	LA	Baton Rouge, LA I-10 at I-110
19	IL	Chicago, IL I-90 at I-94 (South)
20	CO	Denver, CO I-70 at I-25

INTERSTATE FUNDING CHALLENGES

The U.S. Department of Transportation (USDOT) has determined that the nation faces a significant backlog in needed Interstate highway repairs and improvements.

- The current backlog of needed improvements on the nation's Interstate Highway System is estimated by the USDOT to be $123 billion.

- The backlog on the nation's Interstate Highway System includes $54 billion needed to improve pavement conditions, $37 billion to improve bridges and $33 billion for needed system expansion and enhancement.

The primary source of revenue for the Interstate Highway System is the federal surface transportation program, which was set to expire on September 30, 2020 and extended by one year by Congress to September 30, 2021. The program does not have a long-term and sustainable revenue source.

- Signed into law in December 2015, the Fixing America's Surface Transportation (FAST Act), provides modest increases in federal highway and transit spending. The bill also provides states with greater funding certainty and streamlines the federal project approval process. But, the FAST Act does not provide adequate funding to meet the nation's need for highway and transit improvements and does not include a long-term and sustainable funding source.

- Revenue collected from the 18.4 cents-per-gallon federal motor fuel tax and the 24.4 cents-per-gallon federal diesel fuel tax are the primary sources of funding for the federal Highway Trust

Fund, which distributes funds to state and local governments for highway and bridge repairs and other surface transportation improvements, including public transit, pedestrian and bicycling facilities.

RECOMMENDATIONS FOR RESTORING THE INTERSTATE HIGHWAY SYSTEM

Restoring and upgrading the Interstate Highway System to meet 21st Century transportation needs will require strong federal leadership and a robust federal-state partnership to reestablish the Interstate Highway System as the nation's premier transportation network. The TRB Interstate report notes that "the scale and scope of the Interstate reinvestment imperative is daunting."

- The following recommendations, based on the findings and recommendations of the TRB Interstate report, provide a roadmap for the restoration of the Interstate Highway System:
    - Reconstruct the nation's Interstate Highway System, including pavements, bridges and interchanges
    - Improve safety features on Interstate highways
    - Right-size the Interstate Highway System by:
        - ✓ upgrading some existing roadways to Interstate standard
        - ✓ adding needed additional highway capacity on existing routes to maintain and improve mobility
        - ✓ adding additional corridors to accommodate demographic and economic growth
        - ✓ modifying some urban segments to maintain connectivity while remediating economic and social disruption

All data used in this report is the most current available. Sources of information for this report include: The Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA), the Transportation Research Board (TRB), and the U.S. Census Bureau. Cover photo credit: U.S. Geological Survey.

Introduction

Stretching from South Florida to the Canadian border in Maine, straddling the Puget Sound region of Washington State and reaching the Mexican border south of San Diego, the Interstate Highway System connects the United States, providing its citizens and visitors with an unrivaled level of access and mobility.

The Dwight D. Eisenhower National System of Interstate and Defense Highways, built at a cost of $114 billion ($209 billion in current dollars), has been called the most ambitious public works project built since the age of the Roman Empire, and is the backbone of America's economy and the most critical element of the nation's transportation system. Today, the Interstate Highway System continues to provide Americans with economic growth, improved traffic safety and convenient access, while also playing a role in the nation's defense.

Concerned with the decline in the condition, reliability and safety of the nation's preeminent transportation system, Congress in 2015, as part of the legislation authorizing the five-year Fixing America's Surface Transportation Act (FAST-Act), required that a comprehensive report be prepared on the Interstate Highway System. The U.S. Congress asked the Transportation Research Board (TRB), a division of the National Academy of Sciences, Engineering and Medicine, to develop the report, which was to include an examination of the condition of the Interstate Highway System and provide recommendations on actions necessary to restore and upgrade the system to meet the transportation needs of the 21st Century. The findings of TRB's report, "Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future," confirmed Congress' fears for the nation's Interstate highways.

"The Interstate Highway System's physical condition and operating performance continue to exhibit deficiencies, and much of the Interstate System is already past due for major reconstruction and modernization as a result of heavy use and the effects of age, exacerbated by escalating use and deferred reinvestment," notes the report.[1] " These aging and intensely used segments, whose numbers are expected to grow over the next 20 years, are poorly positioned to accommodate even modest projections of future traffic growth, much less the levels of growth actually experienced over the past 50 years."[2]

This report examines the benefits, history and impact of the Interstate Highway System, its current use and condition, and the future needs of the nation's most critical transportation system. It concludes with a set of recommendations based on the findings of the TRB report to restore, renew and upgrade the nation's most critical transportation system.

Development of the U.S. Interstate System

In 1919, Lieutenant Dwight D. Eisenhower participated in the U.S. Army's first transcontinental motor convoy, from Washington, DC, to San Francisco, California. During the 62 days it took to cross the country, the convoy experienced many difficulties, including roads that were muddy, narrow or otherwise inadequate, and bridges that often could not support the vehicles in the convoy.

A generation later, General Eisenhower saw firsthand how an efficient, effective highway transportation system benefited a nation when the German Autobahn network, opened in 1935, provided a significant military advantage to Germany.

The United States also began looking at the feasibility of constructing a series of interregional highways in the late 1930s. In 1938 Congress directed the then Bureau of Public Roads (BPR) to prepare a study on the possibility of building a national system of toll highways. The resulting 1939 BPR report concluded that it would be impossible to finance a national system of highways strictly through

charging tolls, but did recommend that the U.S. build a system of approximately 26,700 miles of transcontinental highways. The BPR report also called for many of the design elements found on modern Interstate highways, including limited access, which separates highway traffic from other traffic and from trains. The report also suggested that the nation's highways should connect with the center of large cities, include beltways around large urban areas, and bypass small towns.

Further attempts to develop a national highway system were interrupted by World War II. But, as the Allies gained the upper hand in the war, Congress started to turn its attention to post-war challenges, including consideration of a modern highway system to support the nation's growing economy and improve safety and mobility. The Federal-Aid Highway Act of 1944 authorized the BPR to designate a system of approximately 40,000 miles of Interstate highways, which proved very similar to the routes ultimately approved as the national Interstate system. But, the 1944 highway bill did not specify any additional funds for construction of the highways, other than the small amount of funds then made available by the federal government for highway construction.

The 1944 Highway Act identified the need for a national system of interconnected highways, but left out a key piece of the puzzle – how to fund a uniformly designed national highway system, which would have significant differences in construction costs and traffic volume, depending on location. Even without significant federal funding available, cities and states began to move forward on their own, with some additional highway networks being built or planned in current Interstate corridors, under various financing mechanisms. These early highway projects included toll highways, such as the Pennsylvania Turnpike and the New York Thruway, and early urban highways including the Los Angeles Freeway System and the Detroit Expressway System. However, for most motorists and businesses, the inadequate roadway system of the late 1940s and early 1950s contributed to growing human and economic losses, as cars and trucks jostled for position on the nation's inadequate, narrow and winding roads and streets.

In 1954 President Eisenhower appointed a committee to draft a proposal to fund a national system of Interstate Highways. Eisenhower noted that the nation's obsolete highway system penalized Americans through increased traffic deaths, the waste of time caused by traffic delays, the increased cost of freight movement, and the inability of the nation's highways to meet the mobility demands that would be caused by a regional catastrophe or national defense emergency.

The initial plan prepared for President Eisenhower called for funding a national Interstate System through bond financing, but Congress dismissed the use of bond revenue as the primary source of Interstate highway financing. In 1956, Congress overwhelmingly approved the construction of a national Interstate Highway System when the financing was changed to a pay-as-you-go format that would collect a series of user fees -- most notably a three cents-per-gallon tax on motor fuel -- into a national Highway Trust Fund.

The Federal-Aid Highway Act of 1956 called for the construction of a 41,000-mile Interstate Highway System, which was to be completed by 1970 at a cost of approximately $27 billion. The design of the system was very similar to the initial 1944 plan, which called for connecting large urban areas, including routing highways into central cities, largely at the request of mayors and other local politicians who feared that their communities would be left behind without modern highway access. The Interstate system was designated to incorporate approximately 2,000 miles of existing highways, including the Pennsylvania Turnpike and the New York Thruway. The highways were to be built to high design standards that would reduce traffic deaths and increase the amount and speed of traffic that could be carried. These design standards included: full access control to limit entrance and exit to on and off ramps, a minimum of four lanes, medians to separate oncoming lanes, and moderate curves.

Construction of the Interstate System

Following President Eisenhower's signing of the Federal-Aid Highway Act of 1956 on June 29, 1956, the nation moved quickly to orient its highway program toward the enormous task of planning and constructing the nation's eventual 48,482-mile Interstate system.

The first construction contracts awarded under the provisions of the 1956 Interstate legislation were in Missouri in August of 1956,for portions of Interstate 44 in Laclede County and a portion of Interstate 70 in St. Charles County.[3] The first section of Interstate highway on which construction was completed under the provisions of the Federal -Aid Highway Act of 1956 was a portion of Interstate 70 in Northeast Kansas, which was completed in November, 1956.[4] The majority of the nation's Interstate system was completed by 1986, when 92 percent of the Interstate system's current length and 86 percent of lane miles were complete. By 1996, 98 percent of the Interstate system's current length and 96 percent of lane miles were complete.[5]

The Interstate Highway System

Today, the 48,482-mile Interstate Highway System includes 10 transcontinental routes and highways varying in length from 18 miles to more than 3,000 miles. The Interstate Highway System includes three east-west transcontinental routes: Interstate 10 from Los Angeles, California to Jacksonville, Florida; Interstate 80 from San Francisco, California to Teaneck, New Jersey; and, Interstate 90 from Seattle, Washington to Boston, Massachusetts.

The Interstate Highway System also includes seven north-south transcontinental routes: Interstate 5 from San Diego, California to Blaine, Washington; Interstate 15 from San Diego, California to Sweetgrass, Montana; Interstate 35 from Laredo, Texas to Duluth, Minnesota; Interstate 55 from New Orleans, Louisiana to Chicago, Illinois; Interstate 65 from Mobile, Alabama to Gary, Indiana; Interstate 75 from Miami, Florida to Sault Ste. Marie, Michigan; and, Interstate 95 from Miami, Florida to Houlton, Maine.

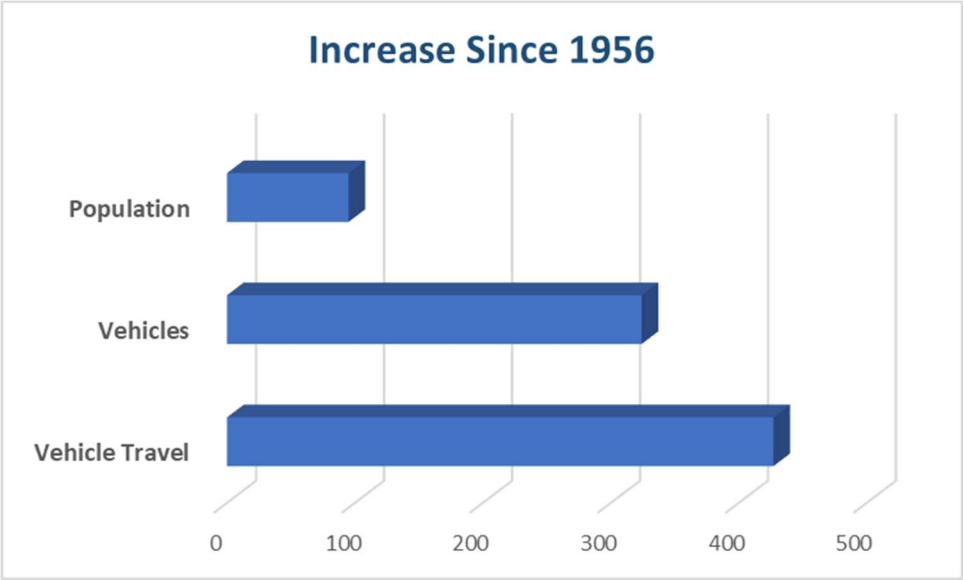
The longest Interstate route, excluding three-digit urban routes, is Interstate 90 from Seattle, Washington to Boston, Massachusetts, which is 3,021 miles in length. The shortest Interstate route, excluding three-digit urban routes, is Interstate 97 in Maryland, which runs 18 miles from Annapolis to Baltimore.

The Interstate route that traverses the most states is Interstate 95, which passes through 15 states: Florida, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire and Maine.

Trends in Interstate Travel and Capacity

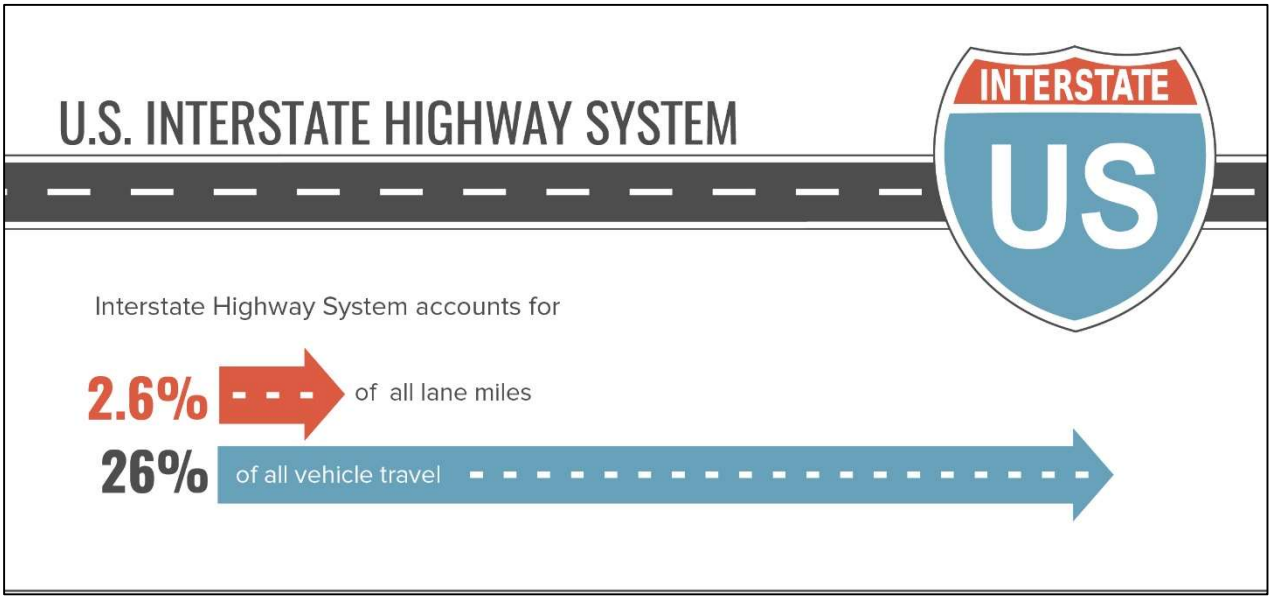
Since the beginning of the Interstate era 65 years ago, the U.S. has seen enormous increases in population, motor vehicles and vehicle travel. From 1956 to 2020, the nation's population increased by 96 percent, from 168 million to 329 million.[6] From 1956 to 2019, the number of motor vehicles increased by 324 percent, from 65 million to 276 million[7], and vehicle travel increased by 427 percent, from 626 billion miles driven annually to approximately 3.3 trillion.[8]

Chart 1. Increase since 1956 in Population, Vehicles and Vehicle Travel in the U.S. (1 = 1956 level).



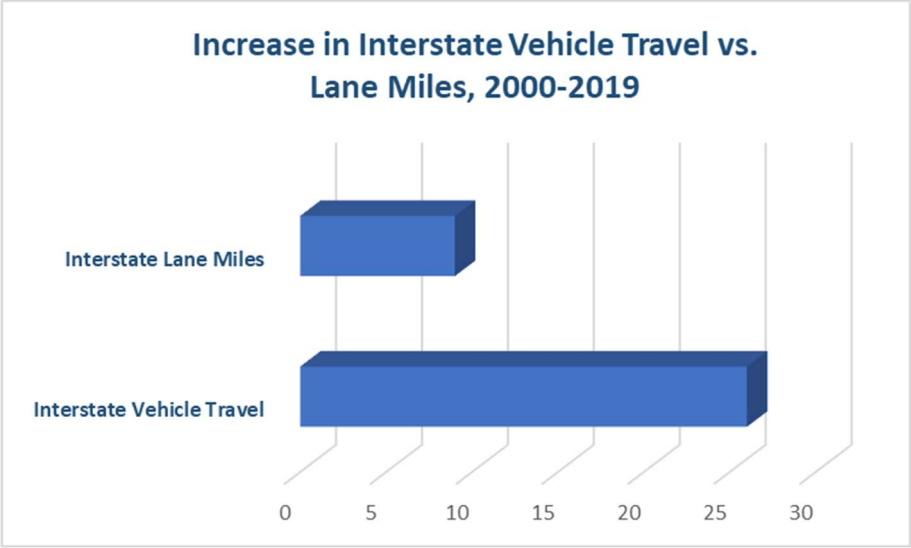
Source: TRIP analysis of U.S. Census and Federal Highway Administration data.

The Interstate Highway System remains the most critical component of the nation's transportation system. While Interstate highways account for only 2.6 percent of all lane miles of roads in the U.S., they carry 26 percent of all travel.[9]



Travel on Interstate highways is growing at nearly triple the rate that new lane capacity is being added. From 2000 to 2019, vehicle travel on Interstate highways increased 26 percent, from 662 billion miles traveled annually to 837 billion miles.[10] Yet, during the same period, total lanes miles on the nation's Interstate system increased by nine percent, from 208,502 miles to 227,129.[11]

Chart 2. Increase in Interstate vehicle travel vs. lane miles from 2000 to 2019.



Source: TRIP analysis of FHWA data.

As a result of the increase in travel on the nation's Interstate system without a corresponding increase in Interstate lane mileage, these highways are more crowded than in the past. The average annual amount of travel per Interstate lane-mile increased 16 percent from 2000 to 2019.[12]

The chart below shows the states with the greatest increase in vehicle miles of travel (VMT) on their Interstate highways from 2000 to 2019. Data for all states can be found in the Appendix.

Chart 3. States with Largest Increase in Interstate Vehicle Travel from 2000 to 2019.

RANK	STATE	2000-19 Interstate VMT Increase
1	Nevada	69%
2	Louisiana	61%
3	North Carolina	57%
4	Utah	57%
5	Colorado	53%
6	Texas	49%
7	Mississippi	45%
8	Idaho	44%
9	Wisconsin	42%
10	Florida	41%
11	North Dakota	41%
12	South Carolina	39%
13	New Jersey	36%
14	Arkansas	35%
15	Montana	34%
16	Alabama	33%
17	Tennessee	33%
18	South Dakota	30%
19	Iowa	27%
20	Kentucky	26%

Source: TRIP analysis of FHWA data

Due to the COVID-19 pandemic, vehicle travel on the U.S. Highway System dropped by as much as 45 percent in April 2020 (as compared to vehicle travel during the same month the previous year) but rebounded to six percent below April 2019 (the previous pre-COVID-19 April) levels by April 2021.[13]

Pavement Conditions on the Interstate System

The lifecycle of highway pavements is greatly affected by a transportation agency's ability to perform timely maintenance and upgrades to ensure that surfaces remain smooth as long as possible. The pavement condition of major roads is evaluated and classified as being in poor, mediocre, fair or good condition.

In 2019, pavement on 11 percent of the nation's Interstate highways was rated in poor or mediocre condition, with three percent rated poor and eight percent rated mediocre.[14] Roads rated poor often have pavements that are cracked or broken. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed. Roads rated in mediocre condition show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition. An additional nine percent of Interstate pavements are rated in fair condition and the remaining 80 percent are rated in good condition.[15]

Pavement deterioration is caused by a combination of traffic, moisture and climate. Moisture often works its way into road surfaces and the materials that form the road's foundation. Road surfaces at intersections are even more prone to deterioration because the slow-moving or standing loads occurring at these sites subject the pavement to higher levels of stress. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.[16]

The chart below shows the states with the greatest share of their Interstate highways with pavements in poor condition. Data for all states can be found in the Appendix.

Chart 4. States with greatest share of Interstate highways with pavements in poor condition (2019).

RANK	STATE	INTERSTATE PAVEMENT IN POOR CONDITION
1	Hawaii	23%
2	Delaware	9%
3	New Jersey	9%
4	Louisiana	7%
5	New York	6%
6	Colorado	6%
7	Michigan	6%
8	California	6%
9	Maryland	5%
10	Indiana	5%
11	Pennsylvania	5%
12	Washington	5%
13	South Carolina	4%
14	Arkansas	4%
15	Illinois	4%
16	Oklahoma	4%
17	Minnesota	4%
18	Alabama	4%
19	Ohio	3%
20	West Virginia	3%

Source: TRIP analysis of FHWA data.

The 2019 TRB Interstate report found that more than half a century of intensive use has taken a toll on the system, and that most segments of the system need to be rebuilt from the subbase up. The report found that most of the nation's Interstate miles have been subject to age and wear with only periodic resurfacing, resulting in a significant backlog of needed reconstruction of the roadway's original underlying structure.[17] The TRB report found that the repeated resurfacing of Interstate highways is not addressing the deterioration of subbases of the roadways and results in diminishing returns. This leads to shorter periods of serviceability between successive overlays and can produce higher life-cycle costs relative to full-depth periodic pavement reconstruction.[18]

Interstate Bridge Conditions

Of the 58,470 bridges on the U.S. Interstate system, three percent are rated in poor/structurally deficient condition and 57 percent are rated in fair condition.[19]

Bridges that are rated poor/structurally deficient show significant signs of deterioration as a result of use and exposure. The FHWA defines a poor/structurally deficient bridge as one that requires immediate rehabilitation to remain open, is restricted to carrying lighter- weight vehicles, or is closed.

The chart below shows states with the greatest share of Interstate bridges in poor/structurally deficient condition. Data for all states can be found in the Appendix.

Chart 5. States with greatest share of Interstate bridges rated poor/structurally deficient (2020).

RANK	STATE	INTERSTATE BRIDGES POOR/STRUCTURALLY DEFICIENT
1	West Virginia	13%
2	Rhode Island	12%
3	Illinois	8%
4	Massachusetts	7%
5	New York	6%
6	Michigan	6%
7	Colorado	5%
8	Maine	5%
9	Washington	5%
10	Missouri	5%
11	Idaho	4%
12	Pennsylvania	4%
13	Wyoming	3%
14	Montana	3%
15	Louisiana	3%
16	California	3%
17	Connecticut	3%
18	New Mexico	3%
19	New Jersey	3%
20	North Carolina	3%

Source: TRIP analysis of National Bridge Inventory data.

The average lifespan of the nation's Interstate bridges is 50 years.[20] Older bridges often need significant repairs or rehabilitation or may need to be replaced to continue to provide adequate service. The average age of the nation's Interstate bridges is 46 years. Fifty-four percent of the nation's Interstate bridges are at least 50 years old. The chart below shows states with the highest share of Interstate bridges that are 50 years old or older. Data for all states can be found in the Appendix.

Chart 6. States with greatest share of Interstate bridges that are 50 years old or older (2019).

RANK	STATE	Share of bridges 50+ Years
1	Wyoming	76%
2	Connecticut	74%
3	Massachusetts	73%
4	Oklahoma	68%
5	Arizona	67%
6	Ohio	66%
7	Maine	66%
8	Rhode Island	66%
9	New Hampshire	65%
10	Vermont	65%
11	Idaho	65%
12	New Jersey	63%
13	California	63%
14	Mississippi	61%
15	Kansas	61%
16	North Dakota	60%
17	Pennsylvania	60%
18	Indiana	60%
19	New Mexico	60%
20	Delaware	58%

Source: TRIP analysis of National Bridge Inventory data.

Traffic Congestion on the Interstates

The Interstate Highway System was initially designed to provide transportation between the nation's urban areas and to support national defense. But, as Interstate highways were ultimately built around and through many cities, they became the nation's most critical transportation corridors between, and often within, urban areas.

The continued increase in Interstate highway travel has resulted in a surge in traffic congestion levels. Forty-seven percent of the nation's urban Interstates (9,046 of 19,177 miles) are considered congested because they carry traffic levels that result in delays during peak travel hours.[21] The chart below shows states with the greatest share of congested urban Interstates.[22] Data for all states can be found in the Appendix.

Chart 7. States with Greatest Share of Urban Interstates That Experience Congestion during Peak Hours, 2019.

RANK	STATE	Congested Urban Interstates
1	California	87%
2	Maryland	83%
3	New Jersey	81%
4	Delaware	71%
5	Florida	70%
6	Massachusetts	68%
7	Rhode Island	65%
8	Connecticut	63%
9	Hawaii	60%
10	Washington	58%
11	Texas	58%
12	Georgia	57%
13	Colorado	57%
14	Minnesota	56%
15	New Hampshire	54%
16	Virginia	52%
17	Kentucky	51%
18	South Carolina	50%
19	Utah	49%
20	Ohio	48%

Source: TRIP analysis of FHWA data.

The chart below details states with the busiest urban Interstates, as measured by the number of vehicles carried daily per Interstate lane mile. [23] Data for all states can be found in the Appendix.

Chart 8. States with Greatest Daily Travel Per-Lane-Mile on Urban Interstates, 2019.

RANK	STATE	Daily Interstate Travel Per Lane Mile
1	California	20,957
2	Maryland	20,214
3	Hawaii	17,864
4	Colorado	17,702
5	Florida	17,145
6	Texas	17,123
7	Rhode Island	16,644
8	Massachusetts	16,326
9	Washington	16,251
10	New Jersey	16,053
11	Delaware	15,956
12	Connecticut	15,514
13	Georgia	15,325
14	Virginia	15,207
15	Nevada	15,130
16	Arizona	15,016
17	Tennessee	14,718
18	Louisiana	14,452
19	Kentucky	14,404
20	Minnesota	14,236

Source: TRIP analysis of FHWA data.

Freight Shipment by Large Trucks on the Interstates

Every year, $18.9 trillion in goods are shipped from sites in the U.S., to domestic and international destinations.[24] Seventy-two percent of the goods shipped annually from sites in the U.S. are carried by trucks and another 14 percent are carried by courier services, which use trucks for part of their deliveries.[25]

The Interstate Highway System is the nation's most critical set of highways for goods shipment. Interstate highways carried 55 percent of all combination truck travel, measured by vehicle miles of travel in the U.S. in 2019.[26]

Travel by combination trucks, which are the large trucks that carry the majority of freight shipped in the U.S., accounted for 12 percent of all vehicle miles of travel on the Interstate Highway System in 2019.[27] The chart below shows states with the largest share of Interstate vehicle miles of travel attributed to combination trucks in 2019.[28] Data for all states can be found in the Appendix.

Chart 9. States with Largest Share of Vehicle Miles of Travel Attributed to Combination Trucks (2019).

RANK	STATE	Percent Interstate Vehicle Travel by Combination Trucks
1	Wyoming	30%
2	Arkansas	28%
3	Indiana	23%
4	Nebraska	22%
5	Iowa	19%
6	South Dakota	18%
7	North Dakota	18%
8	Montana	17%
9	Missouri	17%
10	West Virginia	17%
11	Illinois	17%
12	Mississippi	17%
13	Kentucky	17%
14	Maine	16%
15	Kansas	16%
16	Tennessee	16%
17	Oregon	16%
18	Idaho	15%
19	Oklahoma	15%
20	Alabama	14%

Source: TRIP analysis of FHWA data.

Travel by combination trucks on the Interstate Highway System increased 43 percent from 2000 to 2019, while overall vehicle travel increased 26 percent during the same time.[29] From 2010 to 2019, travel by combination trucks on the Interstate Highway System increased 14 percent, outpacing the 10 percent rate of growth for all vehicle travel during the same period.[30]

The American Transportation Research Institute (ATRI) prepares an annual list of the nation's top 100 truck bottlenecks, based on the analysis of a massive database of truck GPS data, to quantify the impact of traffic congestion on truck-borne freight. Forty-nine of the 50 top truck bottlenecks rated by ATRI, based on congestion levels, are on Interstate Highways. The chart below includes the top 20 truck bottlenecks. A list of the top 50 bottlenecks is included in the Appendix.

Chart 10. ATRI Top 20 Freight Bottlenecks (2021).

RANK	STATE	Top Bottlenecks
1	NJ	Fort Lee, NJ I-95 at SR 4
2	OH	Cincinnati, OH I-71 at I-75
3	GA	Atlanta, GA I-285 at I-85 (North)
4	GA	Atlanta, GA I-20 at I-285 (West)
5	TX	Houston, TX I-45 at I-69/US 59
6	IL	Chicago, IL I-290 at I-90/I-94
7	TN	Chattanooga, TN I-75 at I-24
8	MO	St. Louis, MO I-64/I-55 at I-44
9	NY	Rye, NY I-95 at I-287
10	CA	San Bernardino, CA I-10 at I-15
11	CA	Los Angeles, CA SR 60 at SR 57
12	TX	Dallas, TX I-45 at I-30
13	TN	Nashville, TN I-24/I-40 at I-440 (East)
14	NY	Brooklyn, NY I-278 at Belt Parkway
15	TX	Austin, TX I-35
16	GA	Atlanta, GA I-75 at I-285 (North)
17	TX	Houston, TX I-45 at I-610 (North)
18	LA	Baton Rouge, LA I-10 at I-110
19	IL	Chicago, IL I-90 at I-94 (South)
20	CO	Denver, CO I-70 at I-25

Source: ATRI.

The approximately 15,000 Interstate highway interchanges are a significant source of traffic delays and are the location of almost all of the nation's worst bottlenecks. Reconstructing and reconfiguring these interchanges would result in improved physical conditions, reduced travel delays and improved traffic safety.[31]

Traffic Safety on Interstate Highways

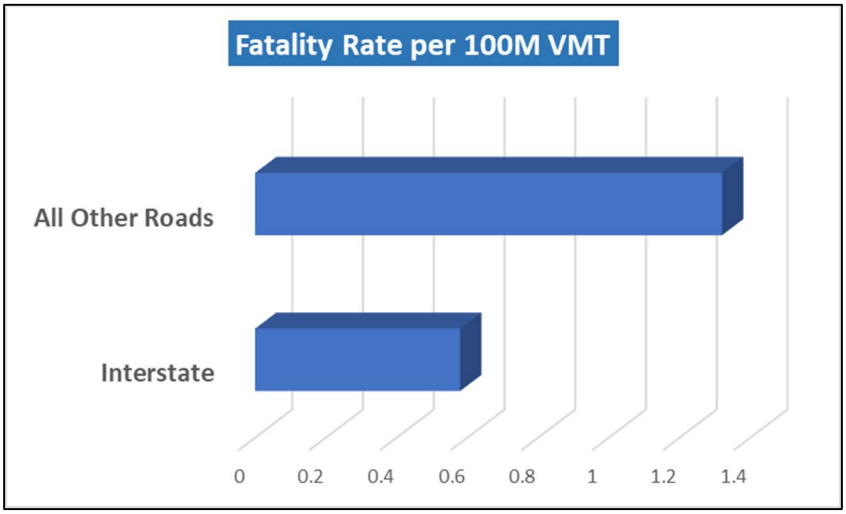
Perhaps the most significant benefit of the Interstate system is that it has greatly improved traffic safety throughout the nation by providing travelers with a network of highways with a variety of safety designs that significantly reduce the likelihood of serious accidents.

The safety features that are required on Interstates include a separation from other roads, streets and rail lines; access limited to on and off ramps; a minimum of four-lanes to prevent the need to enter oncoming lanes for passing; and, gentler curves. Most Interstate highways also have paved shoulders, and many have median barriers to avoid cross-over crashes and rumble strips to warn drivers if they are leaving the roadway. The result of the high level of safety design standards on the Interstate is that travel on the nation's Interstate highways is more than twice as safe as travel on all other roads and highways.

The Interstate Highway System, which carried 26 percent of the nation's travel in 2019, accounted for only 13 percent of the nation's traffic fatalities as a result of superior safety features.[32] There were 4,644 traffic fatalities on the nation's Interstate highways in 2019 – 13 percent of the 36,096 traffic fatalities that occurred in the U.S. in 2019.[33]

The traffic fatality rate per 100 million vehicle miles of travel on Interstate highways was 0.55 in 2019.[34] The fatality rate per 100 million vehicle miles of travel in 2019 on non-Interstate routes was 1.30 – nearly triple the rate on the nation's Interstates. [35]

Chart 11. Fatality rate per 100 Million Vehicle Miles of Travel for Interstate and Non-Interstate roadways, 2019.



Source: TRIP analysis of FHWA data.

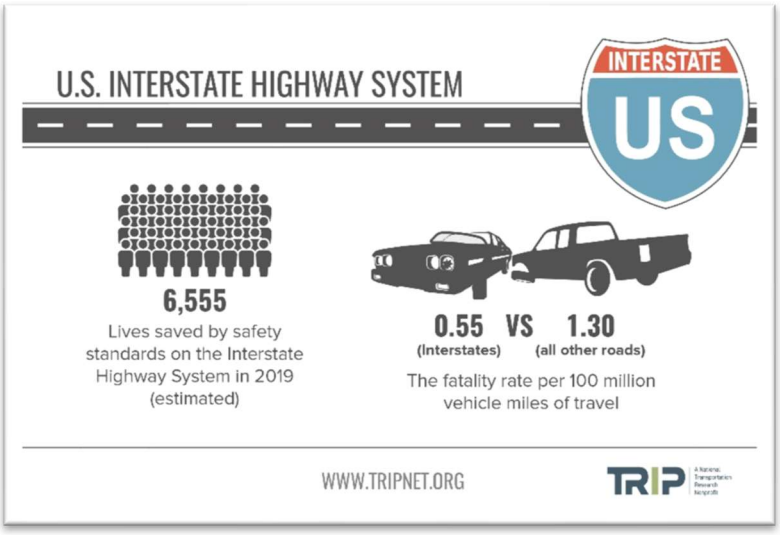
The chart below shows states with the highest traffic fatality rates on their Interstate highways in 2018, and the fatality rate on all other roads in those states.[36] Data for all states can be found in the Appendix.

Chart 12. States with Highest Traffic Fatality Rate per 100 Million Vehicle Miles of Travel on its Interstate system and Traffic Fatality Rate on non-Interstate roadways (2019).

RANK	STATE	INTERSTATE FATALITY RATE	ALL OTHER ROADS FATATLITY RATE
1	Wyoming	1.36	1.48
2	New Mexico	1.19	1.65
3	Mississippi	1.04	1.72
4	Arizona	0.87	1.54
5	Alabama	0.83	1.43
6	Texas	0.80	1.41
7	Idaho	0.80	1.39
8	Nebraska	0.76	1.28
9	Arkansas	0.75	1.58
10	Florida	0.72	1.56
11	South Carolina	0.71	2.14
12	Georgia	0.71	1.26
13	Kansas	0.70	1.48
14	Montana	0.70	1.67
15	Tennessee	0.70	1.65
16	Oklahoma	0.70	1.68
17	Missouri	0.69	1.27
18	Delaware	0.67	1.39
19	Nevada	0.66	1.18
20	Kentucky	0.55	1.90

Source: TRIP analysis of FHWA and NHTSA data.

Lives Saved by Interstate Highway System



Because it carries significant volumes of traffic on roadways with higher safety standards and lower traffic fatality rates, the Interstate Highway System saves thousands of lives annually. TRIP estimates that the Interstate Highway System saved 6,555 lives in 2019.[37] This estimate is based on a comparison of the annual fatality rate on the nation's Interstate highways compared to the fatality rate each year on other major roads in the state. Interstate safety benefits were estimated by calculating the additional fatalities that would have occurred each year if the travel that occurred on Interstate highways had instead been carried by other major roads, many of which often lack some of the safety features found on Interstate highways and have a significantly higher traffic fatality rate.

The chart below shows states that TRIP estimates had the most lives saved in 2019 due to the increased traffic safety provided by the Interstate Highway System.[38] Data for all states can be found in the Appendix.

Chart 13. States with the greatest number of lives saved in 2019 as a result of the increased traffic safety provided by the Interstate Highway System.

RANK	STATE	LIVES SAVED BY INTERSTATES IN 2019
1	California	765
2	Florida	454
3	Texas	449
4	Ohio	295
5	Pennsylvania	290
6	South Carolina	278
7	Illinois	267
8	Tennessee	253
9	North Carolina	234
10	Kentucky	228
11	Louisiana	225
12	Virginia	205
13	New York	202
14	Georgia	185
15	Michigan	177
16	Oregon	144
17	Arizona	142
18	Missouri	137
19	Indiana	134
20	Washington	130

Source: TRIP estimate based on FHWA and NHTSA data.

Economic Benefits of the Interstate System

The construction of the Interstate Highway System has had a profound impact on the nation's development, affecting the quality of life of Americans in numerous ways including increased safety, expanded lifestyle choices and an enhanced standard of living.

By greatly increasing the number of areas that are within a reasonable driving distance, the Interstate system has significantly increased access to jobs, housing, recreation, healthcare, shopping and other amenities.

Similarly, the construction of the Interstate Highway System has benefited the nation's economy by reducing the costs of and increasing the speed of goods movement. The ability to cheaply and quickly ship products to or from domestic and international sites has resulted in lower costs and greater selection to consumers, while opening up new markets to U.S. businesses. The completion of the vast majority of the Interstate system by the 1980s, and the deregulation of the U.S. trucking industry, resulted in a significant improvement in the competitiveness of U.S. business. The cost of moving freight, as measured by U.S. business logistics costs, dropped from 16 percent of U.S. Gross Domestic Product (GDP) in 1980 to eight percent in 2018.[39]

Interstate access has a significant impact on the competitiveness of a region's economy Increasingly, companies are looking at the quality of a region's transportation system when deciding where to re-locate or expand. Regions with congested or poorly maintained roads may see businesses relocate to areas with a smoother, more efficient and more modern transportation system. Highway access has a significant impact on the competitiveness of a region's economy. Not surprisingly, highway accessibility was ranked the number two site selection factor in the 2021 survey of corporate executives by Area Development Magazine, behind only skilled labor.[40]

The TRB report found that U.S. counties either on an Interstate highway or within 20 miles of an Interstate are anticipated to grow in population through 2060 at a rate approximately seven times greater than counties that are at least 20 miles from an Interstate highway (36 percent versus five percent).[41]

While additional segments have been added to the Interstate Highway System to provide access to more communities, in 2019, 37 urban areas with populations of at least 50,000 did not have access to the Interstate Highway System, defined as being at least 25 miles from an Interstate.[42]

Chart 14. Urbanized Areas with a Population 50,000 or Greater that are more than 25 Miles from an Interstate Highway.

Urban Area	Population
Fresno, CA	654,628
Oxnard, CA	367,260
Santa Rosa, CA	308,321
Atlantic City, NJ	248,402
Visalia, CA	219,454
Myrtle Beach–Socastee, SC–NC	215,304
Santa Barbara, CA	195,861
Salinas, CA	184,809
College Station–Bryan, TX	171,345
Panama City, FL	143,280
Merced, CA	139,969
Santa Maria, CA	130,447
Greenville, NC	117,798
Seaside–Monterey, CA	114,237
Salisbury, MD–DE	98,081
Bend, OR	83,794
Madera, CA	78,413
Florence, AL	77,074
Lake Jackson–Angleton, TX	74,830
Porterville, CA	70,272
Dothan, AL	68,781
Dubuque, IA–IL	67,818
El Paso de Robles (Paso Robles)–Atascadero, CA	65,088
Victoria, TX	63,683
Kokomo, IN	62,182
Sherman, TX	61,900
Sebring–Avon Park, FL	61,625
San Luis Obispo, CA	59,219
Lexington Park–California–Chesapeake Ranch Estates,	58,875
Mankato, MN	57,584
Kahului, HI	55,934
Farmington, NM	53,049
Arroyo Grande–Grover Beach, CA	52,000
Lewiston, ID–WA	51,924
Lompoc, CA	51,509
Villas, NJ	51,291
New Bern, NC	50,503

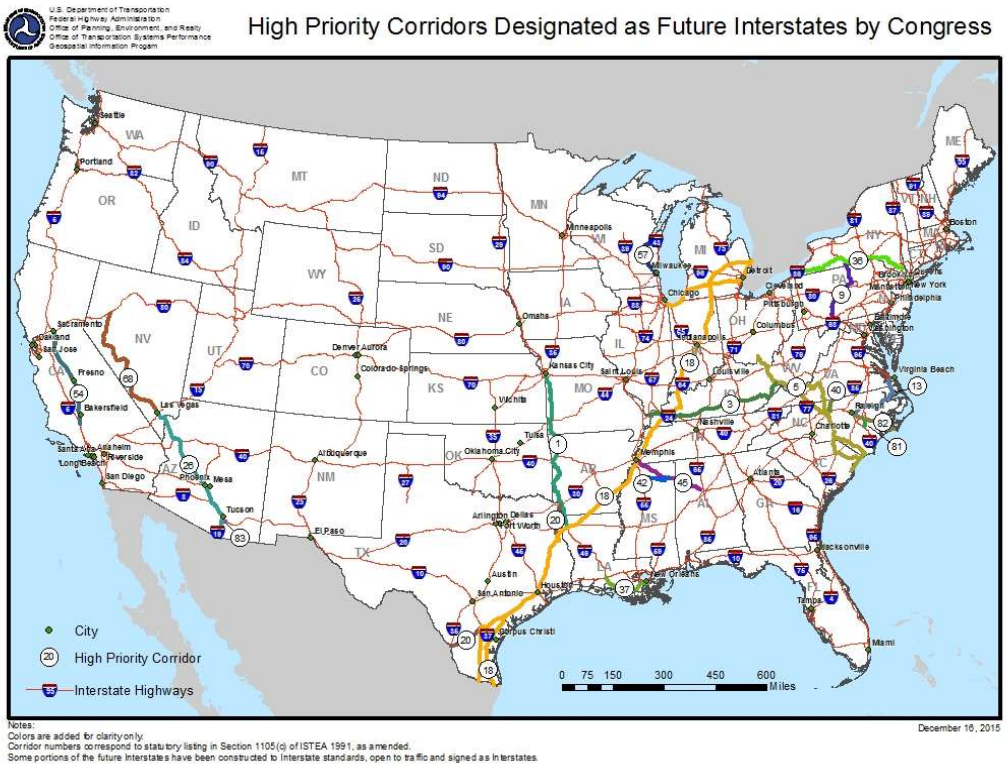
Source: TRB.

The tremendous increase in freight deliveries over recent years has been partly fueled by improved communications and the need for greater economic competitiveness. Improved communications provided by the Internet are integrating producers, wholesalers, retailers and consumers. Businesses have responded to improved communications and the necessity to cut costs with a variety of innovations, including just-in-time delivery, increased small package delivery, demand-side inventory management and e-commerce.

The result of these changes has been a significant improvement in logistics efficiency as businesses move away from a push-style distribution system, which relies on large-scale warehousing of materials, to a pull-style distribution system, which relies on smaller, more strategic movement of goods. These improvements have made mobile inventories the norm, resulting in the nation's trucks literally becoming rolling warehouses.

Recognizing the critical importance of access to an Interstate highway to increase a region's economic competitiveness and support growth and development, Congress has identified high-priority corridors for designation as future Interstate highways. These designated future Interstate corridors, which are in various phases of development, include I-69 from Michigan to the Texas-Mexico border, I-11, which would connect Phoenix and Las Vegas, and I-49 from Kansas City to Houston.

Chart 15. High Priority Corridors Designated as Future Interstate Highways by Congress



Corridors	States
North-South Corridor (I-49)	Missouri, Arkansas, Louisiana
United States Route 220 and the Appalachan Thruway Corridor (I-99)	(I-99) Pennsylvbania and New York
Raleigh-Norfolk Corridor	North Carolina and Virginia
I-69 Corridor	Michigan, Illinois, Indiana, Kentucky, Tennessee, Mississippi, Arkansas, Louisiana and Texas
United States Route 59 Corridor (I-69)	Texas
New York and Pennsylvania State Route 17 (I-86)	New York and Pennsylvania
I-11 from Nogales, Arizona to Las Vegas, Nevada	Arizona, Nevada
I-73/74 Corridor	Ohio, Kentucky, West Virginia, Virginia, North Carolina and South Carolina
Edwart T. Breathitt Parkway from I-24 to I-69 (I-169)	Kentucky
United States Route 90	Louisiana
The Greensboro Corridor	Virginia and North Carolina
Portion of Corridor V of the Appalachian Development Highway System	Mississippi
United States Route 78 Corridor and Corridor X of the Appalachian Development Highway System (I-22)	Louisiana
California Farm-to-Market Corridor	California
U.S. 41	Wisconsin
United States Route 117/Interstate Route 795 Corridor	North Carolina
Sonoran Corridor	Arizona
I-57 Corridor Extension	Arkansas , Missouri
Wendell H. Ford Parkway (I-569)	Kentucky

Source: U.S. Department of Transportation.

Funding of the Interstate System

The primary source of revenue for the Interstate Highway System is the Fixing America's Surface Transportation (FAST Act), the nation's current federal surface transportation program, which was authorized in 2015 and was set to expire on September 30, 2020. Congress extended the legislation for one year to September 30, 2021. The FAST Act provides modest increases in federal highway and transit spending. The bill also provides states with greater funding certainty and streamlines the federal project approval process. But, the FAST Act does not provide adequate funding to meet the nation's need for highway and transit improvements and does not include a long-term and sustainable funding source.

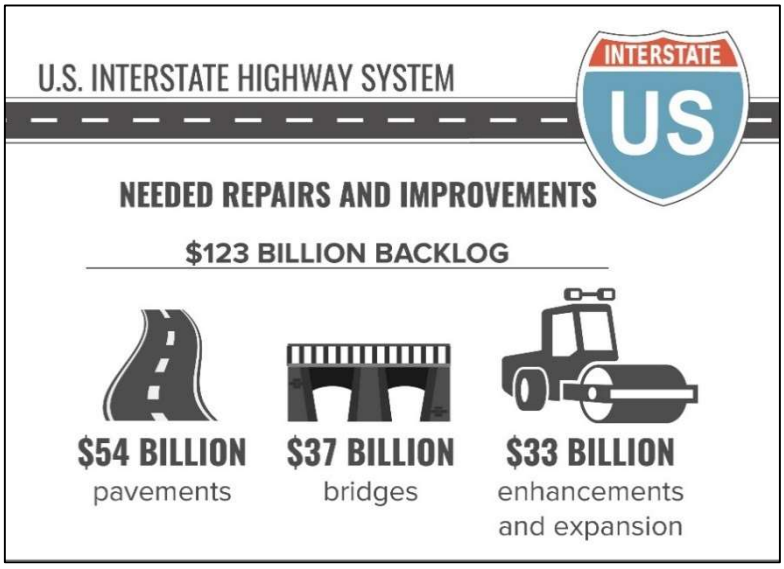
Revenue collected from the 18.4 cents-per-gallon federal motor fuel tax and the 24.4 cents-per-gallon federal diesel fuel tax are the primary sources of funding for the federal Highway Trust Fund, which distributes funds to state and local governments for highway and bridge repairs and other surface transportation improvements, including public transit, pedestrian and bicycling facilities.

Meeting Future Interstate Travel Needs

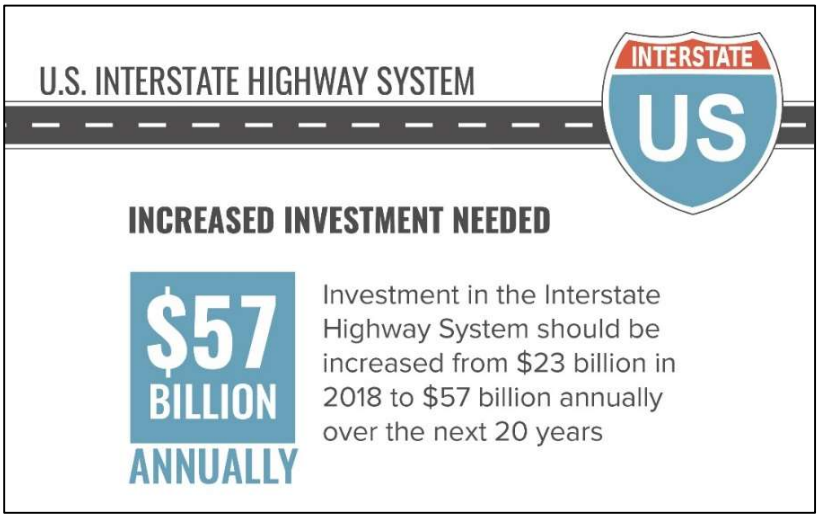
The U.S. faces a significant challenge in maintaining and rebuilding its aging Interstate Highway System and providing additional lane capacity to meet growing travel demand.

The most recent U.S. Department of Transportation (USDOT) analysis of the condition of the nation's surface transportation system found that the nation faces a significant backlog in needed improvements to the Interstate Highway System.

The U.S. Department of Transportation, in its report, Status of the Nation's Highways, Bridges, and Transit, 23rd Edition, submitted to Congress in 2019, determined that the current backlog in needed improvements on the nation's Interstate Highway System is estimated to be $123 billion.[43] The backlog on the nation's Interstate Highway System includes $54 billion needed to improve pavement conditions, $37 billion to improve bridges and $33 billion for needed system expansion and enhancement.[44]



The TRB report evaluated future Interstate Highway System investment that will be necessary to: address the need to rebuild the majority of the system's pavements and bridges; address current and future deterioration; improve traffic safety features and expand the capacity of the system to handle future traffic levels, particularly in urban areas; and, to connect growing urban areas that are not well connected to the Interstate system.



The TRB report estimated that approximately $57 billion should be spent on Interstate Highway System renewal and modernization annually over the next 20 years, a 146 percent increase from the approximately $23 billion spent on Interstate highways in 2018.[45]

Because of the lack of analytical tools and adequate databases, the TRB needed funding estimate does not include the funding needed to reconfigure and reconstruct many of the Interstate system's approximately 15,000 interchanges.[46]

Recommendations for Restoring and Renewing the Interstate Highway System

Restoring and upgrading the Interstate Highway System to meet the nation's 21st Century transportation needs will take significant resolve to reestablish the Interstate Highway System as the nation's premier transportation network. The TRB Interstate report notes that "the scale and scope of the Interstate reinvestment imperative is daunting."[47] The TRB report also noted that the renewal and restoration of the Interstate Highway System will require strong federal leadership and a robust partnership between the states and the federal government.[48]

The following recommendations, based on the findings and recommendations of the TRB Interstate report, provide a roadmap for the restoration of the Interstate Highway System:

- Reconstruct the nation's Interstate Highway System, including pavements, bridges and interchanges
- Improve safety features on Interstate highways
- Right-size Interstate system by:
  - ✓ upgrading some existing roadways to Interstate standard
  - ✓ adding needed additional highway capacity on existing routes to maintain and improve mobility
  - ✓ adding additional corridors to accommodate demographic and economic growth
  - ✓ modifying some urban segments to maintain connectivity while remediating economic and social disruption

Conclusion

Sixty-five years after President Eisenhower articulated a vision for the nation's 20th Century transportation system, a Congressionally-mandated report has found that the U.S. faces a "daunting" task in restoring and renewing its most important transportation system.

The nation's Interstate Highway System is beset with growing traffic congestion, increasing car and truck travel, and aging pavements, bridges and interchanges that need to be reconstructed and modernized.

Today, the Interstate Highway System continues to save Americans time, lives and money while playing a critical role in supporting economic growth and enhancing the lifestyle choices of the nation's residents and visitors.

If Americans are to continue to enjoy the benefit of the unparalleled level of access and mobility provided by the Interstate Highway System, which has enabled the nation's unprecedented development and growth, the U.S. will need to commit to a well-funded program of Interstate restoration, modernization and renewal.

Ensuring that the Interstate Highway System plays the same role in supporting the nation's development in the 21st Century will require a significant boost in investment in an Interstate restoration program based on strong federal leadership of a robust federal-state partnership.

As Americans look back on the many benefits that the Interstate Highway System has provided, they must also look ahead to meeting the challenge of providing a modern Interstate Highway System that will continue to enhance the quality of life of current and future generations.

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ENDNOTES

[1] Transportation Research Board (2019). Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future. P. 199. http://www.trb.org/Main/Blurbs/178485.aspx
[2] Ibid. P. 200
[3] Public Roads, 1996. "Three States Claim First Interstate Highway." Federal Highway Administration.
[4] Ibid.
[5] TRIP analysis of Highway Statistics 1986, 1996 and 2014, Federal Highway Administration.
[6] TRIP analysis of U.S. Census Bureau data.
[7] U.S. Census Bureau data, Federal Highway Administration data. See chart MV-1. Additional historical data from Highway Statistics Summary to 1995.
[8] U.S. Census Bureau data, Federal Highway Administration data. See chart VM-2. Additional historical data from Highway Statistics Summary to 1995.
[9] TRIP analysis of Highway Statistics, 2019, Federal Highway Administration. Data is from charts VM-2 and HM-20.
[10] TRIP analysis of 2000 and 2019 Federal Highway Administration data. See chart VM-2 in Highway Statistics 2000 and Highway Statistics 2019.
[11] TRIP analysis of 2000 and 2019 Highway Statistics, Federal Highway Administration. See charts HM-60 and VM-2.
[12] Ibid.
[13] U.S. Department of Transportation (2021). Travel Monitoring Traffic Volume Trends https://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm
[14] TRIP analysis of 2019 Federal Highway Administration data. See chart HM-64 in Highway Statistics.
[15] Ibid.
[16] Selecting a Preventative Maintenance Treatment for Flexible Pavements. R. Hicks, J. Moulthrop. Transportation Research Board. 1999. Figure 1.
[17] Transportation Research Board (2019). Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future. P. 51. http://www.trb.org/Main/Blurbs/178485.aspx
[18] Ibid. P. 54
[19] Federal Highway Administration, 2020. National Bridge Inventory data.
[20] Commonwealth of Pennsylvania. 2005-06 Governor's Executive Budget.
[21] Highway Statistic 2019. Federal Highway Administration.
[22] TRIP analysis of Federal Highway Administration, Highway Statistics 2019, chart HM-37.
[23] Federal Highway Administration. TRIP analysis of Highway Statistics 2019, charts VM-2, HM-60.
[24] TRIP analysis of Federal Highway Administration's Freight Analysis Framework data (2018). Data is for 2016. https://faf.ornl.gov/fafweb/
[25] Ibid.
[26] Highway Statistic 2019. Federal Highway Administration. See chart VM-1.
[27] TRIP analysis of 2019 FHWA data. See chart VM-4 in 2014 Highway Statistics.
[28] Ibid.
[29] Highway Statistics 2000 and 2019. Federal Highway Administration.
[30] Highway Statistics 2010 and 2019. Federal Highway Administration
[31] Transportation Research Board (2019). Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future. P. 166. http://www.trb.org/Main/Blurbs/178485.aspx
[32] TRIP analysis of 2019 FHWA data. See charts FI-20, VM-2 in 2018 Highway Statistics.
[33] TRIP analysis of 2019 FHWA data. See chart FI-20 in 2018 Highway Statistics.
[34] Ibid.
[35] Ibid.
[36] Highway Statistics 2019, Federal Highway Administration. Charts FI-20, VM-2.
[37] TRIP analysis of 2019 FHWA data. See charts FI-20, VM-2 in 2014 Highway Statistics.
[37] Ibid.
[38] Ibid.
[39] Select USA. (2019). Logistics and Transportation Spotlight. https://www.selectusa.gov/logistics-and-transportation-industry-united-states

[40] Area Development Magazine (2021). 35th Annual Corporate Survey: Effects of Global Pandemic Reflected in Executives Site and Facility Plans _ https://www.areadevelopment.com/corporate-consultants-survey-results/q1-2021/35th-annual-corporate-survey.shtml

[41] Transportation Research Board (2019). Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future. P. 89. http://www.trb.org/Main/Blurbs/178485.aspx
Additional analysis provided by TRIP.

[42] Ibid. P. 68

[43] United States Department of Transportation (2015). 2015 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance. Chapter 7. Exhibit 7-9. https://www.fhwa.dot.gov/policy/2015cpr/es.cfm#8h

[44] Ibid.

[45] Transportation Research Board (2019). Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future. P. 4. http://www.trb.org/Main/Blurbs/178485.aspx The recommended funding is based on the funding needs estimated by TRB assuming an annual 1.5 percent annual average increase in travel. From 2013 to 2019, the average annual increase in vehicle miles of travel was 2.1 percent.

[46] Ibid. P. 5

[47] Ibid. P. 266.

[48] Ibid. P. 5.