



2017 INFRASTRUCTURE REPORT CARD



OVERVIEW

America's roads are often crowded, frequently in poor condition, chronically underfunded, and are becoming more dangerous. More than two out of every five miles of America's urban interstates are congested and traffic delays cost the country \$160 billion in wasted time and fuel in 2014. One out of every five miles of highway pavement is in poor condition and our roads have a significant and increasing backlog of rehabilitation needs. After years of decline, traffic fatalities increased by 7% from 2014 to 2015, with 35,092 people dying on America's roads.

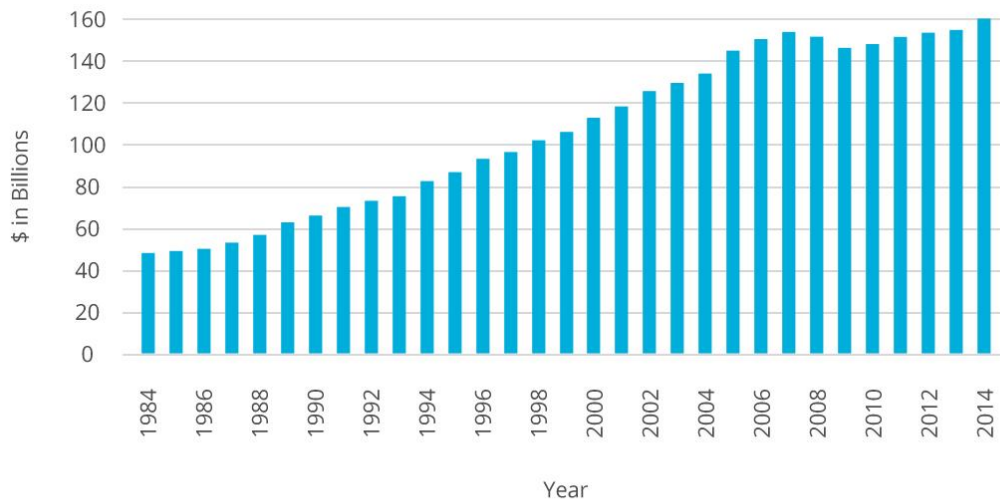
CAPACITY & CONDITION

With over four million miles of roads crisscrossing the United States, from 15 lane interstates to residential streets, roads are among the most visible and familiar forms of infrastructure. In 2016 alone, U.S. roads carried people and goods over three trillion miles—or more than 300 round trips between Earth and Pluto. After a slight dip during the 2008 recession, Americans are driving more and vehicle miles travelled is at its second highest-ever level, second only to 2007.

With more traffic on the roads, it is no surprise that America's congestion problem is getting worse, but adding additional lanes or new roads to the highway system will not solve congestion on its own. More than two out of every five miles of the nation's urban interstates are congested. Of the country's 100 largest metro areas, all but five saw increased traffic congestion from 2013 to 2014. In 2014, Americans spent 6.9 billion hours delayed in traffic—42 hours per driver. All of that sitting in traffic wasted 3.1 billion gallons of fuel. The lost time and wasted fuel add up—the total in 2014 was \$160 billion.



Total Cost of Congestion 2014 Dollars



20% of the nation’s highways had poor pavement condition in 2014. Urban roads are in far worse shape than rural roads due to greater volumes of traffic; 32% of urban roads are in poor condition, compared to 14% of rural roads. Driving on roads in need of repair cost U.S. motorists \$112 billion in extra vehicle repairs and operating costs in 2014.

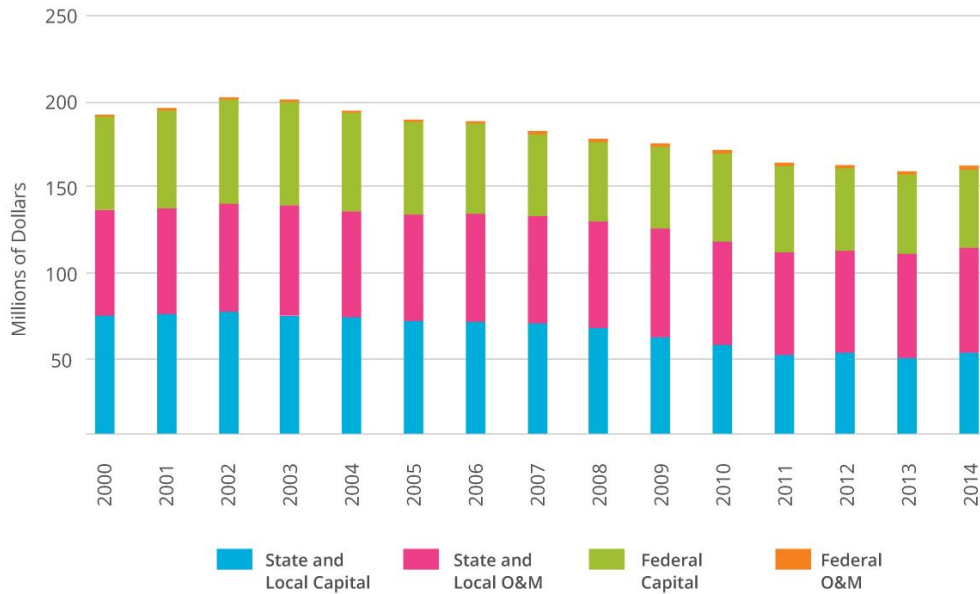
In some areas, state and local governments have reconsidered road materials, converting some low-traffic, rural roads from asphalt to gravel. These roads were mostly paved when asphalt and construction prices were low, but with construction costs rising faster than infrastructure funding, converting the roads back to gravel is a more sustainable solution for maintenance. At least 27 states have de-paved roads, primarily in the last five years.

FUNDING & FUTURE NEED

The U.S. has been underfunding its highway system for years, resulting in a \$836 billion backlog of highway and bridge capital needs. The bulk of the backlog (\$420 billion) is in repairing existing highways, while \$123 billion is needed for bridge repair, \$167 billion for system expansion, and \$126 for system enhancement (which includes safety enhancements, operational improvements, and environmental projects). The Federal Highway Administration estimates that each dollar spent on road, highway, and bridge improvements returns \$5.20 in the form of lower vehicle maintenance costs, decreased delays, reduced fuel consumption, improved safety, lower road and bridge maintenance costs, and reduced emissions as a result of improved traffic flow.



Public Spending on Highway Infrastructure



The federal government is a major source of funding for the construction of highways through the federal Highway Trust Fund and competitive grant programs for specific projects, like TIGER. In 2014, the federal government spent \$43.5 billion on capital costs for highway infrastructure (including bridges) and state and local governments spent \$48.3 billion. State and local governments are responsible for the operation and maintenance (O&M) of highways (with the exception of roads on federal lands). They spent \$70 billion on O&M in 2014, while the federal government spent \$2.7 billion.

Federal investment in highways has historically been paid for from a dedicated, user fee-funded source, the Highway Trust Fund. However, the Trust Fund has been teetering on the precipice of insolvency for nine years due to the limitations of its primary funding source, the federal motor fuels tax. The tax of 18.4 cents per gallon for gasoline and 24.4 cents for diesel has not been raised since 1993, and inflation has cut its purchasing power by 40%. Between 2013 and 2017, 17 states and the District of Columbia raised their motor fuels taxes. A number of states are exploring other revenue sources for funding road investment, including mileage-based user fees. With continued improvements in vehicle fuel efficiency and the popularity of hybrid and electric vehicles, mileage-based user fees present a promising long-term funding alternative to the motor fuels tax.

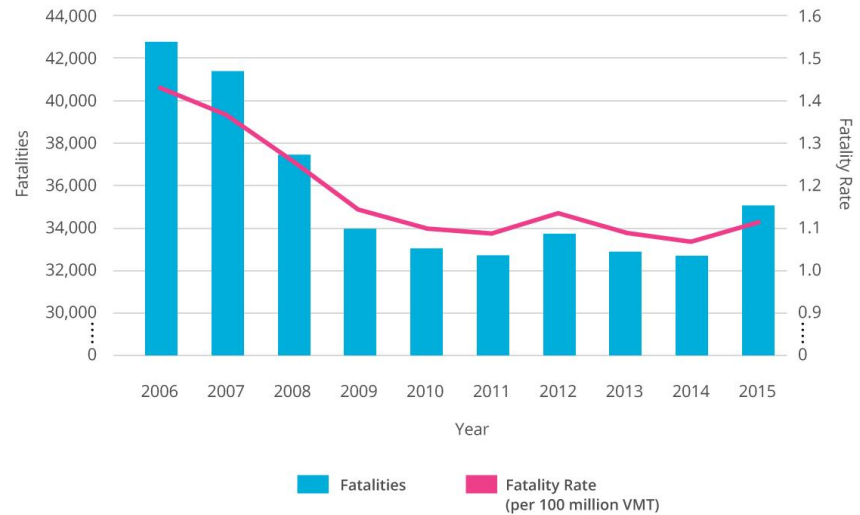
PUBLIC SAFETY

35,092 people were killed in motor vehicle crashes in 2015. Traffic fatalities decreased significantly over the last decade, but abruptly increased by 7% from 2014 to 2015 and preliminary data shows fatalities rose 8% in the first nine months of 2016. 9.5% more pedestrians and 12.2% more bicyclists were killed by crashes in 2015 than 2014, emphasizing the importance of designing streets for the safety of all users.



The recent increase in fatal crashes is not yet fully understood, but communities are trying to save lives through improvements in road design, such as widening lanes and shoulders; adding and improving medians, guard rails, and parallel rumble strips; upgrading road markings and traffic signals; and using new materials, such as high friction surface treatments. Another increasingly popular method communities are using to improve the safety of their roads for all users is the “road

Motor Vehicle Fatalities



diet,” which reconfigures a road, reducing the number of lanes and adding safety features. For instance, a four-lane, undivided highway could be converted to a two-lane highway with a center two-way left-turn lane. The extra space created by removing a lane can be reallocated for other safety-oriented uses such as bike lanes, pedestrian refuge islands, or designated transit stops. The Federal Highway Administration’s Highway Safety Improvement Program (HSIP) collects data, performs research, and provides funding to states to implement these infrastructure-based safety measures.

INNOVATION AND RESILIENCE

New road design, construction, maintenance, and management technologies and techniques are constantly being developed. The Federal Highway Administration’s Every Day Counts program has played an important role in collecting and evaluating new ideas and promoting the deployment of proven, market-ready strategies. These innovations have included the use of 3D engineered models for more accurate and efficient planning and construction; new methods to determine when, where and how to best preserve pavement; and tools to make permitting reviews faster and more efficient. New materials and technology are also helping roads become more sustainable and resilient, such as greater use of permeable paving materials to reduce storm runoff, as well as the use of recycled materials in pavement.

RECOMMENDATIONS TO RAISE THE GRADE

- Increase funding from all levels of government and the private sector to tackle the massive backlog of highway needs.
- Fix the federal Highway Trust Fund by raising the federal motor fuels tax. To ensure long-term, sustainable funding for the federal surface transportation program, the current user fee of 18.4 cents per gallon on gasoline and 24.4 cents per gallon on diesel should be raised and tied to



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inflation to restore its purchasing power, fill the funding deficit, and ensure reliable funding for the future.

- Tackle congestion through policies and technologies that maximize the capacity of the existing road network and create an integrated, multimodal transportation system.
- Prioritize maintenance and the state of good repair to maximize the lifespan of roads.
- State and local governments should ensure their funding mechanisms (motor fuel taxes or other) are sufficient to fund their needed investment.
- All levels of government need to think long-term about how to fund their roads and consider potential alternatives to the motor fuel taxes, including further study and piloting of mileage-based user fees.
- Increase investment and expand the federal Highway Safety Improvement Program to find new ways and further propagate existing methods to make roads safe for all users.

DEFINITIONS

Vehicle miles travelled – the total mileage travelled nationally by all vehicles over one year

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