AN ECONOMIC ANALYSIS OF TRANSPORTATION INFRASTRUCTURE INVESTMENT

July 2014

THE WHITE HOUSE
WASHINGTON

This report was prepared by the National Economic Council and the President's Council of Economic Advisers

Executive Summary

A high quality transportation network is vital to a top performing economy. Investments by previous generations of Americans – from the Erie Canal in 1807, to the Transcontinental Railroad in 1869, to the Interstate Highway System in the 1950s and 1960s – were instrumental in putting the country on a path for sustained economic growth, productivity increases, an unrivalled national market for good and services, and international competitiveness. But today, current estimates indicate that America's transportation infrastructure is not keeping pace with demands or the needs of our growing economy, for today or for future generations.

A well-performing transportation network keeps jobs in America, allows businesses to expand, and lowers prices on household goods to American families. It allows businesses to manage their inventories and transport goods more cheaply and efficiently as well as access a variety of suppliers and markets for their products, making it more cost-effective for manufacturers to keep production in or move production to the United States. American families benefit too: as consumers, from lower priced goods; and as workers, by gaining better access to jobs.

The economic benefits of smart infrastructure investment are long-term competitiveness, productivity, innovation, lower prices, and higher incomes, while infrastructure investment also creates many thousands of American jobs in the near-term.

- Today there are more than 4 million miles of road, 600,000 bridges, and 3,000 transit providers in the U.S. And yet, over the past 20 years, total federal, state, and local investment in transportation has fallen as a share of GDP – while population, congestion, and maintenance backlogs have increased.

- The U.S. lags behind many of its overseas competitors in transportation infrastructure investment. In the most recent World Economic Forum rankings, the U.S. had in less than a decade fallen from 7th to 18th overall in the quality of our roads.

- 65 percent of America's major roads are rated in less than good condition, one in four bridges require significant repair or cannot handle today's traffic, and forty five percent of Americans lack access to transit.

The costs of inadequate infrastructure investment are exhibited all around us. Americans spend 5.5 billion hours in traffic each year, costing families more than $120 billion in extra fuel and lost time. American businesses pay $27 billion a year in extra freight transportation costs, increasing shipping delays and raising prices on everyday products. Underinvestment impacts safety too. There were more than 33,000 traffic fatalities last year alone and roadway conditions are a significant factor in approximately one-third of traffic fatalities. Such fatalities occur disproportionately in rural America, in part because of inadequate road conditions.

That's why the President introduced the GROW AMERICA Act, a four-year, $302 billion proposal to fund our nation's transportation system and invest in the nation's future growth. The President's plan addresses the nation's significant infrastructure investment gap through targeted investments now and lays the groundwork for increased efficiency in the future. The President has been pressing Congress to act to avoid a lapse in funding of the Highway Trust Fund which will go insolvent as early as August, putting numerous active projects at risk.

I. Long Term Economic Benefits from Infrastructure Investment

A modern transportation network is vital to our economy, and is a prerequisite for future growth. President Eisenhower's vision is even more relevant today than it was in 1955, when he said in his State of the Union Address, "A modern, efficient highway system is essential to meet the needs of our growing population, our expanding economy, and our national security."

Today, that vision includes making not only our nation's highways, but its entire infrastructure system, more efficient and effective. A well-performing transportation network allows businesses to manage inventories and transport goods more cheaply, access a variety of suppliers and markets for their products, and get employees reliably to work. American families benefit too: as consumers, from lower priced goods, and as workers, by gaining better access to jobs. An efficient transportation network also enables firms and people to locate near one another, so that they can benefit from shared access to inputs of production, an insight first recognized in the 1890s.[1] This is all the more vital as regional economies with interdependent urban, suburban and rural areas relying on each other for innovation, employment, and growth become more important in manufacturing, energy, tourism, technology, and other US industries.

Evaluating how transportation and other infrastructure benefit the overall economy has been the subject of extensive economic literature. David Aschauer's research found very large economic gains from public capital generally (including but not limited to transportation), suggesting $1 in output gains for $1 in increased investment.[2] Subsequent research has detected more modest effects that can be sensitive to the types of public capital, sectors of the economy, geography level, and time periods considered as well as methods employed to study the data.[3]

More recent research has highlighted the importance of selecting investments wisely in key areas of the country on the basis of their economic contributions. This research has also emphasized the importance of maintaining existing assets in a good state of repair.[4] Beyond contributions to economic growth and productivity, quality transportation infrastructure can also benefit businesses and consumers alike through shorter and more reliable travel times, resulting in direct and indirect benefits that ripple throughout the economy.

[1] Alfred Marshall, *Principles of Economics*, London: Macmillan and Co., Ltd: 1890.
[2] David Alan Aschauer, "Is Public Expenditure Productive?" *Journal of Monetary Economics*,23(2) (March 1989): 177–200.
[3] E.g., John G. Fernald, Roads to prosperity? Assessing the link between public capital and productivity, *American Economic Review* 89 (1998): 619–638; Alicia H.Munnell, "Policy Watch: Infrastructure Investment and Economic Growth," *Journal of Economic Perspectives*, 6(4) (Autumn 1992):189–198.
[4] E.g., Matthew Kahn and David Levinson, "Fix It First, Expand It Second, Reward It Third: A New Strategy for America's Highways" Hamilton Project, 2011; Edward M. Gramlich, "Infrastructure Investment: A Review Essay," *Journal of Economic Literature*, 32(3) (September 1994): 1176–1196.

Less road congestion

A well-connected transportation network means faster, more reliable travel times for both people and goods. Providing transportation choices enables businesses to choose the most efficient way to ship their goods. It is also important, because time spent stuck in traffic not only wastes fuel, resulting in higher out of pocket costs for businesses and households, but also wastes time that could be spent engaged in more productive activities.

For example, the Texas Transportation Institute estimates that American commuters in urban areas collectively lost 5.5 billion hours stuck in traffic in 2011, meaning the average commuter lost nearly a week to traffic. TTI's calculations further suggest that traffic congestion caused American commuters to purchase an extra 2.9 billion gallons of fuel, costing them more than $120 billion in added fuel costs and wasted time.[5] Further, well-maintained roads, coupled with access to public transportation and other driving alternatives, can lower traffic congestion and accident rates which not only save Americans time and money but also save lives.

More reliable shipments and travel times

More congestion also means that both businesses and families must account for the unreliability of travel times when making their plans. For the trucking industry alone, the Federal Highway Administration calculates that highway bottlenecks cause more than 243 million hours of delay each year, at a cost of $7.8 billion annually.[6] Moreover, when shipping takes longer, businesses must re-orient their supply chains, hold more inventories, or rely on more distribution centers, resulting in added costs. To cite just a few examples, in a 2005 survey of Portland, Oregon business leaders, the Economic Development Research Group and found that:

- Intel moved their last shipment departure time up two hours for out-bound shipments to avoid peak-period congestion.

- Sysco Foods opened a new regional distribution center in Spokane to better serve their market area (because it was taking too long to serve its market from the Portland area). Providence Health Systems planned to relocate its warehousing and support operations because medical deliveries were requiring more than four hours in some cases.

- OrePac increased inventories by seven to eight percent because of congestion delays, siphoning of resources that could have been used for other investment.

- PGE estimated that it spent approximately $500,000 a year for additional travel time for its maintenance crews.[7]

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[5] David Schrank, Bill Eisele, and Tim Lomax, *TTI's 2012 Urban Mobility Report*, December 2012.

[6] Karen White and Lance R. Grenzeback, "Understanding Freight Bottlenecks," *Public Roads* 70(5) (March/April 2007). Available at: https://www.fhwa.dot.gov/publications/publicroads/07mar/05.cfm

[7] Economic Development Research Group, The Cost of Congestion to the Economy of the Portland Region, 2005, http://www.portofportland.com/PDFPOP/Trade_Trans_Studies_CoCReport1128Final.pdf.

Similarly, other researchers have found:

- Nike must spend an additional $4 million per week to carry an extra 7-to-14 days of inventory to compensate for shipping delays.[8]

- One day of delay requires American President Line's eastbound trans- Pacific services to increase its use of containers and chassis by 1,300, which adds $4 million in costs per year.[9]

- A week-long disruption to container movements through the Ports of Los Angeles and Long Beach could cost the national economy between $65 and $150 million per day

Higher land values and local economic development

Transportation investments affect not only the level of economic output but geographic distribution of economic activity. Declining transportation costs in the past facilitated the growth of cities across the United States. Chicago, for example, grew in size and importance because it served as a central hub between the fruitful plains of the mid-west and the markets of the northeast and Europe.

Infrastructure investment can also raise property values, particularly if these investments bring about improvements in local living standards (including shorter commute times and greater proximity to desirable amenities).[10] For example, research suggests that proximity to public transit raises the value of residential and commercial real estate. Bernard Weinstein studied the effect of the Dallas light rail system on property values, and found that a jump in total valuations around light rail stations was about 25 percent greater than in similar neighborhoods not served by the system.[11] This is consistent with studies conducted in St. Louis,[12] Chicago,[13] Sacramento,[14] and San Diego,[15] all of which find that property values experience a premium effect when located near public transit systems.

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[8] Isbell, John, "Maritime and Infrastructure Impact on Nike's Inbound Delivery Supply Chain," TRB Freight Roundtable, 2006, http://www.trb.org/conferences/FDM/Isbell.pdf.

[9] Bowe, John. 2006. "The High Cost of Congestion" Presentation to the TRB Freight Roundtable, October 24, www.trb.org/conferences/FDM/Bowe.pdf.

[10] Andrew F. Haughwout, "Public infrastructure investments, productivity and welfare in fixed geographic areas " *Journal of Public Economics* (March 2002) 83(3): 405-428.

[11] Weinstein, B. et al. "The Initial Economic Impacts of the DART LRT System." Center for Economic Development and Research, University of North Texas, 1999.

[12] Garrett, T. "Light Rail Transit in America: Policy Issues and Prospects for Economic Development," Federal Reserve Bank of St. Louis, 2004.

[13] Gruen, A."The Effect of CTA and METRA Stations on Residential Property Values." Regional Transportation Authority, 1997

[14] Landis, J. et al. "Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems." Institute of Urban and Regional Development, UC Berkeley, 1995.

[15] Cervero, R. et al. "Land Value Impacts of Rail Transit Services in San Diego County," Urban Land Institute, 2002.

TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION ACT (TIFIA)

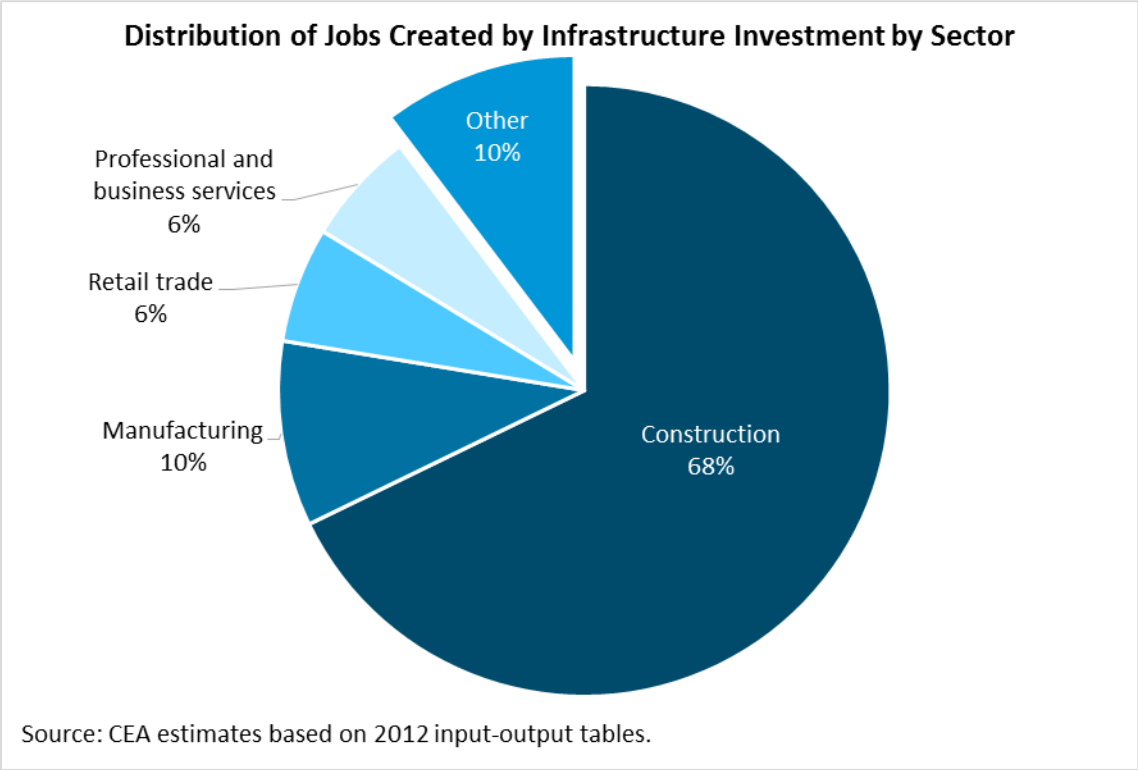
The TIFIA Program offers low-cost, long-term, flexible financing that can make large, complex transportation projects more attractive to both the public and private sector. The TIFIA program allows the Department of Transportation to lend at the 30-year Treasury rate (currently around 3.3 percent) for up to 35 years following substantial completion of an eligible transportation project. It also allows the Department to enter into a subordinate lien position and postpone repayment for up to 5 years after substantial project completion. This flexibility provides significant cost savings to borrowers and, in some cases, is the catalyst that ensures that project will be undertaken.

Under Departmental policy, a TIFIA loan can finance a maximum of 33 percent of total project costs (though MAP-21 increased the statutory maximum to 49 percent of total project cost). Only projects with more than $50 million in total project costs ($25 million in rural areas) are eligible for TIFIA loans. Since its launch, the TIFIA program has helped 46 projects in 18 states turn over $17 billion in TIFIA assistance into nearly $64 billion in infrastructure investment across America. The Moving Ahead for Progress in the 21st Century Act (MAP-21) transformed TIFIA into one of the largest transportation infrastructure loan programs in history, making up to $17 billion available in credit assistance for critical infrastructure projects. The GROW AMERICA Act would make an estimated $40 billion in additional loan volume from a $4 billion investment over four years.

II. Immediate Job Creation in Key Industries

While the most important economic impact of smart infrastructure investment comes from long-term competitiveness, productivity, innovation, lower prices, and higher incomes, infrastructure investment also creates many thousands of jobs in the near-term that are directly linked to the American economy and difficult to ship overseas. These jobs span across a wide variety of different industries. For example, road building not only requires construction workers, but also grading and paving equipment, gasoline or diesel to run the machines, smaller hand tools of all sorts, raw inputs of cement, gravel, and asphalt, surveyors to map the site, engineers and site managers, and even accountants to keep track of costs.

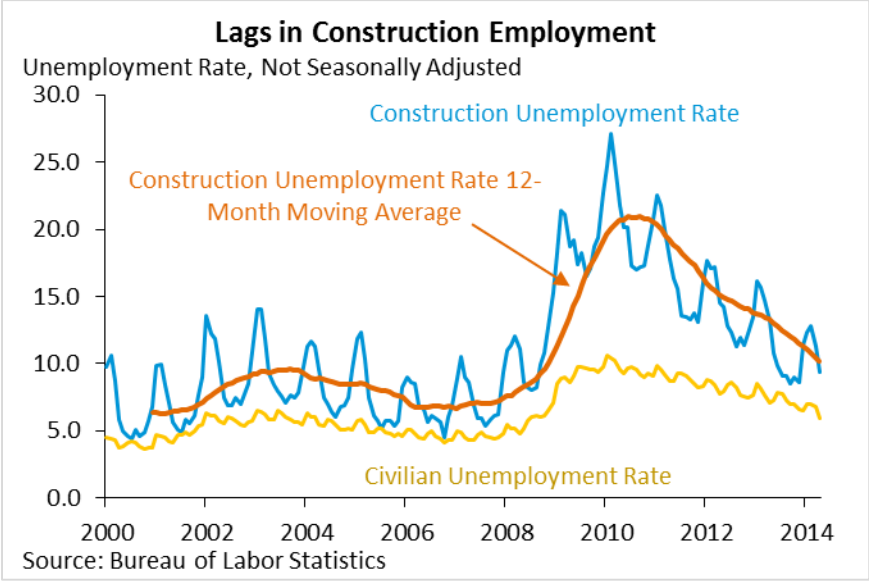
Analysis of data from the BEA 2012 annual input-output table and related data from the Bureau of Labor Statistics (BLS) suggests that 68 percent of the jobs created by investing in infrastructure are in the construction sector, 10 percent in the manufacturing sector, and 6 percent in retail trade.



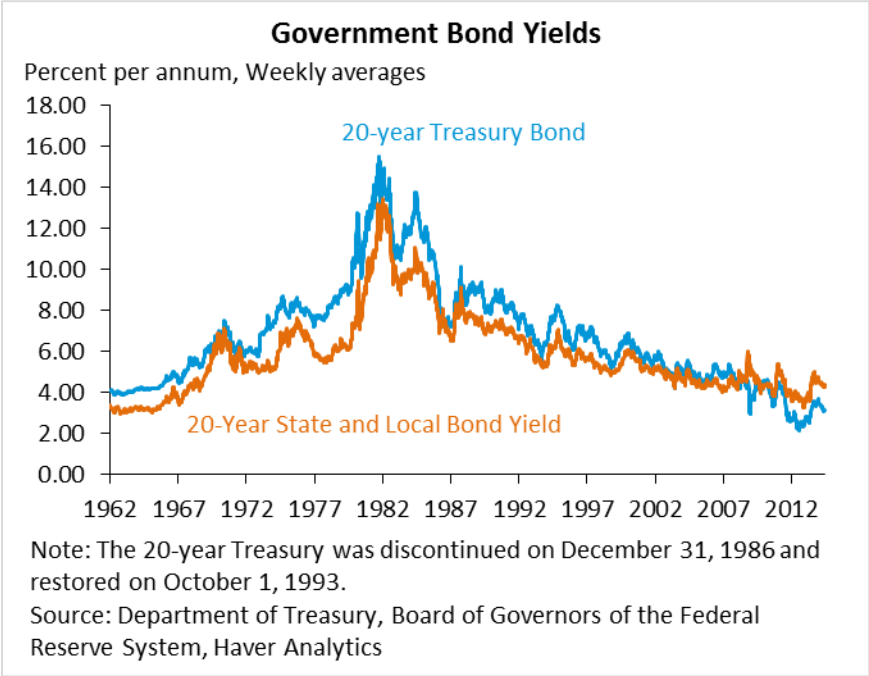
Source: CEA estimates based on 2012 input-output tables.

Construction and manufacturing sectors were disproportionately affected by the economic crisis – so infrastructure investments help support hard-hit American workers. Although the construction sector has added 186,000 jobs over the last 12 months, the unemployment rate for construction workers remains elevated at 9.9 percent (based on a twelve-month moving average of not seasonally adjusted data). At the same time, the number of construction jobs has fallen by

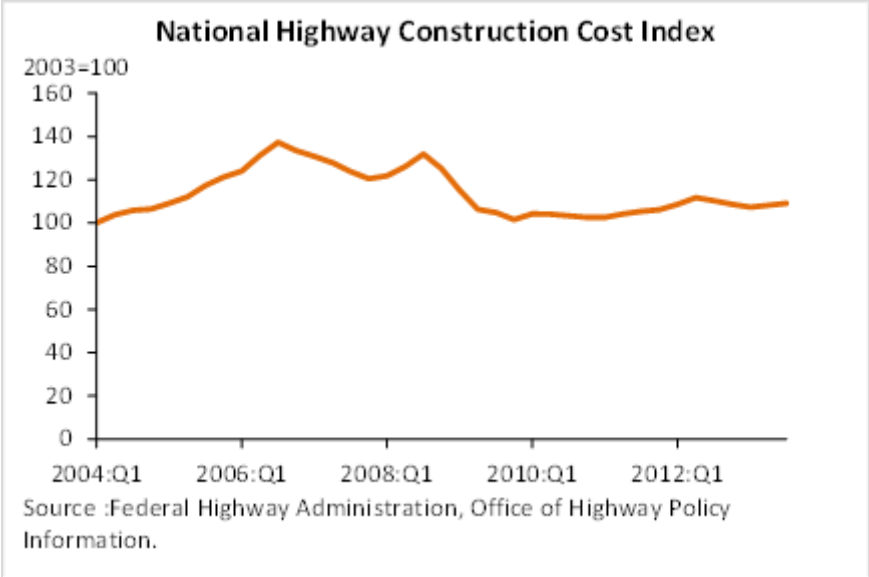
nearly 20 percent since December 2007. Accelerated infrastructure investment would provide an opportunity for construction workers to productively apply their skills and experience.



Investing in infrastructure now would not only help those workers for whom unemployment remains unacceptably high, but would also allow state and localities to address their critical needs at a time when costs for building and financing projects are very low. Specifically, the costs of borrowing through the issuance of municipal bonds are at historic lows. Bond revenues are the primary source of infrastructure finance at the state and local level—and are also used to match federal funds.



Construction costs for highways have declined more than 20 percent since before the 2007 recession and have been relatively flat since 2011. Moreover, 20-year bond yields remain below pre-recessionary levels, but as the economy continues to recover and prices begin to rise, higher construction costs and bond-yields will likely follow.



Investing in infrastructure provides short term benefits to states and localities to address their critical needs at a time when borrowing costs are low but future revenues are uncertain. State and local governments are significant partners in funding public infrastructure. During recessions,

it is common for state and local governments to cut back on capital projects – such as building schools, roads, and parks – in order to meet balanced budget requirements. Although state revenues have now regained pre-recession levels, growth has been moderate.[16] Past research has also found that expenditures on capital projects are more than four times as sensitive to year-to-year fluctuations in state income as is state spending in general.[17] Providing additional federal support for transportation infrastructure investment would be prudent given the ongoing budgetary pressures facing state and local governments.

[16] Lucy Dadayan and Donald J. Boyd, "April 'Surprises' More Surprising Than Expected: Depressed Income Tax Collections Adding to Budget Pressures," Rockefeller Institute of Government Special Report, June 2014.

[17] James R. Hines, Hilary Hoynes, and Alan Krueger, "Another Look at Whether a Rising Tide Lifts All Boats," in The Roaring `90s: Can Full Employment Be Sustained?, edited by Alan B. Krueger and Robert Solow, Russell Sage and Century Fund, 2001

BUILDING ON THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

Research suggests that public infrastructure investments have some of the highest multipliers, or effects on short run GDP of any fiscal interventions. The table below shows Congressional Budget Office and Council of Economic Advisers estimates of the effects of $1 of various types of spending and tax cuts on output or GDP. Since the Recovery Act, some researchers have detected even higher multipliers for transportation infrastructure, suggesting that each dollar of Recovery Act highway spending generated as much as $3 in output gains.

Estimated Output Multipliers for Different Types of Stimulus

	CEA	CBO Low	CBO High
Public Investment Outlays[a]	1.5	0.5	2.5
State and Local Fiscal Relief	1.1	0.4	1.8
Income and Support Payments[b]	1.5	0.4	2.1
One-time Payments to Retirees	0.4	0.2	1.0
Tax Cuts to Individuals	0.8	0.3	1.5
Business Tax Incentives	0.1	0.0	0.4

Note: The CEA multipliers show the impact of a permanent change in the component of 1% of GDP after 6 quarters, or, equivalently, the cumulative impact of a one-time change of 1% of GDP over 6 quarters. The CBO multipliers show the cumulative impact of a one-time change of 1% of GDP over several quarters.
a. Includes transfer payments to state and local government for infrastructure and tax incentives to businesses directly tied to certain types of spending.
b. Includes such programs as unemployment compensation, COBRA, and SNAP

Source: Congressional Budget Office, Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output from October 2012 Through December 2012; CEA Calculations.

Because of high estimated multipliers and the country's infrastructure gap, the Recovery Act dedicated considerable resources to public investments including transportation. In particular, the Recovery Act allocated $48 billion to programs administered by the Department of Transportation. The Recovery Act also initiated the Transportation Investment Generating Economic Recovery (TIGER) grant program, which allowed the Department of Transportation to invest in critical projects that were difficult to fund through traditional means. The program made extensive use of benefit-cost analysis to evaluate project applications. In total the program has funded over 230 capital projects and 33 planning projects, leveraging local, state and private funding to build multimodal projects across the country. The latest competition for $600 million garnered $9.5 billion in state and local applications, demonstrating the stark need for more Federal investment in transportation.

As detailed in the CEA's (2013) report, with Recovery Act funds, shovels went in on more than 15,000 transportation projects across the Nation. The Department of Transportation estimates that these projects will improve nearly 42,000 miles of road, mend or replace over 2,700 bridges, and provide funds for over 12,220 transit vehicles. The Recovery Act also made the largest-ever investments in American high-speed rail, constructing or improving approximately 6,000 miles of high-performance passenger rail corridors and procurement of 120 next-generation rail cars or locomotives. All told, the Recovery Act raised the level of GDP by 2 to 2.5 percent between the fourth quarter of 2009 and the second quarter of 2011. It increased employment by more than 2.3 million in 2010 alone, and continued to have substantial effects into 2012 as shown in CEA (2013).

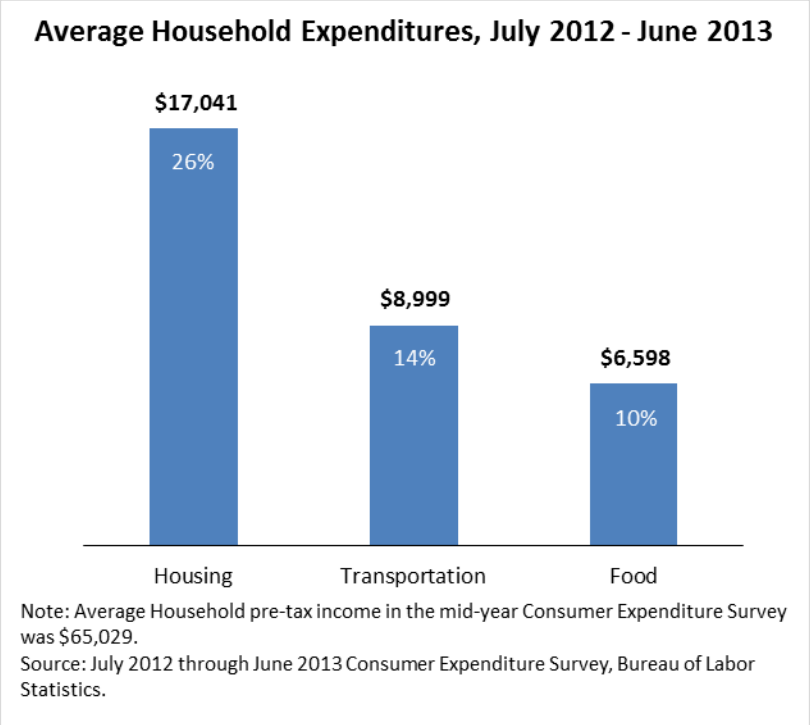
Source: Leduc, Sylvain, and Daniel J. Wilson. Forthcoming. "Roads to Prosperity or Bridges to Nowhere? Theory and Evidence on the Impact of Public Infrastructure Investment." NBER Macroeconomics Annual 2012.

III. Infrastructure Impacts on American Families

Investing in transportation and providing more high-quality transportation choices provides American families with options to save time and money, so that they can retain more of their income for other purposes and spend more time doing what they want, rather than spending time getting there.

Lower household costs

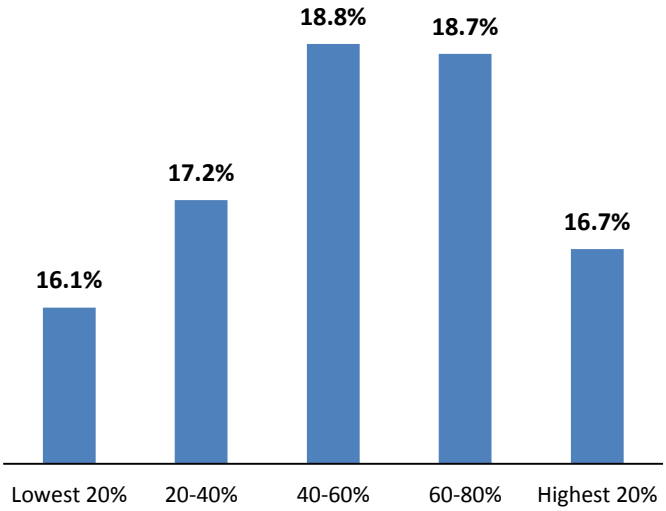
For the average American family, transportation expenditures rank second only to housing expenditures. Given how much Americans spend on transportation, public investments which lower the cost of transportation could have a meaningful impact on families' budgets. Reducing fuel consumption, decreasing the need for car maintenance due to poor road conditions, and increasing the availability of affordable and accessible public transportation systems would allow Americans to spend less money on transportation.



Note: Average Household pre-tax income in the mid-year Consumer Expenditure Survey was $65,029.
Source: July 2012 through June 2013 Consumer Expenditure Survey, Bureau of Labor Statistics.

Transportation expenditures can be particularly burdensome for middle class families. For the 90 percent of Americans below the top decile in the income distribution, transportation costs absorb one out of every seven dollars of income. Transportation expenses relative to income are almost twice as great for the bottom 90 percent as they are for the top 10 percent.

Percent of Expenditure Spent on Transportation by Household Income, July 2012 - June 2013



Source: July 2012 through June 2013 Consumer Expenditure Survey, Bureau of Labor Statistics.

Vehicle operating and maintenance costs

Moreover, improving our nation's transportation system can save American families money by reducing the costs associated with congestion and the additional wear and tear caused by poor road conditions. TRIP, an industry group, notes that deteriorated roads accelerate the depreciation of vehicles and the need for repairs because the stress on the vehicle increases in proportion to the level of roughness of the pavement surface. Similarly, tire wear and fuel consumption increase as roads deteriorate since there is less efficient transfer of power to the drive train and additional friction between the road and the tires. They estimate the average motorist in the U.S. pays $377 each year in additional vehicle operating costs as a result of driving on roads in need of repair, which varies by major urbanized area.

Average Additional Cost of Vehicle Maintenance to Motorists Due to Sub-par Road Conditions by Metropolitan Area

Rank	Urban Area	Annual Vehicle Operating Cost
1	Los Angeles--Long Beach--Santa Ana, California	$832
2	Tulsa, Oklahoma	$784
3	San Francisco--Oakland, California	$782
4	Oklahoma City, Oklahoma	$782
5	San Diego, California	$758
6	San Jose, California	$737
7	Tucson, Arizona	$723
8	Milwaukee, Wisconsin	$700
9	New Orleans, Louisiana	$687
10	New York City--Newark, New York/New Jersey	$673
11	Bridgeport--Stamford, Connecticut	$669
12	Sacramento, California	$658
13	Riverside--San Bernardino, California	$638
14	Seattle, Washington	$625
15	Concord, California	$623
16	Denver--Aurora, Colorado	$615
17	Dallas--Fort Worth--Arlington, Texas	$615
18	Birmingham, Alabama	$601
19	Honolulu, Hawaii	$598
20	Colorado Springs, Colorado	$589

Source: TRIP (2013). Bumpy Roads Ahead: America's Roughest Rides and Strategies to Make our Roads Smoother.

Health and safety

More road congestion also means more stop-and-go traffic which leads to harmful emissions. According to the Environmental Protection Agency, transportation accounts for one-third of all carbon dioxide emissions from fossil fuel combustion, and these emissions are particularly harmful to children's health.[18]

But the impact of the transportation system on our health also extends beyond traffic crashes and air quality to American families' fundamental quality of life. In 2010, the Gallup-Healthways Well-Being Index found that 40 percent of employees who spend more than 90 minutes getting home from work "experienced worry for much of the previous day." That number falls to 28

[18] Currie, Janet, and Reed Walker. 2011. "Traffic Congestion and Infant Health: Evidence from E-ZPass." American Economic Journal: Applied Economic Journal: Applied Economics, 3(1): 65-90.

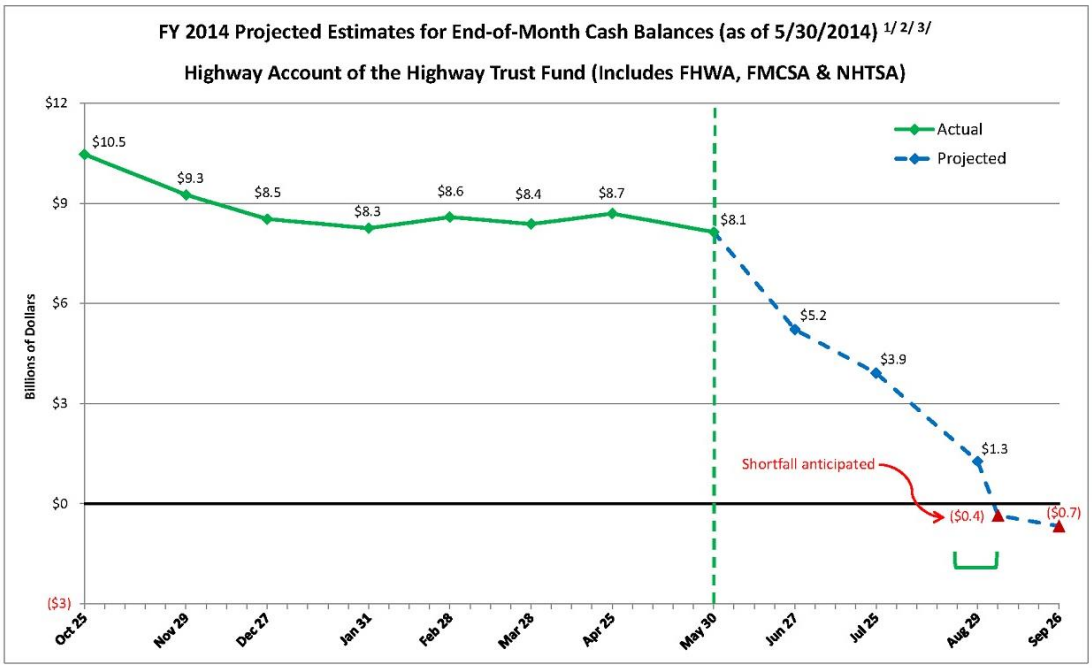
percent for those with "negligible" commutes of 10 minutes or less. The survey also found that one in three workers with a 90-minute daily commute has recurrent neck or back problems. This only confirms what 900 Texan women expressed in 2006, when Nobel laureate Daniel Kahneman and Princeton economist Alan Krueger asked them how much they enjoyed a number of frequent activities. Commuting came in dead last.

IV. Current Budgetary Climate

Since the 1950s, the Highway Trust Fund has been the primary federal source of funding for state and local surface transportation projects. Every five to ten years, Congress authorized predictable levels of funding to states and later local transit agencies for road, bridge, and transit projects. And over the last quarter-century, Congress has customarily taken stock on the nation's needs for transportation investment and has authorized multi-year funding increases of roughly 40 percent over the prior authorization to better meet the needs of our communities and our economy.

But over the past few years, revenues that go into the Fund haven't kept pace with the federal funding levels promised to states by Congress. As a result, the Department of Transportation projects the Highway Trust Fund to be insolvent by the end of this summer. Soon afterwards, Congressional authorities for the federal government to reimburse states and localities for spending on surface transportation – including roads, highways, and transit– will expire.

The President has called on Congress to ensure the continuity of the Highway Trust Fund in the near-term, and to reauthorize transportation legislation on a long-term basis with substantially increased funding levels to give States, communities and businesses the certainty to invest, as many Congresses have done before.



1/ Graph reflects actual data through 5/30/14 and end-of-month projections for the remainder of the fiscal year.

2/ Total receipt and outlay projections are based on FY 2015 President's Budget Baseline assumptions. Projected monthly receipt and outlay rates are based on historic averages.

3/ Range of anticipated shortfall: Green brackets denote the estimated window of when the anticipated shortfall will occur.

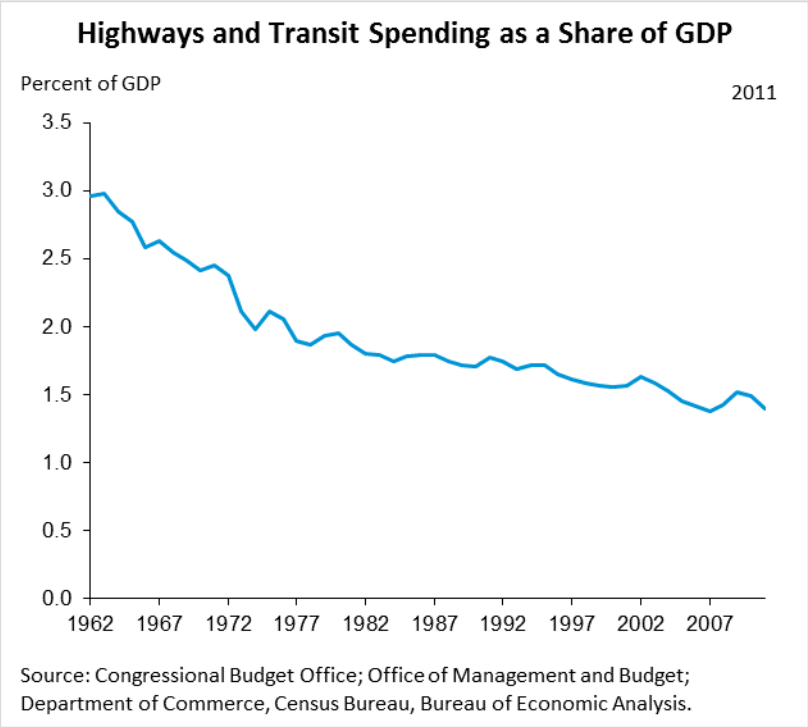
Source: FHWA

In light of the considerable funding uncertainty, states and localities are already pulling back from surface transportation projects. Meanwhile, credit rating agencies are downgrading bonds

supported by anticipated federal payments.[19] While complete data is not yet available, a Goldman Sachs analysis found that in previous years when Congress has balked at reauthorizing transportation funding, "uncertainty regarding federal funding has been associated with a temporary slowdown in construction activity, and the slowdown would probably be more severe if payments were actually delayed or reduced."[20] This means that Congress's stalling may have already cost American jobs and slowed down projects.

Appendix 1 provides a table of state specific data on the transportation system and suggests how federal funding delays might impact different states. As suggested above, federal spending on transportation is an important part of our national infrastructure investment, because it traditionally provided a steady and multi-year funding source for major capital projects – especially major road projects that link major economic centers, both regionally and nationally. 44 percent of all surface transportation capital investment comes from federal funds and states with smaller populations tend to rely much more on federal funds.

In 2011, the latest year for which comprehensive data are available for federal, state, and local governments, the U.S. spent more than $215 billion on surface transportation. Taken together, total spending as a share of GDP has been falling, from about 3 percent of GDP in 1962 to only 1.4 percent today. That's more than a 50 percent decline. And although total spending has generally been increasing in real dollar terms since the 1980s, it declined in 2010 and 2011.



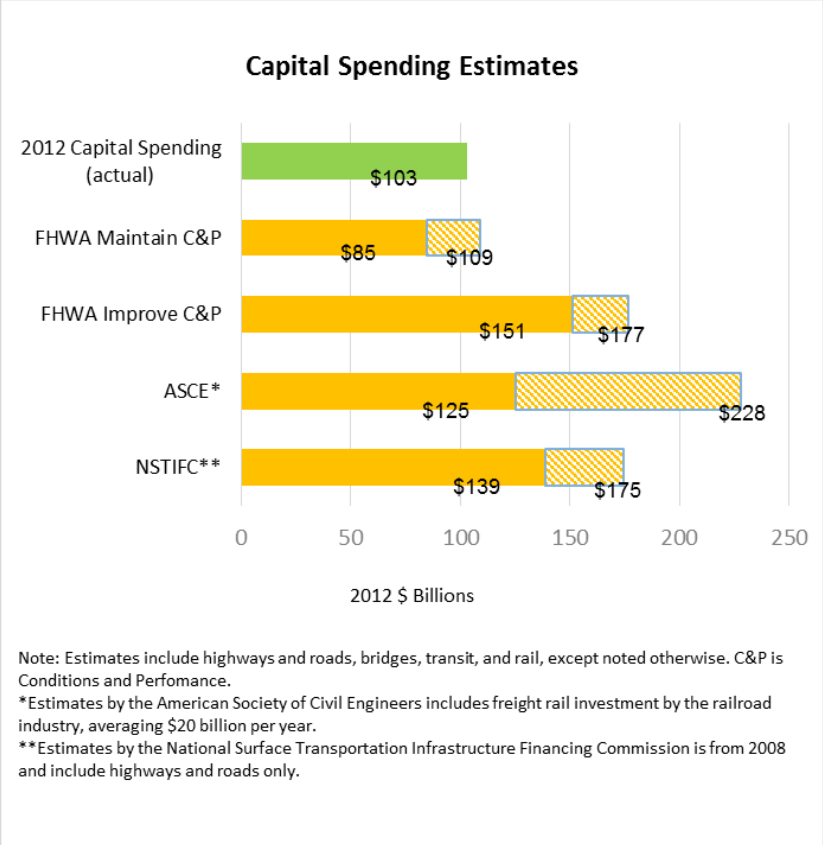
[19] Jim Watts, "Moody's Lowers GARVEES as HTF Evaporates," *Bond Buyer*, June 18, 2014

[20] Goldman Sachs Global Macro Research, "US Daily: Congress Finally Begins to Make Progress on Infrastructure Spending" July 9, 2014.

As investments have declined, it has become widely recognized by government agencies, state agencies, think tanks, stakeholders, and business groups that our infrastructure is not keeping pace with the demands of a growing economy.

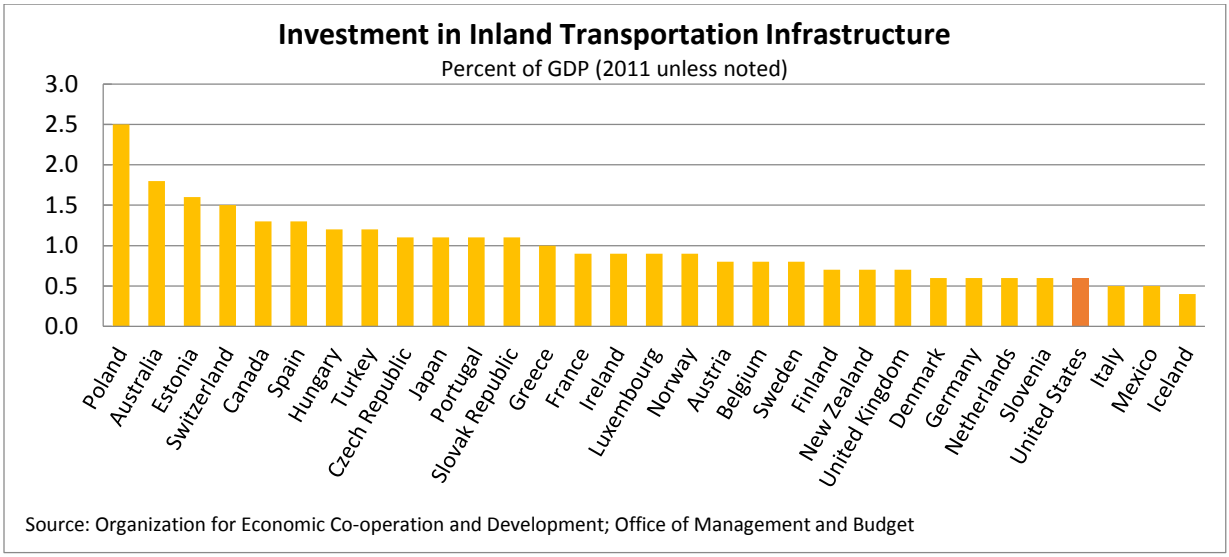
Estimates of the needs for investment vary significantly, as would be expected in any studies of such a large system. In a widely cited report, the American Society of Civil Engineers finds $125 billion per year is needed to maintain and repair our existing surface transportation system, while the National Surface Transportation Infrastructure Financing Commission estimates $139 billion per year (in 2012 dollars). Both estimates are higher than actual capital spending in 2012, which was $103 billion at federal, state, and local government levels.

The Department of Transportation publishes an objective appraisal of the physical conditions, operational performance, and financing mechanisms of highways, bridges, and transit systems based on both their current state and under future investment scenarios. In the most recent Conditions and Performance (C&P) Report, DOT estimates we need $85 to $177 billion.



A strong and efficient infrastructure network is critical to maintaining US competitiveness in a global marketplace. However, in recent years, the United States has fallen considerably behind other advanced countries when it comes to total transportation investment. These investment flows show up in business leader evaluations of the United States as a place to do business. For example, in the World Economic Forum's latest Global Competitive Index, the US ranked 10th for

transportation, 18th for roads, and 19th for quality of overall infrastructure—well below other advanced economies. We are well behind countries including Poland, Estonia, Hungary, Spain and Greece.



Business leaders recognize the threats posed to our competitiveness by underinvestment in our infrastructure – a finding backed up by frequent surveys of businesses and employers:

- In 2014, the US Travel Association issued a report finding that 65 percent of travel executives surveyed believe infrastructure is critical to increasing global competitiveness. Moreover, 87 percent believed American Infrastructure was in "fair" or "poor shape", 74 percent said the quality and reliability of the system was important to the success of their business, 76 percent believed the US was not prepared to respond to the competitive demands of increased travel over the next 10 to 15 years, and 96 percent said that that greater investments in maintained and upgrades are needed and that all options should be on the table.

- In 2013, the National Association of Manufacturers surveyed 401 members and found that 70 percent believe American infrastructure is in fair or poor shape and 65 percent do not believe that infrastructure, especially in their region, will be able to respond to the competitive demands of a growing economy over the next 10 to 15 years. It is important to note that the manufacturing sector moves roughly $1.8 trillion (12 percent GDP) of goods and services each year across air, sea, roads, and rail.

- In 2013, The Economist Intelligence Unit took a narrower look by surveying executives from manufacturing companies in the oil and gas, utilities, chemicals and natural resource industries. The EIU found that 87 percent of executives said that aging infrastructure had an impact on their operations in recent years, with 10 percent mentioning that it had caused severe problems in their operations that they were continuing to address.

THE NATIONAL FREIGHT NETWORK

The nation's freight network transports more than 54 million tons of goods worth nearly $48 billion each day. The Department of Transportation projects freight tonnage to increase by 62 percent by 2040. In 2006, the total logistics cost rose to 9.9 percent of GDP, after declining through the 1980s and 1990s, reflecting increases in fuel prices and increases in congestion in U.S. highways, rail lines, and ports. The DOT estimates the cost of congestion approaching is $200 billion per year for all modes of transport.

The GROW AMERICA Act provides $10 billion over four years for targeted investments to improve the nation's freight network. The proposal will create incentives to support regional coordination and local decision-making, encouraging neighboring states to improve multistate freight corridors and giving freight stakeholders a meaningful seat at the table when it comes to project selection. The remainder of the funds will support winning projects of multimodal discretionary competitions focused on improving critical elements of the freight network.

The Alameda Corridor project in California is an example of how regional and multi-stakeholder collaboration and investment improved intermodal freight mobility for two of the busiest ports dealing with international trade. The rail project consolidated 90 miles of rail and 200 roadway crossings into a 20-mile high capacity transport corridor between the ports of Long Beach and Los Angeles, California, expanding capacity to 12.7 million containers per year from 3.5 million. By removing about 200 highway-rail crossings in the process, these improvements also reduced highway congestion by eliminating 15,000 hours of delay per day for motor vehicles that used to wait for trains to pass.

Improving America's freight transportation supports economic growth and international competitiveness. Transportation improvements lower logistics costs, making it more cost-effective for manufacturers to keep production in or move production to the United States and increase the range of possible locations for manufacturing plants and distribution facilities. It keeps jobs in America, allows businesses to expand, and lowers prices to American families.

V. Conclusion

The data and research presented in this report underscores what the American people already know: investing in infrastructure is essential to the economic health of the nation. That's why poll after poll shows that Americans favor infrastructure investment.

Earlier this year, the President called on Congress to ensure the continuity in surface transportation programs and laid out his vision for a four-year investment plan that would support millions of jobs at home and lay the foundation for American businesses to better compete globally.

Introduced as the GROW AMERICA Act, the proposal would:

- Provide certainty. The multi-year proposal offers states the long term certainty they need to invest in larger, economically transformative projects.

- Increase funding. The President's proposal would provide $302 billion over four years–an increase of 37 percent over current spending levels and creating millions of jobs–to better meet the needs of a growing population and to support a growing economy and growing workforce.

- Make needed reforms. The Administration proposal will create more bang for the buck by streamlining project approval processes, encouraging efficiency and innovation throughout our surface transportation system.

The President has proposed to pay for this critical investment through pro-growth business tax reform. The Administration is eager to work with Congress on tax reform or on other strategies for funding our transportation system. What we can't do is let gridlock in Congress create gridlock across America. It's time to make sure that this important issue gets the attention at home and in Washington that it deserves. This country needs a long-term transportation solution in order to grow the economy, create jobs, and support everyday Americans.

The economic case for investment in our long-term infrastructure is clear-- we know it will grow the economy, create good jobs, and position us for long-term growth—and the time for action is now.

Appendix

	System Conditions					Federal Authorization				Household Impact	
	Miles of Public Road	Percent of Roads in Poor Condition	Highway Traffic Fatalities	Bridges	Deficient or Obsolete Bridges (% of total)	Federal Funds as a Percent of Capital Outlays	Est. Annual Jobs at Risk	Active Highway Projects	Active Transit Grants	Fuel Consumption (gallons/per capita)	Vehicle Repair and Operating Costs Per-Driver
U.S.	4,076,236	14%	32,340	607,751	147,870(25%)	44%	779,469	112,514	5,642	612.48	$ 444.47
AL	101,688	19%	894	16,078	3,608 (22%)	78%	11,890	3,481	54	695.60	$ 366.35
AK	16,674	6%	72	1,196	290 (24%)	95%	7,867	962	83	700.19	$ 321.42
AR	100,082	14%	549	12,748	2,894 (23%)	80%	7,846	1,452	41	690.36	$ 496.89
AZ	65,091	7%	825	7,862	954 (12%)	36%	12,562	1,273	105	527.15	$ 247.10
CA	172,201	34%	2,791	24,955	6,953 (28%)	19%	73,572	5,692	704	461.27	$ 702.88
CO	88,414	17%	447	8,612	1,483 (17%)	69%	9,666	1,078	72	522.32	$ 534.56
CT	21,414	41%	220	4,218	1,472 (35%)	53%	9,612	1,630	89	486.96	$ 661.26
DE	6,357	16%	99	864	177 (20%)	49%	2,791	602	21	546.66	$ 380.78
FL	121,759	4%	2,398	12,070	2,044 (17%)	29%	33,760	2,791	367	497.76	$ 181.43
GA	123,546	5%	1,223	14,769	2,600 (18%)	62%	22,119	3,341	126	602.66	$ 260.02
HI	4,405	27%	100	1,125	494 (44%)	58%	3,115	572	43	377.86	$ 527.86
IA	114,387	12%	360	24,398	6,271 (26%)	50%	7,928	1,556	62	774.37	$ 421.76
ID	48,553	11%	167	4,232	859 (20%)	73%	4,546	1,185	68	590.57	$ 370.08
IL	139,498	15%	918	26,621	4,246 (16%)	37%	29,669	3,945	223	482.41	$ 448.61
IN	97,065	16%	750	18,953	4,168 (22%)	59%	15,321	6,093	115	656.13	$ 391.41
KS	140,513	8%	386	25,171	4,465 (18%)	55%	6,157	837	42	615.10	$ 435.49
KY	79,220	7%	721	14,116	4,436 (31%)	38%	10,726	1,898	62	673.12	$ 315.11
LA	61,635	19%	675	13,050	3,790 (29%)	45%	10,926	2,089	153	669.29	$ 463.61
MA	36,302	19%	337	5,136	2,694 (52%)	32%	14,754	926	193	484.85	$ 478.01
MD	32,321	20%	485	5,291	1,418 (27%)	28%	12,013	1,881	64	542.63	$ 459.56

ME	22,873	7%	136	2,402	791 (33%)	57%	3,125	1,515	38	651.23	$ 450.86
MI	122,085	22%	889	11,022	3,018 (27%)	37%	17,824	6,123	143	538.07	$ 538.96
MN	138,702	11%	368	13,137	1,513 (12%)	37%	11,094	1,911	98	588.55	$ 369.25
MO	131,667	10%	784	24,350	6,633 (27%)	60%	15,319	2,471	94	682.63	$ 380.12
MS	75,119	8%	630	17,044	3,636 (21%)	66%	7,486	1,095	43	722.26	$ 463.79
MT	74,880	5%	209	5,126	882 (17%)	88%	6,294	1,432	27	750.83	$ 292.13
NC	105,869	11%	1,227	18,168	5,534 (30%)	37%	17,333	3,878	146	556.87	$ 340.32
ND	86,851	4%	148	4,439	966 (22%)	75%	3,836	1,061	26	1068.40	$ 260.87
NE	93,599	6%	181	15,370	3,765 (24%)	36%	4,688	921	34	683.56	$ 349.42
NH	16,076	17%	90	2,438	790 (32%)	62%	2,675	623	49	605.89	$ 404.43
NJ	39,213	35%	627	6,566	2,334 (36%)	21%	23,663	1,311	66	564.94	$ 604.88
NM	68,384	10%	353	3,935	654 (17%)	74%	5,979	710	84	705.14	$ 398.85
NV	36,839	2%	246	1,853	253 (14%)	44%	6,208	381	52	508.21	$ 241.76
NY	114,592	23%	1,169	17,442	6,775 (39%)	44%	48,389	6,402	211	352.58	$ 504.90
OH	123,247	15%	1,016	27,015	6,647 (25%)	39%	22,308	3,789	217	559.02	$ 413.37
OK	112,808	18%	696	22,912	5,828 (25%)	67%	10,114	2,059	81	691.01	$ 626.31
OR	59,148	6%	331	7,656	1,754 (23%)	58%	8,824	1,219	80	519.29	$ 236.40
PA	119,771	15%	1,286	22,660	9,561 (42%)	38%	30,672	4,634	198	512.52	$ 424.14
RI	6,484	41%	66	766	433 (57%)	74%	3,595	783	19	415.53	$ 661.94
SC	65,997	5%	828	9,275	1,920 (21%)	52%	10,715	1,508	88	711.71	$ 306.36
SD	82,459	6%	111	5,875	1,459 (25%)	64%	4,259	1,228	23	797.40	$ 339.48
TN	95,492	6%	946	20,058	3,802 (19%)	63%	13,361	3,032	121	638.93	$ 225.34
TX	312,911	8%	3,016	52,561	9,998 (19%)	35%	57,917	3,772	344	640.48	$ 372.61
UT	45,634	4%	240	2,974	437 (15%)	43%	6,125	525	34	556.74	$ 294.79
VA	74,461	6%	764	13,765	3,588 (26%)	67%	17,228	6,595	121	588.57	$ 334.35
VT	14,290	14%	55	2,731	903 (33%)	78%	3,091	1,353	31	606.78	$ 378.86
WA	83,743	22%	457	7,902	2,066 (26%)	33%	13,561	1,630	202	482.44	$ 537.47
WI	115,018	21%	582	14,088	1,970 (14%)	46%	12,480	4,057	68	561.86	$ 502.10
WV	38,646	12%	337	7,125	2,514 (35%)	67%	6,766	1,526	45	594.31	$ 469.29
WY	28,253	2%	135	3,099	723 (23%)	68%	3818.4	854	18	1171.22	$ 301.99

Sources

Data Point	Year	Source
Miles of Public Road	2011	http://gis.rita.dot.gov/StateFacts/
Percent of Roads in Poor Condition	2013	American Society of Civil Engineers http://www.infrastructurereportcard.org/roads/
Highway Traffic Fatalities	2011	http://gis.rita.dot.gov/StateFacts/
Bridges	2013	http://www.fhwa.dot.gov/bridge/deficient.cfm
Deficient or Obsolete Bridges (% of total)	2013	http://www.fhwa.dot.gov/bridge/deficient.cfm
Estimated Annual Jobs at Risk	2014	DOT Calculations using CEA multiplier and FHWA and FTA apportionments with 20% State match
Active Highway Projects	2014	DOT Calculations
Active Transit Grants	2014	DOT Calculations
Federal Funds as a Percent of Capital Outlays	2010	http://www.fhwa.dot.gov/policyinformation/statistics/2011/index.cfm
Fuel Consumption (gallons/per capita)	2011	http://gis.rita.dot.gov/StateFacts/
Per-Driver Vehicle Operating Costs	2013	American Society of Civil Engineers http://www.infrastructurereportcard.org/roads/