

Intergovernmental Challenges in Surface Transportation Funding

First Report in the *Fiscal Federalism in Action* Series

The Pew Charitable Trusts

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The Pew Charitable Trusts is driven by the power of knowledge to solve today’s most challenging problems. Pew applies a rigorous, analytical approach to improve public policy, inform the public, and stimulate civic life.

About this report series

The federal government and the states are partners in almost every major domestic policy area. Together, their dollars pay for health care, education, transportation, public safety, and many other programs important to the American public. According to data from the U.S. Office of Management and Budget and the U.S. Census Bureau, federal grants to states in 2012 made up 15 percent of total federal spending and accounted for about a third of states' revenue. In recognition of this involvement, Pew conducts original analyses to provide clear, data-driven explanations of the state-federal fiscal relationship and to inform federal and state decision-makers working to achieve financial stability at both levels of government.

This paper examines the contributions of the states and the federal government, as well as those of localities, to the funding of highway and transit programs. It is the first in a series, *Fiscal Federalism in Action*, that will describe how the federal-state fiscal relationship works in several policy areas to which both levels of government make significant financial contributions. All levels of government have a long history of investment in transportation, and all are facing challenges in maintaining transportation expenditures. Future research will explore similar topics in other policy areas, such as higher education and K-12 programs.

Table of contents

- 1 Overview
- 3 All levels of government contribute to surface transportation funding
 - Federal, state, and local funding 3
 - How funding flows between levels of government 4
 - Variation across states 6
 - Calculating Federal, State, and Local Shares 6
- 8 Federal funding for surface transportation
 - Other Federal Support for Surface Transportation 9
- 10 Transportation funding system faces challenges maintaining investments
 - Shortfalls in the highway trust fund 10
 - Responses and outlook 11
 - Implications for state and local governments 12
 - Broad Consensus that Current Investments Fall Short 12
- 13 The role of gas and vehicle taxes in transportation investment challenges
 - Heavy reliance on gas and vehicle taxes 13
 - Declines in gas and vehicle tax revenue 14
 - States Respond to Funding Challenges 15
- 16 Looking forward
- 17 Conclusion
- 18 Appendix A: Shares of state highway and transit spending
- 20 Appendix B: Methodology
- 21 Endnotes

Overview

The United States is facing major challenges in maintaining investments in the country's highways and transit systems, which will require policymakers to make difficult choices in the years ahead.¹ These decisions will be made not just at the federal level, but also at the state and local levels.

This analysis examines the role that each level of government plays in paying for highway and transit infrastructure (referred to here as "surface transportation" or "transportation"), the key problems facing this multilayered system of funding, and their causes.² In addition, it identifies central principles that policymakers need to consider as they weigh options and consider solutions.

The federal government, states, and localities all make financial contributions to the country's highway and transit system. Between 2007 and 2011, average annual spending on highway and transit nationwide was \$207 billion. Of that total, \$82 billion, or 40 percent, came from states; \$74 billion, or 36 percent, from localities; and \$51 billion, or 25 percent, from the federal government. The relative contributions of each level of government, however, vary from state to state. For example, the percentage of a state's total funding for surface transportation from the federal government ranged from 55 percent in Montana to just 15 percent in New York.³

These funding streams are not only sizable; they are also deeply intertwined. In general, the federal government does not directly invest in transportation infrastructure, but sends almost all of its funding to states and localities in the form of grants. States use federal and state dollars to pay for surface transportation and to provide funding to localities—which invest directly, using federal, state, and local funds.

This transportation funding system is confronting significant difficulties in maintaining investments at all levels of government. Between 2002 and 2011, overall spending on surface transportation fell by \$27 billion, or 12 percent in real terms. States have experienced a particularly large decline, with spending falling by \$20 billion, or 20 percent in real terms, over this period.⁴

At the federal level, the highway trust fund, the source of most federal funding for the country's roads and transit infrastructure, has seen revenue fall short of expenditures for more than a decade. Drawing down trust fund balances and transferring money from the general fund have served as temporary fixes, but they do not address the underlying issue of declining revenue. The Congressional Budget Office projects that, absent reforms, trust fund shortfalls will grow to \$162 billion over the next 10 years.⁵

Trust fund shortfalls have implications not just for the federal government but also for states and localities. Roughly 98 percent of federal funding for surface transportation flows to state and local governments, primarily as reimbursements for expenses already incurred. As trust fund balances fall, states and localities could see those payments delayed or reduced.

There is a broad consensus that these transportation funding challenges are occurring at a time when the system needs more investment. For example, the Congressional Budget Office, based on Federal Highway Administration data, finds that just maintaining the current performance of the highway and transit system would require at least \$13 billion more per year than is already spent at all levels of government.⁶

The challenges are due, in large part, to the fact that the gas tax, a major revenue source for surface transportation, hasn't generated enough money in recent years to keep pace with the rising cost of construction. Between 2002 and 2012, federal gas tax revenue fell by \$15 billion, or 31 percent in real terms, while state revenue dropped by \$10 billion, or 19 percent.⁷

Several factors contributed to these revenue declines. Changing driving habits and improved vehicle efficiency have reduced demand for fuel, while gas taxes have not risen to keep up with inflation. The federal gas tax has been 18.4 cents per gallon since 1993,⁸ and as of spring 2014, 24 states had not boosted their gas taxes in a decade or more, including 16 that had gone at least 20 years without an increase.⁹ At the state level an \$8 billion, or 21 percent, drop in vehicle tax revenue in real terms between 2002 and 2012 has also played an important role in transportation funding difficulties.

These troubles come at a time when the federal government and the states are facing fiscal strain. Federal budget deficits are projected to rise significantly between 2015 and 2024,¹⁰ and although state revenue overall now exceeds prerecession levels, it remains below prerecession peaks in 26 states.¹¹ These pressures mean that governments have little leeway in their budgets and face difficult trade-offs if they want to maintain transportation investments.

As policymakers consider both short- and long-term solutions for funding surface transportation infrastructure, four key principles can help them evaluate various approaches and address the needs of all levels of government:

1. **Falling revenue forces hard choices.** Transportation investment challenges will not be easily solved. Declines in inflation-adjusted gas and vehicle tax revenue will require the federal government and the states to either raise additional revenue to maintain current spending levels or manage within existing resources by cutting spending in real terms.
2. **Financing is not funding.** Financing measures, such as municipal bond issuances, infrastructure banks, and public-private partnerships, play a prominent role in transportation policy discussions. But while financing is a vital tool for building transportation infrastructure, it is not, by itself, a funding solution. Ultimately, borrowed funds need to be repaid by using taxes, tolls, fees, or other revenue sources.
3. **Rethink the roles of all levels of government.** The purpose and role of federal transportation funding have not been clearly defined since the completion of the interstate highway system in the early 1990s. Any reassessment of the federal role should take into account the fiscal conditions of all levels of government and also consider how states and localities might change the way they fund surface transportation infrastructure to best complement a revised federal approach.
4. **Partnership is essential to confronting challenges.** The various levels of government should communicate and operate as partners. States and localities need to know what to expect from the federal government; in turn, the federal government needs to understand the challenges other jurisdictions face and how policies and procedures might affect them.

This report further examines the findings of this analysis, and it delves into the contributions that all levels of government make in paying for highway and transit infrastructure; the obstacles they confront; and the outlook for addressing these trends so that federal, state, and local investments can meet the nation's transportation needs in the 21st century.

Pew takes no position on how the nation's transportation system should be funded but believes that it is critical for policymakers to understand the complex roles played by each level of government in paying for this infrastructure.

All levels of government contribute to surface transportation funding

Throughout much of the nation's history, transportation was overwhelmingly a state and local responsibility. Until the early 1900s, federal funding was largely confined to building and maintaining post roads for mail delivery. But that picture changed with the widespread use of the automobile.

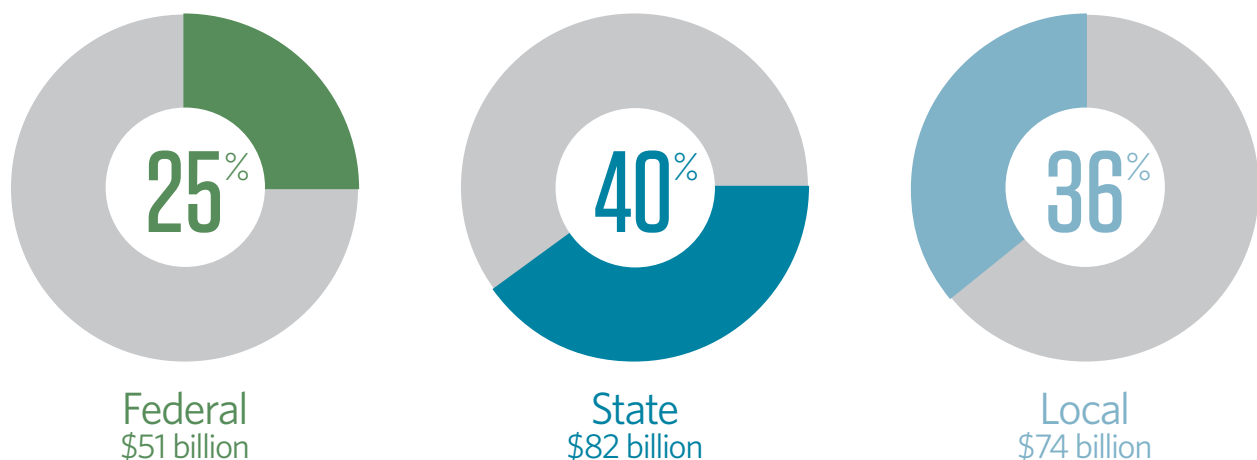
In 1921, the federal government sharply increased grants to states for highways and extended the application of that funding beyond post roads. Then, beginning in the 1950s, federal investments in transportation expanded dramatically with the construction of the interstate highways. A mix of federal, state, and local dollars now forms the foundation of the nation's transportation funding system.¹²

Federal, state, and local funding

Today, all levels of government provide substantial funding for highway and transit infrastructure (referred to here as "surface transportation" or "transportation"). Total federal, state, and local spending on surface transportation—which includes roads, bridges, tunnels, and other motor vehicle infrastructure; and buses, subways, commuter trains, and other public mass transit—averaged \$207 billion between 2007 and 2011 (the most recent year for which data are available), equal to 1.4 percent of the nation's gross domestic product. Of that amount, the federal government provided 25 percent (\$51 billion); states contributed 40 percent (\$82 billion); and localities (i.e., municipalities, counties, and local transportation authorities) accounted for the remaining 36 percent (\$74 billion).¹³ (See Figure 1.) This measure of spending includes both capital investment (construction, rehabilitation, restoration, reconstruction, and general upkeep) and operating expenditures (e.g., snow and ice removal, traffic signals, street lights, etc.).¹⁴ Capital and operating costs are combined to capture the full price tag for providing infrastructure rather than just its construction.

Figure 1

All Levels of Government Fund Highways and Transit Average annual own-source spending by level of government, 2007-11



Source: Pew's analysis of U.S. Census Bureau's Annual Survey of State and Local Governments, 2007-11

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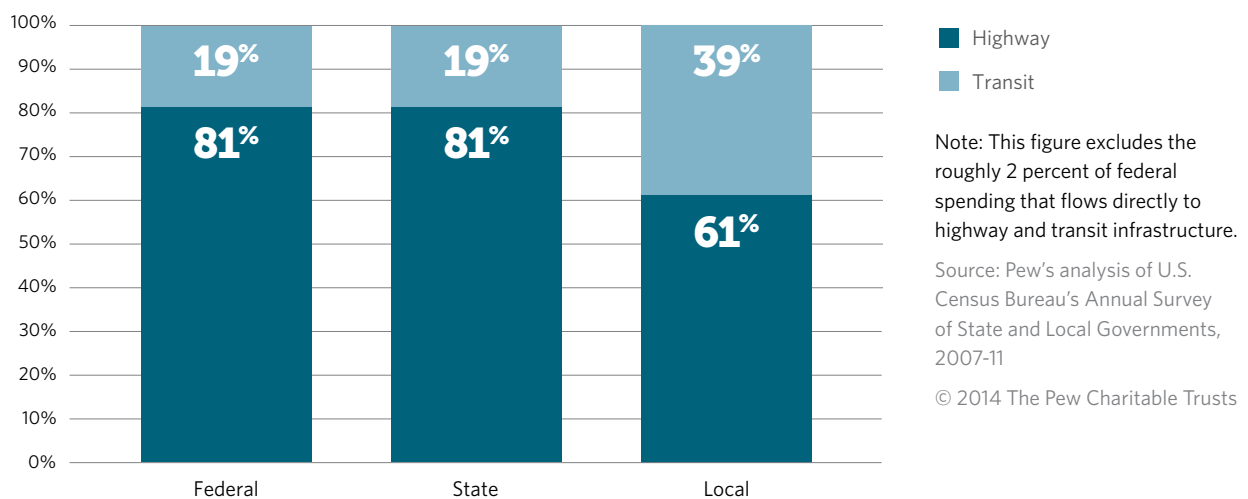
In addition, surface transportation funding plays an important role in government budgets. Though a small share of the overall federal budget, it is the third-largest type of federal grants to states and localities after health and income security.¹⁵ It is also the fifth-largest area of state spending behind health (mostly Medicaid), K-12 education, higher education, and income security (mostly unemployment insurance and retirement). At the local level, transportation is the third-largest spending category, behind K-12 education and public safety.¹⁶

Although all three levels of government devote significant resources to surface transportation, their priorities differ. The federal government and the states dedicate the majority of funding to highways, which often facilitate travel among states, metropolitan areas, and cities, but local funding is generally split more evenly between highway and transit, which tends to provide transportation within cities and metropolitan areas. (See Figure 2.) Furthermore, federal funds are used almost exclusively for capital investments, state expenditures are divided between capital and operations, and local spending is primarily for operations.¹⁷

Figure 2

Spending on Highways Exceeds That for Transit at Each Level of Government

Share of spending, 2007-11



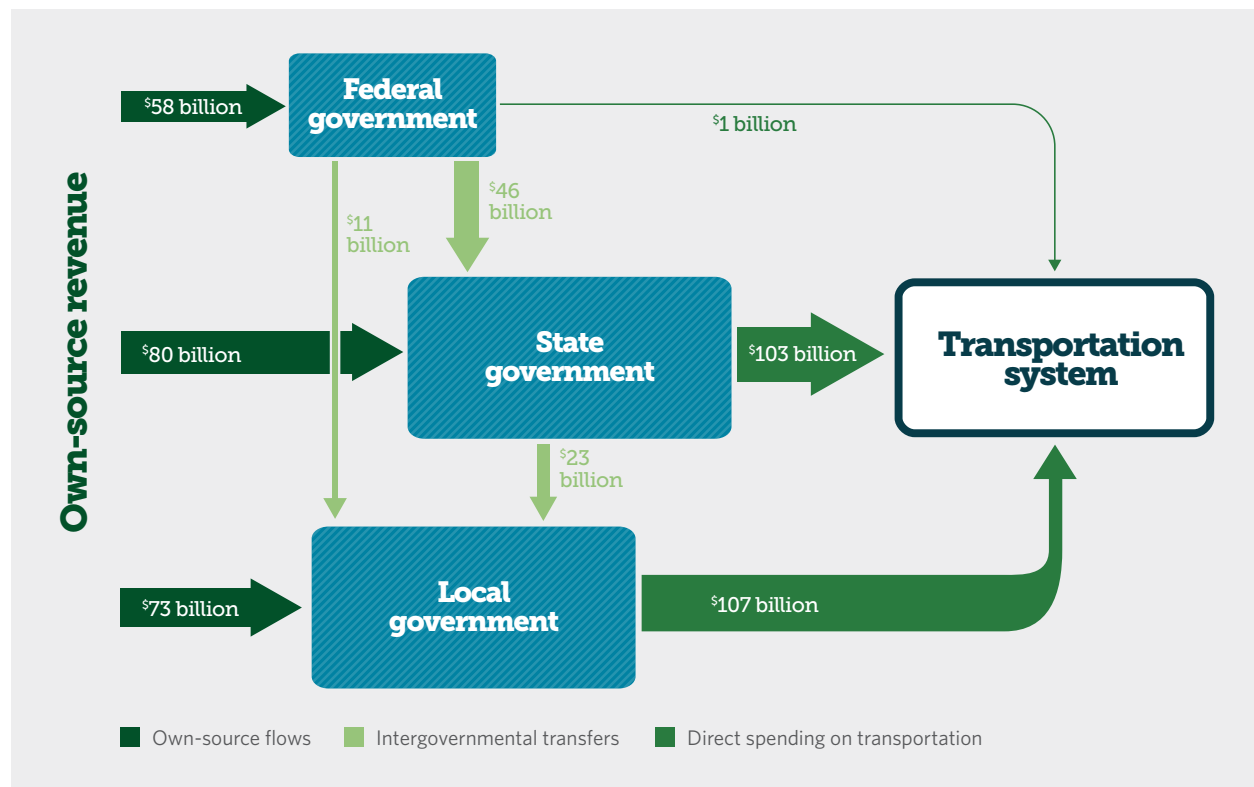
How funding flows among levels of government

The surface transportation funding streams provided by the three levels of government are closely linked. (See Figure 3.) The federal government transfers almost all of its funding to states and localities, which invest in surface transportation. States use a combination of their own and federal dollars to invest directly in highways and transit and to provide funding to localities. Localities, in turn, use a combination of federal, state, and local dollars to pay for transportation infrastructure.

The federal government has provided states with a significant amount of transportation funding since the inception of the interstate highway system, but its purpose has changed over time. When the interstates were created in 1956, and for the next two decades, states were responsible for maintaining road conditions, and federal dollars were targeted to infrastructure expansion.¹⁸ Starting in the 1970s, the condition of the interstate system began to show significant decline, so federal funding shifted from expansion to maintenance and repair.¹⁹ Roughly half of federal funds supported system upkeep in 2013.²⁰

Federal funding for local governments—most of which is for transit—is a newer phenomenon. The federal government first started supporting transit in the 1960s, and funding grew significantly from the 1970s to the early 1980s.²¹ Local governments are also eligible for federal funding through the Transportation Investment Generating Economic Recovery grant program, which supports qualified surface transportation projects that “achieve critical national objectives.”²²

Figure 3
Surface Transportation Funding Flows Among Levels of Government
 Spending on highways and transit, 2011



Note: Numbers may not add up exactly due to rounding.

Sources: Pew’s analysis of U.S. Census Bureau’s Annual Survey of State and Local Governments, 2011; U.S. Office of Management and Budget, Public Budget Database

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Looking specifically at fiscal year 2011, the federal government spent \$58.3 billion on surface transportation.²³ Of that amount:

- About \$46.4 billion (80 percent) went to states, mostly for highways.²⁴
- Another \$10.6 billion (18 percent) went to local governments, primarily for transit.²⁵
- The remaining \$1 billion (2 percent) was spent directly by the federal government for infrastructure on federal lands; for overhead costs of the Federal Highway Administration, the Federal Transit Administration, and the

Office of the Secretary of the Department of Transportation; and for the activities of regulatory boards that ensure vehicle safety.²⁶

States make significant investments in transportation infrastructure and provide substantial funding to local governments. In 2011 they used the \$46.4 billion they received in federal grants and \$79.8 billion from their own sources (i.e., tax and fee revenue) to fund \$126.2 billion in surface transportation spending, of which:

- \$102.8 billion was spent on transportation infrastructure.
- \$23.4 billion (net) went to local governments, roughly two-thirds for highways and the rest for transit.²⁷

Local governments, which tend to provide more services to residents, spend virtually all of their surface transportation dollars directly on the highway and transit system. In 2011, they invested \$107.1 billion, using:

- \$10.6 billion received from the federal government.
- \$23.4 billion (net) from states.
- \$73 billion in own-source revenue.²⁸

Variation across states

On a national level, this funding flow appears fairly straightforward, but the relative contribution of different levels of government varies widely by state. For example, nationwide, federal funding, excluding direct federal spending, made up 24 percent of total surface transportation spending on average from 2007 to 2011, but the percentage of a state's total funding that came from the federal government ranged from 55 percent in Montana to just 15 percent in New York.²⁹ (See Figure 4 and Appendix A.)

Calculating Federal, State, and Local Shares

This analysis measures the share of surface transportation investment that comes from each level of government, nationally and within each state. It includes the building, preservation, and operation of the infrastructure to capture the full cost of the system rather than just its construction.

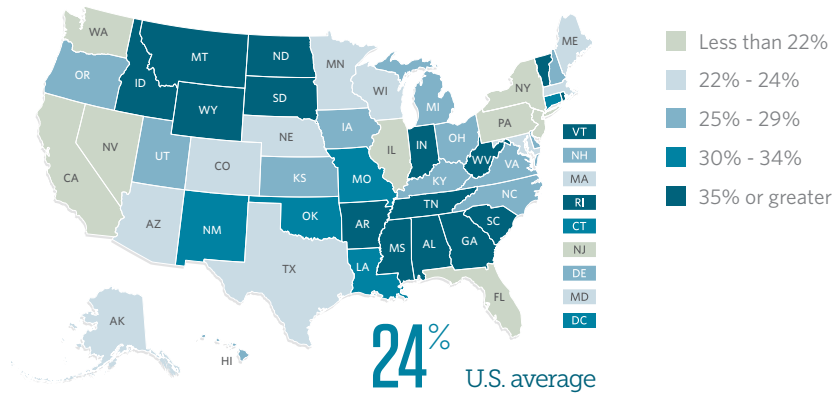
To account for year-to-year variation, Pew averaged surface transportation spending across five years (2007 to 2011). Infrastructure investments are project-based, which could lead to significant disparities in expenditures from year to year in smaller jurisdictions, so averaging over several years provides a more consistent and representative picture of the relative contributions made by each level of government. The selected time period includes years before and during the availability of federal American Recovery and Reinvestment Act funds. (See Appendix B for details on the methodology.)

The share of a state's total transportation funding that comes from the federal government is not determined solely by the amount of federal aid received, but also by the amount of related spending that takes place within the state. For example, 38 percent of state and local transportation spending in South Carolina between 2007 and 2011 was paid for with federal funds, which was well above the national average, but the \$129 per capita in total federal grants for surface transportation the state received was below the national average of \$164. (See Figure 5.) In this case, South Carolina's federal share was high relative to its state and local spending, which at \$212 per capita was among the lowest in the country. (See Figure 6.) Several other southern states, including Arkansas, Alabama, and Tennessee, follow a similar pattern.

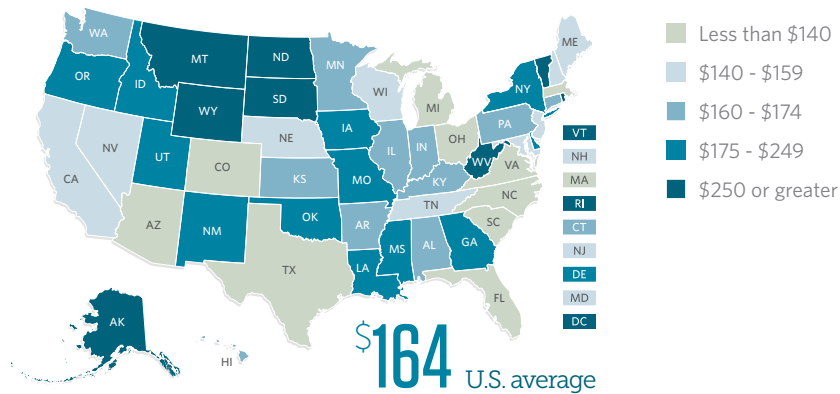
Figures 4-6

Relative Significance of Federal Grants for Surface Transportation Varies by State and Region

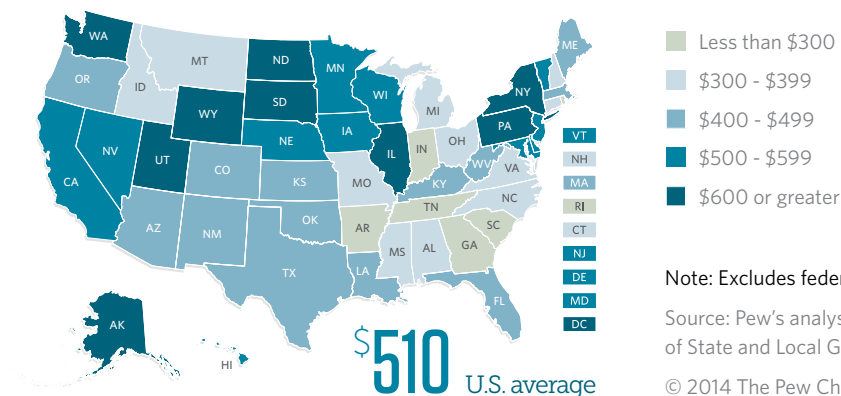
Federal share of total funding for highways and transit, all levels of government, 2007-11



Federal expenditures for highways and transit, per capita, 2007-11



State and local expenditures for highways and transit, per capita, 2007-11



Note: Excludes federal spending directly on projects

Source: Pew's analysis of U.S. Census Bureau's Annual Survey of State and Local Government Finances, 2007-11

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By contrast, a number of states in the Northeast and Midwest, including New York, Illinois, and Pennsylvania, tend to have low federal shares, driven by high state and local spending. New York, for example, which had the lowest federal share at 15 percent (see Figure 4), received an above-average \$207 per capita in federal aid (see Figure 5), but its \$1,145 in per-capita state and local spending was third-highest in the nation, behind Alaska and the District of Columbia. (See Figure 6.)

As these examples show, reliance on federal transportation funding can differ across states because of various factors. States receive more or less money from the federal government largely as a result of federal funding formulas, and state and local governments make a range of decisions about how much of their own money to spend on transportation.

Federal funding for surface transportation

The federal government generally does not invest directly in transportation infrastructure. Nearly all federal funding takes the form of grants to state and local governments. Of those, about 93 percent are formula grants, which are based on a series of measures intended to quantify a given state or locality's needs.³⁰ Federal highway funding formulas generally distribute money according to factors such as a state's aggregate vehicle miles traveled, lane miles, and the amount of federal gas and vehicle taxes collected. Federal transit formulas are based on population, population density, and bus passenger miles, among other variables. Since the late 1990s, the formulas have also mandated that a certain percentage of state residents' contributions to the highway trust fund (through the federal gas and vehicle taxes on motorists) be returned to the states.³¹

The remaining 7 percent of federal funding flows through competitive grants and other programs that don't rely on formulas. Competitive grants, such as the Transportation Investment Generating Economic Recovery, or TIGER, program, allow states and localities to propose projects and compete for a limited pool of funds. Other programs allow Congress or the secretary of transportation to exercise discretion in choosing what types of projects to fund. An example is the scenic byways program, which is designed to recognize, preserve, and enhance the nation's scenic roads to promote tourism and economic development.³²

Receipt of competitive grant funding is conditional on approval of specific projects by the U.S. Department of Transportation, and both competitive and formula grant funding are subject to a number of requirements. Generally state and local governments must match a portion of federal funding from own-source revenue, typically 10 percent for the interstate system, 20 percent for other roads,³³ and at least 20 percent for transit, though often the transit match is much higher because the selection process can favor projects for which the state or local government offers to cover more than 50 percent of the cost.³⁴ Projects using certain funding streams, such as emergency relief to minimize damage, protect facilities, or restore essential traffic flows following a natural disaster or catastrophic failure, and Recovery Act funds, as well as designated safety projects, require no match.³⁵

States and localities must also abide by all rules that govern federally funded projects, such as developing regional transportation plans, paying workers at least the prevailing wage in the local area, conducting environmental reviews, and purchasing equipment and construction materials domestically.³⁶

The federal government also sometimes attaches requirements to grant funding as a lever to influence state policies that reach beyond the construction and maintenance of transportation infrastructure. For example, federal highway funding can carry mandates that a state submit and implement a plan to achieve minimum air quality levels, set its drinking age at 21 years old, or have sufficient laws to prevent driving while intoxicated.³⁷

Other Federal Support for Surface Transportation

In addition to providing funding, the federal government subsidizes state and local borrowing for surface transportation infrastructure through tax provisions and credit programs:

- The main form of such federal support is the municipal bond interest tax exemption, which exempts interest paid on state and local bonds for transportation infrastructure from federal income tax. As a result, bondholders are willing to lend state and local governments money at a lower interest rate than they would if the bonds were taxable. Through this approach, the federal government forgoes tax revenue so that state and local governments can borrow more cheaply, effectively subsidizing transportation investment.
- Tax exclusions can also be applied to some “Private Activity Bonds,” which are used to finance qualified investments, such as surface transportation, undertaken by private entities. This also acts as a federal subsidy of transportation investments, though because these bonds are subject to a \$15 billion cap, they are a much smaller level of support than the municipal bonds exemption.*
- Build America Bonds are a variation of the traditional municipal bond through which the federal government directly subsidizes state and local borrowing, rather than providing a tax exemption. The state or locality issues a taxable bond, with a higher interest rate than a nontaxable bond and receives a direct federal payment that reduces the borrowing costs. Build America Bonds were authorized for 2009 and 2010 as part of the American Recovery and Reinvestment Act of 2009, but the program has since expired.†
- The Transportation Infrastructure Finance and Innovation Act, or TIFIA, program is a credit program through which the federal government provides state and local governments with direct loans, loan guarantees, and lines of credit for qualifying transportation projects, often at subsidized interest rates. The program was first authorized in 1998 and was expanded in 2009 and 2012.‡

These measures facilitate the financing of transportation projects, but they are not sources of funding for those projects. Subsidies represent a cost to the federal government, and any borrowing that state and local governments and private entities undertake must be repaid with interest. Ultimately, funding for transportation projects must come from taxes, tolls, fees, and other revenue.

* Federal Highway Administration, “Private Activity Bonds (PABs)” (2013), https://www.fhwa.dot.gov/ipd/pdfs/fact_sheets/pabs_062713.pdf.

† Congressional Budget Office, “Testimony: Federal Support for State and Local Governments Through the Tax Code” (April 25, 2012), <http://www.cbo.gov/sites/default/files/cbofiles/attachments/04-25-TaxCodeTestimony.pdf>.

‡ Federal Highway Administration “TIFIA Defined,” accessed June 16, 2014, <http://www.fhwa.dot.gov/ipd/tifia/defined>.

Transportation funding system faces challenges in maintaining investments

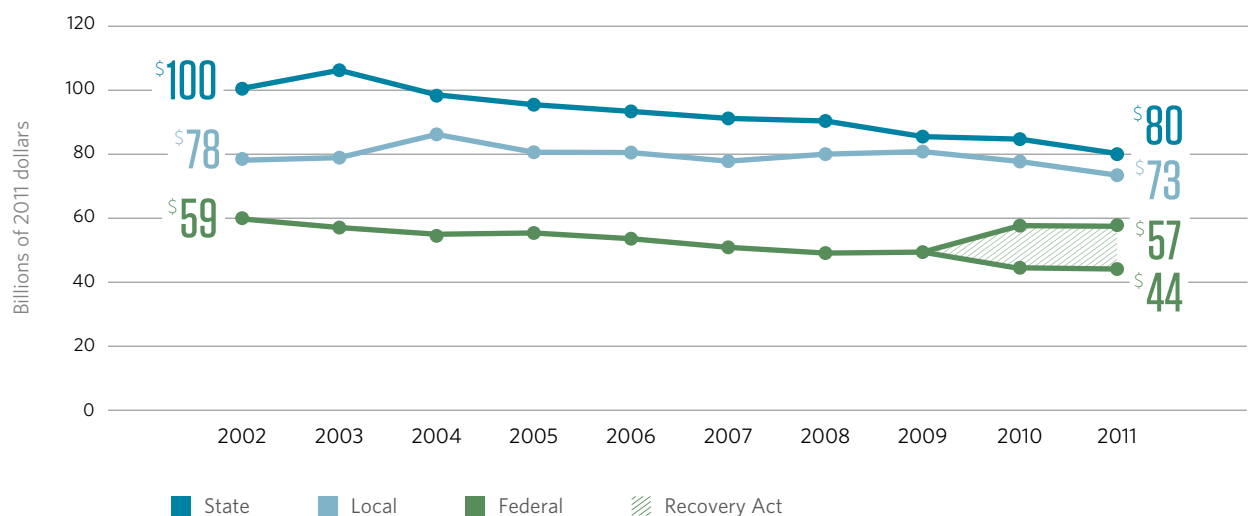
The nation's funding system for surface transportation is facing challenges in maintaining transportation investments that cut across all levels of government. Combined state, local, and federal surface transportation spending has been declining in recent years, falling by \$27 billion, or 12 percent in real terms, between 2002 and 2011.³⁸ (See Figure 7.) State expenditures fell steadily during that period, dropping by \$20 billion, or 20 percent, and federal spending declined by 4 percent in real terms.

The downward trend in federal spending was actually steeper than the state decline—18 percent versus 10 percent—between 2002 and 2008, but the American Recovery and Reinvestment Act of 2009 buoyed federal expenditures somewhat from 2009 to 2011. However, the act's funding was temporary, and roughly three-quarters of the money was spent by the end of state fiscal year 2011.³⁹ Local spending was fairly flat from 2002 to 2011.

Figure 7

Surface Transportation Investment Is Declining

Highway and transit spending by level of government, adjusted for inflation, 2002-11



Notes: Inflation-adjusted using Bureau of Economic Analysis' price index for state and local government investment in structures (Table 3.9.4, Line 36). Years are in state fiscal years.

Sources: Pew's analysis of U.S. Census Bureau's Annual Survey of State and Local Government Finances, 2002-11; Recovery.gov agency-reported data, 2009-11

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These spending declines at the state and federal levels reflect the obstacles facing the major funding sources that support surface transportation investments.

Shortfalls in the highway trust fund

One key challenge is the shortfalls in the federal highway trust fund, which provides roughly 95 percent of federal funding for surface transportation.⁴⁰ The trust fund ran surpluses for much of its history. From its inception in

1957 through 2000, trust fund revenue exceeded spending in 31 out of 44 years, allowing for the accumulation of significant reserves. Over roughly the past decade, however, those surpluses have turned to shortfalls. (See Figure 8.) In 10 of the past 12 years, revenue lagged behind spending.

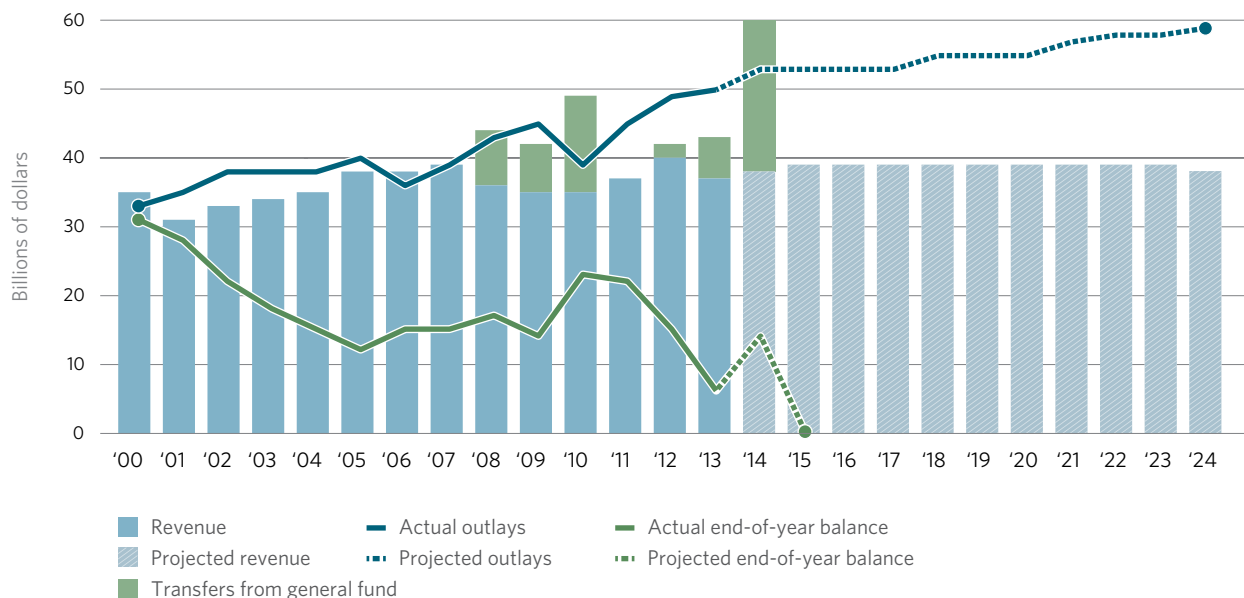
Responses and outlook

The federal government initially made up for those gaps by drawing down trust fund balances. By the end of 2007, however, those savings had declined to half of their 2000 levels, and some policymakers feared that they would dry up completely.⁴¹

Beginning in 2008, federal policymakers initiated a series of transfers, totaling roughly \$54 billion as of 2014, mostly from the general fund, into the trust fund to help compensate for shortfalls.⁴² In some years, these transfers exceeded the level needed to make up for shortfalls, temporarily boosting reserves, but they have not addressed the underlying problem: Revenue dedicated to transportation has not kept up with spending authorized by Congress.⁴³

Barring other changes, trust fund shortfalls will only increase in future years. The Congressional Budget Office projects that trust fund revenue will continue to stagnate while spending authority—the amount the federal government permits states to commit to projects—will grow to keep up with inflation (though it will decline relative to the cost of project construction, which tends to grow faster than general inflation). (See Figure 8.) Over the next 10 years, the trust fund would need to take in an additional \$162 billion to maintain current real spending levels, according to the agency’s baseline projections.⁴⁴

Figure 8
Federal Highway Trust Fund Faces Growing Shortfalls
 Actual and projected revenue and outlays, 2000-24



Note: Numbers not adjusted for inflation.

Source: Pew’s analysis of Congressional Budget Office and Federal Highway Administration data

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Implications for state and local governments

The difficulties facing the highway trust fund in maintaining the current level of spending have important implications, not just for the federal government, but also for states and localities. Roughly 98 percent of all federal funding for surface transportation flows to state and local governments, primarily as reimbursements for project expenses already incurred. As balances in the trust fund fall, states and localities could see their federal repayments delayed or reduced.

Many projects require significant planning and construction time, so it is important that the federal government be able to provide state and local policymakers with some certainty and consistency in funding over the long term. For this reason, the federal surface transportation authorization (the law that effectively sets funding levels over multiple years) is designed to provide a stable flow of funding over six years. But the last full authorization passed nearly a decade ago. For the past five years, states and localities have operated under a series of short-term extensions and, most recently, a two-year authorization. This uncertainty, coupled with the prospect that trust fund balances may eventually be inadequate to provide reimbursement for project costs already incurred, presents significant challenges for state and local policymakers as they undertake multiyear planning and investment in transportation projects.

Broad Consensus that Current Investments Fall Short

The nation's transportation funding challenges come at a time of broad agreement that the system's needs exceed current investment levels. The Congressional Budget Office, based on Federal Highway Administration data, finds that just maintaining the current performance of the highway and transit system would require at least \$13 billion more per year than is already spent at all levels of government.* Studies by the National Surface Transportation Infrastructure Financing Commission, the National Surface Transportation Policy and Revenue Study Commission, the Brookings Institution, the American Society of Civil Engineers, and the American Association of State Highway and Transportation Officials have all found a gap between current funding and needs.†

* Kim P. Cawley, "Testimony: Status of the Highway Trust Fund," Congressional Budget Office (July 23, 2013), http://www.cbo.gov/sites/default/files/cbofiles/attachments/44434-HighwayTrustFund_Testimony.pdf.

† National Surface Transportation Infrastructure Financing Commission, "Paying Our Way: A New Framework for Transportation Finance" (February 2009), 3, http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Advance%20Copy_Feb09.pdf; National Surface Transportation Policy and Revenue Study Commission, "Transportation for Tomorrow" (December 2007), 6, http://transportationfortomorrow.com/final_report/pdf/final_report.pdf; Matthew E. Kahn and David M. Levinson, "Fix It First, Expand It Second, Reward It Third: A New Strategy for America's Highways," Brookings Institution (February 2011), 5, http://www.brookings.edu/~media/research/files/papers/2011/2/highway%20infrastructure%20kahn%20levinson/02_highway_infrastructure_kahn_levinson_paper.pdf; American Society of Civil Engineers, "2013 Report Card for America's Infrastructure" (March 2013), 65, <http://www.infrastructurereportcard.org/a/documents/2013-Report-Card.pdf>; and American Association of State Highway and Transportation Officials, "The Forum on Funding and Financing Solutions for Surface Transportation in the Coming Decade: Conference Report" (January 2011), iv, http://www.transportation-finance.org/pdf/featured_documents/sep_30_report_final_2011_02_02.pdf.

The role of gas and vehicle taxes in transportation investment challenges

The federal and state spending problems are driven, in large part, by the fact that the gas tax, a leading source of surface transportation resources, has not generated enough revenue to keep pace with the growth of construction costs in recent years. A decline in state vehicle taxes also plays an important role in spending problems at the state level.

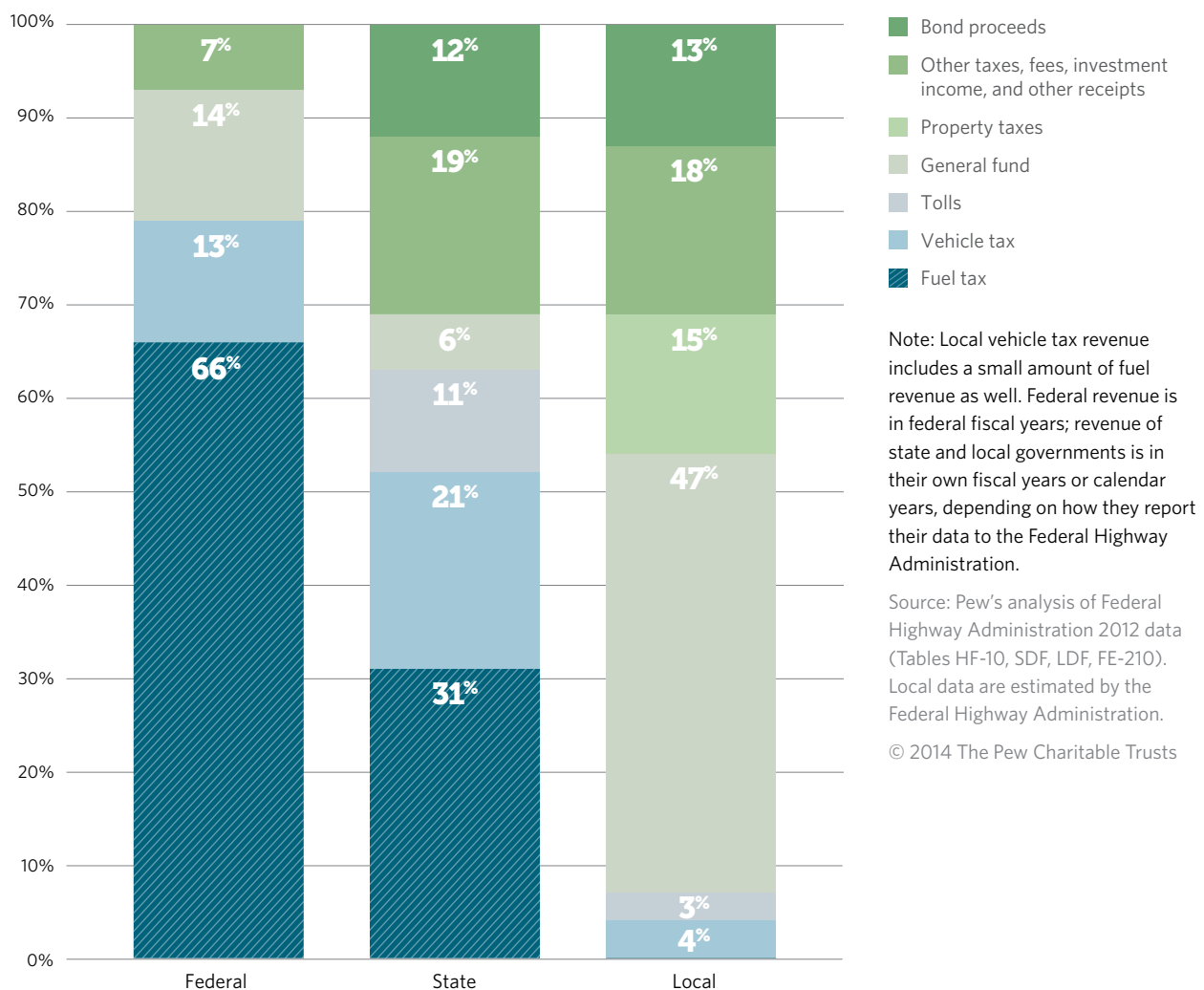
Heavy reliance on gas and vehicle taxes

An analysis of highway revenue data illustrates the importance of the gas tax at the federal level, and the gas and vehicle taxes at the state level, in paying for surface transportation infrastructure. (See Figure 9.)

Figure 9

Federal and State Governments Rely Heavily on Gas Tax Revenue to Fund Highways

Resources used for highways, by level of government, 2012



The federal government is particularly reliant on the gas tax (this term refers to taxes on all fuels, including gasohol, diesel, and special fuels), which in 2012 provided two-thirds of the revenue for highways. Most of the remaining revenue comes from a combination of vehicle taxes and transfers from the general fund. Historically, the federal government's reliance on the gas tax has been even higher. Before the recent general fund transfers, the gas tax provided roughly 90 percent of federal revenue for highways, and vehicle taxes yielded the remaining 10 percent.

States also get the largest share of their own-source highway revenue from the gas tax, but state funds come from a broader range of sources: Vehicle taxes account for more than a fifth, and a significant amount comes from tolls. States also finance a substantial portion of their transportation investments through bond issuances, but these are not a funding source by themselves because they must be repaid through future user fees, taxes, and other revenue.

Local governments are an entirely different story. Gas taxes at the local level are rare. Rather, general fund appropriations provide the largest share of local highway revenue.

In addition, gas and vehicle taxes are important revenue sources for transit. Gas tax collections account for more than half of mass transit spending at the federal level and nearly half at the state level. Vehicle taxes make up another third of state spending on transit.⁴⁵

Declines in gas and vehicle tax revenue

Revenue from federal and state gas taxes as well as state vehicle taxes has not kept pace with the growth of construction costs in recent years. Because these sources provide such a large share of surface transportation resources, their decline in real terms has important implications for the federal government and the states' ability to maintain transportation investments.

Between 2002 and 2012, federal gas tax revenue fell by \$15 billion, or 31 percent, and state revenue fell by \$10 billion, or 19 percent, after adjusting for construction cost growth of 60 percent.⁴⁶ (See Figure 10.) There are three main reasons for these real-term declines:

- **Driving patterns have changed.** Between 1984 and 2007, vehicle miles traveled rose each year, a trend that helped gas tax revenue keep pace with increasing construction costs. Since 2007, however, miles traveled have fallen modestly,⁴⁷ reducing demand for fuel.
- **Cars have become more fuel-efficient.** People are driving farther on each gallon of gas. The fuel efficiency of the average noncommercial vehicle on the road rose from 20.1 mpg in calendar year 2002 to 21.6 mpg in 2012, a 7.5 percent increase, which is reducing gas sales.⁴⁸
- **Federal and many state gas taxes remained fixed even as construction costs increased.** The federal gas tax has been 18.4 cents per gallon since 1993.⁴⁹ As of spring 2014, 24 states had not raised their gas taxes in a decade or more, including 16 that had gone more than two decades without an increase.⁵⁰ This means that per-gallon revenue doesn't go as far as it did in the past in paying for transportation needs.

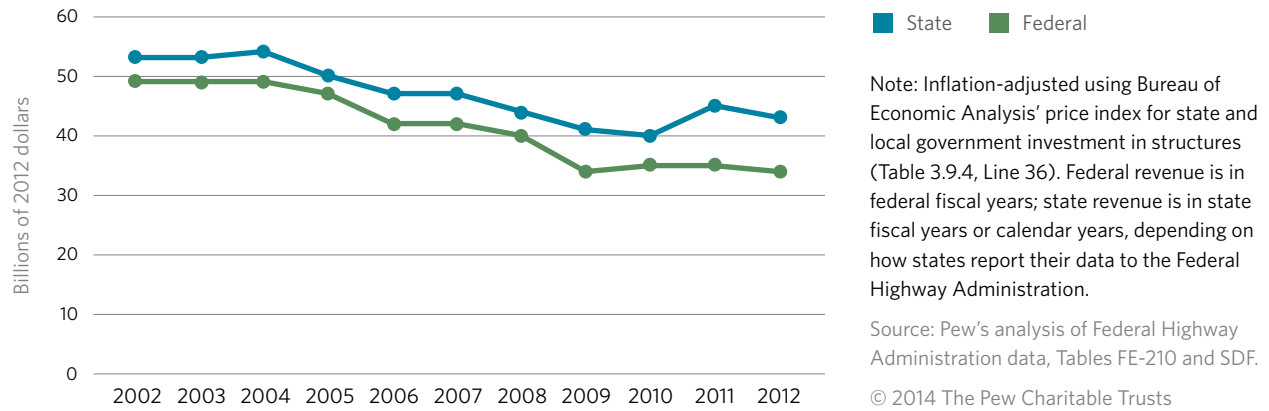
Further, state vehicle taxes have fallen steeply in recent years, dropping \$8 billion, or 21 percent, between 2002 and 2012 after adjusting for inflation.⁵¹ One contributing factor could be declining vehicle ownership: After rising for decades, vehicles registered per household have been falling since 2006. This trend has been linked to the weak economy but also to broader social trends such as greater usage of telecommuting and public transit.⁵²

The decline in gas tax revenue is a leading cause of the growing gap between revenue and expenditures in the federal highway trust fund, and the combination of declining state gas and vehicle taxes helps to explain the significant drop in inflation-adjusted spending for highways and transit at the state level.

Figure 10

Gas Tax Revenue Has Fallen Over the Past Decade

Federal and state fuel tax revenue, adjusted for inflation, 2002-12



States Respond to Funding Challenges

The challenges that states are facing in maintaining their transportation investments have spurred many into action. In the 3½ years before February 2013, no state had increased its gas tax.* But since then, several states—among them, Maryland, Massachusetts, Pennsylvania, Vermont, Virginia, and Wyoming—have employed a variety of approaches to raise additional revenue to fund transportation.†

For example, Virginia passed a major overhaul of its transportation funding system by replacing the state's 17.5-cent-per-gallon gas tax with a 3.5 percent tax on the wholesale price of gasoline and an increase in the state's retail sales tax.‡ Together these policies are intended to help revenue keep up with inflation and economic growth. Just across the Potomac River, Maryland chose to index its gas tax to both general inflation and gas prices.§ Many other states are considering similar measures.**

* Institute on Taxation and Economic Policy, "Gas Tax Gains Favor in the States" (Feb. 21, 2013), http://www.ctj.org/taxjusticedigest/archive/2013/02/gas_tax_gains_favor_in_the_sta.php#.U1G_2vldXOE.

† Fredrick Kunkle and Laura Vozzella, "Virginia Lawmakers Approve Sweeping Transportation Plan," *The Washington Post*, Feb. 23, 2013, http://www.washingtonpost.com/local/va-politics/va-lawmakers-approve-landmark-transportation-plan/2013/02/23/712969d8-7de4-11e2-82e8-61a46c2cde3d_story.html; "Mass. Passes Historic Gas Tax Increase," *Examiner.com*, July 29, 2013, <http://www.examiner.com/article/massachusetts-passes-historic-gas-tax-increase>; "Governor Signs Wyoming Fuel Tax Increase Into Law," *Billings Gazette*, Feb. 15, 2013, http://billingsgazette.com/news/state-and-regional/wyoming/governor-signs-wyoming-fuel-tax-increase-into-law/article_3d2ad331-61cf-5f0a-bd30-4e74de99764d.html; John Wagner, "Maryland Gas Tax to Rise Monday, but Not Quite as Much as Forecast," *The Washington Post*, June 27, 2013, http://www.washingtonpost.com/local/md-politics/maryland-gas-tax-to-rise-mondaybut-not-quite-as-much-as-forecast/2013/06/27/2db948ec-df6b-11e2-b94a-452948b95ca8_story.html; "New Pa. Gas Tax Will Raise Prices at Pump," *The Pocono Record*, Nov. 30, 2013, <http://www.poconorecord.com/apps/pbcs.dll/article?AID=/20131130/NEWS90/311300324/-1/NEWS01>; Ryan Holeywell, "How Vermont Raised Its Gas Tax," *Governing Magazine*, May 17, 2013, <http://www.governing.com/blogs/view/gov-how-vermont-raised-its-gas-tax.html>.

‡ Kunkle and Vozzella, "Virginia lawmakers approve sweeping transportation plan."

§ Citizens for Tax Justice, "Chart: New Gas Tax Plan in Maryland House of Delegates" (March 19, 2013), http://www.ctj.org/taxjusticedigest/archive/2013/03/chart_new_gas_tax_plan_in_mary.php#.U1HCO_ldXOE.

**"Tracking State Transportation Funding Plans," *Transportation for America*, accessed on July 14, 2014. <http://t4america.org/maps-tools/state-plans-tracker>.

Looking forward

If they wish to either maintain or increase infrastructure investments, the federal government and the states will need to address the decline in surface transportation revenue relative to growing construction and operating costs in the years ahead.

Both levels of government face fiscal pressures that extend well beyond transportation funding. The Congressional Budget Office projects that, under current law, federal budget deficits will climb significantly in the decade between 2015 and 2024 owing to the aging of the population and rising health care costs, among other factors.⁵³ And states' recovery from the revenue collapse that followed the Great Recession has been uneven. State revenue overall now exceeds prerecession levels, but in 26 states, collections remain below prerecession peaks.⁵⁴ As a result, the federal government and many states have little leeway in their budgets.

As policymakers consider short- and long-term options for funding transportation infrastructure, four critical principles can help them weigh the trade-offs among approaches:

- 1. Falling revenue forces hard choices.** Declines in traditional sources of transportation revenue will require the federal and state governments to raise additional funds, if they choose to maintain or increase investments in transportation infrastructure, or to manage within existing revenue by cutting spending in real terms. Options for raising additional transportation revenue include raising rates on or broadening the base of existing sources such as the gas tax, personal and corporate income taxes, and, at the state level, tolls and sales taxes to bring in more dollars. Alternatively, money could also be raised from new sources, such as a vehicle miles-traveled tax that would charge drivers a fee for every mile driven.

Regardless of the approach, policymakers should strive to obtain the most from every transportation dollar spent. No clear consensus exists on how to achieve greater efficiency in transportation funding, but ideas include increasing the use of competitive federal grants and cost-benefit analysis to evaluate proposals, and adjusting the federal matching rate for transportation grants to encourage investment in high-value projects.

- 2. Financing is not funding.** Financing measures bolster the capacity of state and local governments to borrow or use private investment to support transportation projects. Proponents of financing have proposed options such as expanding existing federal loan programs; creating new national or state infrastructure banks; reinstating Build America Bonds; and increasing the use of public-private partnerships, in which a state or local government partners with a private company to build or maintain transportation infrastructure.

Financing options, while important tools for building transportation infrastructure, are not solutions to the challenges described in this report. Borrowed money must be repaid with interest. To the extent that the federal government subsidizes state and local borrowing through measures such as the Transportation Infrastructure Finance and Innovation Act program, the cost of the subsidy still needs to be paid by the federal government. And private capital isn't free either: Investors expect a return on their investments. In other words, financing can facilitate the construction of transportation infrastructure, but ultimately taxes, tolls, fees, or other revenue sources are needed to pay the bill.

- 3. Rethink the roles of all levels of government.** For more than three decades, the primary role of the federal government in surface transportation was the construction of the interstate highway system. But the purpose of federal funding has not been clearly defined since that system was completed in the early 1990s. As policymakers work to put the country's transportation funding system on more solid footing, they should also think about the proper role of the federal government in this new era.

The exact nature of that function is the subject of much debate. Some argue for stronger federal involvement in developing a national transportation system to help the country thrive in a global economy.⁵⁵ Others suggest that the federal government should focus its resources on major projects that clearly facilitate interstate travel and commerce.⁵⁶ And still others contend that states and localities are in the best position to identify transportation investments that meet their residents' needs, and therefore, that significantly more responsibility, along with additional flexibility, should be shifted to those levels.⁵⁷ Despite disagreement on what the federal role should be, there is widespread sentiment that it needs to be re-evaluated.⁵⁸

Whatever form it might take, any rethinking of the federal role should be coordinated with other levels of government. States and localities should adapt the way they fund transportation infrastructure to best complement a revised role for the federal government and each other. Moreover, any shift in responsibility should be informed by considerations of the effect of such a change on the fiscal conditions of all levels of government.

- 4. Partnership is key to confronting challenges.** Much of the nation's transportation infrastructure is built through the combined investment of multiple levels of government. The various levels should communicate with one another and operate as partners. States and localities need to know what to expect from the federal government so they can plan their infrastructure investments. In turn, the federal government needs to be aware of the challenges that states and localities face and the potential impact of particular federal policies and procedures. States have diverse needs, and federal officials should understand the local and regional implications of their policy choices.

Conclusion

The federal government, states, and localities play important roles in funding surface transportation. And their financial contributions are not only substantial, but also deeply intertwined.

Over the past 10 years, this multilayered funding system has encountered major challenges in maintaining investments in surface transportation at a time of broad consensus among experts that funding needs exceed the current level of investment.⁵⁹ These obstacles result, in large part, from the fact that gas and vehicle taxes, major sources of surface transportation revenue, have been declining in real terms in recent years because of trends such as improved fuel efficiency and changing driving habits, as well as decades of stagnant tax rates. Complicating efforts to address these challenges are the broader fiscal difficulties confronting the federal government and the states, which leave policymakers with hard choices about how to pay for surface transportation in the years ahead. Ultimately, understanding the role of each level of government in funding transportation will help policymakers address the nation's needs while navigating the larger fiscal landscape.

Appendix A: Shares of State Highway and Transit Spending

Table A.1

Average spending on surface transportation by level of government, 2007-11

	Spending (thousands)		Shares of total spending		Spending (per capita)	
	Federal	State and local	Federal	State and local	Federal	State and local
U.S.	50,107,690	155,913,696	24%	76%	\$164	\$510
Alabama	754,909	1,410,549	35%	65%	\$161	\$300
Alaska	404,636	1,265,874	24%	76%	\$581	\$1,817
Arizona	850,128	2,782,009	23%	77%	\$132	\$432
Arkansas	501,650	777,076	39%	61%	\$174	\$270
California	5,157,592	19,244,946	21%	79%	\$140	\$523
Colorado	691,204	2,354,863	23%	77%	\$139	\$475
Connecticut	605,684	1,395,305	30%	70%	\$172	\$396
Delaware	179,874	514,605	26%	74%	\$204	\$584
District of Columbia	684,713	1,636,286	30%	70%	\$1,148	\$2,743
Florida	2,364,425	8,644,256	21%	79%	\$128	\$466
Georgia	2,073,451	2,595,309	44%	56%	\$214	\$268
Hawaii	226,473	682,246	25%	75%	\$173	\$521
Idaho	348,613	569,216	38%	62%	\$227	\$371
Illinois	2,135,340	8,653,610	20%	80%	\$166	\$674
Indiana	1,040,546	1,845,881	36%	64%	\$162	\$288
Iowa	533,036	1,591,145	25%	75%	\$177	\$529
Kansas	485,044	1,325,497	27%	73%	\$172	\$471
Kentucky	722,742	1,794,802	29%	71%	\$168	\$417
Louisiana	922,591	2,187,594	30%	70%	\$207	\$491
Maine	195,874	614,333	24%	76%	\$148	\$465
Maryland	868,296	3,049,322	22%	78%	\$152	\$535
Massachusetts	906,050	3,236,283	22%	78%	\$138	\$494
Michigan	1,233,187	3,084,543	29%	71%	\$124	\$309
Minnesota	872,288	2,909,799	23%	77%	\$166	\$554
Mississippi	710,482	1,005,787	41%	59%	\$241	\$342
Missouri	1,193,688	2,278,838	34%	66%	\$200	\$383
Montana	470,453	379,247	55%	45%	\$484	\$390
Nebraska	283,408	907,807	24%	76%	\$158	\$505
Nevada	398,907	1,464,139	21%	79%	\$152	\$557
New Hampshire	191,006	514,402	27%	73%	\$145	\$390

Continued on next page

	Spending (thousands)		Shares of total spending		Spending (per capita)	
	Federal	State and local	Federal	State and local	Federal	State and local
New Jersey	1,353,192	5,047,886	21%	79%	\$155	\$580
New Mexico	439,417	944,259	32%	68%	\$219	\$470
New York	4,018,644	22,275,849	15%	85%	\$207	\$1,145
North Carolina	1,097,758	2,901,086	27%	73%	\$118	\$312
North Dakota	284,471	454,783	38%	62%	\$436	\$697
Ohio	1,417,908	4,182,838	25%	75%	\$123	\$363
Oklahoma	773,479	1,473,178	34%	66%	\$210	\$401
Oregon	766,655	1,881,115	29%	71%	\$202	\$496
Pennsylvania	2,185,626	8,214,641	21%	79%	\$173	\$652
Rhode Island	268,294	220,532	55%	45%	\$255	\$209
South Carolina	584,501	961,179	38%	62%	\$129	\$212
South Dakota	286,332	491,815	37%	63%	\$355	\$609
Tennessee	882,313	1,654,594	35%	65%	\$141	\$264
Texas	3,233,463	10,693,506	23%	77%	\$132	\$436
Utah	563,236	1,669,372	25%	75%	\$206	\$612
Vermont	214,053	321,191	40%	60%	\$344	\$516
Virginia	1,018,761	2,863,654	26%	74%	\$130	\$364
Washington	1,097,298	4,776,148	19%	81%	\$166	\$723
West Virginia	465,555	776,576	37%	63%	\$255	\$425
Wisconsin	866,100	2,974,724	23%	77%	\$153	\$527
Wyoming	284,344	419,197	40%	60%	\$526	\$775

Sources: Pew's analysis of the U.S. Census Bureau's Annual Survey of State and Local Government Finances, 2007-11; U.S. Census Bureau's Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2013; and U.S. Census Bureau's Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2000, to July 1, 2009

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Appendix B: Methodology

Spending by level of government

The central analysis of this report calculates how much of its own revenue each level of government spends on highway and transit (i.e., “own-source spending”) as opposed to revenue granted from another level (Figures 1-7). It relies on data from the U.S. Census Bureau’s Annual Survey of State and Local Government Finances—specifically, the public-use flat files from 2002 to 2011 (the most recent data available).⁶⁰

To calculate own-source spending, final expenditures and flows between levels of government were calculated separately, and then flows were added to or subtracted from final expenditures. For example, final state highway expenditures include state-reported operations, construction, and other capital outlays on both regular and toll highways. Interest payments are excluded.

States also send highway funds to local governments and receive funds from the federal and local governments. Own-source state spending on highways is thus calculated as the final state expenditure on a highway plus the highway funds the state sends to local governments minus those it receives from the federal and local governments.

The price index used to adjust for inflation is the Bureau of Economic Analysis’ price index for state and local government investment in structures (Table 3.9.4, Line 36). This index was used for federal as well as state and local expenditures because, as this paper shows, federal funds are almost exclusively spent at the state and local levels. Alternate price indices yielded similar trends. Quarterly price index data were used to construct a July-June state fiscal year series.

Revenue sources for highway spending

This report also analyzes the sources of revenue used for highway spending (Figures 9 and 10). The basis for Figure 9 is the Federal Highway Administration’s 2012 HF-10 data table, which aggregates data from the agency’s FE-210, SDF, and LDF tables.

Data on revenue from tolls; general funds; property taxes; bond proceeds; and other taxes, fees, and investment income come directly from the HF-10 table. Because this table combines fuel and vehicle tax revenue, it was necessary to disaggregate those values using the constituent tables.

Table FE-210 was used to disaggregate federal fuel and vehicle tax revenue. The calculation started with the amount of fuel and vehicle tax revenue flowing into the highway account of the highway trust fund. The portion of the highway account that was used for nonhighway purposes—\$1.201 billion for funding that states chose to use for mass transit and \$95 million for territories, as per HF-10—was allocated to the fuel and vehicle categories in proportion to their share of the account and then subtracted from the total for each category. The resulting calculation represents separate fuel and vehicle revenue used exclusively for highway purposes.

Table SDF was used to disaggregate state fuel and vehicle tax revenue, with no additional calculations necessary. The LDF table does not separate local fuel and vehicle tax revenue, so the aggregated HF-10 value was used and assigned exclusively to the vehicle category. (See Figure 9.)

Figure 10 is directly based on Tables FE-210 (federal) and SDF (state), 2002 to 2012. Both data series are adjusted for inflation using the same methodology as the Census Bureau’s time series analysis. The state vehicle tax decline is also based on the SDF tables, but an adjustment to this data was needed. In the 2012 SDF table,

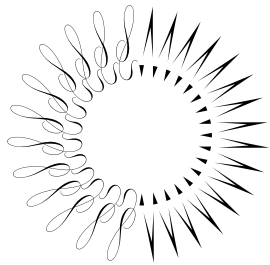
Nebraska's vehicle tax revenue is listed at \$8.9 billion. Through discussions with Federal Highway Administration staff, Pew researchers confirmed that this total should actually be \$8.9 million, which is the figure used in the report.

Endnotes

- 1 Highways, as used in this paper, is a broad term that encompasses roads, bridges, tunnels, and most other forms of infrastructure that accommodate motor vehicle traffic. Transit refers to buses, subways, commuter trains, and other forms of public mass transit.
- 2 For other efforts to map transportation funding across levels of government, see National Surface Transportation Infrastructure Financing Commission, "Paying Our Way: A New Framework for Transportation Finance" (February 2009), http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Advance%20Copy_Feb09.pdf; and Congressional Budget Office, "Public Spending on Transportation and Water Infrastructure" (Nov. 17, 2010), <http://www.cbo.gov/publication/21902>.
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- 5 Congressional Budget Office, "Projections of Highway Trust Fund Accounts Under CBO's August 2014 Baseline" (August 27, 2014), http://www.cbo.gov/sites/default/files/cbofiles/attachments/43884-2014-08-Highway_Trust_Fund.pdf. The \$162 billion includes a \$115 billion shortfall in the highway account, a \$42 billion shortfall in the mass transit account, and a \$5 billion cash balance that the U.S. Department of Transportation says is necessary in order to meet obligations as they come due.
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- 11 The Pew Charitable Trusts, "State Tax Revenue Grows, But a Full Recovery Still Eludes 26 States," May 19, 2014 (updated June 3, 2014), <http://www.pewstates.org/research/analysis/state-tax-revenue-grows-but-a-full-recovery-eludes-26-states-85899545362>.
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- 13 Pew's analysis of U.S. Census Bureau, "2011 Annual Survey."
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- 17 Congressional Budget Office, "Public Spending on Transportation and Water Infrastructure."
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- 26 Pew's analysis of Robert S. Kirk et al., "Surface Transportation Funding and Programs Under MAP-21: Moving Ahead for Progress in the 21st Century Act," Congressional Research Service (Sept. 27, 2012), <https://www.fas.org/sgp/crs/misc/R42762.pdf>.
- 27 The \$23.4 billion figure is \$26.5 billion that states sent to localities net of \$3.1 billion that localities sent to states.
- 28 Numbers do not add up exactly due to rounding.
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- 31 Owing to a series of extensions of federal law between 2010 and 2012—and then MAP-21, the current surface transportation authorization which covers fiscal years 2013 to 2014—state shares have not been recalculated using these factors since 2009.
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