

The Benefits

OF RELIABLE FEDERAL FUNDING
FOR PUBLIC TRANSPORTATION

AMERICAN PUBLIC TRANSPORTATION ASSOCIATION



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THE AMERICAN PUBLIC TRANSPORTATION ASSOCIATION (APTA)

The American Public Transportation Association (APTA) is a nonprofit international association of 1,500 public and private sector organizations, engaged in the areas of bus, paratransit, light rail, commuter rail, subways, waterborne services, and intercity and high-speed passenger rail. This includes: transit systems; planning, design, construction, and finance firms; product and service providers; academic institutions; transit associations and state departments of transportation. APTA is the only association in North America that represents all modes of public transportation. APTA members serve the public interest by providing safe, efficient and economical transit services and products.

The Role of Transit Funding Guarantees in Innovation, Manufacturing, and State of Good Repair

I. Executive Summary

There is a bipartisan consensus that the United States is falling behind its global competitors on the condition of our infrastructure. Policies addressing the current lack of investment would have the potential to generate economic growth and enhance productivity. Former Federal Reserve Chairman Ben Bernanke cited infrastructure spending as one of “the highest return[ing] fiscal actions in terms of getting higher growth.”¹

Not all infrastructure spending has the same economic impact, however. *Guaranteed* annual funding provides benefits that nonguaranteed funds do not, from spurring innovation and job creation to getting more “bang” for the federal buck. This paper examines **guaranteed transit funding** specifically and concludes that *this* type of infrastructure spending provides numerous benefits, including:

1. **Encouraging innovation.** Companies invest in R&D when the potential return on their investment is sufficient to compensate for the risk. The increased uncertainty of federal funding has hiked investment risk. Thus, some businesses have cut their R&D budgets.
2. **Supporting U.S. manufacturing.** The transit industry supports \$34 billion in expenditures in the private sector each year. But as federal funding has become less certain, orders for new vehicles and equipment have slowed, and some transit-related businesses are beginning to consider layoffs.
3. **Delivering projects faster and at less cost.** Bonding against future federal grants reduces borrowing costs and speeds project delivery – as long as lenders trust the federal government to provide those grants on schedule. Losing the guarantees could cost transit agencies and taxpayers an extra \$350 million in borrowing costs over the next 20 years.
4. **Improving state of good repair.** Transit agencies are using asset management techniques to strategically match capital needs with available resources. If those resources do not appear as scheduled, maintenance is deferred and replacements postponed, undermining the condition of transit infrastructure.

¹ Ben Bernanke, Interview with Fareed Zakaria, CNN Money, May 7, 2017, <http://money.cnn.com/2017/05/07/news/economy/ben-bernanke-congress/>.

To support America’s economic competitiveness, Administration officials and Congressional leaders should significantly increase transit funding,² and should also put in place protections – budgetary and/or procedural – to ensure that such funding is provided on schedule and at the promised amount. Restoring guaranteed funding for transit will not only improve the condition of our transportation infrastructure, it will also benefit the economy and help America retain its position as the most innovative nation in the world.

II. The Changing Federal Landscape

When the Transportation Equity Act for the 21st Century (TEA-21) passed nearly two decades ago, Americans were taking more than 8½ billion trips on public transportation each year.³ Today, that number has risen to more than 10½ billion trips annually.⁴ America’s transit fleet includes more than 70,000 buses that operate on 230,000 miles of roadways across the country, and 20,000 rail cars that traverse more than 12,000 miles of tracks.⁵ New public transit lines have recently opened in Denver (commuter rail), Minneapolis (rapid bus), and Seattle (light rail extension), and dozens more are being planned. Transit investments have improved mobility, increased access to economic opportunity, and spurred private development in cities, counties, and towns across the country.

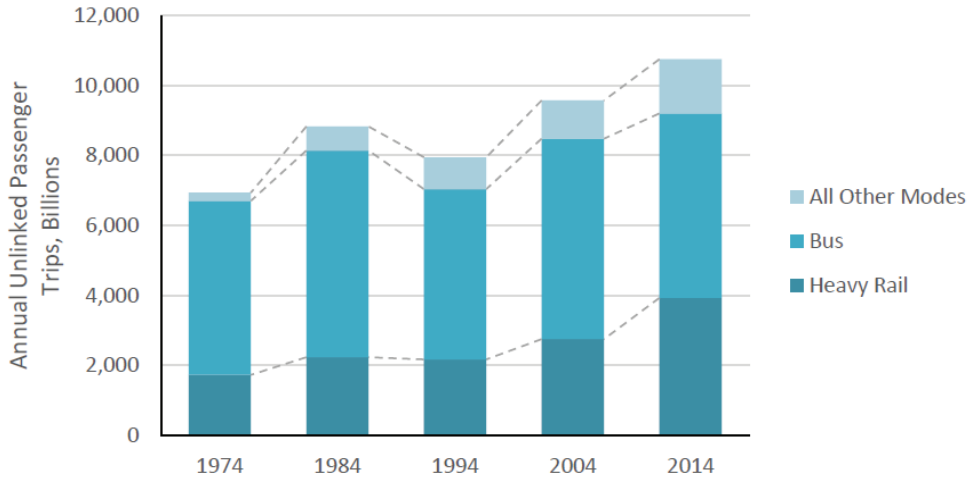
² Though this paper focuses on funding guarantees, rather than funding amounts, the economic benefits of increasing transit funding have been well-documented. See, e.g., “Economic Impact of Public Transportation Investment, 2014 Update,” American Public Transportation Association, <https://www.apta.com/resources/reportsandpublications/Documents/Economic-Impact-Public-Transportation-Investment-APTA.pdf>.

³ “2016 Public Transportation Fact Book, Appendix A: Historical Tables,” American Public Transportation Association, April 2016, Table 1, Part B, <http://www.apta.com/resources/statistics/Documents/FactBook/2016-APTA-Fact-Book-Appendix-A.pdf>.

⁴ Ibid.

⁵ “2016 Public Transportation Fact Book,” American Public Transportation Association, February 2017, Tables 7 and 11 and p.19, <http://www.apta.com/resources/statistics/Documents/FactBook/2016-APTA-Fact-Book.pdf>.

Figure 1. Transit Ridership, 1974 – 2014



Source: 2016 Public Transportation Fact Book

At the same time, federal investment in infrastructure has become increasingly uncertain. This change stems from three interrelated factors: (1) frequent delays in federal authorizations, (2) the impending insolvency of the Highway Trust Fund, and (3) an emerging shift away from formula-based funding to competitive grant programs.

A. Authorization Delays

While TEA-21 was enacted just a few months after the expiration of its predecessor legislation, subsequent reauthorization bills have been delayed for years while Congress debates funding and policy issues. During the gaps between surface transportation laws, funding for federal transportation programs continued only in short-term extensions, requiring Congressional votes every few weeks or months until a new long-term law was passed. (See Table 1.)

Table 1. Gap between Surface Transportation Laws

Transportation Law	Enacted	Expired	Gap before next bill	Extensions during gap
ISTEA	Dec. 18, 1991	Sep. 30, 1997	8 months	1
TEA-21	Jun. 9, 1998	Sep. 30, 2003	1 year, 10 months	12
SAFETEA-LU	Aug. 10, 2005	Sep. 30, 2009	2 years, 9 months	9
MAP-21	Jul. 6, 2012	Sep. 30, 2014	1 year, 2 months	5
FAST Act	Dec. 4, 2015	Sep. 30, 2020		

Other than the extension of the Intermodal Surface Transportation and Efficiency Act of 1991 (ISTEA), which covered only six months of the eight-month gap⁶, there has never been an actual break between authorizations. However, the ongoing uncertainty, particularly between TEA-21 and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), caused considerable market disruption, as states, cities, and public transit agencies delayed major projects or equipment purchases until the next full authorization was in place.⁷

B. Highway Trust Fund Insolvency

From ISTEA through the first four years of SAFETEA-LU, the Highway Trust Fund had sufficient revenues from current fuel tax collections plus accumulated balances to pay for authorized spending. However, beginning in 2008, the situation became more challenging: when the accumulated balances had been spent, and current fuel tax collections were no longer enough to cover authorized spending levels. Several times over the next seven years, the Highway Trust Fund was on the verge on insolvency, requiring transfers from the general fund to keep it functioning. Some of these general fund transfers were included in MAP-21 and the FAST Act, while others were accomplished by special legislation between the major laws. (See Table 2.)

Table 2. General Fund Transfers to the Highway Trust Fund

Date	Amount (\$ billions)
9/15/08	\$8.017
8/7/09	\$7.000
3/18/10	\$19.500
7/6/12	\$17.577
8/8/14	\$9.765
FAST Act	\$70.000
Total: \$135.3 billion	

Sources: Highway Trust Fund 101, Eno Center for Transportation, June 2015, <https://www.enotrans.org/wp-content/uploads/2015/09/HTF-Primer.AH .EB .FINAL -2.pdf>, and FHWA, FAST Act Fact Sheet, <https://www.fhwa.dot.gov/fastact/factsheets/htffs.cfm>. Note that these figures do not include transfers from the Leaking Underground Storage Tank Fund to the Highway Trust Fund.

Local, regional, and state agencies that rely on federal funding for their transportation programs were informed of each impending insolvency several months ahead of time.

⁶ The chronology leading up to passage of TEA-21 is available from FHWA at <https://www.fhwa.dot.gov/reports/fifahwy/ffahappb.htm>.

⁷ “Revisiting the TEA-21 Reauthorization: Extensions and Delays,” Public Roads, Vol. 72 No. 5, Mar./Apr. 2009, <https://www.fhwa.dot.gov/publications/publicroads/09mar/01.cfm>.

Warnings were issued by the U.S. Department of Transportation (DOT) that if Congress did not act, within a few months DOT would begin to slow down or halt payments to its grantees. With insolvency of the Mass Transit Account of the Highway Trust Fund not far behind the Highway Account, transit agencies could no longer count on federal funding arriving on schedule – or at all, causing them to delay or in some cases halt projects.⁸ While the FAST Act has created a relatively stable environment for a few years, the insolvency issue must be addressed again, in order to avoid further market distortions, by the time that legislation expires in 2020.

C. Shift toward Innovative Financing and Competitive Programs

With the funding issue dominating Congressional transportation debates, it might be easy to miss an emerging shift in policy and program structure that has started to appear in recent authorizations. ISTEPA, TEA-21, and SAFETEA-LU relied primarily on formula grants to states, metropolitan planning organizations, and transit agencies. While MAP-21 and the FAST Act retained that basic structure, they have also shown an increasing emphasis on innovative financing and competitive grant programs.

MAP-21 increased the authorization for the TIFIA credit assistance program from \$122 million in the last year of SAFETEA-LU to \$750 million in FY2013 and \$1 billion in FY2014. While the FAST Act dropped that level back to \$275 million in FY2016 and FY2017, \$285 million in FY2018, and \$300 million in FY2019 and FY2020, even that reduced amount is more than twice what was authorized in SAFETEA-LU.

MAP-21 and the FAST Act also created new competitive programs targeted toward particular needs. MAP-21 created a program for projects of national and regional significance (although funding was never appropriated), and the FAST Act included a new program for freight-related projects, known as “FASTLANE” under the Obama Administration and “INFRA” under the Trump Administration. Congress has, so far, also supported the competitive model through appropriations for the popular TIGER grant program every year since its creation in 2009.⁹

Infrastructure proposals have continued to circulate since passage of the FAST Act, and many of these are also focused on innovative financing rather than traditional formula grants. While

⁸ Ibid.

⁹ The transit program contains one example that counters the trend toward competitive programs, as MAP-21 significantly cut the competitive Bus and Bus Facilities program in favor of a much smaller formula-based program. In response to stakeholder calls to return to the previous model, the FAST Act restored some of the competitive aspects of this program.

there have been some bills introduced that would raise revenue for transportation,¹⁰ there have been at least as many proposals calling for more financing options, such as Move America bonds (proposed by Senators Ron Wyden (D-OR) and John Hoeven (R-ND)), and a national infrastructure bank (proposed by Rep. John Delaney (D-MD) and Rep. Rosa DeLauro (D-CT), among others). Competitive programs, including credit assistance programs, have demonstrated benefits such as supporting projects that do not fit well within the existing programs, and there is certainly a need to continue development of these models. Yet it is the annual, formula-based funding that drives the steady demand needed to support a competitive marketplace among transit suppliers and manufacturers. Failure to address the funding shortfalls in the transit formula programs will stifle that demand and further disrupt the market.

III. The Status of Transportation Funding Guarantees

The Highway Trust Fund (HTF) was created in 1956 to help support construction of the interstate highway system. Since 1982, a portion of the federal fuel taxes deposited into the HTF has been dedicated to a Mass Transit Account. Funds in the HTF cannot be spent without Congressional authorization and appropriation. During the early 1990s, appropriations bills often set transportation spending levels below authorized amounts, even though revenues were available in the HTF to support the higher levels. In part, this was a result of the Budget Enforcement Act of 1990, which set caps on overall discretionary spending that included transportation among numerous other programs. In other words, by spending less on transportation, appropriators could spend more on other programs without violating the discretionary spending caps. However, state and local governments and other transportation stakeholders became frustrated with the fact that year after year, they were being provided with less funding than expected, as fuel tax revenues continued to pile up in the HTF. As a result, TEA-21 established a new guarantee that authorized funding levels would be appropriated.

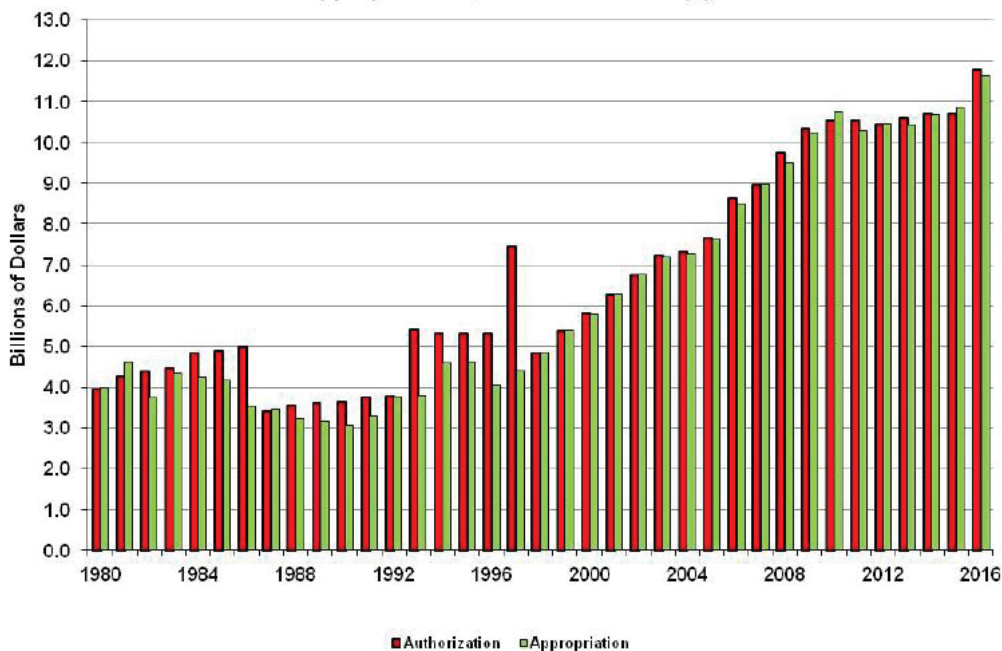
The guarantee was accomplished in two ways. First, TEA-21 established discretionary spending caps for highways and mass transit, separate from the overall spending cap in the Budget Enforcement Act. Highways and mass transit were no longer counted as part of the overall discretionary spending category; in other words, there was now a “firewall” between highway and transit funding and other programs. As a result, reducing highway and transit spending would not create additional room under the overall spending cap, and appropriators would no longer have an incentive to underfund transportation programs.

¹⁰ There are a few direct funding proposals, including the UPDATE Act introduced by Rep. Blumenauer (D-OR) and the Penny for Progress Act introduced by Rep. DeFazio (D-OR).

Second, TEA-21 established a point of order in the House of Representatives to enforce the new budget guarantee for transportation programs. Once raised on the House floor, the point of order could stop consideration of any legislation that did not fully fund the highway and transit programs as called for in authorizing legislation.¹¹

Once the guarantee was in place, highway and transit programs supported by the HTF began to regularly receive their authorized amounts. Figure 2 shows authorized and appropriated amounts for transit from 1980 through 2016. Prior to 1998, appropriated amounts (the green line) were almost always below authorized amounts (the red line), particularly in the years leading up to TEA-21. After 1998, appropriated amounts tracked very closely with authorized amounts.

Figure 2. Federal Transit Authorizations and Appropriations, FY1980-FY2016



Source: “Primer on Transit Funding,” American Public Transportation Association, April 2016
<https://www.apta.com/resources/reportsandpublications/Documents/APTA-Primer-FAST-Act.pdf>

In recent years, however, the guarantees have been diminished. It was argued that as general funds were transferred into the HTF, forgoing the fuel tax revenues which supported the HTF undermined the rationale for the firewall, and the separate budgetary treatment of HTF funds

¹¹ “Financing Federal-Aid Highways,” Federal Highway Administration,
<http://www.fhwa.dot.gov/policy/olsp/financingfederalaid/approp.cfm#g>.

was not continued after SAFETEA-LU expired. (Subsequent budget control laws had eliminated the overall spending caps, which would have made separate caps for highway and transit spending somewhat anomalous in any case.)

The House also amended the point of order that enforced the funding guarantees. In the 114th Congress (2015-16), the point of order prohibited consideration of any appropriations bill that would use fuel tax revenues in the HTF for any purpose other than highway and transit programs. This left unprotected HTF funds that were transferred from general revenues (as well as the general fund portion of the transit program, including the Capital Investment Program).

Nonetheless, as Figure 2 shows, appropriators have continued to fund highway and transit programs at, or near, their authorized levels, even after the formal guarantees disappeared. However, given continuing uncertainty over the future of the Highway Trust Fund and pressure from the Administration to reduce domestic spending, federal funding for transportation has again become a target for cuts.

IV. The Value of Transit Funding Guarantees

One of the most effective ways to achieve economic growth and job creation within an infrastructure package would be to restore the transit funding guarantees. The guarantees themselves cost the government nothing¹², yet they provide significant benefits.

Prior work by the American Public Transportation Association on this topic¹³ as well as other research and a survey of APTA members¹⁴ show that guaranteed dollars provide economic and fiscal benefits that non-guaranteed dollars do not. (Although not within the scope of this paper, the same is likely true for guaranteed dollars in the highway program.) Funding guarantees offer unique value by:

1. Encouraging innovation;
2. Supporting U.S. manufacturing;
3. Delivering projects faster and at less cost; and

¹² For purposes of the federal budget, guaranteed dollars score the same as non-guaranteed dollars. In purely economic terms, there may be some opportunity cost to limiting Congress's flexibility to use these dollars for other purposes.

¹³ "The Benefits of TEA-21 Funding Guarantees," American Public Transportation Association, http://www.apta.com/gap/policyresearch/Documents/funding_guarantees.pdf.

¹⁴ The survey instrument was provided online to both transit agencies and business members of APTA in February 2017 to solicit examples of the impact of funding guarantees. Seventy-two responses were received. While responses came from transit agencies and business members of various sizes and from numerous geographic locations, the survey was not designed to achieve a statistically valid representative sample of the transit industry.

4. Improving state of good repair.

The remainder of this paper will examine each of these benefits in detail.

a. Encouraging Innovation.

America has historically been a leader in innovation, supported by strong public funding for research and development (R&D) and an entrepreneurial culture. While still a leader by many measures, America's unrivaled position is now under threat, as global competitors are significantly increasing their R&D budgets,¹⁵ and America's productivity growth has slowed.¹⁶ According to a recent paper by Brookings and ITIF, "whereas once America's leading technology competitors were largely isolated to Western Europe and Japan, today many developing nations are crafting innovation strategies designed to wrest leadership in advanced technology categories such as life sciences, clean energy, new materials, flexible electronics, computing and the internet, and advanced manufacturing."¹⁷

Slow productivity growth is one of the biggest threats to America's future competitiveness.¹⁸ R&D policy is therefore critical to America's future, as it drives innovation, and innovation enables increases in productivity. As public spending on R&D has become more constrained, private companies have increased their investments, which now make up about two-thirds of U.S. R&D spending.¹⁹ Government still has an important role to play, however, as its economic and fiscal policies send an important signal to private companies about the value of their investment.

The R&D tax credit is an illustrative example of the interplay between public support and private decision-making. For most of its life, the tax credit was a temporary program, which meant that it had to be regularly renewed by Congress. As a result, many observers believe that the tax credit was less effective than it could have been, since uncertainty about its long-

¹⁵ "Promoting Innovation through R&D," Council on Foreign Relations, November 5, 2012, <http://www.cfr.org/innovation/promoting-innovation-through-rd/p29403>.

¹⁶ "Localizing the Economic Impact of Research and Development: 50 Policy Proposals for the Trump Administration and Congress," Brookings Institution and Information Technology and Innovation Foundation, December 2016, <https://www.brookings.edu/research/localizing-the-economic-impact-of-research-and-development/>.

¹⁷ Ibid. at 4.

¹⁸ See, e.g., ibid at 37, and Porter, Michael and Jan Rivkin, "The Looming Challenge to U.S. Competitiveness," Harvard Business Review, March 2012, <https://hbr.org/2012/03/the-looming-challenge-to-us-competitiveness>.

¹⁹ "Rising to the Challenge: U.S. Innovation Policy for the Global Economy," National Research Council (US) Committee on Comparative National Innovation Policies, 2012, <https://www.ncbi.nlm.nih.gov/books/NBK100319/>.

term availability undermined the incentive it would otherwise have provided for businesses to increase their R&D expenditures.²⁰ The credit was finally made permanent in 2015.

The R&D tax credit is not the only way in which the federal government incentivizes innovation. Federal funding has helped to create a growing market for new technology, equipment, and systems. Over the years, technological innovations have increased productivity in the transit industry, and made transit more reliable, efficient, and sustainable. Many improvements in transit materials and technology have resulted from private companies' investments in R&D, and more are on the horizon. Improvements such as zero emission vehicles have the potential to improve environmental outcomes while reducing fuel costs. Smart fare collection systems could make it as easy to pay for a transit trip as it is to pay for Uber or Lyft. Digitizing information systems will allow for data collection that can identify congestion chokepoints, usage patterns, and other factors that will allow transit agencies to operate more efficiently.

As public transit funding has become increasingly unpredictable, the market for innovative products has become constrained. In fact, lack of funding is one of the most commonly cited barriers to innovation at transit agencies.²¹ New technologies often come with a higher upfront cost (though many will pay for themselves over time through operating efficiencies or other benefits). For example, the cost of a hybrid bus is in the \$450,000 - \$550,000 range, while a conventional bus might cost as little as \$280,000 - \$300,000.²² Conversion of a bus fleet to a cleaner fuel requires significant expenditures for facility and infrastructure upgrades. When funding is limited and uncertain, transit agencies default to the most basic equipment and vehicles.²³ As one transit agency put it in responding to APTA's survey, "Not having a predictable level of funding impacts the planning of a bus replacement process. Because of that we only look at bus replacement and have pretty much put on hold infrastructure investment."

Our business in North America is wholly dependent on guaranteed federal funding for transit. Any impact on that will also affect the nascent push to zero emission bus development.
-International manufacturer, responding to APTA survey

²⁰ "Promoting Innovation through R&D," Council on Foreign Relations, November 5, 2012, <http://www.cfr.org/innovation/promoting-innovation-through-rd/p29403>.

²¹ See, e.g., "Innovation at Transit Systems," Federal Transit Administration, 2005, <https://www4.uwm.edu/cuts/bench/innoall.pdf>.

²² "Tech Brief: Assessing the Costs for Hybrid versus Regular Transit Buses," Iowa State University, October 2012, http://www.intrans.iastate.edu/publications/documents/t2summaries/hybrid_transit_bus_tech_brief1.pdf.

²³ The federal government has on occasion provided limited grant funding specifically for innovative technologies, such as through the Lo-No Emission program and the TIGGER program (which is no longer funded).

The effects of uncertain funding ripple through the economy, from the transit agencies to their manufacturers and suppliers, who see the market for their most innovative products shrinking. In responding to APTA's survey, one manufacturing company stated that it has "cut our R&D budget as a risk reduction move," while another stated that "Without predictability we are unable to make investments towards growing our business....[we] cannot invest in new technologies and innovation without a growth market. No money, no growth, no investment."

Of course, R&D will likely not cease altogether, but continued uncertainty in the federal transportation program likely distorts the market by favoring incumbent players with an existing competitive advantage. Smaller firms and start-ups may find that they have a harder time convincing investors to support them in developing and testing new technologies when transit agencies are not in a position to make the long-term investments necessary to provide emerging firms competitive returns at reasonable risk.

Per the Council on Foreign Relations' examination of U.S. innovation, "Government creates the policies that stimulate R&D activity in the private sector."²⁴ Increasing transit funding and restoring the guarantees provides a strong market signal that R&D investments will produce returns. As a result, the industry will attract new entrants, enhancing competition, and therefore more efficiently allocating scarce taxpayer resources.

b. Supporting U.S. Manufacturing

Public transportation does not simply depend on government agencies but also supports a vast network of manufacturers, suppliers, vendors, contractors, technology firms, and other businesses. Manufacturers and suppliers provide vehicles, parts, and equipment to transit agencies; design and construction firms help deliver new infrastructure; and information technology and software firms provide operations control systems, customer information, and fare collection tools, to name just a few. All told, the transit industry supports thousands of private sector jobs. According to APTA, transit-related expenditures in the private sector total more than \$34 billion per year. (See Table 3.)

²⁴ "Promoting Innovation through R&D," Council on Foreign Relations, November 5, 2012, <http://www.cfr.org/innovation/promoting-innovation-through-rd/p29403>.

Table 3: Transit Expenditures in the Private Sector, 2014

Expenditure Object	Dollars (Millions)	Percent of All Expenditures
All Capital	18,465.9	29.4%
Services	3,078.9	4.9%
Materials and Supplies	4,886.1	7.8%
Utilities	1,425.5	2.3%
Casualty and Liability	551.2	0.9%
Purchased Transportation	6,062.2	9.6%
Total Expenditures in Private Sector	34,469.8	54.8%
Total Expenditure, Capital and Operating	62,890.7	100.0%

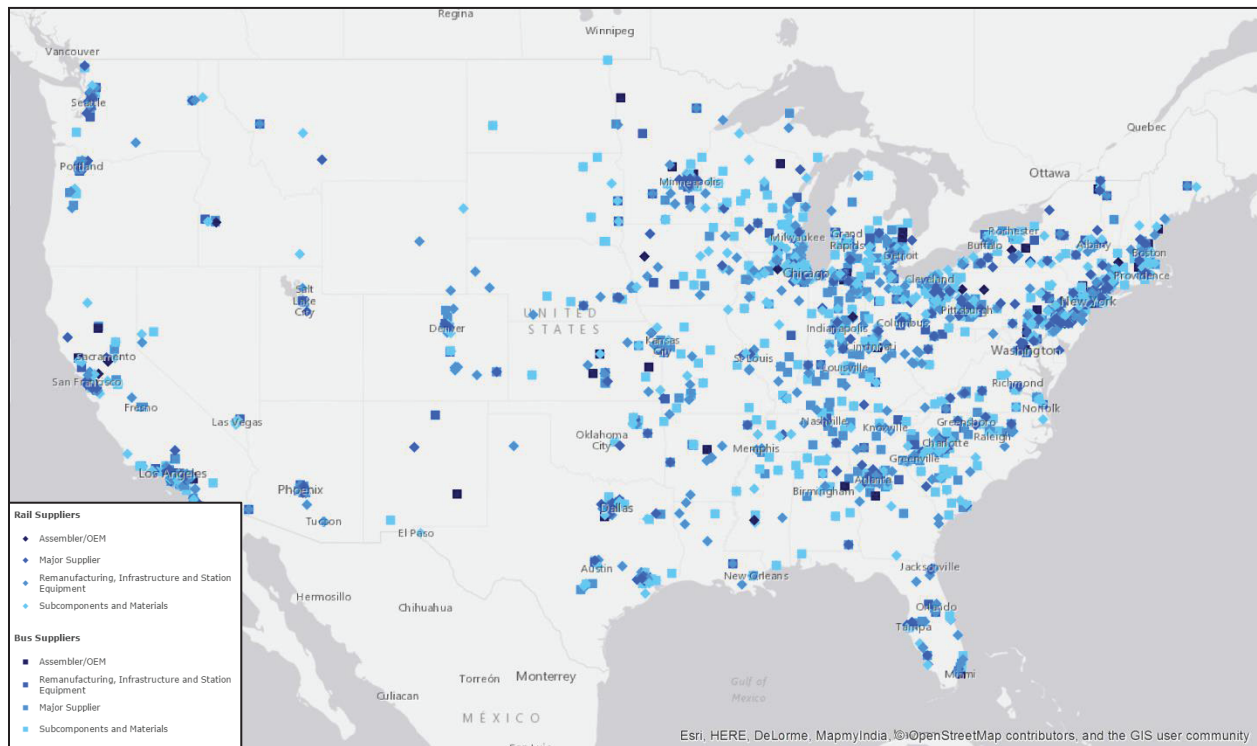
Source: 2016 Public Transportation Fact Book, p. 31

According to the survey of APTA members, some transit agencies are delaying construction projects until there is greater certainty about future federal funding. Several transit agencies noted that they are putting off needed expansion to operations and maintenance facilities due to uncertainty over the timing of federal funds. Delays of this sort not only affect transit agencies' ability to provide service, but also limit opportunities for construction workers who might otherwise be put to work building the new facilities.

Funding uncertainty affects not only those in the construction industry, but manufacturing companies as well, as equipment and vehicle purchases are delayed. Recent research has been conducted on the supply chain for both rail cars and buses.²⁵ The geographic scope of the transit supply chain extends well beyond major cities to smaller cities and towns across the country (as shown in Figure 9).

²⁵ See, e.g., "Passenger Rail and Transit Rail Manufacturing in the U.S.," BlueGreen Alliance and Environmental Law & Policy Center, January 2015, <http://www.bluegreenalliance.org/wp-content/uploads/2015/01/PassengerRailTransitRailManufacturing.pdf> and "The US Transit Bus Manufacturing Industry," Mineta Transportation Institute, October 2016, <http://transweb.sjsu.edu/PDFs/research/1234-US-transit-bus-mfg-industry.pdf>.

Figure 9. The Public Transportation Supply Chain



Source: American Public Transportation Association, *Industry Footprint*.

While guaranteed transit funding over the past twenty years has helped many of these companies stay in business, there are still significant gaps in the U.S. supply chain for transit. For rail cars, there are few domestic suppliers for propulsion, electronics, and doors.²⁶ In addition, many higher value manufacturing activities, such as design and engineering of the rail cars themselves, take place overseas. For buses, there are a relatively small number of companies that produce the vehicles and related parts and supplies. There are only three major manufacturers of heavy-duty transit buses in the U.S.²⁷ Other parts and components may be dependent on just a handful of suppliers – there is currently only one U.S. manufacturer of diesel engines for heavy-duty buses. While transit agency spending on buses has totaled at

²⁶ “U.S. Manufacture of Rail Vehicles for Intercity Passenger Rail and Urban Transit: A Value Chain Analysis,” Center on Globalization, Governance, and Competitiveness, Duke University, June 24, 2010, p.5, <http://www.cggc.duke.edu/pdfs/U.S. Manufacture of Rail Vehicles for Intercity Passenger Rail and Urban Transit.pdf>.

²⁷ “The US Transit Bus Manufacturing Industry,” Mineta Transportation Institute, October 2016, p.1, <http://transweb.sjsu.edu/PDFs/research/1234-US-transit-bus-mfg-industry.pdf>.

least \$1.4 billion every year since 1995²⁸, this level of demand is too low to attract major overseas companies or emerging technology firms into the industry.²⁹

The limited nature of the U.S. transit manufacturing industry is partially due to two interrelated factors. First, long-term underfunding of transit (by all levels of government) has limited demand. The Duke University researchers who studied rail car manufacturing attributed the gaps in the U.S. supply chain to the fact that “these gap categories require complex machinery and special skills, so companies typically invest in them only in overseas locations where there is a stronger market.”³⁰ Transit industry participants surveyed by the researchers “emphasized this need for increased, steady demand in order to stabilize the market and expand the relevant U.S. manufacturing base.”³¹ The researchers concluded that “[f]or the domestic industry to develop fully, much larger and more consistent U.S. investments in passenger and transit rail are needed.”³²

“Any unpredictability or reduction in long term funding will impact our customers’ ability to forecast . . . purchasing requirements which will impact production stability and lead to layoffs.”

*-Manufacturing company
respondent to APTA survey*

Second, lack of predictability in funding levels also constrains broader development of manufacturing capacity in the U.S. Transit agencies will only make major purchases when they are confident that they will have a way to pay for them. Interruptions in federal funding and lack of long-term certainty not only depress the demand for new buses, rail cars, and other equipment, they can also disrupt production schedules as transit agencies are forced to delay delivery due to lack of funds. As one transit agency put it in response to the survey, “Each and every time the federal government cannot timely approve a new transportation bill, and they resort to Continuing Resolutions, we start pulling back on our commitments.”

Figure 10 shows annual bus expenditures between 1995 and 2014. There is a significant drop in the early years of SAFETEA-LU, which researchers at the Mineta Institute concluded was the effect of transit agencies holding off on bus purchases during the period of uncertainty after TEA-21 expired. Demand grew again over the SAFETEA-LU years, but likely would have fallen in the gap between SAFETEA-LU and MAP-21 had ARRA funds not been available. The ARRA effect may have worn off by 2013, however, accounting for the relatively small total in that year.

²⁸ Ibid.

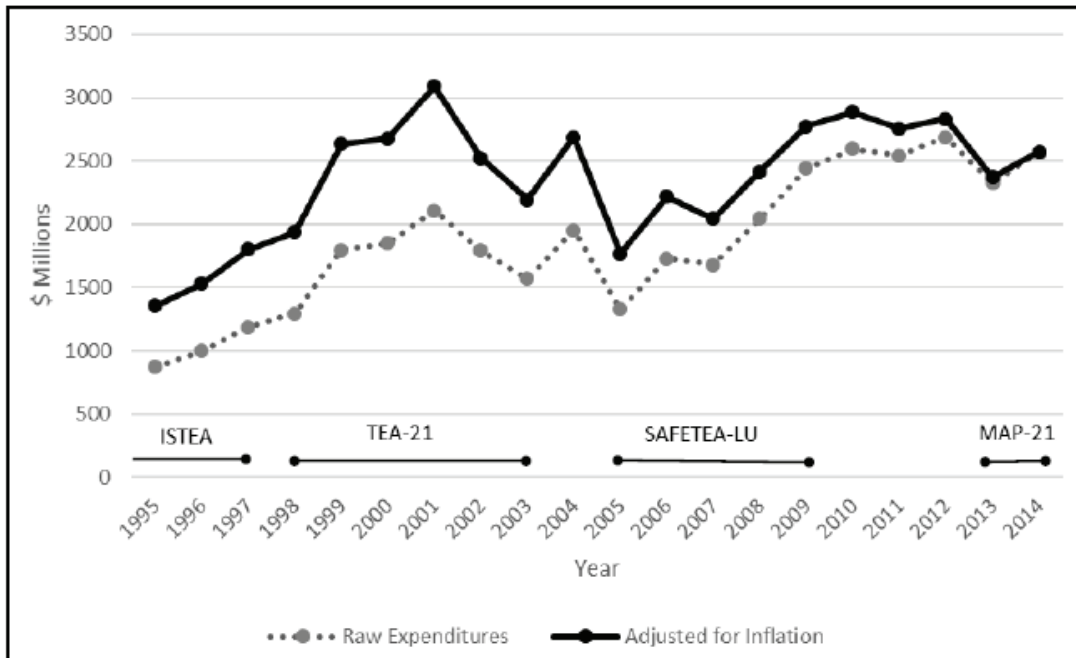
²⁹ Another disincentive for foreign companies to invest in the U.S. is the lack of standardization in vehicle specifications. FTA, APTA, and other industry participants are working to make U.S. requirements more standardized to reduce the costs of doing business here.

³⁰ Ibid.

³¹ Ibid.

³² Ibid. at 51.

Figure 10: Annual Expenditure on Buses, 1995-2014



Source: Mineta Transportation Institute, p. 16, <http://transweb.sjsu.edu/PDFs/research/1234-US-transit-bus-mfg-industry.pdf>

Each delay or cancellation leads to a ripple effect among manufacturers and suppliers. One bus manufacturer that responded to the survey noted that for every job at his plant, there were at least six or seven more jobs at his suppliers that depend on a steady stream of orders from his company. Several manufacturing and supply companies that responded to APTA’s survey noted that they had either held back on hiring or may need to consider layoffs as a result of unpredictable federal funding.

As one respondent to the survey put it, guaranteed federal funding helps to provide a “predictable market” for manufactured goods, resulting in a revenue stream for private companies that “provides the opportunity to hire and invest in people and the business.” Evidence collected from the survey suggests that in the current environment, the only companies able to invest in facilities and workforce are those with enough market share to handle a certain amount of fluctuation in future orders. Smaller companies appear to be dissuaded from making such investments.

“From a private sector perspective, we are very cautious about making long term investments in a country and industry with annual, unpredictable funding. Our investments prefer some level of certainty.”
-International manufacturing company, in response to APTA survey

A market with considerable funding uncertainty will also not attract new entrants, limiting the cost efficiencies inherent in competition and the resulting creative destruction. Less stable funding not only means fewer orders for rail cars and buses, it means unpredictable orders – transit agencies will make such purchases as soon as funds are provided (as they were in ARRA), but will hold off in periods of uncertainty, such as between TEA-21 and SAFETEA-LU. According to the BlueGreen Alliance, which has studied the U.S. railcar market, “manufacturers are far more willing to make the necessary investments in R&D, plant capacity, and worker training in the U.S. if there are *predictable markets* for their goods.”³³ (Emphasis added.) To achieve such a predictable market, federal funding must be increased, with funding amounts guaranteed over several years. With a higher level of guaranteed federal support, a more competitive marketplace will be able to develop among transit manufacturers and suppliers, supporting more domestic plants and manufacturing jobs.

c. Delivering Projects Faster and at Less Cost

Unsurprisingly, given the inadequate condition of America’s infrastructure, virtually all transit agencies – large, midsize, and small –need major capital improvements. For some agencies, this might be procurement of new buses or railcars; for others, an expansion of a rail line or an information technology upgrade. Other projects might include improvements to bus shelters to include real-time arrival information, or adding customer information systems to train stations. Given maintenance backlogs, some agencies will need to do all of the above and much more. Whatever the project may be, accomplishing it quickly and at the least cost is the best way to both strengthen transit infrastructure so that it can support future economic growth and to efficiently leverage taxpayer investments.

³³ “Passenger Rail and Transit Rail Manufacturing in the U.S.,” BlueGreen Alliance and Environmental Law & Policy Center, January 2015, p.14, <http://www.bluegreenalliance.org/wp-content/uploads/2015/01/PassengerRailTransitRailManufacturing.pdf>.

The common feature in these types of projects is that they involve large upfront costs. Federal formula funds are intended to help pay for these projects, but that funding is limited in any particular year. As a result, transit agencies typically borrow to pay for the upfront costs of major projects. Some agencies issue bonds directly into the capital markets, while others seek private financing through loans, leases, or other mechanisms. The interest rate lenders require depends in large part on the likelihood that they will be repaid.³⁴ The greater the risk of payment delays or default, the higher the interest rate – and the more costly the financing is for taxpayers.

In a survey of transit agencies conducted in connection with this paper, 75% of respondents reported that federal funding guarantees had helped them achieve a goal or complete a project sooner or at less cost than would otherwise have been possible. Three out of five respondents have had to halt or delay a project due to uncertainty about the timing or amount of future federal funding.

TEA-21's funding guarantees transformed the financing landscape.³⁵ The guarantees provided certainty to lenders that the pledged collateral – future transportation grants – would in fact materialize.³⁶ With greater certainty of repayment, interest rates are lower, making this a cheaper and more viable financing option. Since TEA-21, many transit agencies have been able to finance important projects using future federal grants as collateral, through issuance of Grant Anticipation Notes ("GANs").³⁷ Since 1998, \$3.1 billion in financing has been raised for public transportation projects through GANs.³⁸

Guaranteed federal funds have also been used to finance capital leasing, in which a transit agency leases equipment, vehicles, or rolling stock rather than purchasing it. When financial analysis shows that the costs of ownership (e.g. maintenance) will exceed the cost of financing,

³⁴ Other factors considered by rating agencies include the overall strength of the issuer's financial situation, fiscal management practices, and overall leverage.

³⁵ Only two transit agencies, New Jersey Transit and TriMet in Portland, OR, issued bonds backed by future federal transportation grants prior to TEA-21. See "Innovative Finance Quarterly," Federal Highway Administration, Fall 2004, https://www.fhwa.dot.gov/ipd/pdfs/finance/if_quarterly/ifqfall04.pdf.

³⁶ Note that the funding guarantees are not the only way to provide certainty. Multi-year funding commitments such as Full Funding Grant Agreements in the New Starts program can also provide a degree of certainty, although from 2005 forward, they have been funded with general funds so are subject to potentially greater appropriations risk.

³⁷ GANs are similar in structure to Grant Anticipation Revenue Vehicles (GARVEEs), which are backed by federal highway program funds.

³⁸ "Revenue Bonds," Federal Transit Administration, <https://www.transit.dot.gov/funding/funding-finance-resources/revenue-bonds/revenue-bonds> and "Innovative Finance Quarterly," Federal Highway Administration, Fall 2004, https://www.fhwa.dot.gov/ipd/pdfs/finance/if_quarterly/ifqfall04.pdf.

leasing can be a cost-effective option for transit agencies. In 2000, Detroit’s Suburban Mobility Authority for Regional Transportation (SMART) entered into a lease/purchase agreement with Gillig Corporation for 287 buses. This arrangement allowed SMART to replace its bus fleet over just three years while making lease payments over 10 years from future federal and state grants and farebox revenues.³⁹

Why does the law allow transit agencies to use tomorrow’s federal funds to advance projects today? Through this action, Congress has acknowledged that today’s funding amounts are not enough to meet all needs. Allowing projects to advance faster brings benefits to the public more quickly. By making access to private capital more cost-effective, transit agencies are able to undertake projects sooner and complete them faster. Without access to financing, transit agencies would have to “pay-as-you-go,” which would slow project schedules to match the pace of federal funding, or delay them until enough funds were accumulated to cover all of the project’s costs. Besides benefits to the public, faster delivery also helps to stabilize and reduce project costs. The longer a project takes to complete, the more likely it is that costs for materials and supplies will escalate.

The credit ratings given to transit bond issuances backed by federal grants provide direct evidence of the importance of the funding guarantees. Following TEA-21, credit rating agencies explicitly noted that the guarantees strengthened the likelihood of repayment and therefore supported a higher rating. In rating “certificates of participation” (similar to GANs) issued by New Jersey Transit in 2003, Fitch Ratings stated that “[t]he 'A' rating on the senior [certificates] is based on the strength of the revenue source and the sufficiency of FTA Section 5307 formula fund reimbursements to meet lease payments, and the budgetary firewalls that exist for transit.”⁴⁰

In October 2004, the Chicago Transit Authority (CTA) issued \$250 million in bonds backed by its future Section 5307 transit formula grants. The money raised was used for renovation of the Red Line, expansion of the Brown Line, rehabilitation of existing stations and bus garages, new rail cars, and farebox modernization.⁴¹ In giving the bonds an “A” rating, Fitch noted that the budgetary firewalls of TEA-21 offered protection to the bonds, and while a to TEA-21 had not

³⁹ “Options for Financing Public Transportation in the United States,” Federal Transit Administration, <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Roundtable%20Discussion%20on%20Innovative%20Finance%20-%20Innovative%20Finance%20Web%20Version.pdf> and “Financial Statements for the Years Ended June 30, 2008 and 2007,” Suburban Mobility Authority for Regional Transportation, p. 5, <https://www.smartbus.org/Portals/0/Documents/SMART2008FS.pdf>.

⁴⁰ “Fitch Rates New Jersey Transit Corp Series 2003A COPs 'A',” Business Wire, September 25, 2003, <http://www.businesswire.com/news/home/20030925005662/en/Fitch-Rts-Jersey-Transit-Corp-Series-2003A>.

⁴¹ “Innovative Finance Quarterly,” Federal Highway Administration, Fall 2004, https://www.fhwa.dot.gov/ipd/pdfs/finance/if_quarterly/ifqfall04.pdf.

yet been enacted “major programmatic changes, which would adversely affect these bonds, seem unlikely in the immediate successor federal surface transportation program to the Transportation Equity Act for the 21st Century (TEA-21).”⁴²

Moody’s noted the guarantees when rating bonds issued by nine California transit agencies backed by federal formula funds in 2000: “Moody’s ratings incorporate legislative risk associated with the reauthorization and the annual re-appropriation of Section 5307 funding. The current federal authorizing legislation, the Transportation Equity Act for the 21st Century (TEA 21), which was enacted in 1998 and expires in FY 2003, authorizes \$41 billion in federal funding for mass transit of which \$36 billion is guaranteed.”⁴³

More recently, however, as the Highway Trust Fund teeters on the brink of insolvency and the funding guarantees have been undermined, they are no longer considered a source of strength in bond ratings. In November 2012 (after passage of MAP-21), Moody’s downgraded 20 bonds backed by federal highway dollars and 7 backed by federal transit dollars and revised their outlook from stable to negative, citing the following challenges:

- Shorter two-year duration of current transportation reauthorization compared to prior ones increases likelihood of future changes that negatively affect funds available for debt service, including funding reductions and program suspensions
- The federal government is under no obligation to continue the federal aid highway program; nothing prevents the federal government from making programmatic changes detrimental to bondholders
- Insufficiency of ongoing fuel tax revenues to fund federal transportation needs necessitates general fund support, which has become less likely in light of federal budgetary pressure.”⁴⁴

Moody’s noted that one factor that could strengthen the ratings would be: “Significant and sustained increase in Highway Trust Fund revenues outside of general fund support combined with longer reauthorization periods and reinstatement of guaranteed funding protections.”⁴⁵

⁴² “Fitch Rates Chicago Transit Authority, IL Capital Grant Rev Bonds 'A',” Business Wire, October 15, 2004, <http://www.businesswire.com/news/home/20041015005259/en/Fitch-Rates-Chicago-Transit-Authority-IL-Capital>.

⁴³ *Section 5307 Transit Financings in the State of California: Update 2000*, Moody’s Investor Services, November 2000, p. 3, quoted in “The Benefits of TEA-21 Funding Guarantees,” American Public Transportation Association, http://www.apta.com/gap/policyresearch/Documents/funding_guarantees.pdf.

⁴⁴ “Moody’s downgrades 27 GARVEE bond ratings and revises outlooks to negative,” Moody’s Investor Services, Nov. 14, 2012, https://www.moody.com/research/Moodys-downgrades-27-GARVEE-bond-ratings-and-revises-outlooks-to--PR_260012.

⁴⁵ *Ibid.*

Similarly, in rating a New Jersey Transit bond issuance in July 2014, Moody's acknowledged the federal government's long history of funding transit, but saw a challenge looming that influenced their rating decision: "Large and growing structural imbalance in the Federal Highway Trust Fund has increased the uncertainty surrounding Congressional reauthorization of the federal highway program, including the timing of the reauthorization, the period for which the program will be reauthorized, and the level of funding it will receive."⁴⁶ Moody's rating action noted that this challenge was not unique to New Jersey Transit, but that risks related to future payments from the Highway Trust Fund had led to "relatively lower ratings for the GARVEE sector."⁴⁷

Fitch has also revised its assessment of the strength of the federal program in recent years, commenting in a 2015 ratings action for Chicago Transit Authority bonds that:

In Fitch's view, what was once a formula-driven program funded on a multiyear basis has now morphed into a program where future policy is less certain, funding levels are less predictable, and the program is more dependent on frequent action to extend authorization and on continued transfers from the general fund that will likely need to be continued indefinitely barring an increase in the federal gas-tax or a significant reduction in spending.⁴⁸

Fitch currently rates the reliability of the federal program at "midrange," but notes that should the federal program fall into the "weaker" category, where the gap between gas tax receipts and spending continues to grow and the prohibition on using HTF revenues for other purposes disappears, Fitch states that GARVEE bonds would likely reach junk status, significantly limiting this financing mechanism for both highway and transit projects.⁴⁹

The impact of this drop in confidence by credit rating agencies is that transit agencies will pay more in debt service costs. The cost of higher interest rates could be significant. A municipal debt that is assigned a AA credit rating typically needs to offer around 30 basis points of additional interest than a similar AAA rated debt. That spread grows to 50 basis between a AAA and A and 100 basis points between a BBB and a AAA. Put another way,

⁴⁶ "Moody's assigns initial A3 to NJ Transit's \$492.2M Grant Anticipation Notes, Ser. 2014 A & B; outlook is stable," Moody's Investor Services, July 17, 2014, https://www.moody.com/research/Moodys-assigns-initial-A3-to-NJ-Transits-4922M-Grant-Anticipation--PR_304412.

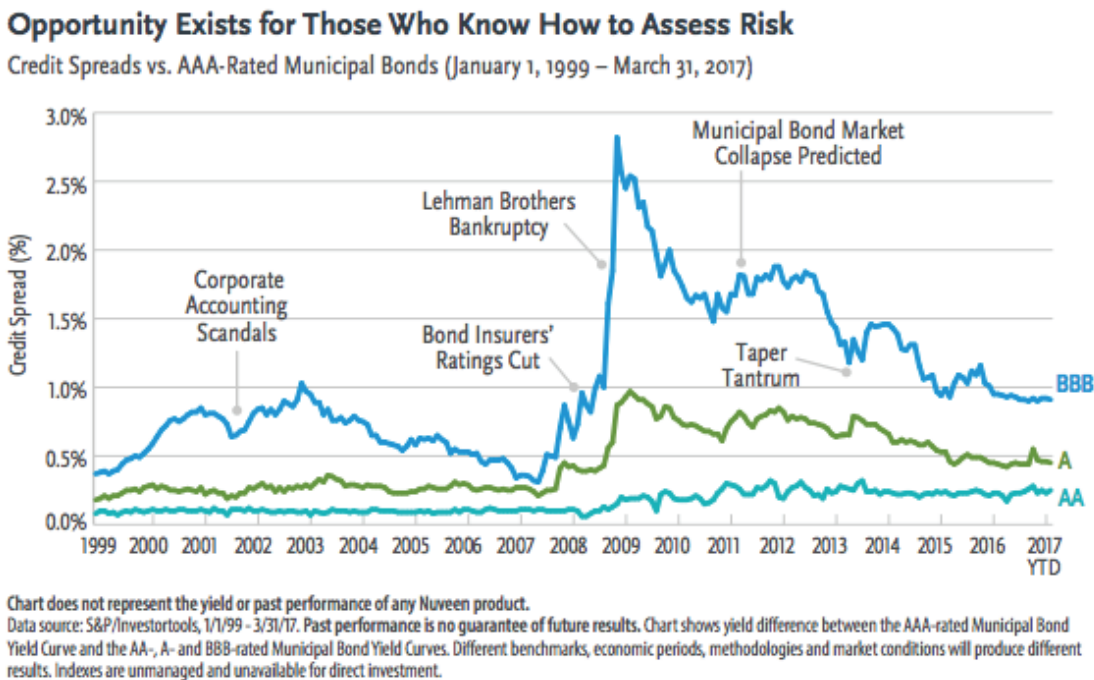
⁴⁷ Ibid.

⁴⁸ "Fitch Rates Chicago Transit Auth, IL Section 5307 & 5337 Bonds 'BBB'; Outlook Stable," Fitch Ratings, July 22, 2015, <https://www.fitchratings.com/site/pr/988356>.

⁴⁹ "Leveraging Federal Transportation Grants, Rating Criteria for GARVEE Bonds," Fitch Ratings, November 29, 2016, <https://www.fitchratings.com/site/re/890791>.

falling one credit rating letter from A to BBB would cost about 50 extra basis points of interest. Figure 3 depicts how these credit spreads have changed over time.

Figure 3. Historical Credit Spreads



Source: <https://www.nuveen.com/Home/Documents/Default.aspx?fileId=56469>

A hypothetical example illustrates the magnitude of the potential impact on transit agencies and taxpayers. Assume that transit agencies issue approximately \$500 million in debt per year backed by future federal funds, either in the form of GANs or through private loans. If the elimination of the ability to use future federal funding results in a two-letter downgrade, such that on average, the debt goes from AA to BBB, that would increase the interest rate by approximately 70 basis points.

Assuming 10-year debt, on average, with principal payment at the end, this scenario would result in \$350 million in cumulative additional borrowing costs over 20 years. Table 4 shows how the additional 70 basis points, or \$3.5 million in higher annual interest rate costs per year of debt, adds up quickly to cost transit agencies \$350 million in additional interest over the lifetime of the debt.⁵⁰

⁵⁰ These figures are illustrative, and varying the assumptions regarding the amount of debt issued and the extent of the credit rating downgrade would vary the total cost. For example, if the cost of losing the federal guarantees is the full difference between AAA and BBB credit ratings, then the total added interest cost would rise, while if the reduction was only between A and BBB the total cost would fall. Similarly, if more debt backed directly or

Table 4. Additional interest costs from a two-letter downgrade

Year	New Infrastructure Borrowing	New Extra Debt Cost	Cumulative Annual Cost
1	500,000,000	3,500,000	3,500,000
2	500,000,000	3,500,000	7,000,000
3	500,000,000	3,500,000	10,500,000
4	500,000,000	3,500,000	14,000,000
5	500,000,000	3,500,000	17,500,000
6	500,000,000	3,500,000	21,000,000
7	500,000,000	3,500,000	24,500,000
8	500,000,000	3,500,000	28,000,000
9	500,000,000	3,500,000	31,500,000
10	500,000,000	3,500,000	35,000,000
11			31,500,000
12			28,000,000
13			24,500,000
14			21,000,000
15			17,500,000
16			14,000,000
17			10,500,000
18			7,000,000
19			3,500,000
20			
Total			\$350,000,000

As the new Administration considers policies to improve infrastructure and facilitate economic growth, restoring guaranteed funding for transit should be high on the list. Guaranteed dollars provide more value than non-guaranteed dollars – *at no additional cost*. Funding guarantees support cost-effective financing for major capital projects, allowing them to proceed more quickly than they otherwise would. Should the guarantees be further undermined, new construction could be delayed or even halted, with ripple effects throughout the construction and manufacturing sectors as well as the overall economy.

indirectly by federal funding is issued, the additional interest costs would be higher; less debt would lead to lower additional interest costs.

d. Improving State of Good Repair

Federal transportation policy is becoming increasingly focused on improving state of good repair (SGR). While SGR activities were eligible for funding under TEA-21 and SAFETEA-LU, SGR became an explicit goal in MAP-21, which was continued in the FAST Act. Although on the surface, funding guarantees may appear to be unrelated to SGR efforts, they are in fact integral to SGR's success.

MAP-21 required FTA to develop a definition of state of good repair and all transit agencies receiving federal funds to develop asset management plans. In part, these requirements were intended to address findings of the Federal Transit Administration that state of good repair backlogs at the nation's transit systems totaled around \$89.9 billion.⁵¹ A significant reason for the backlog is underinvestment. For example, if capital investment in transit remained at FY2012 levels, the state of good repair backlog would increase to \$121.7 billion by 2032.⁵² To bring the nation's transit systems into a state of good repair, more funding is undoubtedly needed. APTA has called for federal transit investment to grow to \$22 billion a year by 2020, in part to begin to address the maintenance backlog.⁵³

At the same time, transit agencies are adopting the principles of asset management to help maintain their assets in a state of good repair and ensure that they are using federal dollars as efficiently and effectively as possible. Asset management is a business model in which agencies use data on the condition of their assets to make strategic investment decisions to extend the useful life of those assets and achieve optimal performance. Specifically, FTA defines asset management as "the strategic and systematic practice of procuring, operating, inspecting, maintaining, rehabilitating, and replacing transit capital assets to manage their performance, risks, and costs over their life cycles, for the purpose of providing safe, cost-effective, and reliable public transportation."⁵⁴ According to FTA, "The core of asset management is understanding and minimizing the total cost of ownership of an asset while maximizing its

⁵¹ "2015 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance," Federal Highway Administration and Federal Transit Administration, 2015, <https://www.fhwa.dot.gov/policy/2015cpr/es.cfm#3t>

⁵² "2015 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance," U.S. Department of Transportation, <https://www.fhwa.dot.gov/policy/2015cpr/highlights.cfm>.

⁵³ "APTA Recommendations on Federal Public Transportation Authorizing Law," American Public Transportation Association, December 2013, http://www.apta.com/gap/legissues/authorization/Documents/APTA%20Authorizing%20Law%20Recommendations_FINAL_adopted%206Dec2013.pdf.

⁵⁴ 49 CFR 625.5.

performance.”⁵⁵ Asset management practices help ensure that assets perform well throughout their expected useful life, reducing the likelihood of premature breakdowns.

Transit asset management (TAM) plans, now required of all recipients and subrecipients of federal transit funds, require agencies to identify maintenance and repair needs for their assets, prioritize those needs by identifying the optimal sequence for rehabilitation and repairs to extend useful life, and match them to expected funding. FTA requires those plans to cover a four-year period. The process for developing an asset management plan is shown in Figure 4.

Figure 4. 5-Step TAMP development process



Source: “Guidance for Developing a Transit Asset Management Plan,” Transit Cooperative Research Program, Report 172, 2014, p.7, <http://nap.edu/22306>.

Following their TAM plans, transit agencies will be able to identify and address their SGR needs comprehensively, rather than on an ad hoc basis, ensuring maximum efficiency from their equipment, vehicles, facilities, and infrastructure. Since so much of transit systems’ inventory of assets was procured using federal funds, the federal government has an interest in seeing that these assets provide maximum value, rather than breaking down and requiring replacement ahead of schedule.

However, for assets to perform well throughout their expected life, transit agencies must be able to conduct needed maintenance *on schedule*. TAM plans call for SGR activities to be carried out in a sequence, at specific times. If funding falls short, and repairs are not carried out

⁵⁵ “Transit Asset Management Guide,” Federal Transit Administration, November 2016 Update, p. 13 https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Report_No._0098.pdf.

on schedule, the backlog of deferred maintenance will increase, ultimately costing taxpayers more.

Deferred maintenance can impact costs in two ways. First, it increases the chances of a catastrophic failure, which can be costly not just in terms of dollars but in impacts to riders. Complete breakdown of a particular asset can require early replacement of that asset – a failure to fully capture the value of the asset if it is replaced before the end of its useful life.

Second, experience has shown that maintenance costs are higher when they are not carried out on schedule. According to a recent study of rail systems, “assets in a state of disrepair cost more to maintain than assets in excellent or good condition.”⁵⁶ In a 2007 study, FTA found that the cost of maintaining buses that are beyond their recommended life is 10-50% higher than for buses that have not reached that point.⁵⁷ Replacing vehicles on schedule helps to keep life-cycle costs down.

For Metro Transit in St. Louis, conducting regularly scheduled maintenance on their buses – rather than simply responding to repair needs as they popped up – has extended the life of buses and improved their reliability. Since the onset of their regular preventive maintenance program, the mean distance between failures is nearly 25,000 miles, up from less than 5,000 miles in 2000.⁵⁸

“Proper planning for asset replacement due to end of useful life or obsolescence requires a solid financial plan that is built on a foundation of dependable revenues projections. Planning for and committing to build new or replacement bus facilities or to procure replacement bus equipment, which is often a process that occurs over multiple years, requires that we have a high confidence level that the money will be there to pay the invoices.”

-Transit agency respondent to APTA survey

One common feature among successful asset management practices is stable and predictable investment in capital maintenance. These are needs that must be addressed each year, on schedule, to achieve optimal results for transit fleets and equipment. Investment must be sustained each year, or assets will become less efficient. Several respondents to APTA’s survey

⁵⁶ “The Need for Greater Federal Investment in Metropolitan Rail,” Regional Plan Association and Metropolitan Rail Discussion Group, October 2015, p. 22, <http://library.rpa.org/pdf/MRDG-The-Need-for-Greater-Federal-Investment-in-Metropolitan-Rail.pdf>.

⁵⁷ “Transit Asset Management Guide,” Federal Transit Administration, November 2016 Update, p. 17 https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Report_No._0098.pdf.

⁵⁸ “It All Begins With Maintenance,” Mass Transit Magazine, April 26, 2013, <http://www.masstransitmag.com/article/10915042/it-all-begins-with-maintenance>.

noted that certainty of federal funding is particularly important for vehicle replacements, the procurements for which often take several years to complete.

When federal dollars do not arrive on schedule, transit agencies are forced to make difficult decisions. Some have opted to take out short-term loans to keep projects on schedule, which can be costly. Other agencies have shifted funds from other priorities to make up the shortfall. According to one survey respondent, “We have postponed spending local funds on service or non-federal projects when federal funds have been delayed, to cover needed preventive maintenance until the federal dollars are accessible.”

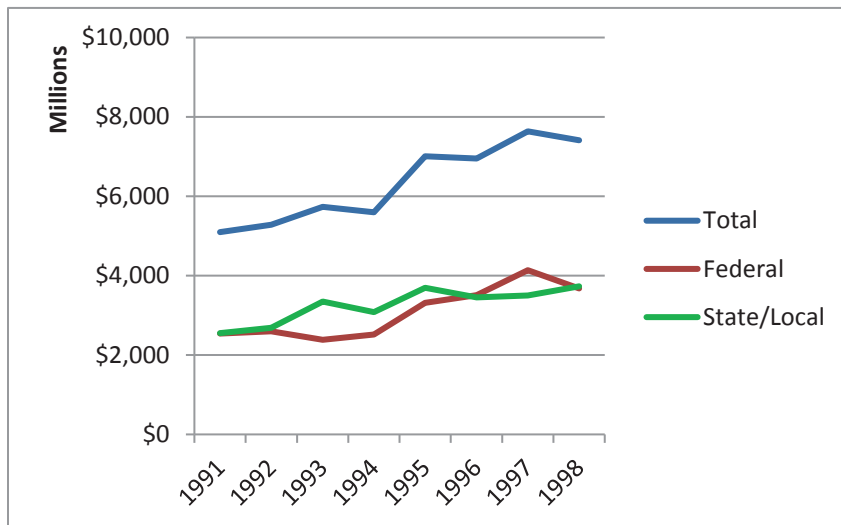
Knowing how much federal funding will be available in the future allows transit agencies to develop project sequencing that will extend the useful life of their assets. Pursuant to Congress’s direction, transit agencies are doing their part to develop multi-year TAM plans that match SGR needs with available funding. If expected funding fails to materialize, maintenance will have to be deferred, reducing efficiency, adversely impacting infrastructure condition, and ultimately costing taxpayers more.

V. Impact of Federal Guarantees on Non-federal Funds

As Congress considers the forthcoming infrastructure package, members may be concerned that increasing guaranteed transit funding at the federal level could impact non-federal funding, primarily from state and local sources. While it is impossible to predict exactly how state and local governments would respond, experience over the past several decades suggests that increasing the amount and certainty of federal funds may actually encourage those entities to increase their support as well.

Because the federal transit program is focused primarily on capital funding, this section will examine changes in capital funding over the past several decades to evaluate whether the advent of the funding guarantees in 1998 had an impact on overall support for transit. In 1991, the year in which ISTEA passed, capital funding for transit totaled \$5.1 billion, of which 50% was federal, and 50% was state and local. As shown in Figure 5, over the next seven years, there was little change in the distribution: by 1998, the year in which TEA-21 passed, the split was the same, 50% federal, 50% state and local (in most places, local contributions are significantly higher than state contributions).

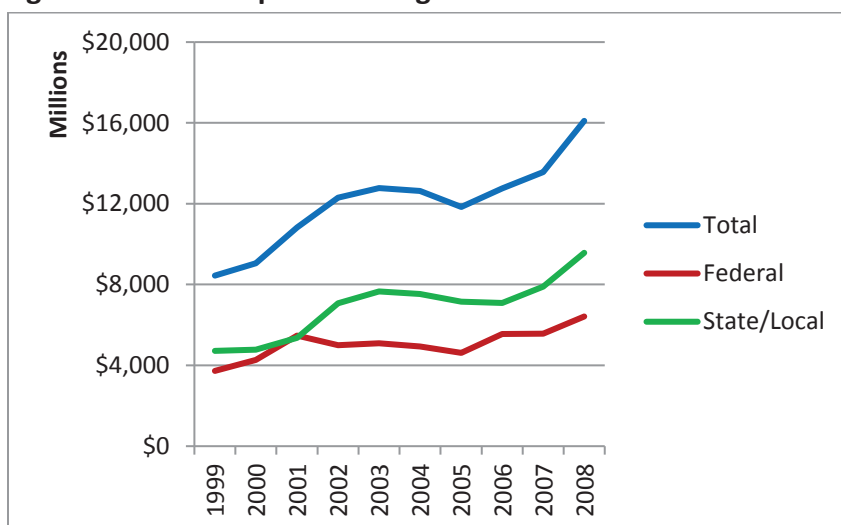
Figure 5: Transit Capital Funding, 1991-1998



Source: National Transit Database

Over the next ten years, during which time the funding guarantees were fully in effect, state and local contributions increased dramatically, as shown in Figure 6. By 2005, the year in which SAFETEA-LU passed, state and local contributions were 60% of transit capital funding. Federal funding represented only 39%, and the remainder came from system-generated revenues. (Note that these are national trends, and not every state and locality experienced them equally.)

Figure 6: Transit Capital Funding 1999-2008

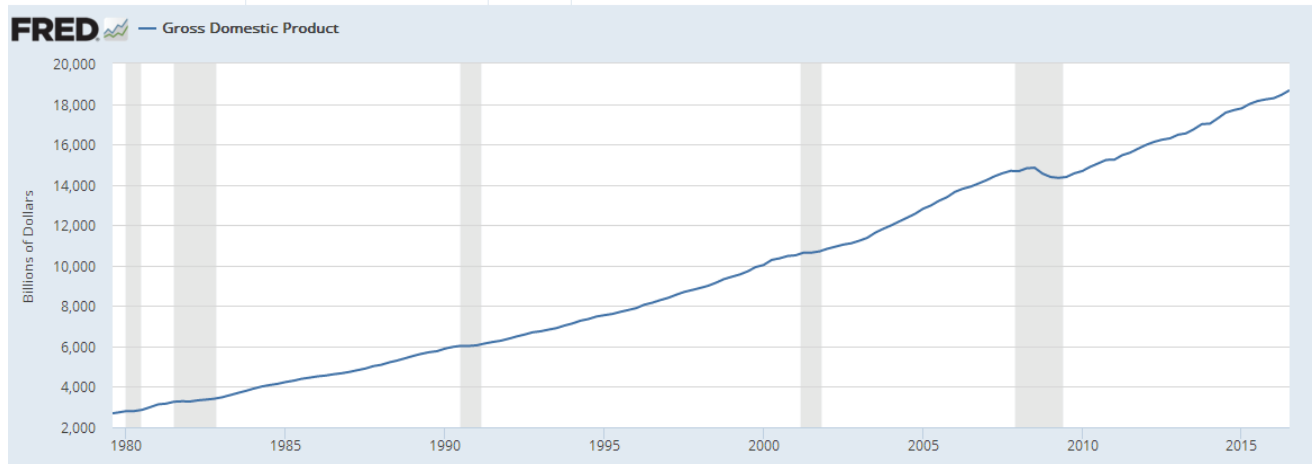


Source: National Transit Database

These figures show that during the TEA-21/SAFETEA-LU period, states increased their capital funding for transit at a faster rate and to a greater extent than the federal government did. As

shown in Figure 7, both periods were experiencing strong economic growth. After a recession in 1991, the remainder of the 1990s saw steady growth. In 2001, the U.S. also experienced an economic slowdown, but recovered rapidly and saw high growth rates until 2008. Thus, the difference in state and local support does not appear to be strongly tied to the relative strength of the U.S. economy.

Figure 7. U.S. GDP Growth, 1980-2016

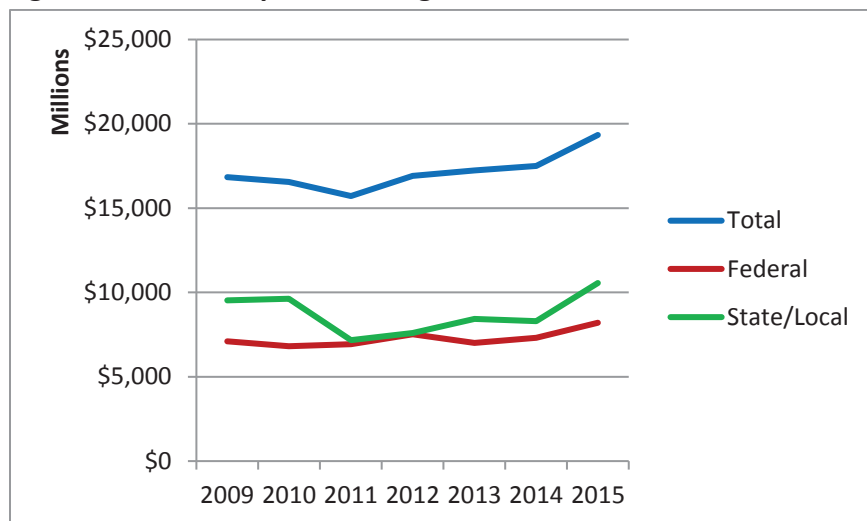


Source: Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/GDP>

While it is not possible to say definitively that there was a causal relationship between guaranteed federal funding and the increase in state and local support, there certainly does not appear to have been a negative impact from the federal funding guarantees. In fact, according to a study of election trends from 2000 -2005, “in some cases the availability of federal funding . . . motivat[ed] communities to ask voters to approve a local financing mechanism.”⁵⁹ As the guarantees diminished in 2009, state and local funding for transit began to fall as a share of the total program. (See Figure 8.)

⁵⁹ “Transportation Finance at the Ballot Box,” Center for Transportation Excellence, 2006, p.4, <http://www.smartskyways.com/Interactive/vote/CFTEElectionTrendsReport.pdf>.

Figure 8: Transit Capital Funding 2009-2015



Source: National Transit Database

It is hard to isolate the effect that the disappearance of the HTF firewalls may have had, given that the timing coincided with the Great Recession. Sales tax and property tax revenues – both common sources of local funding for transit - were hit hard during the 2009-2011 period. The fact that non-federal funding increased so dramatically following 1998 suggests that the guarantees may have had an impact as state and local governments took action to make sure they would have the funding in place to match the guaranteed federal dollars.

VI. Conclusion

By increasing funding for transit and restoring the guarantees, Congress and the Administration can support the economy, stimulate manufacturing, encourage innovation, and improve the condition of U.S. infrastructure.

It is long past time to address the revenue shortfalls in the Highway Trust Fund with a long-term, stable funding source. Public transportation requires more investment to achieve a state of good repair and provide more Americans with access to jobs and economic opportunity.

Guaranteed federal funding is vital to the future of public transportation, which requires federal investment in order to obtain private investment.
-APTA business member

Simply providing more funding is not enough, however. It is clear from the experience of transit agencies since TEA-21 that guaranteed funds provide more value than non-guaranteed funds. A guaranteed dollar can encourage more innovation and investment in U.S. manufacturing, reduce project costs, and extend the life of vehicles and equipment.

Guarantees make more efficient use of federal dollars – getting more bang for every buck.

Though budget enforcement mechanisms have changed since the guarantees were first put into place, it should still be possible for Congress to develop an effective mechanism to protect annual transit (and highway) funding. Procedural points of order can be used for that purpose, as can inclusion of reserve funds or separate caps in any budget resolution or new budget enforcement plan.

As Philadelphia Mayor Michael Nutter said about the federal government’s role in infrastructure, “You can’t make long-term plans on short-term money.”⁶⁰ Localities across the country are already investing heavily to expand transit, with around \$170 billion in future revenues approved by voters in the 2016 election.⁶¹ Both the public transit industry and the private sector are making long-term plans that will support economic growth and productivity. The federal government should provide the long-term commitment to turn these plans into reality.

⁶⁰ Liu, Amy, “My Conversation with Two Mayors about Trump and Cities,” Brookings, December 2, 2016, https://www.brookings.edu/blog/the-avenue/2016/12/02/my-conversation-with-two-mayors-about-trump-and-cities/?utm_campaign=Brookings+Brief&utm_source=hs_email&utm_medium=email&utm_content=38739541.

⁶¹ “Statement for the Record Before the House Transportation and Infrastructure Subcommittee on Highways and Transit,” APTA, October 11, 2017, http://www.apta.com/gap/testimony/2017/Documents/APTA%20Statement%20for%20the%20Record_Highways%20and%20Transit_FINAL.pdf



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