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Infrastructure Finance and Debt to Support Surface Transportation Investment

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Summary

Investment in surface transportation infrastructure is *funded* mainly with current receipts from taxes, tolls, and fares, but it is *financed* by public-sector borrowing and, in some cases, private borrowing and private equity investment. Financing is normally not arranged at the federal level, as the federal government builds few transportation projects directly. This report discusses current federal programs that support the use of debt finance and private investment to build and rebuild highways and public transportation. It also considers legislative options intended to encourage greater infrastructure financing in the future.

The federal government's largest source of support for surface transportation infrastructure is the Highway Trust Fund (HTF), which is funded principally by taxes on gasoline and diesel fuel. Funds from the HTF are distributed to state governments and local transit agencies for projects meeting federal standards. State governments, local governments, and transit agencies must also contribute their own resources because grants from the HTF do not meet states' entire surface transportation capital needs. The federal government supports additional infrastructure spending by providing a tax exclusion for owners of municipal bonds, or "munis," issued by state and local governments. The federal government also supports project finance through loan programs, such as the Transportation Infrastructure Finance and Innovation Act (TIFIA) program and the Railroad Rehabilitation and Improvement Financing (RRIF) program, which can help leverage private investment via public-private partnerships (P3s), and through federally authorized state infrastructure banks (SIBs).

All of these financing mechanisms impact the federal budget, although none are as costly as federal grant funding. With less federal support, financing places a greater burden on state and local governments to identify revenue sources to repay loans or to provide a return to private investors. In many cases, nonfederal revenue to finance a project is provided by a highway or bridge toll, but it could be a pledge of future sales tax or real estate tax revenue.

There are many legislative options that Congress might consider in modifying the federal role in surface transportation financing. This report considers five:

1. Creation of a new type of bond offering federal tax credits to investors in infrastructure.
2. Changes to the TIFIA and RRIF programs.
3. Greater encouragement for P3s.
4. Creation of a national infrastructure bank to provide low-cost, long-term loans for infrastructure on flexible terms.
5. Enhancement of SIBs that already exist in many states, possibly with dedicated federal funding.

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Introduction

Most spending on surface transportation infrastructure is done on a pay-as-you-go *funding* basis, meaning today's expenditures are derived from today's revenue sources such as taxes, tolls, and fares. Only a relatively small proportion is *financed* through public or private borrowing or private (equity) investment. Because government budgets at all levels are strained, however, there is great interest in financing highway and public transportation capital improvements. This is particularly true for very large and costly "mega-projects," such as major interstate highway bridges, which are difficult to construct on a pay-as-you-go basis. New York's $5 billion Tappan Zee Bridge replacement, for example, dwarfs the state's federal highway funding of about $1.7 billion a year, and approaches the state's typical annual highway capital spending of about $6.0 billion.[1] The toll bridge will be largely financed using municipal bonds and a federal loan.[2]

The federal government supports surface transportation infrastructure financing mainly by providing a tax preference for bonds issued by state and local governments. Other mechanisms include federal loan programs, such as the Transportation Infrastructure Finance and Innovation Act (TIFIA) program, which can help leverage private investment via public-private partnerships (P3s), and federally authorized state infrastructure banks (SIBs). All have costs for the federal government, but, as this report explains, some have greater costs than others. Nevertheless, none are as costly as federal grant funding. This is because project financing relies more heavily on revenue streams created at the state or local level in order to repay loans or provide a return to private investors. In many cases, revenue to finance a project has been provided by a highway or bridge toll, but it could be, among other possibilities, a pledge of future sales tax or real estate tax revenues.

This report outlines current federal programs that support the financing of surface transportation infrastructure investment and the relative impact these have on the federal budget. It goes on to discuss legislative options for modifying the federal role, including provisions related to tax credit bonds, dedicated federal funding for SIBs, and the creation of a national infrastructure bank.

Paying for Surface Transportation Infrastructure

Surface transportation infrastructure, the focus of this report, includes the 4-million-mile highway system, as well as more than 80 rail transit systems and 1,200 public bus systems.[3] Public-sector spending on this infrastructure totaled about $256 billion in 2014, the latest year for which data are available (**Table 1**), in addition to an unknown amount of private investment. About 75% of the $256 billion was spent on highways and 25% on public transportation. The public-sector spending was almost evenly divided between capital investment and operations and maintenance

[1] For the project cost, see Federal Highway Administration (FHWA), "New NY Bridge Replacement," https://www.transportation.gov/tifia/financed-projects/new-ny-bridge-replacement; for federal highway funding. see FHWA, "Apportionment of Federal-aid Highway Program Funds for Fiscal Year (FY) 2016," Notice N 4510.802, January 8, 2016, http://www.fhwa.dot.gov/legsregs/directives/notices/n4510802/n4510802.pdf; for New York highway capital spending, see FHWA, *Highway Statistics, 2013*, Table HF-2, http://www.fhwa.dot.gov/policyinformation/statistics/2013/pdf/hf2.pdf.

[2] Freeman Klopott and Brian Chappatta, "N.Y. Thruway Pays Least as Tappan Zee Loan Prepared: Muni Credit," *Bloomberg*, September 5, 2013, http://www.bloomberg.com/news/2013-09-05/n-y-thruway-pays-least-as-tappan-zee-loan-prepared-muni-credit.html.

[3] Federal Highway Administration, *Highway Statistics 2014*, Table HM-220; American Public Transportation Association, *Public Transportation Fact Book, 2015*, Washington, DC, Table 1, http://www.apta.com/resources/statistics/Documents/FactBook/2015-APTA-Fact-Book.pdf.

(O&M). Capital investment involves activities such as land acquisition, construction, resurfacing of highways, and purchase of transit vehicles. O&M includes such items as highway maintenance and law enforcement, transit vehicle operation, and administration. Capital costs were more than half of total highway expenditures and about one-third of public transportation expenditures.

Table 1. Surface Transportation Infrastructure Expenditures, 2014

	Highways and Streets[a]		Public Transportation		Total	
	Percent	Million $	Percent	Million $	Percent	Million $
Capital	55	$105,452	29	$18,466	48	$123,918
Operations and maintenance	45	87,359	71	44,425	52	131,784
Total	**100**	**192,811**	**100**	**62,891**	**100**	**255,702**

Sources: Federal Highway Administration, *Highway Statistics 2014*, HF-10; American Public Transportation Association, *Public Transportation Fact Book, 2016*, Appendix A, Historical Tables, Tables, 62 and 68, http://www.apta.com/resources/statistics/Pages/transitstats.aspx.

a. Does not include interest on debt ($12.1 billion in 2014) and bond retirement ($33.5 billion in 2014). These amounts total $238 billion when added to the $193 billion of capital and O&M expenditures, matching the total funds available for highways and streets shown in **Table 2**.

About half of all receipts for highway and street expenditures are generated by state governments, about $121 billion in 2014, with local governments generating 30%. The remainder comes from federal aid. Most highway spending is done on a pay-as-you-go basis, with a large majority of the revenue coming either from user fees, such as fuel taxes and tolls, or from general funds (**Table 2**). Bond issuance, excluding short-term notes and refundings, raised only about 12% of the total revenue collected for highway purposes in 2014. These bonds were issued mainly by state agencies, with local governments accounting for 24% of issuance.

Table 2. Revenues Used for Highways and Streets by Collecting Agency, 2014

	Federal		State		Local		Total	
	%	Million $	%	Million $	%	Million $	%	Million $
Highway user revenues	59.8	$32,833	56.4	$68,432	6.8	$5,158	42.1	$106,423
Motor-fuel and vehicle taxes	59.8	32,833	46.3	56,168	4.0	3,077	36.4	92,078
Tolls	0.0	0	10.1	12,264	2.7	2,081	5.7	14,345
Other taxes and fees	38.3	21,041	16.5	19,973	74.4	56,824	38.7	97,838
Property taxes and assessments	0.0	0	0.0	0	16.6	12,688	5.0	12,688
General fund appropriations	37.5	20,613	7.9	9,644	49.1	37,490	26.8	67,747
Other taxes and fees	0.8	428	8.5	10,329	8.7	6,646	6.9	17,403
Investment income and other receipts	1.9	1,021	8.3	10,132	9.3	7,100	7.2	18,253
Bond issue proceeds	0.0	0	18.8	22,867	9.5	7,261	11.9	30,127
Total receipts	100.0	54,895	100.0	121,404	100.0	76,343	100.0	252,642
Funds drawn from or placed in reserves	NA	-7,606	NA	-7,589	NA	982	NA	-14,213
Total funds available	NA	47,289	NA	113,814	NA	77,325	NA	238,429

Source: Federal Highway Administration, *Highway Statistics 2014,* Table HF-10.

Note: NA = Not applicable.

Like spending on highways, spending on public transportation is mostly done on a pay-as-you-go basis. The major sources of funds are passenger fares, dedicated taxes (particularly sales and fuel taxes), and general funds.[4] Although there is little information on bond issuance or private investment in public transportation, data published by the U.S. Department of Transportation (DOT) indicate that bond issuance for public transportation amounted to about $4 billion in 2010, about 7% of funds generated in that year.[5] Local government provided the most support, followed by passenger fares and other operating income, state government, and the federal government (**Table 3**).

Table 3. Public Transportation Revenue Sources, 2014

Source	%	Million $
Transit agency funds	26.1	17,332
Passenger fares	23.3	15,465
Other earnings	2.8	1,867
Government funds	73.9	48,952
Local government	33.8	22,424
Directly generated	11.2	7,418
General funds	22.6	15,006
State government	22.2	14,726
Federal government	17.8	11,802
Total	100.0	66,284

Source: American Public Transportation Association, *Public Transportation Fact Book, 2016*, Appendix A, Historical Tables, Table 95, http://www.apta.com/resources/statistics/Pages/transitstats.aspx.

Financing Infrastructure Investment

Although less than one-fifth of surface transportation infrastructure expenditures are financed rather than being paid from current revenues, financing mechanisms are extremely important for large projects and, in some cases, are routinely part of state and local transportation budgets. Financing is normally not arranged at the federal level, as the federal government builds few transportation projects directly. Most state and local government budget rules require that debt financing only be for capital investment, not O&M. These general principles, however, have numerous exceptions not only across states but also across all government entities tasked with providing infrastructure.[6]

[4] U.S. Department of Transportation, *Conditions and Performance Report, 2013*, exhibit 6-19, https://www.fhwa.dot.gov/policy/2013cpr/pdfs/chap6.pdf.

[5] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Government Transportation Financial Statistics*, Table 17a, http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/government_transportation_financial_statistics/2012/pdf/entire.pdf.

[6] For more on budgeting for capital investment, see National Association of State Budget Officers, "Capital Budgeting in the States," Spring 2014, https://higherlogicdownload.s3.amazonaws.com/NASBO/9d2d2db1-c943-4f1b-b750-0fca152d64c2/UploadedImages/Reports/Capital%20Budgeting%20in%20the%20States.pdf.

Municipal Bonds

"Municipal bonds" is a broad reference to a class of debt instruments that receive preferential income tax treatment. Generally, the interest on municipal bonds is excluded from federal income taxes, both individual and corporate. This tax preference for public-purpose bonds is estimated to reduce federal revenues by $187.7 billion over the FY2015-FY2019 window, including a $36.8 billion reduction in FY2017.[7] Federal law allows for several variants of municipal bonds, not all of which can be used for surface transportation purposes.

Municipal bonds issued for transportation represent a significant share of total issuance. In calendar year 2015, $39.1 billion of municipal bonds were issued for transportation projects, or 11% of total issuance.[8] Most of this financing was traditional governmental bonds backed by either a specific revenue stream or the general obligation of the issuing entity.

Municipal bonds issued for transportation and secured by revenue generated by the project financed with the bonds, such as a toll or user fee, would be considered private activity bonds in most cases. Congress has approved limited use of tax-exempt private activity bonds (PABs) for selected transportation projects as outlined in section 142 of the Internal Revenue Code. These include airports, docks and wharves, mass commuting facilities, high-speed intercity rail facilities, and qualified highway or surface freight transfer facilities. The Secretary of Transportation must approve the use of PABs for qualified highway or surface freight transfer facilities and the aggregate amount allocated must not exceed $15 billion. As of July 7, 2016, $11.2 billion of the $15 billion had been allocated (**Table 4**).

Because qualified private activity bonds are dependent on the success of the project for bond repayment, they have a greater level of default risk than general obligation bonds. Bonds that carry more risk compensate the investor for that risk through higher interest rates. Thus, the interest rates issuers must pay on qualified private activity bonds are generally higher than those on general obligation bonds. In many cases, users of the project will pay for the additional cost.

Municipal bonds cause a loss in general economic welfare, because the amount of the reduction in federal revenue exceeds the benefit conferred on the issuer.[9] The holder of a tax-exempt bond receives a benefit equal to the amount of the interest payment multiplied by the holder's marginal tax rate. For example, an individual in the top bracket of 39.6% receives a tax benefit of $39.60 for every $100 in interest received. The issuer benefit is the difference between the taxable interest rate and the tax-exempt interest rate. For example, consider the case in which the yield on a 10-year, A-rated tax-exempt bond is 3.00%, while the yield on a 10-year, A-rated corporate bond is 3.50%. An issuer of $1 million in tax-exempt bonds would face an annual interest payment of $30,000, versus $35,000 if the bonds were taxable. The issuer is receiving an annual saving of $5,000, whereas a top-bracket investor in the bonds benefits from a much greater $13,860 annual reduction in tax liability ($35,000 x 39.6%).

[7] Joint Committee on Taxation, JCX 141R-15, *Estimates of Federal Tax Expenditures for Fiscal Years 2015-2019*, December 2015.

[8] Thomson-Reuters, *The Bond Buyer 2015 In Statistics*, February 19, 2016.

[9] Testimony of Frank Sammartino, Congressional Budget Office, "Federal Support for State and Local Governments Through the Tax Code," in U.S. Congress, Senate Committee on Finance, *Tax Reform: What It Means for State and Local Tax and Fiscal Policy*, 112th Cong., 2nd sess., April 25, 2012.

Table 4. Private Activity Bonds Allocated by the Secretary of Transportation for Qualified Highway or Surface Freight Transfer Facilities

(as of July 7, 2016)

Project	PAB Allocation ($ thousands)
Total Allocated	**$11,185,952**
Bonds Issued	**$6,464,952**
Capital Beltway HOT Lanes, VA	$589,000
North Tarrant Expressway, TX	$400,000
IH 635 (LBJ Freeway), TX	$615,000
RTD Eagle Project, Denver, CO	$397,835
CenterPoint Intermodal Center, Joliet, IL	$150,000
CenterPoint Intermodal Center, Joliet, IL	$75,000
Downtown Tunnel/Midtown Tunnel, Norfolk, VA	$675,004
I-95 HOT/HOV Project, VA	$252,648
Ohio River Bridges, East End Crossing, KY-IL	$676,805
North Tarrant Express Segments 3A & 3B, Fort Worth, TX	$274,030
Goethals Bridge, Staten Island, NY	$460,915
U.S.36 Managed Lanes/BRT Phase 2, Denver Metro Area, CO	$20,360
I-69 Section 5, Bloomington to Martinsville, IN	$243,845
Rapid Bridge Replacement Program, PA	$721,485
Southern Ohio Veterans Memorial Highway	$227,355
I-77 Managed Lanes, Charlotte, NC	$100,000
SH-288, Texas	$272,635
Purple Line, Maryland	$313,035
Bonds Not Issued	**$4,721,000**
Knik Arm Crossing, AK	$600,000
CenterPoint Intermodal Center, Joliet, IL	$700,000
All Aboard Florida	$1,750,000
I-70 East Reconstruction, CO	$725,000
Transform 66, Virginia	$946,000

Source: Federal Highway Administration, "Private Activity Bonds," http://www.fhwa.dot.gov/ipd/finance/tools_programs/federal_debt_financing/private_activity_bonds/index.htm.

Tax Credit Bonds

In addition to traditional municipal bonds, state and local governments may issue tax-favored "tax credit bonds" (TCBs). TCBs take one of two forms: (1) investor credit or (2) issuer credit (direct payment).[10] TCBs were first issued in the form of Qualified Zone Academy Bonds (QZABs), which were created by the Taxpayer Relief Act of 1997 (TRA 1997; P.L. 105-34) for school districts to use for school renovation (not including new construction), equipment, teacher training, and course materials. The school district is required to partner with a private entity that contributes 10% of bond proceeds for the project.[11] Build America Bonds (BABs) were created in the American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5) and could be used for any type of capital investment. Of total BAB issuance of $181 billion, approximately $40 billion, or 22%, was used for transportation projects before the legal authorization to issue such bonds expired on December 31, 2010.[12]

QZABs featured an investor credit only. The credit was intended to be set equal to 100% of the interest received. In contrast, BABs featured the direct pay option in addition to the investor credit option and the credit rate was set at 35%.

Investor Credit

For QZABs with a 100% credit for investors, the method for determining the tax credit rate is the responsibility of the Secretary of the Treasury. The credit rate for investor credit TCBs is set higher than the municipal bond rate to compensate for the credit's taxability. Generally, to attract investors, the credit rate should yield a return greater than the prevailing municipal bond rate and at least equal to the after-tax rate for corporate bonds of similar maturity and risk. Importantly, however, the investor must evaluate the potential that in any given year, it may not have tax liability that it can offset with the credit. This additional risk reduces the value of the credit. Entities without U.S. income tax liability, such as U.S. pension funds and certain international investors, would find the investor tax credit of little value.

For issuers of investor tax credit bonds, the interest cost should be less than, or at least equal to, the next best financing alternative. In almost all cases, tax-exempt bonds would be the next best alternative for governmental issuers. For 100% tax credit bonds like QZABs, where the federal government is effectively paying all of the interest for the issuer, there is no question that the tax credit bond has a lower interest cost for issuers than does tax-exempt bonds. As the credit rate drops the issuer incurs a greater share of the interest cost.

[10] For more information on TCBs, see CRS Report R40523, *Tax Credit Bonds: Overview and Analysis*, by Grant A. Driessen and Jeffrey M. Stupak.

[11] 26 U.S.C. 54E(d)(1)(A). The private entity must donate an amount equivalent to 10% of the bond proceeds. Services of employees as volunteer mentors would satisfy the 10% private partnership requirement.

[12] For total issuance, see http://www.sifma.org/research/statistics.aspx. Transportation issuance is reported in Thomson-Reuters, *The Bond Buyer 2013 Yearbook*, Spring 2013.

Direct-Pay Bonds

The direct-pay tax credit bond model was first made available with BABs. In contrast to the earlier versions of tax credit bonds with only the investor credit option, BABs offered issuers the option of receiving the tax credit directly from Treasury rather than allowing investors to claim it. BAB issuers all chose the direct payment over the investor credit.

When presented with the option of issuing an investor credit TCB or issuer direct payment TCB, municipal issuers are likely to choose the option with lowest net interest costs. For example, if the negotiated taxable interest rate on an issuer direct payment TCB is 8% on $100,000 of bond principal, then a bond with 35% credit amount would produce a credit worth $2,800 (8% times $100,000 times 35%). The interest cost to the issuer choosing the direct payment is $8,000 less the $2,800, or $5,200. If the tax-exempt rate of the bond is greater than 5.20% (requiring a payment of greater than $5,200), then the direct payment is a better option for the issuer.

A U.S. Treasury report estimated that through March of 2010, the bonds had saved municipal issuers roughly $12 billion in interest costs. However, more recent developments, including the increase of marginal personal income tax rates with enactment of the American Taxpayer Relief Act of 2012 (P.L. 112-240) and an Office of Management and Budget ruling that payments to issuers are subject to sequestration under the Budget Control Act of 2011 (P.L. 112-25), have reduced the attractiveness of BABs relative to traditional tax-exempt bonds. [13]

Grant Anticipation Bonds

Grant anticipation bonds are tax-exempt securities issued by state and local agencies and backed by federal grants expected to be received in the future. The best-known variant is the Grant Anticipation Revenue Vehicle (GARVEE) bond, backed by a pledge of future federal highway apportionments. Similar bonds, known as Grant Anticipation Notes (GANs), may be backed by a pledge of future federal public transportation apportionments or by anticipated discretionary funding such as that from the Capital Investment Grant (New Starts) Program to build rail transit lines and bus rapid transit. In 2015, $1.2 billion of GARVEE bonds were issued by the states.[14]

Private Financing via Public-Private Partnerships (P3s)

Private investment in surface transportation projects can be obtained by involving a private entity that borrows money from banks, issues bonds, and/or provides equity investment. Because of the costs of putting together such deals, private financing tends to be more suitable for large and costly projects rather than smaller, more routine ones. The public sector often retains a significant role in projects involving private finance, including a public funding or financing component. Private investments, therefore, are usually made in the context of a contractual arrangement with the public sector known as a public-private partnership, or "P3."[15]

[13] For more information on the difference between investor credit and direct-pay bonds, see CRS Report R40523, *Tax Credit Bonds: Overview and Analysis*, by Grant A. Driessen and Jeffrey M. Stupak.

[14] Federal Highway Administration, "Grant Anticipation Revenue Vehicles (GARVEEs)," http://www.fhwa.dot.gov/ipd/finance/tools_programs/federal_debt_financing/garvees/garvee_state_by_state.htm.

[15] For more information, see CRS Report R43410, *Highway and Public Transportation Infrastructure Provision Using Public-Private Partnerships (P3s)*, by William J. Mallett.

In general, P3s involve greater private-sector responsibility for project tasks than the traditional model of project delivery, in which private companies bid for separate planning, design, or construction contracts offered by the public sector. Most P3s in surface transportation have been of the design-build variety in which project design and construction are combined into a single contract. Some involve more complicated design-build-finance-operate-maintain contracts, in which the private entity receives a concession to operate the project and collects fees from users for a specified period following the completion of construction.

Only a few P3s in the United States have involved long-term private financing. According to one study, from 1989 through early 2011 there were 96 transportation P3s worth a total of $54.3 billion. Of these, 11 projects, built at a total cost of $12.4 billion, included a long-term private financing component.[16] However, a number of P3 deals with private financing have been created more recently. The Federal Highway Administration (FHWA) lists a total of 21 such projects from the late 1980s through June 2015 worth a total of $24.6 billion.[17] P3s and private investment in surface transportation are relatively larger in many other countries, including Portugal, Spain, and Australia.[18]

To be viable, P3s involving private financing typically require an anticipated project-related revenue stream from a source such as vehicle tolls, container fees, or, in the case of transit station development, building rents. In some cases, private-sector financing is backed by "availability payments," regular payments made by government to the private entity based on negotiated quality and performance standards.[19] Private-sector resources may come from an initial payment to lease an existing asset in exchange for future revenue, as with the Indiana Toll Road and Chicago Skyway, or they may arise from a newly developed asset that creates a new revenue stream. Either way, a facility user fee is often the key to unlocking private-sector resources.

As noted above, P3s delivering new assets have typically been large-scale projects of regional or national scope that rely on public funding and financing in addition to private financing. One example is the $2 billion I-495 High-Occupancy Toll Lanes project that opened for traffic on the Washington beltway in November 2012. Delivered by a P3 between Capital Beltway Express, LLC (a joint venture of Fluor and Transurban) and the Virginia Department of Transportation, the project included about $380 million in private equity and $589 million in private activity bonds, but also a $589 million federal TIFIA loan and almost $500 million in state funding (**Table 5**).

[16] William Reinhardt, *The Role of Private Investment in Meeting U.S. Transportation Infrastructure Needs*, American Road & Transportation Builders Association Transportation Development Foundation, Washington, DC, May 2011, http://www.pwfinance.net/document/research_reports/0%20artba.pdf.

[17] Federal Highway Administration, *Successful Practices for P3s*, March 2016, p. 4, Appendix C, https://www.transportation.gov/sites/dot.gov/files/docs/P3_Successful_Practices_Final_BAH.PDF.

[18] Federal Highway Administration, *Public-Private Partnerships for Highway Infrastructure: Capitalizing on International Experience*, March 2009, http://international.fhwa.dot.gov/pubs/pl09010/pl09010.pdf.

[19] Major improvements to I-595 near Fort Lauderdale, FL were made by a private company that agreed to design, build, finance, operate, and maintain the facility for 35 years with availability payments made by the Florida Department of Transportation (FDOT). Toll rates on the new express lanes are set by FDOT, and revenue collected is retained by the state. See Federal Highway Administration, "I-595 Corridor Roadway Improvements," http://www.fhwa.dot.gov/ipd/project_profiles/fl_i595.aspx.

Table 5. Sources of Funds for Virginia I-495 High-Occupancy Toll (HOT) Lanes

Source of Funding	Million $
Private activity bonds	$589
TIFIA loan	589
Commonwealth of Virginia grant	409
Private equity	348
VDOT change-order funding	86
Interest income	47
Total cost	**2,068**

Source: Federal Highway Administration, "TIFIA Project Profiles," http://www.fhwa.dot.gov/ipd/project_profiles/va_capital_beltway.htm.

The "public" in public-private partnerships typically refers to a state government, local government, or transit agency. The federal government, nevertheless, exerts influence over the prevalence and structure of P3s through its transportation programs, funding, and regulatory oversight. Probably the main way in which the federal government has encouraged P3s and private financing in transportation is through the TIFIA program that provides long-term, low-interest loans and other types of credit to project sponsors.

DOT has also been mandated to support P3s in other ways. The department was authorized in the Moving Ahead for Progress in the 21st Century Act (MAP-21; P.L. 112-141) to compile and make available best practices in the use of P3s, develop standard P3 model contracts, and provide technical assistance on P3 agreements. The Fixing America's Surface Transportation (FAST) Act (P.L. 114-94) authorized the creation of a new bureau within DOT to consolidate federal transportation financing programs and support for P3s. To fulfill this mandate, DOT established the Build America Bureau in July 2016.

The Build America Bureau is responsible for administering TIFIA and the Railroad Rehabilitation and Improvement Financing (RRIF) program, the state infrastructure bank program, the allocation of private activity bonds, and the Nationally Significant Freight and Highway Projects Program (23 U.S.C. §117). It is also responsible for providing help to project sponsors with other DOT grant programs; establishing and disseminating best practices and providing technical assistance with innovative financing and public-private partnerships (P3s); ensuring transparency with P3s; developing procurement benchmarks; and working with project sponsors to navigate environmental reviews and permitting to reduce uncertainty and delays.

The FAST Act also allows formula highway funding for "the creation and operation by a State of an office to assist in the design, implementation, and oversight of public-private partnerships" (23 U.S.C. 133(b)(14)). In addition, The FAST Act (§1441) authorized a new Regional Infrastructure Accelerator Demonstration Program that will make grants "to assist entities in developing improved infrastructure priorities and financing strategies for the accelerated development of a project that is eligible for funding under the TIFIA program." These projects typically involve other types of innovative financing and P3s. The FAST Act authorized $12 million in FY2016 from the general fund for the program, but these funds were not appropriated.

One of the purported advantages of P3s is risk transfer from the public agency to the private partner. The many different types of risks in the development and operation of infrastructure,

include the risk that construction and maintenance will cost more than planned and, with toll facilities, the risk that there will be less demand, and thus revenue, than estimated.[20] Transferring these and other risks to the private sector is not necessarily a money saver, as the private partner will require compensation for assuming them, but it provides greater certainty for the public sector. However, not all the risks can or should be shifted to the private sector. As the Government Accountability Office points out, a major risk associated with transportation infrastructure projects that the private sector is unlikely to be able to accept is the delay and uncertainty associated with the environmental review process.[21]

At least in some cases, the transfer of risk in a P3 may prove illusory as major miscalculations may force the public sector to renegotiate the P3 contract or to assume project ownership.[22] Difficulties with the 40-mile extension of SH-130 near Austin, TX, opened in October 2012 and financed and built by a P3 between the Texas Department of Transportation (TxDOT) and a private partner, illustrate the point. The toll road has had much lower traffic volumes than forecast and, therefore, is generating much less revenue than the concessionaire needs in order to repay its loans. In March 2013, in an effort to get more trucks to use the toll road, the state decided to subsidize the toll for trucks for one year. TxDOT paid the concessionaire $6 million as compensation for lost revenue.[23] In March 2016, the concessionaire declared bankruptcy. TxDOT and the concessionaire have stated that this will not imperil the agreement or burden Texas taxpayers. However, the bankruptcy may affect the $430 million federal TIFIA loan to the project, the repayment of which was scheduled to begin in June 2017.[24]

Critics of P3s argue that the amount of private money involved in P3 deals is often a small share of the total, or subsidized by the public sector, or both; that risk transfer from the public to the private sector is often illusory; and that P3 contracts can limit the proper use of and government decisions about the transportation system.[25] The Build America Bureau will also be responsible for ensuring greater transparency of P3s and the completion by the project sponsor of an analysis of the benefits and costs of procuring a project using a P3 versus other types of arrangements. This was one of the recommendations of a special panel set up by the House Transportation and Infrastructure Committee.[26] Opponents of greater oversight worry about the effects of new

[20] Federal Highway Administration, "Typical PPP Risk Allocation," http://www.fhwa.dot.gov/ipd/pdfs/faq_3.pdf.

[21] Government Accountability Office, *Highway Public-Private Partnerships: More Rigorous Up-front Analysis Could Better Secure Potential Benefits and Protect the Public Interest*, GAO-08-44, Washington, DC, February 2008, http://www.gao.gov/assets/280/272041.pdf.

[22] Engel, E., R. Fischer, and A. Galetovic, "Privatizing Highways in the United States," *Review of Industrial Organization*, 2006, Vol. 29, pp. 27-53.

[23] *Public Works Financing*, "SH 130 Liquidity Alarm," March 2013, p. 22.

[24] Richard Williamson, "Lenders to Take Over Private Texas Toll Road," *Bond Buyer*, August 15, 2016, http://www.bondbuyer.com/news/regionalnews/lenders-to-take-over-private-texas-toll-road-1111007-1.html; Federal Highway Administration, "Project Profile: SH-130 (Segments 5-6)," https://www.fhwa.dot.gov/ipd/project_profiles/tx_sh130.aspx.

[25] Jean Shaoul, Anne Stafford, and Pam Stapleton, "The Fantasy World of Private Finance for Transport via Public Private Partnerships," Discussion Paper 2012-6, Roundtable on Public Private Partnerships for Funding Transport Infrastructure: Sources of Funding, Managing Risk, and Optimism Bias, 27-28 September, 2012, http://www.oecd-ilibrary.org/docserver/download/7413021ec006.pdf?expires=1477928972&id=id&accname=oid011901&checksum=87CD4B36F328A8D741681639C28AC960; Ellen Dannin, "Crumbling Infrastructure, Crumbling Democracy: Infrastructure Privatization Contracts and Their Effects on State and Local Governance," *Northwestern Journal of Law and Social Policy*, Volume 1, Issue 6, Winter 2011, pp. 47-93.

[26] House Transportation and Infrastructure Committee, Panel on Public-Private Partnerships, *Public Private Partnerships: Balancing the Needs of the Public and Private Sectors to Finance the Nation's Infrastructure*, September 2014, http://transportation.house.gov/uploadedfiles/p3_panel_report.pdf.

requirements on the development of P3 agreements because of the extra time, expense, and uncertainties that they may cause.

Federal Loan Programs

There are several federal loan programs for surface transportation infrastructure. This section discusses the TIFIA and RRIF programs. Another source is Section 129 loans, which allow states to lend apportioned federal highway funding to support a project with a dedicated revenue stream (23 U.S.C. §129(a)(8)). According to FHWA, Section 129 loans have been used to finance two projects.[27] One reason for this limited use may be that TIFIA provides a separate funding source for loans to similar types of projects.[28]

Transportation Infrastructure Finance and Innovation Act (TIFIA)

TIFIA, enacted in 1998 as part of the Transportation Equity Act for the 21st Century (TEA-21),[29] provides federal credit assistance in the form of secured loans, loan guarantees, and lines of credit for construction of surface transportation projects. Loans and loan guarantees can be provided up to a maximum of 49% of project costs; lines of credit can be for an amount up to a maximum of 33% of project costs. Projects eligible for TIFIA assistance include highways and bridges, public transportation, intercity passenger bus and rail, intermodal connectors, and intermodal freight facilities. As of July 2016, according to DOT, TIFIA had provided assistance of $24.5 billion to 60 projects. The overall cost of the projects supported is estimated to be $88 billion.[30]

Several features of TIFIA financing make it attractive to project sponsors, including private-sector partners. Federal credit assistance provides funds at a low fixed rate (the Treasury rate for a similar maturity). Loans are available for up to 35 years from the date of substantial completion, repayments can be deferred for up to five years after substantial completion, and amortization can be flexible. TIFIA financing is also available with a senior or subordinate lien, but is typically used as subordinate debt, meaning it is in line to be repaid after the project's operational expenses and senior debt obligations. However, the TIFIA statute includes a provision which requires that in the event of a project bankruptcy, the federal government will be made equal with senior debt holders. This is referred to as the "springing lien" and has led some to ask whether TIFIA financing is truly subordinate. The springing lien issue notwithstanding, TIFIA financing is generally thought to reduce project risk, thereby helping to secure private financing at rates lower than would otherwise be possible.

There are a number of eligibility criteria for TIFIA assistance. One of the key eligibility criteria is creditworthiness. To be eligible, a project's senior debt obligations and the borrower's ability to repay the federal credit instrument must receive investment-grade ratings from at least one nationally recognized credit rating agency. The TIFIA assistance must also be determined to have several beneficial effects: fostering a public-private partnership, if appropriate; enabling the project to proceed more quickly; and reducing the contribution of federal grant funding. Other eligibility criteria include satisfying planning and environmental review requirements and being

[27] Federal Highway Administration, "Section 129 Loans: Activity to Date," http://www.fhwa.dot.gov/ipd/finance/tools_programs/federal_credit_assistance/section_129/activity_to_date.htm.

[28] For more information see Federal Highway Administration, *Project Finance Primer*, 2010, pp. 22-23, http://www.fhwa.dot.gov/ipd/pdfs/finance/ProjectFinancePrimerREV4.pdf.

[29] 23 U.S.C. §601 et seq.

[30] U.S. Department of Transportation, "TIFIA Credit Program Overview," p. 8, https://cms.dot.gov/sites/dot.gov/files/docs/TIFIA%20Background%20Slides%20%2807-06-2016%29_0.pdf.

ready to contract out construction within 90 days after the obligation of assistance. Generally, a project must cost $50 million or more to be eligible for assistance, but the threshold is $15 million for intelligent transportation system projects and $10 million for transit oriented development projects, rural projects, and local projects.[31] One further eligibility requirement is that loans must be repaid with a dedicated revenue stream, typically a project-related user fee but sometimes dedicated tax revenue. **Table 6** provides examples of projects that have received a TIFIA loan and the primary means by which the loan is to be repaid.

Table 6. Selected TIFIA-Assisted Projects

Project	Fiscal Year	Project Type	TIFIA Loan Amount (Million $)	Primary Revenue Pledge
U.S. 301 (Delaware)	2016	Highway	$211	Facility tolls
Chicago Transit Authority Rail Fleet Replacement Project	2016	Transit	$255	Farebox revenues
East Link Extension (Sound Transit, Seattle)	2015	Transit	$1,330	Tax revenues
Portsmouth Bypass (Ohio)	2015	Highway	$209	Availability payments
Gerald Desmond Bridge (California)	2014	Highway	$325	Port revenues
North Tarrant Express (Texas)	2014	Highway	$531	Facility tolls

Source: U.S. Department of Transportation, "Projects Financed by TIFIA," https://www.transportation.gov/tifia/projects-financed.

Limiting the federal share of project costs, encouraging private finance, and insisting on creditworthiness standards are ways in which the program attempts to rely on market discipline to limit the federal government's exposure to losses.

Another advantage from the federal point of view is that a relatively small amount of budget authority can be leveraged into a large amount of loan capacity. Because the government expects its loans to be repaid, an appropriation need only cover administrative costs and the subsidy cost of credit assistance. According to the Federal Credit Reform Act of 1990 (2 U.S.C. §661(a)) the subsidy cost is "the estimated long-term cost to the government of a direct loan or a loan guarantee, calculated on a net present value basis, excluding administrative costs." A typical rule of thumb is that the average subsidy cost of a TIFIA loan is 10%, meaning that $1 million of budget authority can provide $10 million of loan capacity.

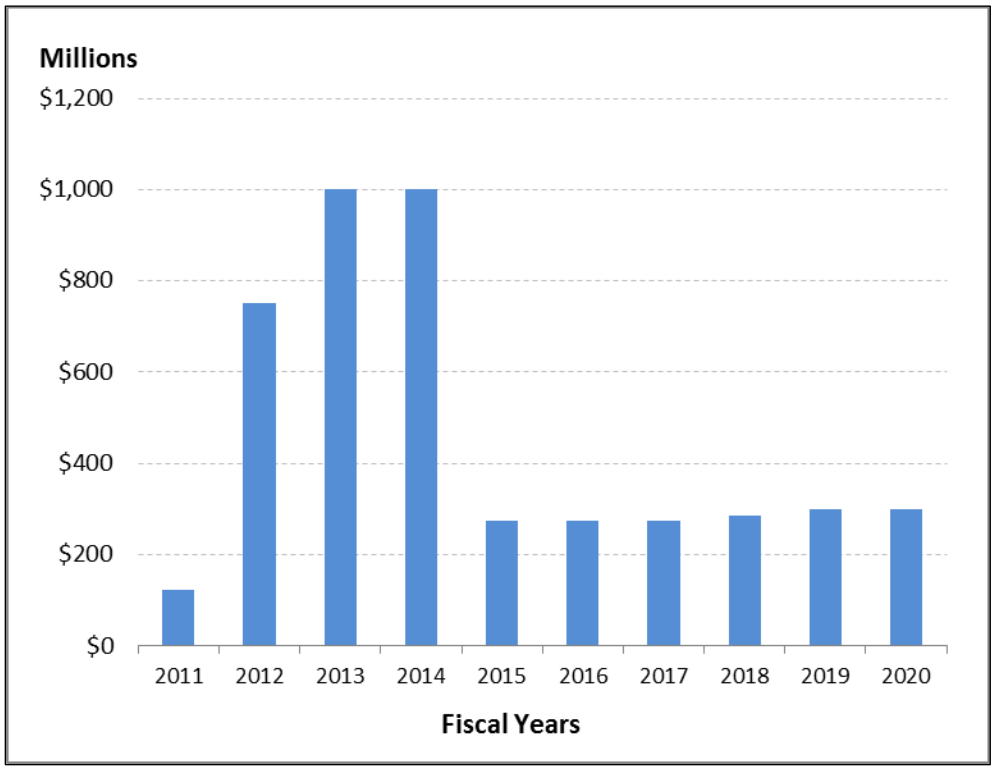
The FAST Act reduced the direct authorization of funding for TIFIA, a few years after it had been greatly increased in MAP-21 (**Figure 1**). Seen in isolation, this reduces DOT's capacity to issue loans by approximately $7.25 billion in FY2016, assuming a 10% subsidy cost and excluding administrative costs. However, the FAST Act also allows states to use funds from two other highway programs, the discretionary Nationally Significant Freight and Highway Projects

[31] The law also provides eligibility for projects whose total expected costs are 33.3% of the amount of federal highway assistance apportioned in the most recent fiscal year to the state in which the project is located.

Program (FAST Act; §1105) and the formula National Highway Performance Program (NHPP) (FAST Act; §1106), to pay for the subsidy and administrative costs of credit assistance. This has the potential to increase TIFIA financing much above the $275 million direct authorization, but at the discretion of state departments of transportation.

Figure 1. TIFIA Program Funding Authorization

(FY2011-FY2020)



Source: Federal Highway Administration.

Railroad Rehabilitation and Improvement Financing (RRIF) Program

Under RRIF (45 U.S.C. §821 et seq.), the Federal Railroad Administration (FRA) is authorized to provide loans and loan guarantees up to a total of $35 billion of unpaid principal, with $7 billion reserved for freight projects benefitting railroads other than the large Class I railroads. Direct loans generally can be up to 100% of a project's cost and for a maximum term of 35 years from the completion of the project. Interest is charged at the U.S. Treasury rate of a similar maturity. Eligible borrowers are state and local governments, government-sponsored authorities and corporations, railroads, joint ventures that include at least one of these other entities, freight rail shippers served by one railroad and wanting to connect a facility to a second railroad, and interstate compacts. Eligible projects include buying or improving rail facilities and equipment, refinancing debt for such purposes, developing new rail or intermodal facilities, and commercial and residential development around a station. Operating expenses are not an eligible purpose.

The RRIF does not receive an appropriation from Congress, but allows project sponsors to pay the subsidy cost (termed the credit risk premium). FRA evaluates applications for RRIF assistance by eligibility and the ability to repay a loan in terms of the applicant's creditworthiness and the value of collateral offered to secure the loan (45 U.S.C. §822(f)). These and other factors determine the credit risk premium that must be paid.

Through 2015 there have been 34 RRIF loan agreements totaling $2.7 billion. Loans have ranged in size from $967 million, made to the New York City Metropolitan Transportation Administration (MTA) in 2015, to $56,000, made in 2011 to C&J Railroad. Most loans have been made to Class II and Class III freight operators that are unable to get loans with comparable interest rates in the private market. Loans are typically at the lower end of the range. Some of the largest loans have been to passenger train operators. FRA announced in 2016 that the RRIF program will lend $2.45 billion to Amtrak, mainly for new trains on the Northeast Corridor.[32]

In the last few years there has been greater interest in the RRIF program from less traditional borrowers, namely sponsors of proposed privately owned and operated high-speed passenger rail projects. Federal financing of these sorts of projects may be more risky than usual because the applicants are seeking much larger amounts of money, the projects involve developing new markets for passenger rail travel, and, in some cases, the applicants may have no collateral or collateral of little value if the project does not succeed.

One example is the proposal for a new, privately owned and operated high-speed intercity passenger rail service between the outskirts of Los Angeles (Victorville) and Las Vegas, a distance of about 185 miles. The private sponsors of this project, known as XpressWest, estimate its cost at $6.9 billion and have applied to borrow the majority of the funds from the RRIF program, with an additional $1.4 billion coming from private investors.[33] In June 2013, according to a letter from the Secretary of Transportation to XpressWest, FRA suspended its review of the application, primarily it appears because XpressWest could not satisfy Buy America provisions that require iron, steel, and manufactured goods for a project financed with a RRIF loan be produced in the United States.[34] In June 2016, XpressWest terminated its relationship with China Railway International U.S.A. Co. Ltd., which was to supply the trains, and said it intended "to renew our request for support from the Federal Railroad Administration."[35]

State Infrastructure Banks

Another source of financing for surface transportation projects is state infrastructure banks (SIBs). Most of these were created in response to a program originally established by Congress in 1995 (P.L. 104-59). According to a 2012 survey, 32 states had established a federally authorized SIB. Several states, among them California, Florida, Georgia, Kansas, Ohio, and Virginia, have SIBs that are unconnected to the federal program.[36] Local governments have also begun to embrace the idea. For example, the City of Chicago has established a nonprofit organization, the Chicago Infrastructure Trust, as a way to attract private investment for public works projects, and Dauphin County, PA, has established an infrastructure bank to loan funds to the 40 municipalities

[32] Office of the Vice President, "Vice President Joe Biden and Deputy Secretary of Transportation Victor Mendez Announce New Loan to Amtrak," Press Release, August 26, 2016, https://www.whitehouse.gov/the-press-office/2016/08/26/vice-president-joe-biden-and-deputy-secretary-transportation-victor.

[33] XpressWest, "Media Kit," http://www.xpresswest.com/pdf/XpressWest_Media_Kit.pdf.

[34] Letter from Ray LaHood, Secretary of Transportation to Anthony Marnell, II, Chairman XpressWest, June 28, 2013, http://www.scribd.com/doc/154207442/Ray-LaHood-s-letter-to-XpressWest. See also Steve Tetreault, "Feds Halt Loan Review for Las Vegas-to-California High-speed Train," Las Vegas Review-Journal, July 12, 2013, http://www.reviewjournal.com/news/nevada-and-west/feds-halt-loan-review-las-vegas-california-high-speed-train.

[35] Press release, June 8, 2016, http://www.xpresswest.com/news.html.

[36] Robert Puentes and Jennifer Thompson, "Banking on Infrastructure: Enhancing State Revolving Funds for Transportation," Brookings Institution, September 2012, https://www.brookings.edu/wp-content/uploads/2016/06/12-state-infrastructure-investment-puentes.pdf.

within its borders and to private project sponsors. Funds for the loans are derived from a state tax on liquid fuels.[37]

As part of the federal transportation program, a state can use some of its share of federal surface transportation funds to capitalize an SIB. This authority lapsed at the end of FY2009, but was restored in the FAST Act though FY2020. The FAST Act also provides authority for a TIFIA loan to a state infrastructure bank (SIB) to capitalize a "rural project fund" within the bank. There are some requirements in federal law for SIBs connected with the federal program (23 U.S.C. §610), but for the most part their structure and administration are determined at the state level. Most SIBs are housed within a state department of transportation, but at least one (Missouri) was set up as a nonprofit corporation and another (South Carolina) is a separate state entity.

Most SIBs function as revolving loan funds, in which money is directly loaned to project sponsors and its repayment with interest provides funds to make more loans.[38] Some SIBs, such as those in Florida and South Carolina, have the authority to use their initial capital as security for issuing bonds to raise further money as a source of loans, with loan repayments then used to service the bonds.[39] SIBs also typically offer project sponsors other types of credit assistance, such as letters of credit, lines of credit, and loan guarantees.

In general, state infrastructure banks have not been significant participants in financing surface transportation projects. According to one survey, between 1995 and 2012 federal and nonfederal SIBs entered into about 1,100 agreements worth a total of $9 billion, an average of about $8 million per agreement. However, SIB activity has varied widely from state to state. Eight states, Pennsylvania, Ohio, California, Texas, Florida, Kansas, Missouri, and Arizona, account for three-quarters of SIB loans, and five states, South Carolina, Florida, Arizona, Texas, and California, account for three-quarters of the agreement value.[40] The same survey found that 71% of the projects helped by SIBs were highway projects, which accounted for 88% of the value of all projects supported by SIBs. Aviation, water, transit, rail, and other types of projects accounted for the remaining activity.

Several factors may explain the generally low level of activity of state infrastructure banks.[41] It has been suggested that the capitalization of the banks has lagged because the federal funds that could be used have already been committed to traditional projects. Another suggestion is that there are relatively few small, local projects which have the ability to generate sufficient revenue

[37] Chicago Investment Trust, http://www.shapechicago.org/; Jeff Frantz, "Dauphin County Creates Infrastructure Bank for Road Improvements," *PennLive*, March 1, 2013, http://www.pennlive.com/midstate/index.ssf/2013/03/dauphin_county_creates_infrast.html; Dauphin County, "Dauphin County, PennDOT Unveil New Transportation Funding Program," March 1, 2013, http://www.dauphincounty.org/government/about-the-county/Pages/News.aspx?NewsID=220.

[38] Under federal transportation law SIBs can provide assistance to any entity with an eligible project. A state may limit this to project sponsors of its choice (e.g., local governments).

[39] See Federal Highway Administration, "State Infrastructure Banks: Frequently Asked Questions," http://www.fhwa.dot.gov/ipd/finance/tools_programs/federal_credit_assistance/sibs/faqs.htm#12; Jonathan L. Gifford, *State Infrastructure Banks: A Virginia Perspective*, School of Public Policy, George Mason University, Research Paper, November 24, 2010, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1714466.

[40] Robert Puentes and Jennifer Thompson, September 2012.

[41] See U.S. General Accounting Office, *State Infrastructure Banks: A Mechanism to Expand Federal Transportation Financing*, GAO/RECD-97-9, October 1996, pp. 13-19, http://www.gao.gov/archive/1997/rc97009.pdf; Federal Transit Administration, *Update on State Infrastructure Bank Assistance to Public Transportation*, July 15, 2005, https://www.transit.dot.gov/sites/fta.dot.gov/files/2005_SIB_Report_Final.pdf; Federal Highway Administration, *State Infrastructure Bank Review*, Washington, DC, February 2002, http://www.fhwa.dot.gov/ipd/pdfs/finance/sib_complete.pdf.

to repay a loan. Tolling, for example, is often infeasible (due to low traffic volumes) or unpopular. Because projects funded by a federally authorized SIB must comply with federal regulations on matters such as environmental review and prevailing wages, project sponsors may decide it is cheaper and quicker to use funding from another source. Other concerns include how an SIB may affect a state's debt limit and credit rating, and also issues with creating an independent entity that can engage in off-budget financing.[42] In some places, state law may inhibit the creation of an SIB.

Federal Budget Impact of Debt Finance Alternatives

The budget impact of federal assistance for debt finance depends on several factors specific to the type of bond. In addition, the perspective of evaluation is important. For the federal government, if the intent of assistance is to encourage more investment in the selected activity, then the assistance must reduce the cost to the issuer (i.e., the borrower, typically a state or local government) below the next best alternative. Federal assistance for debt finance is typically of two varieties, a tax preference or credit assistance.

A federal tax preference for debt finance is generally limited to the following tactics: (1) excluding interest paid from investor income and (2) providing a tax credit to investors or issuers. Federal credit assistance may consist of (1) federal guarantee of debt instrument and (2) direct loans from the federal government. The budget impact of these four mechanisms can be viewed in general terms along a continuum.

Direct loans could confer a fairly significant incentive for borrowers, though the potential budget impact would depend on the level of risk of the selected projects. Loan guarantees would offer similar benefits to issuers, though the structure of the guarantee could limit the risk exposure of the federal government. For example, the federal guarantee could be limited to a portion of the principal borrowed, thereby reducing the federal financial responsibility in the event of default. The nature of credit assistance for capital projects, however, would be most attractive for projects that face the highest alternative financing costs. Generally, this means the riskiest projects would be the most likely applicants for federal credit assistance, in which case, a credit assistance program could be relatively expensive from a budget perspective.

Use of tax preferences reduces federal government risk relative to credit assistance, but there can still be a significant revenue impact. Tax credit bonds, particularly those with a high credit rate and a long term to maturity, offer the largest subsidy for the issuer. Accordingly, these bonds would generate potentially the largest revenue loss. Tax-exempt bonds offer a significantly smaller subsidy to issuers, but unlike tax credit bonds, they also provide a tax preference for investors. When both the issuer and investor subsidies are taken together, the revenue loss from tax-exempt bonds can exceed the revenue loss associated with a tax credit bond with a low rate and limited term.

The impact on the budget of the four debt finance alternatives presented here depends critically on the details of the specific proposal. Generally speaking, for a given amount of potential new capital investment, the largest potential impact would accompany direct loans. With direct loans, the federal government could potentially lose all proceeds loaned to the project. The potential budget impact of a tax-exempt bond subsidy, in contrast, is limited to the taxes that would have been collected on the interest payments on the debt.

[42] These concerns were raised in New York in the wider context of public-private partnerships, see State of New York, Office of the State Comptroller, "Controlling Risk Without Gimmicks: New York's Infrastructure Crisis and Public Private Partnerships," January 2011, p. 12, http://www.osc.state.ny.us/reports/infrastructure/pppjan61202.pdf.

Legislative Options

Tax-Preferred Bonds

Tax credit bonds and tax-exempt bonds have often been used to encourage additional investment in selected sectors. As described earlier, public-sector debt finance is afforded unlimited access to tax-exempt bond financing for infrastructure projects under current law where generally applicable taxes (e.g., income taxes, sales taxes, and property taxes) are used to repay the debt. These are often called "revenue bonds." Governments have also acted as conduits for private-sector investment for a variety of projects delineated in the Internal Revenue Code. Nongovernmental issuers, such as nonprofit hospitals and other nonhospital, nonprofit entities, can also issue tax-exempt bonds.

America Fast-Forward Bonds

The Obama Administration's FY2017 budget includes a number of proposals offering preferential tax treatment for bond-financed infrastructure projects. The proposed America Fast Forward (AFF) Bond would be similar to the now expired BAB, but would offer a 28% direct payment to issuers, significantly less than the BAB program. In contrast to BABs, AFFs would also allow issuance by section 501(c)(3) nonprofit entities and for all private activities subject to the state-by-state volume cap.

The reduced credit amount of 28% might limit interest in the bonds by issuers, particularly in light of possible budget sequester in future fiscal years. BAB payments, as well as all other direct payments for tax credit bonds, were reduced by 6.8% in FY2016.[43] The introduction of AFF bonds is estimated to reduce budget deficits by $3 million over the 2017-2026 budget window.[44]

Private Activity Bond Proposals

The Administration's FY2017 budget proposal includes two provisions that would allow for an increase in the issuance of tax-exempt, qualified private activity bonds for transportation projects. Under current law, the use of tax-exempt, qualified private activity bonds for transportation projects is limited to a fixed $15 billion for the life of the program. The $15 billion is allocated to specific projects by the Secretary of Transportation. The Administration's FY2017 budget proposal includes a provision to increase this amount to $19 billion. Under current law, these bonds can be issued for "(1) any surface transportation project, (2) any project for an international bridge or tunnel for which an international entity authorized under Federal or State law is responsible, or (3) any facility for the transfer of freight from truck to rail or rail to truck."[45]The Administration's FY2017 budget includes several other provisions that would likely expand the issuance of private activity bonds. Among them was a proposal to create a new category of private activity bonds referred to as qualified public infrastructure bonds (QPIBs). The proposed bonds could be used for certain privately owned infrastructure, including airports, docks and

[43] For the IRS notice, see https://www.irs.gov/tax-exempt-bonds/fy2016-update-effect-of-sequestration-on-state-local-government-filers-of-form-8038cp.

[44] Office of Management and Budget, *Mid-Session Review, Budget of the U.S. Government*, Table S-8, https://www.whitehouse.gov/sites/default/files/omb/budget/fy2017/assets/17msr.pdf.

[45] U.S. Department of Treasury, "General Explanation of the Administration's Fiscal Year 2014 Revenue Proposals," April 2013, p. 116.

wharves, and mass commuting facilities. These provisions are projected to generate a revenue loss of $4.54 billion over the 2017 to 2026 budget window.

Changes to TIFIA and RRIF

Another option for Congress is to increase direct funding for or otherwise adjust the TIFIA and RRIF programs. The FAST Act cut direct funding to the TIFIA program, while allowing states to trade formula grant funding for a larger loan. At the moment states do not have to make that trade because the TIFIA program is not in danger of running out of budget authority.[46] If the TIFIA program does exhaust its direct funding in the future, an unanswered question is whether states will voluntarily choose to use grant funding to pay the subsidy and administrative costs of a loan.

The FAST Act made several changes to the TIFIA program to broaden the types of projects eligible for support. This included allowing support for transit oriented development (TOD) projects, and lowering the cost threshold for rural and local projects. To encourage smaller projects, the FAST Act also provided funding to pay the application fees of projects costing $75 million or less. Whether or not these changes will lead to more loans, an overall increase in credit assistance, and thus greater infrastructure investment, is a question that might determine the call for more changes in the future.

The RRIF program has been little used over the years, most likely because borrowers have to pay the subsidy cost of credit assistance. This has changed recently due to major borrowing for publicly funded projects by MTA and Amtrak. Another project involving Amtrak, the Hudson River tunnels, has been mentioned as a possible recipient of a large loan. However, private freight railroads, the original focus of the RRIF program, have not borrowed to any great extent. Possibly the most effective way of increasing the use of the RRIF program by private as well as public borrowers would be to provide an appropriation to cover the subsidy cost. Another suggestion is to simplify the application process, particularly for smaller loans.

Public-Private Partnerships

TIFIA and PABs remain important supports for P3s in surface transportation. While the TIFIA program appears to have enough budget authority to make loans for the foreseeable future, there is concern that the $15 billion PAB cap might be reached in the near future, inhibiting P3s. Monitoring, and increasing if necessary, the availability of assistance from these programs is probably the most important task for supporters of P3s at the federal level.

Congress also may want to monitor whether language in MAP-21 and the FAST Act to support P3s is achieving its goal of increasing private investment in infrastructure.

P3 skeptics might seek to limit the use of federal financing to encourage the development of P3s or seek to build on the transparency requirements contained in the FAST Act. An idea suggested in the past is for an Office of Public Benefit in FHWA to "provide for the protection of the public interest in relation to highway toll projects and public-private partnership agreements on Federal-aid highways."[47]

[46] Jeff Davis, "Was the FAST Act's 70 Percent Cut in TIFIA Funding Justified?" *Transportation Weekly*, December 16, 2015.

[47] Surface Transportation Authorization Act (STAA) of 2009 (§1204). The bill was marked up in the House Subcommittee on Highways and Transit on June 24, 2009, but was never formally introduced; hence it remained unnumbered. A copy of the draft bill is available from the authors.

National Infrastructure Bank

Many different formulations of a national infrastructure bank have been proposed in Congress over the past few years. Proponents typically see such a bank as a way to provide low-cost, long-term loans, loan guarantees, and lines of credit on flexible terms to support infrastructure projects. Policy choices include the following:

- **Infrastructure type.** Some proposals focus on one type, such as transportation or energy, but most would support a wider spectrum of sectors.
- **Institutional form and governance.** Most current proposals would create a wholly owned government corporation governed by political appointees. But other models exist, including placing the bank inside an existing government department and creating a government-sponsored enterprise with an independent board.
- **Funding source.** Under the Federal Credit Reform Act of 1990, credit assistance by the bank would be supported by an appropriation that pays the subsidy and administrative costs. Assuming a 10% subsidy cost, every $1 appropriated beyond the amount of administrative costs would enable the bank to lend $10 to projects. Alternatively, a bank could operate as a revolving fund, such that credit assistance and administrative costs are limited to the size of the appropriation, but funds from repaid loans could be used to make new loans. In some formulations an infrastructure bank would raise its own capital through bond issuance. Most proposals would allow the bank to offset some of its costs by charging fees.

Five infrastructure bank proposals have been introduced in the 114th Congress. Each proposes a national infrastructure bank created as a wholly government-owned corporation, but with somewhat different governance, eligibility rules, and funding mechanisms (**Table 7**). The Green Bank Act is not discussed here as it limits support to energy projects.

The Partnership to Build America Act of 2015 (H.R. 413) would create the American Infrastructure Fund (AIF) with $50 billion of repatriated foreign earnings. The companies repatriating the earnings would receive tax benefits in return for investing a certain share of the earnings in 50-year bonds paying 1% interest. Infrastructure sectors eligible for loans and loan guarantees from the AIF would include transportation, energy, water, communications, and education. In addition, H.R. 413 would permit the AIF to make equity investments (i.e., an ownership stake) up to a maximum of 20% of project costs.

The National Infrastructure Development Bank Act (H.R. 3337) proposes to create the National Infrastructure Development Bank (NIDB) as a wholly owned government corporation. The NIDB would be authorized to aid transportation, energy, environmental, and telecommunications infrastructure projects. In addition, to providing loans and loan guarantees, the NIDB would be permitted to subsidize the interest on a new type of taxable bond called an American Infrastructure Bond (AIB). AIBs could be issued by eligible infrastructure project sponsors. An amount equivalent to the federal taxes paid by AIB holders would be credited to the NDIB for assistance to other eligible infrastructure projects. The NIDB also would be capitalized with $25 billion from the general fund.

The Building and Renewing Infrastructure for Development and Growth in Employment (BRIDGE) Act (S. 1589) proposes to create the Infrastructure Financing Authority (IFA) as a wholly owned government corporation. The IFA would be authorized to provide loans and loan guarantees to sponsors of projects in transportation, energy, and water. Modifications to the list of

eligible project types would be possible by a vote of five or more of the seven-member board of directors. The act authorizes an appropriation of $10 billion to capitalize the authority. The act also authorizes the collection of fees from applicants and for recipients of assistance to pay all or part of the federal government's subsidy cost. The act would create an Office of Technical and Rural Assistance within the IFA to identify and develop projects for financing in cooperation with project sponsors. At least 5% of the budget authority made available by the BRIDGE Act would have to be used to assist rural projects.

The Build USA Act (S. 1296) would establish the American Infrastructure Bank as a wholly owned government corporation. The bank would be authorized to make loans and loan guarantees to state and local governments for highway projects. The bank would be capitalized with taxes on repatriated foreign earnings, the issuance of its own bonds, and 10% of federal highway formula funds remitted voluntarily by states. The bank would be authorized to return the other 90% of the funds remitted by a state with different and possibly more flexible federal requirements than came with the original formula funds.

Potential advantages of an infrastructure bank include the leveraging of state, local, and private-sector investment and data-driven project selection. Another potential advantage might be its ability to develop a staff specialized in infrastructure finance, although this might be possible in more traditional settings, as the Build America Bureau illustrates.

Potential drawbacks of a national infrastructure bank include the limited number of suitable projects for support, politically driven project selection, and the duplication of existing programs, such as the TIFIA program. A bank may also not be the lowest-cost means of increasing infrastructure spending. The Congressional Budget Office notes that a special entity issuing its own debt would not be able to offer the low interest and issuance costs of the U.S. Treasury.

State Infrastructure Banks

One alternative to creating a national infrastructure bank could be enhancing the state infrastructure banks that already exist in many states. One of the biggest stumbling blocks to federally authorized SIBs has been capitalization. This is because federal grant funds that could be used to capitalize a SIB have typically been committed elsewhere. It is too soon to know if a FAST Act provision that provides authority for a TIFIA loan to a SIB will help in this regard. Other ideas that have been proposed but not enacted include dedicating federal funds to SIBs (H.R. 7, 112th Congress) and authorizing SIBs to issue a type of tax credit bond (S. 1250, 113th Congress).

Table 7. Infrastructure Bank Bills Introduced in the 114th Congress

	H.R. 413 (Rep. Delaney)	S. 1296 (Sen. Fischer)	H.R. 3337 (Rep. DeLauro)	S. 1589 (Sen. Warner)
Name	American Infrastructure Fund	American Infrastructure Bank	National Infrastructure Development Bank	Infrastructure Financing Authority
Type	"Wholly owned Government corporation"	"Wholly owned Government corporation"	"Wholly owned Government corporation"	"Wholly owned Government corporation"
Institutional location	Unclear	Unclear	Unclear[a]	Unclear
Governance	Nine-member board of trustees appointed by President with advice and consent of Senate; eight appointees chosen from candidates provided by congressional leaders	Five-member board of directors; four voting members, one each appointed by Majority and Minority leaders of the Senate, the Speaker and Minority Leader of the House; Secretary of Transportation is non-voting member	Seven-member board of directors, all appointed by President with advice and consent of Senate; President designates board chairperson and vice-chairperson	Seven-member board of directors, all appointed by President with advice and consent of Senate; President designates board chairperson
Eligible infrastructure projects	Construction, maintenance, improvement, or repair of a transportation, energy, water, communications, or educational facility	Highways	Transportation, energy, environmental, telecommunications[b]	Transportation, energy, water. Super-majority of board of directors may modify list of eligible project types.
Types of credit assistance	Loans, loan guarantees, equity investment	Loans, loan guarantees, grants	Loans, loan guarantees, payment of interest subsidy on American Infrastructure Bonds (AIB) issued by project sponsor	Loans, loan guarantees
Funding	$50 billion in bonds bought with repatriated foreign earnings; may issue its own bonds; fees	Federal highway formula funds remitted by states; repatriated foreign earnings; bonds	$25 billion appropriation; amounts equivalent to taxes paid by AIB holders; may issue own bonds; fees	$10 billion appropriation; fees; project sponsors' payment of the subsidy cost

Sources: H.R. 413, H.R. 3337, S. 1589, S. 1296, 114th Congress.

a. The Treasury Secretary would have some authorities over the NIDB, such as assisting in its establishment and consenting to the issuance of Public Benefit Bonds. Otherwise, the institutional location is not clear.

b. "Environmental" includes drinking water and wastewater treatment facilities, storm water management systems, open space management systems, wetland restoration, solid waste disposal facilities, hazardous waste facilities, and industrial site cleanup projects.

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