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Highway and Public Transportation Infrastructure Provision Using Public-Private Partnerships (P3s)

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March 5, 2014

Congressional Research Service

7-5700

www.crs.gov

R43410

Summary

Growing demands on the transportation system and constraints on public resources have led to calls for more private sector involvement in the provision of highway and transit infrastructure through what are known as “public-private partnerships” or “P3s.” A P3, broadly defined, is any arrangement whereby the private sector assumes more responsibility than is traditional for infrastructure planning, financing, design, construction, operation, and maintenance. Some P3s involve the leasing by the public sector to the private sector of *existing* infrastructure, while others provide for a private role in designing, financing, building, and operating *new* infrastructure.

P3 proponents argue that, in addition to injecting additional resources into surface transportation infrastructure, private sector involvement potentially reduces costs, project delivery time, and public sector risk, and may also improve project selection and project quality. Detractors, on the other hand, argue that the potential for P3s is limited, and that, unless carefully regulated, P3s will disrupt the operation of the surface transportation network, increase driving and other costs for the traveling public, and subvert the public planning process.

Evidence suggests that there is significant private funding available for investment in surface transportation infrastructure, but that it is unlikely to amount to more than 10% of the ongoing needs of highways over the next 20 years or so, and probably a much smaller share of transit needs. With competing demands for public funds, there is also a concern that private funding will substitute for public resources with no net gain in transportation infrastructure. The effect of P3s on the planning and operation of the transportation system is a more open question because of the numerous forms they can take, and because they are dependent on the detailed agreements negotiated between the public and private partners. Many highway and bridge P3s involve tolling, raising questions about equity and traffic diversion and, more broadly, concerns about whether there is a *national* public interest justifying federal oversight of P3s.

This report discusses two broad policy options for Congress as it considers reauthorizing federal surface transportation programs. The first would be to actively encourage P3s with program incentives as has been done in the Moving Ahead for Progress in the 21st Century Act (MAP-21; P.L. 112-141), but with relatively tight regulatory controls. This might include a requirement for an evaluation of the costs and benefits of the P3 against traditional public delivery methods, new requirements regarding public information and public involvement, and a prohibition against non-compete clauses in P3 agreements (which could prevent public authorities from providing new, competitive infrastructure near a privately controlled facility). The second broad option would be to aggressively encourage the use of P3s through program incentives and deregulation. This might include fewer restrictions on the tolling of Interstate Highways and the enhancement of existing financing programs that encourage P3s, such as the TIFIA (Transportation Infrastructure Finance and Innovation Act) program and private activity bonds, or new initiatives, such as the creation of a national infrastructure bank.

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Introduction

Growing demands on the transportation system and constraints on public resources have led to calls for more private sector involvement in the provision of highway and transit infrastructure through what are known as “public-private partnerships” or “P3s.” As defined by the U.S. Department of Transportation (DOT), “public-private partnerships (P3s) are contractual agreements formed between a public agency and a private sector entity that allow for greater private sector participation in the delivery and financing of transportation projects.”¹ Typically, the “public” in public-private partnerships refers to a state government, local government, or transit agency. The federal government exerts influence over the prevalence and structure of P3s through its transportation programs, funding, and regulatory oversight, but is usually not a party to a P3 agreement.

P3s can offer a means of injecting additional resources into highway and public transportation systems while reducing costs, project delivery time, and public sector risk. However, many individual surface transportation projects are not well suited to P3s, because, for example, they are too small to bear the transaction costs of a P3 or they offer limited opportunity for profit. P3s have the potential to distort transportation planning by directing public funds to projects that offer opportunity for private return rather than to projects that might offer greater social benefits—to construction of a new toll bridge, for example, rather than to repairing an existing highway. Depending upon the specific arrangements, a P3 may also leave the public sector bearing risks if a project does not perform as anticipated.

A wide variety of public-private partnerships in highways and transit exists, but this report focuses on the two types that are generating the most debate: (1) the leasing by the public sector to the private sector of *existing* infrastructure, sometimes referred to as “brownfield” facilities; and (2) the building, leasing, and owning of *new* infrastructure by private entities, sometimes known as “greenfield” facilities. A common, though not essential, element of greater private sector participation in highway infrastructure provision is the use of tolling. Vehicle tolls provide a revenue stream to retire bonds issued to finance a project and to provide a return on investment. Highway tolling can be implemented by public authorities, but it is widely believed that the privatization of transportation infrastructure will hasten the spread of tolling and may raise toll rates. Consequently, a discussion of P3s must include, as this report does, the issue of vehicle tolling and other direct pricing mechanisms.

¹ Federal Highway Administration, “P3 Defined,” <http://www.fhwa.dot.gov/ipd/p3/defined/index.htm>.

Background

Interest in public-private partnerships stems principally from concerns that public-sector resources are inadequate to sustain the nation's highway and transit infrastructure. A number of reports over the past decade have concluded that substantially increased funding of surface transportation infrastructure is needed to deal with physical deterioration, congestion, and future growth in demand for passenger and freight movements.² A 2014 report by DOT estimated that inflation-adjusted spending on highways needs to be between 23% and 46% above the 2010 level to improve conditions and performance, and that spending on transit systems would need to rise between 33% and 48% to expand and achieve a good state of repair.³ Similar problems were found by two congressionally mandated commissions.⁴

At the same time, the main revenue mechanism at the federal level, the fuels tax, is in trouble. The federal contribution to highway and transit infrastructure is largely derived from the highway trust fund, which relies primarily on revenue from motor fuels taxes.⁵ The tax rates are set on a per-gallon basis and were last raised in 1993, while a reduction in auto travel and improved vehicle fuel efficiency mean that drivers are purchasing fewer gallons of fuel. As a result, the amount of revenue flowing into the highway trust fund has not increased in line with construction costs (**Figure 1**). In its most recent estimates, the Congressional Budget Office (CBO) suggests that both the highway account and the mass transit account of the highway trust fund will approach a zero balance early in FY2015 absent congressional action.⁶

² See, for example, Transportation Research Board, National Cooperative Highway Research Program, *Future Financing Options to Meet Highway and Transit Needs*, NCHRP Web-Only Document 102 (Washington, DC, 2006), pp. 2-16, http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_w102.pdf.

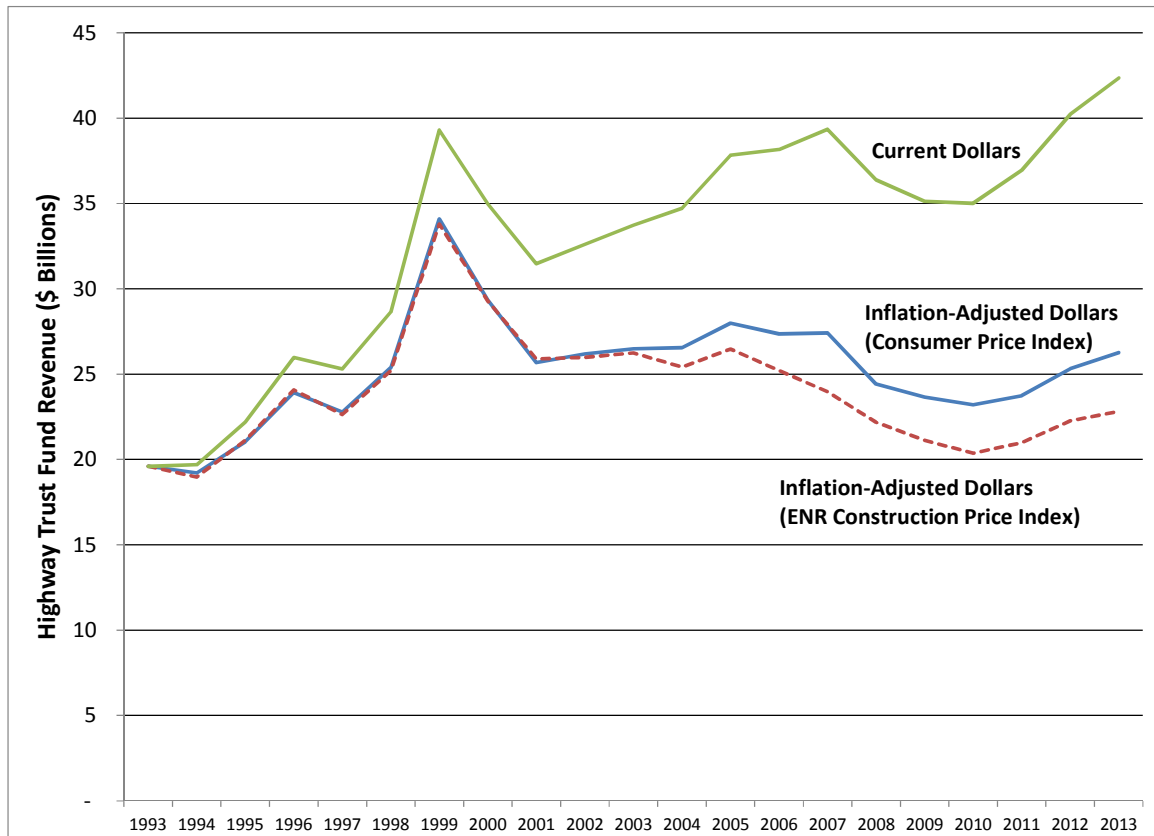
³ The percentages are calculated as increases on spending in 2010, which included substantial amounts deriving from the American Recovery and Reinvestment Act of 2009 (P.L. 111-5). Federal Highway Administration and Federal Transit Administration, *2013 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance*, 2014, p. ES-1, <http://www.fhwa.dot.gov/policy/2013cpr/pdfs/es.pdf>.

⁴ See National Surface Transportation Policy and Revenue Study Commission, *Transportation for Tomorrow*, Washington, DC, 2007, http://transportationfortomorrow.com/final_report/, and National Surface Transportation Infrastructure Financing Commission, *Paying Our Way: A New Framework for Transportation Finance*, Washington, DC, February 2009, http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Mar09FNL.pdf.

⁵ The federal tax on gasoline is currently 18.4 cents per gallon, of which 15.44 cents is deposited in the highway account of the highway trust fund, 2.86 cents in the mass transit account, and 0.1 cents in the leaking underground storage tank trust fund.

⁶ "Projections of Highway Trust Fund Accounts Under CBO's February 2014 Baseline," February 4, 2014, http://www.cbo.gov/sites/default/files/cbofiles/attachments/43884-2014-02-Highway_Trust_Fund.pdf.

Figure I. Total Highway Trust Fund Revenue, 1993-2013
(Current and Inflation-Adjusted 1993 Dollars)



Source: Federal Highway Administration, *Highway Statistics, 2012*; Federal Highway Administration, “Status of the Highway Trust Fund FY 2013”; *Engineering News-Record*, Construction Cost Index; and Bureau of Labor Statistics, Consumer Price Index.

Notes: Highway trust fund revenues do not include transfers from the general fund of the U.S. Treasury and the leaking underground storage tank trust fund.

The gap between fuel tax revenues and future infrastructure investment needs has stimulated interest in P3s. Yet the 2007 report of the National Surface Transportation Policy and Revenue Study Commission illustrated divergent views about the role P3s should play in U.S. transportation policy. The majority view, supported by 9 of the 12 commissioners, contended that severe underinvestment is the main problem facing transportation infrastructure; the majority urged greater use of P3s and other mechanisms to attract private capital as adjuncts to greater federal spending financed by major increases in fuels taxes. An opposing viewpoint, expressed by three commissioners including the then U.S. Secretary of Transportation Mary Peters, asserted that “a failure to properly align supply and demand, not a failure to generate sufficient tax revenues, is the essential policy failure” in transportation infrastructure provision.⁷ A key ingredient of change, in their view, should be market-based reforms allowing for much greater reliance on tolls and private sector participation, including P3s.

⁷ National Surface Transportation Policy and Revenue Study Commission, 2007, p. 60.

Types of Transportation Public-Private Partnerships

In the traditional method of providing transportation infrastructure, known as “design, bid, build,” the public sector decides there is a need for a new facility, plans its development with a wide variety of community input, organizes the funding and financing, lets out contracts to design and construct the facility, and operates and maintains the facility after completion. In contrast, a public-private partnership may involve private-sector participation in any or all phases of development and operation. The private-sector involvement may be predicated on a revenue stream from the operation of a facility, such as vehicle tolls, or it may be attracted by the promise of future government payments.

According to DOT, P3s in highway and transit infrastructure provision can be categorized into seven basic types.⁸ Of these, five have been used to construct new infrastructure. From least to most private responsibility, they are the following:

- **Private Contract Fee Service.** This type of partnership involves the public sector contracting for program management services involving major projects or even capital programs. Program management services include strategic planning, financial management, and coordination in the areas of environmental studies and approvals, design, and construction. An example of this type of P3 is the Louisiana TIMED program, which involved the widening of 536 miles of state highways, widening or new construction of three major bridges, and improvements to the Port of New Orleans and Louis Armstrong International Airport. A private partner, Louisiana TIMED Managers, was hired in 2002 to manage overall program delivery including the financing strategy, public outreach, scheduling, pre-construction activities, and construction administration.
- **Design-Build (DB).** This type of partnership arrangement combines two services that are traditionally separate, design and construction, into one fixed-fee contract. The public sector retains control of the facility as well as responsibility for planning, preliminary engineering, funding and financing, and post-construction operation and maintenance. An example of this type of P3 is the Tappan Zee Bridge in New York. The New York State Thruway Authority is paying Tappan Zee Constructors, LLC, \$3.1 billion to design and build the new bridge, which will be turned over to the Thruway Authority upon completion.
- **Design-Build-Operate-Maintain (DBOM).** These partnerships go even further than design-build P3s by adding private-sector responsibility for operation and maintenance once a facility goes into service. The public sector is still responsible for funding and financing, and retains the risks if operation costs more than anticipated or revenue falls short. The 21-mile Hudson-Bergen light rail system in New Jersey is an example of DBOM. The original fixed-price contract awarded to the 21st Century Rail Corporation in 1996 was for design and construction of the initial 10 miles by a specified date and then 15 years of operation and maintenance. The contract was subsequently renegotiated for extensions to the system and to lengthen the operation and maintenance agreement.

⁸ Federal Highway Administration, “P3 Defined,” <http://www.fhwa.dot.gov/ipd/p3/defined>.

- **Design-Build-Finance (DBF).** This adds *short-term* financing to a design-build contract. Payment by the public partner is typically deferred during the construction phase, requiring the private partner to arrange financing until the work is complete. As with DB projects, the public sector retains responsibility for planning, preliminary engineering, and operation and maintenance. An example of a DBF project is the I-75 expansion in Florida, which began in 2007 and was completed in 2010. For this project, payments began during construction and final payment was received about one year after completion.
- **Design-Build-Finance-Operate-Maintain (DBFOM).** In addition to the designing, building, and operation of an infrastructure project, these types of P3s transfer to the private sector much of the long-term financing responsibility. Debt financing leveraged with a revenue stream, such as tolls, is the most common financing mechanism in this type of P3. However, financing may be supplemented with public-sector grants and/or in-kind contributions such as right-of-way. The I-635 LBJ Managed Lanes project near Dallas, TX, is an example of a DBFOM. After completion, which is expected in 2016, the concessionaire, LBJ Infrastructure Group, will operate and maintain the facility, including the collection of tolls, until 2062.

In the case of existing infrastructure, DOT identified two basic types of P3s. These are the following:

- **O&M Concession.** The public agency turns over to the private sector responsibility for asset operation and maintenance, including service and management. The Anton Anderson Memorial Tunnel in Alaska, a road and rail tunnel, is an example of an O&M concession. VMS, the concessionaire, is responsible for toll collection, train and highway vehicle control, road and rail maintenance, and initial emergency response.
- **Long-Term Lease Agreement.** This type of partnership typically involves the leasing of an existing facility to a private company for a specified amount of time. The private partner usually pays an initial concession fee and must operate and maintain the facility to prescribed standards. The private company typically collects tolls on users and keeps the revenue to pay its bond holders and to generate a return on its equity investment. Examples of this type of P3 are the Chicago Skyway and the Indiana Toll Road.

Prominent Examples of Public-Private Partnerships

Chicago Skyway

The Chicago Skyway is a 7.8-mile elevated toll road connecting the Dan Ryan Expressway (I-94) to the Indiana Toll Road (I-90). Built in 1958 without federal funds, the Skyway was operated and maintained by the City of Chicago Department of Streets and Sanitation until 2004, when it was leased for 99 years to the Skyway Concession Company (SCC), a consortium controlled by two well-known foreign companies involved in infrastructure investment, Cintra (Spain) and Macquarie Infrastructure Group (Australia). SCC won this concession with a bid of \$1.83 billion in a competition that included four other detailed proposals. The city of Chicago and SCC signed a contract on October 27, 2004, and SCC began operating the Skyway on January 24, 2005.

According to the lease agreement, SCC must operate and maintain the Skyway to certain standards, and, within limits, can collect and retain all toll revenue. For cars, tolls were limited to \$2.50 through 2007, gradually rising to \$5.00 in 2017. After that, tolls can be increased each year by the greater of 2%, the percentage change in the government's Consumer Price Index (CPI), or the percentage increase in per capita nominal Gross Domestic Product (GDP). As of February 2014, the toll for cars was \$4. Of the single \$1.83 billion upfront payment to the city of Chicago, \$463 million was used to pay the outstanding debt on the road, \$392 million was used to pay down the city's general obligation debt, and \$875 million was placed into long-term and medium-term reserve funds.⁹

One criticism of the Chicago Skyway P3 is that the lease diverts resources from transportation to other uses. The city of Chicago contests this view, noting that much of the lease revenue was placed in reserve funds that generate interest revenue roughly equal to what the city formerly received in toll revenue. In any case, the city notes, when the Skyway was under public control excess toll revenues were directed to the city's general fund and were not necessarily used for transportation.¹⁰ The U.S. Government Accountability Office (GAO) has stated that the city's credit rating improved when it reduced its general obligation debt, thereby reducing the future cost of borrowing for capital projects.¹¹

Indiana Toll Road

The Indiana Toll Road (ITR) is a 157-mile segment carrying an Interstate designation that runs across northern Indiana linking with the Chicago Skyway in the west and the Ohio Turnpike in the east.¹² Built largely without federal funds and opened in 1956, the toll road was operated by the Indiana DOT from 1981 to 2006. After a bidding process involving 11 proposals, a 75-year lease concession was awarded to the Indiana Toll Road Concession Company (ITRCC), a partnership between Cintra and Macquarie Infrastructure Group, for a single lump-sum payment of \$3.8 billion. Cintra and Macquarie invested \$374 million each and seven banks provided the remaining \$3 billion.¹³

ITRCC began operating the facility on June 29, 2006. Tolls are regulated by the concession agreement. For example, the toll for a two-axle vehicle traveling the length of the road, \$4.65 when the ITRCC took control, was limited to a maximum of \$8.00 through June 30, 2010. After an initial adjustment in 2010, toll increases in subsequent years will be limited to the greater of 2%, the percentage change in the CPI, or the percentage increase in per capita nominal GDP. In February 2014, the toll for a two-axle vehicle traveling the length of the Indiana Toll Road was \$9.70.¹⁴

⁹ 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), p. 21, <http://www.gao.gov/new.items/d0844.pdf>; see also, "The Pros and Cons of Toll Road Leasing," *Public Works Financing*, Vol. 2005, May 2006, p. 1-11.

¹⁰ Schmidt, John, "The Pros and Cons of Toll Road Leasing," *Public Works Financing*, Vol. 2005, May 2006, p. 9.

¹¹ Government Accountability Office, 2008, p. 21.

¹² Government Accountability Office, 2008, p. 85.

¹³ Federal Highway Administration, "Project Profiles: Indiana Toll Road," http://www.fhwa.dot.gov/ipd/project_profiles/in_indianatoll.htm.

¹⁴ A two-axle vehicle with an electronic transponder pays \$4.65 during a toll rate rebate period lasting until June 30, 2016. The toll is the rate charged when the ITR was leased to the concessionaire. The revenue lost to the concessionaire (continued...)

As part of the contract, ITRCC agreed to upgrade the highway in specific ways, such as implementing electronic tolling and adding a third lane in congested areas. The proceeds from the lease were used by Indiana DOT to fund a large number of highway construction and preservation projects under the state's 10-year "Major Moves" initiative.¹⁵ In addition, the seven counties through which the toll road passes received payments of between \$15 million and \$40 million for local transportation projects.

Northern Virginia I-495 HOT Lanes

In December 2007, the Virginia Department of Transportation (VDOT) signed an agreement with a private consortium to build and operate four new high-occupancy toll (HOT) lanes, two in each direction, on a 14-mile stretch of the Capital Beltway (I-495) from the Springfield Interchange to north of the Dulles Toll Road. The partnership between VDOT and the private consortium is an example of a Design-Build-Finance-Operate-Maintain (DBFOM) P3. The contract is a fixed-price, fixed time, design-build contract, with an 80-year lease for operations, maintenance, and toll collection. The HOT lanes opened in November 2012 and are operated using congestion pricing technology that collects a variable toll based on traffic levels. High-occupancy vehicles with at least three passengers, motorcycles, buses, and emergency vehicles travel without charge.

The private consortium of Fluor Corporation and Transurban financed most of the \$2 billion project with \$348 million in equity and another \$1.2 billion borrowed using federal credit assistance. This involved a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan of \$589 million and \$589 million in tax-exempt private-activity bonds.¹⁶ The state committed \$400 million in grant funding to the project for a number of additional highway improvements, including the final phase of the Springfield Interchange, improvements to the I-66 interchange, reconstruction of some bridges on the Beltway, and participation in a regional congestion plan.

Las Vegas Monorail

The ability to impose tolls on heavily trafficked roads provides an obvious source of returns on private investment. Public transportation systems, on the other hand, almost always cost more to run than can be generated from fares and other operating revenues. This makes it difficult to develop transit systems without significant public sector support, as the Las Vegas Monorail project demonstrates. The monorail is a four-mile system that connects hotels and other attractions on the Las Vegas Strip. Unlike most transit P3s, which have direct government ownership and financial support, the Las Vegas Monorail has been a private venture, owned and operated by the Las Vegas Monorail Company, a non-profit corporation. The original segment of the system, operating between two major hotels, was opened in 1995. The system was expanded in 2004 with financial and in-kind contributions from hotels and resorts in addition to the sale of tax-exempt bonds that are being repaid with passenger fares and advertising revenues.¹⁷

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during this rebate period is being paid by the Indiana Finance Authority.

¹⁵ Indiana Department of Transportation, Major Moves Website, <http://www.in.gov/indot/2407.htm>.

¹⁶ Federal Highway Administration, "Project Profiles: I-495 Capital Beltway HOT Lanes," http://www.fhwa.dot.gov/ipd/project_profiles/va_capital_beltway.htm.

¹⁷ General Accounting Office (now the Government Accountability Office), *Highways and Transit: Private Sector Sponsorship of Investment in Major Projects Has Been Limited*, GAO-04-419 (Washington, DC, March 2004), pp. 52- (continued...)

A proposal to extend the system to McCarran International Airport was approved by Clarke County in November 2006. Despite this approval, the project does not appear to have attracted the approximately \$500 million needed to finance construction.¹⁸ Financial problems with the existing system may be to blame. The monorail has had difficulty meeting its operating and debt expenses, a problem exacerbated by the 2007-2009 recession. Newspaper reports in 2008 stated that the system was failing to meet its operating and debt expenses by about \$30 million annually and that the company was drawing down its reserve funds.¹⁹ In January 2010, while continuing to provide service, the Las Vegas Monorail Company filed for Chapter 11 bankruptcy protection.²⁰ The company emerged from bankruptcy in 2012 with its debts of \$757 million, mostly outstanding bonds, reduced to \$13 million.²¹ The monorail carried 4.2 million passengers in 2013 and generated \$18.4 million of revenue, as compared to 10.3 million passengers in the peak year of 2005, when revenue reached \$30.2 million.²²

Missouri DOT Safe and Sound Program

An example of a design-build P3 is the replacement of 554 mostly small bridges carrying local roads by a single contractor as part of the Missouri Department of Transportation's (MoDOT's) Safe and Sound Program.²³ MoDOT awarded KTU Constructors a \$487 million contract to complete the work by December 2013. Work was completed in November 2012. MoDOT financed the project by selling Grant Anticipation Revenue Vehicle (GARVEE) bonds. The bonds are being repaid in 24 annual installments of \$50 million using a portion of the state's annual highway apportionment. This Design-Build P3 was originally proposed as a Design-Build-Finance-Maintain P3. The original P3 was to include a long-term maintenance contract element and private activity bonds as a financing mechanism. Problems in the financial markets in 2008 made the original proposal unaffordable.²⁴

Texas SH-130

Designed to relieve congestion on I-35, SH-130 is a 90-mile, four-lane toll road on the east side of Austin, TX, connecting I-35 in the north and I-10 in the south. In 2007, the Texas Department of Transportation entered into an agreement with a concessionaire, the SH 130 Concession Company, to design, build, finance, operate, and maintain a 40-mile extension to the existing 50

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53, <http://www.gao.gov/new.items/d04419.pdf>.

¹⁸ McCabe, Francis, "Monorail Extension Going Nowhere Fast," *Las Vegas Review-Journal*, January 13, 2008.

¹⁹ McCabe, Francis, "Monorail Tax Break Renewed," *Las Vegas Review-Journal*, March 4, 2008.

²⁰ Adrienne Packer, "LV Monorail Files for Bankruptcy," *Las Vegas Review-Journal*, January 14, 2010.

²¹ Stutz, Howard, "Monorail looks at new course," *Las Vegas Review-Journal*, December 26, 2012.

²² <http://www.lvmonorail.com/corporate/2013-ridership-revenue-data/>; <http://www.lvmonorail.com/corporate/2005-ridership-and-revenue-data/>.

²³ The average bridge in the replacement program was 150 feet long and 24 feet wide. The program also included the rehabilitation of 248 bridges using a design-bid-build procurement costing \$198 million. See Missouri Department of Transportation, Safe and Sound Program Website, <http://www.modot.gov/safeandsound/index.htm>.

²⁴ Missouri Department of Transportation, Safe and Sound Program Website, <http://www.modot.gov/safeandsound/index.htm>; Federal Highway Administration, "P3 Update: \$3.37 Billion in Conditional Private Activity Bond Allocations Made," *Innovative Finance Quarterly*, Vol. 13, No. 2, Spring 2007, http://www.fhwa.dot.gov/IPD/finance/resources/general/if_quarterly/spring_07.htm.

miles of SH 130 on the south-east side of Austin. The agreement specified a 50-year concession from the opening of the new segment, which occurred in 2012. The \$1.3 billion project was primarily financed by the concessionaire with \$686 million in senior bank loans, \$210 million in private equity, and a \$430 million TIFIA loan.²⁵

Since its opening in 2012, and despite a speed limit of at least 80 miles per hour, the 40-mile toll road extension 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 is paying the concessionaire \$6 million as compensation for revenue lost due to reduced truck tolls.²⁶ In October 2013, the project's debt was substantially downgraded and a rating agency stated the concessionaire is at risk of defaulting in 2014. This may force the state to terminate the concession and take full responsibility for the road. These problems also imperil the TIFIA loan to the project.²⁷

Florida I-595 Express Lanes

To relieve major highway congestion, the Florida Department of Transportation (FDOT) entered into a P3 agreement to make major improvements to I-595, a stretch of road near Fort Lauderdale linking I-75 and Florida's Turnpike to the west and I-95 to the east. The centerpiece of the project is the construction of three reversible toll lanes in the median of I-595. Started in 2010, construction is expected to be completed in 2014. The agreement requires the concessionaire, I-595 Express LLC, to design, build, finance, operate, and maintain the facility for 35 years. The \$1.8 billion project was mostly financed by the concessionaire with \$781 million in senior bank loans, a \$603 TIFIA loan, and \$208 million in equity.²⁸ The concessionaire did not accept revenue risk associated with the payment of vehicle tolls. Instead, the private-sector financing is backed by "availability payments," regular payments made by FDOT to the private entity based on quality and performance measured against negotiated standards. Toll rates on the new express lanes will be set by FDOT, and revenue collected will be retained by the state.²⁹

The Growth of Public-Private Partnerships

Through most of the 20th century, highway and transit construction were supported almost entirely by public funding, particularly from the federal government.³⁰ The private sector's role was largely limited to bidding on and building what the public sector had planned, designed, and

²⁵ Federal Highway Administration, "Project Profiles: SH-130 (Segments 5-6)," http://www.fhwa.dot.gov/ipd/project_profiles/tx_sh130.htm.

²⁶ *Public Works Financing*, "SH 130 Liquidity Alarm," March 2013, p. 22.

²⁷ *Tollroads News*, "At Year 1 TX130/5&6 has very little traffic (ADT<6k), revenues low, Moody's thinks may default mid-2014," October 22, 2013, <http://tollroadsnews.com/news/at-year-1-tx13056-has-very-little-traffic-adt>.

²⁸ Federal Highway Administration, "Project Profiles: I-595 Corridor Roadway Improvements," http://www.fhwa.dot.gov/ipd/project_profiles/fl_i595.htm.

²⁹ Florida Department of Transportation, I-595 Improvements, District 4, Project Overview, February 3, 2014, http://www.i-595.com/documents/PressRoom/Newsletters/Archived-Overviews/2014-02-03_I-595_Project_Summary.pdf.

³⁰ Federal Highway Administration and Federal Transit Administration, *2008 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance*, Washington, DC, 2009, ch. 6.

financed. The 1980s, however, saw federal spending on highways and transit projects grow at a slower rate than inflation, and the federal share of total capital spending on highways and transit declined.³¹ These trends spurred interest in the use of public-private partnerships, as states and localities, particularly those in fast-growing parts of the country, searched for new ways to fund and build transportation infrastructure.

This interest was demonstrated in two state-level policy initiatives. With developments in automated toll collection technology that reduced both the cost of collecting tolls and the associated delays for motorists, seven states approved legislation by the late 1980s to allow private investment in highway projects on which the private partners could collect tolls.³² Two of the earliest projects developed under these new rules were the Dulles Greenway in Virginia and SR-91 in California, which both opened in 1995. According to DOT, 33 states and Puerto Rico currently have general P3 enabling legislation.³³ In transit, new revenue was sought from the development of private facilities on or over transit agency land, a process known as joint development.³⁴ For example, joint development was used in the construction of offices, retail space, and a hotel surrounding the Washington Metropolitan Area Transit Authority's Bethesda, MD, station. The station opened in 1984 and the mixed-use development was completed in 1985. The air-rights lease for this development generates \$1.6 million annually in rents for the transit agency.³⁵

Federal Legislation

The growing state and local interest in seeking private investment in transportation prompted Congress to explore the inclusion of P3s in federal surface transportation programs starting in the late 1980s. This has resulted in legislative change in numerous areas.

Highway Tolling

In the Surface Transportation and Uniform Relocation Assistance Act of 1987 (P.L. 100-17), Congress established a pilot program allowing federal funds to be used in construction or reconstruction of toll facilities, with a maximum federal share of 35%. However, these new or reconstructed facilities had to be publicly owned and operated and Interstate Highways were specifically excluded. Four years later, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA; P.L. 102-240) removed the pilot program status, allowed states to convert non-tolled roads, bridges, and tunnels to tolled facilities, raised the federal cost share to 50%, and allowed for private ownership and operation. ISTEA also established the Congestion Pricing Pilot

³¹ Ibid., exhibits 6-7, 6-9, 6-29, and 6-30.

³² Benjamin G. Perez and James W. March, "Public-Private Partnerships and the Development of Transport Infrastructure: Trends on Both Side of the Atlantic," Paper Presented at the First Conference on Funding Transport Infrastructure, Banff, Alberta, Canada, August 2-3, 2006, http://financecommission.dot.gov/Documents/Background%20Documents/perez_banff_ppp_final.pdf.

³³ Federal Highway Administration, Public-Private Partnerships Website, "P3 Legislation," http://www.fhwa.dot.gov/ipd/p3/state_legislation/index.htm.

³⁴ U.S. Department of Transportation, *Report to Congress on Public-Private Partnerships*, Washington, DC, 2004, p. 36, <http://www.fhwa.dot.gov/reports/pppdec2004/pppdec2004.pdf>.

³⁵ Transportation Research Board, Transit Cooperative Research Program, *Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*, TCRP Report 102, Washington, DC, 2004, http://onlinepubs.trb.org/onlinepubs/trcp/trcp_rpt_102.pdf.

Program, which allowed federal funds to be used in the implementation of congestion pricing (variable tolls) on up to five projects, of which a maximum of three could be Interstate Highways.

The Congestion Pricing Pilot Program was continued in the Transportation Equity Act for the 21st Century (TEA-21; P.L. 105-178), enacted in 1998, but expanded to allow 15 projects and renamed the Value Pricing Pilot Project. Additionally, TEA-21 created another pilot program, the Interstate System Reconstruction and Rehabilitation Pilot Program, for up to three toll projects on the Interstate Highway system. The three slots were filled by I-70 in Missouri, I-81 in Virginia, and I-95 in North Carolina, but none of the proposed projects has been completed as a toll facility.

In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA; P.L. 109-59) allowed conversion of High Occupancy Vehicle (HOV) lanes to High Occupancy Toll (HOT) lanes. SAFETEA also created two new programs. The Express Lane Demonstration program authorized up to 15 new tolled facilities from the conversion of existing HOV facilities or where new lanes are constructed. The program explicitly provided for private investment. Five tolling agreements were signed under the program and will continue in force, although the program expired on September 30, 2012. The Interstate System Construction Toll Pilot program authorized tolling of three new Interstate Highways. SAFETEA also extended and modified the Value Pricing Pilot Program by setting aside a portion of the authorized funding for congestion pricing projects that do not involve highway tolls, such as parking pricing strategies and pay-as-you drive pricing involving innovative forms of car ownership and insurance.³⁶

The most recent surface transportation authorization law, the Moving Ahead for Progress in the 21st Century Act (MAP-21; P.L. 112-141), allows states to impose tolls on new federally aided bridges, tunnels, and highways, including Interstate Highways. Tolls may also be imposed on new lanes of an existing free highway, bridge, or tunnel, including Interstates, as long as the number of free lanes is unchanged. Furthermore, tolls may be placed on a reconstructed highway, bridge, or tunnel except on the Interstate system. MAP-21 also did away with the requirement that public authorities execute a toll agreement with FHWA on a federal-aid highway. A tolling agreement was required prior to imposing tolls on a federal-aid highway or before using federal-aid funds on an existing toll facility.

A substantial number of toll-based projects have been initiated since the passage of ISTEA, and this activity appears to have accelerated. A survey sponsored by the Federal Highway Administration (FHWA) found that from the passage of ISTEA through December 2008, a total of 235 toll-based improvement projects were initiated in 32 states and one U.S. territory.³⁷ About 20% of the toll-based projects identified in the survey involved a public-private partnership.

Innovative Highway Finance

Another way in which changes in federal law have encouraged P3s is through developments in innovative financing, a term that covers a broad set of ways to finance infrastructure outside the usual methods involving tax-funded appropriations, intergovernmental grants, and government

³⁶ Federal Highway Administration, "Value Pricing Pilot Program," http://www.ops.fhwa.dot.gov/tolling_pricing/value_pricing/index.htm.

³⁷ Federal Highway Administration, *Current Toll Road Activity in the U.S.: A Survey and Analysis* (Washington, DC, 2009), https://www.fhwa.dot.gov/ipd/pdfs/2008_toll_activity_white_paper.pdf.

revenue bonds.³⁸ Language in ISTEA led to the creation in 1994 of the Innovative Finance Test and Evaluation (TE-045) program, which sought to implement and evaluate new highway financing tools. Some of the ideas developed in this experimental program were subsequently enacted in the National Highway System Designation Act of 1995 (P.L. 104-59), including the State Infrastructure Bank (SIB) pilot program, which permitted certain states to set up revolving funds with federal money in an attempt to leverage other public and private resources for infrastructure projects.

Congress advanced private participation in surface transportation projects in the Transportation Infrastructure Finance and Innovation Act (TIFIA), adopted in 1998 as part of TEA-21. TIFIA provides federal credit assistance to leverage non-federal funding, including investment from the private sector. Over time, Congress has authorized TIFIA to assist projects smaller than originally intended and has expanded its coverage to include freight rail and intermodal facilities.³⁹ MAP-21 greatly expanded the TIFIA program, authorizing \$750 million for FY2013 and \$1 billion in FY2014. This authorization provided DOT with the capacity to lend about \$16 billion.

SAFETEA also designated certain private transportation activities as eligible for federally tax-exempt state and local bond financing. Historically, federal law has provided investors a federal income tax exemption on state and local government bonds issued to finance public activities, such as building a school, enabling the borrowers to take advantage of low interest rates, whereas private activity bonds issued to finance activities that are less public in nature pay taxable interest and therefore offer higher interest rates. Over the years, some types of private activities have been designated “qualified private activities,” allowing their sponsors to access the tax-exempt bond market.⁴⁰ Airports, docks and wharves, mass commuting facilities, and high-speed intercity rail facilities, highways, and surface freight transfer facilities all have been designated as qualified private activities.

Congress has limited the amount of qualified private activity bonds that can be issued in each state and for certain activities. SAFETEA included a \$15 billion limit on bond issuance for qualified highway or surface freight transfer facilities, although bonds issued under this section are exempt from the state volume caps that exist for the general issuance of private activity bonds. Under the law, the Secretary of Transportation is charged with deciding how to allocate the limited capacity among entities desiring to issue private activity bonds. It is possible that the \$15 billion cap will be reached in the first quarter of FY2015,⁴¹ which could inhibit creation of transportation infrastructure public-private partnerships. The Obama Administration’s FY2014 budget proposal included a provision to increase the limit for transportation PABs to \$19 billion.

Innovative Highway Contracting

Since 1990, FHWA has undertaken Special Experiment Projects involving innovative contracting methods designed to reduce costs. One of these, design-build contracting, was made a permissible

³⁸ Federal Highway Administration, *Innovative Finance Primer*, Washington, DC, 2002, <http://www.fhwa.dot.gov/ipd/pdfs/finance/ifprimer.pdf>.

³⁹ K.J. Hedlund and N.C. Smith, “SAFETEA-LU Promotes Private Investment in Transportation,” report prepared for Nossaman, Guthner, Knox, & Elliott, LLP, August 1, 2005, <http://www.nossaman.com/safetealu-promotes-private-investment-transportation>.

⁴⁰ CRS Report RL31457, *Private Activity Bonds: An Introduction*, by Steven Maguire.

⁴¹ *Public Works Financing*, “A Second Warning on PABs Shortage,” December 2013, p. 1.

method of contracting in the federal-aid highway program in TEA-21, albeit with certain conditions. These conditions included limiting design-build contracting to projects over \$50 million (over \$5 million for Intelligent Transportation System projects) and restricting the start of final design until a project has met the requirements of the National Environmental Policy Act (NEPA), including environmental reviews. In 2005, Congress eliminated the \$50 million floor for design-build contracts and permitted agencies to enter into contracts with private firms before NEPA approval. It also set a 180-day limit on the time for challenging federal approvals, including environmental approvals. This limitation was aimed at reducing risk and may be particularly important for projects financed by private investors.⁴²

MAP-21 included several other provisions to encourage the creation of P3s at the state and local level. These provisions require DOT to compile and make available best practices in the use of P3s and to develop model contracts, and allow DOT to provide technical assistance in analyzing and drafting P3 agreements.

Innovative Transit Financing

One of the earliest legislative initiatives in mass transit, the National Urban Mass Transportation Act of 1974 (P.L. 93-503), explicitly encouraged private financial participation in transit by permitting federal assistance for joint development projects, which typically involved commercial or residential development of land near transit stations. These types of projects, however, were discouraged by an administrative decision by the Urban Mass Transportation Administration (now known as the Federal Transit Administration or FTA) in the 1980s that federal subsidies should take contributions from private partners into account, which effectively meant that private dollars committed to a project would replace federal dollars. Congress directed FTA to revise this policy to allow land acquired with federal funding to be used in joint development projects and income derived from such projects to be used for transit operation.⁴³ TEA-21 then made joint development eligible for reimbursement in federal transit grant programs.⁴⁴ The law pertaining to joint development was last modified by SAFETEA, with regulations promulgated in 2007. Among other things, SAFETEA added intercity bus and rail terminals as permitted uses for joint development authority.⁴⁵

Innovative Contracting in Transit

ISTEA furthered the use of P3s in transit by initiating a demonstration program to explore the use of DB/DBOM in the New Starts program. FTA picked five projects to be a part of the demonstration program: Los Angeles Union Station Intermodal Terminal, Baltimore Light Rail Transit System Extensions, San Juan Tren Urbano, Bay Area Rapid Transit (BART) Airport Extension, and the Northern New Jersey Hudson-Bergen light rail project. ISTEA also directed

⁴² Hedlund and Smith, 2005.

⁴³ Federal Transit Administration, *Innovative Financing Techniques for America's Transit Systems* (Washington, DC, 1998), http://libraryarchives.metro.net/DPGTL/publications/1998_innovative_financing_techniques_americas_transit_system.pdf.

⁴⁴ Federal Transit Administration, "Joint Development Guidance," 71 *Federal Register*, 5107-5109, January 31, 2006, <http://edocket.access.gpo.gov/2006/pdf/06-871.pdf>.

⁴⁵ Federal Transit Administration, "Notice of Final Agency Guidance on the Eligibility of Joint Development Improvements Under Federal Transit Law," 72 *Federal Register*, 5788-5800, February 7, 2007, <http://edocket.access.gpo.gov/2007/pdf/E7-1977.pdf>.

FTA to issue guidance on the use of DB/DBOM in the Federal New Starts program. More recently, SAFETEA authorized the Secretary of Transportation to establish a pilot program to explore the use of P3s in new transit rail or bus rapid transit projects. This program was known as the Public-Private Partnership Pilot Program, or “Penta-P.” The East Corridor and Gold Line Corridor Rail projects in Denver, CO, BART’s Oakland Airport Connector, and two BRT projects in Houston, TX, were selected to participate in the program.

Issues for Congress

The widespread interest in encouraging P3s in surface transportation raises a number of important issues for Congress. These fall into two main categories: (1) the extent to which P3s can help finance the surface transportation system; and (2) the effects of long-term concessions on the planning, operation, and use of the surface transportation system. P3s offer a number of benefits for states and localities, but they also present a number of trade-offs and potential problems. Consequently, there is not one easily identifiable “public interest” but multiple stakeholders with overlapping interests that must be weighed against each other. The public interest in P3s has been protected on a project-by-project basis through the terms of concession agreements. Some, including GAO, have suggested that a more systematic approach to identifying and evaluating the public interest in P3s needs be developed and employed, as has been done in other countries such as Australia.⁴⁶ As part of such an effort, the federal government might need to identify and evaluate the *national* public interest in highway projects that employ a P3.

Can P3s Provide Additional Resources for Transportation?

P3s are often touted as a means of providing resources for the provision of transportation infrastructure beyond those provided by government. In many cases, a P3 is designed to offer a return to private-sector capital from a project-related revenue stream such as vehicle tolls, container fees, or, in the case of transit station development, building rents. Of course, the public sector could raise revenue from transportation facilities in the same ways. The putative advantages of P3s are their ability to attract additional capital for infrastructure and to build and operate transportation facilities more efficiently than the public sector.⁴⁷

The private share of a P3 can be financed with both debt (bond) and equity financing. Because equity investors have an opportunity to share in the profits, they may be less conservative than investors who would buy the municipal bonds used to finance a bridge or a transit system. In addition, the opportunity to invest in equity or taxable debt may lure pension funds and foreign investors, which generally are not subject to U.S. federal income tax and therefore do not benefit from the tax exclusion of interest on municipal bonds. Private concessions are often for terms longer than traditional municipal bond maturities of 25, 30, or 40 years, allowing the concessionaire to raise capital from very long-term investors. Based on these principles, one estimate suggests that the city of Chicago, which raised \$1.83 billion for a 99-year concession of

⁴⁶ Government Accountability Office, 2008; see also Jeffrey N. Buxbaum and Iris N. Ortiz, “Protecting the Public Interest: The Role of Long-Term Concession Agreements for Providing Transportation Infrastructure,” USC Keston Institute for Public Finance and Infrastructure Policy, Research Paper 07-02, June 2007.

⁴⁷ Samuel, Peter, “The Role of Tolls in Financing 21st Century Highways,” *Reason Foundation Policy Study 359*, May 2007, <http://reason.org/files/7227d934ecfa04d5db576c126f0385a6.pdf>.

the Chicago Skyway, could have raised only \$800 million by selling municipal bonds backed by Skyway revenues.⁴⁸

P3 agreements involving toll facilities often include provisions regarding future toll increases. With such agreements, investors may be more confident in the ability of a private operator than a public operator to raise tolls in the future, given that toll increases at publicly controlled facilities are often politically contentious. Additionally, investors may believe a private operator will be more able to control operating costs and thereby increase its profit from any given level of tolls.⁴⁹

Even if such advantages make P3s attractive to private capital, it is unclear how much private money could be attracted to investment in surface transportation infrastructure. In principle, hundreds of billions of dollars may be available for infrastructure development around the world.⁵⁰ So far, however, the amount used to provide long-term financing through P3s appears to be small. According to one study, from 1989 through early 2011 there were 96 transportation P3s worth a total of \$54.3 billion in the United States. Of these, 11 projects, built at a total cost of \$12.4 billion, included a long-term private financing component.⁵¹ This suggests that the potential scale of private investment may be relatively modest when viewed in the context of total highway and transit infrastructure spending.⁵²

Tolling, both public and private, accounts for about 5% of highway revenues. The American Association of State Highway and Transportation Officials (AASHTO) has projected that highway tolling may eventually be able to generate between 7% and 9% of future national highway investment needs.⁵³ The potential of P3s in transit financing is likely smaller. As most transit lines cannot cover operating costs from fares, they are less tempting targets for private investment; transit P3s either involve availability payments or development of stations at which private investors can benefit from control of nearby land, leaving the public sector to provide the bus or rail lines that serve the stations. This suggests that P3s are likely to generate less than this estimated level of 7% to 9% of total investment needs for roads and transit.

⁴⁸ Ibid., p. 29.

⁴⁹ Poole, Robert W. "Tolling and Public-Private Partnerships in Texas: Separating Myth from Fact," Reason Foundation Working Paper, May 2007.

⁵⁰ See, for example, U.S. Department of Transportation, "Over \$400 Billion Available Today for Road, Bridge and Transit Projects U.S. Secretary of Transportation Mary E. Peters Announces," Press Release, DOT 43-08, Wednesday, March 26, 2008; Orski, K., "A \$400 Billion Solution," *Innovation Briefs*, Vol. 19, No. 8, March 10, 2008; and Robert Dove, Managing Director, Carlyle Group, "Rebuilding the Nation's Infrastructure: Leveraging Innovative Financing to Supplement Federal Investment," Testimony, Senate Committee on Commerce, Science, and Transportation, 113th Congress, September 24, 2013, http://www.commerce.senate.gov/public/?a=Files.Serve&File_id=ab2d306e-c932-40d7-8d02-7054fae1461a.

⁵¹ William Reinhardt, *The Role of Private Investment in Meeting U.S. Transportation Infrastructure Needs*, The American Road & Transportation Builders Association Transportation Development Foundation, Washington, DC, May 2011, <http://www.artba.org/mediafiles/transportationp3whitepaper.pdf>.

⁵² Transportation Research Board, 2006, p. 4-1; see also Organisation for Economic Cooperation and Development (OECD) and International Transport Forum, *Transport Infrastructure Investment: Options for Efficiency* (Paris, 2008); and General Accounting Office (now the Government Accountability Office), March 2004.

⁵³ Testimony of Pete Rahn, Director of the Missouri Department of Transportation and President of the American Association of State Highway and Transportation Officials (AASHTO), in U.S. Congress, House Committee on Transportation and Infrastructure, Hearing on State Perspectives on Transportation for Tomorrow: Recommendations of the National Surface Transportation Policy and Revenue Study Commission, February 13, 2008.

A related point, and one not fully considered in these estimates, is that the institution of a toll tends to suppress or divert travel demand. Widespread tolling could lead travelers to switch to other modes, change the time of a trip to avoid a charge, or forgo travel altogether. An estimate by DOT suggests that immediate imposition of widespread congestion pricing could reduce highway investment needs by as much as 30% from baseline estimates because of lower vehicle miles traveled.⁵⁴ Of course, there is little likelihood that such widespread highway pricing could be instituted anytime soon, but the DOT estimate suggests that the ability to finance highway needs through tolls may have limitations.

Will P3s Divert Resources from the Transportation Sector?

State and local governments have significant demands for funding in many different areas. It is possible that asset leases of transportation facilities could be used to fund a wide range of government services other than transportation, a prospect that one expert has referred to as “revenue extraction.”⁵⁵

Diversion of resources may also be of more general concern in that new private resources attracted to transportation infrastructure may substitute for public resources in the transportation sector rather than supplementing them, with no net gain in funding. In a study of the effect of federal highway funding increases on state highway funding between 1982 and 2002, GAO observed a substitution effect, particularly between 1998 and 2002, when a 40% increase in federal capital spending was accompanied by a 4% drop in state and local capital spending.⁵⁶

Are There Other Resource Benefits?

P3s may generate new resources for transportation infrastructure in two other ways. First, they may improve resource efficiency through improved management and innovation in construction, maintenance, and operation, in effect providing more infrastructure for the same price. Private companies may be more able to examine the full life-cycle cost of investments, whereas public agency decisions are often tied to short-term budget cycles. On the other hand, some or all of these savings may not materialize if the public sector has to spend a substantial amount of time on procurement, oversight, and disputes that may result in litigation. GAO found in 2008 that most state governments did not have the necessary capacity to manage P3 contracts.⁵⁷ To aid states, MAP-21 required DOT to “develop standard public-private partnership transaction model contracts for the most popular types of public-private partnerships for the development, financing, construction, and operation of transportation facilities.”

Second, through P3s the private sector may bear many of the financial risks of building, maintaining, and operating infrastructure. Such risks abound. One major risk is that construction will cost more and/or take longer than foreseen. Another is that a facility to be financed by tolls

⁵⁴ Federal Highway Administration and Federal Transit Administration, 2012, p. 9-28.

⁵⁵ Steve A. Steckler, “Squeezing Cash from Concrete: Navigating the Perils of Turnpike Privatization,” Infrastructure Management Group, <http://www.imggroup.com/transportation/documents/PennsylvaniaTollwayLeasing.pdf>.

⁵⁶ Government Accountability Office, *Federal-Aid Highways: Trends, Effect on State Spending, and Options for Future Program Design*, GAO-04-802 (Washington, DC, 2004), <http://www.gao.gov/new.items/d04802.pdf>.

⁵⁷ Government Accountability Office, *Federal-Aid Highways: Increased Reliance on Contractors Can Pose Oversight Challenges for Federal and State Officials*, GAO-08-198 (Washington, DC, 2008), <http://www.gao.gov/new.items/d08198.pdf>.

will have less demand than estimated, and will fail to generate the expected revenue. 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 the risk transfer may provide greater certainty for the public sector. However, not all the risks can or should be shifted to the private sector. For instance, 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.

Detractors argue that, at least in some cases, the transfer of risk in a P3 may prove illusory if miscalculations force the public sector to renegotiate the P3 contract or to assume project ownership.⁵⁸ In the case of the extension of SH-130 near Austin, TX, discussed earlier, low traffic volumes prompted the state to provide an unanticipated subsidy of truck tolls for one year. If low traffic volumes cause the concessionaire to default on its financial commitments, repayment of a \$430 million TIFIA loan to the federal government may be at risk. If a default occurs, the state may have to terminate the concession and take full responsibility for the road. In some P3s, the public sector retains revenue risk, thus putting itself on the line to repay creditors if the project fails to generate anticipated revenue.

What Are the Effects of P3s on Operation of the Highway Network?

If P3 projects involve highway tolls, some road users may claim to be charged twice, as they may also be paying tax on the motor fuel used to drive on the facility. A proliferation of tolled roads, particularly those under private control, thus has the potential to raise travel costs. Trucking groups have been particularly wary of proposals to fund highway construction through tolls, as they worry that toll rates could shift some costs from passenger vehicles to trucks. Toll rates are not regulated by the federal government, but P3 contracts provide a mechanism for states to exercise control over tolls on privately operated highways. This may be particularly important in a situation in which there is no viable alternative to a particular road, bridge, or tunnel, allowing the operator to exercise monopoly power—although a concessionaire’s ability to raise tolls is limited by the possibility that higher tolls will reduce traffic and revenue.⁵⁹

If tolls imposed under P3s divert traffic, they could result in increased congestion and reduced safety on other routes. Diversion of truck traffic is seen as particularly problematic, as truckers facing high tolls may find it worthwhile to use toll-free roads less able to accommodate long or heavy vehicles. One study suggests that the safety impacts and infrastructure damage resulting from diversion may be substantial, although the scale of effects will vary by route and the size of the toll.⁶⁰

Tolling also involves equity issues. In some cases, states or local governments have attempted to structure tolls or locate toll-collection facilities so that users from other states or localities provide a disproportionate share of the revenue,⁶¹ potentially burdening interstate commerce. Tolling places a greater burden on lower-income than higher-income households, although surveys of users on toll

⁵⁸ E. Engel, R. Fischer, and A. Galetovic, “Privatizing Highways in the United States,” *Review of Industrial Organization*, 2006, Vol. 29, pp. 27-53.

⁵⁹ Poole, May 2007.

⁶⁰ Peter F. Swan and Michael H. Belzer, “Empirical Evidence of Toll Road Traffic Diversion and Implications for Highway Infrastructure Privatization,” *Public Works Management and Policy*, April 2010, 351-373.

⁶¹ Steckler; Cohen, 2007.

roads tend to show a significant level of usage by people from low income households.⁶² Moreover, projects that add a tolled alternative to non-tolled lanes, such as the I-495 HOT lanes in Northern Virginia, are likely to benefit all road users if they reduce congestion in “free” lanes.⁶³

What Are the Effects of P3s on Infrastructure Planning?

P3s may have longer-term effects on the transportation system insofar as they influence decisions about what to build and where. Public-sector investment decisions inevitably involve a political process, and it is frequently argued that government funding of transportation infrastructure is spread too widely, or worse, goes to projects with low ratios of benefits to costs. A number of studies have shown, for example, that geographic equity is often a basis for distributing transportation funding and selecting projects.⁶⁴ Private-sector investors, on the other hand, will be drawn to projects that have the greatest potential financial returns, and are unlikely to be interested in financing facilities that have little revenue-generating potential or would be easy for users to circumvent. P3s reliant on tolls, therefore, are unlikely to address transportation issues in rural areas. They may also not be suitable for roads that carry relatively little traffic but provide important connections between the more heavily traveled segments.

Concerns about the effects of P3s on transportation planning have been particularly acute when states receive unsolicited proposals. It is generally assumed that projects for which proposals are solicited from the private sector will have come through a public planning process. Unsolicited project proposals, on the other hand, may or may not reflect the priorities of the state, region, or locality as incorporated in short- and long-range plans. Consequently, it has been suggested that P3 enabling legislation should not permit unsolicited proposals. Proponents of P3s argue that this would stifle innovative ideas, and that while a proposal may be unsolicited, to come to fruition it would have to pass through the public review process.

Some P3 contracts contain non-compete clauses that restrict what types of improvements a government agency can make near a privately operated facility. Such restrictions may impede the ability of public agencies to increase capacity and to devise coordinated congestion management policies.⁶⁵ On the other hand, investors might be less willing to undertake P3s if there were no protection from unlimited competition by “free” roads provided by the taxpayer, requiring a balance between attracting private investment and protecting the public interest in mobility and choice.⁶⁶

⁶² U.S. Department of Transportation, “Low-Income Equity Concerns of U.S. Road Pricing Initiatives,” <http://www.upa.dot.gov/resources/lwincequityrpi/index.htm>.

⁶³ Testimony of R. Sims, County Executive of King County, Washington, in U.S. Congress, House Subcommittee on Highways and Transit, *Hearing on Transportation Challenges of Metropolitan Areas*, April 9, 2008.

⁶⁴ Edward Hill et al., “Slanted Pavement: How Ohio’s Highway Spending Shortchanges Cities and Suburbs,” in Bruce Katz and Robert Puentes, eds., *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, Washington, DC: Brookings Institution Press, 2005; U.S. General Accounting Office (now the Government Accountability Office), *Surface Transportation: Many Factors Affect Investment Decisions*, GAO-04-744, Washington, DC, June 2004, <http://www.gao.gov/new.items/d04744.pdf>.

⁶⁵ Testimony of John Foote, in U.S. Congress, House Subcommittee on Highways, Transit, and Pipelines, *Hearing on Understanding Contemporary Public Private Highway Transactions—the Future of Infrastructure Finance*, May 24, 2006.

⁶⁶ Poole, May 2007, p. 8.

The exceedingly long terms of some concession agreements, 99 years in some cases, may further complicate transportation planning. While very long-term contracts may be required to provide investors with sufficient returns, contract provisions may tie the hands of planners and policy makers years into the future, when conditions may be very different. This may argue for limiting the term of a concession to the design life of a facility, although that may deter some investors. Another possible solution is for concession agreements to include provisions that allow for reasonable amendments and for third-party arbitration of disagreements.⁶⁷

Policy Options

MAP-21 made several changes to federal law that are likely to encourage the creation of P3s at the state and local level. These include greatly increasing the amount of funding available for TIFIA loans and making tolling on federal-aid highways less restrictive. MAP-21 also required DOT to provide technical support to P3s. These changes were a move away from the policy of incremental changes and experimentation in program incentives and regulation that existed prior to MAP-21.

There are two broad policy options for expanding use of P3s. The first would be to actively encourage P3s with program incentives, as was done in MAP-21, but with relatively tight regulatory controls. The second would be to aggressively encourage the use of P3s through program incentives and deregulation, particularly in the areas of tolling and financing. It should be pointed out that at the level of detailed policy prescriptions these options are not necessarily mutually exclusive, as Congress could decide to deregulate in one area while enhancing regulation in another, and may add funding to one program and cut funding to another.

Proponents of the first option tend to be cautious about the benefits of P3s and favor regulations designed to protect the public interest from their perceived problems. They emphasize that many P3s involve little private money or are subsidized by the public sector, that risk transfer from the public to the private sector can be illusory, and that P3 contracts may constrain government decisions about the transportation system.⁶⁸ In response to such concerns, MAP-21 required that best practices complied by DOT “shall include policies and techniques to ensure that the interests of the traveling public and State and local governments are protected in any agreement entered into with the private sector for the development, financing, construction, and operation of transportation facilities.”⁶⁹

The debate over public oversight is not new. The proposed Surface Transportation Authorization Act (STAA) of 2009⁷⁰ would have made P3s involving federal-aid highway funds subject to various federal requirements, including a weighing of the costs and benefits of the P3 against

⁶⁷ Ibid.; see also “The Chicago Skyway Sale,” *Public Works Financing*, Vol. 205, May 2006, pp. 4-11.

⁶⁸ Jean Shaoul, Anne Stafford, and Pam Stapleton, “The Fantasy World of Private Finance for Transport via Public Private Partnerships,” Discussion Paper 2012-6, OECD Roundtable on Public Private Partnerships for Funding Transport Infrastructure: Sources of Funding, Managing Risk, and Optimism Bias, 27-28 September, 2012, <http://internationaltransportforum.org/jtrc/DiscussionPapers/DP201206.pdf>; 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.

⁶⁹ §1534(b).

⁷⁰ 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.

traditional public delivery methods. The proposal also contained requirements regarding public information and public involvement and a prohibition against non-compete clauses in P3 agreements. These requirements would have been enforced by a new Office of Public Benefit (OPB) within 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.” The requirement that the OPB review and approve a P3’s compliance with new public transparency provisions raised particular concern among advocates of more widespread use of P3s, who asserted that the risk of OPB disapproval late in the process would discourage project partners from investing the substantial time and money required to develop projects.⁷¹

The more aggressive approach to P3s would provide program funding to encourage innovation and generally deregulate the use of tolling and private sector involvement, thereby letting states decide when and how to enter into agreements. The federal role in such a scenario could be limited to providing guidance about instituting good practices and avoiding common pitfalls, although it might be possible to set up a federal P3 office which, in addition to providing technical advice, could also provide consulting services in a fee-for-service arrangement, and could possibly help to develop the P3 market. Such entities exist in several other countries, such as Partnerships BC in British Columbia, Infrastructure Partnerships Australia, and Partnerships UK.⁷² Other past proposals have linked deregulation of tolling and public-private partnerships with devolution of federal responsibilities in highways and transit to the states.⁷³

P3s and Interstate Highway Tolls

Many parts of the Interstate Highway system have traffic levels that would make it financially viable to have toll-supported public-private partnerships.⁷⁴ The need for reconstructing Interstates is likely to accelerate in the years ahead as many reach their approximately 50-year design life. Many of these projects are likely to be very expensive “mega-projects,” running into the hundreds of millions of dollars. Although imposing tolls on “free” roads is likely to be unpopular, Congress could allow states to impose tolls on an Interstate after its reconstruction as a way to facilitate financing of such projects.

Federal Financing Programs

The TIFIA program has played an important role in the funding packages of several large P3s. MAP-21 greatly enlarged the program, authorizing \$16 billion in loan capacity in FY2013 and

⁷¹ D.J. Gribbin, “Public Private Partnerships and the Surface Transportation Authorization Act of 2009,” *Public Works Financing*, June 2009, pp. 7-10.

⁷² Robert Puentes, “Strengthen Federalism: Establish a National PPP Unit to Support Bottom-Up Infrastructure Investment,” Brookings Institution, November 2012, <http://www.brookings.edu/~media/research/files/papers/2012/11/13%20federalism/13%20public%20private%20infrastructure%20investment.pdf>; Organization for Economic Cooperation and Development (OECD), *Dedicated Public-Private Partnership Units: A Survey of Institutional and Governance Structures*, Paris, 2010; Christine Farrugia, Tim Reynolds, and Ryan J. Orr, “Public-Private Partnership Agencies: A Global Perspective,” Collaboratory for Research on Global Projects, Stanford University, Working Paper #39, August 2008, http://fpd-bd.com/wp-content/uploads/2013/06/Farrugia_etal_PPPAgencies_WP0039.pdf.

⁷³ Ronald D. Utt, “Proposal to Turn the Federal Highway Program Back to States Would Relieve Traffic Congestion,” Heritage Foundation Backgrounder, No. 1709, November 21, 2003, <http://www.heritage.org/research/reports/2003/11/proposal-to-turn-the-federal-highway-program-back-to-the-states-would-relieve-traffic-congestion>.

⁷⁴ For more on this issue, see CRS Report R42402, *Tolling of Interstate Highways: Issues in Brief*, by Robert S. Kirk.

FY2014, but there have already been enough applications to almost exhaust that budget authority. Further enlarging TIFIA could encourage creation of P3s. However, increased lending may also increase the likelihood that a project is unable to repay its loan. TIFIA loans can be subordinate to other debt financing for the project, except, as required by statute, in the event of bankruptcy, insolvency, or liquidation (although there are some exceptions). The possibility that the federal government will claim parity with other creditors, known as a “springing lien,” may discourage the completion of some P3 agreements. Abolishing the springing lien, however, may expose the federal government to greater risk of loss if a project sponsor is unable to service its debt.

Private activity bonds have been another important way in which the federal government has encouraged the development of P3s in transportation. As noted earlier, the current cap of \$15 billion may be reached in FY2015, threatening the development of new projects. The Administration’s FY2014 budget proposal includes a provision to increase this amount to \$19 billion. Raising the cap is not cost free, however. This provision, if enacted, would reduce revenue by \$515 million over the 2014 to 2023 budget window.⁷⁵

A national infrastructure bank could be designed to promote development of P3. The central idea of a national infrastructure bank, or “I-bank,” would be to provide low-cost, long-term loans on flexible terms, much like the TIFIA program.⁷⁶ However, an I-bank might have more independence than TIFIA, which is controlled by the U.S. Department of Transportation, and as a separate organization might be able to build up a specialized staff, including expertise on the creation and oversight of P3s. Funding could come from an appropriation to pay for administrative costs and the subsidy cost of credit assistance, although in some formulations an I-bank would raise its own capital through bond issuance.

Many different formulations of an I-bank have been proposed over the past few years. Three I-bank proposals that have been introduced in the 113th Congress are the National Infrastructure Development Bank Act (H.R. 2553) by Representative DeLauro, the Partnership to Build America Act (H.R. 2084) by Representative Delaney, and the Building and Renewing Infrastructure for Development and Growth in Employment (BRIDGE) Act (S. 1716) by Senator Warner.

State infrastructure banks (SIBs) already exist in 32 states. Most were created in response to a federal program enacted in 1995 (P.L. 104-59).⁷⁷ Although they tend to provide credit assistance to small projects that do not involve a P3, an expansion of their role may make them more supportive of projects involving a private partner. MAP-21 did not extend authority for a state to use a portion of its federal surface transportation funds to capitalize a SIB. Several bills have sought to encourage SIBs by allowing states to fund them from federal funds, by creating a

⁷⁵ U.S. Department of Treasury, “General Explanation of the Administration’s Fiscal Year 2014 Revenue Proposals,” April 2013, p. 116.

⁷⁶ For more information, see CRS Report R43308, *Infrastructure Banks and Debt Finance to Support Surface Transportation Investment*, by William J. Mallett and Steven Maguire.

⁷⁷ Robert Puentes and Jennifer Thompson, “Banking on Infrastructure: Enhancing State Revolving Funds for Transportation,” Brookings Institution, September 2012, <http://www.brookings.edu/~media/research/files/papers/2012/9/12%20state%20infrastructure%20investment%20puentes/12%20state%20infrastructure%20investment%20puentes.pdf>.

dedicated federal funding stream, or by authorizing SIBs to issue bonds that would benefit from tax credits.⁷⁸

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⁷⁸ See S. 1250, S. 1553, H.R. 2534, and H.R. 3872, 113th Congress, and H.R. 7, 112th Congress.