

# PUBLIC-PRIVATE INFRASTRUCTURE FINANCING SOLUTIONS

FINANCIAL INNOVATIONS LAB® REPORT



**MILKEN INSTITUTE**

NOVEMBER 2014



FINANCIAL INNOVATIONS LAB® REPORT

# PUBLIC-PRIVATE INFRASTRUCTURE FINANCING SOLUTIONS

---

## FINANCIAL INNOVATIONS LAB® REPORT

Financial Innovations Labs® bring together researchers, policymakers, and business, financial, and professional practitioners to create market-based solutions to business and public-policy challenges. Using real and simulated case studies, participants consider and design alternative capital structures and then apply appropriate financial technologies to them.

---

## ACKNOWLEDGMENTS

We are grateful to those who participated in the Financial Innovations Lab for their contributions to the ideas and recommendations summarized in this report. We would especially like to thank our partner in this project, the Office of Energy Policy and New Uses at the U.S. Department of Agriculture. We would also like to thank Milken Institute colleagues Joel Kurtzman, Sean Sandbach, and editor Dinah McNichols for their work on the project.

This report was prepared by Dale Bonner and Caitlin MacLean.

---

## ABOUT THE MILKEN INSTITUTE

A nonprofit, nonpartisan economic think tank, the Milken Institute believes in the power of finance to shape the future. The Milken Institute produces rigorous, independent economic research—and maximizes its impact by convening global leaders from the worlds of business, finance, policy, academia, and philanthropy. By fostering collaboration between the public and private sectors, we transform great ideas into action.

©2014 Milken Institute

This work is made available under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License, available at [creativecommons.org/licenses/by-nc-nd/3.0/](http://creativecommons.org/licenses/by-nc-nd/3.0/)

# TABLE OF CONTENTS

INTRODUCTION.....	1
ISSUES AND PERSPECTIVES.....	3
FINANCIAL AND POLICY SOLUTIONS.....	13
POTENTIAL MODEL: A NATIONAL INFRASTRUCTURE BANK (OR SIMILAR ENTITY).....	14
POTENTIAL MODEL: INFRASTRUCTURE EXCHANGE NETWORK.....	15
POTENTIAL MODEL: NATIONAL INFRASTRUCTURE COUNCIL.....	16
NEXT STEPS.....	17
CONCLUSION.....	19
APPENDIXES.....	21
ENDNOTES.....	23

Public-private partnerships, or P3s, are becoming an integral part of infrastructure financing and development.

## Introduction

---

Infrastructure is a crucial component of the U.S. economy. Not only is it the backbone of the country's industries, it is also a driver of job creation and growth. The reliance on infrastructure is constant, from roads and bridges to ports and power lines. An adequate infrastructure maintains domestic productivity and ensures global competitiveness.

Recognizing this importance—and that much of the nation's infrastructure is aging and in dire need of upgrading and maintenance—both the public and private sectors have increasingly turned their attention to the issue. Governments at local, state, and national levels are evaluating new projects; and investors are aggressively seeking opportunities that provide solid returns in exchange for the assumption of manageable risks. With increasing demand, the U.S. market for public infrastructure is diverse and growing, but hampered by inadequate policy frameworks and institutional structures at all levels of government.

The dire need for projects, from new toll roads to retrofitted ports, has led to greater collaboration between the public and private sectors, especially as public-sector budgets continue to shrink. Public-private partnerships, or P3s, are becoming an integral part of infrastructure financing and development, offering a hybrid financing model that allows private investors to provide capital for infrastructure projects that they, too, could not afford to finance, build, or operate on their own. Recently, as more states and public authorities have recognized the value of P3s, there has been additional legislation to authorize such partnerships, and a steady growth of projects.

Recent estimates suggest that the U.S. will need to spend nearly \$3.6 trillion for maintaining, updating, and expanding infrastructure by 2020.<sup>1</sup> So what must be done to capitalize on the P3 momentum, increase investment, and improve efficiency of project development? Given the many P3 challenges, ranging from oversight and monitoring issues to contract and labor purview, it is imperative to look for long-term funding and governance solutions.

To this end, in January 2014 the Milken Institute convened a Financial Innovations Lab with participants from a variety of public- and private-sector infrastructure stakeholders, including policymakers from state and federal legislatures, and their staff members. The daylong workshop, held in Washington, D.C., addressed the degree to which emerging finance and procurement authorities might spur private investment in public infrastructure.

The Lab produced two proposals as well: for an infrastructure exchange network and a national infrastructure council, and discussed what it thought were important characteristics of any national infrastructure bank. Lab participants acknowledged, too, that the term *public-private partnership* has come to mean many different kinds of partnership structures. The Lab considered how proposals to create a new federal entity, such as a national infrastructure bank, could be shaped and implemented to leverage public funding to attract private capital, and to ensure that the country's investment in infrastructure meets the need.

In the months following the Lab, the federal government launched a series of programs and initiatives to facilitate more private investment in the nation's infrastructure. On June 10, 2014, President Obama signed into law the Water Resources Reform and Development Act, which created the Water Infrastructure Public Private Partnership Program. The program allows the Army Corps of Engineers to enter into at least 15 public-private partnership agreements for capital projects relating to hurricane and storm damage reduction and inland navigation projects.

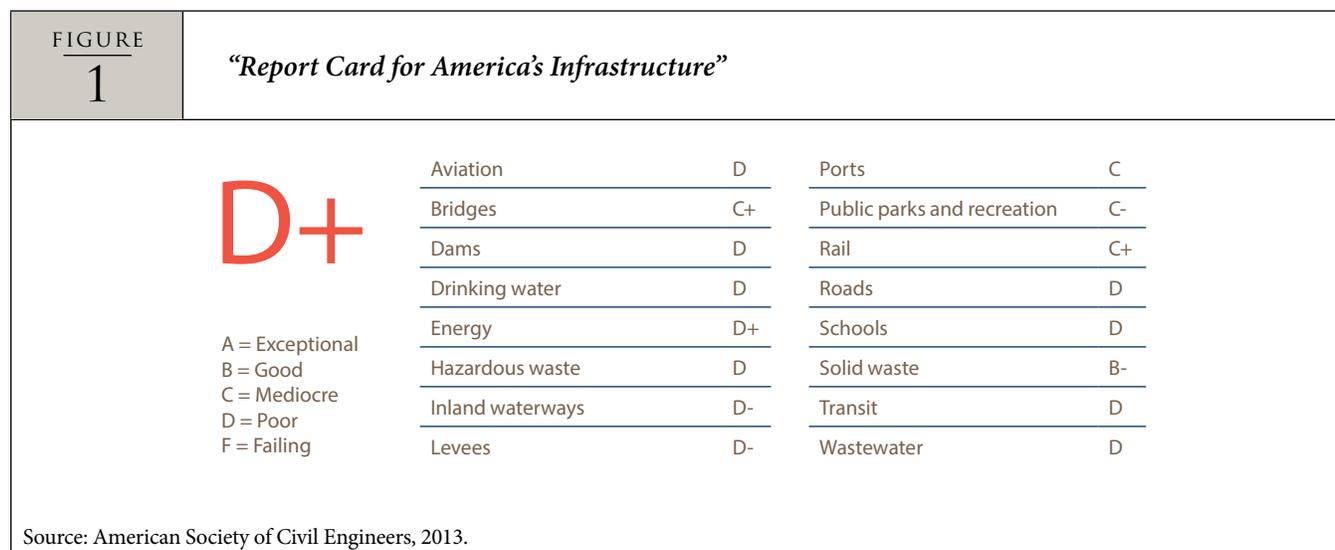
On June 17, 2014 President Obama issued an executive order creating a series of new infrastructure initiatives to promote private investment in public infrastructure, including a \$10 billion Rural Infrastructure Opportunity Fund with the U.S. Department of Agriculture, and a Build America Interagency Working Group as part of the new Build America Investment Initiative.

The new federal initiatives do not address the public funding crisis, and they stop short of creating a national infrastructure bank or similar entity that was a focus of the Lab. Still, thoughtful and diligent implementation holds the potential to improve the investment environment and expand the private sector's role in addressing the nation's mounting infrastructure demands.

## Issues and Perspectives

Investing in U.S. infrastructure is a multifaceted challenge. It encompasses the funding of projects that can range from roads and bridges to electricity and safe water. Moreover, targeted financing requires a nuanced understanding of diverse sectors, each subject to its own labyrinth of funding, finance, and regulatory schemes.

And each segment needs investment. The United States has consistently received failing grades on its aging infrastructure. As seen in figure 1, a 2013 report by the American Society of Civil Engineers gave the country a D+ grade.<sup>2</sup> The underlying conditions behind this grade are felt by local communities, governments, and industries. Billions of dollars are lost as commercial goods move slower and more fuel is consumed, exports and imports bog down at ports, travelers miss businesses meetings, and perishable goods take longer to reach their destinations. According to a 2013 report released by the McKinsey Global Institute, road congestion alone costs drivers over \$100 billion in added fuel costs and time.<sup>3</sup>



The U.S. challenge is defining infrastructure solutions and moving that report card up to straight A's. Without sufficient investment to repair current infrastructure, or the appropriate financing mechanisms to support new projects, the country will likely continue to slip in global rankings as well. In 2013 it ranked 19th in terms of overall quality of infrastructure development.<sup>4</sup> As seen in figure 2, the U.S. lags behind many of its biggest trade partners and competitors. Both Canada and Singapore rank higher in terms of attracting infrastructure investment, which could lead to their gaining a competitive advantage in critical sectors.<sup>5</sup>

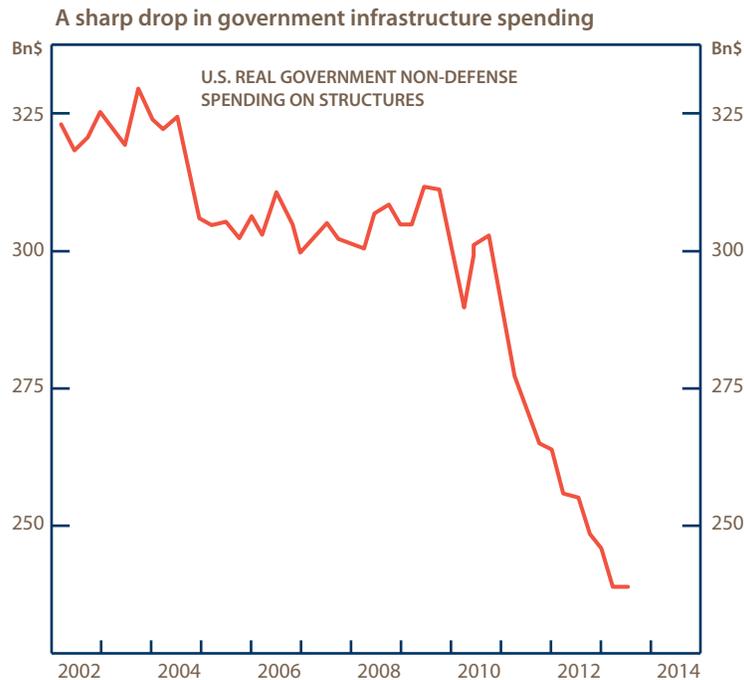
FIGURE  
2*“Quality of Overall Infrastructure”: Global Rankings*

RANK	COUNTRY/ECONOMY	VALUE	RANK	COUNTRY/ECONOMY	VALUE
1.	Switzerland.....	6.6	14.	Japan .....	6.0
2.	Hong Kong SAR .....	6.5	15.	Canada .....	5.8
3.	Finland .....	6.5	16.	Belgium.....	5.8
4.	United Arab Emirates.....	6.4	17.	Oman.....	5.8
5.	Singapore.....	6.4	18.	Denmark.....	5.7
6.	France .....	6.3	<b>19. United States .....</b>	<b>5.7</b>	
7.	Iceland.....	6.3	20.	Bahrain.....	5.7
8.	Austria .....	6.2	21.	Sweden .....	5.7
9.	Netherlands.....	6.2	22.	Saudi Arabia .....	5.7
10.	Germany .....	6.2	23.	South Korea.....	5.6
11.	Portugal .....	6.1	24.	Barbados .....	5.6
12.	Spain.....	6.0	25.	Malaysia .....	5.5
13.	Luxembourg .....	6.0			

Source: “The Global Competitiveness Report 2013–2014,” World Economic Forum, 2013.

These rankings suggest not only a lack of funds, but a lack of national priority to ensure that the U.S. can keep pace with other nations to support business and industry. A well-developed and maintained infrastructure is essential if the nation is to increase exports of agricultural products, energy, manufactured goods, and raw materials. Losing global competitiveness translates into increased costs for businesses, which in turn hurts profits. Persistent underinvestment impedes private investment, both domestic and foreign. To take advantage of essential industry areas like manufacturing, there must be investment in infrastructure to improve the ease and efficiency of doing business.

Industry experts have suggested that the funding gap between what can be allocated for infrastructure development and what will still be necessary is \$1 trillion.<sup>6</sup> Amidst the global recession and post-crisis budget cuts, public spending on infrastructure is down over the past decade, as seen in figure 3.

FIGURE  
3*U.S. Infrastructure Investment*

Source: BCA Research, 2013.

U.S. public infrastructure is funded by a mix of public and private-sector funding. In the first instance, government funding is allocated from revenue generated from bonds, taxes, and tolls. In the case of interstate roads, for example, only 6 percent of U.S. interstates are tolled, and the fuel tax, a major generator of the government's revenue, has not been increased since 1993, even to keep pace with inflation.<sup>7</sup> Consequently, budgets for highway infrastructure spending have diminished over the years, so much so that the Highway Trust Fund, which receives the revenues from gas taxes, is nearly bankrupt and now relies on stopgap general fund transfers. The funding is allocated through a series of programs within different departments and agencies, depending on the segment of infrastructure. The federal departments of Transportation, Energy, Agriculture, and Housing and Urban Development, as well as agencies like the Environmental Protection Agency (EPA), all fund infrastructure projects, as do similar agencies at the state and local levels. This funding comes predominately in the form of grants and long-term loans. Debt financing can come from municipal bonds, private activity bonds, 501(c)(3) bonds, and revolving loan funds, as well as additional state and national programs.

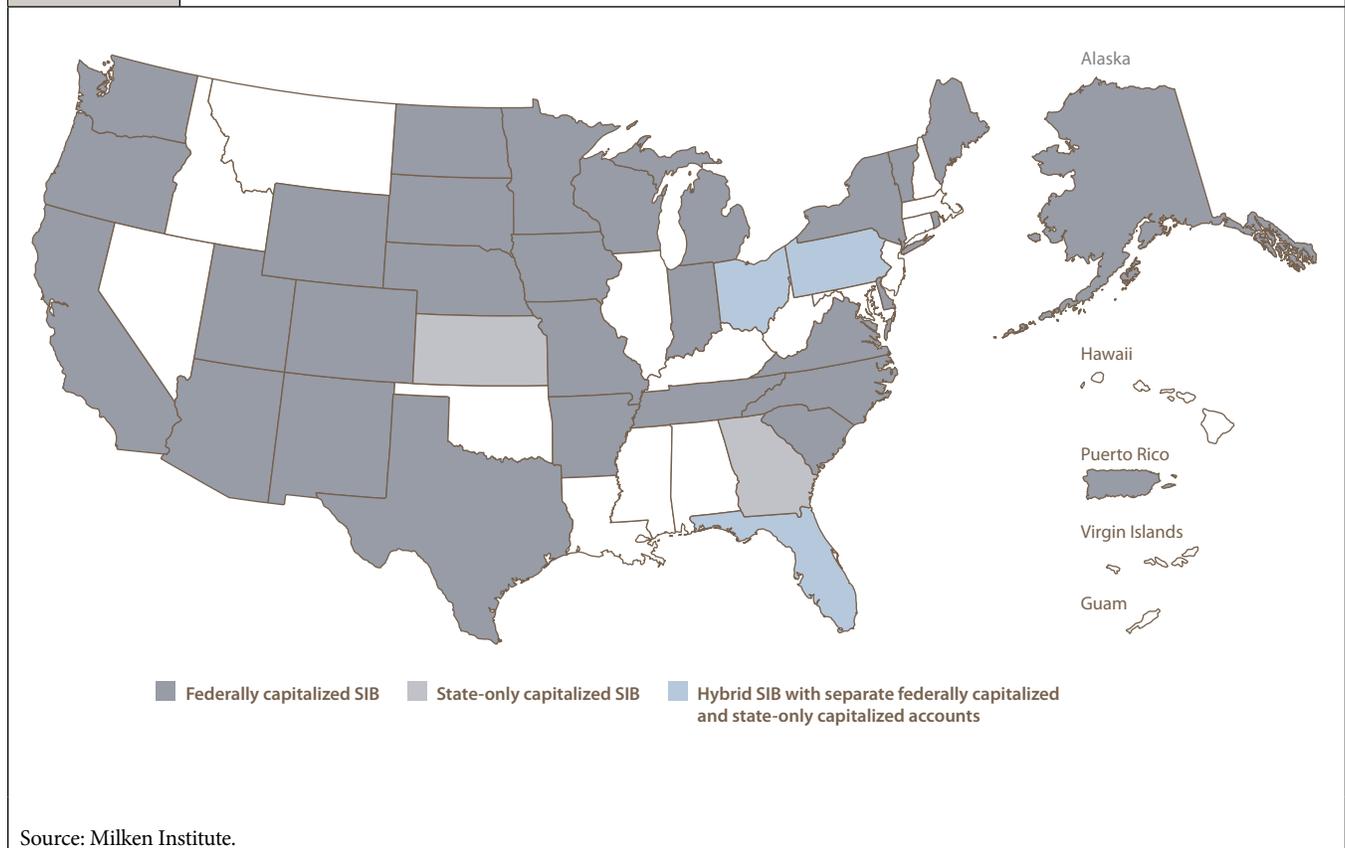
In the second instance, the government can leverage its budgetary allocations at the local, state, and national levels through financing mechanisms that allow for increased private-sector investment in projects. Entities like state infrastructure banks (SIBs), and programs like the 1998 Transportation Infrastructure Finance and Innovation Act (TIFIA), facilitate P3s by providing long-term loans and credit enhancements through guarantees to improve the terms of the financing to lower interest costs.

TIFIA, for example, issues long term loans and loan guarantees to provide credit to large infrastructure projects. Deals are priced at 1 basis point above long-term Treasury bills. Time horizons for the projects are 30 years, with the government committing a maximum of one-third of the project's overall cost. This financing structure translates into significant leverage; for every \$1 in funds made available by Congress, TIFIA makes \$10 in loans.<sup>8</sup> It also reduces the potential risk of default during the long ramp-up of revenue-dependent projects, such as toll roads, when cash flows are not yet positive.

State infrastructure banks, finance authorities and specialized procurement units are becoming popular financing mechanisms to support public-private partnerships and provide low capital costs for projects. As seen in figure 4, some states capitalize these entities through state, federal, and hybrid combinations of funding. And new approaches to financing, procurement, and coordination among stakeholders are emerging at the local, state, and regional levels. These entities, including Colorado's High-Performance Transportation Enterprise, the Indiana Finance Authority, Virginia's Office of Transportation Public-Private Partnerships, and the West Coast Infrastructure Exchange can provide financing support, as well as technical and operational assistance. They and other emerging "centers of excellence" hold promise but require additional tools, resources, and a willingness by project developers and investors to use them.

FIGURE  
4

*State Infrastructure Banks (SIBs)*



Programs like TIFIA and the newer financing entities have attracted new sources of capital through public–private partnerships. However, the trillion-dollar funding gap remains. This is partly due to structural limits of current tools, a host of intergovernmental issues, and inefficiencies in the planning and execution of P3s, as discussed in the Lab.

### **Challenge: Structuring Financial Tools**

Many investors seek the long-term yields and low inflationary risks of the infrastructure asset class, yet despite a growing interest in P3s, some in the capital markets have been reluctant to directly engage them. Apart from the return profile of infrastructure projects and the long time horizons, there are challenges in creating the financial products themselves. Pension funds and other institutional investors still face challenges that limit their participation due to the difficulties of reviewing individual projects; it takes a specific expertise to review and select appropriate ventures to pursue, and the due diligence of tackling one large project at a time isn't realistic for them. Currently, most public employee pension funds allocate up to 5 percent of their funds to infrastructure; but they would rather invest in a financing vehicle that uses a portfolio approach to reach the scale they need, as opposed to looking for specific project investments.

However there are infrastructure funds that are increasingly taking on development risk in projects such as the new Goethals Bridge. The U.S. energy and telecommunications markets have been more successful in attracting private capital, as they appear “open” to invest, while the transportation sector, because of the overarching government presence, appears “closed” to invest. This is slowly changing because of TIFIA and the evolution of the P3 process.

Lab participants discussed how project developers and governments could benefit from a portfolio approach—bundling projects to help reach the scale investors need and to diversify the risk of any one project's failure.

One barrier to institutional investment is the amount of structuring required, from the creation of the P3 to securing financing and determining the terms, to assessing revenue potential and long-term pay-off options. As table 1 illustrates, the capital structure can involve capital from a variety of programs, with grants and bonds, as well as different tranches of private investment in the forms of debt and equity. The terms of the structure are also affected by the potential for the project to generate cash flows through mechanisms like toll collection or meters. However, not all projects are alike and many struggle to find sources of repayment. Investors at the Lab discussed the challenges in valuing projects accurately or mapping out the costs and revenues associated. For road construction, for example, given that there are few toll roads, there is truly no way to generate revenue other than taxes, either a gas tax that supports the Highway Trust Fund or a tax on local communities.

TABLE 1		<i>P3 Deal Structures for Recent Transportation Projects*</i>				
PROJECT INFORMATION						
Project	State	Year (financial close reached)	Description	Model	Public sponsor	
Norfolk Downtown Tunnel/Midtown Tunnel/MLK Extension	VA	2012	58yr DBFOM to double the capacity of the 2-lane Elizabeth River Crossings Project by building an adjacent 2-lane sunken tube under the Elizabeth River between Portsmouth and Norfolk, VA; annual subsidy to improve transit service; rehab the existing Midtown Tunnel and the 2-lane Downtown Tunnel; extend the Martin Luther King Freeway to I-264. Electronic tolling to be added to existing and new facilities by Federal Signal.	DBFOM	Virginia DOT (VDOT)	
I-95 Managed Lanes	VA	2012	73yr (+ construction) DBFOM I-95 HOV/HOT/Bus Lanes in Northern Virginia, adding 17% capacity from I-95 beltway 29.4 miles south on I-95 to Massaponax.	DBFOM	Virginia Department of Transportation (VDOT)/ Office of Transportation Public-Private Partnerships (OTP3)	
Ohio River Bridges Project, East End Crossing	IN/KY	2013	Availability pay 35yr+const. DBFOM component of the bistate Ohio River Bridges Project to improve mobility in metro Louisville-southern Indiana. New construction of I-265 East End Bridge 8 miles from downtown Louisville will link KY 841 to Indiana SR 265 via a new 2,500ft long, 4-lane crossing of the Ohio River. Approaches include 4.1-mile Lee Hamilton Highway (SR 265) and 3.3-mile Gene Snyder Freeway (KY 841), which includes a 2,000ft tunnel. Concession is for 35yrs after 3.6yrs construction. Concession runs Dec. 2012-Oct. 2051. Availability Payments linked to CPI.	DBFOM	Indiana DOT/ Indiana Finance Authority (IFA)	
Goethals Bridge Replacement	NY/NJ	2013	Availability-pay 40yr DBFM replacement of 2x2 lane Goethals steel-arch bridge between Staten Island, NY and Elizabeth, NJ with a 1,700ft, 3x3-lane cable-stayed bridge with capacity for future transit. Current traffic 75,000 AADT. All traffic risk and toll-collection responsibility will remain with PANYNJ. Project includes demolition and disposal of existing bridge upon completion of the new facility. 35yr concession (subject to RFP) to start after 5yr construction.	DBFM	The Port Authority of New York and New Jersey (PANYNJ)	
Northwest Corridor, Atlanta, I-75/I-575 Managed Lanes	GA	2013	DBF 30 miles of new reversible express toll lanes on I-75/I-575 with variable pricing in Atlanta area. Includes 18 mi of new lanes along I-75 and 11 miles along I-575. (Formerly called West by Northwest).	BFM	Georgia Department of Transportation (GDOT)/ State Road and Tollway Authority (SRTA)	
North Tarrant Express, Phase 2 (Seg. 3A), I-35W, Dallas-Ft. Worth	TX	2013	43yr DBFOM concession for phase 2 of North Tarrant Express to add 10.5 miles of 2x2 managed lanes to I-35W and reconstruct interchange at I-35W and SH 121/183 Airport Freeway in metro Dallas (segment 3A). Segment 3B was severed from Cintra's concession and awarded by TxDOT as a \$234m contract for 9 miles of managed lanes north of I-820, but with O&M and toll collections by Cintra as part of the concession.	DBFOM	Texas DOT (TxDOT)/ Texas Transportation Commission (TTC)	
I-69, Section 5 Upgrade	IN	2014	DBFOM 35yrs upgrade 21 miles of existing SR 37 (section 5 of I-69 upgrade project, between Bloomington and Martinsville) to an interstate highway. Is currently a four-lane divided highway. 35yr availability payment DBFOM contract; part of I-69 upgrade project, which goes from Evansville to Indianapolis. Rest of the sections are being procured publicly. Section 5 DBFOM will include 35yrs of O&M after 28mos. of construction. Availability-payment financing: annual payment of \$21.9m from State of IN.	DBFOM	Indiana Department of Transportation (INDOT)/ Indiana Finance Authority (IFA)	
U.S. 36 Express Lanes, DBFOM phase 2, Denver-Boulder	CO	2014	50yr DBFOM with demand risk for the second and final segment of U.S. 36. Financing combined toll revenues from both segments 1 and 2, plus tolls on I-25 Express Lanes from Denver to U.S. 36. First DBFOM in CO.	DBFOM	Colorado High Performance Transportation Enterprise (HPTE)/ Colorado DOT	

Sources: Public Works Financing (PWF), InfraDeals.

\*Please see Appendix II for a list of acronyms.

			PUBLIC SECTOR				PRIVATE SECTOR				
Private partners	Term	Project cost	State / local grant	TIFIA / Federal	PAB (tax exempt)	Equity	Debt (senior)	Other	Total	Toll vs. AP	
Elizabeth River Crossings (ERC): Founding partner, Macquarie Capital (50%) / Skanska Infrastructure Development (50%) DB \$1.47b	58 yr	\$2100m	\$308m at close + \$100m to delay start of tolling for 18 months	\$422m	\$675m	\$221m + \$51m contingent				T	
95 Express Lanes LLC: Transurban DRIVE (90%) / Fluor (10%) DB \$618m	73 yr +const.	\$940m	\$71m	\$300m	\$261m	\$302m				T	
WVB East End Partners: Joint Venture of Walsh Investors LLC (33%) / VINCI Concessions S.A.S. (33%) / Bilfinger Berger PI International Holding GmbH (33%). \$763m DB cost	35 yr +const.	\$1180m			\$677m	\$78m				AP	
NYNJ Link Partnership: Macquarie (90%) / Kiewit Development (10%) \$934m DB cost; \$458m O&M (\$95m NPV 40yrs)	40 yr	\$1500m		\$479m	\$457m	\$113m				AP	
Northwest Express Roadbuilders (NWER): Archer Western (Walsh) / Hubbard Group (Vinci) + Parsons Transportation Group DB \$599m	-	\$840m	\$536m	\$275m				\$160m gap financing		T	
NTE Mobility Partners Segments 3 LLC: Cintra (Ferrovial) (50%) / Meridiam (39%) / Dallas Police and Fire Pension System (10%) / APG (1%)	52 yr	\$1350m	\$127m	\$531m	\$273m	\$430m				T	
I-69 Development Partners: Isolux Infrastructure (51%) / Infra-PSP (Canada Public Sector Pension Investment Board, a Canadian Crown Corporation) (49%) DB \$325m	35 yr	\$370m	\$80m milestone payments		\$243.8m	\$43.9m				AP	
Plenary Roads Denver: Plenary Group / Ames Construction / Granite Construction JV	50 yr	\$120m		\$60m for ph. 2 (Plenary assumes existing \$54m TIFIA loan)	\$20.36m	\$20.8m		\$20.6m subordinated debt		T	

The global capital markets offer more investment opportunities via investment funds and exchange-traded funds (ETFs), from the PowerShares Emerging Markets Infrastructure fund to the Macquarie Global Infrastructure 100 ETF. Foreign investors and financial institutions are participating in U.S. infrastructure projects to a larger degree than their U.S. counterparts. Of the five largest unlisted infrastructure private equity funds, only one is U.S.-based. Table 2 shows the allocation of funding from foreign banks to recent P3 deals, highlighting the limited engagement from U.S. banks. Lab participants discussed the restrictive U.S. lending environment and the need to go to foreign sources of capital to access reasonable rates and terms.

TABLE 2		<i>Bank Financing for U.S. P3s</i>	
Project	Senior Debt (\$M)	Foreign Banks	U.S. Banks
Chicago Skyway	\$948	Banco Santander Central Hispano (Spain) Calyon (France) Banco Bilbao Vizcaya Argentaria (Spain) Depfa Bank (Ireland)	Citigroup
Indiana Toll Road	\$3,030	Banco Bilbao Vizcaya Argentaria (Spain) Banco Santander Central Hispano (Spain) Caja de Ahorros y Monte de Piedad de Madrid (Spain) BNP Paribas (France) Depfa Bank (Ireland) RBS Securities Corp. (Scotland) Dexia Credit Local (France)	None
Pocahontas 895	\$475	Depfa Bank (Ireland) Banco Espirito Santo de Inuestimento (Spain) Bayerische Hypo und Vereinsbank (Germany)	None
SH-130	\$686	N.A.	N.A.
I-595	\$781	N.A. (12 bank club)	N.A.
Port of Miami	\$342	BNP Paribas (France) Banco Bilbao Vizcaya Argentaria (Spain) RBS Citizens (Scotland) Banco Santander Central Hispano (Spain) Bayerische Hypo und Vereinsbank (Germany) Calyon (France) Dexia Credit Local (France) ING Capital (Netherlands) Societe Generale (France) WestLB (Germany)	None
PP-22PR-5	\$425	TBD	TBD
Presidio	\$167	N.A.	N.A.

Sources: Rosenberg Real Estate Equity Funds (RREEF), Public Works Financing (PWF).

### Challenge: Intergovernmental Issues

Excessive bureaucracy is another challenge when attempting to engage the private sector in infrastructure development. Creating a public–private partnership involves costly and sometimes unpredictable procurement processes, various levels of government programs, and numerous stakeholders.

A single project can involve local, state, and national oversight and stakeholders. State and local officials take the lead in deciding what gets built and how it will be funded, but decisions are influenced and often hampered by federal guidelines and restrictions that accompany discretionary funding programs. For example, Lab participants agreed that federal rules for “scoring” programs or expenditures that affect the national budget are a deterrent to attracting new investment because of the risk associated with politically driven decisions.

In a recent survey, institutional investors named infrastructure as one of the most political and operationally risky investment types. Given the bureaucracy around project development, the government is perceived as a risky partner. This prevents investment on a project and funding level.

### Challenge: Perceptions and Planning of P3s

The term *public–private partnership* is generic, classifying a wide variety of projects, from health-care delivery to law enforcement, across industries and regions. Consequently, there can be misconceptions about the structural nuances of an infrastructure P3 in terms of the financing or funding, and how the project is developed. Within infrastructure P3s, there is also a great variety of projects, which can lead to investor reticence. There are no outlined standards for developing infrastructure P3s, and therefore no common understanding or shared language to articulate potential deals.

P3s in the United States have generally been focused in the transportation area, and much of the public discussion often tends to conflate infrastructure and transportation. This distinction is important because as the “business model” for transportation and transit is in a period of churn and change many of the most promising new projects are in areas such as water and energy.

Additionally, given the number of governing bodies at various levels of government, there is no central resource guide for investors to navigate the pipeline of development deals or to provide technical assistance. State centers of excellence are beginning to add this capacity and expertise; however, the shortage of human capital is an additional barrier to investment. Over 30 states have passed PPP laws, Virginia being the first, and the Public Private Partnership panel has explored “best practices” for P3s.

The lack of standards and guidelines for developing P3s highlights an additional challenge: there is insufficient planning to determine long-term maintenance costs. A project may receive approval, but without any qualifications about overall life cycle and without taking into account those costs that will necessitate additional rounds of financing down the road.

The challenges in the P3 market require multifaceted solutions: new financing options, improved coordination and clarity around government engagement, and better education on the best practices for P3 development. During the Lab, participants outlined recommendations for potential next steps that address these issues.

What are the most effective platforms to attract private capital to infrastructure projects?

## Financial and Policy Solutions

---

Fixing the roads, building new bridges, and expanding ports will take a combination of new investment and better coordination of current funding programs. Lab participants discussed the current proposals in Congress for a national financing entity, as well as the design of new models that could help overcome challenges associated with current funding programs. Lab participants discussed options and agreed that the federal government should, at a minimum:

- find ways to incentivize state and local agencies to institute new funding approaches, including tolls and other forms of direct user fees;
- give states and localities substantial flexibility in making these decisions;
- provide more technical assistance and resources for pre-development planning (e.g., more “front-end” assistance to help project sponsors assess their feasibility, and conduct planning and permitting activities prior to construction).

There is still, however, great debate as to the most effective platform to attract private capital. As Lab participants reviewed various proposals, questions remained at the forefront of the discussion and served as a means to assess the models: Is this at a national level or a state level? Should it replace current programs or work alongside them? Will the financing “pick a winner” or remain neutral?

Over the years, a variety of legislative proposals have been put forth for a national infrastructure bank (I-bank). From President Obama’s American Jobs Act to Sen. John Warner’s Building and Renewing Infrastructure for Development and Growth in Employment (BRIDGE) Act and Rep. John Delaney’s Partnership to Build America Act, the I-bank model would resemble entities like the European Investment Bank or the Export-Import Bank, and would offer debt financing products in the form of loans or credit enhancements. In table 3, a side-by-side comparison of two of the recent congressional proposals shows the differences involved in the structuring.

TABLE 3		<i>Comparison of Recent Legislative Proposals</i>	
	Senate BRIDGE Act	House Partnership to Build America Act	
Budget scoring	\$7 billion (preliminary)	\$80 billion (preliminary, pending Senate revisions)	
Capitalization	\$10 billion appropriation, then self-sustaining with fees	\$50 billion, 50 year bonds issued at 1% fixed rate to corporations seeking to repatriate profits, then self-sustaining with fees	
Loans, guarantees	Long-term credits to private developers for up to 49% of project cost; may not be subject to first loss	Credit enhance municipal bonds. Senate companion bill would allow direct loans to P3 developers	
Source of funds	Appropriations	Repatriated profits	
Project selection	By CEO and board appointed by the president	By board consisting of four presidential appointees and seven private-sector members	
P3 component	Focused on P3s	At least 25% of projects must be P3s	
Scope	Transportation; water; energy transmission, distribution, and storage	Transportation; water; energy transmission, distribution, and storage	
Leverage	Same as TIFIA (30:1 x \$10bn = \$300bn)	Credit enhancing municipal bonds (15:1 x \$50bn = \$750bn)	
Transition	Existing federal loan windows remain open	Existing federal loan windows remain open	
Staffing	Modeled on Export-Import (Ex-Im) Bank, not subject to Title 5 pay scales	Modeled on Ex-Im Bank, not subject to Title 5 pay scales	
Institutional structure	Managed by presidential appointees and overseen by Treasury Department	Independent nonprofit board operates on an enterprise basis under private-sector fiduciary rules	
Legislative vehicle	Moving Ahead for Progress in the 21st Century Act (MAP21) reauthorization	TBD	
Companion bill	TBD	TBD	

Source: Public Works Financing (PWF), November 2013.

Participants discussed other potential government entities that could be created to overcome the challenges to accessing new capital. Below is a review of the models.

## POTENTIAL MODEL: A NATIONAL INFRASTRUCTURE BANK (OR SIMILAR ENTITY)

The prospect of a new federal entity to spur private investment raises a host of issues involving the types of financing tools it would provide, the entity's relationship to existing federal programs, and the extent to which it would rely on additional federal funding.

During the Lab discussion of a national I-bank, two fundamental questions arose: Is the creation of an I-bank necessary, and would it lead to higher levels of investment? Given the scarcity of federal funding, participants discussed whether any new entity could have a meaningful impact if not coupled with additional federal (or other outside) funding.

## Defining the Mission: Attracting Private Capital

Lab participants agreed that a federal I-bank should have a primary mission of attracting capital from the private sector to stretch the decreasing amount of federal dollars spent on infrastructure projects. The government clearly cannot do it alone, and thus the I-bank should focus on leveraging public-sector capital to attract private investment to supplement current budget levels.

Participants suggested that the I-bank be designed to provide or support the lending of long-term debt. The structure of the financing could potentially match long-term pension liabilities to attract new institutional investors, for example pension funds. The facility could also explore taking an equity stake in projects, although there was debate as to the effectiveness of the government as an equity holder.

For purposes of discussion, participants assumed that the set of financing tools would include direct subsidies, loans, loan guarantees, lines of credit, bond insurance and reinsurance, debt or equity purchases, issuance of bonds on behalf of a supported project, insurance for project development costs, or technical assistance on project development or financing. Because the availability of funds affects the degree of support an entity can provide to projects, any direct impact is likely to be small unless the entity receives continuing federal appropriations or has some other source of external support.

## Refining the Structure

Lab participants agreed that a critical component of the I-bank should be tools such as:

1. **Credit enhancement:** It is clear that a credit enhancement fund or loan-loss reserves can help to improve the creditworthiness of projects and thus lower the cost of capital for borrowers.
2. **Planning assistance:** The cost of planning is not often factored into the total budget of a project. Some participants felt that a portion of the I-bank could use grants (in their traditional sense, as one-time payments that do not need to be repaid) to support the upfront planning costs for projects, to help improve the balance sheet of a project at its conception.
3. **Standardization of pre-selection criteria for public–private partnerships:** An I-bank could potentially help to standardize the selection criteria so that more investors would be interested in putting in their capital.

## POTENTIAL MODEL: INFRASTRUCTURE EXCHANGE NETWORK

Because of the potential political roadblocks that could slow progress toward a national infrastructure bank,<sup>9</sup> Lab participants discussed another potential federal model that would utilize existing programs but function primarily to support the development process of projects and the allocation of federal funds.

An infrastructure exchange network might be based on linking together regional exchanges and state centers of excellence that coordinate funding, provide technical assistance, and manage projects with experts, governments, and investors. The West Coast Infrastructure Exchange, for example, brings together public and private stakeholders from California, Oregon, Washington, and British Columbia to help facilitate development of new projects and provide access to innovative financing mechanisms. Other regions throughout the country have made steps to

create similar models, including in the mid-Atlantic and Great Lakes areas. Both the U.S. House and U.S. Senate Transportation, and Housing and Urban Development committees have approved bipartisan appropriations language instructing federal agencies to recognize multistate or multijurisdictional partnerships.

The network could serve as a public agency platform that facilitates project development, assists investors in finding available funding programs, and helps to provide technical assistance for projects that could benefit from government financing tools. Federal assistance to regional exchanges has been suggested in the form of project planning loans (grants) and credit lines (loans to lenders) to assist financing under federal requirements

The network could also work with all regional and state financing entities, including DOT's new infrastructure project center announced in July, to better coordinate cross-border, between local governments, state-level representatives, and congressional leaders, as well as investors and developers, to help identify projects in the development pipeline and move them faster toward implementation.

A national exchange network might also, for example:

- adopt international best practices
- use market-proven documentation
- recruit and retain quality talent
- offer a fair and transparent procurement process
- offer effective stakeholder management
- consult with the industry on a regular basis on the feasibility of various projects and their components, e.g., market sounding

Given bipartisan interest in the need for new tools and methods to improve the pipeline of potentially investable infrastructure projects, lab participants determined that an exchange model could bypass budget politics, as it would not need to be capitalized. It would serve simply to better coordinate existing programs, accelerate best practices and link investors and public infrastructure projects. This type of entity was deemed both desirable and viable because it could generate bipartisan support. However, participants did acknowledge that the model would need refinement and regional flexibility so as to add unique value, and not just another layer of bureaucracy.

## POTENTIAL MODEL: NATIONAL INFRASTRUCTURE COUNCIL

A recent report from McKinsey Global Institute projected that better program management and improved operating efficiencies could save \$1 trillion in infrastructure expenses in the short and long terms. It could potentially save the government much-needed funds, while also making it easier for stakeholders to access funding, thus eliminating one of the barriers preventing new investors from putting their capital into infrastructure projects.

To capitalize on this potential savings, Lab participants discussed a potential national infrastructure council, which would review all government programs across departments and state/federal levels to modernize financing processes, reform inefficient funding programs, reduce unnecessary programs, and highlight areas for new funding. The council might be loosely structured like the 1990 Defense Base Realignment and Closure (BRAC) commission, which was established to review a list of recommended military base and installation closings to reduce funding

inefficiencies. The council would review programs and either continue or phase out those that are not performing or those that are unnecessary or redundant. Similar to the BRAC commission, the council would not need an affirmative congressional sign-off; but recommendations would be subject to veto, as seen in table 4.

The council could appoint regional representatives who would provide data and evaluation to help support the zeroing-out of programs. The regional czars would work with state and local government officials and experts to obtain feedback and recommendations. This work would encompass all infrastructure programs, including transportation, water, energy and air quality.

<b>TABLE</b>			
<b>4</b>		<i>BRAC vs. Task Force structure</i>	
	<b>BRAC</b>	<b>Task Force</b>	
Independent members	<b>x</b>		
Focused on cuts	<b>x</b>		
Clear criteria	<b>x</b>		
Up-or-down vote	<b>x</b>	<b>x</b>	
Recommendations operative automatically	<b>x</b>		
Political cover	<b>x (for cuts)</b>	<b>x (for tax increases)</b>	
Source: The BRAC Commission as a Model for Spending Reform.			

The council would add value in that it would function as a “clearinghouse” to help improve the efficacy and efficiency of government funding.

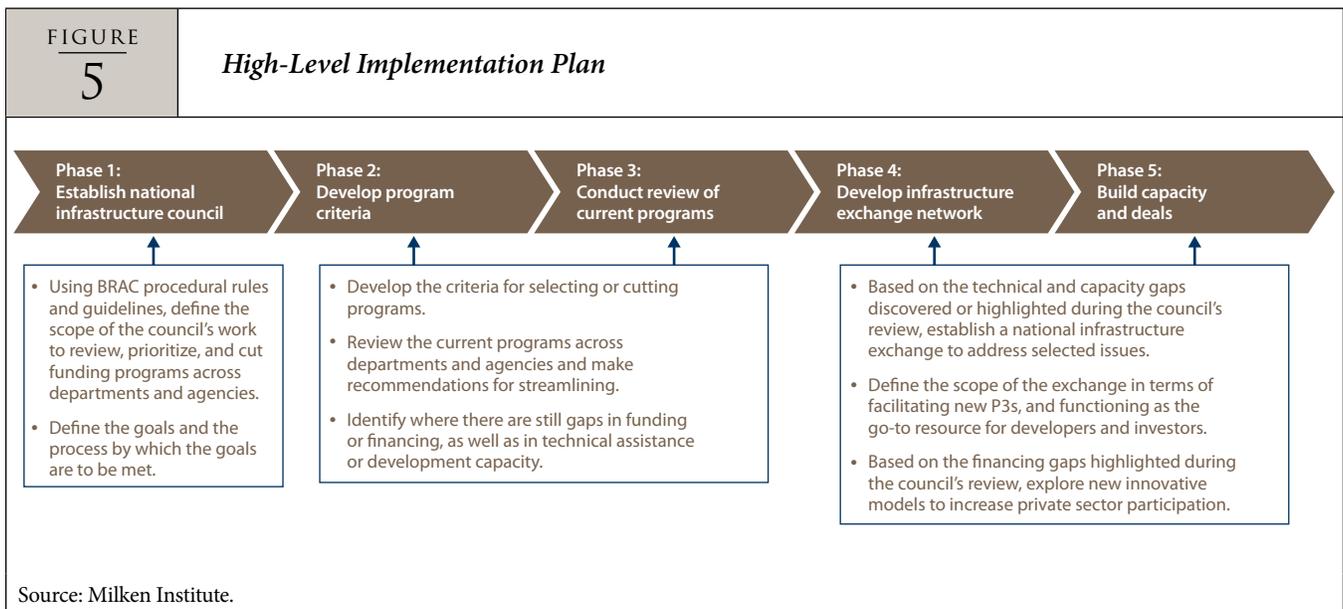
## NEXT STEPS

After reviewing each model, Lab participants outlined next steps that policymakers or industry stakeholders could take to further refine and implement certain elements of pending proposals.

If consensus develops to create a new special-purpose entity to help address the infrastructure investment conundrum, policymakers should consider, among other things, how current or proposed federal entities and programs would work in harmony and produce better outcomes. The guiding principles and intended outcome should be clear and workable, along the lines of those summarized in table 5.

TABLE 5	<i>Guiding Principles</i>
	Accelerate investment
	Have meaningful, positive impact
	Improve the allocation of resources (relative to existing agencies and programs)
	Coordinate its activities with federal agencies and programs, as well as state and local agencies and programs
	Supplement, not supplant, support already available through existing programs
	Provide more “front-end” assistance to help sponsors of major projects assess project feasibility, and conduct planning and permitting activities
	Use a systems approach that will map out the project needs based on its lifecycle
	Encourage sponsors to identify new revenue streams, promote more effective governance, and spur further innovation in project development and operations

Figure 5 broadly outlines a high-level approach to implementing a national infrastructure council to set high-level goals and weed out ineffective policies and programs and a national infrastructure exchange Network to link and support emerging regional exchanges and state centers of excellence.



Whether taken up by one or more new entities created by Congress or by executive order, future actions should fully consider and address the key policy, regulatory and operational issues identified during the Lab, with a focus on reducing bureaucracy, streamlining funding programs and processes, better coordinating stakeholders, and creating financial products that address the true funding gaps.

## Conclusion

---

Numerous studies cite the benefits of investing in the nation's infrastructure, and the costs of not addressing the funding gaps are clear. Economic growth, job creation, national security, and global competitiveness are at stake.

As public sector budgets shrink in the face of growing commitments, it is increasingly clear that government cannot do it alone. To meet the growing demand, the public sector must use limited public funds wisely and unlock every possible source of private sector investment. This means creating an optimal environment for investment and ensuring that efficient and effective funding and finance models are in place.

The momentum toward public-private partnerships is a positive signal for the future of infrastructure financing, but much more remains to be done. As more states enact P3 legislation, and as lawmakers look to the private sector for assistance in meeting the trillion-dollar funding gap over the next decade, improved coordination and collaboration among industry stakeholders is crucial.

This Lab report identifies key challenges and summarizes key recommendations for helping to unlock private sector investment in U.S. infrastructure on an unprecedented scale. It describes certain policy and regulatory changes the government needs to make to remove barriers to investment in key sectors of infrastructure.

Now more than ever, there is a need for innovative financing mechanisms, along with the knowledge and political will to use them. But financing and operational solutions will need to work in parallel to achieve the maximum impact. Only then can the country realize the return on investment that infrastructure can generate.



## APPENDIX I

## Financial Innovations Lab Participants

*(Affiliations at time of Lab)***Dale Bonner***Senior Advisor  
Milken Institute***Jay Brown***Managing Director  
Alvarez & Marsal***Dan Carol***Director of Strategic Initiatives  
Office of the Governor, State of Oregon***David Connolly***Professional Staff Member  
U.S. House Committee on Transportation  
and Infrastructure***Nicholas Devereux***Legislative Counsel  
U.S. Senator Mark Warner  
(D-Virginia)***Clare Doherty***Director, Budget and Program Analysis  
U.S. House Committee on Transportation  
and Infrastructure***Marvin Duncan***Senior Agricultural Economist  
U.S. Department of Agriculture***Dianna Dunne***Director, Government Affairs  
Milken Institute***Evelyn Estes Fortier***Banking Counsel  
Office of U.S. Senator Roger Wicker  
(R-Mississippi)***Jake Falk***Counsel  
Chadbourne & Parke LLP***Daniel Flanagan***Senior Advisor, Infrastructure  
TorreyCove Partners***Travers Garvin***Director  
KKR & Co. LP***Sharon Green***Global Director of Financial Advisory  
HDR***Arthur Guzzetti***Vice President for Policy  
American Public Transportation Association***Jonathan Halpern***Adjunct Assistant Professor,  
Georgetown Public Policy Institute,  
McCourt School of Public Policy  
Georgetown University***Joel Kurtzman***Senior Fellow  
Milken Institute***Caitlin MacLean***Associate Director, Financial Innovations Labs  
Milken Institute***Brian Pallasch***Managing Director, Government Relations  
and Infrastructure Initiatives  
American Society of Civil Engineers***James Pass***Managing Director  
Guggenheim Partners***Sarah Sandler***Associate Director  
Milken Institute***Staci Warden***Executive Director, Center for Financial Markets  
Milken Institute***Bradley Wassink***Program Manager, Domestic Policy Studies  
American Enterprise Institute*

APPENDIX II

*Key List of Acronyms*

*P3 Deal Structures for Recent Transportation Projects*

**AA DT:** Annual Average Daily Traffic

**BFM:** Build, Finance and Maintain

**CPI:** Consumer Price Index

**DB:** Design and Build

**DBF:** Design, Build and Finance

**DBFOM:** Design, Build, Finance, Operate, and Maintain

**DOT:** Department of Transportation

**HOT:** High Occupancy Toll Lanes

**HOV:** High Occupancy Vehicles

**NPV:** Net Present Value

**O&M:** Operate and Maintain

**PAB/Tax Exempt:** Private Activity Bonds

**PANYNJ:** Port Authority of New York and New Jersey

**RFP:** Request for Proposal

**TIFIA:** Transportation Infrastructure Finance and Innovation Act

## ENDNOTES

1. "Report Card for America's Infrastructure," American Society of Civil Engineers, 2013.
2. "Report Card for America's Infrastructure," American Society of Civil Engineers, 2013.
3. Dobbs, Richard, et. al. "Infrastructure Productivity: How to Save \$1 trillion a Year," McKinsey Global Institute: January 2013.
4. "The Global Competitiveness Report: 2013-2014," World Economic Forum, 2013.
5. "Global Infrastructure Investment Index: Move from Risk to Reward," EC Harris, 2013.
6. "Report Card for America's Infrastructure," American Society of Civil Engineers, 2013.
7. DeGood, Kevin, "Understanding the Highway Trust Fund and the Perils of Inaction," Center for American Progress: February 20, 2014.
8. "TIFIA Questions and Answers," U.S. Department of Transportation, <http://www.fhwa.dot.gov/map21/qandas/qatifa.cfm>, accessed on April 7, 2014.
9. Puentes, Robert and Bruce Katz, "To Fix America's Infrastructure, Washington Needs to Get Out of the Way," *Forbes*: May 9, 2014, <http://www.forbes.com/sites/realspin/2014/05/09/to-fix-americas-infrastructure-washington-needs-to-get-out-of-the-way/>, accessed on August 6, 2014.





## MILKEN INSTITUTE

1250 Fourth Street  
Santa Monica, CA 90401  
Phone: 310-570-4600

1101 New York Avenue NW, Suite 620  
Washington, DC 20005  
Phone: 202-336-8930

137 Market Street #10-02  
Singapore 048943  
Phone: 65-9457-0212

E-mail: [info@milkeninstitute.org](mailto:info@milkeninstitute.org) • [www.milkeninstitute.org](http://www.milkeninstitute.org)

