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Annual Privatization Report 2017
Surface Transportation

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1. Global Overview

Long-term public private partnerships (PPPs) for highways have been used for the past 60 years. As documented by Jose Gomez-Ibanez and John Meyer, the phenomenon began in the 1950s and 1960s, as France and Spain emulated the model pioneered by Italy prior to World War II.[1] Italy's national motorway systems were developed largely by investor-owned or state-owned companies operating under long-term franchises (called concessions in Europe). In exchange for the right to build, operate and maintain the highway for a period ranging from 30 to 70 years, the company could raise the capital needed to build it (typically a mix of debt and equity). The model spread to Australia and parts of Asia in the 1980s and 1990s, and to Latin America in the 1990s and 2000s.

Nearly all the projects in those regions from the 1950s to 1980s were financed based on the projected toll revenues to be generated once the highway was in operation. Some projects went bankrupt as a consequence of reduced traffic and revenues during severe economic downturns (e.g., the oil price shock of 1974), leading to nationalization of some of the companies. In the late 1990s and early 2000s the governments of France, Italy, Portugal and Spain all privatized their state-owned toll road companies and formalized the toll concession PPP model. Australia has allowed several concession company entities to go through liquidation, with the assets (in each case major highway tunnels) being acquired by new operators at a large discount from the initial construction cost.

Other governments in Europe adopted a different form of highway concession. Generally not favoring the use of tolls, they created the concept of availability payments as a means to finance long-term concession projects. In this structure, the company or consortium selected via a competitive process negotiates a stream of annual payments from the government sufficient (the company expects) to cover the capital and operating costs of the project. The capital markets generally find such a concession agreement compatible with financing the project, combined with a mix of debt and equity. Since no toll revenues are involved, this model applies to a much broader array of transport and facility projects, including rail transit and public buildings. In the highway sector, nearly all long-term concession PPP projects in Canada, Germany, the UK, and a number Central and Eastern Europe countries have been procured and financed as availability payment (AP) concessions.[2]

In a small but growing number of cases—major bridges, as well as highway reconstruction that includes the addition of express toll lanes, for example—governments collect the toll revenues and use that money to help meet their availability payment obligations. These cases are titled "hybrid" concessions in this section.

Global PPP concessions continued at a strong clip during 2016. *Public Works Financing* has maintained a database of such projects since 1988. In its latest annual review of this sector, it identified the top 10 transportation deals of 2016 (through October), presented here as Table 1.

Table 1: 10 Largest Global Transportation Deals of 2016

Project	Location	Country	Value ($B)	Type	Duration	Concessionaire
Roma Latina	Rome	Italy	$3.10	DBFOM, toll	43 years	Sacyr
Purple Line	Montgomery County, Maryland	United States	$2.65	DBFOM, AP	35 years	Fluor/Meridiam
D4/R7	Bratislava	Slovakia	$1.85	DBFOM, AP	30 years	Cintra/Macquarie
Valley Line Light Rail	Edmonton, Alberta	Canada	$1.60	DBFOM, AP	30 years	Bechtel/Fengate
Conexion Pacifico 3	Medellín	Colombia	$1.29	DBFOM, AP/toll	25 years	MAHC/MECO
A94	Munich	Germany	$1.23	DBFOM, AP	30 years	Effiage/BAM
Conexion Pacifico 1	La Pintada	Colombia	$1.07	DBFOM, AP/toll	25 years	ACS
SW Calgary Ring Road	Calgary, Alberta	Canada	$1.06	DBFO, AP	35 years	Meridiam/Kiewit
SH 288	Houston, Texas	United States	$1.06	DBFOM, toll	52 years	ACS/Infrared
Autopista Al Mar	San Cristobal	Colombia	$0.97	DBFOM, AP/toll	25 years	Sacyr/Strabag

Source: "Global Deal Flow: 31 Concessions." *Public Works Financing.* October 2016.
Note: DBFOM: Design-Build-Finance-Operate-Maintain; DBFO: Design-Build-Finance-Operate

As reflected in this table, the growing use of AP concessions has enabled PPPs to be used in projects that do not generate their own revenues, as well as in hybrid concessions (discussed above) in which toll revenues help the government cover the costs of its AP obligations.

2. International Highway Infrastructure: 2016

2.1 Canada

Canada's federal PPP program has been put on hold while the new Liberal government evaluates the PPP program. The program was started under the previous Conservative government in 2009. The Conservative and Liberal parties have different views of infrastructure. The Conservative party views infrastructure as a long-term investment, while the Liberal party views infrastructure primarily as a job-creating economic stimulus. PPPs can boost the economy over the long term, but they are not a short-term job creator. As a result, there may be less interest in P3s under the new government.

Canadian P3s have been less controversial than projects in other countries because most have been procured as non-tolled availability payment (AP) concessions, not toll concessions. This has helped eliminate claims of double taxation but is unrelated to the federal government's concerns.

The federal freeze of P3 projects has affected one project: The Gardiner Expressway. The 18-km route with 6–10 lanes was denied funding by the new government. The Toronto Council, which backed a PPP, switched its support to a traditional procurement when it became clear the federal government was not going to provide the funding.

However, several other highway PPP projects are moving forward at the provincial level including a $350-million Canadian expansion of Highway 427 in Ontario and $583 million for a Calgary Ring Road.

For transit projects, Canada created an infrastructure bank to be a subordinated equity partner in transit operations and provide low-cost loans to private partners. A total of $15 million will be allocated from current funding and $20 million will be spent on assets and equity. Edmonton, Alberta is moving forward with a new light rail line procured under the previous Administration. However, given that the federal PPP program is on hold, it is not clear if the Administration's new infrastructure bank will support PPPs.

There was only one sale and acquisition in Canada last year. ACS sold most of its 50% stake in the country's South Fraser Perimeter Road to Connor, Clark & Lunn and to Desjardins.

2.2 Europe

Germany's finance minister is considering selling a minority stake (up to 49.9%) in the country's motorways to allow the government to develop the country's infrastructure more efficiently. Currently, ownership of the third largest motorway network in the world (behind the U.S. and China) is split between the federal government and the country's 16 states. The states-owned portion would be sold. A decision will not be made until after the 2017 elections.

The country also has plans to increase its autobahn network by building a new link and tolling all vehicles.[3] (Currently, heavy-duty trucks are the only vehicles that pay a toll on the existing autobahn routes). German residents would have the tolls deducted from what they have already paid in taxes. Non-Germans would have to pay the toll, up to $146 dollars. The European Commission stated that this proposal unfairly targets tourists and cross-border commuters. Negotiations between Germany and the EU on the tolls are ongoing.

In project news, German authorities selected a team for the A6 motorway near Stuttgart. The A7 motorway, which was initially expected to be procured before the A6, is scheduled to be procured in 2017. Procurement of the six-lane expansion of the A3 is also expected to take place in 2017. All German PPPs are availability payments.

Holland is planning to extend its A15 highway by 12 km. The €860-million project will create a connection with Germany. The country is also looking to choose a winning bidder for the A16 Rotterdam PPP in 2017.

Italy granted a 43-year concession to build 186 km of toll roads in the Rome region. These projects included the Sacyr-built Roma-Latina toll road connecting Rome and Latina, which was the most valuable surface transportation PPP in the world in 2016.

Additionally, the country's Prime Minister Matteo Renzi has challenged Salini Impregilo S.p.A. to complete a long-stalled, record-breaking 5.3-km long suspension bridge over the Messina Strait between mainland Italy and Sicily. The government is offering to support the project's revival that the government suspended due to politics in 2006 and again in 2011.

Norway's roads authority is seeking partners for several projects. The first is the Riksveg motorway and the second is a 25-km sub-sea tunnel. However, neither of these projects is a sure thing. Norway's knowledge of PPPs lags other countries and a 2017 election may change the political appetite for such deals.

Slovakia's plan to build the four-lane, 27-kilometer D4 motorway reached financial close. The roadway will form a beltway around the capital Bratislava. A 32-km roadway that links the capital with Austria is also part of the deal. The project is being financed by a $1.1-billion bank loan.

Spain began new talks with international banks to try to reduce the debt owed by nine Spanish tollways currently in default. Spain is planning to offer compensation for banks to write off 50% of the debt. The banks are interested, but making a deal has become more complicated since pieces of the debt have been sold to U.S. and U.K. investment funds.

Finally, several roadways in Europe changed hands in 2016. John Laing sold its interest in **Poland**'s A1 project to a First State-managed fund for $163 million, while Skanska sold its entire shareholding in the A1 motorway concessionaire to DIF and Swiss Life. In **France,** AXA Investment Managers acquired InfraRed's stake in the A63 toll road, while French developer Eiffage and a Macquarie Group subsidiary agreed to buy 46% of France's A41 concessionaire ADELAC.

2.3 Latin America

Argentina passed a new PPP law that allows the government to award PPP deals to private investors for the country's four-year infrastructure program. Argentina wants to upgrade and build 2,800 km of highways, improve airports, modernize freight rail and construct tunnels to neighboring Chile. To advance the program, the country and Qatar agreed on a $1.3-billion infrastructure fund that will help finance many of the PPPs.

Brazil's new President Michel Temer created the Investment Partnership Program (IPP) to expand the role of the private sector in infrastructure. The IPP includes a monitoring mechanism that allows different government agencies to better coordinate activities. Starting in 2017 the government plans on seeing contracts for five highways worth $5.5 billion.

Chile is building Camino Nogales, a 43-km toll road, by lengthening and widening the existing road. The road will run from the Pan-American Highway in Nogales to Puchuncaví. The concessionaire, Belfi Conpax Aura, won the $110-million contract to widen the roadway from two to four lanes and modernize the 2.5-km El Melon tunnel. Separately, Albertis was awarded a contract to widen the 141-km Santiago to Valparaíso-Viña del Mar toll road from two to three lanes.

Additionally, the country invited developers to bid on a 40-year, $800-million, 5.2-km long segment tunnel in Santiago, part of the larger Américo Vespucio ring road around the capital. Another project, the $420-million upgrade of Route 66 between Rancagua and San Antonio is expected to go to bid in 2017.

Colombia is engaging in more PPPs than any other country in Latin America. The country's National Infrastructure Agency (NAI) oversees more than 50 PPP projects. The country granted three separate concessions for the Autopista Conexión Pacífico (segments 1, 2 and 3) that will connect Medellín with La Virginia. Elsewhere, Consesión Costera is building the 110-km Cartagena to Baranquilla toll road.

Colombia reached financial close on five different PPP deals in 2016. The $460-million Santana-Mocoa-Neiva highway project, the $410-million Santander de Quilichao-Papayán highway, the $597-million Mulalo Loboguerrero Highway, the $550 million-Bucaramanga-Yondo-Barrancabermeja and the $881-million Autopista al Mar 1 have all reached financial close. The Autopista al Mar 1 project modernizes and widens 176 km of highway in the Antioquia region of Colombia.

Mexico reached financial close on two toll roads. The first is 90 km linking Puerto Vallarta and Las Varas; the second is 31 km linking San Blas and Tepic.

Elsewhere, the country has targeted $1.4 billion to upgrade four major highways to four lanes. (Centerline km for the project totals 1,541.) However, the Mexican secretary of transportation cancelled a separate project—the $248-million La Raza Indios Verdes-Santa Clara tunnel connecting Mexico City to Pinfra—due to environmental concerns. The government hopes to rebid the project.

Peru's Investimentos & Participações Em Infraestrutura SA sold its electronic toll concession system to Vinci SA for $1.7 billion.

2.4 Asia:

India is using PPPs aggressively to build out its roadway network. During FY 2016, India built more than 6,000 km of roadways. One of India's main goals is to reduce its roadway fatalities, which number 150,000 per year. The country plans to spend $1.6 billion to improve the 726 road segments with the worst road safety scores.

IRB Infrastructure Developers, an Indian construction company, secured a design-build-finance-operate-transfer project to widen the roadway linking Rajasthan and Gujarat to six lanes as part of the National Highway Development Project Phase 5. The project has a 20-year concession period. Elsewhere, Isolux Corsán has won an $8.5-million contract for the modernization and extension of the NH-74 highway. The project will widen parts of the road to four lanes and perform maintenance for four years, although Isolux Corsan went bankrupt earlier this year and the project's fate is uncertain. The country is also building a $1.5-billion, 14-km tunnel with a concession period of 22 years.

Abertis has increased its stake in several Indian toll roads. The company bought 100% of the Trichy Tollway Private Ltd that operates the 94-km NH-45. The company also acquired a 74% stake in NH-44—a 58-km toll road serving Hyderabad and Bangalore.

India is also exploring auctioning 75 highways for 30 years to secure an upfront payment that would allow the government to enter into PPPs or build badly needed additional roadways. The innovative idea is considered a toll-operate-transfer PPP. India plans to develop 50,000 km of road projects over the next five to six years.

Indonesia's state-owned construction companies have been ordered to complete several abandoned projects including the 54-kilometer Bocimi toll road.

The Philippines has a new expressway linking Macapagal Blvd and Manila International Airport. The 30-year PPP concession roadway cut travel times by almost 70%.

Elsewhere, Manila North Tollways plans to extend the North Luzon Expressway by 44 km and the NLEX Segment 8 by 7.9 kilometers. Numerous projects are in the pipeline including Segment 10 of the NLEX Harbor Link, Segments 2-3 of the NLEX Road Widening Project, the C-5 Link Expressway (a 7.6-km link between the C-5 and R-1 expressways), the Cavite-Laguna Expressway, the Cebu-Cordova Link Expressway and the NLEX and South Luzon expressway connector road.

Turkey's largest city Istanbul's third bridge, the $3-billion Yavuz Sultan Selim, opened in 2016. The bridge over the Bosporus Strait is the world's widest suspension bridge (192 feet) and second Turkish bridge operated by the private sector.[4] The country is accepting build-operate-transfer proposals for a bridge about 200 km south of Istanbul crossing the Sea of Marmara.

2.5 Africa:

South African company African Infrastructure Investment Managers (AIIM) has sold investments in three toll roads. The 1,364-km toll roads span the country and extend to Botswana and Mozambique.

Kenya plans to expand the Nairobi-Mombasa road to six lanes via a PPP. The bidding process is currently ongoing and the government hopes to close on the project in 2017 or 2018. The project may require building additional free roads due to a requirement that free roads be available. Later, the government plans to extend the Nairobi-Nakuru highway, improving the flow of traffic to Western Kenya.

Zimbabwe has entered into a contract with a Chinese-Austrian consortium to resume the reconstruction and expansion of the Harare-Beitbridge-Chirundu Highway, which links Zimbabwe to the ports of Durban and Richards Bay in South Africa. The build-own-transfer (BOT) model has a 20-year concession period. The project in 2011 had been awarded to a different consortium that, due to political reasons, was unable to complete the project.

2.6 Oceania:

Australia saw three projects reach financial close in 2016: two transit lines and one port project. Three highway and three additional transit projects are considered high priority for 2017.

Two projects were bought out of bankruptcy last year. A Transurban-led consortium acquired the Airport Link M7 in Brisbane. The 6.7-kilometer variably-priced toll road connecting downtown with the airport opened in 2012, but actual traffic demand of 50,000 per day was far below projected estimates of 135,000–160,000 vehicles per day. In addition, Transurban has secured a refinancing for Sydney's Cross City Tunnel. The concession on the tunnel ends in 2035.

The federal government and the provincial New South Wales government are currently building the WestConnex project. The project has three stages: the widening of the M4 motorway and a 5.5-km tunnel extension, the building of a new 9-km tunnel/new interchange, and the construction of a new road tunnel linking the M4 and M5 corridors. A PPP will be used to build part of the M4 tollway. The M5 East roadway will be tolled and contracted out while the M5 West toll will be extended for 34 years. The government intends to sell a minimum 51% stake in the remaining government-owned tollways (part of M4 and M5). Egis Projects and Fulton Hogan Construction won a contract for the operation and maintenance of the WestConnex highway in the province of New South Wales.

Finally, the Melbourne government has committed to building the North East Link expressway. The section is the missing link in Melbourne's ring road.

New Zealand had only one roadway project reach financial close in 2016: the $550 million Puhoi-Warkworth Motorway. A recent Inspiratia analysis of PPPs in the country found that approximately two out of every three projects failed to reach financial close, suggesting that the country has systemic problems with its PPP system.[5]

3. U.S. Highway Concessions: 2016

Several PPP projects reached financial close in FY 2016:

- The largest highway project is SH 288, a 61-mile highway linking Houston with Freeport near the Gulf of Mexico. Used for commuting, freight movement and hurricane evacuation, the highway intercepts three beltways: I-610, Beltway 8, and State Highway 6. The PPP project is a DBFOM toll project to build four new express toll lanes (two in each direction) in the median as well as to operate and maintain the general purpose lanes. The $1.06-billion project includes a $357-million TIFIA loan, $299 million in private activity bonds, $375 million in private equity, $17 million in TxDOT funds, $15 million in TIFIA capitalized interest, and the remainder in interest income. ACS Infrastructure Development leads the concession company Blueridge Transportation Group. An alternate technical concept proposed by the private sector will rebuild 75% of SH 288's interchange with I-610. Project completion is expected during the second quarter of 2019. However, Hurricane Harvey's damage to the region may delay the project timeline.
- The suburban Richmond, Virginia-based Pocahontas Parkway was acquired by a consortium of European banks. The seller, Transurban, had bought the road in 2006 and built a state-mandated four-lane connector road to Richmond International Airport. The Great Recession prevented much of the planned residential development near the roadway. The Parkway, a $597-million long-term lease concession, was originally a design-build project supported by bond funds. It was refinanced in 2006 using a $150-million TIFIA loan.
- In Colorado, a consortium of DIF, HCL and Northleaf has agreed to acquire the Northwest Parkway from Brisa. The Northwest Parkway project includes a 99-year concession to operate a 14-km segment of the Denver beltway. The $500-million project reached financial close in March of 2017.

Table 2 provides an overview of the 2016 U.S. highway concession market, listed in order of the investment value of each project. For existing toll roads now leased to private concessionaires, the length of each lease is provided. In most new construction projects the concession conforms to a DBFOM contract, with terms ranging from 30 to 70 years. The majority of those concessions are based on toll-revenue financing, as indicated. The others are financed based on a state's agreement to provide annual availability payments (APs) over the life of the concession term. Some of those are "pure" availability payment deals, in which the state DOT uses part of its existing revenue sources (mostly federal and state fuel taxes) to meet its AP obligations. But the larger AP projects also involve toll revenue, which helps the state afford its AP obligations, as noted in the table.

Table 2: Largest U.S. Long-Term Highway and Airport Concessions, 2016

Project	Location	Value ($B)	Type	Begun	Concessionaire
Indiana Toll Road	Indiana	$5.725	66-year lease, toll	6/06	IFM Global Infrastructure Fund
Chicago Skyway	Chicago	$2.836	89-year lease, toll	1/05	Canadian Pension Plan Investment Board, Ontario Municipal Employees Retirement System, Ontario Teachers' Pension Plan
I-635 LBJ Managed Lanes	Dallas	$2.800	DBFOM, toll	6/10	Cintra/Meridiam
I-4 Ultimate	Orlando	$2.323	DBFOM, AP/toll	9/14	Skanska/Granite/Lane
Midtown Tunnel	Norfolk	$2.100	DBFOM, toll	4/12	Skanska/Macquarie
North Tarrant Expressway Phase 1	Fort Worth	$2.047	DBFOM, toll	12/09	Cintra/Meridiam
I-495 HOT Lanes	Fairfax County, VA	$1.998	DBFOM, toll	7/08	Transurban/Fluor
I-595 Managed Lanes	Fort Lauderdale	$1.814	DBFOM, AP/toll	2/09	ACS Infrastructure
Goethals Bridge	New York City/Elizabeth, NJ	$1.500	DBFM, AP/ toll	11/13	Macquarie/Kiewit
SH 183 Managed Lanes	Dallas	$1.415	DBF+OM, AP/toll	11/14	Kiewit
North Tarrant Expressway Phase 2	Fort Worth	$1.400	DBFOM, toll	9/13	Cintra/Meridiam
SH 130 Segments 5 + 6	Texas	$1.358	DBFOM, toll	3/08	Cintra/Zachry
ORB East End Crossing	Louisville	$1.180	DBFOM, AP/toll	3/13	Walsh/Vinci/Bilfinger Berger
Rapid Bridge Replacement	Pennsylvania	$1.119	DBFM, AP	3/15	Plenary Walsh
PR 22, PR 5	Puerto Rico	$1.080	40-year lease, toll	9/11	Albertis, Global Infrastructure Partners II
SH 288 Toll Lanes	Texas	$1.069	DBFOM, toll	5/16	ACS, Infrared, Shikin Banai
Grand Parkway, F-1, 2	Houston	$1.007	DBOM, AP/toll	3/13	Zachry/Odebrecht
I-95 Express Lanes	Virginia	$0.940	DBFOM, toll	8/12	Transurban/Fluor
Port of Miami Tunnel	Miami	$0.914	DBFOM, AP	10/09	Meridiam
SR 125, South Bay Expressway	San Diego	$0.773	DBFOM, toll	5/03	Macquarie
I-77 Managed Lanes	Charlotte	$0.648	DBFOM, toll	06/15	Cintra
Northwest Parkway	Colorado	$0.603	99-year lease, toll	05/07	Brisa/CCR
Portsmouth Bypass	Portsmouth, Ohio	$0.557	DBFOM, AP	04/15	ACS, Infrared, Star
I-69 Upgrade	Indiana	$0.370	DBFOM, AP	07/14	Isolux/PSP Investments
Presidio Parkway	San Francisco	$0.365	DBFOM, AP	10/12	ACS/Meridiam
Dulles Greenway Toll Road	Loudon County, VA	$0.350	DBFOM, toll	09/93	Macquarie
Pocahontas Parkway	Henrico County, VA	$0.300	88-year lease, toll	06/16	DBi Services
Southern Connector, SC	Greenville, SC	$0.191	DBFOM, toll	02/98	Interwest
South Norfolk Jordan Bridge	Chesapeake, VA	$0.140	BOO, toll	1/11	Figg/American Infrastructure
91 Express Lanes	Orange County, CA	$0.130	DBFOM, toll	07/93	Level 3/Cofiroute/Granite
US 36 HOT Lanes, Phase 2	Colorado	$0.113	DBFOM, toll	02/14	Plenary/Ames/Granite
Camino Columbia Bypass	Laredo, TX	$0.085	DBFOM, toll	06/99	Camino Columbia Inc.

Source: "U.S./Canada Transportation PPP Projects Scorecard." *Public Works Financing*. October 2016.

Notes:

AP: Availability Payment
BOO: Build-Operate-Own
DBFOM: Design-Build-Finance-Operate-Maintain
DBFM: Design-Build-Finance-Maintain
OM: Operate-Maintain

Since 2012, the major trend in highway concessions has reportedly migrated away from toll revenue-based financing toward AP-based financing. However, of the 32 highway projects in Table 2, 21 were financed based on toll revenues. Of the others, only five were financed on a pure AP basis, with the six larger AP concessions all involving new toll revenues that will supplement the state's revenue sources. The total dollar value of the 32 concessions is $42.6 billion. Of that amount, 60% (of the non-airport projects) was generated based on toll-revenue financing, with the other 40% financed based on the states' AP commitments. Toll revenues will assist on the large majority of those AP obligations.

The continued development and redevelopment of U.S. PPPs is a major positive development in two different ways. First, it suggests that the more-aggressive developers of new toll projects have an exit option after the project is operational and is demonstrating traffic and revenue results. These developers may want to shift their capital to new projects. Second, it shows that PPPs can be successful in attracting much-needed investment in replacing the U.S.'s first-generation, largely non-tolled, Interstate highways (which are nearing the end of their useful life). Pension investments, in particular, are attracted to such funds and are more politically acceptable to legislators and the public than global investment firms seeking higher rates of return.

4. Federal Policy on PPP Concessions

4.1 Federal PPP Support

Support for surface transportation PPPs comes largely from different entities within the Federal Highway Administration (FHWA). The Center for Innovative Finance Support (CIFS) (previously the Office of Innovative Program Delivery) strongly supports PPPs. The Center is housed within the larger Office of Innovative Program Delivery; both entities are units of FHWA. The center was created during the George W. Bush administration and expanded under both the Obama and Trump administrations. It has developed a large array of educational and analytical materials to assist state DOTs and others in getting up to speed on innovative finance and PPPs in transportation infrastructure. Its PPP Toolkit now includes:

- Fact sheets on key aspects of PPP projects;
- Publications, including guidebooks and other documents;
- P3-VALUE 2.0 spreadsheet-based calculation tools for doing feasibility assessments of potential PPP projects;
- P3-SCREEN, a check-sheet of key factors and analyses involved in making decisions about possible PPP procurements;

- P3-VALUE Webinars for training in using the above tools;
- Training sessions for interested public officials; and,
- Frequently Asked Questions.

During 2014 and 2015, CIFS produced two model concession agreements: one for toll-financed (revenue-risk) concessions and the other for availability payment concessions.

CIFS also offers detailed information on two federal financing programs that have been used by many PPP highway, transit and freight projects: Transportation Infrastructure Finance and Innovation Act (TIFIA) loans and Private Activity Bonds (PABs). Neither of these is available *only* for PPP projects, but any project seeking to use them must have dedicated revenue sources able to provide debt service payments for these loans and bonds.

PABs are especially useful to PPP projects because they are tax-exempt bonds that would not normally be available to projects that expect to earn a return on equity investments. Congress authorized them for PPP transportation projects on the grounds that, since these projects serve the public, there should be a level playing field on bond interest rates between projects developed by public sector and private sector entities. Thus, revenue bonds issued for PPP projects as PABs will carry interest rates similar to those available for the revenue bonds of state toll agencies.

Congress created the TIFIA program to provide low-interest credit support for projects with dedicated revenue sources that can qualify for investment-grade ratings. Although the law currently allows a TIFIA loan to cover up to 49% of a project's total cost, the TIFIA office within DOT has not awarded any loans exceeding 33%. (DOT officials note that a project would have to be "truly exceptional" to receive a loan exceeding 33%). This is consistent with the law's original intent, that TIFIA provide gap financing rather than being a project's primary source of debt finance. It also enables a given TIFIA budget allocation to support a larger total number of projects. Accordingly, TIFIA loans often are subordinated debt, which means senior loans or bonds have first call on project revenues. Only in the event of bankruptcy does the TIFIA loan shift to having equal status with other creditors.

Table 3 lists all current PABs and TIFIA loans for PPP highway and bridge projects through the end of the government's Fiscal Year 2016.

As Table 3 shows, $7.6 billion in TIFIA loans led to more than $27 billion in project activity. PABs had a similar effect; $5.4 billion in PABs helped make that $27 billion in project activity a reality. Compare TIFIA and PABs to federal grants that provide 50%–90% of a project's cost. If a grant covers 70% of the project costs, to receive the same benefit of $7.5 billion of TIFIA loans, grants would need to total more than $19 billion to equal an equivalent amount of investment.

Clearly, TIFIA loans and PABs are more than useful financing tools. They also allow lower taxpayer expenditures than direct funding and stretch those taxpayer dollars further.

Table 3: Highway and Bridge Projects Financed by TIFIA and PABs

Project	TIFIA ($M)	PABs ($M)	Total Project ($M)	Year Financed
South Bay Expressway	$140	$0	$658	2003
I-495 HOT Lanes	$589	$589	$2,068	2008
SH 130, 5 & 6*	$430	$0	$1,328	2008
I-595 Express	$603	$0	$1,834	2009
Port of Miami Tunnel	$341	$0	$1,113	2009
NTE Phase 1	$650	$398	$2,122	2009
LBJ Express	$850	$606	$2,645	2011
Midtown Tunnel*	$422	$675	$2,089	2012
Presidio Parkway II	$153	$0	$365	2012
I-95 Express	$300	$253	$923	2012
East End Bridge	$162	$518	$1,319	2013
NTE Phase 2	$531	$274	$1,641	2013
Goethals Bridge	$474	$453	$1,500	2013
US 36, Colorado Phase 2	$60	$21	$208	2014
I-69, Indiana	$0	$244	$466	2014
I-4 Ultimate	$950	$0	$2,877	2014
PA Rapid Bridge	$0	$722	$1,118	2015
I-77 Express Lanes	$189	$100	$636	2015
Portsmouth Bypass	$209	$227	$646	2015
SH 288 Toll Lanes	$357	$299	$1,064	2016
Pocahontas Parkway*	$150	$0	$597	2016
Total	$7,560	$5,379	$27,217	

Source: FHWA Center for Innovative Financial Support, accessed June 15, 2017

Notes: * Projects classified as bankrupt

Stressing the importance of increasing infrastructure investment, former Secretary of Transportation Anthony Foxx created the Build America Transportation Investment Center (BATIC). Its stated aim is to speed up the time it takes for transportation PPPs to reach financial close. The American Association of State Highway & Transportation Officials launched the BATIC Institute as a new center of excellence, to assist state DOTs in capacity-building in the area of project finance and PPPs. The Center hosts multiple events throughout the country educating policymakers on transportation financing.

4.2 Recent Congressional Action

The 114th Congress reauthorized the federal highway and transit program in late 2015, enacting what it dubbed the Fixing America's Surface Transportation (FAST) Act. This law authorizes surface transportation policy through the middle of 2020. The three most important facets of the legislation for PPPs are TIFIA, PABs and federal tolling provisions.

Negatively, Congress reduced the annual funding for TIFIA. The previous legislation (MAP-21) had increased the annual amount to $1 billion, a large increase from previous years. The TIFIA budget allocation covers the cost of administering the program and approximately 7.5% of the value of each loan that is set aside to cover its default possibility. The year prior to the passage of the Fast Act, TIFIA lending across all types of transportation projects had decreased significantly. FY 2014 had loaned funds to a record 12 projects (many of them not PPPs) totaling $8.4 billion. But by the end of FY 2015 (Sept. 30, 2015), there were only seven loans totaling $2.4 billion. Complicating matters, both the Office of Management and Budget (OMB) and the Congressional Budget Office (CBO) score TIFIA loans as direct funding. As a result, they count against the total revenue Congress authorized in the bill, even though they are loans—not grants. Therefore, Congress is incentivized to spend more money on grants, not loans, even though this practice is contrary to U.S. federal transportation policy. OMB and CBO could fix this problem by changing how they score TIFIA.

For the five years covered by the FAST Act, Congress authorized just $1.4 billion—an average of $287 million per year. But that should be sufficient to cover most of the PPP projects, concludes Bryan Grote, the TIFIA expert at Mercator Advisors.[6] He has estimated that the TIFIA program should have total funding of nearly $3 billion and could support as much as $40 billion of loans, assuming a continued subsidy rate of 7.5% over the five-year life of the FAST Act.

Many PPP advocates had urged Congress to increase the current $15-billion cap on PABs for highway and transit projects, but this idea gained little traction. The Obama administration had proposed increasing the cap to $19 billion, but that went nowhere in Congress. In the end, Congress made no changes to PABs. Fortunately, Congress is looking at this issue in its 2017 session. The easiest way to increase the cap would be as part of comprehensive tax reform that congressional Republicans and President Trump are studying. As comprehensive tax reform is politically challenging, the back-up plan has the House Ways and Means and Senate Finance Committees passing companion bills. Some proposals raise the cap to $20 billion or $25 billion while others eliminate it altogether. The cap was instituted because PAB skeptics argued that PABs might not be successful. Given the importance of PABs in financing megaprojects, there are no longer technical doubts about their success.

Given that Congress will not likely return to highway and transit policy for another four years, there is a real risk that the current $15-billion PAB total will be used up before the next reauthorization bill. Figures from the CIFS website in January 2017 show that PABs totaling $6.6 billion have been issued across all types of transportation projects, and another $4.3 billion have been allocated to specific projects either in planning or under construction. Additionally, there are approximately $2 billion in additional PAB funding currently being evaluated. As a result, $12.9 billion of the $15 billion in PAB financing has been committed. The PAB cap may be reached as soon as 2018.

The FAST Act also made several changes in federal tolling policy that will affect toll-financed concession projects. One of the largest potential areas for such projects would be the replacement of aging Interstate highways as they reach the end of their 50-year design life. An existing federal pilot program allows three states to gain exemption from the general federal prohibition on using tolls for rebuilding Interstate corridors currently not tolled. Specifically, it allows each state to use toll finance to reconstruct one Interstate, with the toll revenue dedicated to the capital and operating costs of the rebuilt facility. The potential to charge higher tolls, thereby turning the rebuilt Interstates into cash cows, has prevented support for such projects by highway user groups such as the American Automobile Association (AAA) and trucking organizations such as the American Trucking Association (ATA).

Several groups argued for revising the pilot program to make it more customer-friendly, by explicitly restricting the use of the toll revenues to the capital and operating costs of rebuilt/replacement Interstates, and by requiring rebates of state fuel taxes for miles driven on the replacement (tolled) Interstates. Along with those provisions, they also argued that the program should be expanded to more states, and that each participating state be able to devise a long-term plan to replace all its first-generation Interstates with new ones, using toll finance. The American Automobile Association's (AAA) national board approved of tolling that followed these specific recommendations at their board meeting in August 2015. Clearly, making changes to the pilot program would help build support.

Senate legislators heard these arguments, but were only willing to make small tweaks to the existing three-state pilot program. The key change was adding a "use it or lose it" provision that required states to take documented steps toward implementing tolling or give up their slot. Since none of the original three states holding the slots (Missouri, North Carolina and Virginia) had obtained legislative consent to proceed with rebuilding its designated Interstate by early 2017, those states were required to give up their slots earlier this year. New participants in the pilot program would have an initial two years by which time they would have to have their project authorized and moving forward. Currently, Connecticut, Indiana, Oregon and Wisconsin are each interested in obtaining a program slot.[7]

5. State Laws and Policy on PPP Concessions

The FHWA Center for Innovative Finance Support lists 35 states, the District of Columbia and Puerto Rico as jurisdictions that have PPP authority for transportation infrastructure. However, the enabling acts vary in authority provided from state to state. Further, many of these states with authority have entered into DBFs or DBMs but not DBFOMs. Full PPPs have been implemented in nine states, Puerto Rico and in projects under the auspices of the Port Authority of NY/NJ only. Legislators in the other states have failed to enter into PPPs for one of several reasons: Some legislation contains serious flaws that make entering into PPPs a poor choice for the public partner, the private partner or both; other states have had political challenges in which the governor or legislator was opposed to PPPs. Other states have not found a project that is a good fit for a PPP.

In December 2015 the Bipartisan Policy Center released its “Public-Private Partnership (PPP) Model State Legislation.” It aims to permit PPPs to be used for a wide range of infrastructure (not just transportation), to create a state office with expertise in PPPs (often called a “PPP unit”), to standardize and promote best practices, and to ensure protection of the public interest. In January 2016 the National Conference of State Legislatures (NCSL) issued a comprehensive review of transportation PPP measures in the states. “Public-Private Partnerships for Transportation: Categorization and Analysis of State Statutes” consists mostly of detailed tables showing which provisions, in various categories, are part of each state’s enabling act.

Finally, in March 2016 the Build America Transportation Investment Center (BATIC) and FHWA released a report highlighting successful PPPs. The report introduces PPPs, provides a detailed step-by-step PPP process, and provides specific information on how to evaluate best value in transportation and minimize unnecessary negotiations. These three reports permit the comparison of states with and without serious PPP investment, as well as provide a guide for state DOTs and legislators seeking to craft effective legislation.

During 2016, several states signed new PPP legislation into law:

- In Florida, Governor Rick Scott signed legislation creating the Florida Department of Transportation Financing Corporation (FDTFC). The entity will be the first choice for FDOT bonds and will allow PPPs within the state to access tax-exempt financing. The entity will be overseen by the state Division of Bond Finance; it is required to seek approval of the state bond director before issuing debt.
- In Kentucky, the legislature finally passed a bill that would allow broader use of PPPs throughout the state. Unfortunately, the legislation prohibits the use of tolls on any state road or bridge that connects with Ohio. It also requires legislative approval of any PPP deal over $25 million. The anti-tolling provision is designed to make the replacement Brent Spence Bridge toll free. However, the states of Kentucky and Ohio have no realistic way to pay for the bridge without tolls. Even for projects in which non-tolling revenue is available, tolling provides a new bondable revenue source in an era of significant infrastructure needs.
- In Louisiana, the state Transportation Authority was already permitted to use PPPs. Act 519 extends this authority to the state’s Department of Transportation and Development. However, the law has some unusual provisions. It stipulates that a quarter of all PPP projects must be located outside of a metropolitan planning organization (MPO). Solicited proposals outside the MPO boundary must be approved by the House and Senate Transportation Committees. Finally, the law does not allow unsolicited PPPs.
- In Michigan, the state passed comprehensive PPP-enabling legislation (Senate Bill 627), allowing the state to enter into a full array of PPP deals. Both solicited and non-solicited PPPs are allowed; the state determines if there is a need for a non-solicited PPP.
- In New Hampshire, after several failed attempts, the state passed a PPP-enabling law. The act limits PPP contracts to DBFOMs and DBOMs. The law creates an oversight commission to review and recommend suitable projects to the commissioner.

In other state-level PPP news, California legislators allowed the state's PPP bill to expire; as a result, all PPP projects in the state will require project-specific legislation from Sacramento. This is likely to pit project proponents against the powerful Professional Engineers in California Government (PECG). PECG, which represents Caltrans engineers, worked hard to defeat a PPP extension. PECG's proposed amendments would have given its engineers and the direct consultants of Caltrans control over all DB inspection services, pre-bid development services and project documentation. Since PPPs place those responsibilities with the developers, the amendments effectively killed PPPs. Many experts viewed the Caltrans' Engineers' Union amendments as a worse option than letting the PPP authorization expire. Some regional transportation agencies, which fund much of the infrastructure construction in California, have their own PPP authority. But that is limited to certain entities and for certain services only. For example, L.A. Metro, which builds and operates roadway and transit facilities in Los Angeles County, can build new PPP transit lines but not new PPP roadways.

6. Major Highway PPP Concessions by State

A September 2014 report from Moody's Investor Service found that "[t]he U.S. has the potential to become the largest PPP market in the world, given the sheer size of its infrastructure.[8] Despite this potential, actual deal flow has remained anemic over the last few years. Generally, tight state DOT budgets have led to a more cautious approach by many state DOTs (which in most cases use federal or state fuel tax funds for a portion of transportation PPP project budgets). Long delays in getting TIFIA loans approved and DOT's implementation of the program as a discretionary instead of check-the-box process contributed to concerns about the PPP pipeline. But leading-edge states continued moving forward, as the following recap makes clear.

Arizona: Several years after enactment of a very workable PPP-enabling law, Arizona DOT embarked on its first major transportation PPP project. Although not pursuing it as a long-term toll concession, ADOT selected a $1.9-billion megaproject as its first serious project: design, build and maintenance (DBM) of the long-planned South Mountain Freeway Loop 22, part of a beltway around downtown Phoenix. Winning the bid was the team of Fluor/Granite/Ames. The new freeway will have three general purpose lanes and one HOV lane in each direction. The project's 20-year maintenance provision makes it the longest of any DBM project in the United States.

Colorado: Colorado DOT (CDOT) is procuring a PPP for the I-70 Central corridor between I-25 and Tower Rd. The $1.2-billion project will be a DBFOM hybrid concession with toll revenue from the express lanes helping CDOT pay the availability payments to the private concessionaire. In 2017, the winning PPP partner will be selected from the four finalists, followed by determining final design. Construction is expected to begin in 2018. Elsewhere, CDOT is expanding the C-470 beltway by adding express toll lanes between I-25 and Wadsworth Blvd. However, this project is being procured using conventional financing and not via a

PPP. CDOT has also added a tolled shoulder lane on I-70 eastbound between exits 232 and 241 west of Denver using conventional financing. The I-70 Central project is Colorado's second PPP and fifth express toll lane project.

Florida: Construction is now under way on Florida's largest transportation PPP to date: the $2.3-billion I-4 project in Orlando. It will rebuild 21 miles of that expressway through Orlando and add two express toll lanes each way. Because the toll revenues are likely to be insufficient to cover the total project costs, this DBFOM concession will compensate the concession company via availability payments. In procurement, I-395/95 improvements are planned as a DBF PPP. The $625-million project rebuilds parts of I-95, I-395 and collector distributor ramps along I-95. FDOT and the Miami-Dade Expressway Authority will jointly manage the project. Two additional projects are under serious consideration: Tampa Bay Next, which would modernize and improve interchanges along I-4 and I-275 in Tampa, and I-4 Beyond the Ultimate, which would expand the tolled express lanes now under construction north and south of the current project limits. Many other toll projects are in the planning process in the metro areas of Jacksonville, Miami, Orlando and Tampa. Which of them will be developed as PPP concessions remains to be seen.

Georgia: Current policy in Georgia does not include long-term concessions. Instead, Georgia DOT is using design-build-finance (DBF) as its procurement method for large projects, including most newly constructed express toll lane projects planned for its expressway system. The Northwest Corridor project is building one to two bidirectional variably priced toll lanes on I-75 and I-575 in the northwest Atlanta suburbs. The $834-million project includes $60 million in financing paid by the developer and is scheduled for completion in 2018. GDOT is also working on a 10-mile extension of the I-85 express lanes in Gwinnett County. This project is not being procured as a PPP and is scheduled for completion in 2017. The I-75/I-575 and I-85 extensions will mark Georgia's third and fourth express toll lane projects. GDOT is also studying express toll lanes on the northside of I-285 between I-75 and I-85 and on SR 400 north of Atlanta between I-285 and SR 20 in Forsyth County. Georgia's Governor Deal, whose term expires at the end of 2018, has been the main force opposed to full PPPs. PPP advocates hope the next governor will be more welcoming of concessions.

Indiana: The state's $1.2-billion East End Crossing (a new bridge over the Ohio River) opened to traffic in December. The DBFOM project compensates the concessionaire using availability payments. Toll revenues will cover a large fraction of the availability payments. The contractor has defaulted on Indiana's other PPP, the $325-million concession to build a new segment of I-69. While the project was planned from the start as a non-tolled availability payment concession, the state favors a traditional design-build to finish construction of the expressway.

Kentucky: Kentucky DOT's first PPP project was intended to be the $2.5-billion Brent Spence Bridge linking Covington, Kentucky to Cincinnati. Kentucky finally passed HB 309, legislation allowing the state to procure PPPs. However, part of HB 309 banned tolls on any road connecting Kentucky and Ohio. The anti-tolling provision has been added to PPP bills in the past two years. Determining that PPPs would be beneficial to other areas of the state, Governor Bevin signed the 2016 bill.

Michigan: This state has pursued no PPP concessions on its own, but is cooperating with the Windsor-Detroit Bridge Authority, a binational agency organized in Canada to procure the long-planned new bridge across the Detroit River separating the two cities. Since this is one of the busiest U.S./Canada border crossings, the project also includes construction of new customs and immigration facilities on both sides, as well as a major new interchange with I-75 in Detroit. The bridge will be tolled, but the bridge concession will be based on availability payments.

New York/New Jersey: Neither New York nor New Jersey has a PPP-enabling law, but the Port Authority of New York & New Jersey does have the authority to enter into PPP concessions. Its first highway concession, replacing the aging Goethals Bridge, is underway. The $1.5-billion project is being built by Kiewit/Macquarie under a DBFM concession. The Port Authority will be responsible for tolling, and will compensate the concessionaire via availability payments. The new bridge is scheduled to open to the public in 2018. The Port Authority also procured the $5.3-billion LaGuardia Airport project, which is the largest PPP project in U.S. history. More details on this project are available in Reason Foundation's *Annual Privatization Report 2017: Air Transportation*.

North Carolina: The state's first PPP concession reached financial close in 2015. The $636-million project will add express toll lanes to 26 miles of I-77 and I-277 from downtown Charlotte to Mooresville. At its scheduled 2018 completion the project will have two express toll lanes in both directions from downtown Charlotte to Cornelius and one lane in each direction from Cornelius to Mooresville. The project will include the converted HOV lanes and new capacity. While the project faced strong opposition, the state Senate and new Governor Roy Cooper decided to move forward with it. The deal is structured as a 50-year DBFOM toll concession, with Cintra as the concessionaire. Additional equity providers are Aberdeen Global Infrastructure Partners and UK-based John Laing.

Ohio: The state's first highway PPP concession is the Portsmouth Bypass, a new 16-mile highway. The $634-million, DBFOM-AP, 35-year concession is being built by ACS/Infrared and is scheduled for completion in 2018.

Pennsylvania: Under this state's innovative Rapid Bridge Replacement program, the winning Plenary/Walsh team will rehabilitate or replace 558 bridges over a three-year period and then maintain them for 25 years. This $1.12-billion DBFM project is a pure availability payment concession scheduled for completion (of the new bridges) by the end of 2017.

Texas: Although Texas has more highway PPP investment to date than any other state, anti-toll and anti-PPP sentiment has been building there for 10 years and has grown stronger during the past few years. Having campaigned on an anti-more-tolling platform, new Governor Greg Abbott quickly moved to restrict tolling. In 2007, the state legislature required that each new transportation PPP project be authorized. In 2017, none of the projects proposed by Texas DOT were approved. As a result, no new toll roads can move forward for at least two years. The tolling atmosphere in Texas is expected to remain negative until at least 2019.

Virginia: Despite concerns that revisions to Virginia's PPP-enabling law might shift the state away from continued use of concessions, Virginia DOT is moving forward with several projects. The largest is the reconstruction of 25 miles of I-66 outside the Capital Beltway to include three general purpose lanes and two express toll lanes in each direction. One express toll lane per direction will be converted from an HOV lane while the other will be newly constructed. VDOT chose the toll concession model and received three bids for the project, ultimately selecting I-66 Express Mobility Partners (Cintra, Meridiam, Ferrovial, Allen Myers) as the concessionaire. Financial close is expected in mid-2017. VDOT has several other PPPs in the procurement or pre-construction stage. The I-395 Express Lanes Extension is being built by Transurban as a concessionaire's enhancement. The project will convert the two existing bidirectional HOV lanes to express toll lanes and add a third lane. Construction is expected to begin in 2017 and be complete by 2019. The I-95 Express lanes are being extended between Garrisonville Rd. and US 17 north of Fredericksburg. The first part of the extension is scheduled to open in the fall of 2017 with the remainder expected to enter construction in 2019 and open in 2021.

VDOT has two other PPPs under construction. The Elizabeth River Tunnels project adds a two-lane tunnel adjacent to the existing Midtown Tunnel, extends several surface streets, and adds fire suppression systems to the existing tunnels. The project reached financial close in 2012. The Coalfields expressway is a 50-mile, four-lane limited access roadway from Pound to Slate in southwestern Virginia. The PPP project uses coal companies' earth-moving equipment to prepare the roadbed for construction. Private sector participation will reduce construction costs by 45%. Parts of the roadway are under construction but it will be more than 10 years before the entire roadway is built.

About the Author

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