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ANNUAL PRIVATIZATION REPORT: TRANSPORTATION FINANCE

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PART 1

INTRODUCTION

An infrastructure investment fund enables large investors (such as insurance companies, investment banks, and pension funds) to pool their resources. They then can more efficiently use experienced managers to find opportunities to invest equity into infrastructure. Since governments in the United States do not offer shares of ownership in their highways, airports, or seaports to investors, these funds seek to invest in infrastructure that:

(1) has always been in the private sector (e.g., investor-owned utilities),

(2) has been privatized (e.g., London Heathrow Airport), or

(3) is operated and managed by a special purpose entity (SPE) as part of a long-term public-private partnership (P3) (e.g., the Indiana Toll Road).

In the latter type of investment, the fund is investing equity in the SPE and its P3 concession, not in the infrastructure asset itself.

During 2017, investors worldwide put $65.4 billion into infrastructure investment funds, according to the 2018 *Prequin Global Infrastructure Report*. Using somewhat different criteria, *Inframation News* reported the 2017 total raised as $53.6 billion, slightly less than its 2016 total of $55.8 billion. Pension funds continued to increase their participation in infrastructure, either as direct investors or by placing a portion of their capital with one or more infrastructure funds to invest for them. Pension funds and insurance companies see a good match between infrastructure assets that provide reasonably steady long-term income flows and pension funds' and insurance companies' long-term liabilities.

Probitas Partners' *Infrastructure Institutional Investor Trends for 2017* survey found that transportation tied with energy and power as the most popular sector for fund investment in 2017, each of interest to 67% of fund managers. Other leading categories included renewable energy (64% of investors), telecom (61%), and water and wastewater (58%). The types of deal structures that funds actively targeted ranked as follows:

- Brownfield and Greenfield 49%
- Greenfield only 15%
- Opportunistic 11%
- Infrastructure debt 10%
- Renewable energy 8%
- Brownfield only 4%
- Other 3%

Probitas also categorized the respondents by investor type, with these overall results:

- Public pension funds 20%
- Consultants/advisors 18%
- Insurance companies 15%
- Fund-of-funds managers 13%
- Asset managers 9%
- Corporate pension plans 8%
- Banks 7%
- Endowments or foundations 5%
- Other 5%

PART 2

MAJOR INFRASTRUCTURE INVESTMENT FUNDS IN 2017

In its November 2017 issue, *Infrastructure Investor* released its eighth annual ranking of global infrastructure funds, the "Infrastructure Investor 50." Over the most recent five-year period, these 50 large funds alone have raised a total of $316 billion (see Table 1). *Prequin* estimates that all such funds had raised a total of $418 billion by 2017. Equity funds such as these typically provide between 20% and 33% of an infrastructure project's cost, with the balance raised from various forms of debt (bank loans, revenue bonds, etc.). At a conservative leverage multiple of four times the equity amount, the equity available from the top-50 funds alone would finance $1.26 trillion worth of projects, while the total raised by all such equity funds would finance $1.67 trillion worth of projects.

TABLE 1" THE 50 LARGEST INFRASTRUCTURE EQUITY FUNDS, 2017

Rank	Name of Investor	Headquarters	5-Year Total Raised ($Billions)
1	Macquarie Infrastructure and Real Assets	Australia	$36.53
2	Brookfield Asset Management	Canada	$29.96
3	Global Infrastructure Partners	United States	$26.79

Rank	Name of Investor	Headquarters	5-Year Total Raised ($Billions)
4	IFM Investors	Australia	$15.22
5	First State Investments	Australia	$13.77
6	BlackRock	United States	$11.22
7	EIG Global Energy Partners*	United States	$10.73
8	Energy Capital Partners	United States	$8.47
9	Kohlberg Kravis Roberts	United States	$8.26
10	Antin Infrastructure Partners	France	$7.42
11	EQT Partners	Sweden	$7.12
12	ArcLight Capital Partners	United States	$7.00
13	Stonepeak Infrastructure Partners	United States	$6.78
14	KDB Infrastructure Investments	South Korea	$6.74
15	I Squared Capital	United States	$6.71
16	Ardian	France	$6.26
17	AMP Capital	Australia	$5.69
18	InfraRed Capital Partners	United Kingdom	$5.66
19	Partners Group	Switzerland	$5.65
20	Hermes Infrastructure	United Kingdom	$5.50
21	Hastings Fund Management	Australia	$5.43
22	Meridiam Infrastructure	France	$5.06
23	Actis	United Kingdom	$4.31
24	Copenhagen Infrastructure Partners	Denmark	$3.88
25	DIF	Netherlands	$3.86
26	Ping An Asset Management*	China	$3.68
27	Dalmore Capital	United Kingdom	$3.66
28	Morgan Stanley Infrastructure	United States	$3.60

Rank	Name of Investor	Headquarters	5-Year Total Raised ($Billions)
29	QIC Limited	Australia	$3.50
30	Equis Funds Group	Singapore	$3.23
31	Ridgewood Energy Corp.	United States	$3.06
32	Equitix Investment Management	United Kingdom	$3.03
33	iCON Infrastructure	United Kingdom	$2.98
34	Axium Infrastructure	Canada	$2.91
35	LS Power Group	United Kingdom	$2.90
36	Goldman Sachs Infrastructure Investment Group	United States	$2.80
37	Infracapital	United Kingdom	$2.72
38	Oaktree Capital Management*	United States	$2.70
39	The Carlyle Group	United States	$2.69
40	Arcus Infrastructure Partners	United States	$2.43
41	China Communication Construction*	China	$2.38
42	Northleaf Capital Partners	Canada	$2.12
43	InfraVia Capital Partners	France	$2.02
44	Harbert Management Corp.	United States	$1.78
45	American Infrastructure Funds	United States	$1.70
46	BTG Pactual	Brazil	$1.68
47	Sunvision Capital	China	$1.66
48	Starwood Energy Group	United States	$1.53
49	Green Investment Group	United Kingdom	$1.45
50	Mirova Environment & Infrastructure*	France	$1.34

***indicates a fund new to the top-50 list in 2017**
Source: *Infrastructure Investor*, November 2017

In a year-end review, *Infrastructure Investor* characterized 2017 as a year "of enduring strength, with more money being raised than ever." It noted that the new, $40 billion Blackstone infrastructure fund had not yet achieved formal financial close as of the August 31, 2017 cutoff date for the above ranking; had it been included, it would have ranked number 1, based on only its first year's fund-raising. Several funds jumped many places on this league table in 2017, including BlackRock, going from #23 in 2016 to #6 in 2017. Antin Infrastructure Partners climbed from #24 to #10, while QIC (formerly Queensland Investment Corp.) went from #49 to #29. Five new funds, indicated by asterisks, joined the top 50 in 2017.

The purpose of infrastructure investment funds is to find and close sound deals, and 2017 was an excellent year worldwide. Prequin reports that a total of $916 billion of equity had been invested in P3 infrastructure deals worldwide by the end of 2017. In the transport sector alone, *Public Works Financing*'s major project's database covering the years 1985 through 2017 finds the total value of projects done by the top 11 P3 developers worldwide to be $557 billion. If equity accounted for 25% of that total, the equity invested in those projects would be $139 billion.

2.1 COMPANY AND FUND ACTIVITIES IN 2017

The year 2017 started off with a bang as Global Infrastructure Partners completed raising its third fund, with $15.8 billion committed. Like many such funds, it has a limited life of 10 years, and during that period it may acquire some assets and sell others. GIP III will invest broadly in countries that are members of the Organization for Economic Cooperation and Development (OECD).

Macquarie Infrastructure Partners (MIP) began selling assets from its MIP II fund in autumn 2017; that process had already been under way for its 10-year MIP I. Among the transportation assets divested was a stake in the Dulles Greenway toll road in Virginia, which was acquired by Macquarie Atlas Roads (MQA). Macquarie's European Infrastructure Fund III sold its 55.5% stake in Copenhagen Airport to Dutch fund ATP in September 2017. In December, parent company Macquarie Group sold its 11.3% interest in MQA for $349.4 million. MQA's holdings include stakes in major French toll road company APRR, Germany's Warnow Tunnel, and the Dulles Greenway.

Several investment funds took part in an early stage of India's "asset recycling" program in early 2018. Cube Highways, owned by I Squared and IFC, acquired two toll roads in the state of Tamil Nadu for $114 million; both were developed under design-build-finance-operate-maintain (DBFOM) concessions. Macquarie Asia Infrastructure Fund II won a 30-year concession to toll, operate, and maintain nine national highways in India, paying $1.5 billion. Separate from the asset recycling program, in early 2018 Italian infrastructure developer/operator Atlantia was in talks with Indian developer IRB Infra to acquire its portfolio of existing toll roads in a deal estimated to be worth $2 billion.

During all of 2017, Atlantia had vied with Spanish infrastructure firm ACS to acquire Spanish toll road company Abertis. On March 13, 2018, the two companies announced that they had joined forces to acquire Abertis for $22 billion.

Mexican toll roads have also featured in several deals in 2017–2018. In October 2017, IFM Investors—the only purely pension-fund investor in Table 1—acquired $3.3 billion worth of Latin American ports and toll roads. The acquisition included 100% of OHL Concessions—operator of concessions for 14 toll roads, three ports, one airport, and one rail transit system. The toll roads include Conmex, the 110 km Mexico City ring road. The $3.3 billion in acquisitions brought IFM Investors' portfolio to $41 billion. And in February 2018, French developer/operator Egis acquired a majority stake in OCACSA, a Mexican toll road operator.

PART 3

THE INCREASING ROLE OF PUBLIC PENSION FUNDS

The fourth-largest infrastructure equity fund in Table 1 is Australia-based IFM Investors, which is owned by 28 Australian pension funds. Very large public pension funds (or groups of funds in the case of IFM) that have developed expertise in infrastructure generally make *direct* investments, assembling a portfolio of infrastructure projects, mostly brownfield but also some greenfield. Smaller pension funds (and large ones just getting into this category of investment) generally take the less-risky approach of investing via one or more of the infrastructure investment funds, such as those in Table 1.

During 2016 and 2017, public pension funds were involved in bidding for assets that were offered under Australia's asset recycling program. For example, bidding for Australia's largest container port, in Melbourne, which went for $7.36 billion, pitted the winning team (which included OMERS and GIP) against another that included IFM and the QIC (Queensland Investment Corporation). IFM already owned a 26.7% interest in the Port of Brisbane and a 35% interest in New South Wales Ports. In the United Kingdom, IFM also led the team that acquired the money-losing M6Toll from a consortium of 27 banks that took over the toll road after its equity investors gave up. Helping to finance the acquisition was German insurer AllianzGI, which provided $634 million in bond financing.

The world's largest public pension fund, the Government Pension Fund of Japan, is operating its first infrastructure fund, GPIF. Its focus appears to be primarily infrastructure in Japan rather than overseas. But in February 2017, GPIF's president, Norihiro Takahashi, acknowledged meeting with overseas institutional investors, including the Canadian Pension Plan Investment Board, to discuss possible joint investments. And *Infrastructure Investor* reported that as far back as 2014 GPIF "teamed up with Canada's OMERS and the Development Bank of Japan to co-invest in projects in developed countries."[1]

The initial hesitance of U.S. public employee pension funds to invest in P3 infrastructure in the United States is fading. The large majority of such pension funds are seriously under-funded and need to find additional asset classes so as to increase their overall returns. The success of overseas pension funds' infrastructure investments is leading to an increasing number of investments of this sort by major U.S. public-sector pension funds.

In 2015 IFM won the bidding for the remaining 66 years of the Indiana Toll Road concession with an offer of $5.725 billion. But unlike the original highly leveraged deal, IFM's financing was very conservative: 57% equity and only 43% debt. Accordingly, IFM expects a steady return of 8% to 9% over the 66 years of the lease. About 70 U.S. pension funds participated in the IFM buyout, including the California State Teachers' Retirement System (CalSTRS), the New York City Employees' Retirement System, the State Board of Administration of Florida, the Arizona State Retirement System, and the Illinois State Board of Investments.

Also that year, the Chicago Skyway's concession company decided after 10 years that they wanted to cash out, and put the remaining 89 years of the concession up for bid. The winner was a consortium of Canadian public-sector pension funds, offering $2.836 billion—about $1 billion more than the original price. The funds are the Canadian Pension Plan Investment Board, the Ontario Municipal Employees Retirement System, and the Ontario Teachers' Pension Plan, each investing one-third of the total. As with the Indiana buyout, this deal was also conservatively financed, with each pension fund putting in $512 million in equity, for a split of 54% equity/46% debt.

America's largest public pension fund is the California Public Employees' Retirement System (CalPERS), with a total portfolio in excess of $307 billion as of January 2017. A year

1 Tam, Nia. "World's Largest Pension Denies Claims It Will Invest in U.S." *Infrastructure Investor*. February 3, 2017.

after IFM's acquisition of the Indiana Toll Road, CalPERS approached IFM about acquiring a stake in the concession, which it did, buying 10%. CalPERS had previously invested in privatized London Gatwick Airport, and has bid on several other investor-owned toll roads. Its infrastructure portfolio of $3.8 billion had increased by 47% since March 2016, and represented 1.2% of total CalPERS investments.[2] *Inframation News* reported that CalPERS' infrastructure portfolio had returned 9.9% for the 12-month period ending March 31, 2017. Just over half (56%) of the pension fund's infrastructure investments are in the United States.

Several other U.S. public pension funds announced planned increases in infrastructure investment during 2017, including CalSTRS[3] and the New York State Common Retirement Fund.[4] *Infrastructure Investor* reported that "real assets" ranked second for public pension fund commitments in 2017, with infrastructure commitments totaling $57.9 billion.[5]

The growing involvement of public pension funds in privatized and P3 infrastructure has important U.S. political implications. Historically, Republican elected officials have been more favorable to private-sector involvement in public services and infrastructure than Democratic officials. Likewise, public employee unions have often opposed privatization and P3s. But as understanding of the large unfunded liability of public pension funds increases, public employee unions are becoming supportive of those funds diversifying their portfolios, and infrastructure investing is proving to be a viable diversification strategy. Pension fund and public employee union support for such investments should lead to support by Democrats as well as Republicans. But since the lack of a "pipeline of P3 infrastructure deals" to invest in is the leading constraint on such investment in the United States, bipartisan support for more such opportunities could be important in broadening the U.S. P3 infrastructure market.

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2 Navedo-Perez, Steffan. "CalPERS to Alter Infrastructure Investment Strategy." *Inframation News*. Nov. 14, 2017.

3 Navedo-Perez, Steffan. "CalSTRS to Reconsider Infrastructure Investment Policy." *Inframation News*. Oct. 31, 2017.

4 Carmody, Jonathan. "New York Pension Fund Plans Increased Infrastructure Fund Investment." *Inframation News*. Jan. 10, 2018.

5 Hedlund, Andrew. "U.S. Public Pension Plans' 2017 Alternative Asset Commitments." *InfrastructureInvestor.com*. February 14, 2018.

PART 4

U.S. TRANSPORTATION P3 INFRASTRUCTURE FINANCE

In the United States, populist concerns about “foreign takeovers” of infrastructure can still be heard. It is useful to compare the nationality of the funders providing equity for infrastructure projects with the nationality of the concession companies that are implementing and managing the infrastructure. Table 2 is based on the 50 largest funds, in *Infrastructure Investor*’s 2017 ranking, which represent a large majority of the capital raised over a five-year period. As can be seen, 34.8% of the capital comes from U.S-based institutions, with Canada’s accounting for another 11.1%. Thus, the total for North American investors is 45.9%. European institutions constitute 34.8% of the capital (up sharply from 18.1% in 2016), while Australia (13.9%), Asia (4.9%) and South America (0.5%) account for the balance.

TABLE 2: NATIONALITY OF TOP 50 INFRASTRUCTURE FUNDS, 2017

Country or Region	Capital Raised ($B)	Percentage of Capital
United States	$109.39	34.8%
Canada	$ 34.99	11.1%
Europe	$109.22	34.8%
Australia	$ 43.61	13.9%
Asia	$ 14.32	4.9%
South America	$ 1.68	0.5%

Source: Infrastructure Investor, November 2017

Statistics on global P3 infrastructure projects have been maintained in a database since 1991 by *Public Works Financing*, the newsletter of record in this industry. The *PWF* database also includes figures on the world's leading PPP transportation companies as of 2017, ranked by the number of projects under construction or in operation as well as active proposals. For these data, shown in Table 3, the project types include airports, highways, ports, and rail infrastructure.

TABLE 3: TOP 32 TRANSPORTATION P3 INFRASTRUCTURE COMPANIES, 2017

Rank	Company	HQ Country	Projects in Construction or Operation	Active Prospects
1	ACS Group/Hochtief	Spain	59	56
2	Vinci	France	47	15
3	Abertis	Spain	45	n.a.
4	Macquarie	Australia	41	3
5	Ferrovial/Cintra	Spain	39	15
6	Sacyr	Spain	33	7
7	Meridiam	France	30	9
8	Globalvia	Spain	27	2
9	John Laing	United Kingdom	25	6
10	Egis	France	25	16

Rank	Company	HQ Country	Projects in Construction or Operation	Active Prospects
11	Bouygues	France	24	6
12	OHL	Spain	23	10
13	Atlantia	Italy	22	n.a.
14	NWS Holdings	China	21	n.a.
15	Odebrecht	Brazil	21	2
16	Transurban	Australia	18	1
17	SNC Lavalin	Canada	17	1
18	InfraRed	United Kingdom	17	2
19	Acciona	Spain	16	7
20	DIF	Netherlands	15	2
21	Balfour Beatty	United Kingdom	14	2
22	Strabag	Austria	14	14
23	BBGI	Luxembourg	13	1
24	Plenary Group	Australia	12	4
25	Empresas ICA	Mexico	11	1
26	Eiffage	France	10	2
27	Ideal	Mexico	9	n.a.
28	Skanska	Sweden	8	5
29	Roadis	Netherlands	8	2
30	Salini Impregilo	Italy	7	2
31	Fluor	United States	6	6
32	Itinere	Spain	6	n.a.

Source: *Public Works Financing*, 2017 Survey of Public-Private Partnerships, October 2017

As Table 3 demonstrates, the large majority of project experience is European, which is based on the long history of transportation P3 concessions in France, Italy, and Spain in particular. Of the top 10 companies, nine are from Europe and one is from Australia. Of the top 20 companies, 16 are from Europe, two from Australia, and one each from Brazil, Canada, and China. A U.S. firm does not show up until position 31. A comparison of Tables 2 and 3 reveals that while the large majority of infrastructure development and operational expertise currently resides with European firms, nearly half of the *capital* is coming from North American investment funds. Those who raise political concerns about foreigners "buying our toll roads" seem to have missed the difference between those who are building and operating these infrastructure projects and those who are financing them.

While Table 3 ranked firms by numbers of projects, Table 4 lists the 11 largest transportation P3 firms operating in the United States by their *total U.S. investment in such projects*. Five of these companies are based in Europe, three in Australia, and three in the United States, which reflects growing P3 capabilities of U.S. developers, with Walsh, Fluor, and Kiewit all becoming significant players in this market.

TABLE 4: TOP 11 TRANSPORTATION P3 FIRMS IN UNITED STATES BY U.S. INVESTMENT

Company	Country	Transportation P3 Investment ($B)
Meridiam	France	$15.33
Skanska	Sweden	$10.17
Ferrovial/Cintra	Spain	$ 8.02
Walsh	United States	$ 7.64
John Laing	United Kingdom	$ 5.57
Fluor	United States	$ 4.70
Macquarie	Australia	$ 4.65
ACS/Hochtief	Spain	$ 3.90
Transurban	Australia	$ 1.93
Kiewit	United States	$ 1.63
Plenary	Australia	$ 1.29

Source: *Public Works Financing* 2017 Survey of Public-Private Partnerships, October 2017

A table compiled by *Public Works Financing* in 2017 provides details on 25 U.S. transportation P3s (design-build-finance-operate-maintain) since the first such financial close in 1993. The table only includes greenfield projects, and so excludes transactions such as the long-term P3 leases of the Chicago Skyway, Indiana Toll Road, and San Juan International Airport. Table 5 is a summary of the *PWF* table, with the addition of the major 2017 project, the $3.5 billion P3 concession for the I-66 reconstruction and widening project in northern Virginia.

TABLE 5: PRIVATE EQUITY INVESTED IN U.S. GREENFIELD TRANSPORTATION P3 CONCESSIONS

Project	Type	Equity	% Equity	Total Cost	Year of Close
91 Express Lanes, CA	RR	$ 30M	23%	$130M	1993
Dulles Greenway, VA	RR	$ 80	21%	$378	1993
S. Bay Expressway, CA	RR	$130	21%	$611	2003
I-495 Express, VA	RR	$630	27%	$2303	2007
SH 130, 5+6, TX	RR	$210	16%	$1326	2008
I-595, FL	AP	$208	13%	$1592	2009
Port of Miami Tunnel, FL	AP	$ 80	9%	$ 863	2009
N. Tarrant Express, TX	RR	$426	21%	$2068	2009
LBJ Express, TX	RR	$682	26%	$2628	2010
Denver Eagle rail, CO	AP	$ 54	3%	$2041	2010
Midtown Tunnel, VA	RR	$272	14%	$1951	2012
Presidio Parkway 2, CA	AP	$ 45	12%	$ 362	2012
I-95 Express, VA	RR	$280	31%	$ 916	2012
East End Bridge, IN	AP	$ 78	6%	$1274	2013
N. Tarrant Express 3, TX	RR	$442	27%	$1626	2013
Goethals Bridge, NY	AP	$107	9%	$1159	2013
US 36, Ph. 2, CO	RR	$ 41	21%	$ 197	2014
I-69 segments, IN	AP	$ 41	11%	$ 365	2014

Project	Type	Equity	% Equity	Total Cost	Year of Close
I-4 Ultimate, FL	AP	$103	4%	$2572	2014
Penn. Rapid Bridges, PA	AP	$ 59	6%	$1005	2015
Portsmouth Bypass, OH	AP	$ 49	7%	$ 663	2015
I-77 Managed Lanes, NC	RR	$248	39%	$ 632	2015
SH 288, TX	RR	$375	36%	$1048	2016
Purple Line transit, MD	AP	$139	5%	$2925	2016
LaGuardia Terminal, NY	AP	$200	5%	$3800	2016
I-66 Virginia	RR	$1549	44%	$3515	2017
TOTALS/Averages		$6558	17.3%	$37951	

Source: "$5bn Private Equity Invested in 25 Transportation DBFOM Deals," ***Public Works Financing*****, April 2017, supplemented by author addition of I-66 Virginia project**

Although availability payment (AP) concessions have become more popular in the past decade, the average equity investment in those projects is only 6%. By comparison, the revenue-risk (RR) financed projects average 34% equity investment, reflecting the private sector's recognition that taking on traffic and revenue risk is significant and requires both a larger equity "cushion" in the event of revenues falling below projections and the need to seek a higher return on investment in riskier projects.

Moody's Investors Service, one of the major bond rating agencies, issued a report on the U.S. market for P3 infrastructure in the first quarter of 2016.[6] While the report covered an array of infrastructure sectors, a major emphasis was on transportation infrastructure. It cited progress as evidenced by more states and the federal government enacting policies favorable to P3 infrastructure, though noting bumps on the road in some states alongside the number of years it often takes between a state's enactment of P3 legislation and the financial close of its first project. It also noted the emergence of infrastructure debt funds, further diversifying the range of funding alternatives available to such projects and included a table of all active TIFIA loans (as of early 2016) for P3 transportation projects.

6 Medina, John et al. "U.S. P3 Market Slowly Builds on Four Fronts." Moody's Investors Service. March 10, 2016.

PART 5

WHITE HOUSE INFRASTRUCTURE INITIATIVE AND ASSET RECYCLING

On February 10, 2018 the White House released its 56-page "Legislative Outline for Rebuilding Infrastructure in America." Later in the month the U.S. Department of Transportation released a 68-page report, "The President's Initiative for Rebuilding Infrastructure in America," explaining how the White House agenda would apply to transportation infrastructure.

As expected, the White House plan calls for $200 billion in new federal outlays over a 10-year period. To achieve the stated goal of a total $1.5 trillion in infrastructure improvements over the decade in question, the plan relies heavily on using the new federal money to incentivize state, local, and private-sector investment. To this end, the plan calls for a large expansion of tax-exempt private activity bonds (PABs) that have been used in the majority of transportation P3 projects over the past decade; this part of the plan is similar to an Obama administration proposal for Qualified Public Infrastructure Bonds (QPIBs), which was not implemented. Change-of-use provisions would permit PABs to also be used in financing long-term P3 leases of existing infrastructure, such as airports and highways. *Inspiratia Infrastructure* suggested that the PABs expansion could significantly increase the pipeline of P3 projects.[7]

The plan also calls for significant increases in federal infrastructure loan programs, including TIFIA (surface transportation) and RRIF (railroads). In the case of TIFIA, the record to date is that its loans from 1999 through 2017 used $1.9 billion in budget authority to deliver $28.75 billion in TIFIA loans that helped to finance $108 billion in projects—a leverage ratio of 57 to 1 for the federal outlays.[8]

Half of the federal $200 billion would be committed to a new Infrastructure Incentives program. The federal government would offer up to 20% of a project's cost, with the balance coming from state/local government and/or private capital investment. The DOT report explains that long-term P3 concessions would offer an array of benefits, compared with status-quo government procurement of both greenfield projects and brownfield reconstruction and modernization. It includes a map identifying all major P3 highway concession projects in the United States, either in operation or financed and under construction. Additionally, several pages summarize Australia's successful Asset Recycling program, in which government sells or long-term leases a revenue-generating asset and uses the proceeds to invest in other infrastructure that cannot be self-supporting from user-based revenues.

The plan also proposes removal of a number of federal barriers to private capital investment, many of which were identified in a 2017 Reason Foundation policy paper.[9] These include:

- Liberalizing the FAA's Airport Privatization Pilot Program, opening it up to all U.S. airports and easing the current airline approval requirement;
- Eliminating the federal ban on tolls on Interstate highways and the ban on commercial service plazas on those highways;
- Eliminating federal constraints on using P3 agreements to deliver public transit projects;

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7 Odera, Pruthvi. "How PABs Could Drive Burgeoning U.S. Pipeline Through to Conclusion." *Inspiratia Infrastructure*. March 1, 2018.

8 Davis, Jeff. "What the Penn-Wharton Study Missed About the Trump Infrastructure Plan." *Eno Transportation Weekly*. March 1, 2018.

9 Poole, Jr., Robert W. and Austill Stuart. "Federal Barriers to Private Capital Investment in U.S. Infrastructure." Policy Study 238. Los Angeles: Reason Foundation, January 2017.

- Codifying Executive Order 12803 on Infrastructure Privatization; and,
- Allowing non-federal construction and operation of projects on the Inland Waterway system, including long-term contracts of up to 50 years.

In a special report, Standard & Poor's Global Ratings termed the plan "a worthwhile effort to push state and local governments to innovate and explore new funding approaches," and said that it also "subtly pushes investment decisions to take full account of lifecycle costs."[10]

[10] Selting, Anne, et al. "President Trump's Infrastructure Plan: A Substantive Shift to Private-Sector Funding." S&P Global Ratings. Feb. 14, 2018.

ABOUT THE AUTHOR

Robert W. Poole, Jr. is director of transportation policy and the Searle Freedom Trust Transportation Fellow at the Reason Foundation. He received his B.S. and M.S. in mechanical engineering at MIT and did graduate work in operations research at NYU.

Poole's 1988 policy paper proposing supplemental privately financed toll lanes as congestion relievers directly inspired California's landmark private tollway law (AB 680), which authorized four pilot projects including the highly successful 91 Express Lanes in Orange County. More than two dozen other states have subsequently enacted similar public-private partnership legislation. In 1993 Poole oversaw a study that introduced the term HOT (high-occupancy/toll) Lane, a concept which has become widely accepted since then. He has also introduced Truck-Only Toll lanes and HOT Networks into U.S. surface transportation.

Poole has advised the Federal Highway Administration, the Federal Transit Administration, the White House Office of Policy Development and National Economic Council, the Government Accountability Office (GAO), and the California, Florida, Georgia, Indiana, Texas, Utah, Virginia, and Washington State Departments of Transportation. He served 18 months on the Caltrans Privatization Advisory Steering Committee, helping oversee the implementation of AB 680. He was appointed by Gov. Pete Wilson as a member of California's Commission on Transportation Investment in 1995-96.

Poole is a member of the board of the Public-Private Partnerships division of ARTBA and was a founding member of the Transportation Research Board's Congestion Pricing Committee. He is also a member of TRB's Managed Lanes Committee. From 2003 to 2005, he was a member of the TRB's special committee on the long-term viability of the fuel tax for highway funding. In 2008 he was a member of the Study Committee on Private Participation in Toll Roads, appointed by Texas Gov. Rick Perry. In 2010 he was a member of the Washington State DOT's Expert Review Panel on the proposed Eastside Managed Lanes Corridor. Also in 2010, he served as a transportation policy advisor on the transition team of Florida Gov. Rick Scott.

Poole is the author of dozens of policy studies and journal articles on transportation issues. His popular writings have appeared in national newspapers, including *The New York Times* and *The Wall Street Journal*; he has also been a guest on such network TV programs as "Crossfire," "Good Morning America," and "The O'Reilly Factor," as well as ABC and NBC News. He writes a monthly column on transportation policy issues for *Public Works Financing*, and produces the monthly e-newsletter, *Surface Transportation Innovations*. *The New York Times* has called him "the chief theorist for private solutions to gridlock." His book, *Rethinking America's Highways: A 21st Century Vision for Better Infrastructure*, will be released by the University of Chicago Press in June 2018.