ANNUAL TRANSPORTATION FINANCE REPORT: 2025

by Robert W. Poole, Jr.

May 2025

Reason Foundation's mission is to advance a free society by developing, applying, and promoting libertarian principles, including individual liberty, free markets, and the rule of law. We use journalism and public policy research to influence the frameworks and actions of policymakers, journalists, and opinion leaders.

Reason Foundation's nonpartisan public policy research promotes choice, competition, and a dynamic market economy as the foundation for human dignity and progress. Reason produces rigorous, peer-reviewed research and directly engages the policy process, seeking strategies that emphasize cooperation, flexibility, local knowledge, and results. Through practical and innovative approaches to complex problems, Reason seeks to change the way people think about issues, and promote policies that allow and encourage individuals and voluntary institutions to flourish.

Reason Foundation is a tax-exempt research and education organization as defined under IRS code 501(c)(3). Reason Foundation is supported by voluntary contributions from individuals, foundations, and corporations. The views are those of the author, not necessarily those of Reason Foundation or its trustees.

TABLE OF CONTENTS

TABLES AND FIGURES

PART 1

INTRODUCTION

Over the past three decades, governments worldwide have increasingly turned to the private sector to design, build, finance, operate, and maintain infrastructure, including electric, gas, and water utilities; airports, seaports, and toll roads; and pipelines and telecommunications facilities. Existing infrastructure entities needing reconstruction or modernization have been "privatized" via either outright sale or long-term leases. (These are referred to as "brownfield" transactions.) For new infrastructure, governments award long-term design-build-finance-operate-maintain (DBFOM) concessions via a competitive process. These long-term public-private partnerships (P3s) have terms typically between 30 and 50 years. These transactions for new projects are referred to as "greenfield" projects.

> *While the United States still lags behind many countries in Europe, Asia/Pacific, and Latin America/Caribbean in using these kinds of P3s, this difference arises in part because much non-transportation infrastructure that was state-owned and operated in Europe and other regions was historically investor-owned in the U.S....*

While the United States still lags behind many countries in Europe, Asia/Pacific, and Latin America/Caribbean in using these kinds of P3s, this difference arises in part because much non-transportation infrastructure that was state-owned and operated in Europe and other regions was historically investor-owned in the U.S.—such as telecommunications, electric and gas utilities, pipelines, and a fraction of water and wastewater utilities. On the other hand, major transportation infrastructure such as airports, seaports, and toll roads that have been widely privatized in Europe, Asia/Pacific, and Latin America/Caribbean countries are still mostly government-owned and operated in the United States.

Both brownfield and greenfield infrastructure projects require long-term financing. Facilities owned and operated by governments are often financed 100% by government revenue bonds or general-obligation bonds, which in the United States are exempt from federal taxation. When the private sector invests in infrastructure, it typically invests equity to cover part of the cost and finances the rest via long-term revenue bonds. To level the financial playing field for U.S. P3s, Congress has provided for tax-exempt private activity bonds (PABs), which are now widely used for such projects.

“Public-sector pension funds, seeking to increase the overall return on their investments, are also making significant equity investments in revenue-generating infrastructure, generally via infrastructure investment funds.”

The large financing needs for privately financed infrastructure have led to the development and growth of infrastructure investment funds, which raise equity to be invested in privately owned or P3 infrastructure. Public-sector pension funds, seeking to increase the overall return on their investments, are also making significant equity investments in revenue-generating infrastructure, generally via infrastructure investment funds. Likewise, insurance companies and sovereign wealth funds are now making long-term investments in this kind of revenue-generating infrastructure.

This report reviews 2024 developments in private/P3 infrastructure investment, focusing on transportation infrastructure. While the report's scope is global, it pays particular attention to U.S. developments in P3 infrastructure and the continued growth in pension fund investment in this field. Part 2 reviews the ongoing role of infrastructure investment funds worldwide. Part 3 provides an update on the largest companies and major P3 projects under way globally and in the United States. Part 4 then reviews pension funds' increasing investment in revenue-generating infrastructure.

PART 2

MAJOR INFRASTRUCTURE INVESTMENT FUNDS AND TRENDS

2.1 OVERVIEW OF INFRASTRUCTURE FUNDS

Each year *Infrastructure Investor* publishes a table of the amounts raised by the largest infrastructure funds over the latest five-year period. Originally covering the largest 50 funds, in 2021 the tally was changed to include the top 100. Table 1 lists the 2024 top 100 funds and five-year total each had raised by autumn 2024. For the second year in a row, the total exceeds $1 trillion. These funds invest in a wide array of infrastructure, but in recent years their largest investment sector has been transportation.

TABLE 1: INFRASTRUCTURE INVESTOR TOP 100 FUNDS, 2024

Rank	Fund Manager	HQ Location	Sum Raised ($M)
1	BlackRock/Global Infrastructure Partners	New York	$113,796.00
2	Brookfield Asset Management	Toronto	$99,147.00
3	KKR	New York	$82,589.00
4	Macquarie Asset Management	London	$80,430.00
5	EQT	Stockholm	$58,709.00

Rank	Fund Manager	HQ Location	Sum Raised ($M)
6	Digital Bridge	Boca Raton	$50,072.00
7	Stonepeak	New York	$47,809.00
8	Blackstone	New York	$34,668.00
9	Antin Infrastructure Partners	Paris	$27,228.00
10	Copenhagen Infa. Partners	Copenhagen	$24,900.00
11	IFM Investors	Melbourne	$24,003.00
12	I Squared Capital	Miami	$22,920.00
13	Ardian	Paris	$21,250.00
14	Partners Group	Baar	$15,724.00
15	Igneo Infrastructure Partners	Sydney	$14,749.00
16	ECP	Summit	$13,927.00
17	CVC DIF	Schiphol	$13,157.00
18	Meridiam	Paris	$11,952.00
19	Equitix	London	$11,397.00
20	Morgan Stanley Infra. Partners	New York	$11,100.00
21	InfraVia Capital Partners	Paris	$9,818.00
22	Actis	London	$9,580.00
23	Swiss Life Asset Managers	Zürich	$9,415.00
24	Vauban Infrastructure Partners	Paris	$9.00
25	Goldman Sachs Alternatives	New York	$7,354.00
26	GCM Grosvenor	Chicago	$6,655.00
27	QIC Limited	Brisbane	$6,529.00
28	The Carlyle Group	Washington, DC	$6,410.00
29	Apollo Global Management	New York	$6,344.00
30	Asterion Industrial Partners	Madrid	$6,265.00
31	ICON Infrastructure	London	$5,991.00
32	InfraRed Capital Partners	London	$5,777.00
33	Basalt Infrastructure Partners	London	$5,696.00
34	Axium Infrastructure	Montreal	$5,530.00
35	Northleaf Capital Partners	Toronto	$5,455.00
36	Schroders Greencoat	London	$5,363.00
37	Grain Management	Washington, DC	$5,340.00
38	Mexico Infrastructure Partners	Mexico City	$5,302.00
39	Energy Infrastructure Partners	Zürich	$5,301.00
40	Manulife Investment Management	Boston	$5,108.00
41	Generate Capital	San Francisco	$5,014.00
42	Quinbrook Infra. Partners	London	$4,972.00
43	Oaktree Capital Management	Los Angeles	$4,781.00
44	DWS	Frankfurt	$4,717.00
45	Luxcara	Hamburg	$4,553.00
46	Patria Investments	Grand Cayman	$4,526.00
47	ArcLight Capital Partners	Boston	$4,461.00
48	GI Partners	Scottsdale	$4,393.00
49	Qualitas Energy	Madrid	$4,381.00
50	AIP Management	Copenhagen	$4,246.00
51	EnCap Investments	Houston	$4,055.00
52	Ares Management	Los Angeles	$3,966.00
53	Morrison	Wellington	$3,906.00
54	Ullico Investment Advisors	Washington, DC	$3,743.00
55	Omnes Capital	Paris	$3,723.00

Rank	Fund Manager	HQ Location	Sum Raised ($M)
56	Keppel	Singapore	$3,720.00
57	Allianz Global Investors	Munich	$3,717.00
58	Ancala	London	$3,712.00
59	JP Morgan Asset Management	New York	$3,570.00
60	Foresight Group	London	$3,529.00
61	Nuveen Infrastructure	London	$3,405.00
62	Cube Infrastructure Managers	Luxembourg	$3,400.00
63	Argo Infrastructure Partners	New York	$3,394.00
64	Arcus Infrastructure Partners	London	$3,368.00
65	Infracapital	London	$3,297.00
66	AXA IM Alts	Paris	$3,278.00
67	Intermediate Capital Group	London	$3,269.00
68	F2i Sgr S.p.A	Milan	$3,230.00
69	Mirova	Paris	$3,107.00
70	Aquila Capital	Hamburg	$3,096.00
71	CIM Group	Los Angeles	$3,084.00
72	Octopus Energy Generation*	London	$3,070.00
73	Capital Dynamics	Zug	$2,958.00
74	Arjun Infrastructure Partners	London	$2,724.00
75	Vision Ridge Partners	Boulder	$2,704.00
76	LS Power Group	New York	$2,700.00
77	NextEnergy Capital	London	$2,694.00
78	Tiger Infrastructure Partners	New York	$2,655.00
79	Harrison Street	Chicago	$2,612.00
80	Fengate Asset Management	Toronto	$2,536.00
81	ESR Group	Hong Kong	$2,443.00
82	National Invest. & Infra. Fund Ltd.	Mumbai	$2,340.00
83	GLIL Infrastructure	London	$2,317.00
84	Pacific Equity Partners	Sydney	$2,243.00
85	Amber Infrastructure Group	London	$2,207.00
86	China International Capital Corp.	Beijing	$2,174.00
87	Silver Hill Energy Partners*	Dallas	$2,150.00
88	Palistar Capital	New York	$2,119.00
89	Hy24	Paris	$2,106.00
90	Sandbrook Capital*	Stamford	$2,100.00
91	Sustainable Development Capital	London	$2,033.00
92	ABDRN*	Edinburgh	$1,910.00
93	Commerz Real	Wiesbaden	$1,809.00
94	DTCP	Hamburg	$1,785.00
95	PATRIZIA	Augsburg	$1,776.00
96	Ridgewood Infrastructure*	New York	$1,725.00
97	Edelweiss Alt. Asset Advisors	Mumbai	$1,709.00
98	Instar Asset Management	Toronto	$1,643.00
99	3i Group	London	$1,640.00
100	Power Sustainable*	Montreal	$1,636.00
			$1,086,900.00

*** designates a fund not in the 2023 top 100**

Source: Kalliope Gourntis, "A New Era for the I.I.100," *Infrastructure Investor,* November 2024

As the table shows, these infrastructure investment funds are based in many countries, but as in previous years, Europe and the United States represent the lion's share. Table 2 provides the geographical breakdown.

TABLE 2: HEADQUARTERS LOCATION OF 2024 TOP 100 INFRASTRUCTURE INVESTORS

Country	Amount	Percentage of Total
United States	$473.33 billion	43.2%
Europe	$432.98 billion	39.5%
Canada	$115.95 billion	10.5%
Australia/New Zealand	$51.43 billion	4.7%
Latin America/Caribbean	$9.83 billion	0.9%
Asia except China	$7.77 billion	0.7%
China	$4.82 billion	0.4%
Total	**$1,096.11 billion**	**99.9%***

Source: *Infrastructure Investor*, November 2024 *Table totals do not total 100% due to rounding

The order in Table 2 is similar to last year's, but U.S. funds have widened their lead over European funds, increasing from 40.8% in 2022 to 43.2% in 2023, while second-place Europe decreased slightly from 39.9% to 39.5%. Canada moved up to third place in 2024, with Australia/New Zealand declining to fourth place (at 4.7%) Latin America/Caribbean at 0.9% slightly edged out Asia except China, and China finished in last place.

For American elected officials who may worry about "foreign companies buying up American infrastructure," the data in Table 2 should be reassuring. The vast majority of infrastructure investment fund capital is being raised from U.S.-headquartered funds or funds based in the U.K., the European Union, Canada, or Pacific allies Australia and New Zealand. Together, they amount to 98% of the total raised and being invested in U.S. and other countries' infrastructure. China's share, at 0.4%, is equivalent to a rounding error.

While the five-year numbers are impressive, the amount raised by these infrastructure investment funds was less in 2024 than in 2023. *Infrastructure Investor* reported that:

> *…2024 claimed its spot as the poorest fund-raising year since 2015. How bad was it? Bad enough for fundraising to dip below the $100 billion mark for the first time in nearly a decade for the top 100 funds. For the record, 2024 was still a better fundraising year than 2015, but with around $92 billion raised, it was considerably worse than the*

$128 billion raised in 2023—and a far cry from the $194 billion raised in 2021, the asset class's high-water mark.[1]

> *The vast majority of infrastructure investment fund capital is being raised from U.S.-headquartered funds or funds based in the U.K., the European Union, Canada, or Pacific allies Australia and New Zealand.*

Year-end figures for the total raised in 2024 by all closed-end infrastructure funds was $103.4 billion, according to *Infralogic*.[2] Analysts Shab Mahmood and Jessica Wong reported that this was about 9% below 2023 levels.

Infralogic analysts sounded a more positive note for 2025. They cited a December preview of 2025 from UBS's Alex Leung that it is "the most bullish outlook we've written in the last three years."[3] That report cited U.S. economic growth, above-average inflation, declining interest rates, and shrinking valuations as positives for the infrastructure investing sector. It also noted a November 2024 Goldman Sachs Research report predicting 2025 U.S. GDP growth of 2.5%, for a fifth year of expansion.

Also in January 2025, CEO Larry Fink of BlackRock (the #1 infrastructure fund in Table 1) told *Infralogic* that, "We expect 2025 to be a dynamic investing environment." In an investor call, Fink said, "Private market assets are an increasingly vital part of capital markets, and blending both public and private markets will be critical in fully capturing growth opportunities."[4]

1 Bruno Alves, "Fund-Raising's Most Important Metric: TOTR," *Infrastructure Investor*, 16 January 2025.

2 Shab Mahmood and Jessica Wong, "2024 Fundraising Report: Groundhog Day With Another Challenging Year," *Infralogic*, 30 January 2025.

3 Liam Ford, Eugene Gilligan, and Matt O'Brien, "Infralogic Outlook 2025: Bullish Outlook for U.S. Core Infrastructure," *Infralogic*, 14 January 2025.

4 Eva Llorens, "BlackRock Sees Infrastructure Investment Growth as Capital Market Evolves," *Infralogic*, 16 January 2025.

> *Infralogic's analyst Andras Csillik reports that infrastructure investment funds finished 2024 with $2.26 trillion in assets under management (AUM). That compares with $1.67 trillion in 2023.*

Infralogic's analyst Andras Csillik reports that infrastructure investment funds finished 2024 with $2.26 trillion in assets under management (AUM).[5] That compares with $1.67 trillion in 2023. Despite the larger total of assets under management, 2024 also saw $375.8 billion in "dry powder"—funds raised by infrastructure funds but not yet invested.[6] That figure comes from Ion Group's *Infralogic* team, which notes that its database does not include performance data for all funds that are currently investing in infrastructure, but reports this as "a rough estimate based on the publicly available information for infrastructure funds."

Table 3 and Figure 1 provide breakdowns of 2024 private infrastructure investment by sector. As can be seen, transportation was again the largest category, at $49.7 billion, representing 64.1% of the investment and 64.5% of the projects. In 2023, the transportation total was somewhat higher, at $51.8 billion, representing 62% of the investment and 65% of the projects.

TABLE 3: 2024 P3 INFRASTRUCTURE INVESTMENT BY SECTOR

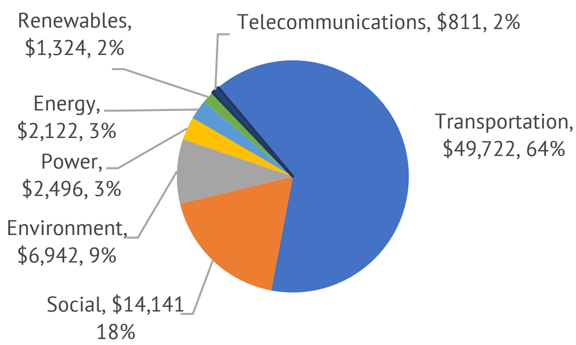
Sector	Value ($M)	% of Total	Number	% of Total
Transportation	$49,722	64.1%	158	64.5%
Social	$14,141	18.2%	39	15.9%
Environment	$6,942	9.0%	27	11.0%
Power	$2,496	3.2%	7	2.9%
Energy	$2,122	2.7%	7	2.8%
Renewables	$1,324	2.0%	6	2.4%
Telecommunications	$811	1.8%	1	0.4%
Total	**$77,558**	**101%***	**245**	**99.9%***

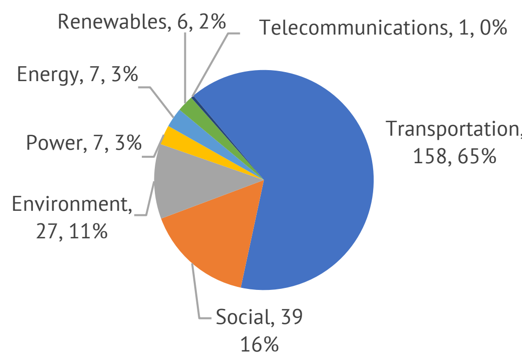
***Note: percentage totals reflect rounding**
Source: *Infralogic*, data analysis for Reason Foundation, January 2025

5 Andras Csillik, Ion Group, email to Robert Poole, 11 February 2025.

6 Andras Csillik, email to Robert Poole, 24 February 2025.

FIGURE 1: 2024 P3 INFRASTRUCTURE INVESTMENT BY SECTOR





2.2 ACQUISITIONS AND DIVESTITURES

Many infrastructure investment funds are "closed-end"—which means they are set up to acquire and manage a portfolio of infrastructure projects for a set period of time—most often 10 years. Other models include longer-term closed-end funds and open-ended funds, which are more like many mutual funds offered by companies such as Fidelity and Vanguard.

Regardless of the structure of an infrastructure fund, it has an interest in maximizing value for its investors, which may include long-term investors such as insurance companies and public-sector pension systems.

Regardless of the structure of an infrastructure fund, it has an interest in maximizing value for its investors, which may include long-term investors such as insurance companies and public-sector pension systems. Hence, at various times in most infrastructure funds' lives, funds will sell some holdings to realize increases in value (or divest others that have not done well) and acquire other holdings in hopes of creating a more diversified portfolio. This is an ongoing process that seeks to optimize the performance of each fund.

Below are some examples of such transactions during 2024 by various members of the Infrastructure Investor 100, with a focus on larger funds that invested heavily in transportation projects.

BlackRock/GIP (#1):

One of the biggest infrastructure news events of 2024 was BlackRock's acquisition of Global Infrastructure Partners (GIP), with the combined fund now ranking first in the 100 biggest funds. Last year GIP was #3 and BlackRock was #13. The deal was finalized on October 1, 2024. Prior to the merger, GIP teamed with developer/operator Vinci Concessions to acquire HKR Roadways in India; its concession runs through 2041.[7] Also prior to the merger, GIP and BlackRock agreed that BlackRock would not take part in bidding on Malaysia Airports' privatization, due to some anti-BlackRock agitation in Malaysia.[8] After the merger, in December BlackRock reached first close on Global Infrastructure Solutions 1, having raised $1.1 billion toward a target of $2.5 billion.[9]

KKR (#3):

Kohlberg Kravis Roberts acquired 12 highway concessions in India for an enterprise value of $1 billion, the largest roads-sector deal to date, according to *Infralogic*.[10] The second-largest India highways deal was the Canada Pension Plan Investment Board (CPPIB) acquisition of eight highway concessions in 2019.

Blackstone (#8) and Mundys:

Blackstone owns 37.8% of Aeroporti di Roma (ADR), the largest Italian airport company, via its interest in Mundys (formerly known as Atlantia, which also operates toll roads in Italy). In May, ADR sold its 15% stake in Aeroporto di Genoa to the local government, which is seeking new investors. The local port authority owns 60% of the airport company.[11]

---

7 Sonu Mohanty, "Vinci and GIP Acquire Indian Motorway Concession," *Infralogic*, 9 September 2024.

8 Lakshmi Iver, "GIP Says BlackRock Won't Participate in Malaysia Airports' Privatisation," *Infralogic*, 24 June 2024.

9 Liam Ford and Jonathan Carmody, "BlackRock Reaches First Close on USD 2.5bn Infrastructure Solutions Fund," *Infralogic*, 18 December 2024.

10 Rouhan Sharma, "KKR Acquires 12 Highways in India's Biggest Roads Deal," *Infralogic*, 15 January 2024.

11 Antonio Fabrizio, "Mundys Sells Genoa Airport Stake Ahead of Further Privatisation," *Infralogic*, 14 March 2024.

Antin Infrastructure Partners (#9):

Antin in December reached close on its largest fund so far, closing at $10.7 billion. It is Antin's fifth infrastructure fund, surpassing KKR's $6.4 billion Asia Pacific Infrastructure Fund. A *Wall Street Journal* article noted that GIP and KKR were still in the market that month for infrastructure funds seeking $25 billion and $20 billion, respectively.[12]

IFM Investors (#11):

IFM, which is owned by public pension funds, increased its stake in toll road operator Atlas Arteria to 27.15% from 24.54% in May. Atlas owns stakes in toll roads in France, Germany, and the United States.[13] In November, IFM acquired an additional stake, increasing its ownership to just below 30%.[14] And in December, Australian property funds manager ISPT became part of IFM.[15]

I Squared Capital (#12):

In December, I Squared registered a new investment vehicle in the United States. ISQ West Cliff Fund GP and ISQ West Cliff Fund LP are registered in the Cayman Islands. The GP Fund was registered in Delaware on December 2 and with the Securities and Exchange Commission on December 9. And in August, the company launched its second growth markets fund, ISQ Growth Markets Infrastructure Fund, targeting $3 billion.[16]

Ardian (#13):

Via its Spanish tollway operator Ascendi, Ardian financed the operator's acquisition of 52% of Madrid-based toll road operator Elsamex Gestion de Infraestructuras, with operations in Spain and Mexico. Ascendi is bidding on the 162 km Zaragoza Oeste toll road P3 in Spain.[17] In May, Ardian-backed ASTM bought control of the operator of the A58 Milan outer ring road concession. ASTM was already the largest shareholder and will now hold a 77.45%

---

[12] Chris Cumming, "Antin Infrastructure Exceeds $10 Billion for New Fund," *The Wall Street Journal*, 23 December 2024.

[13] Sonu Mohanty, "IFM Ups Atlas Stake, Seeks Second Board Seat," *Infralogic*, 16 May 2024.

[14] Sonu Mohanty, IFM Increases Atlas Arteria Stake with AUD 144m Purchase,"*Infralogic*, 18 November 2024.

[15] "ISPT Merges with IFM Investors," *Infralogic*, 16 December 2024.

[16] Liam Ford, "I Squared Capital Registers New Fund in US," *Infralogic*, 10 December 2024.

[17] Norbert Bata, "Ardian-Backed Asendi Acquires Spanish Motorway Operator Stake," *Infralogic*, 23 February 2024.

stake.[18] And in June, Ardian and Saudi sovereign wealth fund PIF bought Ferrovial's stake in privately owned London Heathrow Airport.[19]

Meridiam (#18):

In May, Meridiam bought the 20% stake in Finland's E18 highway that it did not already own. The seller was construction company YIT, which held a 20% stake in the concession company that had begun building in 2018.[20] And in October, Meridiam teamed up with Spain's FCC and Czech contractor Metrostav to bid for the Czech Republic's €1.4 billion D35 motorway P3. Another team bidding for the project is Vinci plus John Laing. The project is a design-build-finance-operate-maintain concession.[21]

Carlyle Group (#28):

The Carlyle Group acquired a controlling stake in London Southend Airport in March. Its Carlyle Global Infrastructure Fund exercised a provision of its $247 million convertible loan into an 82.5% stake in the airport. The previous owner, Esken, will retain the remaining stake. Carlyle has committed to £32 million in new funding for the airport.[22]

Asterion (#30):

Asterion Industrial Partners agreed to buy a 49% stake in Italian airport company 2i Aeroporti from Ardian and Credit Agricole Assurances. Sources consulted by *Infralogic* estimated the price at between 750 and 800 million euros. 2I Aeroporti holds stakes in Bergamo, Bologna, Milan Malpensa, Milan Linate, Naples, Salerno, Turin, and Trieste airports.[23]

Oaktree/Duration:

Oaktree Capital Management in July spun off its infrastructure fund as Duration Capital Partners. Duration is focused on North American transportation infrastructure. Oaktree will continue to hold a minority position in Duration.[24]

---

18 Antonio Fabrizio, "Ardian-Backed ASTM Buys Control of Milan Road Operator," *Infralogic*, 13 May 2024.

19 Brendan Malkin, "Ardian, PIF Agree New Deal for Upsized Heathrow Stake," *Infralogic*, 14 June 2024.

20 Rory Gallivan, "Meridiam Buys Up Finnish Motorway PPP," *Infralogic*, 14 May 2024.

21 Nick Roumpis, "Infra Funds Circle Czech Motorway PPP," *Infralogic*, 21 October 2024.

22 Aaron Karp, "Carlyle Group to Take Controlling Stake in London Southend Airport, *Aviation Daily*, 2 March 2024.

23 Stefano Berra, "Asterion Agrees Deal for 2i Aeroporti Stake," *Infralogic*, 18 July 2024.

24 "Oaktree Spins Out North American Transportation Infrastructure Firm," *Infralogic*, 10 July 2024.

IMPORTANT NEW BOOK ON P3 INFRASTRUCTURE: *Build: Investing in America's Infrastructure*
by Sadek Wahba, Georgetown University Press, 2024
(Reviewed by Michael Bennon, Editor of *Public Works Financing)*

The debate over the role of the state and the private sector in U.S. infrastructure development received a new contribution in October 2024 in the form of *Build: Investing in America's Infrastructure* by Sadek Wahba, founder and chairman of I Squared Capital. *Build* makes a comprehensive case for the liberalization of the U.S. infrastructure industry. It argues in favor of opening the industry up to greater private investment across virtually every sector, via both P3s and other forms of privatization. It is an argument that has been made before, but not in a long time.

To make his case, Wahba lets no argument or line of reasoning go unspared. He situates the current state of American infrastructure in its historical context and offers detailed comparisons with infrastructure development policy in the United Kingdom, Australia, France, India and even China among others. The book includes dozens of case studies of U.S. P3s across sectors, some of which are based on Wahba's personal experience as an investor. That experience is extensive: Wahba is a former World Bank economist and was the head of Morgan Stanley Infrastructure prior to founding I Squared Capital.

Build makes sector-specific cases for increasing private participation in American infrastructure. The book is filled with rich anecdotes of infrastructure history in the U.S. and abroad, from the transcontinental railroads, to America's very first private water companies, to the containerization revolution in international shipping, to Rome's early approaches to infrastructure funding, to the history of India's toll roads and U.K. water utilities.

Wahba includes the results of a public opinion poll that he commissioned on the topic of private participation in American infrastructure. The poll's broad results are striking but understandable—the American public may be far more concerned with the quality of service they receive from their public works than whether that service is directly managed by a public or private entity.

Arguments in either direction on this subject tend to be ideological. One of the elements that makes *Build* unique is Wahba's efforts, from its very first pages, to avoid that trap. He states that "[i]deological commitments to public or private infrastructure management are misguided" and that his perspective is "grounded in empirically based and pragmatic solutions." In other words, Wahba's argument in *Build* is based on history, data, and experiences with infrastructure project delivery, rather than an ideological case in support of private investment.

Generalizing across sectors, he argues that the public would be better served in many cases if government increased its capacity and authority as a *regulator* of infrastructure assets rather than a direct *operator* of those same assets. Here is the argument in full: "If financial responsibility for infrastructure were transferred, in part or in whole, to private operators, local governments would no longer have to double as infrastructure management corporations and could focus more on the work of running a government accountable to the people. Separating government from infrastructure operations would also create an opportunity to strengthen regulatory bodies."

Separating government's responsibilities in infrastructure is a novel approach to the P3 debate, and one worthy of consideration. Other common arguments in the U.S. P3 debate such as the life-cycle cost benefits of combining construction and O&M in a single contract, are discussed far less in *Build*. Wahba mentions this, but not until the very last chapter of *Build*, citing *PWF*'s own Robert Poole.

Build is likely to find its way to an audience very familiar with the debate over the role of the private and public sector in American infrastructure. Informed by their priors, a portion of that audience will likely find the arguments in *Build* very persuasive, and another portion will be very skeptical.

For that former group, a more nuanced question is what, specifically, is holding American infrastructure back? What needs to change? To that end, *Build* includes a number of recommendations, but the political case for P3s is always tougher than the economic one.

Winning over the voting public in such a technical, yet politically charged, topic is a good place to start. Wahba's own public surveys indicate that the public is receptive to private infrastructure management, yet *Build* also includes the usual case studies of public backlash against P3s and privatization. The book notes the need for elected leaders to invest political capital and truly champion any P3 or privatization initiative. While this is certainly true today, it is also not a sustainable solution.

Build does include some recommendations to improve the political, rather than economic, case for P3s and privatization as well. Transparency and extensive planning prior to a solicitation are necessary not only to produce optimal public outcomes, but also to reduce political opposition and the risk that the concession is canceled. Broad federal support to create stronger state regulations and P3 procurement institutions (or even federal P3 regulatory institutions) could generate the public sector capacity and standardization for P3s similar to that found in other countries.

Another broad recommendation from Wahba, derived in part from the success of the asset recycling program in New South Wales, Australia, is for governments to develop a clear set of priorities in which to invest the proceeds of any up-front fees from a concession procurement. The general public needs to understand what the tangible public benefits from any proposed concession will be, whether that includes capital improvements on the assets, improvements to the government's finances, or funding for new infrastructure projects.

Build includes a number of other policy recommendations. It is a comprehensive, well documented contribution to the literature on P3s and privatization, and infrastructure policy more broadly. Paraphrasing Keynes himself, Wahba tries to keep ideology out of it: "there is little question of principle when it comes to which parts of the economy should be managed by the private sector. The country should be guided by whatever works best."

Note: A longer version of this review appeared in the October 2024 issue of *Public Works Financing*. This condensed version is used with the permission of its author, *PWF* editor and publisher Michael Bennon.

PART 3

P3 COMPANIES AND PROJECTS

3.1 GLOBAL COMPANIES AND PROJECTS

During 2024 infrastructure investors financed $77.558 billion worth of P3 infrastructure transactions, including transportation projects. While Table 3 in Part 2 provides a breakdown by the kind of infrastructure (transportation, energy, etc.), Table 4/Figure 2 show the type of transaction, such as greenfield, brownfield, and other categories. Greenfield projects, a main focus of this report, constituted 43.8% of the 2024 total, valued at $42,489 billion. Last year's figure was 45% greenfield, but the total was somewhat larger, at $45.670 billion.

TABLE 4: GLOBAL INFRASTRUCTURE P3 TRANSACTIONS BY TYPE, 2024

Type	Value ($M)	% of Total	Number	% of Total
Greenfield	$42,489	54.8%	107	43.8%
Refinancing	$16,026	20.7%	46	18.8%
Additional Financing	$9,729	12.5%	45	18.4%
M&A	$8,735	11.3%	45	18.4%
Privatization	$579	0.7%	1	0.4%
Totals:	**$77,558**	**100.0%**	**244****	**99.8%***

Source: Infralogic, data analysis for Reason Foundation, January 2025
***Totals do not add to 100% due to rounding.**
**** The number of projects in Tables 3 and 4 differ due to information provided by Infralogic.**

FIGURE 2: GLOBAL INFRASTRUCTURE P3 TRANSACTIONS BY TYPE, 2024

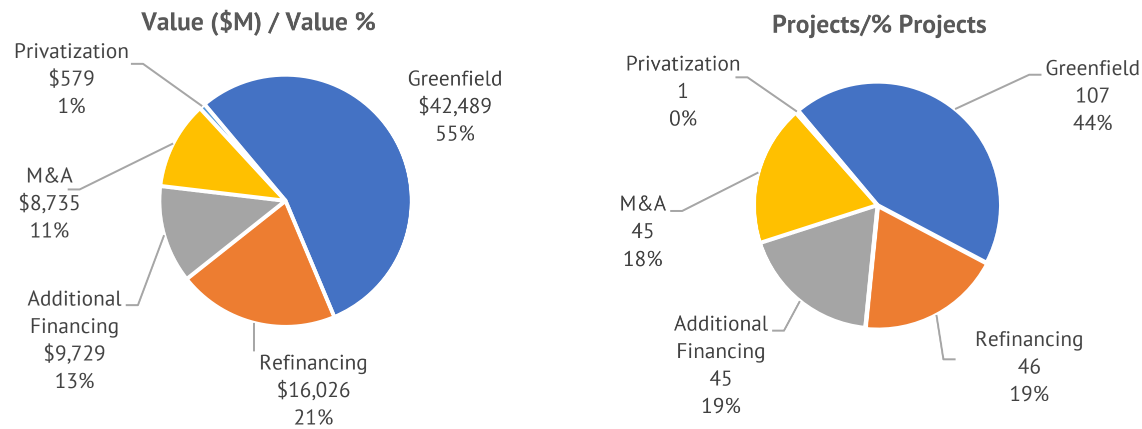


Table 5 lists the 15 largest transportation projects privately financed in 2024. These were all greenfield projects and their lead developers are a more diverse group than in the comparable table in last year's report. In 2024, an unprecedented 91.5% of the top 15 projects worldwide were in the roadway sector (highways and bridges). Coming in a distant second was Brazil's new railway project, at 3.7% of the total. Third were two port projects totaling 3%, while the sole transit (tramway) project accounted for 1.7% of the total. In 2024, of the top 15 projects, three were in the United States compared with two in 2023. Six of the projects were in Europe and another six in Latin America. There were none in Asia or Australia/New Zealand.

TABLE 5: 15 LARGEST P3 TRANSPORTATION PROJECTS FINANCED IN 2024

Country	Project	Sector	Value $B	Lead Developers
Greece	Athens Ring Road Retender	Highway	$3.620	GEK Terna
United States	I-10 Calcasieu River Bridge Replacement	Highway	$2.280	Plenary, Sacyr, Acciona, others
Türkiye	Nakkas-Basaksehir Junctions Road PPP	Highway	$1.553	Samsung, Korea Overseas, KDB Infrastructure, others
Belgium	R4 Highway West & East PPP	Highway	$1.401	14B, EPICo, PMF Fund Management, others
United States	I-285 West and I-20 West P3 DBF	Highway	$1.250	C. W. Matthews
Brazil	Parana Highways Concession	Highway	$1.087	Equipav, Perfin Asset Management
Brazil	Transnordestina Logistica	Railway	$0.965	CSN
Brazil	Minas Gerais Highway Concession	Highway	$0.620	Perfin Asset Management, Equipav
Colombia	Troncal del Magdalena #1	Highway	$0.610	Grupo Ortiz, KMA Construcciones
Colombia	Troncal del Magdalena #2	Highway	$0.530	KMA Construcciones, Grupo Ortiz
Italy	Florence Tramway Extension	Transit	$0.442	Meridiam
United States	San Juan Maritime Ports P3	Ports	$0.425	Global Ports Holding, Enka Holdings, Barclays
Türkiye	Sariyer-Kilyos Tunnel	Highways	$0.405	IC Holding
Belgium	RO X A201 Road PPP	Highways	$0.380	Jan De Nut Group, BBGI
Ecuador	Bolivar Port Modernization PPP	Ports	$0.340	Yilport Holding

Source: *Infralogic*, data analysis for Reason Foundation, January 2025

Table 6 lists the world's largest transportation P3 developers, ranked by the number of DBFOM projects each has in operation or under construction. Some projects are developed by a consortium of two or more companies, so if, for example, Cintra and Meridiam collaborated on a project, it would be included in the project total for each of them. Hence, the numbers of projects should not be added together. Projects counted in Table 6 include highway, railway, airport, seaport, and ancillary projects costing $50 million or more.

TABLE 6: WORLD'S 20 LARGEST TRANSPORTATION P3 DEVELOPERS, 2024

Company	Projects	U.S.	Canada	Home Country	Other
Vinci (France)	58	6	3	22	27
Meridiam (France)	55	10	3	6	36
Sacyr (Spain)	45	1	0	11	33
ACS Group (Spain)	43	6	11	17	9
Macquarie (Australia)	39	6	0	5	28
Abertis (Spain)	37	3	0	6	28
Ferrovial/Cintra (Spain)	29	7	3	4	15
ASTM/Itinera (Italy)	25	0	0	13	12
Transurban (Australia)	24	3	1	20	0
Egis (France)	22	0	0	7	15
Invesis (Netherlands)	20	0	0	6	14
Aleatica (Spain)	20	0	0	5	15
John Laing	15	6	1	1	7
Plenary (Australia)	16	6	6	4	0
FCC (Spain)	13	0	0	11	2
Balfour Beatty (U.K.)	13	1	0	12	0
Fluor (U.S.)	9	5	0	5	4
Skanska (Sweden)	8	2	0	0	6
Acciona (Spain)	8	0	1	3	4
Shikun & Binui (Israel)	8	3	0	4	1

Source: "World's Largest Transportation Developers: 2024 Survey of Public-Private Partnerships," ***Public Works Financing*****, February 2025**

As in previous years, companies headquartered in Europe totaled 15 out of the 20 developers in Table 6—75% of the total. This should not be surprising, since the DBFOM P3 model originated in Europe dating back to the 1970s. Australia also pioneered DBFOM projects prior to 2000, so it is not surprising that three of the 20 firms are Australia-based. Only one U.S. firm (Fluor) made it into the top-20 global players, though a lengthier table would have included Star America and Kiewit, which are in the top-25 global transportation P3 developers.

Just as infrastructure funds adjust their portfolios of projects, so do major P3 developers. Some maintain a portfolio of completed projects. Others tend to retain only some projects, selling others once they are in operation and demonstrating good performance. Here are illustrative examples of these kinds of transactions in 2024.

- In February, Italian toll road operator ASTM announced the termination, for strategic reasons, of its plan to sell its stake in the A58 outer ring road concession. It had lost several bids to renew other toll road concessions in Italy. ASTM is owned by Ardian and Gavio Group.[25]
- In March, Cintra agreed to purchase a 24% stake in IRB Infrastructure Trust, which holds toll road concessions in India. The seller was Singapore sovereign wealth fund GIC. Cintra and GIC are also shareholders in IRB Infrastructure Developers.[26]
- In May, Sacyr announced plans to sell a minority stake in its P3 concessions portfolio to a financial partner that can help fund its growth internationally. It has bundled a number of concessions into a new entity, Voreantis, in which it plans to hold the majority stake.[27]
- In June, investors including Abertis, Ascendi, and Globalvia were preparing to bid on a renewed concession for Portugal's toll road operator AED, which manages 79 km of motorways in the Porto metro area.[28]
- In July, Cube Highways and Infrastructure was in advanced discussions with India's National Investment and Infrastructure Fund regarding BOT projects that are part of a planned 5,000 km of new motorways. Cube Highways is owned by I Squared Capital.[29]
- In September, India's GMR Group announced plans to return three expiring concessions to the government and was in the process of evaluating new concessions in the tolled highways category.[30]
- In October, Ferrovial teamed up with Interogo Holding to manage its stakes in highway and parking concessions in Canada, Ireland, Scotland, and Spain. Their new €100 million venture, called Umbrella Roads, will focus on roads financed via availability payments.[31]

---

[25] Stefano Berra and Antonio Fabrizio, "ASTM Pulls Road Concession Stake Sale," *Infralogic*, 14 February 2024.

[26] Rouhan Sharma, "GIC Sells 24% of Indian Roads Trust to Cintra," *Infralogic*, 14 March 2024.

[27] Antonio Fabrizio, "Sacyr Plots Concessions Stake Sale," *Infralogic*, 9 May 2024.

[28] Antonio Fabrizio, Nelson Rodrigues, and Inaki Miguel, "Investors Prep for Portuguese Road Operator," *Infralogic*, 27 June 2024.

[29] Rouhan Sharma, "*Infralogic* Insights: USD 25Bn Opportunity Spurs Tie-Up Talk for India Roads," *Infralogic*, 8 July 2024,

[30] Rouhan Sharma, "India's GMR to Return Highway Concessions to Government," *Infralogic*, 27 September 2024

[31] Swapnadip Purkayastha, "Ferrovial Launches Road Concessions JV," *Infralogic*, 17 October 2024.

- Also in October, Abertis bought out its partners Ardian and SPG Asset Management in the Trados 45 concession for Spain's M-45 bypass near Madrid.[32]
- In November, John Laing bought out its partners in the Oakland Corridor Partners concession company that rebuilt a portion of I-75 in Michigan. The other large partner was AECOM Capital.[33]
- And in December Sacyr, with co-investor Fininc, acquired the A21/A5 toll road concession in northern Italy. Santander provided the debt for the acquisition.[34]

Table 7 zeroes in on P3 transportation developers active in the United States, listed in order by the number of DBFOM projects in which each has been involved. The more detailed table from which Table 7 is derived lists each of the individual projects each company has been involved with, either alone or in a joint venture with other developers. Hence, as with Table 6, the numbers of projects or total investment should not be added together. The more detailed source table, from the *Public Works Financing* Major Projects Database, includes 11 additional firms that have invested in only one project each.

TABLE 7: LARGEST U.S. TRANSPORTATION P3 DEVELOPERS, 2024

Company	Headquarters	U.S. Projects	Project Cost Total ($M)
Meridiam	France	9	$18,684
Ferrovial/Cintra	Spain	7	$21.200
ACS	Spain	6	$11,049
Fluor	U.S.	6	$14,700
John Laing	U.K.	5	$10,085
Plenary	Australia	4	$4,841
Macquarie	Australia	4	$4,649
Skanska	Sweden	3	$8,881
Transurban	Australia	3	$3,331
Star America	U.S.	3	$4,353
Shikun &Binui	Israel	3	$5,795
Walsh	U.S.	2	$2,437
Kiewit	U.S.	2	$1,088
Fengate	Canada	2	$2,500

Source: "US Transportation P3 Developers," US Survey of Public-Private Partnerships, *Public Works Financing*, February 2025

Finally, Table 8 offers a historical overview of U.S. greenfield transportation P3 projects since the first project was financed in 1993. The first two projects relied on taxable bank

32 Antonio Fabrizio, "Abertis to Take Full Ownership of Madrid Road," *Infralogic*, 31 October 2024.

33 Michael Bennon, "John Laing Consolidates Holding in I-75 P3," *Public Works Financing*, December 2024.

34 Antonio Fabrizio and Stefano Berra," "Santander Backs Sacyr's Italian Toll Road Takeover," *Infralogic*, 13 December 2024.

debt, since neither tax-exempt private-activity bonds (PABs) nor low-interest TIFIA loans were available yet. Since Congress enabled those two financing methods, the large majority of U.S. DBFOM projects have used one or both, as the table shows.

Table 8 separates these projects into two groups. In the upper portion of the table are revenue-risk projects, financed largely based on projected user-fee revenue flows. The lower half of the table lists projects financed based on availability payments (APs) from the sponsoring agency. (Some of the AP projects include tolls, charged by the public agency, the revenue from which covers some or all of the availability payments.)

As can be seen, the fraction of the project financed by equity investment is significantly higher for revenue-risk P3s. This is because those investors are taking on significant revenue risk in addition to the other risks of greenfield projects (cost overruns, late completion, etc.). The additional equity also offers creditors such as bond-buyers a "cushion" in the event of a recession that reduces user-fee revenues. The P3 entity therefore has a better chance of keeping current on debt-service payments to bondholders during such periods.

In addition, the government's direct contribution to the cost of building the project is significantly lower in revenue-risk P3s compared with availability-payment P3s, which means less of a burden on taxpayers. The fraction provided by equity averaged 27.7% in revenue-risk P3s compared with 6% in availability-payment P3s. Accordingly, the extent of government support averaged 8.7% in revenue-risk projects compared with 34.9% in availability-payment projects.

TABLE 8: HISTORICAL OVERVIEW OF U.S. LONG-TERM P3 GREENFIELD PROJECTS

Project	Type	Govt. (M)	Infra Bank Loan	TIFIA (M)	PABs (M)	Bank Debt (M)	Equity (M)	Total (M)	% Equity	Financial Close
91 Express Lanes	RR	0		0	0	$100	$30	$130	23%	1993
Dulles Greenway	RR	0		0	0	$298	$80	$378	21%	1993
S. Bay Expressway	RR	0		$140	0	$340	$130	$610	21%	2003
I-495 Express	RR	$495		$598	$589	0	$630	$2,312	27%	2007
SH 130, Seg. 5-6	RR	0		$430	0	$686	$210	$1,326	16%	2008
N. Tarrant Express, TX	RR	$594		$650	$398	0	$426	$2,068	21%	2009
LBJ Expressway, TX	RR	$490		$850	$606	0	$682	$2,628	26%	2010
Midtown Tunnel, VA	RR	$582		$422	$675	0	$272	$1,951	14%	2012
I-95 HOT, VA	RR	$83		$300	$253	0	$280	$916	31%	2012
N. Tarrant 3A/B, TX	RR	$379		$531	$274	0	$442	$1,626	27%	2013
US 36, Ph. 2, CO	RR	$75		$60	$21	0	$41	$197	21%	2014
I-77 MLs, NC	RR	$95		$189	$100	0	$248	$632	39%	2015
SH 288, Texas	RR	$17		$357	$100	0	$375	$849	44%	2016
I-66, Virginia	RR	$0		$1,229	$737	0	$1,549	$3,515	44%	2017

Project	Type	Govt. (M)	Infra Bank Loan	TIFIA (M)	PABs (M)	Bank Debt (M)	Equity (M)	Total (M)	% Equity	Financial Close
I-95, ext., Virginia	RR	$0		$0	$277	0	$532	$809	66%	2019
N. Tarrant, 3C, TX	RR	$14		$0	$750	0	$160	$924	17%	2019
Newark ConRAC	RR	$110		$0	$0	$310	$60	$480	13%	2019
Belle Chasse Bridge, LA	RR	$45		$0	$110	0	$28	$183	15%	2019
I-495 NEXT, VA	RR	$0	$49	$212	$225	0	$268	$754	36%	2021
JFK New Terminal One	RR	$0		$0	$0	$6,630	$2,330	$8,960	26%	2022
JFK Terminal 6	RR	$0		$0	$435	$3,009	$1,300	$4,744	27%	2022
Calcasieu River Bridge	RR	$345		$0	$1,415	$0	$520	$2,280	23%	2024
Total		**$3,324**	**$49**	**$5,968**	**$6,965**	**$11,373**	**$10,593**	**$38,272**		
Average		**$151**	**$2**	**$271**	**$317**	**$517**	**$482**	**$1,740**		
Percent		**8.7%**	**0.1%**	**15.6%**	**18.2%**	**29.7%**	**27.7%**			
I-595, FL	AP	0		$603	0	$781	$208	$1,592	13%	2009
Port Miami Tunnel	AP	$100		$341	0	$342	$80	$863	9%	2009
Denver Eagle rail	AP	$1,312		$280	$396	$0	$54	$2,042	3%	2010
Presidio Pkway Ph 2	AP	0		$150	0	$167	$45	$362	12%	2012
East End Bridge	AP	$526		$162	$508	$0	$78	$1,274	6%	2013
Goethals Bridge	AP	$125		$474	$453	$0	$107	$1,159	9%	2013
I-69, IN	AP	$80		$0	$244	$0	$41	$365	11%	2014
I-4 , FL	AP	$1,035		$950	$0	$484	$103	$2,572	4%	2014
Penn. Rapid Bridges	AP	$255		$0	$721	$0	$59	$1,035	6%	2015
Portsmouth Bypass	AP	$178		$209	$227	$0	$49	$663	7%	2015
Purple Line rail	AP	$1,599		$875	$313	$0	$139	$2,926	5%	2016
LaGuardia Terminal	AP	$1,200		$0	$2,400	$0	$200	$3,800	5%	2016
I-70, Colorado	AP	$687		$404	$141	$0	$65	$1,297	5%	2017
LAX People Mover	AP	$1,031		$0	$1,295	$269	$103	$2,698	4%	2018
LAX ConRAC	AP	$690		$0	$458	$73	$43	$1,264	3%	2019
PA Major Bridges	AP	$140		$0	$1,759	$0	$202	$2,101	10%	2020
NY MTA ADA	AP	$391		$0	$327	$0	$25	$743	3%	2023
Total		**$9,349**		**$4,448**	**$9,242**	**$2,116**	**$1,601**	**$26,756**		
Average		**$550**		**$262**	**$544**	**$124**	**$94**	**$1,574**		
Percent		**34.9%**		**16.6%**	**34.5%**	**7.9%**	**6.0%**			

3.2 U.S. P3 DEVELOPMENTS IN 2024

The lone major U.S. surface transportation P3 project to reach financial close was the $2.28 billion Calcasieu River bridge project on I-10 near Lake Charles, LA. After having been rejected by a joint legislative committee in October 2023, a revised 50-year DBFOM P3 agreement was approved by the same committee in January 2024. The project will replace a 71-year-old functionally obsolete four-lane Interstate bridge with a state-of-the-art six-lane bridge with electronic toll collection. The Calcasieu Bridge Partners (CBP) consortium is led by Plenary Americas, with Aecon Infrastructure Developers and Acciona Concesions.[35] Financial close on this revenue-risk P3 took place on August 15, 2024.[36] There were many months of negotiation between Louisiana DOTD and CBP, especially concerning toll rates

35 Michael Bennon, "Calcasieu Uncancelled," *Public Works Financing*, February 2024.

36 Eugene Gilligan, "Calcasieu River Bridge Project Reaches Financial Close, *Infralogic*, 15 August 2024.

and revenues. For example, the state will retain nearly 15% of toll revenues after CBP recovers its costs of construction, debt service, and maintenance. After that point, DOTD will be able to either lower the toll rates, reduce the term of the 50-year concession, or use its share of toll revenues for other projects in southwestern Louisiana.[37]

Other U.S. P3 transportation developments in 2024 included the following:

Georgia DOT took a major step forward, selecting its winning bidder for the SR400 express toll lanes (ETLs) project. This is the first of three major revenue-risk P3 projects to add ETLs to the north-south SR 400 expressway and the upper half of the I-285 beltway, known in Atlanta as "the Perimeter." The winning team is SR400 Peach Partners, led by Meridiam, ACS Infrastructure, and Acciona Concesiones.[38] The estimated design and construction cost of 16 miles of ETLs is $4.6 billion. The concession term is planned as 55 years. The expected time to negotiate the long-term agreement is 12 months, at which the financial close should take place mid-year 2025. Construction is expected to begin in mid-2026 and be finished by early 2031.

Tennessee DOT made considerable progress on its planned four additions of ETLs to congested urban expressways under its Choice Lanes program. In December 2023 it identified the first project as I-24 between Nashville and Murfreesboro, a highly congested corridor.[39] In June 2024, TDOT received a decision from the Federal Highway Administration (FHWA) that an Environmental Assessment (EA) is appropriate for the project, rather than a more costly and time-consuming Environmental Impact Statement (EIS).[40] TDOT plans to release an initial Request for Proposals (RFP) in second-quarter 2025, followed by a final RFP in first quarter 2026.[41]

North Carolina DOT and the Charlotte Regional Transportation Planning Organization (CRTPO) studied the feasibility of adding ETLs to I-77 between downtown Charlotte and the South Carolina border. The project was proposed by Cintra in an unsolicited proposal

---

37 Ibid.

38 Michael Bennon, "Georgia's Major Move: Preferred Bidder for SR400 Express Lanes." *Public Works Financing*, August 2024.

39 Eugene Gilligan, "Tennessee DOT Identifies Nashville Area Highway for First Managed Lanes P3," *Infralogic*, 18 December 2023.

40 Eugene Gilligan, FHWA Issues Environmental Decision for Tennessee Managed Lanes P3," *Infralogic*, 25 June 2024.

41 Eugene Gilligan, "Tennessee Advances Initial Managed Lanes P3, *Infralogic*, 11 May 2024.

submitted in 2022.[42] After internal study, the proposal was rejected, but in coordination with CRTPO, NCDOT carried out a study of the trade-offs between a state-funded ETL project and a revenue-risk P3 project similar to Cintra's successful project on I-77 north of Charlotte.[43] NCDOT's report, in September 2024, concluded that:

> *[T]raditional toll delivery for the I-77 South Express Lanes is not likely financially feasible, given current funding constraints. Even including sensitivities, the analysis reveals a significant funding gap of $1.9 billion … In contrast, the comparative analysis shows that a P3 Toll Delivery for the project is likely financially feasible.*[44]

In terms of next steps, the report advises CRTPO that if it opted for the traditional approach, NCDOT would have to find a "logical stopping point and pause work until a [financially viable] path forward is identified." But if CRPTO opts for P3 toll delivery, project development could continue and "NCDOT would work with CRTPO to define key objectives and priorities."

In October, the CRTPO board voted to proceed with P3 procurement of the project.[45] When completed, it will extend from the southern end of the existing I-77 North ETLs to the South Carolina border, a distance of 8.4 miles. The latest cost estimate is $3.2 billion, up from $1.7 billion several years ago, due to NCDOT having decided, due to land-use constraints, that most of the corridor will be elevated. The state has set aside $600 million as its portion of the project budget. NCDOT hopes to select a preferred bidder for the P3 concession by August 2025.

Virginia DOT looks forward to the opening of I-495 NEXT in fourth quarter 2025. Despite an environmental lawsuit,[46] this 2.5-mile northward extension of the I-495 express toll lanes from its current endpoint at the Dulles Tollroad to the George Washington Memorial Parkway interchange is expected to open on-time.

---

42 Michael Bennon, "Unsolicited Proposal for I-77 Express Lane Extension Rejected," *Public Works Financing*, August 2023.

43 Joe Marusak, "I-77 Charlotte Commute Has Gotten Faster Despite Backups, More Cars, Toll Operator Says," *The Charlotte Observer*, 25 October 2023.

44 NCDOT Advisors, "I-77 South Express Lanes Comparative Analysis, Supplemental Report," September 2024, 20.

45 Michael Bennon, "I-77 Express Lanes Project Moving Forward," *Public Works Financing*, October 2024.

46 Michael Bennon, "Federal Judge Rejects Injunction Request on 495 NEXT," *Public Works Financing*, April 2023.

3.3 POTENTIAL FUTURE U.S. P3 TRANSPORTATION PROJECTS

The outlook for U.S. transportation P3s is positive for 2025. Major highway P3 projects are in the pipeline in Georgia and Tennessee, with other projects likely within the next few years in Georgia, North Carolina, Tennessee, Virginia, and Illinois. There are also interesting possibilities in other states.

Georgia DOT's next major express toll lanes revenue-risk P3 project will be for adding ETLs to the eastern half of I-285, called I-285 East express lanes. Soon after last summer's selection of the winning team for SR 400, GDOT held an industry forum on this second project. Its initial segment will extend from Northside drive (west of SR 400) to Henderson Road (and afterward further south to I-20).[47] Subsequent projects are planned to add ETLs to the west side of I-285, again as far south as I-20.

Virginia DOT continues to study ways to add ETLs to the I-495 Beltway between I-95 and the Woodrow Wilson Bridge across the Potomac River.[48] VDOT and Transurban are also studying the possible reconfiguration of the I-95 ETLs from reversible to bi-directional.[49]

Illinois DOT was given a green light by the legislature in 2023 to use a P3 to implement ETLs on highly congested I-55 in the Chicago metro area (which would be the first ETLs in Illinois).[50] No announcements were made by Illinois DOT during 2024 regarding moving ahead to implement this project. The IDOT website, as of February 2025, discussed studies of the project dating back 10 years, but without mentioning the 2023 P3 legislation. Under the heading of "Construction" of this project, IDOT says the project is currently in Phase II, but that Phase III (construction) "is not included in the current program" and that there is no timetable for this project. IDOT also notes, "When funding becomes available, this site will be updated periodically as the project progresses."[51]

47 Michael Bennon, "Georgia's Major Move: Preferred Bidder for SR 400 Express Lanes," *Public Works Financing*, August 2024.

48 Luz Lazo, "Virginia Weighs 11 More Miles of Tolled Beltway Lanes into Maryland," *Washington Post*, 5 October 2023.

49 Lakshmi Iver, "Transurban-backed Company Explores Off-Peak Lane Capacity in US," *Infralogic*, 13 November 2023.

50 Michael Bennon, "Illinois I-55 Managed Lanes Gets Surprise Legislative Approval," *Public Works Financing*, May 2023.

51 Illinois DOT, "Interstate 55 Managed Lanes, Construction (Phase III)," accessed 24 February 2025.

Texas DOT provided the only negative news for highway P3s in 2024. Its governing body, the Texas Transportation Commission, in July took advantage of the termination-for-convenience clause in the long-term P3 agreement for the express toll lanes on SH 288 in the Houston metro area. That provision listed certain buy-out values of the concession for each several-year period of the 52-year concession. Thanks to robust traffic and revenue, the value of the concession was well-above the termination price, if the termination took place prior to the end of October 2024.[52] Though the concession company raised legal objections, those did not prevail and the take-over by TxDOT occurred on October 9.[53] TxDOT announced that it would reduce the toll rates and add another general-purpose (free) lane in each direction on SH 288.

There are several other possible projects that may reach the procurement stage within the next several years.

- The Louisiana Department of Transportation and Development (DOTD) is planning a revenue-risk DBFOM P3 for a new Mississippi River Bridge at Baton Rouge. It is aimed at reducing serious congestion on capital area roadways. The final three alternative routes are going through environmental assessment. The estimated cost of the bridge itself is $2 billion, not including connectors, and the stated policy is that it will be tolled. DOTD reported in late 2024 that the schedule for the project has slipped about a year due to negotiations with consultants working on environmental, geotechnical, and topographical studies.[54]
- The Brightline West high-speed rail project moved closer to financial close in 2024, with the announcement of $2.5 billion in tax-exempt private activity bonds (PABs). In 2023, the Nevada Department of Transportation was awarded a $3 billion federal passenger rail grant for the project. The new 186 mph high-speed rail line will link Las Vegas to an eastern suburb of greater Los Angeles—Rancho Cucamonga in San Bernardino County—where it will connect to a commuter rail line.[55]

52 Michael Bennon, “Texas Moving Forward with SH-288 Concession Termination,” *Public Works Financing*, August 2024.

53 Texas DOT, “TxDOT Finalizes Buyback of SH 288,” 9 October 2024.

54 Robert Poole, “New Mississippi River Bridge a Year Behind Schedule,” News Note, *Surface Transportation Innovations*, December 2024.

55 Liam Ford, “Brightline West Financing Coming Into Place as Test Work Starts,” *Infralogic*, 24 January 2024.

- The Port of New Orleans has commissioned consulting firm WSP to determine a P3 strategy for developing the planned St. Bernard elevated transportation corridor linking the port's forthcoming Louisiana International Terminal with I-510.[56]
- A potential P3 project would be to extend the express toll lanes on I-4 in central Florida in both directions—northeast toward Daytona Beach and southwest toward Tampa. The existing I-4 ETLs opened in 2022 and cover 20 miles through central Orlando and its suburbs. Congestion remains severe beyond the limits of the ETLs, which were developed as a hybrid (availability payments but also tolls) DBFOM P3. Florida's P3 law was amended in 2024 to allow revenue-risk projects, so an I-4 ETL project is a possible 2025 development.
- Another potential Florida P3 project is a railroad tunnel under the New River in Fort Lauderdale. The current railroad bridge is an aging lift bridge which remains in the open position most of the time, due to the large amount of boat travel on that river. With the popular Brightline express trains and plans for new commuter rail service, city and county officials have debated a high-level railroad bridge or a railroad tunnel. Early in 2025, Fort Lauderdale Mayor Dean Trantalis disclosed discussions with Meridiam, which was part of the P3 consortium that developed the successful Port of Miami Tunnel.[57] That 2009 project came in on time and on budget—and was financed by state and local availability payments, with no federal funding but did receive a federal TIFIA loan.

3.4 NBER AIRPORTS P3 STUDY

A major study of airport privatization/P3s found that airports perform better if infrastructure investment funds lead the P3 entity. The paper is a revised version of Working Paper 30544 from the National Bureau of Economic Research (NBER), a U.S. think tank.[58]

NBER's research used a database of 2,444 airports in 217 countries, of which 437 have been "privatized" (meaning sold or P3 leased). The data came from years 1996 through 2019. Of those 437 airports, 102 had been or were still under the control of an infrastructure

56 Press release, "WSP to Evaluate Port NOLA Highway Terminal Connection P3," *Infralogic*, 22 January 2024.

57 Susannah Bryan, "Tunnel vs. Bridge: City Hopes Truce Ahead for Commuter Trains," *South Florida Sun Sentinel*, 21 February 2025.

58 Sabrina T. Howell, et al., "All Clear for Takeoff: Evidence from Airports on the Effects of Infrastructure Privatization," Working Paper 30544, National Bureau of Economic Research, revised March 2023.

investment firm (referred to in the study as "private equity"—PE). This enabled the researchers to compare projects with a majority PE stake to those with none or only a minority stake. Among the differences between PE and non-PE airports, the following are noteworthy. PE-majority airports had:

- Four times as much growth in passenger traffic;
- 21% more passengers per flight;
- Larger increases in service by low-cost carriers (LCCs);
- A larger extent of airport capacity expansion (both runway and terminal capacity); and
- Higher scores in the Airports Council International's annual Airport Service Quality Awards.

> *A major study of airport privatization/P3s found that airports perform better if infrastructure investment funds lead the P3 entity.*

In seeking to understand the differences, the researchers found that non-PE privatizers tended to focus more on airports in developing countries (which score higher on corruption problems). When bidding against non-PE firms, the PE entities won 77% of the time, due to bidding higher. And in cases where the airport has a state-owned "flag carrier" airline, PE airports generate much larger increases in the number of airlines serving the airport, especially LCCs.

The researchers concluded that "privatization consistently leads to higher performance only with PE involvement." Key factors include the PE companies' knowledge of global best practices, new managers with higher compensation, and greater capital investment. In this author's view, these fundings demonstrate that PE companies are more serious about running airports as businesses.

PART 4

PUBLIC PENSION FUND INFRASTRUCTURE INVESTMENT

4.1 INTRODUCTION

Pension funds, like insurance companies, have very large amounts of long-term liabilities—the promised benefits to future retirees. Accordingly, also like insurance companies, they need long-term investments that are likely to grow over time. Traditionally, most pension funds invested in relatively safe long-term bonds, as well as relatively safe corporate stocks in industries such as railroads and investor-owned utilities. U.S. pension funds do not invest in government utilities and other infrastructure (such as airports or seaports) because those facilities' bonds are tax-exempt, and that exemption offers no benefit to nonprofit, tax-exempt pension funds. And they cannot invest in shares of government utilities since there are no such shares.

Over the last three decades, as noted in Part 1, governments in many countries have privatized government-owned utilities (electricity, water, telecommunications, airports, seaports, toll roads). When the privatization transfers actual ownership, shares in such companies trade on stock markets, and can be purchased and held by pension funds as alternative long-term investments. When privatization takes the form of a long-term public-private partnership, the P3 entity is typically financed via a mix of revenue bonds and private equity. Infrastructure investment funds, as described in Part 2, assemble portfolios of infrastructure equity in which pension funds can invest.

> *When the privatization transfers actual ownership, shares in such companies trade on stock markets, and can be purchased and held by pension funds as alternative long-term investments.*

When a pension fund decides to allocate a portion of its assets to infrastructure, it generally deals with one or more funds such as those listed in Table 1 in this report. The pension fund itself in most cases does not have the specialized knowledge to select specific P3 projects in which to invest. It allocates a sum to an infrastructure fund for two reasons: to take advantage of the fund's expertise in investor-owned and P3 infrastructure and to gain the advantage of a balanced portfolio of projects and companies (analogous to an individual investor buying mutual funds rather than individual stocks).

Australian and Canadian public pension funds pioneered infrastructure investing in the 1990s. Australia's federal government in 1992 required employers to set aside 3% of nearly all employee wages in their choice of approved pension funds. Over several decades, the requirement was gradually increased to 9.5%. Due in part to Australia's large-scale privatizations of utilities and infrastructure in subsequent years, its pension funds had growing domestic infrastructure investment opportunities. As the pension funds grew in size, they diversified their infrastructure investments to other countries that employed privatization and long-term P3s. In the process, several Australian infrastructure investors became key global companies in that field, such as Macquarie (#4 in Table 1) and IFM Investors (#11).

The advent and growth of public pension fund investment in Canada was documented in a paper prepared for the Harvard Law School in 2022.[59] A 1986 task force created by Canadian Treasurer Robert Nixon began with a study of how Ontario's public pension

[59] Keith Ambachtsheer, "How Peter Drucker Revolutionized Canada's Public Sector Pension System: Lessons for Americans," Harvard Law School Forum on Corporate Governance, 8 December 2022.

investment returns could be improved. In 1990, the first new pension system was created—Ontario Teachers Pension Plan (OTPP), with a charter that insulated it from politics. Its strategy of investing in private markets in equities, real estate, and infrastructure became the model for a set of similar national and provincial pension systems.

The larger Australian and Canadian public pension funds have developed considerable expertise in evaluating infrastructure in which to invest. Hence, in many cases they are direct investors in specific companies and long-term revenue-financed P3s. By contrast, most U.S. public pension funds, since they lack the experienced staff to evaluate individual companies and P3 concessions, generally invest in larger infrastructure funds such as those in Table 1 of this report.

4.2 INTERNATIONAL PENSION FUND INFRASTRUCTURE DEVELOPMENTS, 2024

Overall, 2024 was a good year for Australian and Canadian pension systems, which pioneered infrastructure investing for pension funds. Australian funds, for financial year 2024 (ending June 30) posted strong returns, with the median Growth fund assets up 10.0% and the median Conservative fund returning 6.2%.[60] Canadian pension funds also had a good year, returning an average return of 10.6% for 2024, according to Northern Trust.[61]

Here are some examples of transactions by leading Australian and Canadian pension funds in 2024.

4.2.1 AUSTRALIAN PENSION FUNDS

IFM Investors:

In March, IFM issued a report concluding that "Global interest in infrastructure is ramping up, with the asset class emerging as a new portfolio cornerstone."[62] In April, IFM was working on financing for its airport holdings, including Manchester Airports Group, London Stansted, and Flughafen Wien (Vienna Airport).[63]

---

[60] Barbara Drury, "Pension Fund Performance to June 2024," SuperGuide, 31 July 2024.

[61] Matt Toledo, "Canadian Pension Funds Returned 10.6% in 2024," Northern Trust, 3 February 2025.

[62] Sonu Mohanty, "IFM Report Says Infrastructure Investment Is Moving to Mainstream," *Infralogic*, 28 March 2024.

[63] Stefano Berra, "IFM Eyes Major Airport Holdco Refi," *Infralogic*, 2 May 2024.

Queensland Investment Corporation (QIC):

In March, *Infralogic* reported that QIC was closing its London office to refocus on Australasia; it was also selling its U.S. infrastructure assets.[64] And in May, Australia's Future Fund (managed by QIC) acquired a 19.8% stake in the P3 concession for Melbourne's EastLink motorway.[65]

Equip Super:

This $24 billion pension fund announced it was looking to add billions of dollars' worth of private market investments to its portfolio in the next several years.[66]

4.2.2 CANADIAN PENSION FUNDS

CDPQ (Caisse de dépôt et placement du Québec):

In April CDPQ announced that it would explore investing in India's ports jointly with DP World, a global ports operator, but also possibly on its own.[67] It also signed a share purchase agreement to acquire a set of toll road assets from Ashoka Buildcon, and was also seeking highway assets from India's National Investment and Infrastructure Fund.[68] That deal reached closure in October.[69] CDPQ's 2024 performance, reported in early 2025, was a weighted-average annual return of 9.4%. CEO Charles Emond told investors that "infrastructure continued to deliver in 2024. It's a solid portfolio year after year."[70]

CPPIB (Canada Pension Plan Investment Board):

Together with Blackstone, CPPIB reached financial close in December on a $15 billion acquisition of Australian data center company Air Trunk. The seller was Macquarie Asset Management, along with its co-investor PSP Investments.[71]

---

64 Rory Gallivan, "London Infra Partner Leaves as QIC Retreats to Australasia," *Infralogic*, 5 March 2024.

65 Shaun Drummond, "Eastink Sale Likely to Close Early Next Month," *Infralogic*, 29 May 2024.

66 Sonu Mohanty, "Equip Super Ramps Up Private Markets Investment Plans," *Infralogic*, 27 August 2024.

67 Sonu Mohanty, "CDPQ Keen to Partner DP World for India Ports Investment," *Infralogic*, 9 April 2024.

68 Rouhan Sharma, "CDPQ to Acquire Toll Roads from India's Ashoka Buildcon," *Infralogic*, 3 March 2024.

69 "CDPQ to Buy Ashoka's BOT Toll Road Assets for Rs 4,500 Crore, *The Economic Times*, 15 October 2024.

70 Liam Ford, "CDPQ Sees Infrastructure Bolster Its Bottom Line." *Infralogic*, 26 February 2025.

71 Shaun Drummond, Jessica Wong, and Pranav Namblar, "Blackstone, CPPIB Complete AUD 24bn Air Trunk Acquisition," *Infralogic*, 23 December 2024.

OMERS (Ontario Municipal Employees Retirement System):

This leading Canadian pension fund generated $4.09 billion in the first half of 2024, though the return on its infrastructure portfolio was only 4.1% over the six-month period.[72] In August, OMERS and DWS Infrastructure agreed to buy Italian railway station business Grandi Stazioni for €1.5 billion. The seller was Antin Infrastructure Partners.[73] And in September, OMERS acquired 13.5% of Interise Trust, an Indian highways investment platform.[74]

OTPP (Ontario Teachers Pension Plan):

This Canadian pension fund has been known for its investments in European airports. When Macquarie Assets Management approached OTPP about its interest in those airports, OTPP appointed Evercore to examine its options.[75] Earlier in 2024, OTPP sold its interest in Copenhagen Airport, at the request of the Danish government. That leaves OTPP's airports portfolio with stakes in Brussels Airport, London City Airport, and two smaller U.K. airports. At year-end, the future of OTPP's airports stake remains to be seen.

PSP Investments (Public Sector Pension Investment Board):

PSP owns a Spanish roadway operator called Roadis. In March, Roadis bought out its co-shareholder Soma Enterprise in four toll road concessions in India. Roadis now owns 100% of those roadways, which have terms of between 15 and 30 years.[76] Subsequently, PSP Investments canceled plans to sell a minority stake in Roadis, Instead, it began planning to sell a minority stake in Roadis's Mexican toll concessions.[77]

In other non-U.S. pension fund infrastructure news, Dutch pension fund manager APG, which is a major shareholder in Itinere Infraestructuras, announced its acquisition of

---

72 Chuck Stanley, "Infrastructure, Stocks, Private Credit Power OMERS' CAD 5.6bn returns," *Infralogi*c, 16 August 2024.

73 Stefano Berra, Micaela Osella, and Antonio Fabrizio, "DWS, OMERS to Buy Antin's Grandi Stazioni," *Infralogic*, 6 August 2024.

74 Rouhan Sharma, "OMERS Ups Stake in India Roads Trust," *Infralogic*, 10 September 2024.

75 Rory Gallivan and Brendan Malkin, "OTPP's European Airport Sale Puts London City Challenges in Spotlight," *Infralogic*, 16 December 2024.

76 Stefano Berra, "PSP's Roadis Buys Up Indian Highways," *Infralogic*, 15 March 2024.

77 Stefano Berra and Jonathan Carmody," PSP Swaps Roadis Stake Sale for Mexican Sell-Down," *Infralogic*, 22 March 2024.

Globalvia's 40% stake in the company, which owns and operates toll roads in Spain.[78] Globalvia, in turn, is owned by three pension funds: OPTrust of Canada, PGGM of the Netherlands, and the U.K.'s Universities Superannuation Scheme.

Finally, U.K. Chancellor Rachel Reeves in August called on U.K. pension funds to emulate the Canadian model by merging with one another and investing in infrastructure. She hosted a roundtable with eight Canadian pension funds, including OMERS, OTTP, and CDPQ.[79]

4.3 U.S. PUBLIC PENSION FUND DEVELOPMENTS

U.S. public pension systems still have a long way to go, in order to match their Australian and Canadian counterparts. According to a report from Reason Foundation's Pension Integrity Project, at the end of their 2023 fiscal year, total unfunded liabilities for U.S. public employee pension systems was $1.59 trillion, with state pension plans carrying the majority of the debt.[80] The median funding ratio of public pension plans (federal, state, and local) stood at 76%, but stress tests suggest that another economic downturn could significantly increase their unfunded liabilities. A stress test scenario for 2025, assessing the impact of a 20% market downturn, found that the average funding level could fall to 61%.

Table 9 is extracted from the Reason Foundation report. It focuses on state pension systems and reports the unfunded accrued liability (UAL) of each and its funding ratio (percentage of its assets to its liabilities). Only one state system (Washington State) was slightly more than 100% funded as of the end of FY 2023.

TABLE 9: STATE PUBLIC PENSION SYSTEM UNFUNDED LIABILITIES

Fiscal Year	State	Unfunded Accrued Liability (UAL)	Funded Ratio
2025	Washington	$(5,908,414,228)	103.8%
2025	Tennessee	$231,405,392	99.6%
2025	Wisconsin	$1,766,532,356	98.8%
2025	Indiana	$2,724,810,040	94.9%

78 Razak Musah Baba, "APG to Buy Globalvia Out of Spanish Toll-Road Concessionaire Itinere," *IPE Real Assets*, 14 October 2024.

79 Rory Gallivan, "UK Chancellor Wants Canadian-Style Pension Funds to Up Infra Investment," *Infralogic*, 7 August 2024.

80 Ryan Frost, Truong Bui, Jordan Campbell, Mariana Trujillo, and Steve Vu, "Annual Pension Solvency and Performance Report," Reason Foundation, 30 September 2024.

Fiscal Year	State	Unfunded Accrued Liability (UAL)	Funded Ratio
2025	South Dakota	$953,923,359	94.1%
2025	West Virginia	$1,413,643,329	93.2%
2025	New York	$52,679,864,982	92.5%
2025	Utah	$3,896,085,513	92.5%
2025	Iowa	$4,599,247,437	91.3%
2025	Delaware	$1,525,832,555	90.4%
2025	Maine	$2,742,431,381	88.0%
2025	Minnesota	$18,575,080,851	83.4%
2025	Oklahoma	$9,168,240,154	82.9%
2025	North Carolina	$24,645,238,199	82.8%
2025	Florida	$44,775,495,618	81.9%
2025	Idaho	$4,840,335,550	81.7%
2025	Wyoming	$2,225,451,667	80.9%
2025	Virginia	$28,341,719,361	80.9%
2025	California	$297,346,847,690	80.4%
2025	Missouri	$22,095,909,979	80.2%
2025	Arkansas	$9,645,713,310	80.0%
2025	Ohio	$68,200,841,613	79.2%
2025	Oregon	$23,280,365,499	78.5%
2025	Louisiana	$17,840,967,652	78.1%
2025	Nebraska	$5,970,126,089	76.9%
2025	Georgia	$38,905,247,275	76.3%
2025	Nevada	$20,053,120,514	76.0%
2025	Texas	$115,679,279,399	75.7%
2025	Maryland	$27,229,299,693	74.9%
2025	Arizona	$29,079,294,777	73.2%
2025	Montana	$4,700,824,483	72.1%
2025	Kansas	$12,143,468,657	70.4%
2025	Alaska	$7,655,966,556	70.1%
2025	Michigan	$45,138,694,789	69.0%
2025	Colorado	$31,367,314,208	68.5%
2025	Massachusetts	$42,707,057,667	68.3%
2025	North Dakota	$3,765,418,154	67.4%
2025	New Hampshire	$6,041,403,322	67.2%
2025	Rhode Island	$5,922,764,988	65.6%
2025	Vermont	$3,554,124,633	65.4%
2025	New Mexico	$19,938,411,007	63.2%
2025	Pennsylvania	$75,158,330,602	62.8%
2025	Hawaii	$14,529,991,816	62.5%
2025	Alabama	$28,360,213,655	61.5%
2025	South Carolina	$28,313,099,071	61.5%
2025	Connecticut	$37,322,616,318	59.9%
2025	Mississippi	$27,381,203,058	54.7%
2025	Kentucky	$40,890,410,867	53.0%
2025	New Jersey	$99,058,430,075	52.1%
2025	Illinois	$208,377,955,591	51.6%

Source: Reason Foundation 2024 "Annual Pension Solvency and Performance Report"

To increase their overall investment return, J.P. Morgan Asset Management several years ago suggested that a typical U.S. pension fund "should start off by allocating 5 to 10% of its assets to [property and infrastructure], with the share rising to 15-20% over time."[81] It's unlikely that any U.S. public pension system comes close to that.

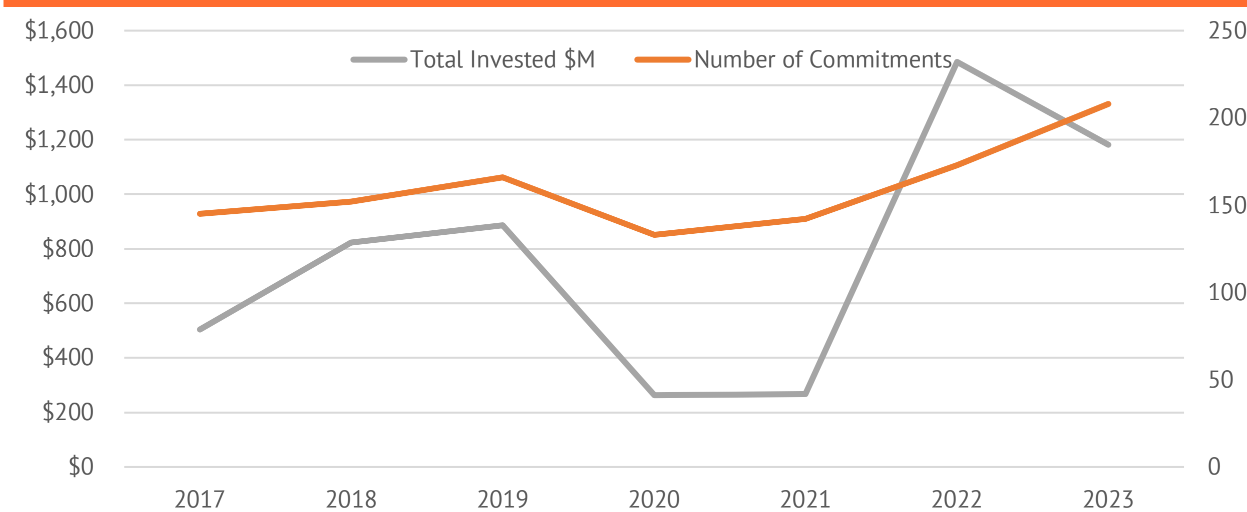
A growing number of state and local government pension systems made initial or increased commitments of funds to infrastructure investment in 2024, nearly always via one or more infrastructure investment funds. *Infralogic* has monitored this trend since 2017, and Table 10/Figure 3 present its findings for U.S. pension fund commitments through 2023. (Figures for 2024 will not be available until well until 2025.) After a decline during 2020-2021 during the pandemic, commitments resumed growth in 2022 and reached a record high level in 2023.

TABLE 10: U.S. PUBLIC EMPLOYEE PENSION FUND INFRASTRUCTURE COMMITMENTS

Year	Number of Commitments	Total Invested $M
2017	145	$503.4
2018	152	$823.2
2019	166	$886.7
2020	133	$263.2
2021	142	$267.4
2022	173	$1,485.3
2023	208	$1,181.0

Source: *Infralogic*, table created for Reason Foundation

FIGURE 3: U.S. PUBLIC EMPLOYEE PENSION FUND INFRASTRUCTURE COMMITMENTS



81 Buttonwood, "Do Physical Assets Offer Investors Refuge from Inflation?" *The Economist*, 11 September 2021.

Although figures for 2024 are not fully available as this report is written in first-quarter 2025, commitments by state employee pension systems reached a new high in 2024. To illustrate the kinds of fund commitments state employee pension systems made in 2024, Table 11 lists those reported by *Infralogic* in weekly reports during 2024. These listings are for state-level systems for state employee pensions; excluded are state-managed systems for local employees (such as city and county public safety employees) and systems run by county and city governments.

TABLE 11: STATE PUBLIC EMPLOYEE PENSION SYSTEM 2024 INFRASTRUCTURE COMMITMENTS

State	Pension System	Amount ($M)	Infra Fund	Month
Alaska	Alaska Permanent Fund	$100	LS Power Equity Partners	January
California	CalPERS	$850	Global Infrastructure Partners	March
California	CalPERS	$850	Global Infrastructure Partners	May
California	CalPERS	$500	Macquarie Infrastructure Partners	September
Connecticut	Retirement Plans & Trust Funds	$200	ISQ Global Infrastructure Credit	December
Connecticut	Retirement Plans & Trust Funds	$300	Morgan Stanley CRPTF	December
Connecticut	Retirement Plans & Trust Funds	$150	Ridgewood Water & Strategic Infra	December
Florida	State Board of Administration	$50	Post Oak Energy Partners	May
Florida	State Board of Administration	$150	Quantum Capital Solutions	August
Florida	State Board of Administration	$150	Hull Street Energy Partners	August
Indiana	Public Retirement System	$100	Basalt Infrastructure Partners	May
Indiana	Public Retirement System	$125	Ardian Infrastructure	October
Kansas	Public Employees Retirement System	$85	Principal Data Center Growth	November
Louisiana	State Employee Retirement System	$75	BCP Infrastructure	September
Maine	Public Employees Retirement Assn.	$25	Stonepeak Infrastructure	June
Maine	Public Employee Retirement System	$100	Brookfield Infrastructure Debt fund	November
Maryland	MD State Retirement & Pension System	$100	EQT Infrastructure	March
Maryland	MD State Retirement & Pension System	$150	Digital Bridge Partners	March
Minnesota	State Board of Investments	$150	Blackstone Energy Transition Partners	March
Minnesota	State Board of Investments	$200	KKR Global Infrastructure Investors	May
Minnesota	State Board of Investments	$125	EQT Infrastructure	November
Minnesota	State Board of Investments	$50	Blackstone Energy Transition Partners	November
Montana	Board of Investments	$158	EQT Infrastructure	March
Montana	Board of Investments	$75	Copenhagen Infrastructure	September
New Jersey	Division of Investments	$200	EQT Infrastructure	October
New Mexico	State Investment Council	$150	LS Power Equity Partners	January
New Mexico	State Investment Council	$120	EQT Infrastructure	March
New Mexico	State Investment Council	$100	LS Power Equity Partners	March
New Mexico	Public Employees Retirement Assn.	$100	KKR Diversified Infrastructure	April
New Mexico	State Investment Council	$250	Ardian Infrastructure	May
New Mexico	State Investment Council	$220	Antin Infrastructure Partners	May
New Mexico	State Investment Council	$200	Oaktree Power Opportunities	November
New Mexico	Public Employees Retirement Assn.	$400	Stonepeak	November
New York	Common Retirement Fund	$50	Digital Bridge Partners	June
New York	Common Retirement Fund	$300	Stonepeak Infrastructure	July

New York	Common Retirement Fund	$250	Hull Street Energy Partners	September
Oregon	Investment Council	$350	Stonepeak Infrastructure	April
Oregon	Investment Council	$350	Stonepeak Infrastructure	June
Oregon	Investment Council	$150	Lotus Infrastructure	September
Oregon	Investment Council	$150	Stonepeak Global Renewables	October
Pennsylvania	State Employees Retirement System	$100	IPI Partners	July
South Carolina	Retirement System	$40	Peppertree Capital Fund	June
Tennessee	Consolidated Retirement System	$200	Quantum Energy Solutions	April
Texas	Employees Retirement System	$50	Igneo North America Diversified Infra.	October
Texas	Employees Retirement System	$50	Tallvine Middle Market Infra.	December
Virginia	Retirement System	$125	LS Power Equity Partners	January
Virginia	Retirement System	$200	Stonepeak Infrastructure	April
Virginia	Retirement System	$200	Stonepeak Infrastructure	June
Virginia	Retirement System	$225	IPI Partners	July
Virginia	Retirement System	$200	EnCap Energy Capital Fund	August
Washington	State Investment Board	$400	TPG Rise Climate	June

Source: *Infralogic* "Weekly Fund Commitments," January through December 2024

The 21 states in this table made commitments in 2024 totaling $9.95 billion to the infrastructure investment funds listed. The largest total was that of CalPERS in California, at $2.2 billion. In second place was much smaller New Mexico, at $1.54 billion, followed by Oregon ($1 billion) and Virginia ($0.95 billion).

4.4 CAUTIONS ABOUT U.S. PENSION FUND INFRASTRUCTURE INVESTMENTS

Infrastructure investment funds are categorized as "private equity" or PE. Such funds are not publicly traded; therefore, information on their performance is not widely available. In January 2025, *The Wall Street Journal* reported concerns being expressed by institutional investors, including pension funds, regarding the limited visibility of PE.[82] Seeking greater transparency is the Institutional Limited Partners Association (ILPA), whose members include the state pension funds of California and Wisconsin. In January 2025 it unveiled proposed guidelines to standardize financial reporting by PE firms. According to data firm Preqin, public pension systems, university endowments, and charitable foundations have about doubled their investments in PE since 2018. CalPERS, Texas Teachers, and Wisconsin Investment Board are members of ILPA's steering committee.

[82] Matt Wirz, "Private Equity Pressed to Open Up," *The Wall Street Journal*, 23 January 2025.

According to data firm Preqin, public pension systems, university endowments, and charitable foundations have about doubled their investments in PE since 2018.

A Reason Foundation pension project analyst wrote a critique of the PE investment of CalPERS, the nation's largest public employee retirement system.[83] That system, she reported, has $180 billion in unfunded liabilities, and recently finalized a plan for increased investments in PE. She reported that over a 20-year period PE was CalPERS' highest-performing asset class (at 12.3%), but "by many estimates, private post-2008 returns have been less impressive, failing to beat public markets on a fee and, importantly, on a risk-adjusted basis."

The efforts of ILPA to increase transparency of PE fees and performance are worthwhile. Infrastructure appears to continue to be a sound investment, but investors such as pension systems, university endowments, and charitable organizations should be able to view the performance and fee structures of infrastructure investment funds and other categories of private equity.

[83] Mariana Trujillo, "CalPERS Takes Unnecessary Risks That Could Cost Taxpayers," Reason Foundation, 31 January 2025.

ABOUT THE AUTHOR

Robert W. Poole, Jr. is director of transportation policy and the Searle Freedom Trust transportation fellow at Reason Foundation, a national public policy think tank based in Los Angeles.

His 1988 policy paper proposing supplemental privately financed toll lanes as congestion relievers directly inspired California's landmark private tollway law (AB 680), leading to similar public-private partnership legislation in about two dozen other states. In a 1993 Reason Policy Study, Poole introduced the term HOT (high-occupancy/toll) Lane, a concept which has become widely accepted since then.

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 has served on various transportation committees throughout the U.S.

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 produces the monthly e-newsletter *Surface Transportation Innovations*. *The New York Times* has called him "the chief theorist for private solutions to gridlock."

Poole received his B.S. and M.S. in mechanical engineering at MIT and did graduate work in operations research at NYU.