

Availability Payments in Public-Private Partnerships: Issues and Implications

Research Brief • In the Public Interest • May 2018

As localities and states in the U.S. consider public-private partnerships (P3s) to build new infrastructure, some believe that contracts structured with “availability payments” are a better alternative to the revenue-risk contracts that have failed in the past. While P3s constitute a small portion of infrastructure procurement in the U.S., since 2009, about half of new P3 projects included availability payments.¹

The private investors, construction firms, and other corporations that make up the growing P3 industry are increasingly pushing for availability payment-based contracts, as they are unwilling to assume the revenue risk found in previous deals. In many of those deals, traffic projections failed to materialize and the private consortium failed to bring in the amount of revenue the companies that teamed together anticipated.²

Availability payment P3s are much less risky for the companies since revenue risk is transferred to the governmental entity, which pays pre-determined payments to the private consortium over the life of the multi-decade contract. However, these deals are fraught with serious long-term fiscal and budgetary implications for the locality or state. This brief explores those fiscal and budgetary implications, which include:

- Availability payments are long-term financial commitments for the governmental entity.
- Governmental entities must account for contingent liabilities in these deals.
- Availability payment P3s may have debt implications for the governmental entity.
- There may be serious future budget implications of high cost availability payments.

A basic introduction to availability payments is included below, followed by a discussion of the four issues that are important for policymakers and stakeholders to understand when considering an availability payment P3. Key questions for policymakers to consider follow each section.

What are “availability payment” P3s?

Availability payments are regular project payments made from the governmental entity to the private consortium once the piece of infrastructure is “available.” In an availability payment P3, the private consortium typically designs, builds, and finances the construction of the asset. After construction, the private consortium will operate and maintain the asset for the life of the contract, typically around 30 years but in some cases longer. In exchange, the governmental entity may provide milestone and/or completion payments during the construction period, and then pay annual availability payments, which are

either pre-determined or based on a pre-determined formula, to the contractor once the asset is operational, as long as contractually specified performance standards are met.

There is a dangerous perception that P3s are “free money” or “new money,” and this couldn’t be further from the truth.³ In a P3, any financing arrangement or equity contribution from the private consortium must be paid back by the governmental entity with the very same sources for which all infrastructure is ultimately funded: taxes, tolls, and/or user fees. This is certainly the case with availability payment P3s.

Why are more projects considering availability payment structures?

Availability payment P3s are relatively new. The first project, the I-595 project in Broward County, Florida, did not reach financial close until 2009. Since then, availability payment P3s are increasingly gaining attention for a number of reasons. First, more traditional revenue-risk P3s require a dedicated revenue stream, such as tolls, from the asset from which the private consortium collects payment. The availability payment P3 model allows for infrastructure that does not have an attached revenue stream, such as a courthouse, to be built using private financing. In many places, public appetite for tolling is low, and the availability payment model can allow policymakers to build a road or bridge using a P3 without the need to add user-based tolling.

Relatedly, many private consortiums are unwilling to assume the revenue risk found in previous toll-based P3s. In a number of high-profile P3 failures, traffic projections failed to materialize, and the private consortiums did not bring in the amount of revenue they anticipated.⁴ Availability payment P3s give the private consortium pre-determined payments over the life of the contract. While this arrangement means that the private consortium might not get the extra revenue it might have received if the asset was to be tolled and attracted a lot more traffic than projected, the consortium is still able to receive a high level of return on their investment while being insulated from any potential downside. Note that some P3s may utilize a combination of revenue-risk and availability payment schemes to compensate the private consortium.

How do availability payments and tax-exempt government bonds differ?

One important difference between availability payments and government bonds is the cost of capital. Private equity financing is significantly more expensive than traditional tax-exempt municipal financing, and a portion of an availability payment is allocated for equity returns for investors. For example, Maryland’s Purple Line project (included in Table 1 in the Appendix) utilizes \$140 million in private equity investment. Maryland DOT estimates that the rate of return for this investment will be around 12 percent, which is significantly more expensive than a 3.5 percent interest rate on a tax-exempt municipal bond in a jurisdiction with a good credit rating. This expensive capital contributes to the high cost of availability payments. And as In the Public Interest has discussed in previous publications, the U.S. does not have an infrastructure gap due to lack of access to financing. To the contrary—local and state governments are constrained by a lack of revenues needed to pay for the asset. These are the same limited revenues that must be used to

pay long-term availability payments.

Another important distinction between debt service payments on tax-exempt government bonds and contractually obligated availability payments is that bonds can be refinanced to lower debt service payments. While this may not always be a prudent financial strategy for governments experiencing budget shortfalls, it is an option that governmental entities have, and one that many states and localities have exercised in recessionary times.⁵ Availability payments on the other hand cannot be refinanced. While they are debt-like in many respects, they are much less flexible as they are contractually obligated payments for the life of the contract and, as such, can impact a government's ability to fund other capital projects and services when revenues are limited, as discussed in Issue 4 below.

Issue 1: Availability payments are long-term financial commitments.

Availability payments are substantial financial obligations.

Availability payments are large contractually-obligated payments that must be appropriated by the governmental entity for the life of the contract. These payments are typically based on a pre-determined formula outlined in the contract. It is important that policymakers and other stakeholders fully understand how the formula works and how much the governmental entity may be obligated to pay year after year. Due to the complexity of these agreements, the availability payment formulas have to incorporate multiple variables and can be quite complicated.

In March 2016, Senator Richard Madaleno, the vice chairman of Maryland's Senate's Budget and Taxation Committee and one of the key lawmakers that would review the Purple Line P3 contract before the state's Board of Public Works that following month, discussed the formula for the planned availability payments with the *Washington Post*. The formula is excerpted here: $MAP_n = MAPG_n + (MAPO_n \times ESCO_n) + (MAPM_n \times ESCM_n) + (I \times ESCG_n) + LCP_n - \Sigma D + PSGS + QVA$. His reaction to the complicated formula was telling, "Talk about a nightmare remembrance from my graduate school statistics class...I thought, 'Oh my God, what language is this written in?'"⁶ While the formula is not actually based on statistical analysis, the complicated math can be difficult to comprehend for even the policymakers tasked with reviewing and approving the contract. It is critical that a governmental entity considering an availability payment P3 has the expertise on hand, which importantly does not have a vested interest in seeing the project approved, to understand and properly evaluate the availability payment structure and estimated cost.

Availability payments are long-term financial obligations.

It is also important to emphasize that these types of arrangements are multi-year budgeting obligations that must be made year after year. As Table 1 in the Appendix shows, of the ten availability payment P3 projects that we examined, the operational phase for most contracts lasts between 30-35 years. This means that the governmental entity will be contractually obligated to pay the annual availability payment for three decades or more. It is important for governmental entities not to overcommit themselves to payments that they may not be able to fund at any point in the contract and carefully consider how they are going to budget for these payments. If any source of funding for availability payments becomes insufficient, the governmental entity is still obligated to make the payments to the private consortium as long as performance standards outlined in the contract are being met.

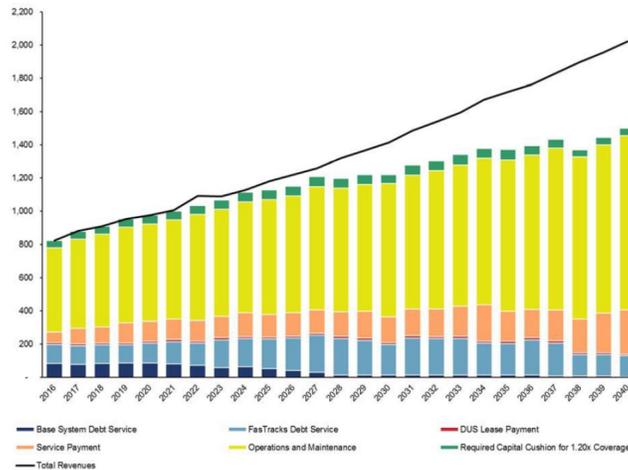
Indiana is currently contending with the budgetary implications of its availability payment P3 contracts. The state used availability payment P3s to finance its share of the Ohio River Bridger project (included in Table 1) and one section of Interstate 69. In 2014, the head of the state department of transportation expressed his concern about the size of future debt loads, saying that he does not think the state should enter into any additional P3 deals financed by availability payments in part due to the strain it puts on the department's budget and the limits it places on the department's ability to undertake other projects. "It's a lot like borrowing,"⁷ Indiana Department of Transportation Commissioner Karl Browning said in 2014. "I would be more than cautious about the notion of doing public-private partnerships of the nature of some of them that we've done."⁸ At the time, Indiana spent 10 percent of its \$1.6 billion annual budget on debt payments; when counting availability payment concession obligations, that number rose to 17 percent.⁹

It should be noted that in 2017, the Indiana Finance Authority took over I-69 project, terminating the P3 agreement. As Julius Vizner, an associate vice president at Moody's Investors Service explained at the time, "The decision by Indiana to voluntarily terminate the I-69 contract highlights certain risks governments take on when they enter into availability payment P3s. Governments enter into P3s to efficiently develop and finance infrastructure, but depending on how they are structured, the P3 contract may obligate the government to payments that are similar to debt. If the developer becomes financially strained to the extent it did in Indiana, the government may choose to step in to gain control, make private lenders whole, and to ultimately finance the project itself."¹⁰

"The decision by Indiana to voluntarily terminate the I-69 contract highlights certain risks governments take on when they enter into availability payment P3s."

These long-term budgetary obligations typically come from the departmental budgets of the government agencies that are party to the P3 contract. For example, in Florida, construction milestone payments and the capital portion of availability payments are paid through the state transportation trust fund. Over the next 38 years, the Florida Department of Transportation will pay \$7.2 billion for the capital portion of the required availability payments for its three active P3s projects: the I-4 Ultimate, I-595 Improvements, and the Port of Miami Tunnel, all of which are included in Table 1 of the Appendix.¹¹ Colorado's Regional Transportation District, which is the government sponsor of the state's Eagle Project, also included in Table 1 of the Appendix, anticipates its total availability payment to be \$129.3 million in 2020 and rise to \$242.7 million in 2040, due to how the availability payment amount escalates each year as outlined in the contract.¹² The capital portion of the availability payment is secured by a subordinate pledge of sales tax revenues, while the operations and maintenance portion of the availability payment is subject to annual appropriations.¹³ The chart below shows that these availability payments (called "service payments" in the chart) constitute a sizable percentage of revenues for the entire FasTracks project, which is RTD's overarching transit project.¹⁴

Projected FasTracks Cash Flow
2005-2040
(Dollars in Thousands)



Ohio, which is currently in the construction phase of the Southern Ohio Veterans Memorial Highway—also included in Table 1 of the Appendix—has included required payments for this P3 project in its FY 2017-2018 Ohio Department of Transportation budget bill.¹⁵ In almost all of these availability P3 contracts, annual payments for the project must be appropriated by the legislative body of the governmental entity each year, which can be difficult to guarantee, especially in times of economic downturns or changing budget priorities, which is realistic given the multi-decade length of these agreements. It should be noted that the Presidio Parkway in San Francisco is an exception, and as California’s first P3 project, the State Legislature approved a multi-year appropriations bill budgeting up-front the funds to meet the stream of availability payments expected for the life of the project.¹⁶ However, in most projects, governments must contend with securing and allocating funds for availability payments each year for the life of the contract.

Availability payments are not flexible financial arrangements.

Availability payments can also take away budgetary flexibility that a more traditional procurement approach can offer. Availability payments paid to the private consortium are typically used for several purposes: 1) debt service associated with the project, including any bonds or debt used to finance construction, 2) equity returns for investors, and 3) on-going operations and maintenance of the asset. While maintenance and operations are critical to the functions of the asset, an availability payment P3 contract converts what is typically an annual discretionary expenditure into a contractually obligated fixed expense. This arrangement can have serious fiscal and/or public policy implications. Moreover, if the operational needs of the asset increase during the life of the contract, and more operations staffing or other inputs are needed than original anticipated, the private consortium may not have an incentive to actually increase the amount it spends on operations, since it receives a fixed amount from the government allocated for operations through the availability payment structure.

Questions for policymakers to consider:

- What are the estimated annual payments that the governmental entity will have to pay? How does the availability payment formula work? Are there provisions in the contract that allow for this payment to rise?

- How does the governmental entity plan to ensure timely payment of the availability payment? What sources of funds will be used for repayment and how will this be accounted for in the budget?
- Are there any anticipated or even somewhat likely events that could cause challenges to the governmental entity making the availability payments at any point in the long-term contract period?
- Are there ways that contractually-obligated availability payments could reduce the governmental entity's flexibility in responding to changing demands and circumstances?

Issue 2: Governmental entities must account for contingent liabilities.

Contingent liabilities refer to risks which may not be fully identified or disclosed in the contract language for the P3. Unlike availability payments that are pre-determined or based on a pre-determined formula, payments associated with contingent liabilities are needed only if some future event or circumstance occurs. Because these contingent liabilities are often not disclosed or discussed, they are often left out of a governmental entity's assessment of a potential P3. However, the identification of these risks is important since they can have serious fiscal and budgetary impacts. Furthermore, the value and timing of these potential payments are unknown, making the impacts of contingent liabilities even more dramatic if the governmental entity is ill-prepared to contend with the additional costs.

Contingent liabilities can include, but are not limited to, compensation clauses contained in the contract, early termination payments, costs associated with contractor bankruptcy, and availability payment escalation clauses. For example, compensation clauses put to government on the hook for additional payment if it engages in some activity that threatens revenues for the private consortium. While not an availability payment P3, the classic example of this is the Chicago parking meters P3 deal. Due to compensation clauses, the city has had to pay the private consortium \$31 million in unanticipated fees in the first eight years of the contract for activities such as the temporary closure of streets for city fairs or the conversion of parking spots into handicap parking.¹⁷ Likewise, Indiana undoubtedly incurred unanticipated costs associated with the termination of the I-69 project discussed above in Issue 1.

Because contingent liabilities can have significant fiscal impact if the event is realized and the obligation is triggered, other countries that engage in P3s have attempted to systematically account for and plan for these unexpected costs. For example, Colombia has established a Contingent Liabilities Fund to cover the funding of liabilities that materialize. Agencies are required to contribute annually to the fund the amount of the expected value of their contingent liabilities as estimated through stochastic methods.¹⁸ Unfortunately, few states and localities have analyzed contingent liabilities associated with P3 contracts, let alone thought about how to account for these types of unanticipated costs.

Questions for policymakers to consider:

- Has the governmental entity identified contingent liabilities associated with a proposed availability payment P3?
- If so, does the governmental entity have a method for accounting for these contingent liabilities?
- How will the governmental entity pay for these costs if they materialize?

Issue 3: Availability payment P3s might have debt implications for the governmental entity.

Private financing of public infrastructure can be used to circumvent debt limits that many governmental entities are subject to, essentially creating a new source of borrowing that may be “off-balance sheet” and may not appear in relevant government financial plans or statements. While on its face, this may sound attractive to governmental entities averse to taking on new debt, availability payment P3s may actually have debt implications that fly in the face of prudent public financial management.

One important consideration for governments considering P3s is how ratings agencies look at availability payment schemes in their calculation of a state’s debt, which ultimately impact a state’s credit rating. All three major ratings agencies view availability payments as “debt-like obligations.” However, there are some differences in how the rating agencies approach this issue. Moody’s and Fitch cap the liability at the amount of project debt and applies the debt once the project is operational. S&P’s approach has a greater impact on debt limits because it also views milestone payments as debt and adds those to the government’s debt at the project’s financial close. Once the project is operational, S&P adds the net present value of the capital portion of all future availability payments to the government’s debt calculation.¹⁹

All three major ratings agencies view availability payments as “debt-like obligations.”

It’s worth noting that all three rating agencies will give “self-support” credit if the project establishes a three-year track record of non-tax derived revenues that fund the availability payments, such as a steady stream of tolls or user fees.²⁰

Below are excerpts from all three major rating agencies’ reports examining this issue:

Moody’s: “We have included availability-payment PPP obligations in our debt metrics for regional governments in...the US...Contractual ongoing PPP obligations such as availability-payment PPP can have a focused, near-term credit impact.”²¹

S&P: “If we consider the revenue stream used to repay the [P3] obligation to be tax-backed revenue, then we’ll include the P3 obligation as tax-supported debt...”²²

Fitch: “The measured liability may be added to the debt of the [local government’s] in the Issuer Debt Rating analysis...”²³

This issue of debt treatment of availability payments became a point of contention between the state of Maryland and Moody’s. Maryland’s Purple Line Project (included in Table 1) is an availability payment P3 in which the private sector will design, build, and finance, as well as operate and maintain the 22-station transit line crossing Montgomery and Prince George’s counties from the Bethesda Metro station to the New Carrollton Metro station. The Maryland Department of Transportation (MDOT) tried to set up the structure of the P3 financing so that the portion of the availability payments used by the private consortium to pay down debt that it took out to finance construction of

the project would not be counted as tax-supported state debt. Tax-supported debt is subject to limits controlled by the legislature and the state's Capital Debt Affordability Committee responsible for fiscal control and helping protect the state's credit rating. Maryland policy is to keep tax-supported debt at 4 percent or less of Maryland personal income, and tax-supported debt service at less than 8 percent of state revenues.²⁴ It did this by essentially creating a paper firewall.

Maryland DOT planned to set up a trust agreement managed by a trustee designed to match the state's availability payments that would be used for debt service with fare revenues from MARC and the Purple Line. This matching would show that MDOT was paying for the portion of the availability payment that went toward the private consortium's debt service with fares instead of tax-derived state revenue, as not to trigger the state limits imposed on tax-supported debt.²⁵ The State Treasurer reviewed the arrangement and in an April 3, 2016 letter assured that the project would be not financed with tax-supported debt.

The rating agency, S&P, disagreed with the state's analysis and explained that it, "will incorporate the net present value of the milestone payments in the state's net tax-supported debt ratios through the period before Maryland starts making availability payments for the P3 project. Once P3 project construction is complete and operational, we will incorporate availability payments that are not supported by project revenue into our estimates of the state's net tax-supported debt ratios."²⁶

While the state of Maryland can categorize the debt as not tax-supported to avoid its own debt limits, S&P's different treatment of the project's debt means that it will rate future Maryland bond issuances using higher tax-supported debt levels than the state does, which could impact the state's rating.²⁷ The *Washington Post* estimated that the difference in the two calculations could be as much as \$3.1 billion.²⁸

States vary in how they categorize availability payments in their own debt calculations. For example, in Ohio, availability payments do not count towards the state's constitutional debt cap. However, Ohio Department of Transportation has a policy restricting its annual debt service plus the capital portion of P3 availability payments to no more than 20 percent of annual revenues.²⁹

In Florida, which currently has three long-term availability payment P3 projects, shown in Table 1, includes P3 obligations for the capital costs associated with construction of P3 projects as state debt, which includes milestone payments tied to construction and the capital portion of required availability payments.³⁰ Florida law also requires Florida Department of Transportation to ensure that no more than 15 percent of the total available federal and state funding in the State Transportation Trust Fund in any given year be obligated to required payments for Contract Debt and P3 contracts. The operations and maintenance and rehabilitation components of the availability payment do not count against the cap.³¹

North Carolina, which has not entered into any availability payment P3s, has taken a stricter approach to this issue. The state has a general-obligation debt ceiling of 4.75 percent of revenue, but uses a 4.0 percent target, and a tax-supported revenue debt ceiling of 6 percent. The state includes long-term contractual obligations, such as availability payments, in its definition of state transportation debt service.³²

Questions for policymakers to consider:

- Does your government entity have debt limit laws or policies? Is there specific policy around how the government entity will consider availability payments in its debt treatment?

- 2. Does this differ how rating agencies might treat availability payments in their debt calculations? What impact could this have on your jurisdiction's credit rating?

Issue 4: High cost availability payments have future implications.

Another important issue is the future implications of high cost availability payments. Specifically, does a contractually obligated long-term availability payment P3 crowd out other important infrastructure projects that the public needs? This has become a criticism of the Long Beach Courthouse project, which opened in 2013, included in Table 1 of the Appendix. The Long Beach Press-Telegram describes the courthouse as a beautiful 531,000-square-foot building with “crystalline facade with 20 types of glass, including two five-story suspended glass curtains; a Brazilian tropical hardwood ceiling; glittering aluminum-leaf ‘air columns’ by the award-winning environmental artist Ned Kahn, and landscaping with more than 30 varieties of drought-tolerant plants.” As Superior Court Judge Runston Maino explained, the facility cost \$490 million to build, but annual expenses per courtroom are expected to top \$1 million, which is about 30 percent higher than comparable courtrooms built with traditional bond financing around the same time in San Diego. According to calculations by the Judicial Council, the courthouse’s construction cost \$1,179.25 per square foot, compared with the average cost of \$591 per square foot for California courtrooms.³³

The annual availability payments for the Long Beach Courthouse are \$53 million and must be paid for the entire 35-year contract period. *The Press-Telegram* reports that at least two courthouses in Kern County have been scrapped since construction of the Long Beach courthouse, while others have shuttered or reduced hours. The local Sacramento-based Superior Court Judge Steve White explained, the Long Beach courthouse came “at a cost so exorbitant that it has resulted in many counties needing courts and not getting them.”³⁴

Because availability payments can be expensive and last for decades, the obligation can also impact a governmental entity’s ability not only to deliver more infrastructure, but also important infrastructure-related services. For example, the Ohio’s 2016-2019 State Transportation Improvement Program clearly outlines its payment priorities as follows: “Under ODOT’s budgeting philosophy, the top priority is to fund debt service payments owed from past bond issuances. Secondly, after paying all current debt obligations falling due in a fiscal year, the Department will pay all Public-Private-Partnership payments (availability payments) falling due in that same fiscal year on a pro rata, pari passu basis.³⁵ Thirdly, basic departmental operations such as payroll, routine roadway maintenance, and snow and ice removal will be funded. The fourth priority is for system preservation, both pavements and bridges.”³⁶ Without judging the department’s priorities, it is clear that overreliance on availability payment P3s, or availability payments that are too expensive, could impact the department’s ability to retain full staffing levels or provide ad hoc services such as snow removal that are essential to public safety.

Questions for policymakers to consider:

- What does the overall jurisdiction’s budget look like and how will annual availability payments affect it? Does the priority of the proposed availability payment P3 project justify the ongoing expense?
- Are there other important projects that may be left behind by entering into a proposed availability payment P3?

Appendix: Table 1 - Selected availability payment P3s in the U.S.

<u>Project</u>	<u>Location</u>	<u>Government Sponsor</u>	<u>Contract Term</u>	<u>Status</u>	<u>Total Project Cost</u>	<u>Milestone and/or Construction Payments Paid by Government Sponsor</u>	<u>Availability Payments Paid by Government Sponsor</u>
Central 70	Denver, CO	CO DOT	30 years after construction complete	Construction to begin in Summer 2018	\$1,271 million	Total milestone payments during construction: \$319 million	\$35.5 million annual base payment and will increase each year
Eagle Project	Denver, CO	Regional Transportation District (RTD)	34 years	Operational	\$2,043.1 million	\$1.1 billion	Range from \$3 million/month to nearly \$7 million/month at the end of the contract term
I-4 Ultimate	Orlando, FL	FL DOT	40 years	Construction expected to be complete in 2021	\$2,877 million	\$1.035 billion in milestone payments and final acceptance payments of \$688 million	\$75 million annual payment
I-595 Improvements	Broward County, FL	FL DOT	35 years	Operational	\$1,833.6 million	Final acceptance payment of \$686 million	\$65.9 million payment (2014\$) and escalates annually
Ohio River Bridges East End Crossing	Southern IN / Louisville, KY	Indiana Finance Authority/Indiana DOT	35 years	Operational	\$1,319.2 million	\$392 million	Estimated \$33 million annually
Port of Miami Tunnel	Miami, Florida	FL DOT, Miami-Dade County, City of Miami	35 years	Operational	\$1,113 million	\$100 million in milestone payments and \$350 million final acceptance payment	\$32.479 million (2009\$) payment with annual adjustments for inflation
Presidio Parkway	San Francisco, CA	California Department of Transportation (Caltrans) and San Francisco County Transportation Authority (SFCTA)	30 years	Operational	\$364.7 million	\$185 million milestone payment and additional payment of \$91 million	\$22.1 million annual payment
Purple Line Project	Washington DC Metro / Central MD	MDOT and Maryland Transit Administration (MTA)	30 years	Construction expected to be complete in 2022	\$2,650 million	\$990 million in progress payments throughout construction	Estimated annual payments between \$149.4 million and \$154 million
Southern Ohio Veterans Memorial Highway	Portsmouth to Lucasville, Scioto County, OH	Ohio DOT	35 years	Construction expected to be complete in 2019	\$646.3 million	\$44 million in milestone payments	Estimated \$1,159 million over the life of the agreement (annual payment amount not available)
Long Beach Courthouse	Long Beach, CA	CA Administrative Office of the Courts	35 years	Operational	\$492 Million	None	Approximately \$53 million per year

About In the Public Interest



In the Public Interest is a research and policy center committed to promoting the common good and democratic control of public goods and services. We help citizens, public officials, advocacy groups, and researchers better understand the impacts that government contracts and public-private agreements have on service quality, democratic decision-making, and public budgets. For more information, please visit inthepublicinterest.org.

Endnotes

- 1 Board of Audit And Inspection Hyun Duk Choi, A Study of Public-Private-Partnership Practices and Fiscal Integrity in the U.S., December 2017.
- 2 Eduardo Engel, Ronald Fischer, and Alexander Galetovic, "Public-Private Partnerships to Revamp U.S. Infrastructure," The Hamilton Project, February 2011.
- 3 Ryan Holeywell, "Public-Private Partnerships Are Popular, But Are They Practical?," *Governing*, November 2013. <http://www.governing.com/topics/transportation-infrastructure/gov-public-private-popular.html>.
- 4 Eduardo Engel, Ronald Fischer, and Alexander Galetovic, "Public-Private Partnerships to Revamp U.S. Infrastructure," The Hamilton Project, February 2011.
- 5 Leighton Walter Kille, "Assessing state and local government debt refinancing measures," *Journalist's Resource*, Shorenstein Center on Media, Politics, and Public Policy, September 24, 2014.
- 6 Katherine Shaver, "Determining if the Purple Line contract is a good deal isn't easy," *Washington Post*, March 12, 2016.
- 7 D. Bruce Gabriel and Roderick N. Devlin, Squire Patton Boggs LLP, "Market Update: A Review of the US Public Private Partnership (P3) Sector in 2014," January 7, 2015.
- 8 Kathleen McLaughlin, "Financing strategy for roads hits bump," *Indianapolis Business Journal*, November 22, 2014.
- 9 Reason Foundation, "Availability Payment or Revenue-Risk P3 Concessions? Pros and Cons for Highway Infrastructure," November 2017.
- 10 Nora Colomer, "Indiana completes takeover of P3 road project," *The Bond Buyer*, August 15, 2017.
- 11 Florida Division of Bond Finance, "State of Florida 2017 Debt Report, December 2017.
- 12 Regional Transportation District, "Adopted Budget 2017."
- 13 *Ibid.*
- 14 Chart excerpted from Note 11
- 15 Legislative Service Commission, LSC Analysis of Executive Budget: Transportation Budget Bill, Department of Transportation, February 2017.
- 16 San Francisco County Transportation Authority, "Major Capital Projects Update –Presidio Parkway," Memorandum, April 17, 2015.
- 17 Kevin DeGood, "The Hazards of Noncompete Clauses in Public-Private Partnership Deals," *Center for American Progress*, July 27, 2016.
- 18 Asian Development Bank, "Philippines: Management of Contingent Liabilities Arising from Public-Private Partnership Projects," 2016.
- 19 Hecht, Jodi. "Are Availability Payment Obligations Debt?" *Public Works Financing*. September 2015.
- 20 *Ibid.*
- 21 Moody's Sector In Depth: PPP Impact on debt Metrics of Governments, February 22, 2016.
- 22 S&P Ratings Direct: How S&P Treats Public-Private Partnerships In US. State and Local Government Analysis, September 17, 2015.
- 23 Fitch ratings: Rating Public sector counterparty Obligations in PPP Transactions, January 15, 2016.
- 24 Charlie Hayward, "Bond-rating firm differs with Treasurer Kopp over Purple Line debt," *Maryland Reporter*, May 31, 2016.
- 25 *Ibid.*
- 26 S&P Global Ratings, "Maryland; Appropriations, General Obligation," May 26, 2016.
- 27 Charlie Hayward, "Bond-rating firm differs with Treasurer Kopp over Purple Line debt," *Maryland Reporter*, May 31, 2016.
- 28 *Ibid.*
- 29 Jeffrey Parker, "Availability Payments Can Add Value," *Public Works Financing*, April 2013.
- 30 Florida Division of Bond Finance, "State of Florida 2017 Debt Report, December 2017.
- 31 Florida Statutes, Section 334.30
- 32 State of North Carolina Debt Affordability Advisory Committee, "State Affordability Study, February 1, 2015.
- 33 "Judges say high cost of Long Beach courthouse is depriving other areas of courtrooms," *Long Beach Press-Telegram*, September 1, 2017.
- 34 *Ibid.*
- 35 *Pari passu* basis is a Latin phrase meaning "equal footing" and describes situations where two or more assets, securities, creditors or obligations are equally managed without any display of preference. For more information about the term, see <https://www.investopedia.com/terms/p/pari-passu.asp#ixzz5DhMVHMw2>.
- 36 Ohio Department of Transportation, "ODOT 2016-2019 STIP."