

US Infrastructure

Maximizing the
benefits of private
participation

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The debate in the US over how to improve essential infrastructure has intensified with President Trump's unveiling of a proposed plan premised on accessing over US\$1 trillion in private capital. How to deploy that capital most effectively has become a central question in the debate, as private capital and management of infrastructure projects have not, outside of the energy and real estate sectors, gained wide acceptance in the US market. For an infrastructure plan to succeed in attracting the vast pools of capital held by pension funds, insurance companies and other institutional investors, that needs to change.

In the hopes of gaining some insight into the US experience with private participation in public infrastructure, Dentons teamed up with a group of researchers from the Global Leaders in Construction Management program at Columbia University to study a diverse group of projects in which private investment and management of the asset was a key part of the procurement strategy¹.

The results of our research came as a bit of surprise. Our core finding was that projects have more success where the key risks are shared and managed by both the public and private sides of the project, rather than completely transferred to the private side under a broad concession agreement, as tends to be the approach outside the US.

We also discovered, anecdotally, some misunderstandings about what the procurement tool known generally as a "public-private partnership" (PPP) can do, and in what circumstances it can be an effective tool for buying new or upgraded infrastructure. The first misconception we discovered about the PPP is that it is a financing vehicle capable of unlocking the global capital markets for cash-strapped governments at all levels. In reality, a PPP is not a financing vehicle at all but rather a project delivery method with a proven track record of producing better quality projects in less time and at less life-cycle cost than design-bid-build and other project delivery approaches. The difference between a financing method and a delivery system is key. In the case of the former, only money is supplied; in the latter, both money and skill are supplied.

The second misunderstanding is that a PPP is only appropriate when every aspect of a project is part of a concession granted to the private-sector party for an extended period, typically 20 years or more, such that the private side has substantially all of the management responsibility and risk of the project. The case studies summarized in this paper indicate that PPPs in the US in fact work best when the scope of the concession is tailored to the needs of a particular project. This kind of concession has proved useful in a number of recent projects, one being the LaGuardia Central Terminal Project, where

the procurement was structured to maximize the use of municipal bonds with their lower interest rates and a substantial part of all of the risk of the project was borne by the procuring agency through the contractual and financial structure of the project.

In short, we found, to our surprise, that the US is a unique market for private participation in infrastructure, and that traditional PPP structures are less likely to succeed here. The US market appears to call for private-side players that are willing to share responsibility and risk with the public side in something that looks more like a partnership, at least in the colloquial sense. The case studies tell us that this method of procuring infrastructure works best when risks are analyzed during the project's concept phase and then allocated among the public and private parties, rather than simply transferred to the private side.

The case studies, presented in summary form below, are based on information from publicly available sources only. Transaction documents not in the public record were not reviewed. The analysis is nonetheless useful in bringing to light the impact of broad risk allocations on the outcomes of the projects we examined.

¹ This white paper was authored by Philip R. White, Global Co-Leader of the Transportation and Infrastructure practice at Dentons, and Ibrahim S. Odeh, Founding Director, Global Leaders in Construction Management at the Fu Foundation School of Engineering at Columbia University. The authors are thankful for the assistance of Valeriya Bannokova, a graduate student in engineering at Columbia University who contributed a great deal to the research and analysis presented in this paper.

Case studies

Before taking a look at the risk allocations, structures and project outcomes, we need to take a moment to be clear about what we mean by PPP. Many US public agencies have experience with PPP—broadly defined—through project finance and capital leasing structures that have been widely used to procure publicly owned power plants as well as a wide variety of public buildings, from offices to university dormitories to airport terminals. These procurement methods shed light on how risks can be allocated differently from the traditional PPP approach, where the asset is transferred from public ownership to private ownership for a period of years long enough to allow the private side to earn an acceptable return on its investment. However, they are not true PPPs because they involve minimal transfer of non-financial risk to the private sector. PPP, as we define it for this paper, involves at least some non-financial risk transfer to the private sector. This working definition of PPP is corroborated by our research finding that the best approach to incorporating private investment in public infrastructure is to consider not just the risks, but also the skills, on both the private and public sides.

Also needed is an understanding of how the capital markets view projects. The major considerations posed by global experience are:

1. PPP is a project delivery mechanism, not a project finance tool or funding source. PPP allows enhanced private sector participation in project planning and delivery (from design-build to fully integrated delivery), as well as operation. The goal is to provide the public savings in construction time and costs. Thus, predesign-stage procurement enabling legislation is as important for successful PPP market development as new private funding mechanisms.
2. The main goal of PPP is optimization of the mix of the parties' skills and assets, combined with the inclusion of appropriate incentive mechanisms to maximize the value of each dollar spent and minimize the asset's life cycle costs. Each party is specialized in certain areas. This knowledge, experience and skill, when properly applied, allows project delivery with time and money savings against traditional delivery (as much as 20 to 30 percent, according to some sources).
3. Transferring all of the responsibilities and risks to the private sector does not lead to maximized value for the public because all risks (particularly demand risk) and costs (including the higher borrowing costs when more risk is transferred to the private side) are directly reflected in the price for end users. Any upfront or later costs "absorbed" by the private sector will be paid back by the public with a "premium."
4. Unlike other countries, the US has a well-established municipal finance system. Since municipal bonds are both tax-exempt and "trustworthy," they enjoy lower cost and thus decrease the total project "burden" on both asset users and taxpayers. This does not mean that private funding should never be used for PPP projects in the US. Rather, it suggests that, when possible, projects should be structured to take advantage of the lower cost of capital and the risk-sharing that public finance offers.

Even with these benefits, private investment and management is not always the best solution for a given infrastructure project. A thorough cost-benefit analysis of alternative delivery and funding options, in various combinations, should always be conducted before incorporating private skills and capital into a project.

Although we looked at a number of projects as part of this study, we found six to be particularly instructive. Three used a one-sided, risk-and-management allocation (Indiana Toll Road, Dulles Greenway and Vista Ridge Pipeline) and three took a “hybrid” approach (Port of Miami Tunnel, LaGuardia Central Terminal and Long Beach Courthouse). By comparing two groups of similarly structured projects, we learned that all those in the first group experienced financial issues, while those in the second group did not.

The takeaway? While full-risk-and-responsibility transfer to the private partner might be tempting, our research into US PPP projects found a high correlation between that kind of project structure and later financial challenges in the form of substantial increases in user fees and the need for financial restructuring solutions. Surprisingly, our research also found that these results occurred not only when the public side transferred all of the project risk to the private side but also when all of the major risks remained with the public side. The Indiana Toll Road and Dulles Greenway are examples of the first, while Vista Ridge Pipeline is an example of the second.

Finally, our research found much better results when the principle that “risk should be placed on the party best able to manage it” was followed. At least that’s been the case so far for the Port of Miami Tunnel, the Long Beach Courthouse and the LaGuardia Airport Central Terminal, the three projects we studied in which the deal terms provide that the major risks are to be shared between the public and private sides in a true economic partnership. The Miami Tunnel and Long Beach Courthouse have been in successful operation for many years. The LaGuardia Terminal, the largest PPP in the US to date, is now under construction.





Indiana Toll Road

The Indiana Toll Road project involved the granting of a 75-year operating lease of a public toll road to a private entity. The private operator took revenue, operation and maintenance, and cost risks, and paid the public authority \$3.8 billion at the beginning of the lease in exchange for the right to collect the tolls during the lease term. The lease began in 2006. In 2014, the private partner filed for bankruptcy, reporting \$6 billion in liabilities. In 2015, another private investor purchased the remaining years on the lease out of bankruptcy for \$5.7 billion.

A summary of the major events, facts related to deal structure, funding sources, risk allocation and outcomes is presented below.

Public partner: Indiana Department of Transportation

Private partner: Indiana Toll Road Concession Co. LLC (ITRC)

Lenders: 7 European banks

Deal nature: 75-year concession to operate the toll road

Deal value: \$3.8 billion purchase price, plus agreed expansion, road improvement and maintenance obligations

Funding sources: Debt (80 percent) and equity (20 percent: equal contribution of the private partners two members)

Revenue mechanisms: Tolls and vendor payments

Year of the contract award: 2006

Project status:

- In September 2014² the ITRC filed for Chapter 11 protection in Illinois bankruptcy court, reporting a \$6 billion debt.
- In May 2015, Industry Funds Management³ purchased the remaining years on the lease for \$5.7 billion—less than the amount of debt on ITRC's books and resulting in a total loss of equity.
- Toll road still in operation under the lease.

Public sector benefit: MIXED for road users. POSITIVE (arguably) for the public partner, which used the \$3.8 billion upfront payment for the lease to finance statewide infrastructure maintenance, rehabilitation and expansion).

Private sector benefit: NEGATIVE. ITRC filed for bankruptcy in 2014.

Risk allocation:

- **Revenue risk:** Mainly on the private side (traffic volume) with public entity providing a limited backstop (compensating difference in toll collections for a few years)
- **Operation and maintenance:** Private
- **Construction:** Project did not include any significant construction/expansion plans.

Interesting facts:

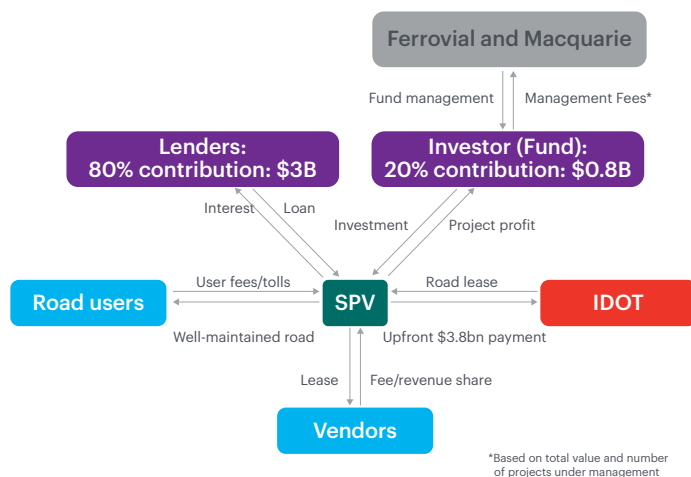
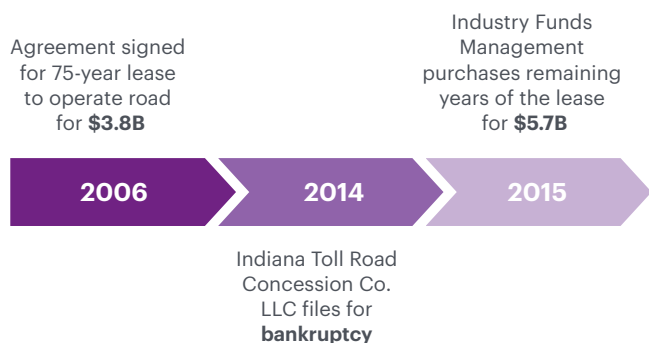
- The winning bid was \$1 billion higher than any other and twice as high as expected by the state. Yet no questions were raised during procurement and award of the lease.
- Unusual amount of leverage—80 percent was used. A balanced PPP financing structure uses a level of private investor equity that would not allow it to quickly return its investments and exit the deal as the maintenance costs start increasing while the tolls are raised at a slower rate. This level normally is 30 percent or higher to assure both the project lenders and the asset owner (public authority) that the private party who has

control over the project will have a continuing interest in delivering and maintaining the asset in the best technical and economical way, as well as paying back the debt.

- Although publicly characterized as a PPP, the nature of the transaction is less like a PPP than a “temporary” privatization of a public asset to raise money for other projects.
- Reasoning behind the project initiation was not aligned with the best practices for private infrastructure investments. The concept behind the lease was to raise money to pay for upgrades to Indiana’s aging infrastructure, rather than to bring in a private party to optimize the quality and overall cost of the leased asset. Because of this misaligned purpose, the project concept did not consider the need to offset the higher cost of money accessed in private markets versus public finance with efficiencies achieved through private sector expertise.

Lessons learned:

Although the public sector arguably achieved its goal of obtaining a source of funding for upgrades to its infrastructure, the private side suffered bankruptcy due to the misallocated risks. This kind of result is likely to dampen interest in private infrastructure investments on both the public and private sides. Thus, an allocation of risk and responsibility that gives both sides proper incentives to deliver quality public assets is essential if private investment is to take its place as an available structure for US infrastructure improvements.



² <https://www.law360.com/articles/579574>

³ IFM is a world leading investment manager with over A\$39 billion in funds under management across four asset classes in three of the world's largest pension markets. IFM manages portfolios across listed equities, private equity, infrastructure and debt via a global team based in Australia, North America and Europe. Source: <http://www.infrapppworld.com/companies/industry-funds-management-ifm-investors>



Dulles Greenway

The Dulles Greenway project involved the Virginia Department of Transportation's (VDOT) grant of a full concession to a private entity to design, build, operate and maintain a toll road that would be part of a system of toll roads that link Dulles Airport with communities in Northern Virginia and Washington, DC. The concession included a grant of all authority needed to build and operate a highway. While the private owner completed construction of the project earlier than expected and within the budget, the project required a financial restructuring within two years after it opened to traffic. Tolls have increased from \$1 in 1996 to \$5.20 (peak) and \$4.30 (off-peak) in 2015.

A brief summary of the major events, facts related to deal structure, funding sources, risk allocation and outcomes is presented below.

Public partner: VDOT

Private partner: Toll Roads Investor Partnership II (TRIP II)

Deal nature: Design-build-finance-operate-maintain (DBFOM). The agreement, originally ending in 2036, was extended to 2056 as part of a 1997 financial restructuring.

Project cost: \$348 million

Funding sources: \$40 million equity capital and \$310 taxable debt (\$258 million of long-term fixed rate notes provided by 10 institutional investors, and a \$40 million revolving credit facility with three banks)

Revenue mechanisms: Toll payments

Year of the contract: 1989

Project status: The project is in operation. However, the project's finances were restructured in 1997, at which time the concession end date was extended from 2036 to 2056; and in 2005 Macquarie Infrastructure Group increased its ownership to 87 percent share of the project.

Public sector benefit: MIXED. POSITIVES include reduced travel times; a new commuting option; and the potential for real estate development along its corridor, adding to the tax base and creating jobs ⁴. On the NEGATIVE side, a considerable toll increase.

Private sector benefit: Mixed. Apparently strong enough financial performance to attract new equity in 2005, but restructuring needed in 1997 due to private partner's problems servicing the debt.

Risk distribution:

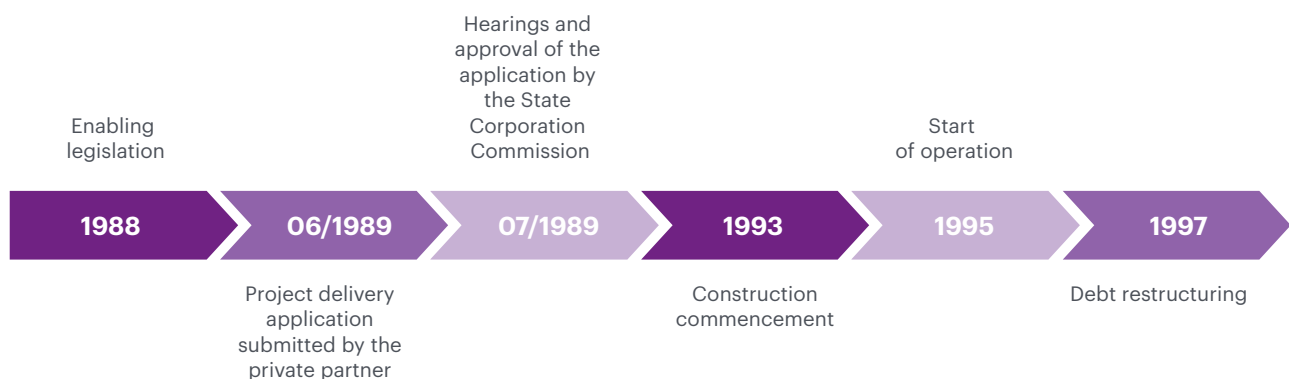
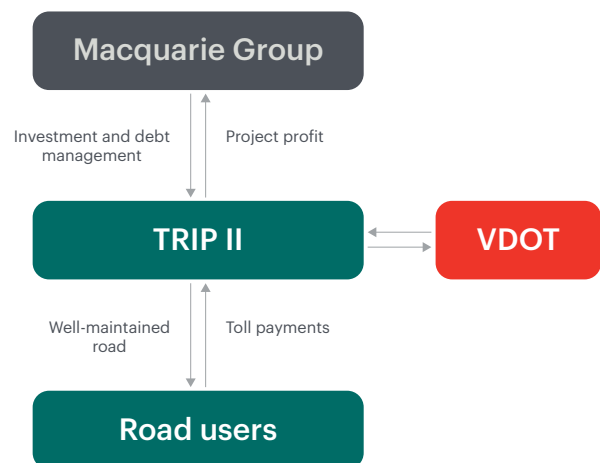
- **Revenue risk:** Fully private
- **Construction, finance, operation and maintenance:** Fully private

Interesting facts:

- "A report in 1990 projected that the public cost of building and operating the Dulles Greenway over 40 years (including debt payments) would have been **\$894.8 million, versus \$3.5 billion** for a private owner, because state governments can take advantage of **much lower interest rates** than a private company"⁵
- The agreement was signed without conducting open tender procedures
- The private partner not only took all the risks, but also responsibility for all land acquisition and permitting, which took much more time than it would have had there been public sector involvement. This fact led to a delay in construction and operation commencement of almost five years and negatively impacted economic performance of the project.

Lessons learned:

- Shifting full responsibility for land acquisition and permitting to the private sector, which was not well positioned to manage those risks, resulted in a significant delay to the start of commercial operations and an adverse impact on the project's economic viability.
- Revenue and construction risks were borne solely on the private side, which could only manage the risks through toll increases while benefits flowed more broadly through real estate development, jobs and other public benefits beyond a quicker ride to and from the airport.
- Competition in choosing the private partner would have helped in evaluating traffic forecasts and their sensitivity to different factors.



⁴ <http://bipartisanpolicy.org/wp-content/uploads/2016/10/BPC-Infrastructure-Dulles-Greenway.pdf>

⁵ <http://bipartisanpolicy.org/wp-content/uploads/2016/10/BPC-Infrastructure-Dulles-Greenway.pdf>



Vista Ridge Pipeline

The Vista Ridge Pipeline (VR Pipeline) project is another example of the difficulties faced by projects that are procured without proper risk-sharing between the public and private sectors; in this case with all of the revenue risk borne by the public side. In this project, the San Antonio Water System (SAWS) entered into a build, own, operate and transfer (BOOT) agreement with a private partner to develop a new water supply pipeline. The agreement provided for the private entity to supply water to the city for 30 years and guaranteed payment to the private side of \$3.4 billion under the pact's take-or-pay provisions.

Public partner: City of San Antonio

Private Partner: Abengoa Vista Ridge LLC

Deal nature: BOOT (30-year take-or-pay water supply contract)

Project cost: \$3.4 billion, including \$900 million for design and construction

Revenue mechanisms: Fixed annual payments (take-or-pay contract) to the private partner.

Year of the contract: 2014

Project status: Under construction after delays due to the bankruptcy and replacement of the major partner.

Public sector benefit: QUESTIONABLE. During both the procurement process and afterwards, various parties have raised concerns about the need for the project and the risk to users of substantial water cost increases.

Private sector benefit: POSITIVE, because of the limited risk.

Risk distribution:

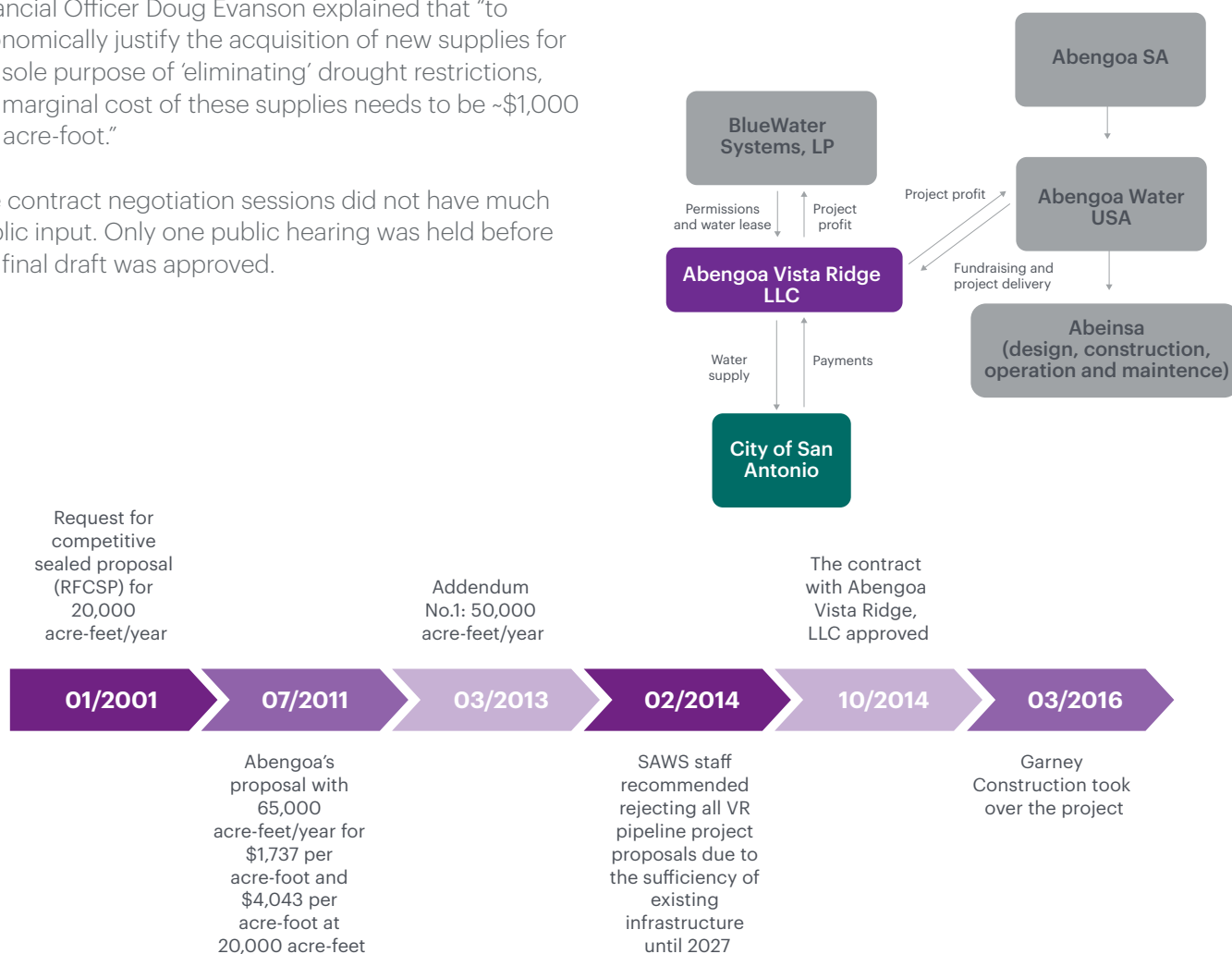
- **Revenue risk:** Fully public
- **Construction, finance, operation and maintenance:** Fully private

Interesting facts:

- ⁶ In February 2014, the SAWS staff recommended rejecting all pipeline project proposals received in response to the RFCSP. As noted at that time by SAWS Vice President of Communications Greg Flores, rejecting the additional 50,000 acre-feet that Vista Ridge or another pipeline would have supplied was not a concern. "Because of successful water management, proactive planning, and additional water supplies being added," Flores said, "SAWS now has enough water supplies and management tools to last until 2027." Despite this fact confirming that the city would not need Vista Ridge until 2027, the Board of Trustees of SAWS in March 2014 deemed the project responsive to its needs, and in October 2014, it approved the contract with the Vista Ridge Consortium.
- In a February 20, 2014, presentation, SAWS Chief Financial Officer Doug Evanson explained that "to economically justify the acquisition of new supplies for the sole purpose of 'eliminating' drought restrictions, the marginal cost of these supplies needs to be ~\$1,000 per acre-foot."
- The contract negotiation sessions did not have much public input. Only one public hearing was held before the final draft was approved.

Lessons learned:

- Project structure did not hold the private sector accountable for demand calculations and cost optimization. High user fees to make up the shortfall are expected to be introduced.
- Project structure did not hold the public side responsible (and accountable) for properly investigating the financial strength of the private party. This resulted in project delays when the parent company of the private side went bankrupt.
- Procurement process left questions about the need and timing of the project open to question. Ironically, if some or all of the demand risk had been allocated to the private sector, this would have led to questions about the viability of the project.



⁶ http://www.sierraclub.org/sites/www.sierraclub.org/files/sce/alamo-group/docs/VistaRidge-position_paper-Nov_18_2015.pdf



Port of Miami Tunnel

The Port of Miami Tunnel is an example of how a PPP can be an effective and efficient method of procuring major infrastructure when risk is actually shared between the public and private sectors. Although the project was under consideration for over 20 years before the concept of a PPP was seriously considered, once that delivery system was implemented the project went from contract award to start of operations within 7 years. The delivery system involves a sharing of risk between the public and private sides under which the public bore the revenue risk, the private side bore the financing and operations risk and both sides shared the risk associated with the tunnel's technically challenging design and construction.

Public partner: Florida Department of Transportation (FDOT)

Private Partner: MAT Concessionaire LLC

Deal nature: DBFOM (35-year concession agreement between FDOT and MAT Concessionaire)

Project cost: \$1.4 billion, including \$607 million for design and construction ⁷

Funding sources: \$80 million equity capital, \$341 million senior debt, \$341 million TIFIA loan, \$100 million construction milestone payments and \$210 million development funds from FDOT, Miami-Dade County and the City of Miami.

Revenue mechanisms: Milestone payments during construction and availability payments during operation.

Year of the contract award: 2009

Project status: Financial close reached in October 2009. Construction began in May 2010. Tunnel open to traffic in August 2014.

Public sector benefit: POSITIVE. The project spurred commercial development, reduced downtown traffic and optimized cost. Despite the technical complexity—the project was the first of its kind in the US—the combination of open tender procedures, the chosen

delivery mechanism and risk distribution resulted in the annual availability payments coming in under budget at \$33 million (down \$5 million from the \$38 million per year initially budgeted).

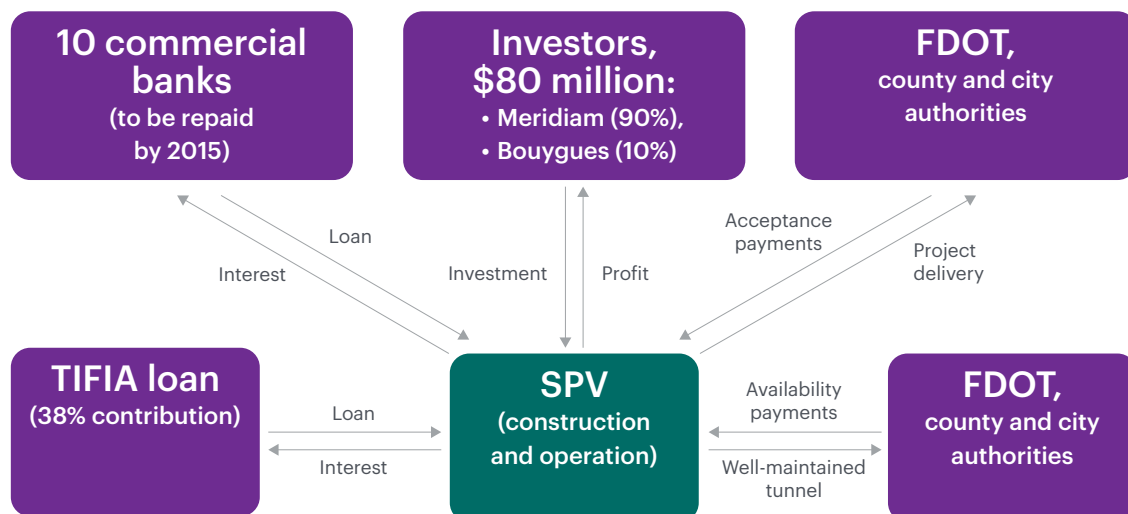
Private sector benefit: POSITIVE. It was a unique project for the US that resulted in profit (despite losses of \$9 million due to technical difficulties encountered during construction).

Risk allocation:

- **Construction:** Joint
- **Operation, finance:** Private
- **Revenue, political:** Public

Interesting facts:

- Before proceeding with the procurement process, the FDOT, to determine the most effective delivery method and the optimum duration of the concession, undertook a value-for-money (VFM) analysis that looked at a wide range of issues, including cost of capital, risk transfer and completion time.
- Shared geotechnical risk solution reduced actual availability payments by almost 15 percent (to \$33 million compared with FDOT initial projection of \$38 million).⁸
- FDOT addressed the Port of Miami and cruise ship operators' strong opposition to tolling and the risks associated with traffic diversion that would likely result from partial tolling, through the use of availability payments.





Risk Category	Description	Risk Allocation		
		FDOT	Concessionaire	Shared
Political	Intergovernmental Agreements needed for award of concession	X		
Financial	Appropriation risk for Const. Milestone Payments and Avail. Payments		X	
	Equity and debt funding (financial close, interest rate and currency risk)		X	
Right-of-Way	Areas with in Preliminary Right of Way Plan	X		
	Areas outside Preliminary Right of Way Plan		X	
Permits	Obtaining Federal, State and Local Permits		X	
Utilities	Agreements, schedules and relocations			X
Procurement	Legislative and regulatory authorities for award of concession	X		
Construction	Unforeseen conditions			X
	Impacts on vehicle traffic and POM operations beyond agreed levels		X	
	Impact to adjacent communities during construction above agreed levels		X	
	Unforeseen increases in material costs and labor		X	
Operations & Maintenance	Meeting availability and O&M criteria		X	
	Inflation during the Operating Period			X
	Traffic exceeding specified levels			X
Hand-Back	Return O&M Segments in specified condition when concession ends		X	
Force Majeure	Specified events not covered by insurance or performance specifications			X

Source: Port of Miami Tunnel Project, "Project Information Memorandum Supplement," FDOT, 3/17/06

⁷ https://www.hwa.dot.gov/ipd/project_profiles/l_port_miami_tunnel.aspx



LaGuardia Central Terminal

The LaGuardia Central Terminal project—currently the largest public private partnership in the US—applied a different approach to risk-sharing by allocating risk through the funding structure. The cost of constructing the terminal is being paid for primarily through the issuance of tax-exempt bonds on which the private partner is the borrower, with an additional contribution from the public partner. While the private side has the revenue, construction, financing and operations risks, they are backstopped by the public-side contribution to the cost of the project as well as its right to take over the terminal in the event of a private side failure, such as bankruptcy. While it's too soon to assess project's success, the structure has already led to the successful financial close of the project and construction is well underway.

Public partner: Port Authority of New York and New Jersey (Port Authority)

Private Partner: LaGuardia Gateway Partners LLC

Deal nature: DBFOM (a 35-year lease that entitles LaGuardia Gateway Partners the right to develop, design, construct, operate and maintain new Terminal B facilities and to charge, collect and retain revenues from the operation of such facilities until expiration of the lease term in December 2050⁹)

Project cost: \$3.9 billion, including \$2.8 billion for design and construction and \$500 million for debt service

Funding sources:

- \$2.4 billion in tax-exempt bonds issued by the New York Transportation Development Corp. with LaGuardia Gateway Partners as the borrower
- \$1 billion in funding from the Port Authority
- \$200 million in equity from the members of LaGuardia Gateway Partners
- \$300 million from other sources

Revenue mechanisms: Landing and terminal fees paid by airlines and payments made by purveyors of goods and services in the terminal under concession contracts

Year of the contract award: 2015

Anticipated substantial completion and start of operation: 2021

Project status: Financial close in 2016; currently under construction

Public sector benefit¹⁰: POSITIVE. Benefits include replacement of outdated facilities and relief of air traffic congestion; modern LEED certified facility and a region landmark, to be delivered with a cost contribution from the public authority of only 25 percent and limited public risks related to design, construction, operation and debt service.

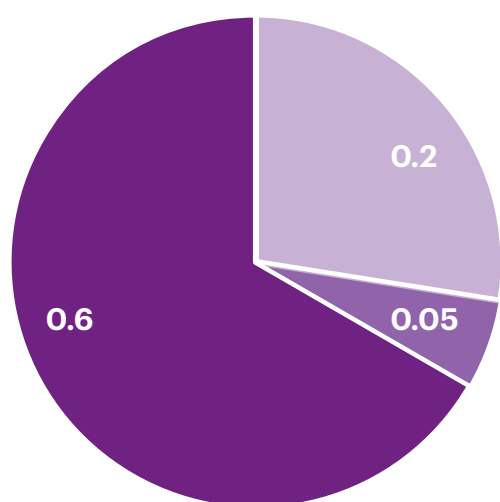
Private sector benefit¹¹: POSITIVE. Benefits include project profit and experience in delivering a national landmark.

Risk allocation: Approximate overall risk distribution based on financial contribution and liability limits is presented in the chart below. In case of any default, bankruptcy or inability to service the debt, LaGuardia Gateway Partners' financial responsibility is limited to its equity capital (\$200 million) without any recourse on the investors. None of the public entities—the Port Authority, the States of New York or New Jersey, the City of New York, or any others—have any financial liability associated with the bonds or the borrower's inability to pay its debts.

Interesting facts

- This project is largest DBFOM PPP project, in terms of scale and complexity, in the US to be financed without federal government support
- Transfer of majority of the risks on the bond holders
- Tax-exempt bonds issued and managed without any public authority participation or backup.

Risk Distribution



- Public entity
- Private entity
- Bondholders

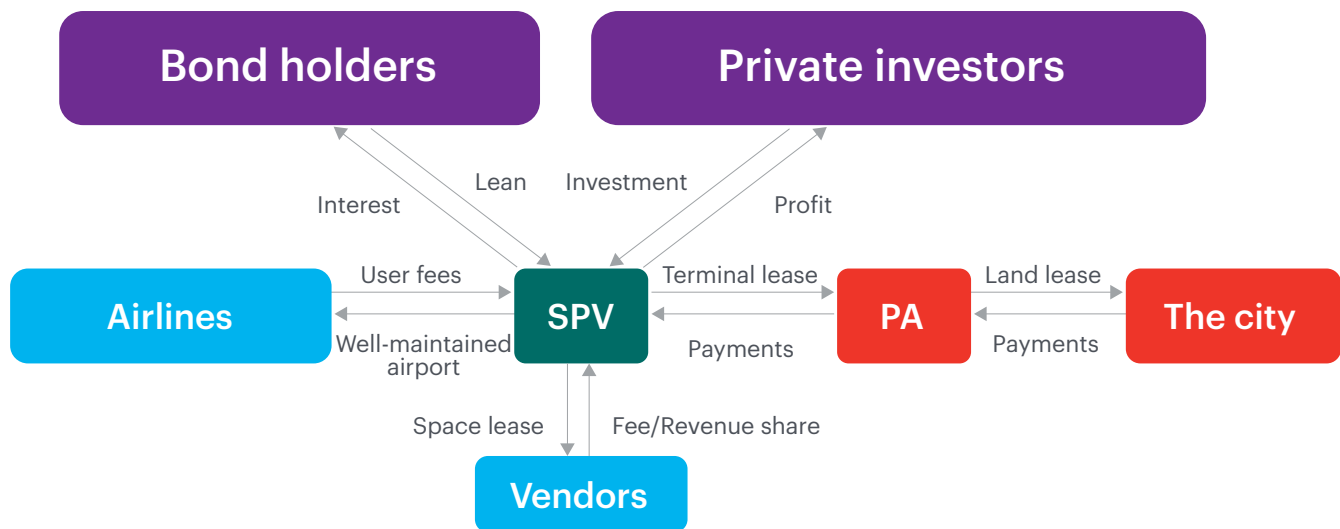
NOTE: The Port Authority's contribution of \$1 billion is not associated with the borrower's debt obligations and the authority has no debt repayment responsibility. The "public entity" risk share of 26 percent represents its potential maximum "loss" of the investment in the event of significant decrease or total loss of capital value. However, since the chances of such loss of value are very low and the Port Authority retains ownership of the asset and has contingent "control" rights in case of bankruptcy or other potential project failures, the "real" risks of the public partner are closer to zero.

⁸ https://www.fhwa.dot.gov/ipd/project_profiles/fl_port_miami_tunnel.aspx

⁹ <https://dwuconsulting.com/images/OS/LGA%202016AB%20SFB%20OS.pdf>

¹⁰ As of November 2017

¹¹ As of November 2017





Long Beach Courthouse

The Long Beach, CA, courthouse is the only example we were able to find of a hybrid (i.e., shared risk and management) approach to a social infrastructure project. Here, the public and private sides developed the model for the project and its enabling legislation for a project delivery method that was the first of its kind. The risks that the model would not achieve acceptance or attract private side bidders was borne by the public side, but with extensive support from private side experts. The project structure itself has many of the major risks shared between the private and public side, with the private side taking the lead in building and operating the building during the 35-year lease period.

Public partner: Judicial Council of California

Private Partner: Long Beach Judicial Partners

Deal nature: DBFOM agreement with a term of 35 years.¹²

Project cost: \$490 million, including \$343 million for design and construction costs

Funding sources: Bank debt and private equity (the developer invested \$49 million in cash equity in 2010 and obtained 7-year floating-rate loans totaling \$443 million).¹³

Revenue mechanisms: Service fee/availability payments from the Administrative Office of the Courts, plus lease, parking and retail revenues.

Year of the contract award: 2010

Project status: Substantial completion and start of operation in 2013

Public sector benefit: POSITIVE. Benefits include a new, modern, LEED gold-level certified courthouse facility delivered without any public contribution or payments up to the occupancy, and with most of the risks (geotechnical, design, construction, performance, O&M, finance and debt service, revenues from the third parties) transferred to the private sector.

Private sector benefit: POSITIVE, including a stable, 35-year revenue stream at the negotiated level; and experience in an important public infrastructure LEED certified project.

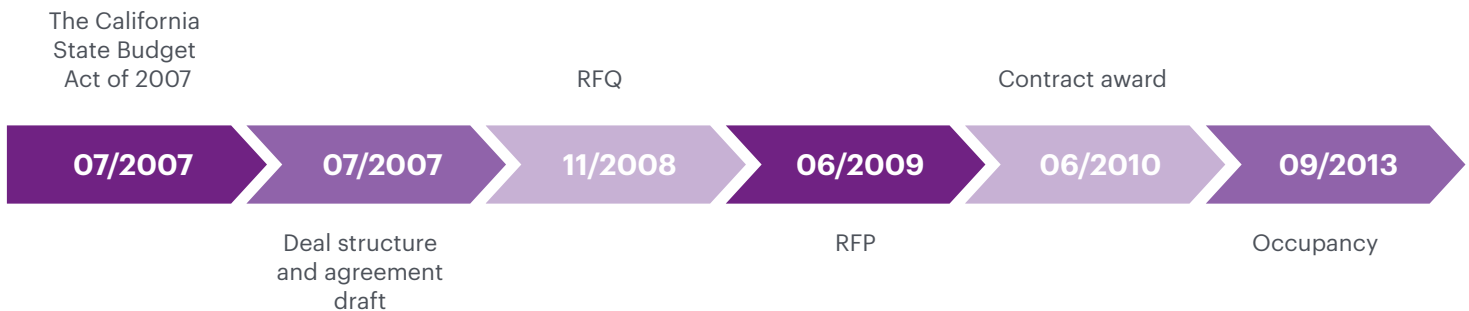
Risk allocation:

- **Construction:** Private sector, with some specific risks like utility relocation, environmental, archeological and changes in law either completely or partial shared with the public sector
- **Revenue:** Public sector through availability payments, with some revenue risk borne by the private sector through responsibility for third party real estate leases

- **Operations and maintenance:** Private sector, with support through incentive/availability payments from the public sector

Interesting facts:

- The Long Beach courthouse is the first government building in the US to be developed using this delivery method, which has been dubbed “performance-based infrastructure.”¹⁴
- The proposed delivery method had never been used in California before. As a result, the public entity had to undertake numerous steps to ensure all needed legal approvals (including enabling legislation¹⁵) and creation of a well-balanced agreement.
- In addition to LEED gold-level certification, the project received over nine different awards, including for the deal structure, the PPP model applied and the project delivery method.

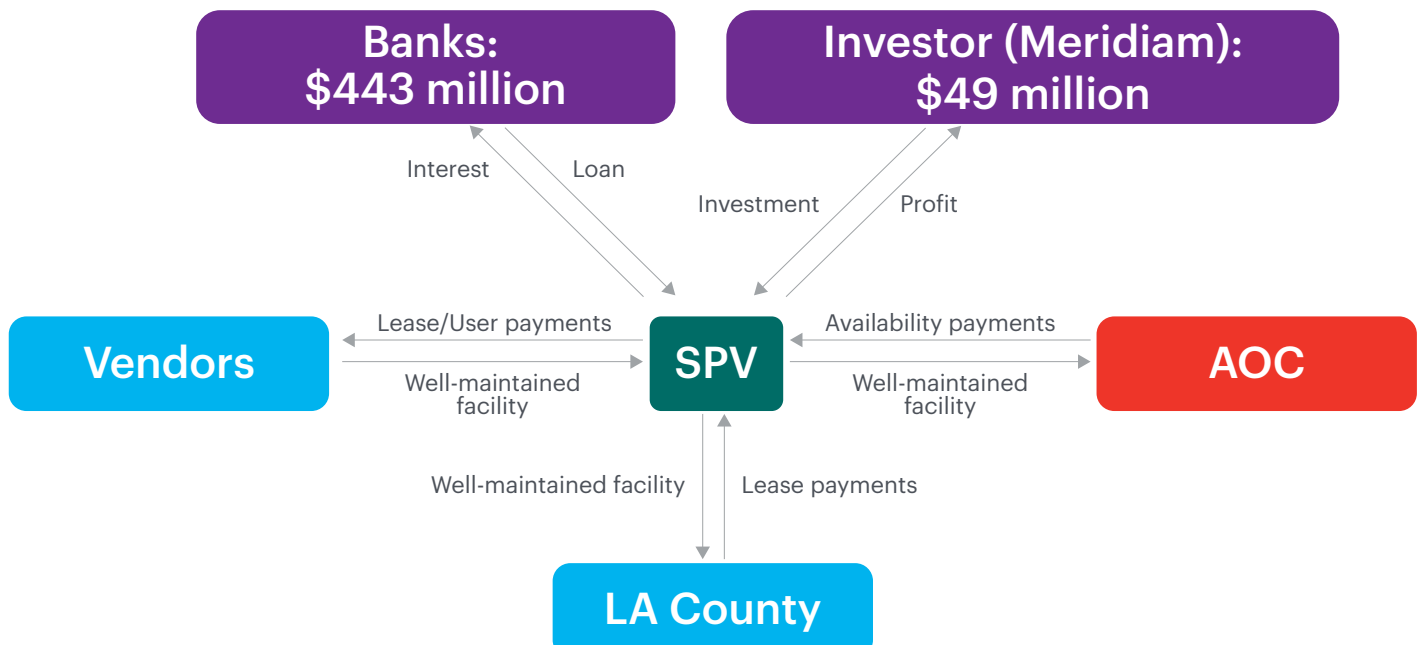


¹² <http://www.courts.ca.gov/documents/Long-Beach-PBI-evaluation-report-9-14-12.pdf>

¹³ <http://bipartisanpolicy.org/wp-content/uploads/2016/10/BPC-Infrastructure-Long-Beach-Courthouse.pdf>

¹⁴ <http://www.courts.ca.gov/documents/Long-Beach-PBI-evaluation-report-9-14-12.pdf>

¹⁵ Enabling legislation: California State Budget Act of 2007, Senate Bill 77 (enacted in July 2007) granted the Judicial Council and Administrative Office of the Courts (AOC) the authority to investigate the use of a public-private partnership in the development of the Long Beach project, while the Judicial Council has authority under section 70391.5 of the Government Code to enter into a public-private partnership agreement (<http://www.courts.ca.gov/documents/Long-Beach-PBI-evaluation-report-9-14-12.pdf>)





Conclusions

First and foremost, it should be noted that despite the economic troubles of some of the projects we analyzed, none has experienced a major technical or delivery failure (failure to construct, operate, maintain, or deliver the project on time and within budget). This means that mixing private and public responsibility for infrastructure projects of many varieties is a sensible policy.

That said, the success rate can be improved by giving close consideration to two key elements of the procurement design of the projects:

- Risk allocation
- Responsibility distribution

Risk allocation

These case studies indicate that when the major risks—design, construction and finance—are allocated completely to one side or the other, the chance of financial difficulty in the life of the project increases. Since revenue risk is the major one in large-scale infrastructure projects, its proper allocation is the key to a successful project. The observed attempts to fully transfer this risk to the private sector have not been shown to be productive and, in the majority of cases, they have led to either private partner bankruptcy (Indiana Toll Road) or unexpected toll/user fee growth (Dulles Greenway and Vista Ridge Pipeline). The more economically stable models have either shared revenue risk or kept the public sector responsible for revenue deviations (Long Beach Courthouse and Miami Tunnel).

The most important consideration here is allocation of the risks to the parties that can manage them. Since civil infrastructure revenue risk is barely “manageable,” assigning it to the private sector does not have real benefits, while the private sector includes the price of this risk in user fees. In the worst-case scenario, where the revenues are below the level needed to service the debt, the private partner files for bankruptcy or attempts to save money on operation and maintenance, and the public entity, as the owner, has to deal with the outcomes. In the best-case scenario, when the revenues are actually higher than projected, the private partner enjoys extra profit that might otherwise be used by the public entity or lead to lower user charges. Thus, despite the seeming appeal of full revenue risk transfer to the private party, outcomes are more economically stable when the public sector keeps the revenue risk on its side or shares it, to a meaningful degree, with the private sector.

Responsibility distribution

The second point, which relates to responsibility distribution, follows the same logic. It is important to distribute the roles in the project based on the skills each party possesses. This requires a granular analysis of the strengths and weaknesses of the particular public granting agency its ability to access private know-how to either supplement the weaknesses or unavailability of public resources.

Throughout this process, one must remain mindful that private sector capital alone and without expertise in design, construction, operations and maintenance is not a stable procurement model. Several of the projects we studied went even further in the blending of assets between the public and private sides by including the use of public finance to drive down borrowing costs (Port of Miami Tunnel and LaGuardia Central Terminal)—a unique accessing of a public sector asset by the private side.

However, for some projects private funding, even with its higher costs, may be more suitable. For example, the VFM analysis conducted for the Long Beach Courthouse compared different tax-exempt and non-tax-exempt options and concluded that, from a public perspective, non-tax-exempt private financing was the most beneficial. The contrasts between these different project procurement structures serves to highlight the need for thorough consideration of the alternatives for each project.

As the US continues to debate how to close its infrastructure gap and, specifically, the best role for the private sector in important projects, it would be best to keep the following guiding principles in mind.

1. Projects tend to be more successful, from every perspective, when private sector skills and capital are integrated with public sector skills and assets. Typically, the revenue risk should be either shared or secured by the public sector, while the construction, operation and maintenance risks are better managed by the private sector. However, our research also found that the best outcomes are achieved where the risk and management responsibilities are more carefully and specifically matched to the needs of a specific project.
2. Funding sources (public, private or in combination) should be determined on a project-by-project basis, taking into account industry, sector and other project-specific features. It was a notable finding of our research that the distribution of financing risk between the private and public sectors has a positive effect on project outcomes. Thus, it seems that these projects should not fall within the sole purview of corporate capital, but should also access municipal bonds and other means of public finance when feasible.

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