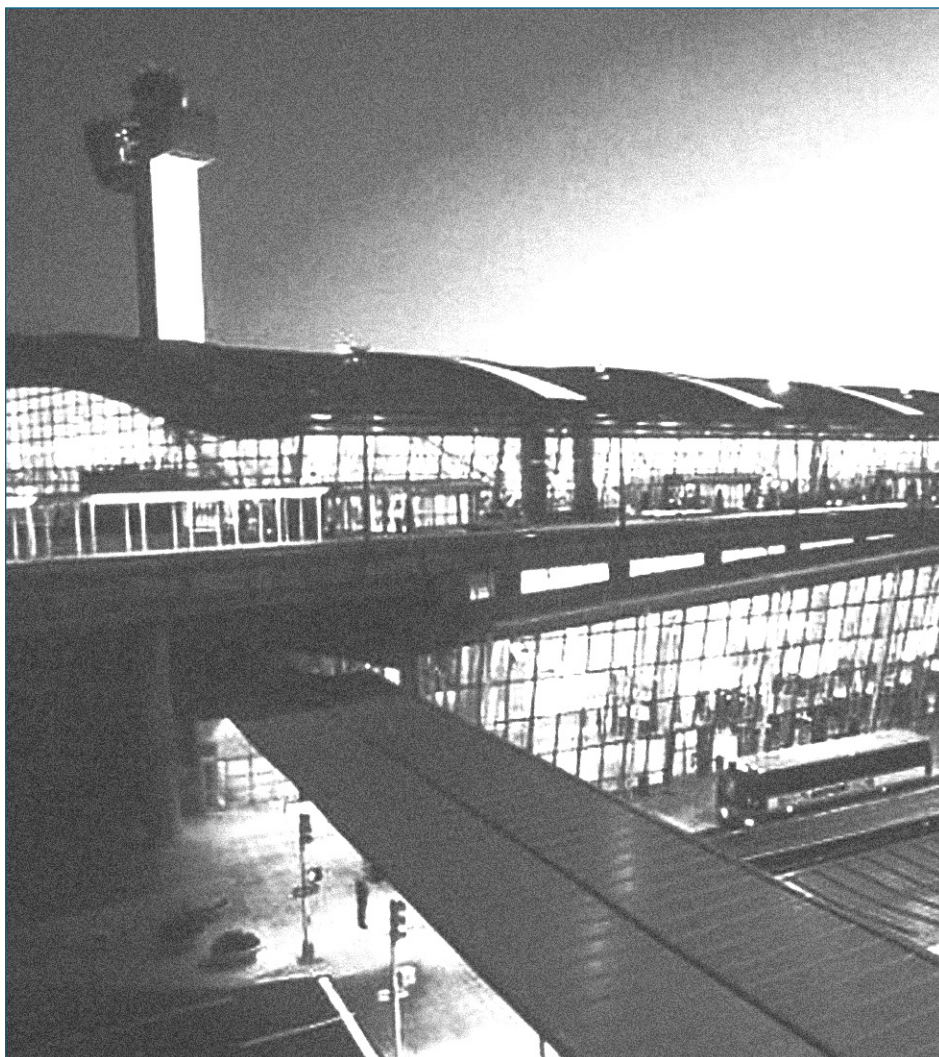


How Public-Private Partnerships Can Help New York Address Its Infrastructure Needs



INTRODUCTION

With the extraordinary combination of infrastructure needs and financial pressures now facing city and state governments across the United States, there is growing interest in the effective use of public-private partnerships (PPPs). These collaborations have been employed in Europe and other parts of the world as a mechanism for infrastructure delivery for many years, and high-profile arrangements for a few toll roads in the United States have recently heightened interest in this country.

Public-private partnerships are oriented primarily toward the construction or renovation of infrastructure, but they may include the provision of a service. In a typical arrangement, the public partner retains ownership of the capital asset but contracts with the private partner for the design, construction and maintenance of the asset. PPPs can be structured in a variety of ways and have been defined in various ways, as well.

This report explores the potential of PPPs for New York in the belief that the creation of such relationships should be rooted in a clear understanding of their benefits and pitfalls, based on a review of the global experience. It is intended to provide guidelines for the application of PPPs to public infrastructure in New York and to stimulate thinking about where PPPs may be useful tools for infrastructure improvement.

WHAT IS A PPP?

This analysis restricts its definition of PPPs to a subset of public-private arrangements and excludes three types of relationships sometimes viewed as PPPs. First, it excludes “privatizations” or asset sales in which the public sector relinquishes ownership of the asset. Second, it excludes management and other outsourcing contracts in which the private partner is responsible for a service in a larger operation or undertaking, but is not responsible for the creation or care of a physical asset. Third, it excludes “design-build” (DB) contracts, in which the design and construction of an asset are bundled together as the responsibility of a single private partner. DB contracts are an important and useful procurement mechanism; however, since they are limited solely to construction phases, they are excluded from this review of PPPs.

The definition of PPPs for this analysis centers on two important elements that make the relationship more like a partnership with shared risks and rewards. The first is the extension of the relationship to include life-cycle costs, including maintenance, energy consumption and others, of the facility over a long-term period; this is sometimes referred to as “design-build-maintain” (DBM). This is important because it imposes a life-cycle discipline on asset management that adds incentives for efficiency and can reduce long-term costs. These incentives are absent in DB contracts in which the contractor may choose design elements that facilitate lower costs and speedier construction, but do not hold up as well over the longer intended life of the facility.

The second element of a PPP is that the private partner finance at least part of the initial construction or renovation of the facility. The relationship becomes more of a partnership when the private party has invested some of its own capital and is at risk to lose that investment if other terms of the arrangement, such as maintenance standards, are not met. The private partner need not finance all of the initial construction costs; private financing is desirable for the incentives it provides to enhance efficiency, not necessarily because it creates “new money” for infrastructure. For the most part, the revenue streams – tolls, fees or tax revenues – used to repay private investment are the same as for public financing. The private funds represent only the substitution of one form of capital for another (equity for bonds) and not new sources of revenue to support the investments. While some private financial commitment is highly desirable, because of the availability of tax exempt financing, some projects in the U.S. have the characteristics of a PPP without private equity investment. In these cases, the tax exempt financing is “conduit” debt for which the private partner is liable, but the debt is issued by a public authority and is not private equity. This report considers these types of arrangements as PPPs.

Thus, PPPs are defined as relationships for physical assets in which private partners are responsible for life-cycle costs – including design, construction and maintenance – and for at least partly financing the projects. These types of PPPs have an extensive history in other parts of the world and are emerging in the United States.

While the median value for a PPP is \$170 million, 25 percent of projects have values above \$455 million. Approximately 10 percent of projects have values over \$1 billion.

THE GLOBAL EXPERIENCE WITH PPPs

The best available data source identifies over 1,100 projects worth \$509 billion worldwide; Europe accounts for 43 percent and nearly half of their dollar value. Within Europe, Great Britain is the dominant player, accounting for 193 (40 percent) of the 477 European projects.

In all regions, PPP projects have been concentrated in transportation and water systems. Transportation projects of all types comprise 52 percent of the total projects and 76 percent of their dollar value. Roads are the most common type of transportation projects, but significant numbers of PPPs have been used for rail lines, airport facilities and seaports. Water system projects include individual wastewater treatment facilities and more extensive water delivery projects employed in nations such as China and Indonesia.

Less than 100 of these projects, accounting for 5 percent of the total global value, are in the United States. Half of all U.S. projects are water or wastewater treatment facilities, most of which are smaller in scale, with values below \$100 million and contract terms for 20 years or less; however, some large-scale deals have been negotiated in recent years for transportation assets. In fact, the most valuable contracts tend to be for transportation projects: nine of the ten most valuable PPPs are for roads, bridges, airports and light rail systems. Transportation projects represent 70 percent of the total value of U. S. projects, \$24.3 billion.

NEW YORK'S EXPERIENCE WITH PPPs

Table 1
Number of PPPs Underway or Completed by Sector and Region, 1985-2007

Sector	Africa and the Middle East	Asia and Australia	Europe	Latin America and the Caribbean	North America	Total
Roads and Bridges	11	114	156	69	40	390
Water/Wastewater	20	72	89	38	71	290
Building	2	16	162	5	54	239
Rail	4	20	36	13	7	80
Seaport	2	22	20	10	2	56
Airport	0	24	14	9	7	54
Total Number	39	268	477	144	181	1,109
Percentage	4%	24%	43%	13%	16%	100%

Note: CBC analysis of data excludes contracts characterized as DBs, asset sales, joint development agreements and management contracts. See report for more information.

Source: International Public Works Database, October 2007 edition, from Public Works Financing.

New York has some limited but important experience with PPPs. Many of these are small PPPs in waste-energy systems, but three are among the largest projects in the United States. The largest New York PPP is the \$1.8 billion contract to build and operate the Airtrain from John F. Kennedy International Airport (JFK) to the Jamaica Station of the Long Island Railroad. This project was funded by revenues accumulated from a \$3 passenger facility fee on outbound tickets and tax-exempt debt of the Port Authority of New York and New Jersey. The agreement is for five years with two optional five-year extensions, one of which has already been authorized.

Another large project is JFK Terminal Four (T4). In 1997, the Port Authority of New York and New Jersey entered into a 20-year partnership with a consortium to rebuild and operate T4, the old international arrivals building. The total cost of rebuilding T4 was \$1.4 billion, and it was financed mostly by tax-exempt revenue bonds issued by the Port Authority and backed by the revenue to be generated by the terminal's operations.

In the U.S., about half of all PPP projects are for water or wastewater treatment facilities.

Another large PPP of note is New York City's 20-year partnership with Cemusa, Inc. for the design, construction and maintenance of street furniture. Specifically, the agreement called for Cemusa to replace all of New York's City's 3,200 bus shelters and 300 newsstands, to add 300 new bus shelters and an unlimited number of newsstands, and to install 37 bike parking structures and 20 new public toilets. Cemusa was granted the right to sell advertising space on these street fixtures; in return, it will provide New York City with \$999 million – to be paid in yearly installments for the life of the agreement – for those rights, as well as \$399 million of in-kind services, mostly advertising space promoting New York City as a tourist destination on Cemusa facilities located around the world.

There are also a range of experiences with smaller PPPs throughout the State. These are mostly contracts to design, build, finance and operate waste-to-energy, materials recovery and composting plants in a variety of counties. Many of these projects are under \$100 million, but there are several that are quite large, including 20-year partnerships for waste-to-energy plants in Babylon and Hempstead.

Interestingly, PPPs in New York have been developed despite some statutory restrictions on State and local procurement methods. New York's partnerships have not been pioneered by State government, but by the Port Authority and local governments; however, Governor David Paterson has formed a commission to study PPPs and examine where they may benefit New York.

Table 2
Most Valuable U.S. PPPs Underway or Completed, October 2007
(dollars in millions)

No.	Sector	State	Name	Value
1	Roads/Bridges	IN	Indiana Toll Road	\$3,850
2	Rail	NJ	Hudson-Bergen Light Rail	\$1,900
3	Rail	NY	JFK Airtrain	\$1,825
4	Roads/Bridges	IL	Chicago Skyway	\$1,800
5	Roads/Bridges	TX	Central Texas Turnpike, SH130, seg 1-4	\$1,800
6	Airport	NY	JFK Terminal Four	\$1,400
7	Building	NY	NYC Street Furniture	\$1,400
8	Rail	NJ	Camden-Trenton River Line	\$998
9	Rail	NV	Las Vegas Monorail, Phase I	\$650
10	Roads/Bridges	CA	South Bay Expressway, SR 125	\$642

Source: International Public Works Database, October 2007 edition, from Public Works Financing; CBC.

GUIDELINES FOR APPLICATION OF PPPs

Studies in the United Kingdom show that PPPs deliver a variety of projects on time and on budget more frequently than traditional procurement contracts.

PPPs can be a useful tool in the delivery and management of infrastructure. PPPs have demonstrated the ability to improve design and reduce construction time and costs. Furthermore, the private sector's ability to procure specialized expertise and harness innovation and technology offers the potential to enhance operations and improve maintenance standards over the life of an asset. In these respects, PPPs offer the potential to overcome important deficiencies in public-sector performance and are an important option for infrastructure management that should be made available in New York. The following are recommended guidelines for the application of PPPs.

1. **PPPs should be focused on achieving efficiencies in the life-cycle costs of facilities and ensuring their long-term maintenance at standards higher than typically achieved by direct public-sector operation.** PPPs can be a mechanism for correcting serious shortcomings in public-sector performance. State and local entities in New York, as elsewhere in the United States, have a long and regrettable history of delivering projects late and over budget, of designing projects without giving adequate consideration to the long-term maintenance needs associated with the design elements chosen, and of failing to keep key components of infrastructure, including bridges, schools, dams, and parks, in a state of good repair.

There is evidence that PPPs can be helpful in addressing these inadequacies. Perhaps the strongest evidence is from the United Kingdom, which has pioneered PPPs and systematically evaluated them. The most compelling evidence is that of improved project delivery under PPPs: compared to similar traditionally procured projects, PPPs have consistently performed better in delivering projects on time and on budget by a wide margin. Less extensive evidence is available on the performance of PPPs in providing better maintenance standards, since most projects are in the early stages of their life cycles; however, the available evidence suggests that projects are operating to standards as good or better than expected. In evaluative surveys, project managers pointed to day-to-day maintenance and hard facilities management as areas where they were especially pleased with the performance of private contractors.

2. **PPPs are well-suited to revenue-generating facilities, but user fees are not essential for a PPP.** PPPs are attractive for facilities that generate substantial revenue, such as toll roads and bridges and water systems. Such projects can be segregated from a larger network, and the revenue stream can be collected and managed by a discrete operating entity. They also offer the advantage of linking costs and revenues and permitting innovative pricing policies.

Effective PPPs are not limited to facilities that generate substantial revenue from user fees. Many viable PPPs have been developed for public facilities through two

other models in which the public partner pays the private partner directly. Under these models, the private partner is able to recover initial investments, meet operating costs and make a profit through regular “availability payments” or “shadow tolls” conditioned on keeping the facility in satisfactory condition.

Availability payments are used for projects when volume of use is less critical and the government is seeking the availability of some facility such as a school building, military barracks or hospital. Shadow tolls are similar to user fees but are paid by the government rather than an individual customer. For the public sector, these PPPs only provide savings if the payments are less than the projected capital and maintenance costs for building and adequately maintaining the facility under direct public management.

- 3. PPPs need not be limited to large facilities; smaller assets can work, too.** The complexity and large transaction costs of PPPs have tended to limit them to large individual facilities, but this need not be the case. PPPs can be developed for multiple, similar, smaller facilities, using the British model called “strategic partnerships.” With national funding, local governments work with joint public-private sector organizations – composed of the appropriate government agency and Partnerships UK, a nonprofit PPP dedicated to promoting best practices– to create a strategic planning framework. The local governments then work exclusively with one private partner to deliver the assets. By batching similar projects together, transactional costs for smaller projects can be reduced significantly.

The two major strategic partnerships in the U.K are in health and education. The first is Local Improvement Finance Trusts (LIFT), a ten-year, £1 billion investment by the Department of Health to build one-stop primary health care centers. (This supplements a previous nationally funded program to use PPPs for hospital construction by Hospital Trusts.) The second is the Building Schools for the Future initiative to upgrade all secondary schools over 15 years. Planned spending for this initiative is £2-3 billion a year over a 15-year period. Because the goals are ambitious, the work occurs in phases, with only a portion of buildings being built or renovated in each phase of work. New York may be able to benefit from a similar model for several key assets, such as bridges, parks and schools.

PPPs do not require tolls. Throughout the world, availability payments and shadow tolls have been used to create PPPs for projects without fees.

POTENTIAL APPLICATIONS IN NEW YORK

In selecting opportunities for effective PPPs, New York’s leaders should give high priority to assets that are currently in poor condition and have a history of poor maintenance. That is, the greatest potential benefit of PPPs is their promotion of efficiencies in life-cycle management of assets and stimulus for adequate maintenance after initial construction or renovation. In most cases, the PPPs should be initiated as pilot programs and viewed as benchmarks for project delivery times and maintenance standards. They should be compared to experience with similar facilities that remain under direct public management, leading to decisions about whether the PPPs should be expanded to more facilities.

For New York City and New York State, initial application of these criteria suggests the following candidates for exploration:

New York is second in the nation in the number of functionally obsolete bridges, with more than 4,500.

1. Highway bridges. Among the more than 17,000 bridges in New York State, 6,650 are functionally obsolete or structurally deficient, usually due to inadequate maintenance. One or more groups of bridges should be selected for repair and maintenance through a PPP with the New York City and/or New York State Department of Transportation (NYSDOT) as the public partner. The approach is not restricted to tolled bridges; un-tolled bridges can be included in a PPP by using availability payment or shadow toll models. A PPP has been proposed by private companies for the Tappan Zee Bridge and is the subject of a study by financial consultants to NYSDOT and the New York Thruway Authority. Any next steps for pursuing a PPP should be informed by this study.

PPPs have been employed successfully for school construction and renovation in other countries, especially in the United Kingdom, Canada, and Germany.

2. New York City School Buildings. New and renovated school capacity are needed in the City, and the Department of Education has a history of poor performance in this function: schools have chronically been in disrepair and crowded. A group of planned new schools and/or school renovation projects should be considered for a PPP modeled on the British experience with “strategic partnerships,” in which local governments forge a long-term relationship with private partners to create a strategic framework for building or renovating a number of smaller capital assets with similar specifications. These partnerships mitigate the transaction costs of designing and monitoring PPPs for small assets with a small value, and result in efficiencies, such as economies of scale and improved supply-chain management, throughout the life of the partnership.

3. New York City Parks. Central Park and other flagship parks have been restored to good condition since their neglect in previous years through a combination of public and philanthropic efforts; however, many other parks, often in poor neighborhoods, still require major improvements and better ongoing maintenance. A group of parks in need of improvements could be packaged for a suitable PPP. In addition, the Mayor's commitment to investment in new parks as part of PLANYC requires committing resources for their future maintenance. Another option is to pursue stand-alone partnership opportunities for the large underdeveloped parks. Any relatively modest concession revenue opportunities associated with these parks could be included in the arrangement to provide incentives for enhancing such revenues for the private partner and thereby reducing the availability payment required from the City. The City Department of Parks already employs a sophisticated system for monitoring the conditions of its facilities. A critical and challenging next step will be adapting this system to contractual provisions for financial incentives and penalties in management of parks.

4. Higher educational facilities. Both of the state's public university systems – the City University of New York and the State University of New York – have extensive facilities that are old and not well-maintained. Recent assessments identified critical maintenance backlogs of \$3.2 billion and \$1.7 billion, respectively, for these systems. PPPs could be used to renovate some currently deficient educational facilities and keep them well-maintained for the expected life cycle. The initial private capital and operating costs would be paid through the availability payment model, and several facilities could be grouped together. In addition, it may be worthwhile to experiment with a PPP for residential facilities that generate user fees. This provides an opportunity to have PPP and Dormitory Authority-managed facilities on the same campuses to ensure competition in prices and comparative performance standards.

The NYC Department of Parks and Recreation owns more than 29,000 acres of parkland that house more than 1,000 recreational facilities.

SUNY has 2,765 buildings within its control; CUNY has 293.

POTENTIAL MISSTEPS AND CAUTIONS

PPPs can be an opportunity to provide improved infrastructure at lower cost; however, PPPs are not a panacea for the infrastructure needs of New York. PPPs should be pursued selectively for initiatives that will have the greatest benefits, and they should be designed to avoid the pitfalls, summarized below, that have characterized some experiences.

- 1. PPPs should not be looked upon as “new” money for infrastructure.** In other countries, PPPs have been used to circumvent legal limits on the amount of public-sector debt. The arrangements provide initial private financing for projects that otherwise would be financed by public-sector borrowing. This objective is not relevant for many entities in the United States, and particularly for New York State and its localities, because legal limits are not a major constraint on infrastructure investments. Unlike many foreign entities, New York can use revenue bonds issued by authorities and other financing mechanisms to raise capital; the tax-exempt status of interest payments on these bonds makes this form of borrowing economically efficient. In New York, the private investment in a PPP can supplement tax-exempt bonds, but it is desirable primarily as an incentive for innovation and efficiency from the private partner.
- 2. User-fee revenue streams should not be tapped inappropriately as part of a PPP arrangement.** While offering great potential, user-fee-supported PPPs also pose two dangers. First, public officials’ desire and ability to obtain large up-front payments from the private partner, in exchange for the right to the future revenue, can lead to a heavily discounted value for the future revenue that shortchanges future generations. Second, use of these up-front payments may be diverted from infrastructure enhancement to other budgetary purposes with more short-run political attractiveness. In addition, public officials may use the mechanism to diffuse accountability for substantial increases in the tolls or fees. Toll increases are typically necessary, but the public should be informed that they are a result of public policy decisions.
- 3. The public sector must enhance its management capacity in order for PPPs to be successful.** PPPs are not an abdication of public responsibility. The public sector must develop an enhanced capacity for contract design, performance measurement and monitoring. The public partner should also foster transparency in the partnership and enforce contract provisions regarding penalties and termination, if necessary. Enhanced capacity for public administrators requires adequate resources, and these costs should be recognized as part of the PPP arrangement and taken into account in deciding whether a PPP is appropriate.

4. **PPPs are prone to failure when integral responsibilities are divided.** PPPs do not work well when multiple private partners are involved in PPP contracts for the same service, or when the infrastructure elements subject to a PPP are integrally related to and require close coordination with a public agency that retains the service-delivery responsibility. The failure of two of the three PPP contracts for the London Underground illustrates this problem as well as others.

5. **Labor concerns can be addressed.** Representatives of unionized public servants often raise concerns about PPPs on grounds that they threaten the job security of current employees and may worsen wages and working conditions for those selected to work on the project. The private partner's latitude to achieve efficiencies through substitutions of capital and technology for labor and through reforms of work rules may be important to the viability of the project. In fact, this may mean that public employees are replaced or rehired by the private partner under different terms. Public officials should decide the extent to which they share these concerns. If they are willing to sacrifice some of the benefits of PPPs, then they can provide protections. Public officials can act unilaterally by guaranteeing the hiring of displaced workers in other public sector jobs that become available; alternatively, they can negotiate with the private partner to establish contractually compensation or work conditions similar to that provided to public employees.

Founded in 1932, the Citizens Budget Commission is a nonpartisan, nonprofit civic organization devoted to influencing constructive change in the finances and services of New York State and New York City governments. The Commission conducts research and regularly issues reports and recommendations based on that research. The research is conducted by staff members and consultants and is guided by committees composed of Trustees of the CBC.

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