

# HOW PUBLIC-PRIVATE PARTNERSHIPS CAN HELP NEW YORK ADDRESS ITS INFRASTRUCTURE NEEDS

**Citizens Budget Commission**

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## FOREWORD

Founded in 1932, the Citizens Budget Commission (CBC) is a nonprofit, nonpartisan civic organization devoted to influencing constructive change in the finances and services of New York State and New York City governments. A major activity of the Commission is conducting research on the financial and management practices of the State and City.

All research by the CBC is overseen by a committee of its Trustees. This report was prepared under the auspices of the Public-Private Partnerships Committee, which we chair. The other members of the Committee are: Paul R. Alter, Paul T. Bader, Kenneth W. Bond, Lawrence B. Bittenwieser, James S. Chanos, Herman R. Charbonneau, Cheryl Cohen Effron, Bud H. Gibbs, Kenneth D. Gibbs, Walter L. Harris, Peter J. Kiernan, Robert Kinney, David N. Lebenstein, Robinson Markel, Joel H. Moser, James S. Normile, Steven M. Polan, John Rhodes, Michael L. Ryan, Richard L. Sigal, Joan Steinberg, Mark Strauss, Mark E. Strauss, and James L. Lipscomb, ex-officio.

The Committee's work focused on analyzing the range of experience with public-private partnerships (PPPs). As this report describes, these partnerships have been used globally for some time and are starting to gain momentum in the United States and emerge in New York; however, public debate on the merits of these partnerships has not always been informed by the lessons learned from prior experiences. This report analyzes the evidence and concludes that PPPs can be a useful tool in improving infrastructure management; however, they must be employed selectively and cautiously, and the report suggests some assets which may benefit from their application.

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## INTRODUCTION AND SUMMARY

The public and private sectors work together in a variety of ways to provide many different services. Recently in the United States, much attention has been given to collaborations called public-private partnerships (PPP). These arrangements may include the provision of a service, but are primarily oriented toward the construction or renovation of infrastructure. In a typical arrangement, the public partner retains ownership of the capital asset, but contracts with the private partner for the design, build and maintenance of the asset. PPPs have been employed in Europe and other parts of the world as a mechanism for infrastructure delivery for many years. The United States has a history of using PPPs for certain types of projects, including projects in New York for waste-to-energy facilities and airport projects, but the use of PPPs is extremely limited in comparison to Europe and other parts of the world. Recently, high-profile arrangements for a few toll roads in the United States have generated a great deal of interest among state and local governments struggling to address adequately their transportation and other infrastructure needs.

PPPs can be structured in a variety of ways, and they have been defined in a variety of ways. This report restricts its definition of PPPs to a subset of public-private arrangements and excludes three types of arrangements 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 or infrastructure element.

Third, it excludes relationships known as “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 the review of PPPs in this report.

The CBC definition of PPPs 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: “design-build-finance-maintain” (DBFM). 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 may be 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 many of 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. Nonetheless, 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, build, maintenance, and others – 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. Of the over 1,100 such projects worth \$509 billion worldwide, only 100 projects accounting for 5 percent of the total global value are in the United States. Many of these U.S. projects are smaller in scale, but some large-scale deals have been negotiated in recent years.

As public officials give increased consideration to PPPs, the Citizens Budget Commission believes that the creation of such relationships should be rooted in a clear understanding of their potential benefits and pitfalls based on a review of the global experience. This report is intended to provide guidelines for the application of PPPs to public infrastructure in New York, and stimulate thinking on where PPPs may be useful tools for infrastructure improvement.

## **Guidelines for Application of PPPs**

PPPs can be a useful tool in the delivery and management of infrastructure; they 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 offer 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 useful 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.** 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. PPPs can be a mechanism for correcting these serious shortcomings in public sector performance.

**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 advantages 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. For the public sector, these PPPs provide savings only if the availability 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, as well.** The complexity and distinctiveness of PPPs have tended to limit them to large, individual facilities, but this need not be the case. Innovative financing mechanisms have been used for relatively small solid waste incineration projects in New York’s localities and other jurisdictions. In addition, there is notable British experience with primary care health centers and secondary school buildings indicates that effective PPPs can be developed for multiple, similar smaller facilities and a private partner. This model can be applied to facilities in New York.

### **Potential Applications in New York**

Changes in state legislation will be required if PPPs are to be pursued by state and city agencies in New York. Other states have adopted considerably more flexible laws relating to construction and procurement. New York State has such a law relating to solid waste facilities, but it does not apply to other types of public infrastructure.

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 these candidates for exploration:

**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 as the public partner. The approach is not restricted to large tolled bridges; un-tolled bridges can be included in a PPP by using availability payment or shadow toll models. These models are used for assets that do not have natural revenue streams, and are structured so that the private partner issues the financing and is repaid by the public partner with a regular payment for ensuring the availability of the asset or based on its use. A PPP for the Tappan Zee Bridge has been proposed by private companies and is the subject of a study by financial consultants to the New York State Department of Transportation and the New York State Thruway Authority. Any next steps for pursuing a PPP for the Tappan Zee should be informed by this study.

**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 been chronically deteriorated and crowded. While the Educational Construction Fund has combined school design and construction with privately-financed residential and commercial development for some new facilities, these arrangements have been limited in number and do not extend to maintenance and other lifecycle costs. This experience could be expanded; 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 lifecycle. 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.

## **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 look 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. 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. 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 both 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 the 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.

## THE RANGE OF EXPERIENCE

The public and private sectors join in a variety of ways to provide public facilities and services. In analyzing these arrangements, multiple distinctions are useful in order to arrive at a relevant definition of a PPP.

First, the arrangement may involve a physical asset (usually some form of infrastructure or building) or it may involve only the provision of service. In the latter category are a variety of contracts for services, such as health care in a prison, foster care for children, maintenance of a park, and providing lunches to school children. The contracts may be with for-profit or non-profit agencies, and they usually involve payments from the government to the agency contingent on adequate performance. More refined versions of these service arrangements may involve shifting from not just requiring the private organization to collect relevant fees (such as the price of a school lunch), but granting incentives for them to earn more when use increases or costs are curbed. Simple examples include concessions for services, such as selling refreshments in a park. More complex arrangements include proposals for private operation of public lotteries. The design, implementation and evaluation of service-oriented contracts with the private sector are an important aspect of public administration that warrants serious attention, but they are not the focus of this report. Rather the focus here is on arrangements that are oriented primarily to the creation or renovation and maintenance of physical assets.

Public-private relationships relating to physical assets also take a variety of forms. First, there are “privatizations,” asset sales in which the public sector relinquishes ownership of the asset. Examples in New York City include the sale of municipal radio and television stations and municipal parking lots during Mayor Rudolph Giuliani’s administration.<sup>1</sup> In these arrangements, the relationship between the public and private sectors is limited or non-existent after ownership is transferred. As a result, these arrangements are not considered PPPs.

Another type of relationship involves contracting with a private firm for the construction or renewal of physical assets. Rather than hiring public employees with construction skills, most government construction, ranging from school buildings and firehouses to roads, bridges and sewer systems, is conducted by private firms. Typically the government agency designs the facility it wants (perhaps aided by independent architects) and seeks competitive bids from private contractors for its construction. When construction is complete, the government agency assumes responsibility for maintenance. Although it involves cooperation between the two sectors, these construction contracts are not generally included in a definition of PPP.

A third type of relationship is known as a “design-build” (DB) contract. In this arrangement, the government does not prepare a detailed design of the facility it wants; rather, it provides a set of specifications for capacity or performance. The private party is asked to prepare the detailed design and construct the facility under a single contract.

These DB arrangements have been found suitable for a variety of facilities and have yielded savings for the public sector in the form of speedier completion and lower costs than under conventional arrangements of public design and private construction. In California, the San Joaquin Toll Road was constructed under a DB contract, with a guaranteed maximum price and construction date. The

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<sup>1</sup> E.S. Savas. *Privatization in the City: Successes, Failures, Lessons*. CQ Press: Washington DC, 2005: pp 152-156.

road opened three and a half months early. In Utah, the reconstruction of I-15 as a DB project resulted in a road that opened to the public five months ahead of schedule.<sup>2</sup> DB contracts are an important and useful procurement mechanism, and are sometimes defined as a type of PPP; however, since they are limited solely to construction phases, they are excluded from the review of PPPs in this report.

The CBC definition of PPPs centers on two important elements that make the relationship more like a partnership with shared risks and rewards. One is the extension of the design-build relationship to include life-cycle costs, including maintenance, energy consumption and others, of the facility over a period corresponding approximately to its intended useful life; this relationship is known as “DBM” and “DBOM” when operational responsibility is also included. This life-cycle cost discipline adds incentives for efficiency in managing assets. The private party, in performing its design function, has incentive to design the facility in a way that minimizes maintenance needs over the life of the asset. Such incentives are absent in DB contracts or in construction contracts for facilities that the public agency has designed. In fact, public agencies sometimes design facilities in a way that emphasizes their grandeur and adds to long-run maintenance costs. Similarly, in DB contracts 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.

A second element of a PPP is that the private partner finances at least part of the initial construction or renovation of the facility – a “DBFM” partnership. 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, but some significant private investment is intrinsic to a meaningful PPP. While some private financial commitment may be 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 many of 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, a PPP is defined as a relationship for a physical asset (as opposed to a service) in which the private partner is responsible for life-cycle costs – including design, build, maintenance, and others – and for at least partly financing the project.<sup>3</sup>

Two additional points are worth noting in defining PPPs. First, competition is an integral factor in entering into a partnership. Partnerships are formed only after a competitive process among multiple potential private parties, with the award based on clearly defined cost and performance criteria. Second, PPPs are used both for building new facilities and for renovating older facilities. New construction projects are sometimes referred to as “greenfield” projects, and reconstruction or renovation projects as “brownfield” projects.

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<sup>2</sup> U.S. Department of Transportation. *Report to Congress on Public-Private Partnerships*. December 2004.

<sup>3</sup> In some cases, the private financing may take the form of tax-exempt (conduit) debt. In the United States, public authorities, often industrial development authorities, may issue tax-exempt debt for the benefit of private parties, which are responsible for the repayment of the debt. In some cases, this tax-exempt debt can comprise the private partner’s investment.

## Global Experience with PPPs

Globally, there is extensive experience with PPPs. One source identifies 1,109 such projects valued at \$509 billion launched in the period from 1985 to 2007.<sup>4</sup> PPPs are most heavily concentrated in Europe, and to a lesser extent Asia. Europe accounts for fully 43 percent of the projects and nearly half of their dollar value. Within Europe, Great Britain is the dominant player; it accounts for 193 (40 percent) of the 477 European projects.

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

Number of PPPs by Sector and Region						
Sector	Africa & the Middle East	Asia and Australia	Europe	Latin America & 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
<b>Total Number</b>	<b>39</b>	<b>268</b>	<b>477</b>	<b>144</b>	<b>181</b>	<b>1,109</b>
<b>Percentage</b>	<b>4%</b>	<b>24%</b>	<b>43%</b>	<b>13%</b>	<b>16%</b>	<b>100%</b>

Value of PPPs by Sector and Region (US dollars in billions)						
Sector	Africa & the Middle East	Asia and Australia	Europe	Latin America & the Caribbean	North America	Total
Roads and Bridges	\$5.3	\$37.0	\$121.2	\$28.4	\$40.5	\$232.4
Rail	\$4.7	\$28.4	\$47.0	\$4.5	\$9.3	\$93.9
Building	\$0.0	\$3.6	\$53.6	\$0.3	\$7.1	\$64.7
Water/Wastewater	\$4.6	\$19.9	\$18.2	\$5.5	\$7.6	\$55.9
Airport	\$0.0	\$35.9	\$5.6	\$2.6	\$3.0	\$47.1
Seaport	\$0.2	\$10.4	\$2.6	\$0.9	\$0.6	\$14.6
<b>Total Value</b>	<b>\$14.8</b>	<b>\$135.1</b>	<b>\$248.3</b>	<b>\$42.3</b>	<b>\$68.2</b>	<b>\$508.6</b>
<b>Percentage</b>	<b>3%</b>	<b>27%</b>	<b>49%</b>	<b>8%</b>	<b>13%</b>	<b>100%</b>

**Note:** CBC analysis of data excludes contracts characterized as DBs, asset sales, joint development agreements and management contracts. Table also excludes certain solid waste incineration projects involving long-term contracts between governments and private owners and operators.

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

<sup>4</sup> Data from International Major Projects Survey, October 2007 edition, published by *Public Works Financing*. CBC analysis of data excludes contracts characterized as DBs, asset sales, joint development agreements and management contracts. For most projects, values recorded in the database represent project capital costs as estimated in the year the contracts were signed, except for select entries updated by CBC.

The large number of projects in Europe is related to historic patterns of public-private interactions, including the “corporatist” tradition in several nations, but it is also linked to the 1993 creation of the European Union (EU). Member nations of the EU are mandated to keep their public debt below 60 percent of GDP. This has created incentives for nations to finance large infrastructure investments in ways that avoid or reduce public borrowing, and PPPs provide such a mechanism. In Great Britain, the Labour government elected in 1997 expanded the use of “Private Finance Initiatives” (PFIs) to help meet a commitment to greatly enhance investment in public facilities while avoiding EU debt limits. As of March 2008, there were 628 PFI/PPP projects operational, accounting for £58.6 billion in investment.<sup>5</sup> Similarly, a 2004 French ordinance opening up use of PPPs has resulted in projects worth €10 billion in progress.<sup>6</sup>

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, such the €1.5 billion Harnaschpolder wastewater treatment plant in the Netherlands, and more extensive water delivery projects employed in developing nations like China and Indonesia.

The large number of transportation and water projects is consistent with the notion that PPPs are linked to projects that generate substantial user fees. Road projects are often tolled, many transport facilities have user fees, such as landing fees and rents at airports, and water projects generate revenue from charges to customers. But, it is important to note that many PPPs have been structured without the private partner collecting user fees. In these cases, the private partner earns its profit from payments made directly from the public partner. These payments come in two forms: shadow tolls and availability payments.

Shadow tolls are similar to user fees, but are paid by the government rather than an individual customer. For example, rather than collecting tolls from drivers, the private partner in a bridge project may receive a payment from the government based on the volume of use at the bridge. Several highways in the United Kingdom and increasingly in Spain are being constructed and operated under such arrangements.

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. The government makes periodic payment contingent on the private partner making the facility available and keeping it in good condition. The amount of the availability payment is intended to cover the private partner’s capital and operating costs with profit possible due to operating efficiencies. Such availability payments fund projects in the United Kingdom for hospitals, clinics, schools and other

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<sup>5</sup> HM Treasury. “Signed Projects List – March 2008.” Available online at [http://www.hm-treasury.gov.uk/documents/public\\_private\\_partnerships/ppp\\_pfi\\_stats.cfm](http://www.hm-treasury.gov.uk/documents/public_private_partnerships/ppp_pfi_stats.cfm).

<sup>6</sup> Matthieu Desiderio. “Public Private Partnerships, French practices and evolutions.” Transport Information Group. Accessed 4 September 2008. Available online at <http://en.transport-expertise.org/index.php/2008/02/26/public-private-partnerships-french-practices-and-evolutions/>.

buildings, as well as some transport projects; in 2007, these payments totaled nearly £5 billion annually.<sup>7</sup>

## U.S. Experience with PPPs

The PPP experience in the United States is relatively limited. The 95 PPP projects account for only about 9 percent of the global total number of projects and 5 percent of their total dollar value.<sup>8</sup> The 22-year cumulative value of the projects, \$24.3 billion, should be seen in the context of the estimated \$281 billion spent annually by the public sector on infrastructure in the United States.<sup>9</sup>

**Table 2**  
**Number and Value of PPPs in the United States by Sector, 1985-2007**  
*(dollars in billions)*

Sector	United States		As a Percent of Global Total	
	Number	Value	Number	Value
Airport	4	\$1.7	7%	4%
Building	28	\$2.7	12%	4%
Rail	4	\$5.4	5%	6%
Roads and Bridges	12	\$9.9	3%	4%
Water/Wastewater	47	\$4.6	16%	8%
<b>Total</b>	<b>95</b>	<b>\$24.3</b>	<b>9%</b>	<b>5%</b>

**Note:** CBC analysis of data excludes contracts characterized as DBs, asset sales, joint development agreements and management contracts. Table also excludes certain solid waste incineration projects involving long-term contracts between governments and private owners and operators.

**Source:** CBC analysis of data from *International Public Works Database*, October 2007 edition, from *Public Works Financing*.

Mirroring international trends, PPP activity in the United States has been prevalent in water systems and transportation projects. About half of all projects are for water or wastewater treatment facilities. The prevalence of these water projects may reflect a comfort with privatizing water

<sup>7</sup> In the United Kingdom, availability payments are referred to as “unitary charges.” See HM Treasury, “Signed Projects List – March 2008.” Available online at [http://www.hm-treasury.gov.uk/ppp\\_pfi\\_stats.htm](http://www.hm-treasury.gov.uk/ppp_pfi_stats.htm).

<sup>8</sup> Data from International Major Projects Survey, October 2007 edition, published by *Public Works Financing*. CBC analysis of data excludes contracts characterized as DBs, asset sales, joint development agreements and management contracts. For most projects, values recorded in the database represent project capital costs as estimated in the year the contracts were signed, except for select entries updated by CBC.

<sup>9</sup> In 2004 dollars. See Congressional Budget Office Supplemental Tables to “Investing in Infrastructure,” Testimony before the Committee on Finance, United States Senate, May 2008.



operations stemming from past U.S. local experience with transferring responsibility for construction or operation of water facilities from the primary government to a public authority or separate water board. Despite their number, these projects are worth only \$4.6 billion in total. Most of these contracts have a value below \$100 million and have shorter contract terms, typically for 20 years or less.

The most valuable contracts tend to be for transportation projects, which represent 70 percent of the total value of U. S. projects. In fact, transportation projects, particularly toll roads and bridges and light rail lines, account for 12 of the largest 20 PPP contracts. All four U.S. rail PPPs make the list of top projects. Three of these are operating in the tri-state area – the Hudson-Bergen Light Rail, the Camden-Trenton River Line, and the JFK Airtrain – and vary in length from 5 to 20 years.

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**Table 3**  
**Top 20 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
11	Roads/Bridges	VA	Pocahontas Parkway	\$604
12	Water/Wastewater	CA	Stockton California Utilities	\$600
13	Roads/Bridges	FL	Southwest Florida, I-75	\$430
14	Water/Wastewater	RI	Cranston Wastewater	\$400
15	Roads/Bridges	VA	Dulles Greenway	\$350
16	Water/Wastewater	AZ	Phoenix Lake Pleasant	\$336
17	Building	TX	Texas Prisons (7)	\$300
18	Water/Wastewater	MI	Detroit Water Works Park II	\$260
19	Water/Wastewater	IL	Chicago Sludge Pelletizer	\$218
20	Airport	CO	Airport Cargo Commercial Complex	\$200

**Note:** All projects are DBM or DBM projects; some projects do not include private equity investments and instead rely on tax exempt debt. Certain solid waste incineration projects involving long-term contracts between government and private owners or operators are not included.

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

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The large toll road projects are linked to recent federal policy changes that have lifted restrictions on the tolling of roads and attempted to leverage private investment in public infrastructure. The 2005 federal transportation act eliminated some federal restrictions for design-build contracts, created pilot programs to allow states to convert free Interstate highways into toll roads, and authorized variable pricing and tolled express lane construction to ease congestion.<sup>10</sup> In addition, it offered two forms of financing for transportation infrastructure improvements.

The first was an expansion of eligibility and funding for an existing program (the Transportation Infrastructure Finance and Innovation Act, or TIFIA) that offers secured loans, loan guarantees or supplemental lines of credit to nationally or regionally significant projects.<sup>11</sup> For the period from 2005 to 2009, \$610 million in such financing has been authorized; this can support more than \$2 billion of average annual credit assistance.<sup>12</sup> The Central Texas Turnpike, the South Bay Expressway and the Pocahontas Parkway have all received such funding.<sup>13</sup>

The act also authorized the U.S. Department of Transportation to issue up to \$15 billion in private activity bonds (PABs), tax exempt bonds for private projects with a public purpose, for highway and freight transfer facilities. As of January 15, 2008, \$3.3 billion of these bonds had been allocated to a total of five projects, including the Miami Port Tunnel, the Missouri Bridge Improvement Project and the Virginia Capital Beltway HOT lanes.<sup>14</sup>

In other areas of transportation, there has been less activity. Though common in other areas of the world, there are no PPPs for U.S. seaports. Many airports make use of the private sector through management contracts and cooperation with airlines to construct or operate facilities, but PPPs for airport facilities are rare. A few airports, such as Denver International Airport, have entered into PPPs for cargo facilities, and the Port Authority of New York and New Jersey has entered into a partnership for one airport terminal. The City of Chicago recently became the first government to strike a partnership agreement for an airport with a 99-year concession lease of Midway Airport. As of this writing, the deal is pending the approval of the Federal Aviation Administration and the Transportation Security Administration.

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<sup>10</sup> Federal Highway Administration. "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users or SAFETEA-LU." Accessed 8 Sept. 2008. Available online at <http://www.fhwa.dot.gov/safetealu/index.htm>.

<sup>11</sup> Federal Highway Administration. "SAFETEA-LU – Fact Sheets: Transportation Infrastructure Finance and Innovation Act." Accessed 8 Sept. 2008. Available online at <http://www.fhwa.dot.gov/safetealu/factsheets/tifia.htm>.

<sup>12</sup> Transportation Infrastructure Finance. "Fact Sheet: Transportation Infrastructure Finance and Innovation Act." U.S. Department of Transportation. Accessed 8 September 2008. Available online at [http://tifia.fhwa.dot.gov/about/background/docs/tifia\\_prog\\_fact\\_sheet.pdf](http://tifia.fhwa.dot.gov/about/background/docs/tifia_prog_fact_sheet.pdf).

<sup>13</sup> Transportation Infrastructure Finance. "TIFIA Approved Projects." U.S. Department of Transportation. Accessed 8 September 2008. Available online at <http://tifia.fhwa.dot.gov/projects/approved.cfm>.

<sup>14</sup> Federal Highway Administration. "Private Activity Bonds – Public-Private Partnerships - FHWA." Accessed 11 August 2008. Available online at [http://www.fhwa.dot.gov/ppp/private\\_activity\\_bonds.htm](http://www.fhwa.dot.gov/ppp/private_activity_bonds.htm).

Finally, about one-third of all U.S. PPPs are for buildings, mostly prisons, and tend to have a relatively small contract value. The few high-value PPPs for buildings are for a series of buildings or for a new sports stadium or arena.<sup>15</sup>

## **New York's Experience with PPPs**

New York already has some limited but important and relevant experience with PPPs. Three projects are among the largest in the United States. The largest New York PPP is the \$1.8 billion contract to build 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 was 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.

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 yearly 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 New York State. These are mostly contracts to design, build, finance and operate waste-to-energy, materials recovery and composting plants in different counties throughout the State. Many of these projects are under \$100 million, but the larger ones include 20-year, \$900 million partnerships for waste-to-energy plants in Babylon and Hempstead.

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<sup>15</sup> The two new baseball stadiums in New York City do not conform to the model of a PPP applied here. The old stadiums were built and owned by the City of New York, and they were leased to the teams in exchange for rental payments. The City is responsible for maintenance, but credit is given to the teams for expenditures they make for maintenance. In contrast, the new stadiums will not be owned by the City; they are being built and will be maintained and controlled by the teams. Financing for the facilities is provided largely through tax exempt bonds issued by the City's Industrial Development Authority with debt service covered through payments in lieu of taxes from the teams. The City leases the land on which the stadiums are being built to the IDA, which then leases it to the teams, and the City is making investments in related infrastructure such as roads and parking lots to promote access to the stadiums.

These projects demonstrate that there is precedent for PPPs for a variety of assets across New York State. Interestingly, these 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. Looking ahead, the State should evaluate the variety of local experiences in developing a statewide framework for pursuing or encouraging PPPs.

It should be noted that the PPP experience in New York has evolved despite many statutory limitations. State and local procurement is restricted by the “Wicks Law,” which requires multiple subcontractors for most construction projects, and other provisions that prohibit design-build and PPP arrangements for a wide range of projects. The solid waste facilities were developed under a specific law allowing localities to contract for these facilities and/or services with PPP-like terms. Expansion of PPPs would require significant changes in State law relating to public procurement procedures.

## **GUIDELINES FOR APPLICATION OF PPPs**

The wide range of experience with PPPs offers some guidance from which New York’s public officials can benefit in deciding whether and how to apply the strategy to local infrastructure. The CBC staff has reviewed a variety of studies and other evidence relating to PPP ventures with particular emphasis on the limited experience in the United States and the more extensive experience in the United Kingdom, where project outcomes have been studied carefully. This “real world” evidence— as opposed to more ideologically based assertions— provides the basis for three important guidelines that should inform the application of PPPs.

### **Pursue PPPs For The Right Objectives: Lower Lifecycle Costs and Better Maintenance**

In the United States generally and in New York specifically, PPPs should be pursued for two related purposes: lowering the lifecycle costs of an asset and achieving better standards of maintenance than under direct public management. The ability of PPPs to lower lifecycle costs is rooted in their competitive award process and their incentives for encouraging designs that reduce operating and maintenance costs; delivering major construction work in a more timely fashion; and keeping facilities in a state of good repair throughout their lifecycles. The potential for higher maintenance standards is rooted in the tendency for assets to be neglected in the later stage of their life under direct public management.

The neglected condition of American infrastructure has been well documented. The evidence is not just in tragic events such as the 2007 bridge collapse in Minnesota, but also in multiple expert studies. The American Society of Civil Engineers (ASCE) estimates that \$1.6 trillion in investment is necessary in the next five years to bring the nation’s infrastructure to a good condition. ASCE surveyed 15 categories of infrastructure, with nine categories— including roads, schools and energy— receiving a “D” grade. The highest grade awarded was a “C+” for solid waste facilities, and the worst grade, “D-,” went to drinking water systems, navigable waterways and wastewater systems.<sup>16</sup>

National studies focused on transportation and water systems point to the same troubling conditions. For water infrastructure, a 2002 report by the Congressional Budget Office estimated between \$26.9 and \$42.7 billion in 2001 dollars is necessary for water and wastewater infrastructure systems annually for the period from 2000-2019.<sup>17</sup> In addition, ASCE reports that the number of unsafe dams is increasing at a rate faster than the number being repaired, with \$10.1 billion needed over 12 years to address all critical dams.<sup>18</sup>

For transportation infrastructure, the National Surface Transportation Commission estimated in its December 2007 report that at least \$220 billion- about \$135 billion more than currently invested— is

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<sup>16</sup> American Society of Civil Engineers. “Infrastructure Report Card 2005.” Accessed 15 July 2007, updated 2008, available online at <http://www.asce.org/reportcard/2005/index.cfm>.

<sup>17</sup> Congressional Budget Office. “Future Investment in Drinking Water and Wastewater Systems.” November 2002. Available online at <http://www.cbo.gov/ftpdocs/39xx/doc3983/11-18-WaterSystems.pdf>

<sup>18</sup> American Society of Civil Engineers. “Infrastructure Report Card 2005: Dams.” Accessed 15 July 2007, updated 2008, available online at <http://www.asce.org/reportcard/2005/page.cfm?id=23>

needed annually through 2035 to maintain and improve all modes of surface transportation: highways, mass transit, freight and passenger rail.<sup>19</sup> Currently, 27 percent of the nation's bridges are deficient or obsolete; 15 percent of road pavements are rated "not acceptable;" 51 percent of urban rail stations are substandard; and the average condition of rail vehicles and urban bus fleets is no greater than "fair."<sup>20</sup> Increased investments are needed to address the existing deterioration and perform improvements necessitated by increased population and use of the systems.

Surprisingly little evidence exists that PPPs successfully address the problems of high cost and poor maintenance. PPPs have not been carefully evaluated based on these criteria, but the limited evidence from a series of evaluations in the United Kingdom and Australia indicate that they perform as expected in promoting these goals.

Studies conducted in the United Kingdom have systematically evaluated PPPs. Three studies address the issue of delivering projects on time and on budget. A 1999 study by the U.K. National Audit Office (NAO) examined the experience with 66 projects completed using traditional government procurement practices; this provided a baseline for comparison with 37 projects using PFI contracts examined in a 2003 NAO study.<sup>21</sup> Another 2003 study by Her Majesty's Treasury (HMT) examined the experience with 61 larger PFI projects and 35 smaller PFI projects with a contract value less than £20 million.<sup>22</sup>

The results confirm favorable performance under PPPs. (See Figure 1.) While 70 percent of the conventionally procured projects were delivered late, only 24 percent of PFI projects surveyed in the NAO study were late by comparison. This finding was supported by the HMT study, which reported that only 12 percent of large projects and 24 percent of smaller projects were delivered late.

The studies also considered whether the projects were delivered on or over budget. Because the private partner bears the risk for any over budget costs under the PPP model, data were not always available; therefore, the results are relevant only to the extent that they support or contradict the broader benefits of PPPs rather than direct savings to government. Nonetheless, the data show that PPPs are effective. While 73 percent of the conventionally procured projects were over budget, only 22 percent of PFIs in the 2003 NAO study and 17 percent of smaller PFIs in the 2003 HMT study were reported to exceed budget. (Data were not available for the larger projects in this study.)

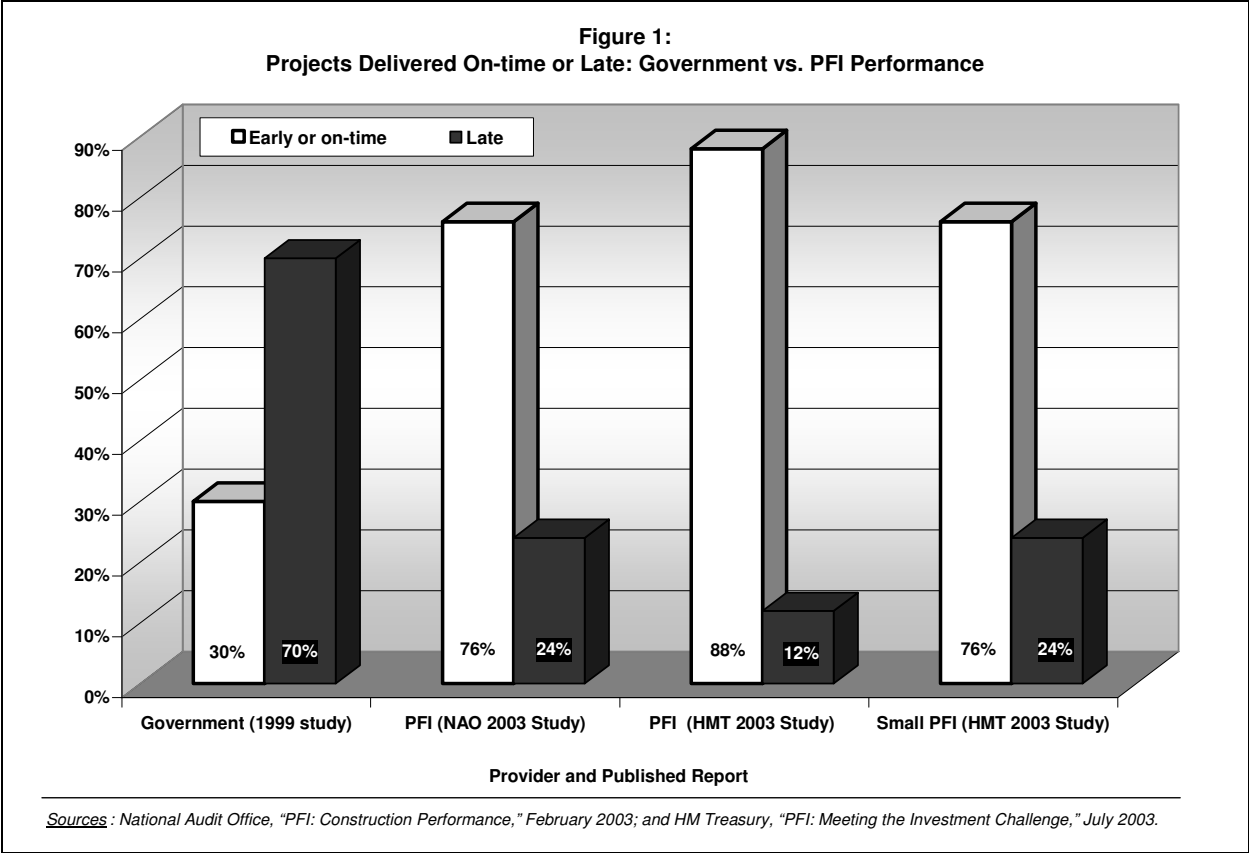
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<sup>19</sup> Report of the National Surface Transportation Policy and Revenue Study Commission. December 2007. Volume II, Chapter Four, pp. 4-25.

<sup>20</sup> Report of the National Surface Transportation Policy and Revenue Study Commission. December 2007. Volume II, Chapter Four, pp. 3-13.

<sup>21</sup> U.K. National Audit Office. "PFI: Construction Performance." HC 371 Session 2002-2003. February 2003. Available online at [http://www.nao.org.uk/publications/nao\\_reports/02-03/0203371.pdf](http://www.nao.org.uk/publications/nao_reports/02-03/0203371.pdf).

<sup>22</sup> See HM Treasury, "PFI: Meeting the Investment Challenge." July 2003. Available online at [http://www.hm-treasury.gov.uk/media/F/7/PFI\\_604a.pdf](http://www.hm-treasury.gov.uk/media/F/7/PFI_604a.pdf).



Evidence from Australia substantiates these findings. A 2007 report commissioned by Infrastructure Partnerships Australia, a group with public and private sector participation that aims to promote best practices, examined 33 traditional projects and 21 PPP projects. The report demonstrated superior performance by PPPs in time and cost, with the benefits of PPPs increasing with the size and complexity of projects. The PPP projects examined were worth AU\$4.9 billion, with net cost overruns of AU\$57.6 million, or 1.2 percent; on the other hand, traditional projects, with a cost of AU\$4.5 billion, suffered from net overruns of AU\$673 million, close to 15 percent. Furthermore, PPPs were completed 3 percent ahead of schedule on average, compared to 24 percent late for traditional projects. The performance differential between traditional projects and PPPs was statistically significant in both cases.<sup>23</sup>

Part of the gains of PPPs over traditionally-procured projects results from the relatively minor contract changes during the construction period. A 2008 NAO study examined the nature of contract changes in 390 operational PFI projects in the U.K., and found that the vast majority (82 percent) of change requests had associated costs of less than £5,000.<sup>24</sup> The cost of all contract

<sup>23</sup> The Allen Consulting Group. *Performance of PPPs and Traditional Procurement in Australia*. Report to Infrastructure Partnerships Australia. 30 November 2007.

<sup>24</sup> Small projects with a value under £20 million and IT projects were excluded. Very large projects, such as the London Underground, were also excluded. See National Audit Office, "Making Changes in Operational PFI Projects." HC 205 Session 2007-2008. 17 January 2008.

changes in 2006 totaled about £180 million, 3.6 percent of the £5 billion in availability charges that year.<sup>25</sup>

It should be noted that the added cost of the changes is based on the total life cycle costs associated with the changes. For example, when a PPP for court building in the village of Worle required conversion of two rooms and some other renovations, the cost was calculated to include the initial cost of the work (£96,000), lifecycle costs (£56,000) and other fees (£48,000) and miscellaneous costs (£18,000), for a total of £218,000. In contrast, a similar conversion of a courthouse in Bridgewater via conventional procurement cost £117,000 – including initial construction cost of £100,560 and a contingency sum of £6,000. No funds were included for maintenance of facilities that should occur or for future replacement and repair that may be necessary; that is, no estimates for whole-life costs were provided.<sup>26</sup>

The complexity of calculating these lifecycle costs (and associated disputes between the partners) was sometimes a source of delay in implementing the changes. These complexities also meant that small changes could cause longer delays than would occur for similar changes in conventional procurement practices, although urgent changes would be processed without delay. Interestingly, many of the changes requested were considered during the negotiation of the deal, but were left out due to affordability concerns; however, undertaking work as a contract change, rather than at the outset of the project, typically made the work more costly. Larger changes, however, were generally in line (both time and cost wise) with conventionally procured work.<sup>27</sup>

The pattern of fewer contract changes for PFI projects can be attributed to better scoping and planning. A study commissioned by HMT compared planned against actual performance with respect to project procurement and delivery for 50 major public projects, both PFI and non-PFI. It found that PFI projects had less underestimation of project cost and delivery time and/or overestimation of benefits than for traditional projects. The key reasons were better project scoping, identification and management of risk, and due diligence performed during the procurement stage; in other words, PFI projects forced government to be more specific about its goals and committed to its requirements than was common for traditional projects.<sup>28</sup> This was echoed by the 2003 NAO report, which acknowledged that specifications for PFI projects are worked out in greater detail in advance, with cost and time targets set later in the procurement process than under traditional methods.<sup>29</sup> At the time, this process was quite lengthy: an average of 22 months.<sup>30</sup>

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<sup>25</sup> National Audit Office. “Making Changes in Operational PFI Projects.” HC 205 Session 2007-2008. 17 January 2008. Available online at [http://www.nao.org.uk/publications/nao\\_reports/07-08/0708205.pdf](http://www.nao.org.uk/publications/nao_reports/07-08/0708205.pdf).

<sup>26</sup> National Audit Office. “Making Changes in Operational PFI Projects.” HC 205 Session 2007-2008. 17 January 2008. Page 14.

<sup>27</sup> National Audit Office. “Making Changes in Operational PFI Projects.” HC 205 Session 2007-2008. 17 January 2008.

<sup>28</sup> Mott MacDonald. “Review of large Public Procurement in the UK.” Prepared for HM Treasury. July 2002.

<sup>29</sup> National Audit Office. “PFI: Construction Performance.” HC 371 Session 2002-2003. February 2003. Available online at [http://www.nao.org.uk/publications/nao\\_reports/02-03/0203371.pdf](http://www.nao.org.uk/publications/nao_reports/02-03/0203371.pdf).

<sup>30</sup> HM Treasury. “PFI: Meeting the Investment Challenge.” July 2003. Available online at [http://www.hm-treasury.gov.uk/media/F/7/PFI\\_604a.pdf](http://www.hm-treasury.gov.uk/media/F/7/PFI_604a.pdf).



Less extensive evidence is available on the performance of PPPs in providing better maintenance standards. Because most PPPs are relatively new and because the projects have long lifecycles, no studies have been able to determine the long-term impacts on lifecycle costs. Instead, the limited available evidence offers some insight into adequacy of maintenance in the earlier stage of project operations. Specifically, a study in 2006 by HMT and Partnerships UK, a nonprofit organization, surveyed the contract managers of a sample of 105 projects, most of which were in their first five years of operation. The findings were favorable: 66 percent of projects surveyed were performing to a good or very good standard and another 30 percent were performing satisfactorily, for a total of 96 percent. 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. Furthermore, performance improved after the early years; projects operational for a greater duration of time received higher marks. In addition, among projects reporting problems, 82 percent also reported that the problem had been resolved within the time permitted in the contract.<sup>31</sup>

Less systematic data from a few of the larger PPPs in the United States indicates they too have good records in asset maintenance. Private operators of JFK Terminal Four (T4), NYC street furniture, and the Indiana Toll Road (ITR) have all implemented technological innovations and are maintaining assets at a level as good as or better than previous owners. The ITR contract agreement specifies operating and maintenance standards affecting everything from temporary pothole repairs and standards for pavement smoothness and strength to landscaping and litter collection to preventative maintenance on bridge structures and emergency roadside repairs.<sup>32</sup> It also lays out specific requirements for capital improvements, including the installation of electronic tolling, to total \$4 billion over the life of the agreement, as well as conditions under which the consortium must initiate expansions.<sup>33</sup>

Cemusa's street furniture has been constructed from impact-resistant, vandalism-proof materials and must contractually be maintained at a high level, including the performance of preventive maintenance.<sup>34</sup> JFKIAT's design, amenities, maintenance and technological innovations, such as common use ticketing counters, have earned T4 high marks for comfort, cleanliness and overall terminal performance from passengers surveyed by JD Powers & Associates.<sup>35</sup>

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<sup>31</sup> HM Treasury. "PFI: Strengthening long-term partnerships." March 2006. Available online at [http://www.hm-treasury.gov.uk/media/7/F/bud06\\_pfi\\_618.pdf](http://www.hm-treasury.gov.uk/media/7/F/bud06_pfi_618.pdf).

<sup>32</sup> Indiana Finance Authority. "Concession and Lease Agreement for the Indiana Toll Road. Volume I of III: Maintenance Manual." Available online at [http://www.in.gov/ifa/files/TRvolume\\_I.pdf](http://www.in.gov/ifa/files/TRvolume_I.pdf). See also other operating and maintenance standards manuals available online at <http://www.in.gov/ifa/2474.htm>.

<sup>33</sup> Indiana Toll Road Concession Company. "ITRCC announces \$250 million road expansion." Press Release, September 28, 2006. Available online at [https://www.getizoom.com/aboutITR/PressRel\\_PDF/092806250\\_Expansion.pdf](https://www.getizoom.com/aboutITR/PressRel_PDF/092806250_Expansion.pdf).

<sup>34</sup> The City of New York. "Franchise Agreement between the City of New York and Cemusa, Inc. Coordinate Street Furniture Franchise."

<sup>35</sup> JFKIAT. "Terminal 4 By the Numbers." Webpage accessed 25 September 2007.

## **PPPs Need Not Be Limited To Projects That Generate User Fees**

In terms of their revenue-generating abilities, infrastructure projects can be divided into three types. The first are those that are not expected to generate any revenue from the users. Examples are public schools or military barracks. The second type may generate some user revenue, but it is not sufficient to cover all the costs and ongoing public subsidies are anticipated. Most mass transit operations are an example of this, with fares often more than matched by subsidies. The third are those that are expected to be self-financing due to adequate user charges. Toll roads and bridges are the most common example, and many water systems also fall in this category.

In the United States, there is a tendency to think that PPPs can work only with projects that fall in the third, self-financing category. These projects are attractive because they can often be segregated from a larger network, and the revenue stream can be collected and managed by a distinct operating entity. However, they are not the only types of projects suitable for a PPP. Subsidized projects can be built and maintained through a PPP using the mechanism of shadow tolls or availability payments. These models are used extensively in the United Kingdom to construct or renovate and maintain roads and buildings.

Florida is also pursuing the availability payment model for several of its projects, including the construction of the Miami Port Tunnel and enhancements, including the construction of express tolled lanes, on the I-595 Corridor in Broward County. The Florida Department of Transportation (FDOT) will set and collect the tolls, and will make availability payments to the private operator based on the lanes being open to traffic and meeting the operating and maintenance standards to be specified in the contract.<sup>36</sup>

In New York, the most promising opportunities for PPPs are likely to be facilities that are not associated with large user fees that make them self-financing; rather, attention should be given to opportunities to achieve better long-term maintenance of fully or heavily subsidized facilities using arrangements that involve availability payments.

## **PPPs Can Work For Big And Small Projects**

PPPs have large transaction costs related to their design and negotiation, and they require an ongoing expense for the monitoring of performance and enforcement of standards. These expenses suggest that public sector savings are greatest for large scale projects, where there is a large potential for efficiencies by the private partner. In contrast, smaller projects may not generate enough savings to offset their individual transaction and monitoring costs; however, other models have been developed to accommodate smaller projects.

PPPs have been used for many large scale projects. 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; these 107 projects account for 60 percent of the worldwide value of all

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<sup>36</sup> TollRoadNews. "FL/I-595 gets competing availability concession proposals for \$1.5b upgrade REVISED." 8 September 2008. Available online at <http://www.tollroadsnews.com/node/3734>.

PPPs.<sup>37</sup> These include projects from all sectors, such as the \$2.5 billion contract for Eleftherios Venizelos Airport in Greece, the \$5 billion contract for Allenby-Connaught Army Base in Great Britain, the \$3.3 billion contract for the Gautrain Express Rail Line in South Africa, the \$5.4 billion contract for Madrid Calle 30 (M-30) in Spain, the \$1.75 billion contract for the Taipei Port, and \$1 billion Project Omega Wastewater Treatment in Northern Ireland.

Only ten percent of projects have values less than \$30 million. For smaller projects, studies of the PFI in the United Kingdom found that the relatively high transaction costs reduced the value of the approach. The procurement period was just as lengthy as that of larger projects, averaging two and a half years, since the same level of legal and technical documentation was required. Furthermore, the cost of doing so for the private partner often was out of proportion to the size of the project, driving up the relative cost. As a result, PFI is no longer considered as an option for projects with a capital value less than £20 million.<sup>38</sup>

To accommodate these smaller projects, the British have developed a model, called “strategic partnerships,” that reduces the transactional costs for smaller projects by batching similar projects together. 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.

Using 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. Some limited early evidence suggests improved expertise, reduced transaction costs and procurement times, and efficiencies, such as economies of scale and improved supply chain management, throughout the life of the partnership.<sup>39</sup>

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<sup>37</sup> CBC analysis of data from International Major Projects Survey, October 2007 edition, published by *Public Works Financing*. CBC analysis of data excludes contracts characterized as DBs, asset sales, joint development agreements and management contracts. For most projects, values recorded in the database represent project capital costs as estimated in the year the contracts were signed, except for select entries updated by CBC.

<sup>38</sup> HM Treasury, “PFI: Meeting the Investment Challenge.” July 2003. Available online at [http://www.hm-treasury.gov.uk/media/F/7/PFI\\_604a.pdf](http://www.hm-treasury.gov.uk/media/F/7/PFI_604a.pdf).

<sup>39</sup> HM Treasury. “PFI: Strengthening long-term partnerships.” March 2006. Available online at [http://www.hm-treasury.gov.uk/media/7/F/bud06\\_pfi\\_618.pdf](http://www.hm-treasury.gov.uk/media/7/F/bud06_pfi_618.pdf).

## POTENTIAL APPLICATIONS IN NEW YORK

PPPs have benefits in their potential to achieve reduced lifecycle costs and better maintenance standards for physical assets. In considering opportunities for effective PPPs, New York's leaders should seek to capitalize on these benefits to address weaknesses in public sector infrastructure management. The State and City should launch a few carefully selected pilot projects, which give high priority to assets that are currently in poor condition and have a history of poor maintenance. The efforts should be treated as experiments with the results carefully monitored and evaluated. Only if the potential benefits are realized should the efforts be expanded to a broader scale.

Based on the guidelines established in the previous section, the CBC suggests exploring PPPs in five areas: highway bridges, school buildings and parks in New York City, higher educational facilities, and subway stations. They are discussed below.

### Highway Bridges

The network of highways in New York includes over 17,000 bridges. Most are not massive waterway crossings, but are smaller bridges that are nonetheless vital in the state's transportation system. These bridges are all ultimately the responsibility of the State Department of Transportation (NYSDOT), but counties, other local governments and the City of New York operate and maintain many that are not part of the highway system. These entities have tended to neglect many bridges through poor maintenance practices.

NYSDOT assesses biennially the condition of all the highway bridges. They summarize the results according to a standardized scale of 1 to 7; a rating under 5.0 is deficient, meaning the bridge exhibits deterioration and requires maintenance or rehabilitation to restore to a fully functional state.<sup>40</sup> Fully 38 percent of the State's bridges— about 6,650 bridges— do not meet this standard and are classified as functionally obsolete or structurally deficient.<sup>41</sup> Functionally obsolete bridges cannot meet standards for the volume of traffic they manage; they may have narrow lanes or no shoulders, for example.<sup>42</sup> New York is second in the country in the number of functionally obsolete bridges, with over 4,500.<sup>43</sup> Structurally deficient bridges require significant repair or rehabilitation or must have weight limits to remain in service; over 2,100 bridges, 12 percent, are structurally deficient.<sup>44</sup>

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<sup>40</sup> New York State Department of Transportation. "New York State Highway Bridge Data." Accessed 22 August 2008. Available online at <https://www.nysdot.gov/portal/page/portal/main/bridgedata>.

<sup>41</sup> Note: Bridges that are both functionally obsolete and structurally deficient are categorized as structurally deficient only.

<sup>42</sup> New York State Department of Transportation. "New York State Highway Bridge Data." Accessed 22 August 2008. Available online at <https://www.nysdot.gov/portal/page/portal/main/bridgedata>.

<sup>43</sup> Bureau of Transportation Statistics. "Condition of U.S. Highway Bridges by State, 2007." As of February 17, 2008. Accessed 22 August 2008. Available online at [http://www.bts.gov/current\\_topics/2008\\_04\\_24\\_bridge\\_data/html/bridges\\_by\\_state.html](http://www.bts.gov/current_topics/2008_04_24_bridge_data/html/bridges_by_state.html).

<sup>44</sup> New York State Department of Transportation. "New York State Highway Bridge Data." Accessed 2 March 2008. Available online at <https://www.nysdot.gov/portal/page/portal/main/bridgedata>.

The problem is expected to get worse without policy changes. NYSDOT reports that another 1,450 bridges will become deficient (rated less than 5.0) in the next five years and an additional 1,500 will become deficient in the next six to ten years if proper investments are not made. NYSDOT estimated that almost \$31 billion will be needed over the next 20 years to achieve and maintain a state of good repair for state and local highway bridges.<sup>45</sup>

Some of the poorly maintained bridges are in New York City. The City Department of Transportation annually reviews the condition of its 790 bridges; they are rated as “very good,” “good,” “fair” or “poor.” The number of bridges rated “very good” and “good” has increased in the past ten years, while the number of “fair” and “poor” bridges has decreased; however, the majority of bridges, 58 percent in 2007, continue to be rated fair. Three bridges are in poor condition: the Belt Parkway Bridge over the Mill Basin; a pedestrian bridge over the FDR drive; and, most notably, the Brooklyn Bridge.<sup>46</sup>

The City DOT has plans to address the deficiencies in its bridges. The Mayor declared achieving a state of good repair on all roads and bridges by 2030 a key priority in the PLANYC agenda; this would require an estimated investment of \$1.7 billion.<sup>47</sup> Plans to generate some of the funding necessary for this investment via congestion pricing failed to gain support in 2008. The DOT has made eliminating “poor” bridges and engaging in preventive bridge maintenance a key goal of its strategic plan.<sup>48</sup> In its Ten-Year Capital Strategy, the City allocates \$5.8 billion to bring its bridges to a state of good repair and maintain them during the 2008-2017 period.<sup>49</sup> While the City anticipates cutting its capital program as part of its adjustment to revenue declines in fiscal year 2009, substantial funding for bridge repair and maintenance is still likely to be available.

While most bridges throughout the state are small and un-tolled, New York State also has 25 major toll bridges.<sup>50</sup> All of these are waterway crossings, with 11 in or connecting to New York City and the others located over the Hudson River, the Niagara River and other bodies of water. None of these bridges are operated and maintained by State, City or country governments; instead, all are owned by public authorities, such as the Metropolitan Transportation Authority, Port Authority of New York and New Jersey, the New York State Thruway Authority, and the New York State Bridge Authority.

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<sup>45</sup> New York State Department of Transportation. “Multimodal Investment: Needs and Goals for the Future.” 2008. Available online at <https://www.nysdot.gov/portal/page/portal/programs/repository/multimodal%20investment%20needs.pdf>.

<sup>46</sup> New York City Department of Transportation. *2007 Annual Bridge and Tunnel Condition Report*. June 2008. Available online at <http://www.nyc.gov/html/dot/html/bridges/annualbridgerpt07.shtml>.

<sup>47</sup> PLANYC. “A Greener, Greater New York.” City of New York. 22 April 2006. Available online at <http://www.nyc.gov/html/planyc2030/html/downloads/download.shtml>.

<sup>48</sup> New York City Department of Transportation. *Sustainable Streets: Strategic Plan for the New York City Department of Transportation, 2008 and Beyond*.

<sup>49</sup> City of New York. *Ten-Year Capital Strategy, Fiscal Years 2008-2017*. April 2007, pp. 20-21.

<sup>50</sup> Does not include 7 toll bridges connecting to Ontario with miles outside the U.S. See Table T-1, Parts 1 and 2, dataset available online only from “Toll Facilities in the U.S.” Federal Highway Administration, Office of Highway Policy Information, December 2002. FHWA-PL-07-029. Available at <http://www.fhwa.dot.gov/ohim/tollpage.htm>.

These bridges have an initial appeal for PPPs because they have significant revenue streams, and private partners may be able to use enhanced technology for toll collection and to innovate in pricing policies to optimize revenues and traffic flows. In addition, private competition could bring about more efficient maintenance practices; however, to the extent the operating authorities have a better record on these practices than do some general local governments, pursuing PPPs for tolled bridges may not be as high a priority as developing PPPs for poorly maintained un-tolled bridges. Public authorities are able to issue tax-exempt debt backed by tolls, which provide a dedicated revenue stream for financing capital improvements; as a result, many of these bridges are in better condition than those under the control of the State and local governments.

The Tappan Zee Bridge has sometimes been singled out as a candidate for a PPP. The bridge spans the Hudson River, connecting Rockland and Westchester counties, and is operated by the New York State Thruway Authority. Built in 1955, the bridge is heavily trafficked, has outlived its useful life and continues to deteriorate despite substantial investment by the Thruway Authority; at its last inspection, in November 2006, it earned a state rating less than 3.0.<sup>51</sup> To address this deficiency, plans have been announced to replace the Tappan Zee with a new bridge that has the capacity for bus rapid transit and rail service. This proposal has been priced at \$16 billion including \$6.4 billion for the bridge itself, \$2.9 billion for highway improvements related to the bus rapid transit routes and \$6.7 billion for the rail transit line.<sup>52</sup>

Private companies have proposed a PPP for construction of the new bridge, and it is the study of financial consultants retained by the New York State Department of Transportation and the Thruway Authority. Any next steps for pursuing a PPP for the Tappan Zee should be informed by this study, although designing a PPP for a new bridge that meets the specs announced by the State may be challenging. A new bridge with bus and rail mass transit options will address critical transportation needs in the area, but operating and maintaining a bridge that provides three separate modes may present challenges in designing a PPP. The jurisdictional overlap between the private operator and Metro-North, which would presumably provide the rail service, generates a tension caused by separating integral responsibilities. The difficulties of operating a service and maintaining infrastructure when right of way is not exclusively in the authority the operator have been a key cause of failure for some projects. These difficulties are described in detail in the last section of this report.

PPPs are also attractive as a means to promote improved conditions and maintenance practices for New York's un-tolled highway bridges. Funding to the private partner could be in the form of an availability payment or a "shadow toll," a payment to the private operator based on use of the bridge and adjusted for the performance of the private partner. To achieve a scale sufficient to justify designing and monitoring a PPP, it likely would be necessary to put together a group of bridges with one private partner. These bridges might be some drawn from New York City with the City DOT as the public partner, and another set from several counties in other parts of the state forming a strategic alliance with the NYSDOT providing technical support. Monitoring should include not

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<sup>51</sup> New York State Highway Bridge Data for Rockland County. April 2008. Available online at <https://www.nysdot.gov/portal/page/portal/main/bridgedata/repository2/RocklandBridgeData.html>.

<sup>52</sup> New York State Department of Transportation. "Proposal for Tappan Zee Bridge & I-287 Corridor Unveiled," Press Release, September 26, 2008.

only the performance of the private partner in the PPP, but ongoing comparison with use and conditions and cost of maintenance and repair for similar bridges operated directly by the City and by counties or the NYSDOT.

## School Buildings in New York City

The New York City Department of Education (DoE) is responsible for about 1,200 facilities that serve more than 1 million students. These buildings are often crowded and poorly maintained, and these conditions have persisted for decades. While some progress has been made in recent years, the conditions suggest new practices, such as a PPP, are worth trying.

As shown in Table 4, school buildings are not in good condition. Since fiscal year 2001, the DoE has released data on assessments of its facilities, rated from “poor” to “fair” to “good.” Schools in fair condition or worse generally are in need of repairs in one or more features such as windows, heating and ventilation, or the roof. In fiscal year 2007, nearly two-thirds of the schools were in just fair condition and only 3 percent in good condition; this is somewhat better than the 78 percent in fair condition in fiscal year 2001, but still a weak record.

**Table 4**  
**Functional Distribution of New York City School Building Conditions, Fiscal Years 2001-2007**

<i>Condition</i>	<b>FY2001</b>	<b>FY2002</b>	<b>FY2003</b>	<b>FY2004</b>	<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>
Good	1	1	3	NA	2	3	3
Fair to good	15	21	30	NA	16	28	32
Fair	78	77	66	NA	82	69	65
Fair to poor	7	2	76	NA	0	15	0
Poor	0	0	0	NA	0	0	0
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>NA</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

*Source: New York City Mayor's Office of Operations, Mayor's Management Report, Fiscal Years 2002-2008.*

The troublesome condition of the schools is related to a long history of weak maintenance. In a 1998 study, the City Comptroller found that the DoE (then Board of Education) was spending on average 86 cents per square foot for maintenance, about 10 percent of what was estimated to be required to keep the facilities in a state of good repair. At that time, the backlog in needed repair work was estimated to exceed \$10 billion.<sup>53</sup> This problem persists. In fiscal year 2007 average maintenance expenses were \$1.42 per square foot, and at the end of that fiscal year the DoE had a backlog of 14,626 work orders to be processed.<sup>54</sup>

<sup>53</sup> City of New York Office of the Comptroller. *Dilemma in the Millenium: Capital Needs of the World's Capital City*. Volume II. August 1998

<sup>54</sup> City of New York. Mayor's Office of Operations. *Mayor's Management Report, Fiscal Year 2007, Supplementary Indicator Tables*. September 2007

The DoE is not well organized to address lifecycle planning and maintenance. A separate entity, School Construction Authority (SCA), has been responsible for design and building of large projects since 1988, while the DoE itself handles regular maintenance. This separates responsibility for design from the maintenance, minimizing incentives for concern with lifecycle costs, particularly with the SCA being judged primarily on its ability to deliver new schools on time.

The DoE needs not only to repair its existing facilities, but to build new ones to accommodate students in currently crowded buildings. About 38 percent of the high schools, 27 percent of the elementary schools and 13 percent of middle schools have enrollments that exceed capacity, and these schools account for about 59 percent of the high school students and 20 percent of all other students.<sup>55</sup> Although the SCA has been building schools with new capacity of several thousand students per year, a large number of facilities remain crowded.

The persistent needs of the school system offer a compelling reason to consider a different approach to school construction and maintenance. The DoE created the Education Construction Fund (ECF) in 1967 as an innovative way to combine school design and construction with private residential and commercial development. Private developers build a school as part of a larger project, often in exchange for enhanced development rights and tax-exempt financing through the ECF. Fifteen projects were built, creating 18,000 seats, and the Bloomberg administration recently revived the organization and announced a project in Manhattan to create 1,630 seats, as well as residential and commercial space on existing school sites.<sup>56</sup> All the projects are “turn-key” with the DoE responsible for maintenance once the school facility is completed; thus, the ECF projects do not capture the potential life-cycle cost efficiencies of a complete PPP.

Funding increases in recent years, particularly from the State, have provided the DoE with significant resources. The City’s ten-year capital program allocates to the DoE \$28.2 billion for fiscal years 2008-2017, with \$21.6 billion to achieve and maintain a state of good repair and \$6.7 billion for system expansion.<sup>57</sup> A part of these resources could be made available to support an experiment with a PPP.

PPPs have been employed successfully for school construction in the United Kingdom, Canada, and Germany. In particular, the U.K. model of strategic partnerships for smaller-sized projects would work well. Sufficient scale can be achieved by bundling several school projects, including renovations and new school construction, and working together with one private partner. Facilities can be constructed under DBM agreements under which DoE would pay the private developer an availability payment for use of the asset that covers the cost of capital and maintenance. These agreements would span the life cycle of the asset and impose a life-cycle approach to planning that is currently missing from management of school facilities. For new school construction in particular,

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<sup>55</sup> City of New York. Mayor’s Office of Operations. *Mayor’s Management Report, Fiscal Year 2007, Supplementary Indicator Tables*. September 2007

<sup>56</sup> New York City Department of Education. “Chancellor Klein Unveils Design of Two New Midtown Schools To Be Built With Private Investment.” Press Release. October 23, 2008.

<sup>57</sup> Planned as of April 2007. See New York City Office of Management and Budget. *Ten-Year Capital Strategy, Fiscal Year 2008-2017*.



employing a life-cycle perspective can move cost focus beyond project delivery to the oft-neglected costs of maintaining the school and generate long-term savings.

Perhaps the greatest uncertainty about applying the PPP approach to public school buildings is the capacity of the DoE to monitor the project effectively. The agency does not have a good record of establishing and enforcing maintenance standards internally, yet this would be a key element of any PPP. A new unit within the DoE might be needed to design and monitor the PPP, and it would have to work closely with the principals managing the schools involved. However, there likely would be spillover benefits for internal operations from the standards and practices developed and for the SCA from the design elements incorporated in new PPP projects.

## **New York City Parks**

The New York City Department of Parks and Recreation (DPR) owns over 29,000 acres of parkland that house over a thousand recreational facilities including playgrounds, athletic fields, swimming pools, tennis courts, and comfort stations. In the past decade, the DPR has made notable progress in restoring these facilities from a condition of neglect dating from the 1970s and early 1990s fiscal crises to a much improved condition that encourages use by residents and visitors.<sup>58</sup> Much of the progress is related to the development and expansion of a form of public-private partnership that differs from the PPPs discussed in this report. These partnerships involve nonprofit organizations, and these organizations provide philanthropic resources to the DPR facilities rather than depend exclusively on payments from the public sector or on user fees. The leading example, the Central Park Conservancy, has raised hundreds of millions of dollars in donations for capital improvements in that park as well as for its ongoing maintenance. Similar entities have been established for numerous other parks, although they have typically been less successful in generating philanthropic support.

Despite its progress, the DPR still faces three challenges that PPPs might help address. First, many neighborhood parks, relatively often those in poorer neighborhoods, are still not in satisfactory condition. DPR has a relatively sophisticated system for monitoring the condition of its parks that includes visual inspections of park conditions one to three times a year. Data collected on 17 different indicators assessing custodial, structural, and horticultural maintenance are aggregated in the *Mayor's Management Report*. The data show that the condition of parks by almost all measures has improved since the early 1990s; however, citywide ratings have slipped slightly in recent years. The percentage of parks rated as not in an acceptable condition in fiscal year 2007 was 16 percent and the percentage of parks not rated as acceptably clean was 9 percent.<sup>59</sup>

Independent civic and community groups issue their own assessments of parks. One group, New Yorkers for Parks, conducts inspections of parks and issues a yearly report card on their condition. The most recent report card, issued in 2007, highlighted geographic disparities in park conditions

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<sup>58</sup> The progress and remaining challenges are described in Citizens Budget Commission's Report: *Making the Most of Our Parks*, June 2007, available online at <http://www.cbcny.org/parks%20white%20paper%20final.pdf>.

<sup>59</sup> New York City Mayor's Office of Operations. *Mayor's Preliminary Management Report, Fiscal Year 2008*.

and found that poor conditions tend to persist in the same parks.<sup>60</sup> An analysis by the CBC confirmed a statistically significant correlation between overall park condition and median household income – that is, parks tend to be in poorer condition in poorer neighborhoods.<sup>61</sup>

Additional evidence of a continuing backlog in repairs appears in the Asset Management Information System (AIMS), a report that quantifies the repair work needed to bring assets to a state of good repair.<sup>62</sup> Funding requirements for the Department of Parks and Recreation (DPR) have grown steadily over the past ten years, from \$190 million in fiscal year 1998 to \$433 million in fiscal year 2008. A significant portion of these needs are bulkhead repairs on waterfront properties that may not correspond to the parks in poor condition, but neglect of those local parks facilities is also a part of the picture.<sup>63</sup>

A second challenge relates to planned enhancements of existing parkland. Specifically, the PLANYC initiative calls for significant improvements to eight large parks, totaling about 500 acres, which have not been fully developed: Fort Washington Park and Highbridge Park in Manhattan; Soundview Park in the Bronx; Highland Park and Rockaway Beach in Queens; McCarren Park and Dreier-Offerman Park in Brooklyn; and Ocean Breeze in Staten Island. These parks—ranging in size from 36 to 212 acres—face different challenges, including improving access to the parks for the surrounding community, developing around a natural preserve, performing major repairs to bring facilities to a state of good repair, creating and upgrading recreational and athletic facilities, and improving amenities on the boardwalk.<sup>64</sup> The City’s current ten-year capital plan allocates \$386.4 million for these projects.<sup>65</sup>

A third challenge for the DPR is making the most of the revenue opportunities in the parks. Parks are not intended to be self-financing and New York’s facilities have very limited user fees, but there are profitable concessions in the parks. About \$50 million annually is generated by concessions that include restaurants, push carts, and parking lots; however, there is potential for significantly greater revenues from these and similar sources. The DPR has only limited incentives to optimize these revenues, because they flow to the City’s general fund rather than being dedicated to the DPR. The CBC has recommended modifying this policy to allow incremental revenues to be shared between the DPR and the general fund,<sup>66</sup> but a PPP arrangement might be a preferred option by allowing the private partner to keep these revenues (as is the case for some of the existing partnerships with

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<sup>60</sup> New Yorkers for Parks. *The Report Card on Parks 2007*. Available online at [http://www.ny4p.org/index.php?option=com\\_content&task=view&id=57&Itemid=83](http://www.ny4p.org/index.php?option=com_content&task=view&id=57&Itemid=83).

<sup>61</sup> Relationship statistically significant at the .05 level. For details of CBC analysis, see *Making the Most of Our Parks*, June 2007, pages 40-42.

<sup>62</sup> An agency’s assets are reviewed on a rolling basis every four years. Only assets with a replacement value above \$10 million and a useful life of over ten years are covered. Some special systems and aesthetic components, such as landscaping, are also excluded from review.

<sup>63</sup> Sum of capital and operating needs. See *Asset Information Management System* for fiscal years 1998 and 2008.

<sup>64</sup> PLANYC. “A Greener, Greater New York.” City of New York. 22 April 2006. Available online at <http://www.nyc.gov/html/planyc2030/html/downloads/download.shtml>.

<sup>65</sup> City of New York. *Ten-Year Capital Strategy, Fiscal Years 2008-2017*. April 2007, p. 125.

<sup>66</sup> Citizens Budget Commission. *Making the Most of Our Parks*, June 2007, pages 54-60.

nonprofit organizations) and take that potential into account in setting the availability payment (or shadow toll, if parks use were to be measured and made the basis of payment).

Given these challenges, two types of PPPs might be appropriate for the DPR. First, a group of smaller parks in need of significant repairs could be grouped for an arrangement with a single private partner. Availability or shadow payments would be made by the DPR, with the necessary payments made lower than otherwise necessary to reflect the private partner's ability to generate and retain concession revenue. Ongoing monitoring would include comparisons with the use and conditions in parks maintained by the DPR.

Second, one or more of the larger underutilized parks scheduled for improvement could be developed as a PPP. The private partner would be responsible for design, building and maintaining the new facilities. As noted above, the public sector payment could be lowered by allowing the private partner to retain concession revenues. This arrangement would allow for innovative designs and create incentives to encourage park use, a major purpose of the City's planned investments in these areas.

In both these cases, the DPR will need to adapt its performance monitoring system to meet the needs of a PPP. Using its indicators as a basis for financial penalties and incentives likely will require modifying and refining the system. This is a challenge that should be thoughtfully addressed in preparing for a PPP initiative.

## **SUNY and CUNY Educational Facilities**

New York has two large public university systems – the State University of New York (SUNY) and the City University of New York (CUNY). The SUNY system includes 34 senior and technical college campuses around the state and 30 community colleges. The State operates and funds the senior colleges; the community colleges are partly financed by the State and partly financed and governed by counties. The CUNY system includes 11 senior colleges and six community colleges; they share a single governing board, but the senior colleges are financed primarily with State funds while the community colleges are jointly financed by the State and the City of New York.

Both systems have extensive facilities that are old and not well maintained. SUNY has 2,765 buildings within its control: 1,811 general educational facilities, 485 community college buildings, 457 residence halls and 12 hospitals. The infrastructure supporting these buildings includes electrical and steam distribution systems, millions of square feet of parking lots, and 450 athletic fields. The average age of the general educational facilities and community college buildings is over 40 years, and the average age for residence halls is over 30 years.<sup>67</sup>

In 2007, SUNY undertook a comprehensive review of the condition of facilities at its campuses (excluding the community colleges). The review identified a critical maintenance backlog of \$3.2 billion to bring the facilities to a state of good repair, and ongoing maintenance needs of about \$400

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<sup>67</sup> The State University of New York. "2008-2009 Operating and Capital Budget Presentation." November 27, 2007. Accessed November 28, 2007. Available online at <http://www.suny.edu/files/sunynewsfiles/pdf/budgetpresentation1.pdf>

million annually. A review of community college buildings is ongoing, and it is likely to reveal additional needs totaling billions of dollars.<sup>68</sup>

The picture is similar for CUNY, which has 293 buildings totaling over 26.1 million square feet in 21 campuses across the city. The average age of the buildings is 57 years, and more than 75 percent of the square footage was built before 1970. CUNY conducted a buildings assessment in 2007 in tandem with the SUNY assessment. It found that \$1.7 billion was needed to eliminate its deferred maintenance backlog. The bulk of this, \$1.5 billion, is for building system renovations, and the remainder, \$200 million, is for renewal of supporting infrastructure. The largest needs are for heating and ventilation systems (\$700 million), exterior walls, roofs and windows (\$277 million), electrical systems (\$164 million), laboratory and similar “built-in” equipment (\$114 million) and interior finishes (\$77 million). Community colleges represent \$516 million of the \$1.7 billion total.<sup>69</sup>

SUNY and CUNY senior college capital investments for educational facilities typically are funded with State authority bonds backed by State revenues. Community college investments are also funded with authority bonds, generally backed by joint local and state revenues. However, residence halls, which operate on 26 campuses and have 70,967 beds, are usually managed by the State Dormitory Authority and are self-financing with rents and other revenues generated at the facilities.<sup>70</sup>

PPPs could be used in two ways to help improve the condition of facilities at SUNY and CUNY and keep them in a state of good repair in the future. First, for senior college educational facilities, a PPP could require the private partner to renovate some currently deficient facilities and keep them well maintained for the expected lifecycle. The initial private capital and operating costs would be paid through the availability payment model. The grouping of several facilities with a single private partner would make the project large enough to justify the design and monitoring of a PPP. Senior college facilities may be more suitable than community college facilities because the arrangement could be developed exclusively with the State, as the primary financier and monitor, without the complication of involving multiple county officials.

Second, it may be worthwhile to use a PPP for residential facilities. For these facilities, the private partner could be responsible for collecting rents and generating other revenues, and no availability payment would be necessary. It is likely that PPPs for such facilities would result in greater amenities and innovation in the use of space; for example, there may be convertible spaces or rooms or facilities that can also be rented out for community use. A PPP may also allow for flexibility within the traditional model of how students are charged for room and board and other amenities, potentially providing a value for both students and the colleges. The previously cited dangers of PPPs for facilities with user fees can be avoided in this instance by not seeking any upfront payments, and by having both PPP and Dormitory Authority managed facilities on the same campuses to ensure competition in prices and comparative performance standards.

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<sup>68</sup> New York State Commission on Higher Education. *Preliminary Report of Findings and Recommendations*. December 2007. Available online at [www.hecommission.state.ny.us/report/CHE\\_Preliminary\\_Report.pdf](http://www.hecommission.state.ny.us/report/CHE_Preliminary_Report.pdf).

<sup>69</sup> Testimony of Iris Weinshall, Vice Chancellor for Facilities Planning, Construction, and Management at The City University of New York, to the New York City Council Infrastructure Taskforce. February 15, 2008.

<sup>70</sup> The State University of New York. “2008-2009 Operating and Capital Budget Presentation.” November 27, 2007. Accessed November 28, 2007. Available online at <http://www.suny.edu/files/sunynewsfiles/pdf/budgetpresentation1.pdf>

As with public school buildings, perhaps the greatest challenge for a PPP in higher education is building the capacity for design and oversight by the public partner. One strategy is to establish a single unit with expertise to serve both SUNY and CUNY in establishing PPPs, and to have ongoing evaluation through comparisons with conventionally managed facilities.

## **POTENTIAL MISSTEPS AND CAUTIONS**

PPPs are an opportunity to provide cost-effective and better maintained capital assets in New York State; however, they are not a panacea for all the infrastructure needs of New York. PPPs should be pursued selectively, and they should be designed to avoid the pitfalls that have characterized some experiences. In particular, State and City officials should avoid five missteps.

### **PPPs Should Not Be Pursued As New Money For Infrastructure**

Proponents of PPPs sometimes present them as a source of “new” money for investment in public infrastructure, yet this is rarely the case. Capital funds can be raised by government borrowing or by private equity investment, but in each case there are costs associated with raising the capital. Public borrowing must be repaid through annual debt service payments, and private equity requires a return on investment in the form of regular profits. Funds to cover the debt service or the return on equity both come from the same source – either the tolls or fees intended to make the projects self-financing or tax subsidies for projects relying on availability payments. In this sense, PPPs only substitute one form of capital for another; they do not create any new fee or tax revenue stream with which to finance the projects. Their benefits are not “new” capital; they are the lifecycle cost savings and higher maintenance standards described earlier.

In some national contexts, PPPs have appeal as “new” money because of legal limits imposed on public borrowing. As noted earlier, the European Union has set limits on public debt. Under these conditions, PPPs have raised private money as a source of additional infrastructure investment capital, because they make available funds outside the debt limits. However, the repayment of private capital investments through availability payments comes from the same tax base as would any debt service on public borrowing, so no “new” money is raised in the sense of new revenue streams to support infrastructure investments. Similarly the transfer of a toll or fee backed project from direct public operation to a PPP does not create any new revenue– it only moves the tolls outside the public budget.

It may be argued that PPPs are raising new revenue to the extent that they are associated with new or increased user fees; however, the merit of his argument rests on the assumption that the public sector alone could not raise these fees. This is rarely the case in either legal or economic terms; public officials generally have the authority to raise tolls and demand is typically sufficient to provide increased revenues. The case for PPPs is often more political: they are perceived to make toll increases more politically acceptable by shifting publicly perceived responsibility to a private partner. They also make deferral of the toll increases possible by, in essence, borrowing from the private partner to cover costs until future toll increases become effective.

In the United States, and especially in New York State, the availability to state and local governments of federally tax-exempt revenue bonds has opened opportunities for borrowing against user fees, and the reliance on these revenue bonds further limits the potential for PPPs to raise “new” money. Projects that PPPs could support through user fees are already backed by these revenue bonds or can be backed by such revenue bonds issued by public authorities with the benefits of tax exemptions. A recent Citizens Budget Commission study found that in New York State public authorities had \$55.7 billion in debt outstanding for projects backed by user fees or

similar revenues and another \$68.9 billion in authority debt backed by tax revenues; in comparison, direct state and local general obligation debt was \$61.5 billion.<sup>71</sup> Thus, in New York the need is not for more legal borrowing capacity; it is for new revenues to support the investments – and PPPs do not yield that.

The one way in which PPPs can create “new” money is not a priority in New York. PPPs can be used to finance projects that are not a part of a government’s regular capital plan because they are of low priority and/or because their feasibility as a user fee backed project is risky. In this instance, the government may ask for private sector initiatives to finance such projects, and the money is more clearly “new” in the sense that the government would not have provided it under foreseeable circumstances. The creation of new high-priced and/or high occupancy toll roads to compete with congested public roads is sometimes presented as such opportunities; however, even in such cases, the public partner might be required to provide at least some financing to move the project forward.<sup>72</sup>

## **Revenue Streams From User Fees Should Not Be Tapped Inappropriately**

Recent United States experience suggests that toll-financed PPPs can be misused in two ways. First, if public officials seek to convert future revenue streams into a large up-front payment, future taxpayers and highway users may be shortchanged. In order for a private partner to make a large “up-front” payment, that partner must rely on future revenue to cover the cost of investing in the initial payment. To make such a payment the private partner must take a risk that the future revenue will be sufficient and apply a suitable discount rate to the future revenue. In PPPs with large up-front payments— usually long-term (such as 75 years) PPPs— the revenue uncertainties are great, and the discount rates applied to future revenue may be high. As a result, the current officials are provided with funds they can use in the short-run, but future generations may be deprived of the full value of the revenue paid out.

There is some evidence that this happened in the concession for the Indiana Toll Road, which involved a \$3.85 billion up-front payment. A study from the Government Accountability Office (GAO) found that a state-hired consultant placed the net present value of the toll revenues at just \$2 billion, but independent consultants placed the value at nearly \$11 billion. The GAO did not make a judgment about the validity of the different assumptions used, but the reported assumptions behind the higher estimate were closer to the terms of the concession. The GAO warned, “It is possible that the net present value of the future stream of toll revenues (less operating and capital costs) given up can be much larger than the concession payment received.”<sup>73</sup>

A second potential misstep is for public officials to use the up-front payment for short-run operating budget relief rather than infrastructure investment. The experiences with the Chicago

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<sup>71</sup> Citizens Budget Commission, *New York’s Public Authorities: Promoting Accountability and Taming Debt*, (September 2006) Table 2, page 6.

<sup>72</sup> Ken Orski. “Public-Private Partnerships at the Crossroads: Special Conference Issue.” *Innovation Newsbriefs*. 25 August 2008. Available at <http://www.innobriefs.com/>.

<sup>73</sup> Government Accountability Office. “Highway Public-Private Partnerships: More Rigorous Up-front Analysis Could Secure Better Potential Benefits and Protect the Public Interest.” GAO-08-44. February 2008.

Skyway Bridge and the Indiana Toll Road illustrate this problem. In Chicago, the up-front payment was allocated within the context of one budget cycle: Some of it was used for some virtuous purposes, like paying down the old city-issued Skyway bonds, but none of the funds were directed toward transportation initiatives and approximately \$100 million was used to fund neighborhood services and programs.<sup>74</sup> As a result, Chicago's asset base was reduced without providing for any long-term capital improvements.<sup>75</sup> Indiana also used some of the payment to fund immediate needs, although the bulk of it went into a reserve fund for transportation improvements; however, this capital program is only ten years in length, compared to the toll revenue stream that was relinquished for 75 years. In general, PPPs with large up-front payments are not good public policy.

Another risk associated with PPPs for self-financing projects is that arrangement may anticipate significant new user fees in order to attract the private investment; however, the future rate increases permitted under the contract may eventually prove to be politically repulsive and not sustainable. This has been a problem in arrangements for water system investments in low income countries. Two deals in Tucuman, Argentina and Cochabamba, Bolivia were both terminated after prices were doubled and tripled, respectively, by the private partners, prompting organized opposition in Argentina and social unrest in Bolivia.<sup>76</sup>

## **Enhanced Public Sector Management Capacity Must Be Cultivated**

Effective PPPs are not an abandonment of public sector responsibility to the private partner. Instead they require public managers to gain and exercise four types of expertise.

### **Project Selection and Contract Design**

The first step in a PPP rests almost entirely with the public sector. Government officials must decide whether a project is suitable for a PPP. This is a complex decision involving both quantitative and qualitative analysis. In the United Kingdom, Her Majesty's Treasury, a unit of the national government, has developed formal guidelines to be used by local authorities in deciding on whether projects should be developed as PPPs. The recommended procedures include quantitative analysis of the potential savings based on calculations of lifecycle costs, but also take into account qualitative factors, such as the potential for private sector innovation, the degree of competitiveness in the market among potential bidders, and the potential for developing clear measures for contract

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<sup>74</sup> Federal Highway Administration. *Case Studies of Transportation Public-Private Partnerships in the United States*. Final Report Work Order 05-002. Prepared for the Office of Policy and Governmental Affairs by AECOM Consult Team.

<sup>75</sup> Federal Highway Administration. *User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States*. Final Report Work Order 05-002. July 7, 2007. Available online at [http://www.fhwa.dot.gov/ppp/ppp\\_user\\_guidebook\\_final\\_7-7-07.pdf](http://www.fhwa.dot.gov/ppp/ppp_user_guidebook_final_7-7-07.pdf).

<sup>76</sup> Norma Giarracca. "The Social Protest for Water in Tucuman, Argentina." Public Citizen. Accessed 16 September 2008. Available online at [http://www.tradewatch.org/cmep/Water/cmep\\_Water/reports/argentina/articles.cfm?ID=7638](http://www.tradewatch.org/cmep/Water/cmep_Water/reports/argentina/articles.cfm?ID=7638).

Also Emanuele Lobina. "Cochabamba - water war." June 2000. Public Services International Research Unit, University of Greenwich. Available online at [www.psir.org/reports/Cochabamba.doc](http://www.psir.org/reports/Cochabamba.doc).



performance. Under these criteria, IT projects and projects with a capital value under £20 do not represent value for money and can no longer be considered as PFI/PPP.<sup>77</sup>

If a project is pursued, public officials must negotiate a viable contract with the private partner. One observer has aptly summarized the challenge as striking a balance between flexibility and accountability: “The ideal partnership [has] the minimum number of control mechanisms (for greater flexibility), but enough of these mechanisms strategically placed so as to insure sufficient feedback (i.e. accountability) to keep the partnership on the straight and narrow.”<sup>78</sup>

The contract should include explicit mandates that require the private partner to perform some action or provide some level of service that is particularly important. For example, Cemusa is required to clean and restock its automatic public toilets daily, repair broken glass at bus shelters within 24 hours, inspect and remove graffiti and garbage twice a week, and clear a 3 foot area around street fixtures when it snows.<sup>79</sup> Similarly, the ITR contract lays out specific timetables by which various types of maintenance must be performed and by which emergency repairs must take place. These mandates are useful in regulating areas of particular concern, but should not be so prolific as to be overly restrictive to the private partner’s ability to perform. A 2001 U.K. study by the NAO found that public managers of 30 percent of projects reported no innovation while projects were in operation, which can be explained by contractors who reported that their ability to innovate was restricted by excessive regulations.<sup>80</sup>

The ways in which contract flexibility (or lack thereof) can strengthen or undermine a PPP are illustrated in two examples from the United States: Terminal Four at John F. Kennedy International Airport and California State Route 91 (SR91) Express Lanes. At the time of the terrorist attacks on September 11, 2001, John F. Kennedy International Arrivals Terminal, LLC (JFKIAT), the consortium that constructed and runs Terminal Four, had been in business for just a few months. With air travel severely reduced and airlines’ profits suffering, there was an urgent need to renegotiate contracts with airlines to attract and keep tenants at the terminal. The contract permitted these individual negotiations in a way the Port Authority, the public partner, would not likely have been able to do due to public leasing regulations.<sup>81</sup>

In contrast, a lack of flexibility led to the buyout of California Private Transportation Company (CPTC) for SR91. The contract had a restrictive non-compete clause that precluded any road improvements for 1.5 miles around SR91 for the length of 30-mile tolled express lanes until 2030. This restricted the State from widening the adjacent un-tolled highway lanes. Public pressure to

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<sup>77</sup> HM Treasury. “Value for Money Assessment Guidance.” November 2006. Available online at [http://www.hm-treasury.gov.uk/media/4/4/vfm\\_assessmentguidance061006opt.pdf](http://www.hm-treasury.gov.uk/media/4/4/vfm_assessmentguidance061006opt.pdf).

<sup>78</sup> John O’Looney. “Public-Private Partnerships in Economic Development: Negotiating the Trade-off Between Flexibility and Accountability.” *Economic Development Review*, v. 10, n. 4, fall 1992, p. 21.

<sup>79</sup> The City of New York. “Franchise Agreement between the City of New York and Cemusa, Inc. Coordinate Street Furniture Franchise.”

<sup>80</sup> National Audit Office. “Managing the Relationship to Secure a Successful Partnership in PFI Projects.” 29 November 2001. Report by the Comptroller and Auditor General. HC375 Session 2001-2002.

<sup>81</sup> Conversation with David Kagan and Michael Sibilila at a meeting of the CBC Public-Private Partnerships Committee on March 12, 2008.

make improvements to the free lanes led to the dissolution of the partnership and the sale of SR91 to the Orange County Transportation Authority.<sup>82</sup>

Disagreements in interpreting the contract and on the quality of service provided are key reasons that disputes arise in partnerships.<sup>83</sup> The near inevitability of conflicts between the partners means that dispute resolution procedures should be part of good contract design. This can be critical in some countries where private foreign investors may have doubts about the neutrality and independence of the judicial system, but it can also be relevant in advanced democracies where prolonged court cases are not desirable. Mutually agreed upon private dispute resolution procedures can be part of PPP contract design; for example, the Indiana Toll Road Lease Agreement specifically lays out procedures and timelines for resolving disputes through senior-level negotiations, mediation and, if necessary, final arbitration. In Brazil, the 2004 federal legislation authorizing PPPs explicitly permits such mechanisms.<sup>84</sup>

### **Design and Monitoring of Performance Measures**

Accountability in PPPs is achieved primarily through the monitoring of the private partner's performance. The PPP should be structured around established public objectives that are gauged through performance standards and measures that are negotiated and specified in the contract. These standards should be regularly measured and consistently monitored and evaluated by the public partner.

In defining measures and indicators, it is important to focus on key outcomes that capture the quality of service provided rather than the method by which it is provided.<sup>85</sup> Adopting such an outcome oriented-approach focuses the PPP on performance, and allows the private partner adequate flexibility in achieving the overall objectives of the partnership. For example, one of key objectives of the London Underground PPPs is to provide commuters with a pleasant traveling environment. On a quarterly basis, data is collected by an independent survey organization that measures train and station attributes such as cleanliness of train cars, condition of train seats, levels of litter and graffiti, condition of waiting rooms and bathrooms, and the appearance of elevators and escalators. These attributes are weighted and aggregated to form a total score for station ambience.<sup>86</sup> Collecting these performance measures also allows for benchmarking performance, so that the private partner's performance can be judged against prior performance, but also that of comparable institutions or direct government provision. The standards for acceptable ambience, for example,

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<sup>82</sup> Government Accounting Office. *Private Sector Sponsorship and Investment in Major Projects Has Been Limited*. Report to Congressional Requesters. March 2004.

<sup>83</sup> National Audit Office. "Managing the Relationship to Secure a Successful Partnership in PFI Projects." 29 November 2001. Report by the Comptroller and Auditor General. HC375 Session 2001-2002.

<sup>84</sup> Henry G. Burnett. "Dispute Resolution under Brazil's Federal PPP Law," in Joel Moser, ed., *Global Infrastructure*, Volume 1, (Fulbright & Jaworski L.L.P., 2007) pp. 19-23.

<sup>85</sup> National Audit Office. "Managing the Relationship to Secure a Successful Partnership in PFI Projects." 29 November 2001. Report by the Comptroller and Auditor General. HC375 Session 2001-2002.

<sup>86</sup> Metronet Rail. "Metronet Rail: Performance Measures." Accessed 9 September 2008. Available online at <http://www.metronetrail.com/default.asp?sID=1079542145940>.

were set at levels above those achieved through prior public operation and are now measured against prior— as well as anticipated— performance. For other standards, such as maintenance, measures are assessed against accepted industry benchmarks.<sup>87</sup> This allows for effectively evaluating whether a PPP is operating in as cost-efficient or customer-oriented a manner as expected.

In the United States, many state and local governments have a poor record of performance measurement and management for their own operations and face difficulties in applying these skills to PPPs. Few states and municipalities engage in rigorous performance management and/or reporting. In its latest review, the Government Performance Project gave only five states an “A” grade in Information— a category that includes budgeting for performance, managing for performance and performance auditing— with the national average being a mediocre “B-.” (New York was below the average, earning a “C+,” with budgeting for performance noted as a particular weakness.)<sup>88</sup>

This lack of sophistication carries over to performance standards in contracts, which are “often poorly developed, weak or ill-conceived.”<sup>89</sup> This problem often stems from a lack of expertise, but it also reflects the under-funding or under-staffing of such functions in many government agencies. Even where expertise or resources exist, they tend to be focused on project delivery aspects such as delays or cost overruns, but not on ongoing operations.<sup>90</sup> Successful PPPs require that sufficient expertise and resources be cultivated and devoted to monitoring performance of the private partner throughout the life of the contract.

The importance of this has been duly recognized in the U.K., where national government agencies have issued guidelines for local governments, including a standardized contract that can be used as a basis for a PFI arrangement. There are also established institutional supports for public administrators to aid in all phases of contract management, from initial analysis and negotiation to ongoing monitoring and termination.

## **Transparency**

In democracies, PPPs must be designed and implemented with a concern for transparency. Public trust in these arrangements and their sound management require that performance and financial information about them be made readily available to the public. Meeting this obligation is a responsibility of both partners, but it is typically the public partner who takes the lead and ensures the public’s interests are protected in the contract and in practice.

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<sup>87</sup> Transport for London. “London Underground and the PPP: Data Summary 2006/2007.” 2007. Available online at <http://www.tfl.gov.uk/corporate/modesoftransport/londonunderground/management/1582.aspx>.

<sup>88</sup> The Pew Center on the States’ Government Performance Project. Information Performance Grades for 2008. Accessed 11 August 2008. Available online at <http://www.pewcenteronthestates.org/uploadedFiles/Information%20Performance.pdf>.

<sup>89</sup> Deborah Auger. “Privatization, Contracting and the States: Lessons from State Government.” *Public Productivity and Management Review*. vol. 22, no 4, June 1999, pp. 435-454.

<sup>90</sup> Deloitte Research. “Closing America’s Infrastructure Gap: The Role of Public-Private Partnerships.” 2007. Available online at [http://www.deloitte.com/dtt/cda/doc/content/us\\_ps\\_PPPUS\\_final\(1\).pdf](http://www.deloitte.com/dtt/cda/doc/content/us_ps_PPPUS_final(1).pdf).

Public partners do a mixed job of providing information. London Underground issues a yearly report that provides performance information for all three of its PPP contracts. The New York City Department of Transportation required Cemusa to establish and give it access to an electronic inventory tracking system that would also provide data on complaints, advertising and financial information and that would also interface with 311. However, there are no contractual requirements for regular public reporting of this data; neither does it appear in the city's performance reporting tool, the *Mayor's Management Report*.

The Indiana Finance Authority, the public partner in the Indiana Toll Road PPP, makes public documents related to the agreement easily accessible. It features a prominent link on its website for information on the ITR and provides the request for proposals, the bids, and the entire concession agreement, including its amendment, accompanying schedules and operating standards manuals.

On the other hand, finding performance or financial information on the ITR is more difficult. The website for the ITR, managed by the Indiana Toll Road Concession Company (ITRCC), does not include performance indicators or annual reports. To find audited financial statements, one must visit the website of the Macquarie Infrastructure Group, which, together with Cintra Concessions, has formed the consortium that owns the ITRCC through a series of subsidiaries. The relevant financial statements are for a limited liability company called Statewide Mobility Partners that owns the ITR Concession Company Holdings, LLC, which in turn owns the ITRCC that manages the ITR. As of September 2008, the most recent financial statement available is almost two years old, for the year ending December 31, 2006.<sup>91</sup> The lack of information further thwarts transparency and makes it impossible to assess the PPPs performance or financial viability.

Public partners in PPPs should develop appropriate public reporting channels for the review and evaluation of the PPP. The public partner should mandate a level of disclosure that mirrors its own standards, and should subject the PPP to annual review by the auditor, comptroller or a special PPP review office. In the UK, the National Audit Office reviews both individual projects and PPPs as a model, while Her Majesty's Treasury is accountable for overall policy regarding PPPs.

## **Enforcement**

The public partner must not only monitor and disclose performance standards; it must also have the capacity to enforce the standards in reasonable ways. Appropriate penalties for poor performance should be spelled out in the contract and invoked when appropriate. NYCDOT's contract with Cemusa has a detailed schedule of liquidated damages that must be paid if Cemusa fails to meet installation or replacement schedules or maintenance standards. For example, Cemusa is subject to a \$50 daily fee for every automatic public toilet it fails to clean and restock on a daily basis.

These penalties will only be effective if they are not too weak, too stringent or too complicated to implement. A 2006 U.K. study by Her Majesty's Treasury found that penalties were only somewhat effective in stimulating improved performance for these reasons. Of the 105 project managers surveyed, 50 percent found penalty mechanisms too complicated to implement. Of those that did apply penalties, 32 percent reported no change in performance by the private partner. Too often,

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<sup>91</sup> Statewide Mobility Partners LLC and Subsidiary. *Consolidated Financial Statements for the year ending December 31, 2006*. Available online at [http://www.macquarie.com.au/au/mig/acrobat/financials\\_itr\\_dec06.pdf](http://www.macquarie.com.au/au/mig/acrobat/financials_itr_dec06.pdf).

the penalties were low in relation to the availability payment, and did not offer enough of a kick in the right direction.<sup>92</sup> At the same time, penalties that are too stringent risk not being invoked.

To find the appropriate balance, HMT recommended establishing penalty deductions for all key areas; limiting the performance measures that would trigger penalties; calibrating penalties so that the service provider would be incentivized to fix the problem; and creating a graduated or tiered penalty system so that major offenses trigger larger deductions than smaller ones. The report also recommended balancing penalties for poor performance with incentives for exceptional performance.<sup>93</sup>

One way to create a graduated penalty system is to assign points to each performance failure, with the number of points increasing according to the severity of the failure. More points should be amassed for failure to remove broken glass than failure to empty the garbage. This schedule of penalty points should be linked explicitly to performance measures and should translate into a specified financial impact.<sup>94</sup> For example, each failure of the private operators of the London Underground to meet minimum standards for the ambience of individual stations and train fleets resulted in the allocation of service points. For each service point accrued, £50 penalty was levied against the availability payment made to the private operators every four weeks.<sup>95</sup>

Ultimately, if a PPP is not working as intended, the public partner must be able and willing to end the relationship. This may mean transferring responsibility to another private partner or having a public agency assume full responsibility. Two of the three PPP contracts for the London Tube, which failed for other reasons rather than weak reporting and penalty mechanisms, reverted back to the control of the public partner, Transport for London. The failure of the SR91 express lanes in California as a PPP led to a transfer of control from the private partner to a public authority. When traffic volume fell under projections on the Pocahontas Parkway and the association managing it was close to defaulting on its debt, the Virginia Department of Transportation intervened to negotiate a deal with a new private partner to assume the debt and manage the parkway.

## **PPPs Are Prone To Failure When Integral Responsibilities Are Divided**

PPPs do not always work well, and it is important to understand the reasons for failures. One of the most noteworthy failures of PPPs is that for the infrastructure of the London Underground (LU), often referred to as “the Tube.” In 2003, London Underground Limited (later incorporated into Transport for London) signed three PPP agreements totaling £17.6 billion: two of these agreements were with MetroNet and the other with Tube Lines. Under these 30-year agreements, these consortiums were given responsibility for maintaining and upgrading key components of the

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<sup>92</sup> HM Treasury. “PFI: Strengthening long-term partnerships.” March 2006. Available online at [http://www.hm-treasury.gov.uk/media/7/F/bud06\\_pfi\\_618.pdf](http://www.hm-treasury.gov.uk/media/7/F/bud06_pfi_618.pdf).

<sup>93</sup> HM Treasury. “PFI: Strengthening long-term partnerships.” March 2006. Available online at [http://www.hm-treasury.gov.uk/media/7/F/bud06\\_pfi\\_618.pdf](http://www.hm-treasury.gov.uk/media/7/F/bud06_pfi_618.pdf).

<sup>94</sup> HM Treasury. “Standardisation of PFI Contracts: Version 4.” March 2007.

<sup>95</sup> Metronet Rail. “Metronet Rail: Performance Measures.” Accessed 9 September 2008. Available online at <http://www.metronetrail.com/default.asp?sID=1079542145940>.

London Underground's infrastructure, including trains, signals, tracks, tunnels and stations, as part of an effort to modernize the LU and bring it to a state of good repair. Operational responsibility was retained by the public partner, including operating trains and stations, collecting fares and ensuring public safety.

The project was financed privately, and the consortiums were paid with availability payments that were conditioned on meeting performance measures of capability, availability and ambience, with adjustments made based on an incentive and penalty mechanisms triggered by exceptional or deficient service. Because little data was available on the condition of the system when the deal was negotiated, costing out certain aspects of maintenance was troublesome. In addition, in the later stage of negotiation, the government agreed to guarantee the senior debt at 95 percent in the event of termination.<sup>96</sup>

The structure of the arrangement resulted in several challenges for the private operators. The sparse data available on conditions in the system proved to be a major impediment to completing work on time and budget; often, work planned on sites where conditions were unknown resulted in unexpected challenges and major delays. Another key challenge was the need to perform improvements on a system that needed to operate everyday— and that was operated by another entity. For example, the private partners were responsible for renovating the tracks, but could not stop trains from running on them or reroute trains to accomplish the work.

The division of operational and maintenance responsibilities created complications that affected the ability to deliver on key aspects of performance – particularly those affecting availability. The results were detailed in annual performance reports. In the 2005 annual report, both consortiums were behind schedule on many projects and engineering overruns increased by 35 percent compared to the previous year.<sup>97</sup> Despite limited achievements, problems continued, and the 2006 report showed that Metronet and Tube Lines were failing to deliver to the standards mandated by the contract. In particular, Metronet was far behind in station rehabilitation, with only 14 of the 35 scheduled stations delivered, and all delivered late. Both Metronet and Tube Line were issued corrective action notices to rectify their poor performance.<sup>98</sup>

The complications in undertaking work made it difficult for the private companies adequately to predict costs and be cost-efficient. In 2007, Metronet suffered £1 billion in cost overruns for one project – anticipating another £1 billion in cost overruns on its other contract – and filed for reimbursement of £551 million by Transport of London, citing changed demands as the major

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<sup>96</sup> House of Commons Committee of Public Accounts. “London Underground Public Private Partnerships.” Seventeenth Report of the Session 2004-05. HC 446 (Incorporating HC783-I, Session 2003-04.) 31 March 2005. Available online at <http://www.publications.parliament.uk/pa/cm200405/cmselect/cmpubacc/446/446.pdf>.

<sup>97</sup> Transport for London. “London Underground publishes second Annual PPP Report.” Press Release. 27 July 2005. Available online at <http://www.tfl.gov.uk/corporate/media/newscentre/archive/3550.aspx>.

<sup>98</sup> Transport for London. “London Underground publishes third Annual PPP Report.” Press Release. 24 July 2006. Available online at <http://www.tfl.gov.uk/corporate/media/newscentre/archive/3550.aspx>.

reason. The PPP arbitrator awarded £121 million to Metronet on the £1 billion claim.<sup>99</sup> As a result, Metronet filed for bankruptcy, and went into a period of administration in July 2007. In May 2008, the Metronet lines were transferred back to Transport for London.

While Metronet lost the equity invested in the project, the government had guaranteed the debt and suffered a loss of £1 billion. Tube Lines has not declared bankruptcy, but the PPP arbitrator found that it is also facing a funding shortfall of £1 billion. Its contract terms are currently being renegotiated.<sup>100</sup>

## **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. In the New York metropolitan region, compensation in state and local government generally exceeds that for comparable occupations in the private sector.<sup>101</sup> 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.

The consequences of these changes for current public employees should not be ignored, and public officials should decide if they are willing to sacrifice some of the benefits of PPPs to 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.

The deals negotiated in Chicago for the Skyway and Midway Airport illustrate the two approaches. For the Skyway, the private firm was required to interview existing employees, but was under no obligation to hire them. Employees who were not rehired were offered preference for hiring in other city agencies. Labor agreements on the Midway deal are governed by a 2006 state statute mandating that existing employees to be hired by the concessionaire must be offered employment under "substantially similar terms and conditions." The same condition applies to new employment opportunities granted to displaced employees by the City of Chicago in other city agencies.

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<sup>99</sup> The PPP Arbitrator. "Reference for Directions from Metronet Rail BCV Ltd Interim level of ISC pending a direction on ISC at Extraordinary Review." Draft directions. 16 July 2007. Available online at [http://www.ppparbitrator.org.uk/files/uploads/o\\_direction/200771665446\\_Final%20draft%20directions.pdf](http://www.ppparbitrator.org.uk/files/uploads/o_direction/200771665446_Final%20draft%20directions.pdf).

<sup>100</sup> Transport for London. "Transport for London responds to PPP Arbitrator's Guidance on Tube Lines second period funding." Press Release. 09 September 2008.

<sup>101</sup> See Citizens Budget Commission, "The Case for Redesigning Retirement Benefits for New York's Public Employees," April 2005. Available online at <http://www.cbcny.org/RetirementBenefits.pdf>