Testing Tradition

Assessing the Added Value of Public-Private Partnerships

THE NATIONAL
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PARTNERSHIPS FOR PROGRESS

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Executive Summary

Today, governments at all levels – federal, state and local – face challenges related to the upkeep and construction of a wide range of public infrastructure. Budgetary limitations; delayed projects; deferred maintenance, repair, and replacement; and population growth have led to questions of how to best address these public needs. One option that is being entertained with increasing frequency is use of Public-Private Partnerships (PPPs), contractual agreements between public agencies and private sector entities that allow delivery of a service or facility for public use.

The advantages of this innovative form of project delivery are well-documented. PPPs can reduce development risks, provide more cost effective and timely infrastructure delivery, offer the potential for better ongoing maintenance, and leverage limited public sector resources, all while maintaining the appropriate level of public control over the project. While PPPs may not be appropriate in all cases, these partnerships can address public needs in the areas of facilities, real estate development, energy, information technologies, transportation, education and healthcare, and water/wastewater. In each case, unlike under privatization, the public sector retains a high level of ownership and control over the project and its outcomes.

Despite the advantages, there are also misperceptions about PPPs that lead to criticism and quick dismissal without the proper evaluation. This white paper addresses one of the most common misperceptions – that PPPs are a more expensive form of project delivery. This idea is based upon difference in interest rates for obtaining capital when sources of public funding such as tax-exempt municipal bonds or general revenue sources are compared to private capital costs. If decision makers conduct a proper evaluation of all options, including a complete financial analysis using a Value for Money (VfM) assessment, however, the comparison can provide a more complete picture of the true total costs for project delivery. Many may find it surprising that PPPs can provide products and services at comparable or lower costs than those associated with public financing while also providing the equal or greater value to the public.

A complete and proper evaluation of project delivery incorporates a number of considerations that provide a more comprehensive look at the total costs associated with procurement than is traditionally conducted. While this assessment of each option is a more complex process than traditionally performed, the potential benefits that can be achieved make its use attractive. The analysis can expose the potential benefits and drawbacks to both project delivery options, and choosing the right option for each scenario may make the difference between being able to deliver a project and leaving needs unmet.

This white paper provides a description of the evaluation as part of the decision making process, with the hope that these tools may be used to help meet the demands for infrastructure and improved public services.

> *"The real difficulty in changing the course of any enterprise lies not in developing new ideas but in escaping from the old ones."*
>
> *— John Maynard Keynes*

PPPs Defined

According to the National Council for Public-Private Partnerships, a PPP is defined as:

"A contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility."

New Orleans Wastewater Facility

Commonly-Used Abbreviations

FLC – Full Life-Cycle

NPV – Net Present Value

O&M – Operation and Maintenance

PPP – Public-Private Partnership

PSC – Public Sector Comparator

RFP – Request For Proposals

VfM – Value for Money

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The Current Environment: What's the Problem?

State and local decision makers who employ traditional approaches to project delivery face a multi-dimensional problem: they often lack capital to fund necessary infrastructure projects but then also face added costs associated with inaction or deferral of projects. In FY 2012, 42 states had budget shortfalls totaling $103 billion, and a shortfall totaling $54 billion across 30 states is forecast for FY 2013.[1] In an effort to try to close these gaps, 46 states have been forced to cut services and 30 have raised taxes.[2] When these steps do not close the budget gap, localities are often forced to defer projects. In a survey conducted by the National League of Cities in 2011, 60 percent of cities said they delayed or canceled capital projects that year due to fiscal conditions.[3] In light of these circumstances and the call for both new facilities and renovation of existing infrastructure, the funding gap is unlikely to improve, especially since deferrals will lead to further deterioration of the structures – both in terms of physical condition and value – and therefore added expenses.

Traditional procurement involves the planning and design of a project, appointment of advisors to issue public debt, and, after securing funds, selection of a contractor to complete the project. Once the construction phase is complete, assets are turned over to the public for continued operations and maintenance (O&M). The costs of O&M then become subject to annual appropriations debates, opening up the potential for budget cuts, deferred maintenance and repairs, and politicized concerns about the use of adequate user rates or tax increases to cover continuing costs. All of this usually occurs in sequence, with O&M often financed only after construction is complete. In contrast, the PPP option can consider the design, finance, construction, operation, and maintenance phases of a project in a single procurement contract. This reality means decision makers are forced to approach project delivery from a long-term, macro-perspective, rather than looking at each phase separately.

As implied above, there are significant costs associated with deferred maintenance, repair, and replacement. Studies demonstrate that deferring timely maintenance to the point of a breakdown event can increase the total cost of repair by a factor of at least 15-to-1 and at times as high as 40-to-1.[4] For this reason and because of the other risks and costs associated with old infrastructure, not all projects can or should be deferred. When deciding the best course of action on a potential project, decision makers must compare the current cost of delivery and continued O&M to the estimated cost at a future date, which should then include the costs associated with project deferral. Due to inflation and breakdown costs, future construction or replacement is generally more expensive; however, many decision makers do not know this because analysis to project costs to a future date (for instance, postponing a project for five years, as a comparison) is rarely performed.

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To make the problem worse, municipal revenues have also declined in many jurisdictions.[5] These fiscal woes are not perceived as a short-term problem: in fact, a large majority of public officials expect the changes implemented in response to the recession to be permanent, touting "a new normal."[6] For this reason, waiting until the economy improves may not be an option. Unable to counteract that trend without utilizing significant tax and user fee increases, state and local governments are then left with two options: innovation or

inaction. Decision makers will soon be forced to make difficult decisions in order to meet the estimated need for $300 billion in urgent infrastructure projects over the next 5-7 years.[7] When new construction and renovations are added in, the estimate rises to $2.2 trillion over five years.[8] Under the "new normal" funding levels, decision makers must find a "new normal" for infrastructure and service delivery – one that takes all project delivery options into consideration.

Seeking Alternatives

Rather than consider alternatives for financing[9] public projects, many localities have chosen to increase revenues, defer spending, or both. Again, however, deferral does not solve the infrastructure problem. With this in mind, decision makers should seek out other options for project delivery, including the use of PPPs. However, this option is sometimes discounted because private financing is often preconceived as being more "expensive" than the use of general revenues or municipal bonds. Despite this negative perception, cost reductions in other areas often make PPPs cost competitive with more traditional options and in many cases provide additional benefits to localities.

"Those which we call necessary institutions are simply no more than institutions to which we have been accustomed."

— Alexis de Tocqueville

The primary obstacle to establishing PPPs for municipal projects is the perceived cost of money. Although there are added costs associated with utilizing private funds for public projects, savings are often derived from PPP-based projects in the long-run. This is true because the public sector can share the risks and responsibilities associated with the project with the private sector, therefore saving money.[10] Likewise, long-term planning measures utilized as a part of the PPP development process can lead to cost savings.

In many cases, however, a comprehensive evaluation is neither contemplated nor completed, leading many decision makers to dismiss a project delivery option that could potentially protect the public interest while maintaining cost effectiveness. To prevent this mistake, decision makers should conduct a comparison of value derived from projects when undertaken via each delivery option. The assessment of value earned as a result of spending is termed "Value for Money."

This estimation is intended to provide a long-term assessment of the total cost incurred by the public sector under a PPP arrangement and compare it to costs under the traditional process. When completed, the analysis sheds light upon not only the comparative costs between the options but also the potential affordability and feasibility under either option. Often, cost savings will be realized under PPPs. This is not to say that PPPs are the best way to deliver all projects, but they do provide an option worthy of greater attention.

This white paper will demonstrate the importance of performing a careful cost analysis of all project delivery options. By fully analyzing all options for project delivery, public sector decision makers can make more informed decisions about project delivery and, in turn, realize the fullest potential benefits of their spending decisions.

A Context for Change

Historically, public debt has been undertaken to finance projects because of the low interest rate associated with tax-exempt debt. Bonding initiatives were common, and the tax-exempt savings of about 2 to 4% over private financing seemed like the best option for getting the necessary funds for capital projects. Today, though, limits on tax exemptions make this option less appealing, and low interest rates on private, taxable issuances decrease the magnitude of that perceived advantage.

The historic difference between tax exempt interest rates and taxable interest rates has narrowed substantially as a result of the current financial environment. Further, the tax-exempt bond market has also been disrupted by the declining success in bonding initiatives and referenda. While the market for public investment has become more challenging, there remains a very strong interest in infrastructure investment by many private capital sources including banks, institutional investors, pension funds, and private equity firms. This leaves a potentially viable option in the form of using PPPs to finance public capital projects.

Today, there are also new factors that must be incorporated into financing decisions. Previously, project feasibility studies only considered physical needs such as building capacity and facility life expectancy. The various alternatives now available for procurement bring into question the most appropriate institutional arrangements, financing strategies, and methods of planning, designing, constructing, operating, and maintaining facilities. One such example can be seen in government provisions such as the low-interest TIFIA loans given for qualifying transportation projects, which provide new financing options. Because of the new factors and alternatives to consider today, there are more questions to consider when choosing the best method of procurement.

The common gap between available public funds and the cost of traditional procurement indicates that projects might be made more feasible by leveraging a combination of funding sources. Augmentation of public funding by incorporating private investment into the mix may allow decision makers to meet the total project costs efficiently. Thus, because of the political and economic limitations to the amount of public funding available for projects, decision makers would be wise to at least explore alternative methods of both securing immediate funds for procurement and financing for continued operations.

The PPP Option: One Alternative

In light of the challenges described above, PPPs, in their many forms, may provide an alternative to the common practices of cutting spending, raising taxes and fees, deferring projects or payments, or borrowing from other agencies. It is imperative, however, to note that using PPPs does not mean privatizing public services or assets. While frequently used interchangeably, the two terms are not synonymous, and PPPs actually provide distinct benefits. Most notably, PPPs, "joint ventures," or "collaborative enterprises" retain a high level of public control and oversight, while avoiding the negative perceptions associated with the "selling" of public assets or responsibilities that is frequently associated with privatization.

Private Investment

There is a substantial private investor base with a significant appetite for investment in public infrastructure projects, thus making PPPs a viable option in spite of a "turbulent" capital market.[11] Fundraising in the infrastructure sector has remained fairly strong in recent years, resulting in a pool of approximately $250 billion in 2011.[12] Even if the current pool of funding is exhausted, the likelihood of additional growth in the future is high due to continued investor interest.[13] [14]

Unfortunately, these funds are not being tapped due to weak demand levels among public agencies, which is a result of decision makers' stated belief that PPPs will be more expensive than traditional procurement. There are several common beliefs reinforcing this misperception of PPP costs:

- Loss of public control will cause unnecessary user rate increases (and therefore unfair private profit) and loss of public assets.
- Private financing is more expensive than using public debt, making the PPP option more expensive than using tax revenues and municipal bonds.
- Contract negotiations for PPPs are too difficult and costly to yield a positive outcome.

Fortunately, it seems that each of these perceptions is often false. The misinformation associated with each of these perceptions is further described in Appendix B.

Despite the skepticism surrounding PPPs, benefits can be realized. One municipal official in Woonsocket, RI stated that the immediate availability of private financing could result in time (and therefore cost) savings, especially where there is potential for costs to rise with inflation.[15] Further cost savings can be realized over the course of the contract term as well, despite higher base financing costs. The decision cannot be reached haphazardly, though: full commitment is needed from public decision makers in order to achieve successful partnerships, so the option must be investigated thoroughly. The large amounts of funding currently available do not signal "free money." Rather, as with any procurement method, there are risks associated with PPP use, and some of those risks are retained by the public sector. For this reason, the PPP option must be carefully considered using VfM analysis.

Assessing PPPs: Value for Money

One way of assessing the potential benefits associated with a PPP is through VfM analysis, which compares the cost of PPP-based provision to that of traditional project delivery, providing decision makers with a quantitative tool and data to help them make the case for selecting the most appropriate mode of project delivery. A comprehensive analysis of options should include the following key components to VfM:

- Public Sector Comparator (PSC) use, to assess the public sector cost of traditional delivery and compare it to PPP or privatized options
- Full Life-Cycle (FLC) cost and revenue analysis for each option
- Determination of most appropriate risk sharing scenario
- Assessment of public opinion and maintenance of transparency

VfM analysis is currently used widely in Canada, the United Kingdom, the Netherlands, Australia, South Africa, and Hong Kong but is less common – though emerging – in the United States.[16]

This tool for assessing the potential value derived using one mode of project delivery over another can facilitate good decision making in two main ways. First, it is useful for comparing several options. Likewise, it can provide insight into how to achieve the greatest likelihood of project delivery in a timely and cost effective manner, while achieving the highest value for the amount invested, which, of course, should be a decision maker's primary goal. While this method of analysis does require various qualitative and quantitative assumptions to be made about operations, finances, and risks associated with projects, it can be an effective and objective evaluation tool when conducted with fairness and transparency.

The Public Sector Comparator

VfM analysis is based on a comparison of the public cost of traditional project delivery to the public cost of using a PPP. The first step in conducting the analysis, then, is to establish the cost of delivery under traditional delivery methods, which is known as the PSC. This value is later compared to each private or PPP option in order to determine whether any alternative can provide positive added value.

The PSC is intended to provide "an estimate of risk-adjusted costs" to the public sector when delivering the project itself.[17] Within the PSC, all project costs, revenues, and risks must be projected over the full life of the project. These include, but are not limited to:

- Capital/construction costs (during construction and for ongoing O&M, determined by precedent)
- Operating costs (core functions, non-core supporting services, maintenance, insurance, personnel, replacement and replenishment of supplies and equipment over time)
- Taxes
- Project income (based on public sector ability to generate revenue, i.e., from user fees)
- Risk-related costs

Because all of these costs are included in the PPP proposal, all are necessary in order for the PSC to show an accurate comparison. For instance, if risks of cost overruns or time delays are not incorporated into the PSC based on previous public sector experience, the comparator will be inaccurate. To this end, decision makers should aim for a realistic assessment in order to create a fair comparison of the options. Once the total public cost has been determined for public delivery, it can be compared to the cost of delivery through other alternatives. The amount saved by using the cheaper option is termed "Value for Money" and claimed by whichever option has the lowest total cost. Decision makers should choose the project delivery method that offers the optimal combination of quality, features, and price over the whole of a project's life, which can fall in favor of either option but often favors PPPs.[18]

Full Life-Cycle Cost Analysis

VfM analysis further allows decision makers to determine whether a project is affordable based upon costs incurred over the full life of the project. By considering not only construction costs but also financing and continued O&M costs, decision makers gain insight into the best method of project delivery. Components of a FLC cost analysis include initial construction, operations, maintenance, and other anticipated costs such as those associated with future expansion of the project. While including all of these costs

in the assessment of the PPP option may show higher costs in the short-term, savings are often realized due to savings on long-term O&M due to higher quality of design and construction, warranty requirements, and other benefits to using private partners.[19]

One critical problem with current valuation efforts is that costs are often omitted or underestimated.[20] This occurs because traditional project delivery does not require bidders to account for the costs of future O&M. Particularly for high-cost components such as personnel wages and benefits, the omission of these expense categories can significantly alter budgets. Likewise, for building projects, the majority – 50 to 75 percent – of the life cycle budget is dedicated to O&M.[21] Thus, a comprehensive analysis of all life cycle costs must be considered – not only capital expenditures.

Optimizing Risk Allocation

Another critical component to VfM is the concept of risk allocation between the partners. By using VfM to evaluate PPP projects, decision makers may also account for the potential benefits that arise from effective risk allocation. Regardless of the method of procurement, effective risk allocation is a prerequisite to achieving positive VfM, where *effectiveness* is defined as allocating risk to the party best able to manage it.[22] One common scenario of risk reallocation is shown in Appendix A. In the case of PPPs, large proportions of project risk are generally either shared with or reallocated to the private sector. Effective risk allocation and mitigation helps to keep the project on budget and schedule, thus saving the money often lost due to delays.[23]

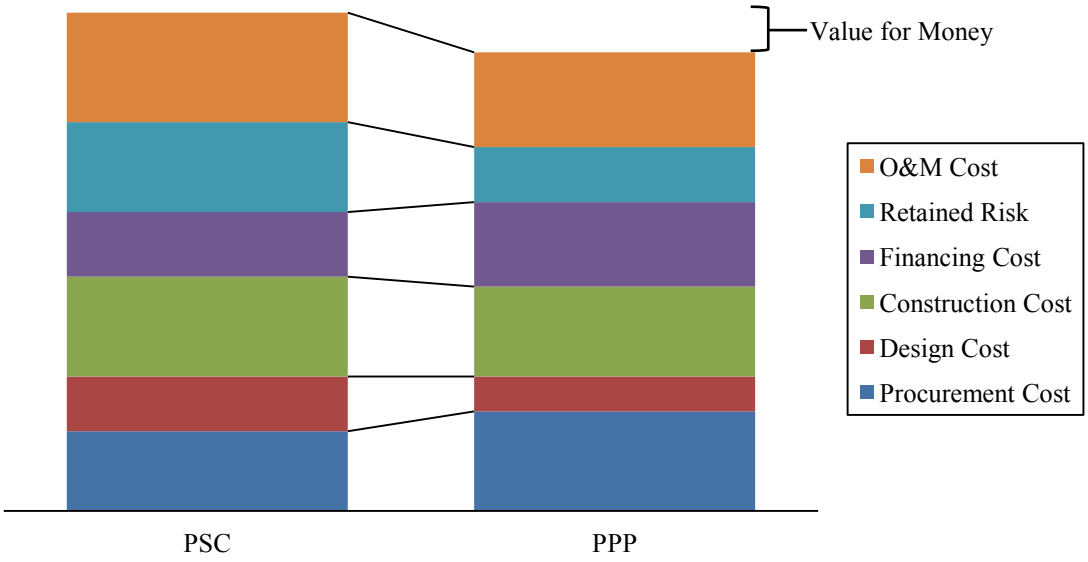
It should be noted that not all risks can be reallocated to the private sector, even under a PPP contract. This is inefficient and may make the project prohibitively expensive, so risk allocation must instead be based on economics.[24] Rather than allocate as much risk as possible to the private partner, risks (and, likewise, benefits) should be shared, with the party best able to manage it accepting each risk. With that in mind, however, it has been shown that private organizations today are willing to shoulder more risk than in the past.[25]

Total Cost Comparison of PPPs vs. Public Delivery

Thorough analysis often reveals that cost savings are possible when PPPs are used, with many estimates providing a 7-10 percent savings over the life of the project, though one study reflected a 24 percent advantage.[26] Admittedly, procurement[27] and financing costs[28] may be higher for PPPs; however, the FLC analysis shows savings over time due to the reduced costs associated with risk allocation,[29] design,[30] construction,[31] and long-term O&M.[32] While not to scale, this is shown graphically in Figure 1, wherein the PSC column represents the estimated total project costs under traditional procurement and the PPP column represents estimated total costs incurred by the public sector under the alternative proposal. In short, this estimated sample graph demonstrates that the higher procurement and financing costs associated with PPPs are more than offset by a reduction in other costs. While this "positive" VfM is not guaranteed under PPPs, it is often found when careful analysis is performed.

Sources of public funding such as municipal bonding are tax-free and this basic knowledge may make those options attractive to public decision makers, leading them to question the advantages of PPP use. This interest payment, however, is only a fraction of total financing costs – and an even smaller portion of total project cost. As

Figure 1: Public sector cost of project delivery[33]



such, the cost of financing should not be the deciding factor pointing to public delivery of a project.

Under the public-private contract, this difference in financing costs is recovered later, by way of the cost savings associated with risk transfer to (or absorption by) the private partner as well as reduced design, construction, and O&M costs. A 2008 GAO study on PPPs for highway construction confirmed that although these financing costs are higher under PPPs and there is money lost due to the lack of tax exemptions for private sector financing, there are other reasons – financial and otherwise – to use PPPs, which benefit parties in both sectors.

When private financing is used, the private sector receives payments over the course of the contract term, leading to a return on investment over time. Likewise, the private sector may benefit from completion payments paid once a project is finalized. The public sector also frequently benefits from risk transfer to and absorption by the private sector, and both parties can potentially achieve cost savings due to operational efficiencies implemented by the private partner, as in the case of improved maintenance practices.[34] Other potential areas for cost reduction, among others, include scheduling (because design and build phases can overlap, rather than waiting on a bidding process), bulk purchasing (because orders can be merged when a private entity operates multiple facilities), early construction start, and life cycle O&M efficiencies and innovations. These cost advantages of using PPPs often outweigh the potential for increased expenses related to the transaction costs incurred under private financing.[35]

Need more reasons? Additional Benefits of Choosing PPPs

Although high VfM does not guarantee that PPPs will be more cost effective (or that they are even affordable), this test can bring to light the potential benefits to using these arrangements. If used, additional benefits may be realized for both public agencies and their private partners. These benefits to the public sector include:

- Maximization of public and private sector strengths
- Reduction or sharing of risks

- Reduction in public capital investment
- Mobilization of excess or underutilized assets
- Improvement of efficiencies/faster project completion/guaranteed maintenance
- Better environmental compliance
- Improved service to the community while maintaining public oversight
- Improved cost effectiveness[36]

This paper focuses specifically on those advantages that can yield high cost effectiveness over the life of the project: guaranteed maintenance of the asset, enhanced public oversight, long-term planning, and faster project delivery.

Guaranteed Maintenance

One reason for choosing a PPP is the guarantee of continued maintenance, repair, and replacement of the public asset. As noted previously, deferring maintenance can cause the total cost of improvements, once finally made, to be 15-40 times the original cost.[37] Thus, decision makers must consider future maintenance when determining whether to proceed with new projects. Because future maintenance costs are accounted for within PPP contracts, they are removed from the general budget debate. This means the project O&M costs are guaranteed and continued maintenance is not in jeopardy with each budget cycle.

Enhanced Public Oversight

One significant concern of public sector decision makers considering PPPs is the ability to guarantee performance and retain oversight of the project and continued maintenance. PPP contracts, however, should contain clear performance standards and maintenance requirements for the full life of the project, thus enhancing the likelihood of successful O&M through the end of the contract term.

One way of further promoting accountability is through availability payments. When this measure is included in the contract, the private partner is only paid in full if the contracted deliverables meet pre-arranged quality and time standards. The payment is intended to cover earlier private sector investment in the project, not as an additional profit. If the project falls behind schedule or does not meet the prescribed standards, however, the payment is reduced on the basis of non-performance.[38] Because most private partners will abide by contract standards with the payment in mind, the payments are generally effective, providing incentive for the private sector to perform to standards while also promoting accountability to the public interest.

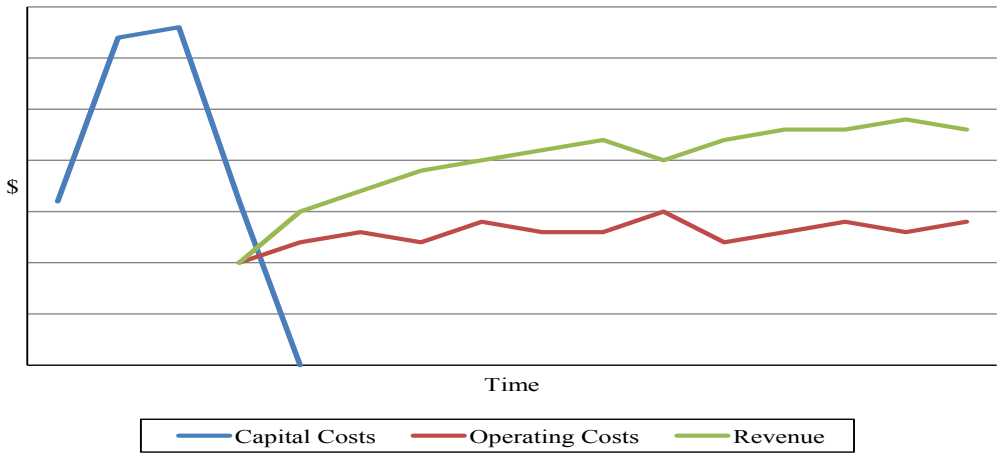
Long-Term Budgeting Perspective

Since PPP cost estimates can include ongoing O&M costs, decision makers should consider the long-term affordability of a project. Moreover, when projects are assessed using figures in Net Present Value (NPV),[39] stakeholders are able to consider both immediate and future costs at once, allowing them to determine whether the project is truly affordable in both the short- and long-run. By evaluating project costs from this perspective, decision makers look at the true total costs before moving forward and determining how much funding they will need to secure from partners or other sources in order to begin construction and see the project to completion.

Similarly, the long-term perspective forces decision makers to consider costs over the full life of the project and to compare them with expected revenues. The long-term approach can save money on O&M because those expenses are specified in the PPP contract, whereas inflation-related price increases may make maintenance more

expensive under traditional arrangements. Further, by considering O&M expenses from the outset, the project timeline and life cycle can be set up to improve the likelihood that revenues generated from the project balance the initial capital costs and later provide a return for both public and private partners, as shown in Figure 2. In this example, the project life cycle must be long enough so that the total cost of the project – the total area under the blue and red lines – is offset by the revenue generated, which is represented by the area under the green line.

Figure 2: Payments and revenue under PPP model[40]



Use of a long-term perspective may also yield other benefits for partners in both sectors. When private partners use a long-term perspective, they may realize additional savings from using cost-effective design, construction, and maintenance options, and these savings are often shared with the public sector. The corresponding likelihood of proper and guaranteed maintenance, repair, and replacement for the whole term of the PPP provides asset protection for investors in both sectors, thus protecting the public interest.

Faster Project Delivery

PPPs have consistently been found to deliver more projects on-time and on-budget than traditional arrangements.[41] By making a procurement decision based on FLC costs and with a long-term perspective, however, the public sector may not only be able to deliver cheaper projects but also those that might otherwise be cost-prohibitive in the short-term. Public sector expenditures under traditional arrangements tend to be high during the construction phase at the beginning of a project, and additional O&M costs are incurred over the rest of the project life. In contrast, PPPs often utilize private financing for up-front costs, thereby allowing the public sector to make more moderate payments back to the private partner(s) later in the process. Because private funds can be used for up-front costs, the likelihood of time lost due to pre-construction fundraising delays is reduced, and, in turn, the design and construction processes may be expedited. Public payments are then made later, after construction is underway and user fees or other revenues are generated. Particularly for large-scale, high-value projects, the use of private funds for capital expenses can mean that PPP-based projects achieve faster groundbreaking and more rapid construction once negotiations are complete, rather than waiting to secure public financing. Again, while the PPP option may not eliminate all delays, this decreased likelihood of launch delays and/or schedule

slippage can be a significant advantage to using PPPs.[42]

The ability to efficiently finance up-front costs and use revenues for repayment allows public decision makers to budget more effectively while also potentially reducing overall project costs. For this reason, PPPs may provide one way to circumvent short-term budgetary concerns. Such was the case with New York's JFK Airport international terminal, where the Port Authority would not have been able to afford the necessary infrastructure improvements without use of a PPP.[43]

Cautious Optimism

Again, despite these potential advantages to PPP arrangements, there can be instances where they are not appropriate for use. To this end, decision makers must be sure that projects are financially viable, regardless of the results of a VfM analysis. Likewise, they must consider whether they have the resources necessary for successful contract negotiation and implementation, as described in Appendix D. For these reasons, significant financial and logistical analysis must be completed before embarking on a PPP.

[PPPs] may be helpful for acquiring new infrastructure or extracting value from existing assets. That said, they are "not a panacea" and significant up-front analysis is needed to determine whether a [PPP] or any other arrangement is in the public interest.

— GAO, Highway Public-Private Partnerships

Conclusion

In general, PPPs can offer long-term savings on capital expenditures, in addition to the other advantages described above. Private financing of capital expenditures can lead to significant capital savings on the design, build, and operation phases, with additional savings possible through technology investment on operating expenditures. When considering those cost savings and adding in the savings that result from risk transfer, the tax exemptions previously thought by some to be an advantage of traditional procurement are rendered ineffectual. For this reason, decision makers must consider the final, bottom line dollar amount required for the full life of the asset in question, not just the construction and financing costs. Thus, comprehensive analysis must consider not only construction bids but also ongoing O&M and all risks, whether retained, transferred, or shared.

Because of the potential cost savings associated with PPPs and the large amounts of private equity currently available to fund them, this method appears to be an option that should be considered for procurement of public projects. Again, PPPs can be advantageous in many cases; however, these arrangements are not "free money" or miraculous solutions to public budget problems. Decision makers must consider the long-term consequences of investment upon taxpayers, economies, and the environment. The best way of considering all of these factors is through careful analysis including Value for Money assessment.

Appendix A: Critical Components of Value for Money

In addition to providing an estimate of the true costs associated with a project, VfM also provides insight into how much government funding is necessary under each option, therefore helping decision makers to determine whether any delivery option is financially feasible. In addition to providing information to the public sector, it can also be useful as an objective way to manage stakeholder and public perceptions. In order to achieve these benefits, however, the VfM analysis must be comprehensive, including several critical components: comparison of the PSC and PPP alternative using FLC analysis and risk estimates set in Net Present Value (NPV).

The Public Sector Comparator

As Dave Zelenok, Director of Public Works for the City of Centennial, Colorado, states, the key to developing a valid PSC is accounting for all direct and indirect costs related to the project over its full life.[44] These include human resource, construction, operation, maintenance, future capital improvement costs, and ancillary expenses (such as legal fees for traditional contractor negotiations or the cost of balloting and implementing bonding initiatives). To prepare this figure, the public agency needs to define the project scope and realistically determine project requirements and consequent costs and revenues.

One category that is often omitted from the PSC but incorporated into the private business plan is that of human resource costs. These costs are guaranteed under private partnerships but may be subject to changes under public procurement, especially when pensions and other varying costs are incorporated. This simple example demonstrates the importance of including all expenses and risks into the PSC: to make an accurate comparison, the public and PPP estimates must measure the same components.

Risk Allocation and Transfer

Effective risk transfer is one of the keys to achieving high VfM under PPP contracts. Although the base cost of financing is often higher when using private funds, risk allocation is one of the primary areas where those costs are recovered and, often, real cost savings is realized. With that in mind, decision makers should seek to allocate risk to the party best able to manage it. Under PPP arrangements, many project risks traditionally shouldered by the public sector are transferred to the private sector, as in the table below. While this scenario is not necessarily reflective of every case, the principle of risk transfer contained within is applicable to many PPP environments.

Figure 3: Typical Risk Transfer Scenario Under PPP Arrangements[45]

	Responsibility for Risk		Transferred?
	Public/DBB	PPP	
Development Risks			
Performance	Public	Private	X
Interface	Public	Private	X
Design Risks			
Scope	Public	Shared	X
Errors and Omissions	Public	Private	X
Interference/Coordination	Public	Private	X
Life Cycle	Public	Private	X
Construction Risks			
Performance	Private	Private	
Schedule	Public	Private	X
Cost Overruns	Public	Private	X
Changes in Scope	Public	Public	
Force Majeure	Shared	Shared	
Financing Risks			
Schedule Slippage Additions	Public	Private	X
Interest Rate Risk	Public	Private	X
Vehicle Supply Risks			
Supply/Performance Risk	Private	Private	
Financing Risks	Public	Private	X
Defects	Private	Private	
Maintenance and Life Cycle Risks			
Maintenance Level	Public	Private	X
Deferred Maint/Repair/Repl	Public	Shared	X
Defective Components	Private	Private	
Residual Value	Public	Shared	X
Operations Risks			
Revenue	Public	Shared	X
Service Level and Quality	Public	Shared	X

Net Present Value

Because many costs associated with public project delivery can be incurred over a long time period, they should all be estimated into dollars at Net Present Value (NPV). This allows for easier comparison of figures, without decision makers having to account for cost increases due to inflation. Thus, by bringing all future costs into present terms and basing them on the current dollar value, comparisons between the PSC and PPP cost estimates can be made more easily.

PPP Valuation

For more information on how to assign values to non-monetary costs, risks, and other components of VfM, see *Public Sector Decision Making for Public-Private Partnerships: A Synthesis of Highway Practice*, by the Transportation Research Board National Cooperative Highway Research Program (Washington, D.C.: National Academies Press, 2009).

Appendix B: Facts and Myths about PPP Use

Myth: PPPs are just another method of 'privatization,' leading the public sector to lose control over its assets.

There are significant differences between PPPs and other practices known as 'privatization.' While similar, PPPs allow the public sector to retain ownership and control over the project, unlike some privatization schemes that require the public sector to sell some of its assets. In contrast, however, "under a PPP agreement, the public sector *never* losers ownership of the facility, … [even when] some responsibilities are transferred to the private sector."[46] Specifically, the public sector retains control over establishment of user rates, operating standards, and other legal requirements, to which the private partner must adhere. The degree to which responsibilities are retained or shared is defined in the contract, and well-negotiated contracts that include monitoring and enforcement of performance standards can ensure that public interests are protected. To this end, many different types of PPPs can be used to realize the intended benefits without losing public control.

Myth: A PPP can work to meet any infrastructure need.

PPPs, like other options for project delivery, need to be thoroughly investigated. Not all projects are viable opportunities for partnerships. The following are factors to consider when determining whether a PPP might be useful for meeting project needs:

- Presence of a legal/institutional framework facilitating for PPP arrangements
- Favorable investment environment, including public opinion and willingness of potential private partners
- Economic viability, both from the public (VfM) and private (compensation) perspectives
- Reliability of prospective partners, including technical strength and adherence to performance and method specifications
- Appropriateness of risk allocation via reliable contractual arrangements

These and other keys to successfully managing PPPs are described in greater detail in Appendix D.

Myth: Private money offered through a PPP is a good way for the government to access "quick cash" to close budget gaps.

While the immediate availability of money from private investment sources may entice some decision makers to choose PPPs, it is important to remember that there is no such thing as "free money." The up-front payments seen in some arrangements can provide funds for immediate use in the applicable project (or, in some cases, for unrelated projects), but there are often restrictions on whether and under what circumstances private funds can be used to finance public projects. Appropriate uses of up-front payments should be spelled out in the contract. This possibility and other similar tradeoffs between advantages and restrictions are inherent in PPPs, meaning that these arrangements are not necessarily the answer to all budget shortfalls or infrastructure needs.

Myth: Private partners make excessive returns as a result of PPPs.

Earning a return on investment is one objective of the private sector when pursuing PPP contracts – this makes sense, given the profit motive common in that sector. However, there are many ways to prevent the private sector from siphoning undue benefits from the arrangement. Options such as revenue sharing provisions, refinancing regulations, and contract rebalancing provisions can be negotiated with the help of experienced PPP advisors and explicitly spelled out in the PPP contract, thus providing reassurance to the public sector that the agreement will be beneficial for both entities.

Myth: PPPs are difficult and expensive to negotiate, thus negating their benefits.

The perception that these agreements are difficult to reach has led to a general unwillingness to even try negotiating contracts, especially on the part of public sector decision makers. While PPP contracts can be subject to expensive and complex negotiations, they should remain an option to investigate and consider. Most reluctance is the result of unfamiliarity: one study of state and local officials revealed that 90% of those who had experience with PPPs expressed a willingness to pursue them again.[47] Luckily, there are many experienced firms and advisors able to educate potential public and private partners on PPPs and to help negotiate contracts that will be advantageous to both.

Appendix C: Case Studies

City of Centennial Public Works Department

Centennial, Colorado – 2007

The city of Centennial, Colorado was founded in 2001 by a group of community members who wanted to create a more cost efficient city with more effective public works services than had previously been delivered from the county. Through the use of a Public Sector Comparator, the Director of Public Works found that a PPP would narrowly win over the cost of in-house provision, and the winning proposal was implemented in 2007, following competitive bidding.

The city and private partner agreed to a $40 million contract for five years, but the city is permitted to review and re-approve the agreement annually. The $40 million payment by Centennial was allocated over five years, and costs are expected to decrease after the initial contract period because start-up costs have been paid. Moreover, the partnership has brought cost efficiencies and grant money to the city. During the first 12 months of the contract, $352,294 was collected for 564 right-of-way permit fees and $50,000 was saved by changing snow and ice control materials. The department was also awarded $160,215 in federal funds for new traffic signal equipment and $531,112 for three energy projects.

Today, the Public Works Department boasts just 48 employees, with remaining human resources provided by the private partner and everyone working as a unified team to form the largest public works partnership in the country. Through this partnership, the city has achieved cost savings, earned grant funding, and elevated performance standards. Services including transportation planning; traffic engineering and operations; pavement management; street and traffic infrastructure maintenance; capital improvement programs; city permit processing; and citizen call center operations are provided for 100,000 residents.

For more information on the Centennial case, see: http://www.ncppp.org/cases/Centennial.shtml.

Regional Transportation District (RTD) FasTracks Commuter Rail Lines

Denver, Colorado – 2010

The Regional Transportation District (RTD) of Denver, Colorado, is dedicated to achieving high levels of Value for Money on its FasTracks projects. For its largest contract to build and operate commuter rail lines – budgeted at $2.3 billion under public procurement – a PPP was established following competitive bidding in 2010. The winning proposal is estimated to save $300 million over the PSC and open the main rail line 11 months ahead of the anticipated deadline, both while being rated the higher technical proposal of the two bidding teams. Once complete, the project will bring 47 miles of new rail to the RTD system, more than doubling its existing light rail holdings.

Other RTD FasTracks projects are also planned to expand rail and bus service by building a total of 122 miles of commuter and light rail and 18 miles of bus transit service, add 21,000 new parking spaces in the service area, and redevelop Denver's Union Station. In all, the initiative is projected to create more than 10,000 construction jobs during the peak construction period and bring tourist and other money into the regional economy.

Project funding for FasTracks is derived from a combination of funding sources, including a voter-approved sales tax increase, municipal revenues, federal funding (including TIFIA funds), and PPP investment. In addition, one goal of RTD is to constantly reevaluate the technical aspects of their projects in order to find ways to provide greater VfM, especially through improvements in efficiency and cost-effectiveness. The program is also evaluated annually using an Annual Program Evaluation (APE). As part of the APE, staff analyzes the cost of the program, specifically looking for changes that can lower program costs without changing the current or future plans for FasTracks.

For more information on the FasTracks case, see: http://www.rtd-fastracks.com.

U.S. Food and Drug Administration, White Oak Campus, Phase III

Silver Spring, Maryland – 2010

Phase III of the U.S. Food and Drug Administration's ("FDA") landmark campus build-out project implements energy conservation measures at the White Oak facilities. Initiated in 2001, the public-private partnership between the FDA, General Services Administration ("GSA") and an Energy Services Company ("ESCO") is expected to generate $1.02B in total savings. At the forefront of this $195M phase is the expansion of the Combined Heat and Power/Cogeneration Central Utility Plant, which will support the heating and cooling loads of the facilities constructed in the earlier phases. The expanded plant is capable of producing up to 20MW of electricity, 6,000 tons of cooling, 112 MMBtu/hr of heating, and sufficient process steam to meet a 35,700 pph requirement.

The utilization of a PPP and third-party financing, in conjunction with the DOE's Super Energy Savings Performance Contracting Program, is estimated to save more than $200M over 20 years, according to the PSC analysis. Furthermore, the project significantly mitigates construction and financing risk through a fixed price contract and savings guarantee. The project improves the performance and efficiency of the Central Utility Plant, which will allow the FDA to meet budget and performance measure challenges. Over $90M in capital appropriations are freed up to meet mission critical and functional requirements of the FDA.

Initially, the project was to be funded through an appropriation of $45M for energy equipment and $165M in third party financing. The repayment of the money would be through energy and water savings, O&M savings, and utility rebates and incentives realized through a demand response program with the local utility. Ultimately, the $45M originally appropriated was funded by third party financing after a modification to the task order in 2012. This alteration allowed for further budget flexibility and cost savings.

When completed, this project will be invaluable to achieving energy security at the FDA, and achieving federal objectives outlined by Executive Order 13514 for the reduction of energy consumption and greenhouse gas emissions.

For more information on the White Oak case, see: http://www1.eere.energy.gov/femp/financing/superespcs_fda.html

JFK Airport International Terminal

Jamaica, New York – 1999

When capital improvements were necessary to enhance and expand the international terminal at New York's JFK Airport, the Port Authority of New York and New Jersey had limited debt capacity to finance the improvements. A PPP allowed for concurrent operation of the old facility and construction of the improvements, which would have encountered "significant" delays and logistical challenges if completed by traditional means.

Following a competitive solicitation involving international consortia of private developers, operators, and financiers, a private company entered into a 28-year lease with the Port Authority. The arrangement allowed private partners to design, finance, build, operate, and manage the new 16-gate, 1.5 million square foot facility. This contract allowed project debt to be secured by the private sector in a timely manner while the private partner received income from terminal operations (including gate fees) and retail activity, which it could use for lease payments to the Port Authority.

Value added by construction of the new terminal includes accommodation of an additional 1,200 arriving passengers hourly, profit during construction of the new terminal, a 100,000-square-foot retail concourse, and several areas for relaxation.

For more information on the JFK Airport case, see: http://www.ncppp.org/cases/jfkairport.shtml.

James F. Oyster Bilingual Elementary School

Washington, District of Columbia – 1993

In 1993, the James F. Oyster Bilingual Elementary School was in danger of permanent closure due to its crumbling facilities. Both the city of Washington, DC and the school district lacked the capital funds necessary to renovate the building, so concerned parents and the principal led efforts to save the school through establishment of the 21st Century School Fund, a non-profit set up with the goal of financing the necessary capital improvements. The partnership between DC Public Schools, the DC government, and a national real estate development company allowed for the use of alternative financing sources to complete the project, exceeding community expectations in the process.

The partnership allowed the project to be funded through a combination of payment in lieu of taxes (PILOTS) funds, an $11 million DC bond, and sale of a portion of the property to the private partner.

Through the PPP, a new, state-of-the-art 48,000-square-foot building and an adjacent 211-unit apartment building were constructed at no cost to taxpayers. Community-use areas, exterior playgrounds, and parking areas also contribute to the current, more efficient use of the site.

For more information on the Oyster School case, see: http://www.ncppp.org/cases/oyster.shtml.

Presidio Parkway

San Francisco, California – 2007

Like many other parts of the nation's infrastructure, the south access road to San Francisco's Golden Gate Bridge, known as Doyle Drive or Route 101, was "structurally and seismically deficient" due to continual use since its original construction in 1936. The new roadway, re-envisioned as "Presidio Parkway," is an opportunity for both structural and design improvements to be made. Planners aimed to reduce its biological and natural resource impacts as much as possible, while respecting neighborhoods, historic landmarks, and the surrounding Golden Gate National Recreation Area.

In 1996, a study began to assess the status of the road and determine the most appropriate course of action for improvement. The project was planned in two phases, with Phase I (2009-2012) delivered through traditional procurement and Phase II (2011-2015) through a PPP. This arrangement was negotiated in order to take advantage of federal stimulus money and begin construction sooner, achieve seismic safety as quickly as possible by diverting traffic onto completed Phase I work at the midpoint of the project timeline, and to shorten the total construction schedule. The PPP contract requires the private partner to design, build, finance, operate, and maintain the project for 30 years, reducing overall costs, transferring risks to the private partner, and guaranteeing high maintenance standards over the contract term, in exchange for a milestone payment of $185 million and a completion payment of $91 million.

For more information on the Presidio Parkway case, see: http://www.presidioparkway.org/.

Appendix D: Keys to Successfully Managing PPPs

The following are the "7 Keys to Successful PPPs," as developed by the National Council for Public-Private Partnerships. They are to be considered "best practices" in the development of these arrangements, though it is recognized that the methodology for implementation of PPPs can vary depending on the nature of a given project and local concerns.

1. **Public Sector Champion** – Recognized public figures should serve as the spokespersons and advocates for the project and the use of a PPP. Well-informed champions can play a critical role in minimizing misperceptions about the value to the public of an effectively developed PPP.

2. **Statutory Environment** – There should be a statutory foundation for the implementation of each partnership. Transparency and a competitive proposal process should be delineated in this statute. However, unsolicited proposals can also be a positive catalyst for initiating creative, innovative approaches to addressing specific public sector needs.

3. **Public Sector's Organized Structure** – The public sector should have a dedicated team for PPP projects or programs. This unit should be involved from conceptualization to negotiation, through final monitoring of the execution of the partnership. This unit should develop Requests For Proposals (RFPs) that include performance goals, not design specifications. Consideration of proposals should be based on best value, not lowest prices. Thorough, inclusive VfM calculations provide a powerful tool for evaluating overall economic value.

4. **Detailed Contract (Business Plan)** – A PPP is a contractual relationship between the public and private sectors for the execution of a project or service. This contract should include a detailed description of the responsibilities, risks and benefits of both the public and private partners. Such an agreement will increase the probability of success of the partnership. Realizing that all contingencies cannot be foreseen, a good contract will include a clearly defined method of dispute resolution.

5. **Clearly Defined Revenue Stream** – While the private partner may provide a portion or all of the funding for capital improvements, there must be an identifiable revenue stream sufficient to retire this investment and provide an acceptable rate of return over the term of the partnership. The income stream can be generated by a variety and combination of sources (fees, tolls, availability payments, shadow tolls, tax increment financing, commercial use of underutilized assets or a wide range of additional options), but must be reasonably assured for the length of the partnership's investment period.

6. **Stakeholder Support** – More people will be affected by a partnership than just the public officials and the private sector partner. Affected employees, the portions of the public receiving the service, the press, appropriate labor unions and relevant interest groups will all have opinions, and may have misconceptions about a partnership and its value to all the public. It is important to communicate openly and candidly with these stakeholders to minimize potential resistance to establishing a partnership.

7. **Pick Your Partner Carefully** – The "best value" (not always lowest price) in a partnership is critical in maintaining the long-term relationship that is central to a successful partnership. A candidate's experience in the specific area of partnerships being considered is an important factor in identifying the right partner. Equally, the financial capacity of the private partner should be considered in the final selection process.

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[9] It is important to note that "financing" a project is different than "funding" it. A "financing" mechanism must be repaid with a rate of return, whereas "funding" mechanisms are options that do not have to be repaid such as grants, tax revenues, or user fees (i.e. tolls or fares).

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[27] Typical procurement costs include issuance of the Request for Proposals [RFP] (including advertising, stipends) and contract negotiation costs.

[28] Financing costs under the PSC may include the cost of issuing municipal bonds, negotiating user fees, or levying taxes. Under PPP arrangements, financing costs include the amount spent on private investment (equity and debt), tax-exempt and taxable bonding, and other financing options.

[29] Risk allocation includes the monetary values assigned to various types of risk, which may include cost overruns, schedule slippage, deferred maintenance, private efficiencies, and other factors. For more information on risk allocation, see Appendix A.

[30] Design costs may include oversight, engineering or design consultants, project need analyses, etc.

[31] Construction costs typically include engineer and contractor costs (whether outsourced or done in-house), labor, materials, etc.

[32] Long-term O&M costs may include employee wages, power and materials needed for full operation, and routine and capital maintenance costs.

[33]Costs estimated in this graph are based upon a number of projects but can vary significantly from case to case. Graph is adapted from Office of Transportation Public-Private Partnerships, *PPTA Value for Money Guidance*, Commonwealth of Virginia (Richmond, VA, 2012), 19, http://www.vappta.org/resources/VDOT_VfM_guidance_document_August2012.pdf.

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[39] For more information on the importance of using figures in NPV, see Appendix A.

[40] Figure adapted from Raymond, "PPPs and Use of Availability Payments."

[41] Paul Posner, Shin Kue Ryu, and Ann Tkachenko, "Public-Private Partnerships: The Relevance of Budgeting," *OECD Journal on Budgeting* 9 (1): 11, http://www.oecd.org/dataoecd/43/32/43410287.pdf.

[42] GAO, *Wastewater Infrastructure Financing*.

[43] The case of JFK Airport is described in Appendix C.

[44] David Zelenok, "The First Steps in the Process: What Should Public Agencies Do?" (presented at the Implementing Partnerships for Infrastructure Workshop, Michigan State University, Lansing, Michigan, May 11, 2011).

[45] Table derived from Raymond, "PPPs and Use of Availability Payments."

[46] Emphasis added. TRB, *Public Sector Decision Making for Public-Private Partnerships.*

[47] PricewaterhouseCoopers, *Public-Private Partnerships*, 11-12.

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