

# **Public Cost Comparator for Public-Private Partnerships**

American University Masters of Public Policy on behalf of the National  
Council for Private-Public Partnerships

Claire Goldbach, Valerie Goldman, Richard Phillips, Ashlyn Seymour

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## **Executive Summary**

With the increased emphasis on the need to cut costs within the government costs, it is increasingly important for the public sector to find new and more cost effective ways to provide public services and continue with needed projects. Frequently when the public sector calculates the total costs of a given project they omit several important costs, such as employee benefits, utilities, and total administrative costs. As a result of omitting these costs, when comparing public sector versus private sector provision, the public sector may look cheaper than the private sector, which can be due to an incomplete calculation of the total costs. A public cost comparator calculates the total costs and risks if the public sector provides a particular good or service through any given project. The public cost comparator can then be used to compare the public sector versus private sector provision. If private sector provision is found to be the more cost effective option, then the public sector may choose to engage in a public-private partnership, sharing in the costs, benefits, and risks of the project with the private sector.

There are several decision making factors that need to be understood prior to calculating a public cost comparator, including: the discount rate, risks, and costs. The discount rate takes into account the high and low risk factors and their return on investment. Typically the discount rate will be lower for the public sector than the private sector because they have the infrastructure already in place. Risks should be limited to those that will increase the total cost of the project. It is crucial to include all of the potential of the project. It is important to note that some risks are shared within the partnership, while other risks are retained by the individual partners. Components of a public cost comparator include the raw public cost comparator, competitive neutrality, transferred risk, and retained risks. By including all of these components, the public sector will better be able to calculate the total cost of a given project, and as a result

will be more efficient in their use of funds. Best practices for using a public cost comparator were developed from published case studies, research, and interviews with practitioners.

## **Introduction**

When considering whether the costs of providing a given public service or capital project, the public sector often only considers the cost of the service omitting several other significant costs. An example of this happening occurred when the State of Florida performed a cost comparison of public and privately run prisons and found that the public prisons were seven percent more cost effective.<sup>1</sup> A second, and more complete cost comparison found that the private prisons were actually much more cost effective with savings ranging from 14-27% depending on the facility.<sup>2</sup> The critical difference between the comparisons was that the first did not include indirect administrative costs or compare the specific services performed by each prison facility.

Without an adequate assessment of the total costs of a project, the intended goals of the service may not be reached, additional costs may be incurred by taxpayers, and contracts may be terminated without knowing the true costs and benefits. Similarly, it can result in the public sector making improper investment decisions and a limiting of the possibility for public-private partnerships (PPP). Public-private partnerships allow governments to form partnerships for the provision of public services or capital projects through agreements with the private sector, while

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<sup>1</sup> Gilroy, L. C., & Moore, A. T. (2011). Corrections 2.0: a proposal to create a continuum of care in corrections through public-private partnerships. *Reason Foundation Policy Brief*, 94, 1-25.

<sup>2</sup> Gilroy, L. (2011, February 4). Corrections PPPs delivering cost savings in florida. *Out of Control Policy Blog*. Retrieved April 10, 2011, from <http://reason.org/blog/show/corrections-ppps-florida-savings>

avoiding having to raise taxes or borrow funds.<sup>3</sup> According to a 2007 survey commissioned by the Infrastructure Partnership Australia<sup>4</sup>, an advocate for PPPs in Australia, it was found that PPPs were more cost-efficient and more likely to be completed on time than traditional procurement strategies.<sup>5</sup> Public projects are inherently risky and these risks vary depending on the nature of the project. Possible risks include changes in political mood, changes in available funds, and external factors that can change the timeline of a project to make it take longer and change the costs of a project to make it more expensive. The creation of a public cost comparator (PCC) is a way to quantify the costs and risks if the project were retained by government. Acting as a comparison bid, a PCC can be used as a decision making tool for public organizations when deciding whether or not to partner with a private company to provide a particular good or service. While PCCs have been used for decades around the world, they are still relatively new to the United States.

This study acts as a resource and guide for public sector agencies to use in conducting a PCC. In acting as a guide to public agencies completing a PCC, it also seeks to provide resources and give background information regarding the PCC as well as its importance, provide a thorough explanation of the steps to effectively execute a PCC, and examine best practices to enhance the PCC process. In following this process, this study aims to enable public and private organizations to better realize their own potential. This study and guide notes that it is important

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<sup>3</sup> Akintoye, A., & Beck, M. (2009). *Policy, Finance & Management for Private-Public Partnerships*. Oxford, United Kingdom: Wiley-Blackwell.

<sup>4</sup> National Cooperative Highway Research Program (2009). *Public Sector Decision Making for Public-Private Partnerships: A Synthesis of Highway Practice*. Transportation Research Board of the National Academies. Washington, D.C.

<sup>5</sup> Savas, E. S. (1987). *Privatization: the key to better government*. Chatham, N.J.: Chatham House Publishers.

to understand the PCC in context—it is but one piece of a cost benefit analysis (CBA) or a Value for Money (VfM) assessment.

## **Background**

Within the realm of public-private partnerships (PPP), PCCs are a relatively new practice. Governments often create their own systems for determining the costs of projects, however, there is not one standardized method for estimating these costs. This often results in the omission of costs such as employee pension plans, health benefits, office space, and utilities. PCCs have become more prevalent as the need for a feasible method for calculating the cost of public sector projects has grown. PCCs have also been referred to as public sector comparators (PSC), with the terms being used interchangeably, depending on preference. The literature on PCCs is relatively limited due to it being a new step in the process of forming PPPs.

The actual ideas behind PPPs and PCCs are, however, not exactly new. In Governing By Network: The New Shape of the Public Sector by Stephen Goldsmith and William D. Eggers<sup>6</sup>, the authors conclude their analysis of using networks within the government by examining how to “focus less on programs and more on public value.”<sup>7</sup> The authors suggest that this can be done best through further investigation of issues such as learning to work with private funding, developing solutions to problems through combing the work of multiple partners, and understanding the best sources of specialist outside of the government entity.<sup>8</sup> These ideas are central to both PPPs and PCCs, and, have been employed by governments prior to the increased interest in streamlining and creating larger efficiencies within government.

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<sup>6</sup> Goldsmith, S. & Eggers, W.D. *Governing by Network: The New Shape of the Public Sector*. Washington, D.C: Brookings Institution Press, 2004.

<sup>7</sup> Goldsmith, S. & Eggers, W.D. (2004). 180.

<sup>8</sup> *Ibid.*

## *Public Private Partnerships*

The National Council for Private-Public Partnerships (NCPPP) defines a PPP as:

A contractual agreement between a public agency (federal, state, 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.<sup>9</sup>

PPPs are part of the new government model, integrating the public sector with private sector management strategies. They create greater flexibility within the public sector that allows for governments to better tailor their service provision to the unique needs of their constituents.<sup>10</sup> With current fiscal budget constraints, the use of alternative means of providing services and the ability to provide services at the lowest cost is becoming increasingly important.

David Osborne's and Ted Gaebler's Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector, breaks down the "transformation" to the use of PPPs in the United States into a number of key ideas, most notably: using competition for the delivery of services, focusing on the outcomes of projects and customers, and foresee issues of the future.<sup>11</sup> These initiatives were not in the vernacular of the government before the second half of the twentieth century, but these changes were critical to the innovation being seen today in local, state, and the federal government.<sup>12</sup>

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<sup>9</sup> NCPPP - How PPPs Work. (n.d.). *Welcome to The National Council for Public-Private Partnerships*. Retrieved March 20, 2011, from <http://ncppp.org/howpart/index.shtml#define>

<sup>10</sup> Goldsmith, S., & Eggers, W. D. (2004). *Governing by network: the new shape of the public sector*. Washington, D.C.: Brookings Institution Press.

<sup>11</sup> *Ibid* 139, 166, 299.

<sup>12</sup> *Ibid*.

### *Public Cost Comparator*

A PCC should be administered prior to engaging in a public-private partnership PPP, in order to calculate the opportunity costs and true costs of providing a service or project. By calculating the total costs early in the planning process, the public sector will know the full costs of the project. A PCC will help quantify the benefits of using a PPP, making it possible to compare the tangible and intangible assets of public sector provision to private sector provision.<sup>13</sup> This consists of calculating the risks of private service provision followed by the Value for Money (VfM). Value for Money is a valuation tool that is widely used outside of the United States in areas more familiar with PPPs.<sup>14</sup> VfM takes the public cost comparator beyond just producing a market value for the project, but instead computes if there will be a return on investment, or *value for money*, to the end-users it does this by comparing the results with competitive bids from private firms.<sup>15</sup> However, VfM is not without its drawbacks and risks. A calculation of this kind of scope requires insight, education, and extensive prior knowledge of multiple facets of the project.<sup>16</sup> This point is significant in that it is extremely difficult to task just one person with calculating and creating the best estimate for the many diverse sets of expenses included in a specific project.

In addition to using a PCC to compare public versus private service provision, a PCC can also be used to compare multiple private sector contracts in terms of costs, to measure how successful a given project or service is during the implementation process, and to aid in deciding

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<sup>13</sup> Akintoye, A., & Beck, M. (2009).

<sup>14</sup> National Cooperative Highway Research Program (2009). *Public Sector Decision Making for Public-Private Partnerships: A Synthesis of Highway Practice*. Transportation Research Board of the National Academies. Washington, D.C.

<sup>15</sup> *Ibid.*

<sup>16</sup> *Ibid.*

to whether or not to renew a PPP contract.<sup>17</sup> This makes using a PCC a necessary step not only prior to the request for proposal (RFP), but also throughout the process. In addition, it is important to use a PCC when the public sector receives unsolicited proposals.<sup>18</sup>

While a PCC is similar to a cost-benefit analysis in that a PCC should be expressed in net present value terms, thus viewing all the costs over the lifecycle of the project as if at their present value, the PCC is not a cost-benefit analysis. Unlike a cost-benefit analysis which looks at cash flows including their accumulation basis as well as other non-cash items, the PCC looks at cash flows—not their accrual basis. Thus, non-cash items such as depreciation are not always required as part of the PCC.<sup>19</sup><sup>20</sup> The PCC also places an emphasis on the following three element:

1. A PCC is based on recent public methods of providing a defined output<sup>21</sup>;
2. A PCC takes into account the risks and the costs of these risks that would incur by the considered method of service provision;<sup>22</sup> and,
3. A PCC is based on the assumption that there is no net financial advantage between public and private sectors even though the government has an inherent advantage due to its ownership of the public sector.<sup>23</sup> This allows money assessments between the public and private sectors to be viewed the same.<sup>24</sup>

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<sup>17</sup> Akintoye, A., & Beck, M. (2009).

<sup>18</sup> National Cooperative Highway Research Program, (2009).

<sup>19</sup>Partnerships Victoria (2001), 18. *Public Sector Comparator: A Technical Note*. State of Victoria. Melbourne, Victoria. Australia: Department of Treasury and Finance, 18.

<sup>20</sup> McHugh, K. J. (Director) (2002, July 28). Improving system efficiency. *Water asset management seminar*. Lecture conducted from The National Council for Public-Private Partnerships, Florida. Retrieved from <http://www.ncppp.org/councilinstitutes/watermeeting02/mchugh.pdf>

<sup>21</sup> Akintoye, A., & Beck, M. (2009).

<sup>22</sup> *Ibid.*

<sup>23</sup> Partnerships Victoria. (2001), 18.

<sup>24</sup> *Ibid.*

As every PPP is different, the scope and content of a PCC will vary depending on the project. However, these unique elements in a PCC ensure that parameters such as the value criteria used to measure success; the whole-life cost of the project, and the input and output specifications to be used, are considered prior to entering into a PPP.<sup>25</sup>

### **Decision Making Tools**

Since public-private partnerships range from infrastructure endeavors to a provision of a public good or service the particulars of the decision making process differ vastly depending on the more detail oriented and cost specific an analyst becomes. Moreover many of these details may be very complex and may require the additional input of a technical expert who is experienced in similar projects. There are three different aspects that all public sector agencies must understand before constructing financial evaluation of the PCC. These three aspects are an understanding of the discount rate, an understanding of the risks, and an understanding of the costs.

#### *Understanding the Discount Rate*

One component that is important to the assessment of the total costs of services and projects is the determination of the discount factor. Since the project is over several years, a Net Present Value (NPV) must be determined to perform a proper and accurate PCC.<sup>26</sup> The NPV is the best method to use when analyzing the time value of money of the cash flow over the life of a

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<sup>25</sup> Akintoye, A., & Beck, M. (2009).

<sup>26</sup> Buxbaum, J. & Ortiz, I. (2009).

project.<sup>27</sup> It is an evaluative measure that is able to distinguish high and low risk projects and their correlation to the rate of return.<sup>28</sup> Theoretically, the discount rate for the public sector evaluation will be smaller than the one used by the private sector, otherwise the present value of the private cost stream will be overestimated.<sup>28</sup> This is due to the fact that the private sector will base their discount rate on the cost of capital, private borrowing costs, and the costs of equity, while public sector will use their cost of borrowing rate or interest rate, which is inherently lower for the public sector or government entity.<sup>26</sup> This will remain the case even under a completely free market with zero taxes. If the same discount rate is used for both the public and private sector, it is assumed there are two, similar, cost cash flows being compared. However, when incorporating the private sector cost benefit analysis, benefits and revenues must also be taken into account.<sup>29</sup>

One way to determine the discount rate for both the public and private sector is to use the Capital Asset Pricing Model (CAPM). Several countries use this calculation to determine the discount rate used for the NPV of the private bids. As applied in Australia, the variables are defined differently for a PPP to include systematic risk. When this method is used there is no reason to adjust the cash flows for systematic risk.: if only the risk free rate is used then the cash flows should reflect the risk of return involved in the project. This discount rate should be used to rank the different options and not on a stand alone analysis.<sup>30</sup> The basic CAPM formula is:

$$Ra=Rf+\beta a(Rm-Rf)$$

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<sup>27</sup> Guidelines for the Appraisal and Management of Capital Expenditure Projects in the Public Sector (2005). *Department of Finance*. Dublin, Ireland.

<sup>28</sup> The National Public Private Partnerships Policy Framework and National PPP Guidelines (2009). *Financial Circular*. Australian Government, Department of Finance and Regulation

<sup>29</sup> Grout, P.A. (2002). *Public and Private Sector Discount Rates in Public-Private Partnerships*. CMPO: University of Bristol.

<sup>30</sup> Shugart, C. (2008). *PPPs, the Public Sector Comparator, and Discount Rates: Key Issues*. John Deutsch Institute: Canada.

$R_a$  is the the required return, which factors in systemic risk

$R_f$  is the risk free rate

$\beta_a$  is the variation of asset returns in the market (this can be adjusted to reflect the project's risk

$(R_m - R_f)$  is the return expected over the risk free rate

The risks transferred to the private sector will be added to the risk free rate resulting in choosing a higher discount rate to be applied to the private sector bid.<sup>31</sup>

Another more accurate equation to calculate the discount factor is the Weighted Average Cost of Capital (WACC). This does not only include the cost of equity (CAPM), but it will also take into account the cost of debt. The formula is as follows:

$$WACC = (E/V * R_e) + (D/V * R_d * (1 - T_c))$$

$R_e$  = Cost of Equity (CAPM as described above)

$R_d$  = Cost of Debt (market value)

$E$  = market value of firm's equity

$D$  = market value of firm's debt

$V = D + E$

$E/V$  = % of financing that is equity

$D/V$  = % of financing that is debt

### *Understanding Risks*

Risks are an important component of a PCC as they reflect the possibility of costs above the direct and indirect costs involved in the project. In a PPP, risks play a major role. The

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<sup>31</sup> Summary of Discount Rate Changes (2009). Partnership Victoria Requirements. Retrieved from [www.partnerships.vic.gov.au](http://www.partnerships.vic.gov.au).

transfer of risks from the public to the private sector is inherent in the benefits gained from the private funding and partnership of public goods and services.<sup>32</sup> In evaluating risks, it is important to first identify all material risks, then quantify the consequences of the risk and estimate the probability of the risk. Only by calculating the consequences and probability is it possible to calculate the value of all the risks in the project. The PCC requires the evaluation of all the risks retained, transferred, and shared. The financial evaluation of the PCC will then include the transferable risks and retained risks that should have already been estimated. The transferable risks will increase the value of the private bid, and the retained risks will be added to the costs of the private bids.<sup>33</sup> In many cases, correct calculation of the risk in projects accounts for cost savings. In a study by Ball (2003), sixty percent of the total savings was due to risk transfers.<sup>34</sup> Alternatively, the UK analysis of the case study Anderson and LSE Enterprise found that thirty-five percent of the cases only achieved value for money because of risk transfer.<sup>35</sup>

#### Identification of Risk and Risk Consequence

There are many different types of risk, with some types being more or less important depending on the type of PPP. For example, design and construction risks are higher in infrastructure projects while technology change risks are higher in PPPs with more IT involved. Appendix A compiles a list of examples of risk categories that could be included. Note that this list is incomplete and further research is required on the part of the public sector agency to

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<sup>32</sup> Hodge, G. A. (2004). The risky business of public-private partnerships. *Australian Journal of Public Administration* 63(4):37-49, pg. 39.

<sup>33</sup> Buxbaum, J. & Ortiz, I. (2009). *Public Sector Decision Making for Public-Private Partnerships: A Synthesis of Highway Practice*. Washington, D.C.

<sup>34</sup> Ball, R., Heafey M. & King, D. (2003). Risk transfer and value for money in PFI projects. *Public Management Review* 5(2). Retrieved from <http://www.informaworld.com/smpp/content~content=a714042651~db=all>.

<sup>35</sup> Hodge (2004), 39.

determine which risks need to be included based on the *specific* nature of the project. For the purposes of the PCC, only material risks need to be identified and will be included within the Transferable Risk and Retained Risk PCCs.<sup>36</sup>

Once all risks have been identified, the potential cost of the risk needs to be calculated. This cost is equal to the consequence of the risk multiplied by the probability of its occurrence added to a contingency amount. As the consequences of risk can be direct and indirect, these interactions and implications need to be addressed in the PCC. Once each consequence is identified, the probability of the consequence is taken into account. It is useful to construct a risk matrix to organize the risks, their consequences, the outcome, and the probability of the outcome and consequence.<sup>37</sup>

### Calculation of Risk

The formula for the calculation of risk requires the discretion of the planners and auditors to factor in the details but can follow a basic formula or matrix. For each potential situation, there will be a list of possible scenarios that reflect potential monetary or cost outcomes. These outcomes will be assigned a probability factor. The costs for each scenario multiplied by their probability will be the cost of the risk to be included in the project cash flow.<sup>38</sup>

Scenario	Probability (p)	Cost (c)	Value of Risk (p*C)
Scenario A	0.5	\$50,000	\$25,000
Scenario B	0.25	\$100,000	\$25,000

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<sup>36</sup> Partnerships Victoria (2001), 31.

<sup>37</sup> *Ibid.*

<sup>38</sup> Robinson, H., Carillo, P., Anumba, C.H., & Patel, M..(2010) *Governance and Knowledge Management for Public-Private Partnerships*. Malaysia: Vivar Printing Sdn Bhd

Scenario C	0.25	\$75,000	\$18,750
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*Transferred Risks PCC*

The private sector will encounter risks from maintenance life cycle costs, especially if the PPP has a build, operate, and maintain design. They will also be responsible for the operations of the facility and production as well as the performance of the company and their employees. The other risk they are responsible for is continual innovation in order to remain efficient and a player within their industry, since their underlying goal is to maximize their profit or remain a top competitor. In this same regard, technology used by the private sector must remain current and on the cutting edge to be on the same playing field as others within their industry. These risks are referred to as *transfer* risks to the public sector and will increase the value of the private sector bid. Risks are identified and calculated as previously described. Note that when transferring the risk to the private sector, assessments of risk require “an optimal rather than maximum transfer of risk. [This] is determined by assessing the ability of each party to reduce the probability of a risk occurring, and to [minimize] the consequences if that risk eventuates.”<sup>39</sup>

*Retained Risk PCC*

A very important factor of the PCCs is the assessment of risk between public and private entities. This component is distinguishable from any other assessment in that the public sector faces very different risks than their private counterparts. They retain the political risks in the design phase and face more limitations. They are guided by rules and regulations of what they can do rather than what they cannot do. They must also consider the cost if the implementation of the delivery fails as well as the risk of a change in the preferences in the demand of their

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<sup>39</sup> Partnerships Victoria (2001), 52.

constituents. These risks are commonly referred to as “retained.”<sup>40</sup> Risks are identified and calculated as previously described.

### Other Risks

The risks that must also be considered are those that are shared between the two sectors. These are the uncontrollable, environmental factors that include inflation, interest rates, and changes in legislation. Any of these risks could alter the value of a partnership and could potentially discourage investing in projects with the private sector and vice versa if there is no certainty in the economic stability of the program. This will affect both sectors and prove to impact their decision whether to place a bid for a project or to pursue the public private partnership to begin.

### Understanding Costs

The public cost comparator needs to be assessed to use as a comparison to the private sector bids. In constructing the PCC there are several different costs to consider in the analysis.

According to Akintoye and Beck there are three categories to consider when conducting a PCC: value-based inputs (cost based), risk-based inputs (hypothetical cost based), and competitive neutrality (hypothetical cost based).<sup>41</sup> The value-based inputs that make up seventy to eighty percent of a PCC consist of capital, operational, and whole life-cycle costs, of what could be described as the Raw PCC. Risk-based inputs generally consist of ten to twenty percent of the PCC.<sup>42</sup> There are several possible models for calculating risk-based inputs. The

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<sup>40</sup> Partnerships Victoria (2001), 56-58.

<sup>41</sup> Akintoye, A., & Beck, M. (2009).

<sup>42</sup> *Ibid.*

competitive neutrality elements account for differences between the public and private sector models for providing a service such as taxation and administrative structures.<sup>43</sup> These are up to approximately ten percent of the cost calculated using the PCC.<sup>44</sup> The different types of costs will be adjusted throughout the PPP, but it is important to calculate these costs prior, when assessing the costs of the project.

The whole-life cycle costs consist of the capital and operational expenditures. These are generated by the base case model without accounting for risk. Risk can be calculated as *pure risk* and as *spread risk*. Pure risk is the probability of the occurrence of an event multiplied by the financial consequence if it were to occur.<sup>45</sup> The probability of occurrence can be calculated by reviewing similar previous projects and data.<sup>46</sup> Spread risk is the uncertainty of the cost estimates of the project, including the markets and the technical capacity.<sup>47</sup> Probabilities and hypothetical scenarios can be used to calculate spread risk.

Additional costs that are difficult to calculate, but that should be considered, include the costs incurred outside of the partnership such as those incurred to customers and citizens, as well as the depreciation costs.<sup>48</sup> This could consist of conflicts in organizational structure between the public and private sector, resulting in challenges with communication and transparency. The inclusion of depreciation expenses depend on the current assets used in operation. If the assets of the project do depreciate over time, then depreciation expenses should be included unless a

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<sup>43</sup> *Ibid.*

<sup>44</sup> *Ibid.*

<sup>45</sup> *Ibid.*

<sup>46</sup> Akintoye, A., & Beck, M. (2009).

<sup>47</sup> *Ibid.*

<sup>48</sup> Kamensky, J. M., & Burlin, T. J. (2004). *Collaboration: using networks and partnerships*. Lanham, Md.: Rowman & Littlefield Publishers.

maintenance schedule precludes depreciation.<sup>49</sup> It must also be decided if the depreciation will be expensed according to Generally Accepted Accounting Principles (GAAP) and current legislation (for tax liability purposes) or the actual, operational life of the asset. Note the chart below for examples of the various costs that would be included.

<b>Direct Capital Costs</b>	<b>Direct Maintenance Costs</b>	<b>Direct Operating Costs</b>
Design costs Land and other development costs (lease, purchase, etc) Raw Materials Payments to external actors (financial, legal, engineering, etc.) Equipment Payments for procurement (project development, documentation, etc.)	Raw Materials Tools/Equipment Labor (wages/salaries) Capital Improvements/upgrade to facilities or expansions	Inputs Employees (wages, entitlements, superannuation, insurance, training, annual/sick leave, travel, etc.) Insurance Building Services (water, electricity, furniture, etc.)
<b>Indirect Capital Costs</b>		<b>Indirect Operating Costs</b>
Corporate overheads (running costs) Non core IT and equipment Employees Facilities management Employees not directly involved (ex. HR)		Partial use of plants/equipment Partial use of administrative buildings Depreciation

### **Components of a PCC and their Financial Evaluation**

There are four different cost analyses involved in the full PCC. These are:

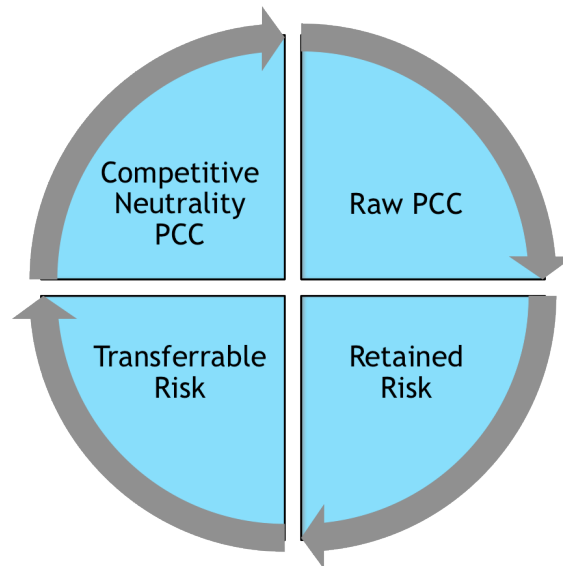
1. Raw PCC.
2. Competitive Neutrality PCC
3. Transferable Risk

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<sup>49</sup> McHugh, K. J. (Director) (2002, July 28).

#### 4. Retained Risk

Each of these components' financial evaluation is described below. Each of these PCCs has a distinct purpose and includes certain elements that are not always included in other components. Only by calculating all of the components of the PCC can the public sector truly understand the full public costs of completing a project. All of these components added together equal the total value of the PCC for the project.<sup>50</sup>



$$\text{Total Value of PCC} = \text{Raw PCC} + \text{Competitive Neutrality PCC} + \text{Transferrable Risk PCC} + \text{Retained Risk PCC}$$

#### *Raw PCC*

The first component is to calculate a raw PCC by conducting a simple cost analysis as if the public sector was to distribute the good or service on its own. The public sector will supply its own public resources and face limitations as to what resources it can provide as well as the

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<sup>50</sup> Partnerships Victoria (2001), 7.

capacity the government has to take on a given project. The raw PCC is a quantitative evaluation that considers all of the direct and indirect costs used (or anticipated) in the lifecycle of the project – before adjustments for competitive neutrality and risk. Thus, the raw PCC includes *only* the financial costs and benefits.

The Raw PCC is intended as a financial benchmark to be used against other bids for the projects. At this point the discount factor chosen would be applied in calculating the NPV of net costs or benefits incurred by the public sector.

It is important to remember several points when calculating the Raw PCC regarding which costs are and are not included.

The Raw PCC includes:

- Only **financial costs** and **financial benefits**, when they are applicable, that are **part of the cash flow**. This includes the purchase of **fixed assets**.
- **Maintenance costs** over the life cycle of the project are **essential** to the Raw PCC.

These costs must be estimated as close as possible to their actual anticipated amounts.

- As **third-party financing** reduces the net cost to government, it should be **included** in the Raw PCC. However, while the risks of third-party financing are adjusted in the Transferable Risk PCC, the Raw PCC must be careful to understand the costs of the third-party revenue and its risks.<sup>51</sup>

The Raw PCC does not include:

- All **risks, contingencies, and adjustments** are **excluded** from the Raw PCC. In the Raw PCC, everything is assumed to work perfectly. These elements are included within the Transferable Risk PCC and the Retained Risk PCC. Rather, when constructing the Raw

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<sup>51</sup> *Ibid.*

PCC, these elements of risk, contingency, and adjustment should be recognized for use later.<sup>52</sup>

Thus, the Raw PCC is calculated below:

$$\text{Raw PCC} = (\text{operating costs} - \text{third-party revenue}) + \text{capital costs}$$

### *Competitive Neutrality Value PCC*

Competitive neutrality is a designed “set of policies and legal arrangements that ensure that all organizations and individuals—public, private and nonprofit—are treated in an equal manner in the bidding process between public and private bidders”.<sup>53</sup> In calculating the Competitive Neutrality PCC, all inherent advantages and disadvantages of the public sector are removed to create comparable project costs. This results in any tax exemptions or economies of scale will be netted out. All advantages and disadvantages which are not available to the private sector are calculated into the Competitive Neutrality PCC. Without incorporating the advantages or disadvantages of the public sector given its nature as government and public sector ownership, the PCC may be artificially lower than private bids.

There are three main steps in calculating the Competitive Neutrality PCC.

1. Identify the overall effects of government ownership including the areas of financial advantage and disadvantage. Government potential advantages such as exemptions from

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<sup>52</sup> Partnerships Victoria (2001), 18-23.

<sup>53</sup> Eggers, William D. (1998). Competitive Neutrality: Ensuring a level playing field in managed competition. How to Guide no. 18. Retrieved from <http://reason.org/files/89757d9aa5aed0ed3225193829d2b667.pdf>.

paying land tax, local government rates, stamp duties, payroll tax. Government potential disadvantages include accountability costs and employment compensations<sup>54</sup>.

2. After identifying the overall effects of government having a monopoly of the public sector, the value of each element quantified per unit needed in the project is estimated.
3. Lastly, the total for the Competitive Neutrality PCC is found by assessing the net advantage of government ownership. All quantified potential 'advantages' are treated as costs while the quantified potential disadvantages are treated as benefits.

### *Transferred Risks PCC*

When forming a PPP, often times part of the appeal is the transfer of risk from the public to the private sector. This transfer of risk will increase the overall value of the private bid, so the financial calculation is an important part of the decision making process. The public sector must identify all risks and value each risk (as described in the "Understanding Risks" section). This step must be completed before continuing with the process.

The optimal transfer of risk will then need to be identified and agreed upon. The appropriate type and amount of risk to be transferred will differ due to the unique conditions in each project. Each sector will be able to manage and minimize certain risks better than the other. If all risks are transferred to the private sector, they could potentially be ill managed and the probability of occurrence will increase (maximum transfer of risk). The sector that is able to best, financially maintain specific risks will receive them during the optimal risk allocation.

Cash flows will need to be adjusted to reflect the values of the transferred risks that have been designated to the private sector. The risk inclusive cash flows must be calculated separately

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<sup>54</sup> Note that these should not be counted in the Competitive Neutrality PCC if they are already included in the Raw PCC to avoid counting elements twice.

to find their NPV, which will include the assigned monetary value of the risk as well as the expected time of occurrence. Transfer of Risks will greatly enhance the VfM that will be calculated at the end of the PCC process.

### *Retained Risk PCC*

Retained risk refers to applying an understanding and fiduciary figure to the risks that remain with the government when engaging in a PPP. These risks will differ with each partnership and can even differ between the bids that are received in exploring the use of PPPs in the delivery of services or in a project. Interestingly, the public sector can request a preferred threshold of risk that would be retained and transferred to the private sector partner. The most important aspect is that this value of retained risk be calculated and added to the private sector bids that have been received. This can only be done by identifying all project risks, developing and understanding the consequences of each risk, establishing the probability of each risk, and finally, calculating the appropriate value of the risks.<sup>55</sup>

### **Understanding PCC in Context: Value for Money**

The value for money assessment also includes the NPV of the PCC.<sup>56</sup> Developing a whole life cost is an important element, so is understanding the benefits to the transfer of risks, single ownership and facilitation of the operations, the use of assets (both operating and capital), and innovation of the private sector.<sup>57</sup> The VfM as defined by Treasury as the “optimum

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<sup>55</sup> Partnerships Victoria (2001), 56-58.

<sup>56</sup> Robinson (2010).

<sup>57</sup> Pangeran, M.H., & Wirahadikusumah, R.D. (2010). Challenges in Implementing the Public Sector Comparator for Bid Evaluation of PPPs Infrastructure Project Investment. *Proceedings of the First Makassar International Conference on Civil Engineering*.

combination of whole life costs (capital and operating) and quality of services to meet the requirement of the public sector.” The ultimate rule for decision making following a VfM assessment is that there must be a net benefit for the public sector in order to enter into a public private partnership.<sup>58</sup>

## **Best Practices**

By describing the components necessary in the creation of a PCC for a PPP, the goal is to illustrate the best way to achieve the PCC—and thus, the best possible PPP. This section works as a compliment to the previous section by providing practical advice on this process.

To arrive at these best practices, a systematic literature review and interviews with many professionals known for their contribution in the formation of successful PPPs were performed. What was found in examining the wide-range of case studies and talking to informed individuals, was that there are several universal principles that have proven to be critical in whether or not a PPP was a success or failure.

The following describes best practices for creating a PCC and PPP. For another fantastic list of critical success factors for PPPs, see the NCPPP’s “6 Keys to Success.”<sup>59</sup>

### *Best Practice #1: Understand the Uniqueness of the Project*

Over the past several decades PPPs have become an increasingly common tool throughout the world. This has resulted in experience and research which informed this guide. The important thing is to approach this study and other experience as a guide rather than a

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<sup>58</sup> Robinson (2010).

<sup>59</sup>NCPPP - How PPPs Work. (n.d.). 6 Keys to Successful PPPs. Retrieved March 20, 2011, from <http://www.ncppp.org/howpart/index.shtml#keys>

stringent list of rules in creating a PPP.

Shirley Ybarra, whose experience includes serving as the Secretary of Transportation for the Commonwealth of Virginia and writing Virginia's model public-private partnership legislation, "The Public-Private Transportation Act of 1995,"<sup>60</sup> acknowledges both the importance of the PCC process and its inability to be a complete formula: "Too many people want to come up with a formula to say 'that's what works' ... It's a nice idea but I doubt it. You can't cookie cutter it."<sup>61</sup> While Ybarra notes that guides can point to the elements that ought to be included, the actual inputs and elements are unique and project specific. Ybarra proves her point with the simple example that picking a standard overhead rate "would be foolhardy."<sup>62</sup> Thus, it is important to remember that each potential project or problem should be understood as a unique opportunity. Taking this approach allows for public and private stakeholders to act creatively to the specific problems and circumstances they are confronting.

Gene Schiller, whose substantial hands on experience in project development stems from his experience as senior executive with Southwest Florida Water Management District, notes that "each project is a unique set of variables, not one size fits all... process is as important as the product."<sup>63</sup> He describes the potential in partnerships as "a business relationship, but it's a mutual beneficial one...It's not a war."<sup>64</sup>

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<sup>60</sup> *Reason Foundation* (2011). "Staff Shirley Ybarra." Retrieved from <http://reason.org/staff/show/shirley-ybarra.html>.

<sup>61</sup> Ybarra, S. (2011, March 10). Telephone interview.

<sup>62</sup> *Ibid.*

<sup>63</sup> Schiller, G. (2011, March 10). Telephone interview.

<sup>64</sup> *Ibid.*

### *Best Practice #2: Include Everything, but Be Wary of Bias*

Not including every aspect of public costs can mean the difference between finding that a PPP is or is not cost effective. For example, Allyson M. Pollock, Jean Shaoul, and Neil Vickers found in a study that advocates of the privately financed hospitals in Great Britain were correct to include the cost of transferred risks, but that they calculated the risk transfer in such a way that private financing appeared the best option in almost every case.<sup>65</sup>

One of the most effective ways for an interest group to build the case for or against a PPP is to distort the PCC by excluding specific costs. Ensuring that you have considered every cost is the best way to counteract this bias in favor an objective PCC to use in deciding whether to go forward with a PPP. Phil Russel echoed this sentiment following his vast experiences in PPPs with the Texas Department of Transportation: “[The process needs] to look at hard and soft costs. [It n]eeds to be the whole picture.”<sup>66</sup>

### *Best Practice #3: PCC is Not a Final Step*

The PCC is just one way of exploring the possibility of public sector involvement and assessing their value for money. Furthermore, the PCC only provide a partial picture. It is impossible to determine from only the public cost assessment whether a PPP will be beneficial without the comparative factor of what it would cost the private sector.

Parker Williams whose PPP experience includes serving Administrator of the Maryland State Highway Administration and Deputy Secretary of Administration with the Pennsylvania Department of Transportation, agrees noting the importance of the PCC while also pointing to its

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<sup>65</sup> Pollock, A. M., Shaoul, J. & Vickers, N. (2002). Private Finance And "Value For Money" In NHS Hospitals: A Policy In Search Of A Rationale?. *British Medical Journal*, 324(7347), 1205-1209.

<sup>66</sup> Russel, Phil. (2011, March 10). Telephone interview.

limitations. Having had several successful transportation PPPs, Williams notes that decision making for a PPP revolves around a host of issues including sufficient state and local government funding without financing from the private sector, a possible revenue source generated by the project to offset the cost of private sector involvement and financing, and scheduling delays resulting from lack of funds in the public sector. For these reasons as well as the need to be cautious and not overly biased as explained the previous best practice, Parker notes that it is important to view the with caution PCC as a “decision aid tool, not a decision making tool.”<sup>67</sup>

#### *Best Practice #4: Be Realistic, Not Overly Optimistic*

Study after study has shown that public sector cost estimates are consistently too optimistic in terms of a project’s cost, timeline, and ability to generate revenue.<sup>68</sup> This has certainly proven to be the case for both PCCs and and the costs of PPPs.

In order to counter this effect, the initial PCC and PPP cost estimates should be understood as starting points that are likely to rise as the project progresses. In addition, to counteract this effect, PPPs can be constructed to allow for renegotiation as a project progresses.

The good news for PPPs is that although these partnerships also tend to experience a substantially higher cost than originally estimated, this rise is significantly lower than the average rise through traditional government projects. In fact, a comparative study of a representative sample of PPP and traditional government projects in Australia found that PPP

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<sup>67</sup> Parker, W. (2011, March 10). Telephone interview.

<sup>68</sup> Eggers, B., Flynn, M., Walsh, I. & Ziglar, J. (n.d.). Partnering for value Structuring effective public-private partnerships for infrastructure. *Deloitte*. Retrieved April 10, 2011, from [www.deloitte.com/assets/Dcom-Global/Local%20Assets/Documents/Public%20Sector/dtt\\_ps\\_partneringforvalue\\_090](http://www.deloitte.com/assets/Dcom-Global/Local%20Assets/Documents/Public%20Sector/dtt_ps_partneringforvalue_090)

contracts typically had a average cost escalation of over four percent after the contract was executed while traditional projects had an eighteen percent cost escalation.<sup>69</sup>

#### *Best Practice #5: Identify Strengths AND Weaknesses*

Gene Schiller points to the possibility that due to General Services Administration (GSA) pricing, where the GSA works with industry to secure discounts for government procurement,<sup>70</sup> the public sector may be able to buy raw steel for a much lower price than the private sector which, however may be able to handle the building of the project at a cheaper cost.

The PCC is unique in that it aids the decision making process by helping the public organization identify its own strengths and weaknesses. The strength of the PCC is that it reveals what the public sector already has and what is needed. With this information decision-makers can identify specific areas where collaboration might be most effective.

#### **Conclusion**

Recently, the public sector has experienced challenges providing public services due to the lack of resources. Through partnering with private sector organizations, the public sector potentially could continue to provide such services at a lower cost and with greater innovation. However when deciding whether to provide a service, the public sector needs to conduct a complete calculation of the cost of the project, a PCC. By conducting a PCC including all costs

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<sup>69</sup> Duffield, D., Raisbeck, R., and Xu, M. (2008). Report on the performance of PPP projects in Australia when compared with a representative sample of traditionally procured infrastructure projects. *National PPP Forum – Benchmarking Study, Phase II*, 1-44

<sup>70</sup> GSA. (2011). The Procurement Process At The U.S. General Services Administration. Retrieved from <http://www.gsa.gov/portal/content/101951>.

appropriately, including potential risks, the public sector will adequately be able to compare public sector versus private sector provision.

## Appendix A

Risk category	Risks	Responsibility/Role
Finance	Securing finance Maintaining finance (including changes to loan conditions) Interest rate and tax amendments Tax rulings Price escalation in capital components	Risks mostly borne by public sector
Design and development	Design suitability Development problems Testing problems Design and development variations Delivery of design	Shared risks.
Construction	Fixed time and cost to complete Delivery schedule Planning approvals Environmental issues Disruption to existing services Site preparation Transport of assets to site Design and construction variations Industrial disputes	Risks mostly borne by private sector
Operation	Asset/service performance Asset/service availability Repairs and maintenance cost variations Security Staff training Change to Defence requirements Cost of keeping existing assets operational Latent defects in existing assets Changes in demand Third-party revenue	Shared risks.
Ownership	Uninsurable loss or damage to the assets Technology chance or obsolescence Federal and state legislation/regulation changes Public/third-party liabilities Realisation of the residual value of assets	Risks mostly borne by the public

SOURCE: Hodge, Graeme A. (2004). The risky business of public-private partnerships. Australian Journal of Public Administration 63(4):37-49.