This is a technical document. Defined terms can be found in PPTA Guidance – Definitions (www.vappta.org/resources/OTP3GlobalDefinitions.pdf)

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1 INTRODUCTION

1.1 OBJECTIVES OF THIS GUIDANCE

This document has four objectives:

- Firstly, it provides guidance on how the Office of Transportation Public-Private Partnerships (OTP3) will assess Value for Money (VfM) when procuring infrastructure projects as candidate Public-Private Transportation Act (PPTA) projects as compared to procuring them as public sector projects using traditional project delivery methods such as design-bid-build or design-build\(^1,2\). Candidate PPTA projects include highways, bridges, tunnels, ports or other significant transportation related infrastructure in the Commonwealth of Virginia (commonwealth) as represented by the agencies under the Secretary of Transportation;

- Secondly, it enables OTP3 to assess the VfM of selecting a particular structure for a PPTA project. For example, whether to proceed with a tolled concession in which the private sector takes full revenue risk, or whether the Agency may provide revenue share, or opt for an Availability Payment structure in which the Agency retains revenue risk, as may be permitted under the PPTA;

- Thirdly, the document identifies the planning stages at which VfM should be assessed; and

- Lastly, it recommends a reporting structure and format for presenting the results of the VfM assessment.

This guidance document provides the reader with background information, a definition of what VfM is and a detailed discussion on the Initial and Final VfM Assessments. The objective is to provide a clear step by step approach to assess projects at different stages of development that have the potential to be delivered via the PPTA. Such assessments will be conducted by the OTP3 and provided to the PPTA Steering Committee and Agency leadership.

Later chapters provide a summary table format for presenting the results of the VfM assessment and a checklist of the steps recommended when assessing VfM. Appendix 1 includes references cited in this guide. A comprehensive set of defined terms used in this document can be found in OTP3’s PPTA definitions guidance document\(^3\).

The guidance provided in this document is coordinated with and should be utilized in conjunction with the PPTA Project Delivery Framework (Framework), as set out in the commonwealth’s PPTA Implementation Manual and Guidelines (Manual), which in Sections 5.2 and 6.4 refers to the need for VfM assessments\(^4\).

1.2 DEFINITION OF VfM

This guidance document is based on a widely used definition of VfM in deciding whether or not to procure a project utilizing a PPTA procurement method. The procurement of a PPTA project represents VfM when - relative to a traditional project delivery method - it delivers the

\(^1\) PPTA projects are more generically referred to as Public-Private Partnership or P3 projects, although the term ‘PPTA project’ is generally, but not exclusively, used in this document.

\(^2\) The Design Build project delivery method may also be used for comparison as the commonwealth is gaining experience in the use of this method and more data on outcomes is available.


\(^4\) The PPTA Project Delivery Framework at http://www.vappta.org/publications.asp, which is described in outline later in this guidance document, includes a series of decision points at which go / no-go determinations may be made for a given procurement process.
The optimum combination of net life cycle costs and quality that will meet the objectives of the project and the commonwealth\(^5\). Achieving VfM from candidate PPTA projects, through this optimum combination of net life cycle costs and quality, depends on two key factors:

- securing the optimal risk allocation in which the Agency and the private sector assume risks that they are individually best placed to manage; and
- wherever possible, using a firm fixed-price competition for the PPTA procurement\(^6\).

The calculation of the monetary value of the benefits achieved by using a PPTA procurement method, less the higher costs of private finance, relative to public funding, is a key element in assessing the VfM of PPTA projects. This is referred to throughout this document as a quantitative VfM assessment. However in making an overall VfM assessment, it is also important to take into account other factors that cannot be expressed in monetary terms; therefore a qualitative VfM assessment is also required. It is the combination of the quantitative and qualitative VfM assessments – undertaken at two points within the PPTA Project Delivery Framework - that determines whether a PPTA project is likely to provide the commonwealth with VfM.

A particular feature of the commonwealth’s PPTA program is that a source of project funding is likely to be a user fee. For example, within the Virginia Department of Transportation (VDOT), new roads or improvements to existing roads are likely to seek revenue through collection of a user fee as a tolled facility. Therefore, this document provides advice on how decisions about the most appropriate tolling options should be incorporated into the VfM analysis.

A definition of VfM is contained in PPTA definitions guidance document and the concept is explained in more detail in Chapter 3 of this document.

### 1.3 Updating the Guidance

The growth of P3 projects in the US and internationally has been rapid in recent years and best practice approaches for assessing the VfM of P3 projects continue to develop. As a result, the OTP3 will periodically update this guidance document to ensure it reflects best practice and aligns with its other planning processes.

### 1.4 Wider Applicability

While the commonwealth will be developing P3 projects across all modes of transportation, this document focuses on road projects which are administered by VDOT. The OTP3 understands there will be differences in how VfM is assessed for PPTA projects on other modes of transportation and will adapt specific provisions as necessary to provide VfM assessments for other Agencies.

### 1.5 Document Structure

The remainder of this document is structured as follows:

- Chapter 2 provides some background on the commonwealth’s PPTA program and the PPTA Project Delivery Framework;

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\(^5\) The term ‘net life cycle costs’ is used to reflect the fact that toll revenues reduce the life cycle costs of a project.

\(^6\) The term ‘price’ refers to the concession fee or Availability Payment that the proposers will charge to design, build, finance and operate the road being procured.
Chapter 3 defines what is meant by VfM in the context of making decisions about PPTA procurement options, describes the potential benefits from PPTA projects that can deliver VfM and briefly summarizes the approach for assessing the VfM of candidate PPTA projects;

Chapter 4 sets out the steps to carry out an Initial VfM Assessment;

Chapter 5 sets out the steps to carry out the Final VfM Assessment;

Chapter 6 explains how the VfM assessments should be reported; and

Chapter 7 provides a checklist of issues to address in carrying out the VfM assessments.

Appendix 1 includes a list of references.

Appendix 2 provides guidance to help select a tolling approach for a PPTA project.

Appendix 3 includes guidance on selection of the appropriate discount rate.

Appendix 4 includes a checklist of qualitative issues to be considered.
2 BACKGROUND ON THE PPTA PROGRAM

2.1 INTRODUCTION

This chapter provides background information on P3 projects, the commonwealth’s PPTA program and the Project Delivery Framework for assessing and selecting PPTA projects.

2.2 P3 PROJECTS

Public-private partnerships are increasingly seen as an important approach for procuring improvements to critical transportation infrastructure. Both domestically and internationally, the use of P3 contracts to deliver improvements has become more common. This is a reflection of an accumulating body of documented evidence that, for the right projects, despite the typically higher cost of private finance, P3 contracts are capable of delivering a better net life cycle outcome for public sector sponsors as compared to a traditional public delivery of a transportation project. These benefits, recognized by the Federal Highway Administration (FHWA), include:

- Ability of public agencies to transfer substantial upfront costs to the private sector;
- Involvement of the private sector to accelerate project implementation and bring innovation in design, construction and service delivery;
- Ability to transfer risks to the private sector that they can in turn better manage than the public sector; and
- Opportunity for public agencies to share the burden of delivery with organizations that have the appropriate skills.

Other documented benefits include lower life cycle project costs and higher, or more consistent, levels of service quality.

A study carried out for the UK Government by Arthur Andersen and Enterprise LSE in 2000, and widely referred to in the literature on P3 contracts, identified six key factors that drive VfM:

- Risk transfer – optimally allocating risks to the party best able to manage them over the contract period;
- Long term contracts – these enable the private sector to recover the initial investment, develop alternative approaches to service delivery and focus on life cycle costing;
- Use of performance-based specifications – specifying services provided under P3 project contracts as outputs enabling payments to the private sector to be linked to the quality and delivery of those outputs;
- Competition - high levels of competition between interested private sector Proposers can result in improvements in pricing and service delivery innovations;
- Performance measurement and incentives - contractual incentives act as a means of ensuring that the standards and specifications set in place through the original deal or contract will be implemented; and

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7 Innovation Wave: An Update On The Burgeoning Private Sector Role In U.S. Highway And Transit Infrastructure United States Department Of Transportation July 18, 2008 pages 8-10
Private sector management skills - the private sector’s ability to effectively manage the delivery and operations of a project is critical to the success of the P3.

2.3 The Commonwealth’s PPTA Program

It is recognized that the private sector has a crucial role in helping deliver improvements to the commonwealth’s transportation infrastructure and achieve its transportation goals of improving safety, reducing congestion, increasing capacity, and/or enhancing economic efficiency. These goals are contained in the commonwealth’s state-wide long term multimodal transportation plan. The highway component of this plan is set out in the Virginia State Highway Plan prepared by VDOT. The achievement of these transportation goals is supported by a number of constrained long range plans and vision plans produced by regional Metropolitan Planning Organizations (MPOs), as well as the Virginia Surface Transportation Plan.

To facilitate the private sector’s role, the commonwealth has established a PPTA program that focuses on the identification, prioritization, project development and procurement of select infrastructure projects. The objectives of the PPTA program, as set out in the Manual, are to:

- Facilitate timely delivery of PPTA projects, within established laws and regulations;
- Develop multimodal and intermodal solutions that are consistent with state, regional and local transportation policies, plans and programs;
- Encourage competition for innovation and private sector investment to create VfM for the commonwealth;
- Promote transparency and accountability, coupled with informed and timely decision making;
- Establish reliable and uniform processes and procedures to encourage private sector investment;
- Seek efficiencies by standardizing processes;
- Foster efficient management of commonwealth financial and organizational resources;
- Achieve Lifecycle Cost efficiencies through appropriate risk transfer; and
- Promote economic growth and job creation.

The OTP3 manages the commonwealth’s program of PPTA projects and delivers these using partnership arrangements with the private sector. These arrangements are typically based on a Design Build Finance Operate and Maintain (DBFOM) delivery structure, although the OTP3 and affiliated Agency is not restricted to this structure. For projects delivered under this program, such as new or improved transportation facilities on a Greenfield or Brownfield site with a capital value that typically exceeds $100 million, it is envisioned that private sector

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8 Virginia General Assembly: Code of Virginia http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+56-558
11 The PPTA legislation, as amended, allows private sector entities to submit unsolicited proposals to VDOT for a qualifying transportation facility, or for VDOT to solicit proposals from the private sector, and for the private sector to enter into agreements with VDOT to develop and/or operate qualifying transportation facilities.
entities will take on responsibility for their design, construction, financing, operations and maintenance.

2.4 Project Delivery Framework

It is in the interests of the commonwealth to develop its procurement processes in a way that will maximize VfM by encouraging private sector interest and deliver the additional benefits that arise from competition under a firm, fixed price procurement process.

Therefore, to facilitate the evaluation and selection of PPTA projects, the commonwealth has developed a structured process or Framework, as set out in the Manual, which is administered by OTP3. OTP3 believes that this Framework will strengthen the PPTA program, accelerate the development of candidate PPTA projects and give more confidence to private sector entities to invest in projects developed in the commonwealth. This process is designed to build on, and work within the context of existing transportation planning, procurement and environmental processes. The Framework consists of a series of actions and decision points which occur within four project phases (identification, screening and prioritization, project development and procurement), as shown below in Figure 1.

**Figure 1: Project Delivery Framework**
The five decision points require the PPTA Steering Committee to decide whether a project should proceed to the next phase of the Framework and the sequence of their occurrence relative to key milestones is summarized below with additional detail in the following sections:

- **Decision Point 1** – a decision is made whether to progress a candidate project, including unsolicited proposals, after the project identification phase and high level screening of projects, as described in Sections 2.4.1 and 2.4.2 below;

- **Decision Point 2** – a decision is made about the feasibility of a candidate project as a PPTA project after the detailed level screening, as described in Section 2.4.2;

- **Decision Point 3** – a decision is made whether to initiate the procurement and develop PPTA procurement documents for the candidate PPTA project after prioritization and project development phases, as described in Sections 2.4.2 and 2.4.3; and

- **Decision Points 4 and 5** – decisions are made whether to continue with the procurement of the project as a PPTA project (Decision Point 4) and then whether to execute a PPTA contract (decision point 5), as described in Section 2.4.4.

The final action is then to execute the Comprehensive Agreement.

### 2.4.1 Project Identification Phase

The objective at the project identification phase is to identify those solicited and unsolicited proposals that may be considered for delivery as PPTA projects. These include those listed in MPO’s or the commonwealth’s vision plans and other proposals that have been submitted to transportation agencies, jurisdictions or other transportation focused entities. The [PPTA Implementation Manual](#) describes the process for submittal of potential PPTA projects.

### 2.4.2 Project Screening and Prioritization Phase

The objective of this phase is to determine the suitability of delivering identified projects as PPTA projects. It involves a high level screening of projects, prior to Decision Point 1, and a more detailed screening of projects, prior to Decision Point 2. The Manual describes the criteria used by OTP3 and considered by the PPTA Steering Committee at the decision points to advance potential projects. By the end of this phase, projects will have progressed through the Manual’s planning level assessment and been subjected to a high or strategic level of analysis in relation to the costs and benefits and overall Business Case, but usually without an explicit consideration of what represents the best value procurement route for a candidate PPTA project. Additional detail is available in the [Project Identification and Screening Guide](#).

### 2.4.3 Project Development Phase

During this phase, a number of key tasks take place to prepare a project for procurement. The specific activities depend on the characteristics and proposed scope of the project, but typically include:

- Further defining the project scope, design concept and phasing schedule;

- Analyzing compliance with environmental and transportation planning requirements;

- Analyzing technical feasibility and operations and maintenance evaluations;

- Refining project cost and revenue estimates and Lifecycle Costing;

- Submitting funding and grant applications, as required;
Performing outreach, coordinating public involvement and garnering stakeholder support;

Defining an approach to risk allocation and management;

Performing an Initial VfM Assessment; and

Determining the optimal procurement method.

The objective of the Initial VfM Assessment is to test whether a candidate PPTA project is likely to provide VfM relative to the traditional delivery method and whether it should proceed to the subsequent phase of the Framework. This involves formulating a tolling strategy for the project, if procured as a PPTA project, and then carrying out quantitative and qualitative assessments of VfM. The Initial VfM Assessment will also provide information that will help develop the procurement strategy for the candidate PPTA project.

The quantitative assessment involves developing an estimate of the net costs (costs less of any revenues) of publicly financing and delivering the project, referred to as a Public Sector Comparator (PSC), and an estimate of the net costs of the private sector financing and delivering the project, referred to as a Shadow Bid. In developing these estimates, there is a need to decide on the appropriate allocation of risks between the private sector and the public sector. Any changes in the risk allocation need to be incorporated into a Risk-Adjusted PSC and Shadow Bid. The estimate that provides the lowest net present value (NPV) represents the lowest net life cycle costs and represents VfM from a quantitative perspective at this initial stage in the development of the project.

The qualitative VfM assessment should take into account factors that cannot be expressed in monetary terms, such as any predicted differences in service quality between the delivery options. The aim of the qualitative VfM assessment is to complement the quantitative VfM assessment by identifying those issues or problems with the project that cannot be quantified in monetary terms but which may change the decision whether to procure the candidate project as a PPTA project. There is no prescriptive way in which the results of the quantitative and qualitative assessments should be combined. However, when a pool of projects or project solutions is being assessed, adopting a standard approach for doing this can be useful.

During this phase, work will also begin on the environmental review process in accordance with the requirements of the National Environmental Policy Act (NEPA). This will lead to the identification, development and assessment of the environmental, economic and social impacts of alternative project solutions. As a result, there is a need for the OTP3, undertaking the Initial VfM Assessment, to liaise closely with Agency officials conducting the environmental review process. The OTP3, in coordination with the affected Agency, will also begin a process for assessing public/stakeholder support and industry outreach which will inform the level of interest from private sector entities.

The project development phase is completed at Decision Point 3 when:

- the NEPA process has been completed and federal approval obtained;
- The OTP3, in coordination with the affected Agency, determines that the candidate PPTA project is mature enough to create an environment of competition and should proceed through an efficient and streamlined PPTA procurement process; and
- Approval from the PPTA Steering Committee has been obtained.

### 2.4.4 Project Procurement

When all studies have been completed and relevant procurement documents finalized, the procurement phase begins when solicitations are issued for consideration by the private
sector to submit qualifications statements for the PPTA project. When conceptual proposals containing qualifications statements have been received, the OTP3 begins the proposal evaluation process in order to short-list qualified Proposers and works with the PPTA Steering Committee to approve and advance short-listed Proposers.

Short-listed Proposers will be invited to submit detailed proposals and upon receipt of those proposals, OTP3 will conduct its evaluation and selection of the Apparent Best Value Proposal. Once the Apparent Best Value Proposal has been selected, a Final VfM Assessment will be conducted to ensure that continuance of PPTA procurement still represents VfM. The objective of the Final VfM Assessment is to inform the decision whether to proceed with the PPTA procurement (Decision Point 4) and then select a preferred Proposer and execute a PPTA contract (Decision Point 5).
3 What is Value for Money?

3.1 Introduction

This chapter explains what is meant by VfM in the context of this guidance document, describes the benefits of carrying out VfM assessments of PPTA projects and provides a summary of how the VfM of candidate PPTA projects should be assessed.

3.2 Definition of VfM

The generic definition of VfM in Chapter 1 and PPTA definitions forms the basis for the methods included in this guidance document. To deliver VfM, a candidate PPTA project needs to provide the lowest (or optimum) level of costs (adjusting for any differences in service quality and risks) over the whole asset life compared with procuring it using a traditional public sector project delivery method such as design-bid-build (DBB) or a Design-Build (DB). The goal is to compare a candidate PPTA project against the best alternative procurement option. Figure 2 below illustrates the comparative nature of the VfM assessment.

Figure 2: Comparing Public Sector Procurement Against Private Sector

However, in the context of the commonwealth, where additional road capacity is likely to involve tolling as the revenue source, regardless of procurement route, there is also the question to what extent the private sector should bear revenue risk, or whether a structure in which the commonwealth bears some or all of the revenue risk (for example revenue sharing, revenue support or an Availability Payment structure) would represent better value. This consideration is an important part of the VfM assessment.

The VfM definition above emphasizes four important issues:

- the process of carrying out a VfM assessment is comparative – the PPTA option needs to be assessed relative to a public delivery option to decide whether it is likely to deliver
financial and wider benefits to the Agency through a combination of lower net life cycle costs (after taking account of any revenues) and higher service quality;

- the Agency needs to take into account the service quality it requires and the ability of the private sector to deliver the project objectives, with a selection process that yields a best value proposal which has been evaluated for both service quality and price\(^{14}\);

- the comparative process needs to take account of costs and service quality over the life cycle of the project; and

- an assessment of whether a PPTA project should be progressed as a privately tolled concession with the private sector assuming full revenue risk, or as a publicly tolled road, needs to be made at an early stage in the VfM assessment process.

### 3.3 Benefits of Using VfM Assessments

An objective of formalized VfM assessments is to ensure the commonwealth secures best value from improvements to its transportation networks and to provide confidence to potential private sector entities and the wider infrastructure investment community. The assessments will enable OTP3 to eliminate low VfM candidate PPTA projects early in the process that:

- may not have the necessary potential for innovation;

- may not be capable of generating private sector efficiencies;

- may not provide the opportunity for the private sector to influence service levels; and/or

- are not supported by a rigorous Business Case.

If potential investors see that candidate PPTA projects have been rigorously assessed under a VfM process and are supported by key stakeholders based on a solid Business Case, they are more likely to view the PPTA program as sustainable. Likewise, they are more likely to make the necessary significant investment participating in a competitive procurement process for PPTA projects.

It is important that the case for choosing a PPTA procurement route for a specific project is based on an assessment of whether those benefits are likely to be realized and whether there is a reasonable expectation that the benefits will exceed the higher costs associated with private finance. There is a large and developing base of literature on VfM assessments in relation to P3 projects and useful summaries of international and US practice can be found in two papers by Morallos et al\(^{15}\). While there are differences between, and sometimes within, countries, a standard methodology, based on quantitative and qualitative assessments, has emerged and the approach contained in this guidance document is consistent with identified international and national best practice.

### 3.4 Initial and Final VfM

The VfM of a competitively procured PPTA project is assessed at two stages in the Framework, which are discussed in greater detail in Chapters 4 and 5 of this guidance document. Both VfM assessments should include a quantitative component, in which

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\(^{14}\) This is typically achieved through a best value procurement process that is included in the commonwealth’s PPTA process.

estimates are made for those elements that can be expressed in monetary terms, and a qualitative component for those elements that cannot be expressed in this way. This chapter summarizes the Initial and Final VfM assessments.

3.4.1 Initial VfM Assessment

An Initial VfM Assessment is carried out as part of the project development phase of the Framework, prior to Decision Point 3, to help OTP3 and the Agency determine the appropriate procurement strategy for the project before soliciting proposals from the private sector (see Figure 3 below). This assessment first addresses questions regarding the nature of the intended tolling strategy for a PPTA project by carrying out a Private Toll Viability Assessment (PTVA), which is designed to assist OTP3 and the Agency in making a decision on whether to retain or transfer revenue risk.

**Figure 3: Initial and Final VfM Assessments**

3.4.2 Final VfM Assessment

For those candidate PPTA projects that progress through the Framework, a Final VfM Assessment is carried out during the project procurement phase, prior to Decision Point 5 of the Framework, and after the Apparent Best Value Proposal has been identified.

3.4.3 Additional Issues

Certain candidate PPTA projects may warrant additional VfM assessments, particularly if there is an unforeseen delay in the project development process or if a re-scoping of the PPTA project is necessary. In the case of a non-competitive (single-source negotiated)
project, a VfM assessment should be carried out within the procurement phase prior to Decision Point 5.

As noted above, additional details related to the execution of the Initial and Final VfM Assessments are provided in Chapters 4 and 5. A checklist of the steps in VfM assessment is provided in Chapter 7.
4 Initial Value for Money

4.1 Introduction

This chapter describes the steps that need to be carried out to produce an Initial VfM Assessment.

4.2 Objective of the Initial VfM Assessment

The objective of the Initial VfM Assessment, which is carried out during the project development phase of the Framework prior to Decision Point 3, is to provide an indication whether a candidate PPTA project is likely to represent VfM when compared with traditional delivery. This assessment will help determine OTP3’s procurement strategy for a candidate PPTA project before soliciting proposals from the private sector.

As noted in Chapter 2, in carrying out the Initial VfM Assessment, close coordination is needed with the Agency’s environmental division, which is preparing the project’s environmental document.

4.3 Private Toll Viability Assessment (PTVA)

The first step is to carry out a PTVA. The objective of the PTVA is to assess whether a candidate PPTA project would be more viable as a privately tolled concession, where the private sector assumes full revenue risk, or whether it is more suitable as a PPTA project in which the Agency would retain some or all revenue risk (e.g., revenue guarantee or an Availability Payment model). Under an Availability Payment model, the Agency collects tolls and assumes revenue risk, but a private operator designs, builds, finances, operates, and maintains the facility and receives regular Availability Payments based on the operational performance of the facility.

The PTVA is qualitative in nature and involves answering a number of questions designed to assess factors such as whether traffic and revenue estimates have characteristics that may be attractive to private investors, local and regional economic considerations, public policy and public interest factors and the opportunities for technology enhancements and efficiencies. Appendix 2 contains the full list of questions asked in the PTVA. OTP3 will select a team of experts from relevant disciplines with the necessary expertise to review each question and address each question in the PTVA.

The team of experts will be asked to score the answers to each question on a scale of 1 to 5 using the background notes and explanations in the PTVA tables as a guide. A score of 1 indicates in favor of a privately tolled concession and a score of 5 strongly favors tolling by the Agency. It is recommended that the experts consider the questions on their own first in order to provide an independent set of scores for the question(s) to which they have been allocated. There may then be benefit in OTP3 convening a workshop involving all experts to review the initial scores and make adjustments due to information provided in the discussions with the other experts.

Each question will then be assigned a weighting between 1 and 5 by OTP3 or assigned experts. These weightings may vary depending on the project’s specific characteristics. For each question, the score will be multiplied by the weighting for that question to derive a weighted answer. These are then totaled to produce an overall PTVA weighted score for a candidate PPTA project. The weighted scores provide an indication of private toll viability and will be one factor in considering whether to pursue a project as a privately tolled concession. The weighted scores range between 17 (favors a privately tolled project) and 453 (favors tolling by the Agency), with a mid-range weighted score of 153 (where each question is scored 3 and given a weight of 3).
PPTA projects with low PTVA weighted scores are likely to be suitable as privately tolled concessions with full revenue risk. Conversely, PPTA projects with high PTVA weighted scores are more likely to be suitable as publicly tolled facilities with Availability Payment transaction structures. It should be noted that the PTVA weighted score is only one indicator and should not be used as a final determination. The weighted score should be considered alongside other factors such as the level of market interest exhibited as part of industry outreach that typically precedes a formal procurement process. However, it is necessary for OTP3 to make an initial determination, because the factors to be taken into account for the quantitative VIM of a privately tolled concession are typically more complex than those for an Availability Payment model, involving a more sophisticated assessment of projected revenues.

4.4 Quantitative Assessment

The next step in the Initial VIM Assessment is to carry out a quantitative assessment to see whether the candidate PPTA project (as a privately tolled concession or as an Availability Payment model) is likely to represent VIM compared with delivering the toll road using traditional delivery 16.

In both delivery methods -- a privately tolled concession and an Availability Payment model - there is a need to estimate the net costs of the candidate PPTA project by constructing a Shadow Bid. The purpose of constructing the Shadow Bid is to address the question:

If the Agency was to engage a P3 Concessionaire, through a Comprehensive Agreement, for the engineering, design, construction, operation and/or maintenance of a project, including its financing, how much would the project be worth to the Concessionaire today?

Whichever delivery method is assumed for the PPTA project, there is also a need to construct a Risk-Adjusted PSC. The purpose of constructing the Risk-Adjusted PSC is to address the question:

If the Agency were to undertake the engineering, design, construction, maintenance and/or operation activities required for a project itself, including its financing, how much would the future Cash Flows generated by the project be worth to today?

A risk adjustment is necessary because, as described later in this guidance document, traditional delivery (as reflected in the PSC) has a different risk profile as compared to PPTA delivery (as reflected in the Shadow Bid), and in order to compare like with like, a risk adjustment process is necessary. It should also be noted that the nature of the comparisons between the Shadow Bid and Risk-Adjusted PSC differs depending on the type of PPTA project.

This guidance document describes the construction of the Risk-Adjusted PSC and Shadow Bid for a project to be taken forward under the PPTA with both an Availability Payment model transaction structure and a privately tolled concession and where there are differences in approach these are highlighted.

4.4.1 Constructing the Risk-Adjusted PSC and Shadow Bid

The Shadow Bid and Risk-Adjusted PSC will be based on separate financial models that take as their inputs various cost and revenue components or Cash Flows, as described below. Figure 4 shows the input components of a financial model constructed for a Shadow Bid for a privately tolled concession. It should be noted that the analysis within the financial models

16 It is assumed that all new road capacity provided in the commonwealth for major projects would be tolled wherever tolling is permitted.
include a number of complex financial assumptions. Further information and advice on the inputs to the financial model can be obtained from the Agency’s financial division and OTP3.

The diagram on Figure 4 is equally applicable to an Availability Payment model except that there is no revenue component input to the model.

**FIGURE 4: TYPICAL INPUTS AND OUTPUTS OF A SHADOW BID FINANCIAL MODEL FOR A PRIVATELY TOLLED CONCESSION**

The financial model for the Shadow Bid will take into account the expected characteristics of different sources of funds to be used in the private sector financing. The output from a financial model will typically include the total after-tax Cash Flows generated by the asset.

In order to provide an indication of the value of the asset in present value terms, the Cash Flows estimated for every year of the term of the concession are typically converted to an
NPV (translated back into today’s dollars and totaled). This result captures all free cash generated by the project.

For a privately tolled concession, the result serves as a reasonable estimate of the Market Valuation of the asset, whether it takes the form of an up-front concession payment / revenue share from the private sector to the Agency, or a public subsidy from the Agency to the private sector.

For an Availability Payment model the result serves as a reasonable estimate of the discounted value of the annual payments that the Agency could expect to make to the private sector in exchange for the private sector’s design, construction, financing, maintenance and operation of the asset.

4.4.2 Development of Cash Flow Components

The first task is for OTP3 to assemble separate teams to construct Risk-Adjusted PSC and Shadow Bid estimates independent from each other. The members of each team should include people who have a good understanding of the technical, legal, financial and traffic and revenue inputs that will be needed to generate the various Cash Flow items for the PSC and Shadow Bid (as set out below). Team members should work under the guidance of a project manager who can ensure there is close collaboration between the team members. For example, any changes in the engineering scope of the project can significantly impact on traffic and revenue estimates.

As explained below, although separate teams are typically assembled, some of the data inputs and assumptions are common to both the PSC and Shadow Bid, although how these inputs and assumptions are developed into costs will depend on the form of procurement used. For example, different procurement methods may change the level of service provided and impose different restrictions on use of materials. Where there are common inputs and assumptions it is important that any changes in them are understood by both teams and to this extent coordination between teams is needed. Therefore it is important to establish and update a set of common project inputs and assumptions that can be used by both teams. One of the teams should take responsibility for these common inputs and assumptions. However, this common set should not include data that is specific to either the PSC or Shadow Bid.

The Agency will make historic out-turn costs from other projects available to both teams.

The Risk-Adjusted PSC and Shadow Bid should both include the following Cash Flow components:

- Procurement costs;
- Oversight and administration costs;
- Design engineering costs;
- Construction costs (including contractor overhead and profit);
- Operating costs;
- Routine maintenance costs;
- Capital maintenance costs;
- Finance costs;
• Contingencies;
• Transferable risks;
• Retained risks;
• Competitive neutrality;
• Efficiencies and innovation (Shadow Bid only);
• Deferral and vulnerability costs;
• Revenues (if the project involves collection of user fees); and
• Taxation assumptions.

It is important that the cost components in the estimates for the Risk-Adjusted PSC and Shadow Bid are both constructed assuming the same specifications and service expectations. If this is not the case, any differences should be noted and recorded in the qualitative assessment. Figure 5 shows differences in the values of certain components between the Risk-Adjusted PSC and Shadow Bid. Figure 5 also shows the overall difference between the Risk-Adjusted PSC and Shadow Bid – this represents the quantitative assessment of VfM. In the diagram the costs of the Risk-Adjusted PSC are higher than those for the Shadow Bid and the PPTA project would represent better VfM on a quantitative assessment basis than publicly procuring the project. This diagram is illustrative only and it may be found in assessing a specific project that the PSC would represent better VfM than the Shadow Bid. Not all of the components shown in Figure 5 are directly calculable. For example, the components shown as ‘cost of finance’ and ‘Competitive Neutrality’ are the net result of financial assumptions integrated within the financial models, as further explained below. There is often uncertainty about the values of the various Cash Flow components and it is good practice to establish ranges of values for use in sensitivity analysis.

4.4.3 Raw PSC

The Raw PSC represents the base level of capital and operating costs associated with designing, constructing, operating and maintaining a traditionally delivered transportation project. In comparing the Risk-Adjusted PSC with the Shadow Bid, the Raw PSC costs are taken as a reference point. Although there may be some slight differences, as shown in Figure 5, the costs making up the Raw PSC are unlikely to differ significantly between a traditional delivery model and a PPTA delivery model.

A helpful way to consider the Raw PSC is to think the way in which a contractor typically constructs a low-bid for a traditionally procured design-bid-build project as a combination of unit rate work items, overheads, profit and risk items that the contractor owns. The Raw PSC would include all these items plus the low-bid contractor's allowance for risk.

The Raw PSC costs are an integral part of the Risk-Adjusted PSC and form a starting point for all of the VfM analyses. In Figure 5, the Raw PSC Costs are shown as separated into ‘Raw PSC Costs to Service Commencement’ and ‘Raw PSC Costs during the O&M period.’ The Raw PSC data should be shared with the team developing the Shadow Bid to ensure that both teams begin with similar initial data points.
Figure 5: VfM Comparison Between PSC and Shadow Bid

Notes:
1. Components are indicative only, and need to be calculated for each project. Components shown as "Public Extra" may, on calculation, be "DBFOM Extra" and vice versa.
2. Bars represent NPV of Cost components. Certain cost components (e.g. Finance Costs) are not directly calculable but are implicit within the assumptions contained in the financial models.

Diagram showing comparison between PSC and Shadow Bid with various cost and benefit comparisons. The diagram illustrates how VfM is calculated and broken down into different components.
4.4.4 Capital Costs

Capital costs incurred in constructing or upgrading a road typically consist of:

- procurement costs;
- oversight and administration costs;
- right of way acquisition and other pre-construction costs;
- design engineering costs; and
- construction costs including contractor overhead and profit.

Estimation of capital costs for candidate PPTA projects will follow appropriate guidance as established by each Agency.

4.4.5 Operations and Maintenance Costs

Operations and maintenance costs are associated with the operations and maintenance of a facility according to specified performance standards or service levels. Direct operating costs can include:

- routine, cyclical and preventative repairs and maintenance;
- capital maintenance;
- staffing, equipment and general operations of a facility;
- administrative and overhead costs;
- utilities; and
- toll operations and transaction costs.

Estimation of operations and maintenance costs for candidate PPTA projects will follow guidance as established by each affected Agency.

4.4.6 Finance Costs

The PSC team will determine the method for financing the toll road as a traditionally delivered project. Examples of funding sources include tax-exempt revenue bonds, GARVEEs and public funds or a mixture of these sources. The funding method used for a project will need to take account of financing issues such as:

- reserve requirements;
- required ratios;
- cashflow waterfall arrangements;
- regulatory requirements and restrictions;
- the Agency’s ability to fund annual operating deficits over the project life; and
- the Agency’s treatment of residual Cash Flows.
The Agency’s financial division should be consulted about these issues. When a method has been agreed, the appropriate factors should be included within the financial model used to represent the Risk-Adjusted PSC. From this financial model it is possible to report metrics for the financing cost of the Risk-Adjusted PSC such as its ‘weighted average cost of capital’.

Similarly, the financial model constructed to support the Shadow Bid will need to include financial assumptions that would reflect the private sector’s approach to the project such as the mix of commercial debt and equity that would be used to finance the Shadow Bid, the likely availability of federal sources of funds such as TIFIA credit assistance, and the expected terms of any re-financing of commercial debt. Similar financing issues to the PSC such as coverage ratios and taxation also need to be addressed for the Shadow Bid. As with the PSC, the financial model may be utilized to report on the financing cost of the Shadow Bid.

4.4.7 Contingencies

Estimation of contingencies will follow the processes established by the affected Agency and as established in the PPTA Risk Analysis Guidance.

4.4.8 Risks

The Raw PSC should not incorporate the costs of any of the other risks involved in designing, building and operating the project under the selected PSC traditional delivery approach other than those that are typically assumed by a general contractor, such as the risk of labor disputes and the risk of re-work that is not carried out to meet the required specification. For the purpose of constructing a Raw PSC it is important that all Agency retained risks are removed from the estimate at this stage. For example, the risk of unforeseen site conditions, material price escalation, variations in the project scope and all other risks that the Agency typically allows as valid claims or additional reimbursements under a traditional delivery mechanism should be excluded.

Under a VfM assessment, all risks not traditionally transferred to a contractor are assessed, and two separate cost components within the PSC need to be calculated:

- the value of the transferable risks – those risks that the Agency normally retains under traditional arrangements that would be transferred to the private sector under a PPTA project; and
- the value of retained risks – those risks that would be retained by the Agency under a PPTA project.

The PPTA Risk Analysis Guidance provides general guidance on the valuation of risks in the context of a VfM assessment and provides specific advice on the calculation of the efficiencies that are achievable via transferable risks. The PPTA Risk Analysis Guidance should be used in conjunction with the VfM assessment.

The Risk Analysis Guidance recommends that risk workshops are held to address risks in relation to:

- Design and Construction issues (including the risks of delay);
Operations and Maintenance issues, including risks relating to traffic and revenue estimates; and

Financial and economic issues.

It is important that there is consistency in the approach used to evaluate risks between the various teams. The PSC and Shadow Bid teams need to understand the appropriate risk allocation for the different procurement options. Separate sessions/outputs for each team should be held for the evaluation of risks under the PSC and Shadow Bid.

4.4.9 Competitive Neutrality

In P3 VfM assessments a Competitive Neutrality value is typically included in the PSC to remove the inherent competitive advantages, or disadvantages, that would be available to the Agency as a public sector body in pursuing the PSC option, which would be inaccessible to the private sector in delivering the PPTA project and vice versa.

The Competitive Neutrality value allows the PSC for a traditional delivery and a private sector proposal under PPTA to be compared on an equivalent basis. If Competitive Neutrality is not taken into account, the NPV of the Risk-Adjusted PSC may be artificially low or high. Typically the value for Competitive Neutrality takes account of factors such as:

- differences in tax obligations;
- differences in regulatory costs; and/or
- tort liability limitations.

Examples of public sector advantages are exemptions from land taxes, local government rates, and other taxes and fees. In a situation where a public sector is exempted from a property tax on acquiring land for the project that the private sector would be subjected to, the public sector would quantify the amount of land tax that a private firm would incur and include it in the Competitive Neutrality calculation. A tax advantage that may be held by the public sector is the ability to raise tax exempt finance, although various tax exempt products are now also potentially available to the private sector.

Examples of public sector disadvantages include the additional costs associated with accountability, public scrutiny, and reporting requirements. A private company may sometimes have fewer of these costs in pursuing the same project.

As distinct from the situation that pertains in much of the World, where it is realistic to make specific Competitive Neutrality adjustment for differences in treatment of tax receipts between the private sector and the public sector, in the US context this distinction is more difficult to draw due to the complexity of the analysis between state and federal tax codes. Matters considered under the heading of Competitive Neutrality will typically be taken into account in the way the PSC financial model and Shadow Bid financial model are constructed, and although this component is shown in Figure 6, unless specifically advised by the Agency’s financial division, a separate allowance will not generally be calculated as an input to a financial model.

4.4.10 Efficiencies and Innovation

As noted in Chapter 2, it is the transfer of risks that provides incentives to the private sector to innovate in the approach it takes to delivering a project as PPTA and derive efficiency savings that help generate value for money. Further advice on the valuation of risks in the context of a VfM assessment, such as the calculation of the efficiencies that are achievable via transferable risks, can be found in the PPTA Risk Analysis Guidance.
4.4.11 Deferral and Vulnerability Costs

In cases where the OTP3 is carrying out a VfM assessment of a PPTA project, and the commonwealth has insufficient funds or Bonding Capacity to finance a project as a traditional public sector project, deferral and vulnerability costs could be included in the PSC as a sensitivity test. The deferral cost should reflect the costs to the Agency of not proceeding with the public sector option on the same schedule as would be possible under the PPTA option and should reflect the additional costs arising from elements such as congestion, accidents, vehicle operating costs and Agency maintenance costs, if applicable.

The vulnerability cost is the risk adjusted cost of a loss of service or catastrophic failure of a vital facility, which may be applicable in the case of certain aging assets that are, for example, structurally deficient or prone to flooding. This cost should be expressed in NPV terms. However some vulnerability cost elements may not be amenable to quantification and should be included in the qualitative assessment. It is generally appropriate to perform a VIM assessment both with and without deferral and vulnerability cost as this provides an additional data point for assisting decision making.

4.4.12 Toll Revenues (User Fees)

Toll revenues or user fees are an additional component that needs to be included in the financial models for both the PSC and Shadow Bid.

Where toll revenue risk is to be retained by the private sector as part of the PPTA project, there will be differences in the ability of the private and public sectors to maximize toll revenue yield over the term of the agreement. For example, the public and private sectors are assumed to have different perceptions of their abilities to effectively collect and efficiently price toll charges across all vehicle classifications within any toll caps that may apply. Public and private sector sponsors attract different classes of investors who typically demonstrate different appetite for traffic growth risk. Many of these factors will already have been explored and documented qualitatively in the PTVA (See Appendix 2). Some of the key differences are as follows:

- Forecasts prepared to support a PSC are often constructed using different assumptions than those revenue forecasts for the Shadow Bid, reflecting different expectations and practices within the bond market versus private equity and commercial lending markets;

- A PSC revenue model is driven by concerns for certainty in revenue income and support which further defines that the confidence level is high. For example, there is a probability that 85% of the revenue will be greater than or equal to the forecast; and

- A Shadow Bid forecast is typically analyzed for risk and more rigorously tested for sensitivity to various changes in value of time, toll rate increases and demographics to reflect the different demands typically imposed by equity / commercial lenders. A Shadow Bid forecast may therefore reflect more robust confidence levels for the right project.
FIGURE 6 – DATA SOURCES AND GUIDANCE FOR CONSTRUCTING PSC AND SHADOW BID

Principal guidance and sources of data for constructing PSC and Shadow Bid

Refer to PPTA Risk Analysis Guidance on preparing revenue estimates to support the PSC and the Shadow Bid

Revenue Risk Delta (where applicable)

Refer to Agency Finance for assumptions contained within financial models constructed to support the PSC and Shadow Bid, including Competitive Neutrality

Public Finance Costs using public sector financing methods

Competitive Neutrality Delta

Private Finance Costs using private sector equity, commercial debt, TIFIA etc.

Refer to PPTA Risk Analysis Guidance for advice on methods for managing risks and valuing risk transfer, efficiencies and innovation

Operational Efficiencies and Integration Delta

Transferable Risks (OSM) (e.g. patent defects and unplanned capital maintenance)

Savings from efficiency of Risk Management through Risk Transfer

Transferable Risks (O&M) (Managed more efficiently by DBFOM)

Refer to Agency guidance for advice on estimating Operations, Maintenance and Life Cycle costs

Public Capital Maintenance Planned Cost

DBFOM Capital Maintenance Planned Cost

Public Routine Maintenance Planned Cost

DBFOM Routine Maintenance Planned Cost

Refer to PPTA Risk Analysis Guidance for advice on methods for managing risks and valuing risk transfer, efficiencies and innovation

Design and Construction Efficiencies and Integration Delta

Retained Risks (Design and Construction)

E.g. Force Majeure, Hazmat, ROW, HEPA

Retained Risks (Design and Construction)

Transferable Risks (Design and Construction)

Savings from efficiency of Risk Management through appropriate Risk Transfer

Transferable Risks (Managed More Efficiently by DBFOM)

Refer to Agency guidance for advice on estimating for risk on capital costs

DBB Contractor Base Risk Items (Labor, materials etc)

DBFOM Contractor Base Risk Items (Labor, materials etc)

Contractor Overheads and Profit

Contractor Overheads and Profit

Base construction costs excluding risk

Base Design-Build costs excluding risk (including detailed design and construction costs by DBFOM)

Owner prelim and final design engineering costs

Owner prelim design engineering costs

Project-specific basis including historical costs for similar projects

Public oversight costs incl. checking, QA/QC

Owner oversight costs incl. checking, QA/QC

Public Procurement Costs

Owner Procurement Costs including Advisors, Stipends

Public Sector Comparator (Design-Build)

Shadow Bid (DBFOM)
4.4.13 Shadow Bid

When calculating the Shadow Bid, OTP3 will determine the projected Cash Flows based upon the following:

- The Raw PSC;
- The value of the transferred risks;
- The estimated cost of private sector finance;
- Any public subsidies, including milestone payments, to the private sector, or concession fees from the private sector to the Agency; and
- The level of guaranteed Availability Payments.

4.4.14 Comparing PSC and Shadow Bid

In order to compare the Risk-Adjusted PSC to the Shadow Bid, each of the Cash Flows needs to be estimated and presented in an appropriate format, such as separate cost and revenue lines profiled over the whole term of the proposed PPTA agreement, to enable them to be input into the financial models for the Risk-Adjusted PSC and Shadow Bid. Therefore it is important to ensure close liaison with the teams running the financial models to understand the required format for the inputs.

With the completion of the financial model runs, the Cash Flows then should be converted to present values for inclusion in the VfM analysis. This is done using an appropriate discount rate. Refer to Appendix 3 for further details on discount rate selection and the present value process to be followed.

4.4.15 Updating VfM assessment

The Initial VfM Assessment is based on assumptions which may change as the project is developed. It is important that the Initial VfM is updated if significant changes occur, such as changes in the project scope and/or risk allocation. Such updates should be coordinated with key project milestones and key decision points in the Framework.

4.5 Qualitative Assessment

Although the quantitative assessment constitutes a significant portion of the VfM analysis, it is not the sole factor driving the VfM of a project. While many factors can be expressed in quantitative terms, others can only be expressed in qualitative terms. Therefore, it is important to identify those issues that might impact the VfM assessment but which cannot be expressed in monetary terms. The consideration of qualitative factors can make or break the attractiveness of the PPTA procurement route, especially when the quantitative analysis does not very significantly favor the Shadow Bid or the PSC. It is important to consider the timing of the qualitative assessment. For example it may be beneficial to carry out the qualitative assessment before the risk workshops since this:

- may reveal important policy issues that need to be resolved before continuing with the procurement; and
- help the understanding of risk allocation.

A qualitative VfM assessment should be carried out to help determine whether a PPTA project should be undertaken as a privately tolled concession or as an Availability Payment structure.
Unlike the quantitative assessment, the qualitative assessment is less prescriptive. The issues that need to be considered, particularly at the Initial VfM Assessment stage, are likely to vary depending on the project in question and other factors. In general the qualitative assessment will seek to identify factors which will influence the project in terms of:

- **viability** – the ability to form a sound contract;
- **performance** – the opportunity to encourage risk sharing and innovation; and
- **achievability** – the capability of the commonwealth and the private sector to deliver the project.

Some examples of qualitative factors that should be addressed in the Initial VfM Assessment include:

- an assessment of the strategic fit of the PPTA project with the commonwealth’s and Agency’s overall objectives;\(^{19}\);
- any concerns the Agency has about the deliverability of the project under a Comprehensive Agreement with the private sector. These may include whether the contract adequately describes the service requirements in clear, objective, output-based terms and maintains sufficient operational flexibility over the lifetime of the contract at an acceptable cost;
- whether the Agency is aware of any significant changes to project scope, specifications or maintenance requirements that may need to be included as change orders;
- any differences in the specifications and service expectations between the PSC and Shadow Bid;
- whether there are any equity, efficiency or accountability issues;
- whether there are any regulatory or legal restrictions;
- whether there are any affordability issues;
- whether there are sufficient opportunities for the private sector to deliver high service quality through innovation;
- whether there are sufficient resources in the Agency to manage the procurement process and administer the contract;
- the likely strength of competition in the market between private sector entities that submit proposals; and
- the robustness of the information used in developing the PSC.

Appendix 4 provides a checklist of questions to consider that might be useful in carrying out the qualitative assessment for the Initial VfM and for the Final VfM assessments.

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\(^{19}\) A project that has been initiated within the NEPA process will have been assessed for strategic fit. However, objectives and policies may change during the course of a project’s life.
4.6 OVERALL VfM ASSESSMENT

The Initial VfM Assessment needs to reflect the outcome of the quantitative VfM assessment and the findings from the qualitative VfM assessment. Chapter 6 explains how these components should be presented in an initial VfM Report.

A decision to proceed as a candidate PPTA project depends upon both quantitative and qualitative VfM assessments. Where the quantitative assessment of the Shadow Bid demonstrates a more favorable outcome than the PSC and qualitative factors also support the PPTA route, this would provide a valid case for advancing with PPTA procurement.
5 Final VfM Assessment

5.1 Introduction

A Final VfM Assessment is completed as part of the procurement phase, after proposals have been received and an Apparent Best Value Proposal, providing the optimum combination of financial benefit and technical quality, has been identified by the OTP3. The final VfM should take account of the terms of the Comprehensive Agreement. The final VfM will inform Decision Points 4 and 5 whether to proceed with the procurement by selecting the preferred Proposer and executing the PPTA agreement. This chapter provides an overview of the approaches used in carrying out the Final VfM Assessment.

It is important to note that between the completion of the Initial VfM Assessment and the Final VfM Assessment, work should have been carried out by the OTP3 to update the Risk-Adjusted PSC and Shadow Bid to reflect a more developed understanding of the project.

5.2 Quantitative Assessment

5.2.1 Availability Payment Structure

As part of the Final VfM Assessment, the initial quantitative VfM assessment needs to be updated after receipt of binding proposals under the PPTA from proposers. If the OTP3 has determined to pursue the project under the PPTA, and it is decided to hold a firm price competition, the OTP3 will reassess the VfM after the proposals have been submitted and an Apparent Best Value Proposal has been identified.

The NPV costs in the Apparent Best Value Proposal should be compared with those in the updated PSC and the assessment would demonstrate VfM if the costs of the Apparent Best Value Proposal were lower than those of the updated PSC.

5.2.2 Privately Tolled Concession

There is no need to carry out a quantitative assessment if the Apparent Best Value Proposal represents a lower net cost – with toll revenues included - to the Agency than the updated Shadow Bid. For example, if the OTP3 has estimated from the updated Shadow Bid that a project should generate a concession fee from a Concessionaire of $10 million, and the Apparent Best Value Proposal offers a concession fee greater than $10 million, the project would move forward to award of the Comprehensive Agreement without the need to compare against the PSC.

However there is a need to carry out a quantitative VfM assessment if the Apparent Best Value Proposal generates a lower Market Valuation for the project than had been anticipated in the updated Shadow Bid. In that case, a final quantitative VfM assessment is needed in which the Market Valuation for the project based upon the Apparent Best Value Proposal should be calculated and compared against the Market Valuation for the project based upon the updated PSC. This comparison would be needed to ensure that the PPTA project, procured as a privately tolled concession, still provides VfM immediately prior to award of a Comprehensive Agreement. Where the Apparent Best Value Proposal is conditioned on changes to the scope, inputs and risk allocation in the draft Comprehensive Agreement, the assessment would need to be updated if these changes impact the risk transfer.

5.3 Qualitative Assessment

The Initial VfM qualitative assessment should also be updated to take account of a more developed understanding of the PPTA project in terms of the following three types of qualitative factors:
• viability;
• performance;
• achievability.

In turn each of these factors contains groups of questions to be addressed. The purpose of considering the issues set forth on the checklist of qualitative issues (Appendix 4) is to consider whether the benefits of PPTA project are likely to outweigh any additional costs and disadvantages.

5.3.1 Viability

For a PPTA project to be viable the investment objectives and desired outcomes need to be capable of translation into a clear and robust Comprehensive Agreement and payment mechanism. For example, the performance requirements need to have clear measurement methods and objective achievement targets. Given the likely changes in technology and user expectation over time there needs to be a method of updating the performance requirements in line with best management practices. Generally for highway projects the concept of transferring the risk of non-discriminatory operating and maintenance practices is well-established, but this concept may be less well established in other transportation modes.

5.3.2 Performance

A Comprehensive Agreement constructed under the PPTA can provide opportunities for integrated, single-point responsibility and accountability. This encourages more efficient approaches to risk management and produces incentives to develop innovative approaches to output delivery. Consistent high quality services can be encouraged through performance and payment mechanisms. However, risk transfer will be priced by the private sector into the contract.

5.3.3 Achievability

Determining the rules that will govern the relationship between the public and private sectors does involve significant transaction costs. In particular, the procurement process can be complex and involve significant resources, including senior management time which may be required for project development and the ongoing monitoring of service delivery. Agency capacity and capability, together with private sector deliverability will have direct consequences for procurement times and the level and quality of market interest.

5.4 Overall Assessment

The results of the quantitative and qualitative assessments should be presented together in a standard reporting format that will inform the outcome at Decision Point 4. Chapter 6 explains how the quantitative and qualitative assessment should be reported.
6 REPORTING VALUE FOR MONEY

6.1 INTRODUCTION

This chapter describes a recommended structure and reporting format for the OTP3 reports on PPTA VfM assessments. The recommended six-section structure and format can be used for reporting both the Initial VfM Assessment and the Final VfM Assessment. The content of these reports will vary, but the following elements should be included in the reports.

6.2 REPORT STRUCTURE

6.2.1 Section 1: Executive Summary

The purpose of the Executive Summary is to provide a clear high level summary of the purpose and conclusions of the VfM assessment and to refer to later chapters in the report that provide a more detailed explanation of this assessment.

The following information should be included:

- The type of VfM assessment, specifically whether it is an ‘initial’ or ‘final’ VfM assessment;
- The procurement options being compared in the VfM assessment. The type of PPTA delivery business model should be clearly stated, as well as the traditional public sector delivery model that is used as a point of comparison;
- The source of the information from which the expected costs of each option were derived, i.e. whether the costs have been estimated for a Shadow Bid, or have come from the Apparent Best Value Proposal:
- The dataset(s) used to prepare the estimate costs should be described. Where the costs are the result of an Apparent Best Value Proposal, this should be stated.
- In both cases, key assumptions that could significantly affect the outcome of the assessment should be highlighted, particularly if amounts have been added to the estimate or proposal to allow for Competitive Neutrality, risk, deferral and vulnerability, finance costs and/or other sensitivity test components.
- The report should include some high-level conclusions from the VfM assessment, in particular the expected benefits to be delivered through the Apparent Best Value Proposal in terms of:
  - Quantitative factors; and
  - Qualitative factors.
- Quantitative figures should be drawn directly from the one page summary of the VfM assessment as shown in Table 1 below;
- An assessment of qualitative factors should be drawn from the results of the qualitative assessment. The qualitative conclusions should highlight the benefits to the project of pursuing the chosen business model, as per the considerations listed in this guidance document; and
- Recommendations/next steps following the results of the VfM assessment should be included.
6.2.2 Section 2: Project Background

The purpose of this section should be to establish the context for the VfM assessment and provide background history to the project, its location, size and scope, as well as the project goals and expected benefits. Much of this information would be available from other sources and would be reusable within a subsequent procurement process, for example as a project information memorandum to support an industry consultation or to accompany a solicitation.

The following key information should be included:

- Background history of the project;
- A map of the project's location;
- A description of the scope of the project;
- A description of the schedule for the procurement, design, construction, operation and transfer of the project, including whether the project is split into phases;
- A diagram showing the scope of the project, number of lanes, interchanges, ramps, tolling zones etc. using a standard presentation format;
- The key objectives/deliverables/goals of the project;
- Any factors critical to the success of the project as a PPTA (e.g. delivery by a certain date, or within a certain budget);
- A summary of the detailed level screening conducted by the OTP3, and the expected economic and other benefits of the project;
- What value for money means in relation to the project. How the goals and benefits of the project align with the methodology used to assess VfM. How the goals of the project are translated into VfM;
- Any process that has been followed to obtain an independent review of the VfM assessment;
- A section on the key assumptions made in carrying out the Initial and Final VfM Assessments;
- The outcome of any procurement processes undertaken to date and/or the proposed procurement route for the project; and
- An overview of the expected funding and financing arrangements for the project.

6.2.3 Section 3: Procurement Process

This section should describe the process and timetable for selecting an Apparent Best Value Proposal and explain the stage that the procurement process has achieved within the Manual.

The following key information should be included:

- details of the proposed procurement option / business model for the project;
- details of the solicitation process to date (if appropriate), including:
- the number of valid conceptual proposals and names of short-listed parties;
6.2.4 Section 4: Risk Valuation & Sensitivity Analysis

The purpose of this section is to describe the steps in the risk assessment methodology and present the key factors in the risk assessment.

The following information should be included:

- the Raw PSC and Shadow Bid costs prior to undertaking the risk assessment calculated using the methodology set out in this guidance document;
- a brief summary of the methodology used to arrive at the risk valuation for the PSC and Shadow Bid;
- a summary of the key risks for the Project;
- a summary of the methodology used to undertake sensitivity analysis;
- a description of the key assumptions to which sensitivity analysis was applied, and the resulting range of values for the PSC and Shadow Bid; and
- a summary of the range of sensitivity values which were considered in the VfM assessment.

6.2.5 Section 5: Value for Money Assessment

This section should provide a detailed description of how the VfM assessment of the project was undertaken and the conclusions drawn. It should include an explanation of how the PSC and Shadow Bid models were constructed and identify the assumptions used to estimate the construction, operation and maintenance costs, risks and financing costs and where appropriate the revenues.

The following key information should be included:

- a description of the build-up to the estimated cost of the PSC option as per the methodology in this guidance document;
- a description of the amendments to the Raw PSC undertaken to arrive at the Shadow Bid when carrying out an Initial VfM Assessment;
- a list of the assumptions made to calculate the PSC, Shadow Bid and any adjustments for Competitive Neutrality, risk valuation, deferral and vulnerability cost, sensitivities;
- summary of financial assumptions (refer to the Agency’s financial division or OTP3);
● a summary of the results of any previous VfM assessments undertaken for the project;

● the results of the VfM assessment stating the expected quantitative advantage of the Apparent Best Value Proposal as well as any qualitative factors; and

● the results of any sensitivity analysis undertaken to assess the robustness of this result. It may be helpful to indicate the ranges of values in the sensitivity analysis for which the VfM assessment favors one procurement method over another.

6.2.6 Section 6: Conclusion

This section should include tabular summaries of the VfM assessment and a conclusion that summarizes the results of the VfM assessment and the recommended next steps.

The following key information should be included:

● a summary table or tables, which may follow a format similar to the table below;

● summary details of the date and purpose of the VfM assessment;

● a summary of the expected VfM achieved and any pertinent qualitative factors, consistent with the Executive Summary; and

● next steps actions and recommendations following the report.
6.3 **Key Summary Table**

Table 1 below sets out below an illustrative summary presentation for the quantitative VfM assessment\(^2\).

**Table 1: VfM Summary Table\(^2\)**

<table>
<thead>
<tr>
<th>Summary of Financial Analysis for VfM</th>
<th>Public Sector Comparator</th>
<th>Shadow Bid (PPTA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>($ millions)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nominal</td>
<td>Nominal</td>
</tr>
<tr>
<td></td>
<td>NPV</td>
<td>NPV</td>
</tr>
<tr>
<td>Pre-Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procurement costs (a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prelim and final engineering costs (a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Construction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction period (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction oversight (QA/QC) (a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk adjusted construction cost (c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction efficiency adjustment (c)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Retained construction risks (a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operations and Maintenance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating period (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk adjusted O&amp;M costs (c)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Retained O&amp;M costs (a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained O&amp;M risks (a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Adjustments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive Neutrality</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Financial Model Outputs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concession fee or Agency up-front subsidy (x)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Subsidy during operations (including value of availability payments) (y)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Surplus revenues to agency during operations (z)</td>
<td>Note 1</td>
<td>Note 1</td>
</tr>
<tr>
<td><strong>Net Cash Flow (x-y+z)</strong></td>
<td>Note 1</td>
<td>Note 1</td>
</tr>
</tbody>
</table>

The above items may be summed but are intended for line-by-line comparison.

**Quantitative VfM expressed as $B - $A**

- $c$ denotes a cost item by Contractor (PSC) or Developer (PPTA)
- $a$ denotes a cost item borne by agency

**Notes**

1. This line item refers to net cash flow from PSC model taking into consideration all costs, toll revenues and public financing costs
2. This may be a revenue share under a privately tolled comprehensive agreement

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\(^2\) This table would ideally draw its inputs from a “reporting dashboard” software tool that is to be constructed for the VfM assessment.

\(^2\) The “assessment of Value for Money achieved” – the last row in the table – can be expressed in absolute terms, as the difference between the AVBP / Shadow Bid and PSC, and/or as a percentage change relative to the PSC costs.
7 Check List

To assist in carrying out PPTA Value for Money assessments, the following checklist has been produced highlighting the key steps that need to be followed.

7.1 Initial Value for Money Assessment

7.1.1 Private Toll Viability Assessment (PTVA)

1. OTP3 to review PTVA questions and identify experts to address each question.
2. Experts to separately score answers to the questions.
3. OTP3 may decide to hold expert workshop to review initial answer values and make adjustments if required.
4. OTP3 or assigned experts to assign weights to the questions.
5. OTP3 to calculate weighted answer values.
6. OTP3 to sum weighted scores and derive PTVA score.
7. OTP3 to compare the score against mid-range score and use this to inform decision (refer to Chapter 4 for further details of the mid-range, low and high scores).
8. OTP3 to decide whether project, if pursued as a PPTA, should be a privately tolled concession or an Availability Payment structure.

7.1.2 Availability Payment Structure

1. OTP3 to assemble PSC and Shadow Bid teams.
2. The PSC team should estimate the Raw PSC cost components for each year of the candidate PPTA project.
3. Prepare the Raw PSC costs in a form as required by the PSC financial model.
4. Pass the Raw PSC numbers to the Shadow Bid team.
5. Each team should estimate the remaining cost components for the PSC and Shadow Bid respectively, taking account of the methods referred to in this guidance document.
6. The Shadow Bid team should take account of efficiencies and savings that might apply to all cost components, as described in the PPTA Risk Analysis Guidance.
7. The PSC and Shadow Bid costs should be discounted and expressed in NPV terms, which is typically accomplished within the financial models (seek advice from the Agency’s financial division or OTP3).
8. The net NPV costs for the PSC and Shadow Bid should be compared.
9. Qualitative issues that cannot be expressed in monetary terms should be identified and a record made of how these factors have been assessed.
10. Quantitative and qualitative VfM assessments should inform the overall Initial VfM Assessment.
7.1.3 Privately Tolled concession

1. Follow the approach in Step 1 to 10 above.

2. The PSC and Shadow Bid teams should estimate revenues independently taking account of the factors that typically influence revenue models in public and private sectors.

3. Financial models will typically report Market Valuation for both PSC and Shadow Bid. There is no need to express costs and revenues in NPV terms. Market valuations may be compared directly in year of expenditure dollars or may be discounted and expressed in NPV, following advice from the Agency’s financial division or OTP3 and guidance included in Appendix 3.

7.2 Final Value for Money Assessment

7.2.1 Availability Payment Structure

1. Compare net NPV costs in Apparent Best Value Proposal with those in updated PSC.

2. Carry out qualitative assessment and make a record of the assessment.

3. Quantitative and qualitative VfM assessments should inform the Final VfM Assessment.

7.2.2 Privately Tolled concession

1. Follow the approach in steps 1 to 3 above.

2. No need for final quantitative VfM assessment if the net costs in Apparent Best Value Proposal are less than those in updated Shadow Bid.

3. A final quantitative VfM is required if the net costs in the Apparent Best Value Proposal exceed those in the updated Shadow Bid. In that case, calculate the NPV for the Apparent Best Value Proposal and compare with the updated PSC.
APPENDIX 1: REFERENCES


Halcrow Inc. (2010): Literature Review of Value for Money assessments used in Public Private Partnerships for Virginia Department of Transportation


Virginia Department of Transportation (2012): Operations & Maintenance and Lifecycle Costs Guidance

Virginia General Assembly: Code of Virginia http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+56-558


22 All links verified as of April 2012
### APPENDIX 2: PRIVATE TOLL VIABILITY ASSESSMENT

<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
<th>Background notes and Explanation</th>
<th>Score (1-5)</th>
<th>Weighting (1-5)</th>
</tr>
</thead>
</table>
| 1 Traffic and Revenue Predictability | 1.1 Confidence in Revenue Studies                                        | How confident is the Agency in the ability of more detailed Traffic and Revenue (T&R) studies to provide greater certainty and narrower ranges of traffic and revenue prediction compared to those currently available?  
A toll facility's competitiveness is primarily measured by the amount of travel time saved and its value to motorists relative to the toll paid. These are key inputs to the traffic forecasting efforts that are nevertheless subject to uncertainties, given that they are based on assumptions about the expected physical capacity of the regional transportation network, including the toll facility; underlying economic, demographic and land use conditions; and motorists' perceived value of time saved. If the Agency has low confidence that further expenditure on T&R studies to support the Shadow Bid and PSC would significantly improve certainty of estimates, the project may be more suitable as a public tolled facility, see also Question 1.2 below. | 1 – High confidence | 5 – Low confidence |
<p>| 1.2 Inherent unpredictability of traffic | Where there are factors that make the estimation of future traffic and revenue inherently unpredictable is this risk capable of more effective management by a private sector? | Note that if future revenues are considered inherently unpredictable (regardless of techniques, experience and judgment that may be applied in revenue grade forecasting by a private sector), this will tend to make it more challenging to demonstrate VfM for a privately tolled concession. (Sensitivity testing of revenue inputs to financial models set up to support the PSC and | 1 – Inherent unpredictability better managed by private entity |</p>
<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shadow Bid may have wide ranges that may not provide a clear assessment of VfM(^\text{25}). Better management of unpredictability by a private sector entity may include an enhanced ability to secure debt</td>
</tr>
<tr>
<td></td>
<td>Examples of tolled concession agreements that were reliant on future development to generate future revenues are South Bay Expressway and Pocahontas Parkway. Other examples in which the private sector has greatly underestimated revenues include Camino Colombia Toll Road (Texas).</td>
</tr>
<tr>
<td>1.3 Specific Revenue Risks</td>
<td>Are there factors in the corridor that would give rise to significant revenue risks to which the private sector is known to be averse, e.g. due to private toll concession difficulties and lessons learned, such as uncertainty over future development, particularly in Greenfield development? Limited access to the facility? Choke points off the facility that limit throughput?</td>
</tr>
<tr>
<td></td>
<td>Analysis of truck traffic and its sensitivity to tolls is not currently well-researched. Commercial traffic choices based on value of time savings has not always been borne out in actual performance. Truck traffic is potentially more sensitive to economic downturns. Truck-only toll lanes have additional complexity, as there</td>
</tr>
<tr>
<td>1.4 Reliance on Commercial Vehicles</td>
<td>Does the toll facility depend upon commercial vehicles for a significant share of revenues?</td>
</tr>
<tr>
<td></td>
<td>1 – Few known private-averse risks</td>
</tr>
<tr>
<td></td>
<td>5 – significant private-averse risks</td>
</tr>
<tr>
<td></td>
<td>1- Little dependence on CVs</td>
</tr>
<tr>
<td></td>
<td>5 – Significant</td>
</tr>
</tbody>
</table>

\(^{25}\) There are different views of what T&R characteristics would make a project a good candidate for a privately tolled concession agreement. It may be argued that a stable and predictable corridor would be better suited for a public sector, while an unpredictable corridor is better suited for transfer to private sector due to the higher risk but this is not always the case. Rather than generalizing on characteristics, respondents should focus on which party is best placed to manage the unpredictability of revenue risk. This is not necessarily the ability to control the demand in the corridor, but refers to the relative ability of public and private sectors to secure debt given the revenue risk profile.
<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
<th>Background notes and Explanation</th>
<th>Score (1-5)</th>
<th>Weighting (1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Local and Regional Economic Considerations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Diversity of Traffic Base</td>
<td>Does the facility have a diverse traffic base that includes some combination of intercity, commuter, business-related and recreational travel, all coming from and going to multiple origins and destinations?</td>
<td>Diversity allows a toll facility to better withstand a downturn in a particular segment and is likely to be attractive to a private sector. Recreational and intercity traffic patterns are more sensitive to gas price increases than commuter travel.</td>
<td>1 – Great diversity</td>
<td>5 – Little diversity</td>
</tr>
<tr>
<td>2.2 Facility Enterprise Value</td>
<td>Does the facility hold out the prospect of the Concessionaire establishing true enterprise value from the facility?</td>
<td>In certain concessions, the private sector has established direct customer relationships and loyalty that, coupled with better and safer service may encourage higher ridership than the public sector could achieve.</td>
<td>1 – High Enterprise Value</td>
<td>5 – Low Enterprise Value</td>
</tr>
<tr>
<td>2.3 Economic Fundamentals</td>
<td>Is the Facility situated in a region with strong economic fundamentals?</td>
<td>The strength and diversity of key economic, demographic and land use factors all contribute to a toll facility’s travel demand. Demographic measures include population and the number of households. Economic factors encompass total employment, employment by industry, household income and any relevant local/regional indices of economic activity. Land use measures include the mix of existing commercial, residential and retail development and vacancy/absorption rates, as well as the dependency on the timing and magnitude of future developments. A history of volatile economic cycles and a dependency on particular industries/sectors of the economy would be</td>
<td>1 – Strong economic fundamentals</td>
<td>5 – Weak or volatile with high dependency on one sector</td>
</tr>
</tbody>
</table>
### Public Policy and Public Interest Factors

#### 3.1 Competing Facilities

<table>
<thead>
<tr>
<th>Question</th>
<th>Background notes and Explanation</th>
<th>Score (1-5)</th>
<th>Weighting (1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project traffic demand be highly susceptible to change if the commonwealth or other entity were to build adjoining or nearby facilities or improvements?</td>
<td>If this is the case it may be necessary for the Agency to include within the Comprehensive Agreement certain competing facilities provisions that could be contrary to the public interest. Competing facilities could also include rail or roadway controlled by another entity which may not be by the commonwealth. Although competing facilities provisions can be crafted, experience has shown that privately tolled facilities work best where there is limited susceptibility to adjacent facilities.</td>
<td>1 – Low susceptibility to competition</td>
<td>5 – High susceptibility to competition</td>
</tr>
</tbody>
</table>

#### 3.2 Forced Closure

<table>
<thead>
<tr>
<th>Question</th>
<th>Background notes and Explanation</th>
<th>Score (1-5)</th>
<th>Weighting (1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the Agency or another party have rights to block or otherwise disrupt the facility at will?</td>
<td>A concession agreement will typically include compensation events for certain types of closure, e.g. hurricane evacuation or national security, but if this is a very frequent likelihood or risk, it could adversely affect the efficiency of a privately tolled concession.</td>
<td>1 - Few Forced closure risks</td>
<td>5 – Significant forced closure risks</td>
</tr>
</tbody>
</table>

#### 3.3 Toll Violation Risk

<table>
<thead>
<tr>
<th>Question</th>
<th>Background notes and Explanation</th>
<th>Score (1-5)</th>
<th>Weighting (1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the significance and predictability of toll violation risk?</td>
<td>A key risk to electronic toll collection, particularly open road tolling, is toll evasion and the potential for growing enforcement and collection costs. Typically a facility that has a low toll violation risk would be a better candidate privately tolled project. For a number of tolled concession agreements in the US the toll violation and enforcement risk has been retained.</td>
<td>1 – Low risk of toll violations</td>
<td>5 – Significant expected toll</td>
</tr>
</tbody>
</table>

The strength and competitiveness of a toll facility’s regional economy directly influence its economic rate-raising ability, which is particularly important for a privately tolled facility.
<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
<th>Background notes and Explanation</th>
<th>Score (1-5)</th>
<th>Weighting (1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4 Toll Services Agreement</td>
<td>For this facility, is the provision of back-office services by a private entity commercially viable? Would the Comprehensive Agreement mandate the provision of back-office services by an established public provider via a Toll Services Agreement?</td>
<td>Where the private sector is able to take full billing responsibility for a facility and is enabled to be a full toll service provider and tag provider from the outset, it is generally considered to provide a better platform for developing the toll facility as an enterprise in which direct customer loyalty and relationships can be established. A well-written concession agreement can successfully integrate a toll services agreement in which the public sector is toll services provider. In some instances the toll services agreement is optional (SH130 S5&amp;6 in Texas); in other instances it is mandatory (IH-635 Managed Lanes in Texas)</td>
<td>1 – Facility viable for private toll services</td>
<td>5 – Public Toll Services Agreement mandated</td>
</tr>
<tr>
<td>3.5 Public Policy</td>
<td>Could private tolling be contrary to policies that may exist or may be implemented in the corridor such as maximizing throughput (e.g. stated contrary policy issues for Florida’s I-595 corridor)?</td>
<td>A number of aspects of public policy could be adversely impacted by the provisions of a privately tolled Comprehensive Agreement. For example, in certain corridors, particularly very constrained corridors in which managed lanes are to be implemented, it is sometimes found that maximizing toll yield is at odds with optimizing throughput. (e.g. a greater yield can be achieved with fewer vehicles). Managed lanes policies can sometimes be very complex, and are conceived to suit a particular set of circumstances (e.g. to meet current air quality targets). It needs to be understood that drivers of policy may</td>
<td>1 – Very unlikely that policy changes would require changes</td>
<td>5 – Significant risk that policy issues may necessitate changes to concession agreement</td>
</tr>
</tbody>
</table>
### Category | Question | Background notes and Explanation | Score (1-5) | Weighting (1-5)
--- | --- | --- | --- | ---
| 3.6 Control of Traffic Demand (Network Issues) | Are traffic demand issues largely under control of public sector such as management of area wide traffic networks and economic activity in the region (e.g. Staten Island Bridges) | This issue may apply to toll policies that may be set at a regional or state level (such as HOT lanes being free for HOV 3+ instead of the current 2+). Where it is essential for a public Agency to retain area wide network operational control, it may prove impossible to “monetize” only one facility within a group | 1 – No network issues | 5 – Significant network issues |
| 3.7 Enforcement | Can the revenue risk transfer be properly enforced? (E.g. Federation Bridge Canada) | For some projects there has been difficulty enforcing the revenue risk allocation. This is considered to be unlikely for an Agency and may arise if a Comprehensive Agreement contains terms that are ambiguous or if contract terms are re-negotiated. This could arise for example if the project includes some complex revenue risk sharing provisions that have not been well-tested. | 1 – No risk of unenforceability | 5 – significant risk of unenforceability |
| 3.8 Political Constraints to Toll Raise | To what extent would a private sector be in a stronger position to impose the highest possible toll rates on the facility (subject to toll caps and yield), whereas the public agency would be politically constrained from raising tolls? | In most cases, privately operated toll facilities have had greater success at regularly imposing toll rate raises due to the generally growing economic ratemaking ability of most toll facilities, and relative freedom from political implications. When concessions are initially granted, toll rates tend to be lower than revenue maximization levels. Over time, as demand increases, toll rates will likely increase to maximum legal revenue levels. However, aggressive toll rate increases (where these are unwisely permitted in agreements) can also subject private concessions to political risk, which potentially | 1 – High political constraints to suppress toll raises | 5 – Low political constraints to suppress toll raises |

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26 This factor may be considered of general application to all privately and publicly operated toll roads; however, as demonstrated e.g. by the North Texas Tollway Authority, where future toll rate increases are essential to repay debt obligations, public toll entities can operate at arms length in the right circumstances. A wider economic argument can be made that political suppression of toll rate increases provides area-wide economic benefits and so should not be a factor taken into account in deciding between public and private toll viability. However, this is a project-specific analysis and so is not intended to take into account wider economic factors.
<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
<th>Background notes and Explanation</th>
<th>Score (1-5)</th>
<th>Weighting (1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>carries adverse consequences.</td>
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<td></td>
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</tr>
<tr>
<td>4 Technology and Efficiency</td>
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<tr>
<td>-----------------------------</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>4.1 Practicality</strong></td>
<td>Is a privately tolled concession fully practical</td>
<td>For example, consider a facility that involves adding an extra lane and only tolling that lane. It may be impractical to have the private sector maintaining just one or two lanes along side 3-4 publicly maintained and operated general purpose lanes? It may not be practical to transfer revenue risk without transferring maintenance across an entire facility.</td>
<td>1- No practicality issues</td>
<td></td>
</tr>
<tr>
<td><strong>4.2 Technology Enhancement</strong></td>
<td>Are there particular factors to suggest that the private sector would be able to bring a technological advantage to the tolling such as new or improved technology?</td>
<td>A project in this category could include complex managed lanes where a privately tolled operator could fine-tune tolling strategies to maximize yield. Toll facility operators can offer users a number of innovative pricing and payment options. The private sector may be in a better position to implement the latest ETC or ORT technology that contributes to a toll facility's competitiveness and may reduce the elasticity effects of toll increases (separating the decision to use the toll facility with the payment process). Conversely there are many public toll agencies such as Harris County Toll Road Authority that has successfully implemented state-of-the-art systems.</td>
<td>1 – Significant innovation potential compared to public</td>
<td></td>
</tr>
</tbody>
</table>

5 – Significant practicality issues

5 – Little or no innovation potential compared to public


APPENDIX 3: SELECTION OF THE DISCOUNT RATE

PURPOSE

This document outlines the steps to be taken in the selection of a Discount Rate.

COMPARING PSC AND SHADOW BID

In order to make a determination of VfM it is important to present both the PSC and Shadow Bid (or final offer) project Cash Flows to and from the Agency at a single point in time. This is referred to as either the:

i. Total net present cost of the project, where Cash Flows are going from the Agency; or

ii. Total net present value, where Cash Flows are coming to the Agency.

This analysis process is referred to as Discounted Cash Flow (DCF) and includes the use of forecast Cash Flow projections and the use of a Discount Rate to convert future Cash Flows to a specific base date. The Discount Rate selection is the topic of this appendix.

The Discount Rate used in a VfM assessment should reflect the risks associated with it. The process for selection of the Discount Rate, similarly to the process used to quantify project risks, may be a subjective discussion, as evidenced by the number of approaches to the use of Discount Rates employed across the various jurisdictions that use VfM techniques. These include the use of a government borrowing rate\(^27\) (assumed to be the risk-free rate or an approximation), the use of a calculated weighted average cost of capital\(^28\) derived from the project financial model and the use of the capital asset pricing model\(^29\).

The approach to the Discount Rate is also influenced by the approach taken to risk and the estimation of costs as described elsewhere in this guidance document. The general assumption taken is that prior to the Discount Rate selection all project specific (or unsystematic risks) have been adjusted for in the forecast project Cash Flows to reflect the Agency policy and, where available the draft Comprehensive Agreement (refer to the PPTA Risk Analysis Guidance for more details on risk allocation and development). Such risk adjustment may include risks associated with construction cost overruns, the timing of right of way acquisition or utilities, or the estimates and timing of future capital expenditure.

The following describes the steps to be taken for the selection of the relevant Discount Rate for a VfM assessment.

STEP 1 – CONFIRM TIMING

It is important that for comparative purposes a single base date is used to which all Cash Flows are then discounted. Depending on the timing of the analysis this date may be:

i. Prior to the initiation of a procurement (whether P3 or traditional delivery) when the evaluation date may be established as the date of analysis; or

\(^{27}\) Used in Ontario, Canada and both Texas and Florida in the United States

\(^{28}\) Used in British Columbia, Canada and California, United States

\(^{29}\) Partnerships Victoria, Australia
ii. If the evaluation is being conducted during procurement as part of the final VfM, the base date should be the date on which the Agency would expect to have to pursue an alternative route of a traditional delivery model, this is typically chosen as either the date of proposal submissions or the expected financial close date.

Consideration should also be given to timing of the project delivery. In cases where the traditional project delivery (the PSC) is expected to be significantly longer than delivery using the PPTA (the Shadow Bid), the schedule (and costs) should be adjusted to best reflect the PPTA delivery schedule, otherwise, by deferring costs under the PSC, the analysis may be incomparable as those costs may be unfairly presented in a present value comparison.

**STEP 2 – IDENTIFY THE CASH FLOWS**

There are two project delivery types considered in this guidance document, Availability Payment structures and privately tolled concessions, which may be further categorized, prior to the selection of the Discount Rate, into net cash inflow to the Agency or net cash outflow to the Agency.

This distinction is important, as adjustments to the Discount Rate act inversely depending on the Cash Flow – for example an increase in the Discount Rate would imply a greater level of uncertainty and reduce a future uncertain cash inflow (revenue) or benefit to the Agency, the same alteration would result in a lower cash outflow (cost) implying the opposite impact by increasing the benefit to the Agency through the lower future cost. An example of an issue this may cause is as follows:

Assume two options for a project each with the same stream of payments from the Agency, as shown in the table, however, Option A is perceived to be of less risk to the Agency than option B.

<table>
<thead>
<tr>
<th>Period</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option A</td>
<td>(100)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td>Option B</td>
<td>(100)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
</tr>
</tbody>
</table>

Selecting a higher Discount Rate for Option B, to reflect the increase in risk, would result in a lower net present cost, and an incorrect assessment of value to the Agency.

<table>
<thead>
<tr>
<th>Option</th>
<th>Discount factor</th>
<th>Net present cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option A (low risk)</td>
<td>5%</td>
<td>$192</td>
</tr>
<tr>
<td>Option B (high risk)</td>
<td>8%</td>
<td>$178</td>
</tr>
</tbody>
</table>

Typical project sub-categories are described as follows and will be defined in the procurement selection documents shared with potential proposers:

Net cash outflows from the Agency:

i. *Subsidy* – the project may be awarded on the basis of the lowest subsidy request from the private sector to complete the project; or

ii. *Net present cost of Availability Payments* – the project may be awarded on the basis of the lowest net present cost of the scheduled Availability Payments proposed.

Net cash inflows to VDOT:
i. **Concession fee** – the project is awarded on the basis of the highest concession fee payable by a proposer for the right to the toll road concession;

ii. **Present value of guaranteed operating payments or revenue sharing** – the project awarded based on the present value of a series of guaranteed payments or future revenues from the Concessionaire to the Agency; or

iii. Combination of i) and ii).

The nature of the relevant Cash Flows for both project types is described in more detail as follows:

**Availability Payment structures**

Where tolling is not included in the project scope the PSC Cash Flow for inclusion in the quantitative analysis will include a periodic net cost reflecting the costs of development, design, construction and ongoing operational costs for the project. The periodic net cost for the project should then be adjusted to a total net present cost for inclusion in the quantitative value for money comparison.

Under an Availability Payment structure the Shadow Bid or offer will comprise a series of payments from the Agency to the Concessionaire. This payment stream is then included on a total present cost basis for comparison to the PSC.

**Privately tolled concessions**

In developing the PSC, the objective is to establish whether net toll revenues are sufficient to raise enough debt to cover the cost of construction. Net toll revenues are used to raise a toll revenue bond (refer to the Agency finance department for bonding calculation) and any remaining cost of construction, not met through the proceeds of the bonding, represent an additional upfront public funds request for the PSC. Remaining net Cash Flows, during the analysis period, represent Cash Flows after debt and capital maintenance commitments and should be included in the calculation of the present value of the PSC.

The Cash Flow for comparison to the PSC is dependent on the basis for selection. This may be a concession fee, a concession fee in combination with an operating payment, or a public subsidy request from the Concessionaire.

**STEP 3 – SELECTION OF THE DISCOUNT RATE**

Once the project type, timing and Cash Flows have been confirmed the adjustment of the relevant Cash Flows to a total present value at the chosen base date can be completed. To carry out this adjustment the periodic Cash Flows are discounted using a Discount Rate selected as follows. The approach taken is described below for the two project types contemplated.

**Availability Payment structure**

For projects representing a cash outflow from the Agency, such as an Availability Payment or the costs of construction and ongoing operations, defined in the PSC to be used, the recommendation is to use an estimate for the government (or the Agency’s) cost of borrowing defined as follows (to be updated from time to time by the Agency finance department):

Government rate of borrowing – the average of the reported yields on outstanding thirty year limited obligation debt (secured by appropriations) issued by the Agency’s oversight board from the last six months prior to the date of the analysis. This may be approximated by using the thirty year AA-rated general obligation yields provided by Municipal Market Data (the assumption to be reviewed from time to time by the Agency finance department).

30 Comparable to practices in other jurisdictions described earlier
Privately tolled concession
As described above, the project value for the PSC includes:

- **Toll revenue bond issue** – defined as the upfront issue of toll revenue bonds less fees and required debt service reserves; and

- **Present value of surplus Cash Flows** – defined as the present value of excess toll revenues (cash) remaining during each operating period at the bottom of the Cash Flow waterfall (the “surplus Cash Flow”). The Cash Flow waterfall will typically have the following priority for cash outflows: administrative expenses; operations and routine maintenance expenses; interest payments; principal repayments; and periodic maintenance expense (including periodic maintenance reserve funding).

To assess the value of surplus Cash Flows, these Cash Flows need to be discounted at a rate that reflects the time value of money and the risks associated with the collection of such excess funds.

Two generally accepted methods of developing Discount Rates commonly used for toll road projects include:

- **Market comparables approach** – this approach relies on the equity internal rate of return (“Equity IRR”) observed in precedent market transactions as indicative for the purposes of setting an appropriate rate of return for the current project analysis.

- **Use of the Capital Asset Pricing Model (CAPM)**: the capital asset pricing model (CAPM) is a commonly used tool to estimate the cost of capital associated with a particular project. CAPM is a technical approach that uses a number of input variables and market statistics from a representative group of comparable publicly traded companies to assist in assessing the Discount Rate that may be applied to a target project.

**Market comparables approach**
The market comparables approach involves an assessment of publicly disclosed transactions and market rates of return to assist in determining the return expectations that should be applied to the target project. The use of market comparable returns provides objective support for the market perception of the risks associated with the transaction, including an assessment of how those risks should be priced and ultimately reflected in the value of the project. Since the risk profile of every project is unique, it is important to consider the sample of comparable projects in the context of the risks relevant to the target project and where appropriate, the target return should be adjusted to reflect the key differences in the risks between the projects. The common risks that should be considered when reviewing comparable projects for toll road transactions include, among others:

- **Stage of project delivery/maturity of operations.** The stage of project delivery (e.g. Greenfield/new construction, major refurbishment, Brownfield/mature operation, etc.) is a key component of the risk profile of the project and a major determinant of the market rate of return that would be required by an investor.

- **Construction/refurbishment risks.** Greenfield projects or major refurbishment projects have a significantly different risk profile than projects where no construction or major refurbishment is required. The risks associated with cost overruns and design flaws have a direct impact on the return required by an investor in the Project.

- **Traffic and revenue risk.** Traffic demand risk is also a major determinant of overall project risk and can vary significantly between new construction/Greenfield projects, the conversion from unrestricted public access to a tolled facility, and a Brownfield project.

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31 Examples include Partnerships Victoria discount rate development guidance 2003
that is tolled with a proven history of traffic demand. The traffic and revenue history of a project has a significant impact on the risk assessment and the corresponding return required by an investor.

- **Tolling regime and performance requirements.** Projects may have different restrictions imposed by the authority that may influence the ability of the Concessionaire to change toll rates. In addition, each project may have different performance requirements defined in their project agreements as it relates to maximum traffic levels, minimum average speed, etc. Restrictions on changes in toll rates and performance standards can also impact the return that would be required by an investor in the project.

- **Operations risk.** Operations risk is also a major determinant of overall project risk depending on the operating structure proposed as part of the contract. As a result, the risk exposure of the investor may be different for each project which will directly impact the rate of return required.

- **Handback risk.** The risks associated with complying with handback requirements may also differ significantly by project, thereby having an impact on the return that would be required by a project investor.

When assessing the relevance of market comparables, each of the above-noted risks along with other project-specific risks must be considered to determine the level of adjustment, if any that should be applied to the expected return requirement for the target project. Additional consideration should be given to the typically unleveraged nature of financing for public projects as compared to privately tolled concessions. Additional adjustments to consider may include:

- **Adjustment for traffic and revenue (T&R) forecasting risk.** In the PSC analysis the bond proceeds are typically optimized on a conservative estimate for T&R, and therefore the Agency may be taking less risk on the actual T&R meeting forecast levels than a private sector equity holder would take under a concession model therefore the equity IRR may be adjusted down.

- **Adjustment for difference in financial leverage.** The financing structure assumed in the PSC analysis could be considered more conservative than the capital structures used in private sector concession projects and therefore the equity IRR may be adjusted down.

The output from the market comparables approach is typically the average of equity IRR rates from comparable projects in the market place, adjusted for relevant items shown above. This rate may then be used to discount surplus Cash Flow in the PSC.

**Capital Asset Pricing Model (CAPM)**

A CAPM based approach uses the concept that investors in a project/security must be compensated in two ways: the time value of money and risk. The CAPM based approach relies on market data and statistics to help quantify how investors should be compensated for the risk they are accepting. As noted above, the surplus Cash Flow stream at the bottom of the cash waterfall that may occur for toll road projects under the PSC model carries the greatest amount of risk and can therefore be considered analogous to dividends that are paid to equity investors of publicly traded securities. This would suggest that any surplus Cash Flows projected in the PSC analysis of a tolled concession should be valued using an equity cost of capital that effectively prices the risks associated with the ultimate collection and realization of those Cash Flows. Therefore, the cost of equity capital is equal to an investor’s risk-free rate of return, plus the product of a beta coefficient and the risk premium of the market as a whole. Each of these components is explained below.
Risk-free rate of return

For the purposes of establishing a cost of equity applicable to a privately tolled concession, an appropriate risk-free rate of return should be selected. In line with standard valuation practice, the actual yield on the thirty-year US Treasury Bond as of the pricing date should be used in the analysis.

Beta coefficient

The beta coefficient is a measure of volatility of a given equity security relative to the overall market, typically defined as the benchmark index for the country in which the security is traded (i.e. the S&P 500 for US-based companies). A beta of more than 1.0 would imply that the equity is more volatile than the overall market (i.e. subject to large fluctuations), while a beta of less than 1.0 would imply a lower level of volatility than the overall market. For example Partnerships Victoria, in Australia, identifies an asset beta of 0.5 as a guide\textsuperscript{32} for projects in the transportation sector. The identification of a project specific beta for a project will require an analysis of the levered betas for a sample of public companies operating in the infrastructure sector and more specifically, companies with toll road operations. This will help to determine a beta that may be applied in the determination of the cost of equity for a candidate privately tolled concession project.

Equity Risk Premium

As noted above, the equity risk premium represents the difference between the expected return on the stock market and the risk-free rate. The equity risk premium is applied as a forward-looking estimate of the ability of a long-term equity investment to outperform the return on long-term bonds. The long-term average spread between large company equity returns and long-term government bond returns is estimated to be in the range of 4.0% to 6.0%.\textsuperscript{33} The mid-point of this range is 5% and should be used as the basis for an equity risk premium used in the CAPM calculation. Note that this assumption should be tested and revised as needed by the Agency finance department.

Using the component parts described, the project team is then able to construct the CAPM derived Discount Rate for the project based on the formula described as follows:

\[ R_a = R_f + \beta(R_m - R_f) \]

Where:

- \( R_a \) = the required rate of return (and hence Discount Rate) for the asset class
- \( R_f \) = the risk free rate of return
- \( \beta \) = the asset beta
- \( R_m \) = the market risk premium

The choice of the methodology, between market comparable and CAPM derived Discount Rate, may be influenced by the stage of the value for money and the quality of existing cost and revenue data. For a preliminary analysis, or Initial VfM Assessment, it may be appropriate to use a market comparable approach to develop an initial estimate of the Discount Rate. This may then be supported by a more detailed assessment of the Discount Rate using a CAPM approach at the Final VfM Assessment stage when there is more information regarding the project inputs and risk profile.

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\textsuperscript{32} Partnerships Victoria Technical note July 2003: Use of Discount rates in the Partnerships Victoria process

\textsuperscript{33} Studies conducted by Ibbotson & Associates and “Equity Risk Premiums (ERP): Determinants, Estimation and Implications” prepared in September 2008 by Aswath Damodaran, Stern School of Business
STEP 4 – MAKING THE QUANTITATIVE VALUE FOR MONEY COMPARISON

The application of the discount factor in order to assess Cash Flows in present value terms may then be completed having selected the appropriate rate. This presentation is summarized as follows.

Availability structure
The comparison of net present costs can be made as follows using the government cost of debt rate described above to adjust the forecast nominal Cash Flows.

PSC value = present value of total project costs

Shadow bid value = present value of total Availability Payments

Privately tolled concession
The comparison of net present cost (or value) in the case of a privately tolled concession is summarized as follows.

PSC value = present value of surplus Cash Flows (presented using the Discount Rate described above) less any public funding required in addition to toll revenue bond proceeds used to meet the cost of construction

Shadow bid value = total subsidy requirement / concession fee
APPENDIX 4: QUALITATIVE ASSESSMENT ISSUES CHECKLIST

INITIAL VALUE FOR MONEY

1. Does the project fit within the overall objects for the Commonwealth and Agency?

2. Are there regulatory or legal restrictions that require the facility to be provided directly by the Agency?

3. Does the Comprehensive Agreement clearly describe performance requirements and scope?

4. Do the RFP Documents allow innovation that would maximize value?

5. Is there sufficient interest and likely strength of competition in the market to support delivery of the project?

6. Under a PPTA Comprehensive Agreement, will the Agency retain appropriate operational control?

7. Is appropriate risk transfer achievable under a Comprehensive Agreement?

8. Are there significant risks than cannot be transferred?

9. What would be the consequences if the Agency were to wait for public funding; how affordable / deliverable is this project if conventionally procured?

10. Are there sufficient resources to manage the procurement process?

11. Are there sufficient resources in Agency to administer the contract in terms of the ongoing performance against agreed performance requirements?

12. How robust was the information used in developing the PSC and shadow bid?

13. Can the project be delivered under a PPTA Comprehensive Agreement?

FINAL VALUE FOR MONEY

<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viability</td>
<td></td>
</tr>
<tr>
<td>Project level outputs</td>
<td>Is OTP3’s and Agency project delivery team satisfied that a long term contract can be constructed for this project?</td>
</tr>
<tr>
<td></td>
<td>Is the requirement deliverable as a service and as a long term arrangement?</td>
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<tr>
<td></td>
<td>Can the contract describe the requirements in clear, objective, output-based measurable terms?</td>
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<tr>
<td></td>
<td>Can the quality of the service be objectively and independently assessed?</td>
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<tr>
<td></td>
<td>Is there a good fit between needs and contractible outputs?</td>
</tr>
<tr>
<td>Category</td>
<td>Question</td>
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<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td></td>
<td>Can the contract be drafted to avoid adverse incentives and to deliver quality services?</td>
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<tr>
<td></td>
<td>Is service certification likely to be straightforward in terms of agreeing to measurable criteria and satisfying the interests of stakeholders?</td>
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<td></td>
<td>Does the project have clear boundaries (especially with respect to areas of procuring Agency control)?</td>
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<tr>
<td></td>
<td>If there are interfaces with other projects, are they clear and manageable?</td>
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<tr>
<td></td>
<td>Can the service be provided without the essential involvement of Agency personnel?</td>
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<tr>
<td></td>
<td>To what extent does any involvement of Agency personnel negate the risk transfer that is needed for VfM?</td>
</tr>
<tr>
<td></td>
<td>Is the contractor able or likely to have control/ownership of the intellectual property rights associated with the performance / design / development of the assets for the new service?</td>
</tr>
<tr>
<td></td>
<td>Will existing or planned elements within the scope of the project - or related to it – be complete before the start of the new service?</td>
</tr>
<tr>
<td>Operational flexibility</td>
<td>Is there a practical balance between the degree of operational flexibility that is desired and long term contracting based on up-front capital investment?</td>
</tr>
<tr>
<td></td>
<td>What is the likelihood of large contract variations being necessary during the life of the contract?</td>
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<tr>
<td></td>
<td>Can the service be implemented without constraining the delivery of future operational objectives?</td>
</tr>
<tr>
<td></td>
<td>Is there confidence that operational flexibility is likely to be maintained over the lifetime of the contract at an acceptable cost?</td>
</tr>
<tr>
<td>Equity, efficiency and accountability</td>
<td>Are there public equity, efficiency or accountability reasons for providing the service directly, rather than through a PPTA contract?</td>
</tr>
<tr>
<td></td>
<td>Does the scope of the service lend itself to providing the contractor with “end-to-end” control of the relevant functional processes? Does the service have clear boundaries?</td>
</tr>
<tr>
<td></td>
<td>Are there regulatory or legal restrictions that require services to be provided directly?</td>
</tr>
<tr>
<td></td>
<td>Is the private sector able to exploit economies of scale through the provision, operation or maintenance of other similar services to other customers (not necessarily utilizing the same assets)?</td>
</tr>
<tr>
<td></td>
<td>Does the private sector have greater experience/expertise than the procuring Agency in the delivery of this service? Are the services non-core to the procuring Agency?</td>
</tr>
<tr>
<td></td>
<td>Is a PPTA procurement for this project likely to deliver improved VfM to the Commonwealth as a whole, considering its impact on other projects?</td>
</tr>
<tr>
<td>Overall Viability</td>
<td>Is the Agency satisfied that a suitable long term contract can be</td>
</tr>
</tbody>
</table>

PPTA Value for Money Guidance
<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performance</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Risk Management</strong></td>
<td>Bearing in mind the relevant risks that need to be managed for the program, what is the ability of the private sector to price and manage these risks? Can the payment mechanism and contract terms promote good risk management?</td>
</tr>
<tr>
<td><strong>Innovation</strong></td>
<td>Is there scope for innovation in either the design of the solution or in the provision of the services? Does some degree of flexibility remain in the nature of the technical solution/service and/or the scope of the project? Is the solution sufficiently free of constraints imposed by the Commonwealth’s legal requirements and/or the Agency’s technical standards? Does a preliminary assessment indicate that there is likely to be scope for innovation in the program? Could the private sector improve the level of utilization of the project assets (e.g. through selling, licensing, commercially developing for third party usage etc)?</td>
</tr>
<tr>
<td><strong>Contract duration and residual value</strong></td>
<td>How far into the future can service demand be reasonably predicted? What is the expected life of the assets? What are the disadvantages of a long contract length? Are there constraints on the status of the assets after the contracts end? Given the possibility of changes to the requirement, the assets and the operating environment, is it possible to sustain VfM over the life of the contract utilizing mechanisms such as benchmarking and technology updates?</td>
</tr>
<tr>
<td><strong>Incentives and monitoring</strong></td>
<td>Can the outputs of the investment program be described in contractual terms, which would be objective and measurable? Can the service be assessed independently against an agreed standard? Would incentives for service delivery be enhanced through a PPTA payment mechanism?</td>
</tr>
<tr>
<td><strong>Lifecycle Costs</strong></td>
<td>Is it possible to integrate the design, build and operation elements of the project? Are there significant ongoing operating costs and maintenance requirements? Are these likely to be sensitive to the type of construction?</td>
</tr>
<tr>
<td><strong>Overall desirability</strong></td>
<td>Overall, is the Agency satisfied that the PPTA would bring sufficient benefits that would outweigh the expected higher cost of capital and any other disadvantages?</td>
</tr>
<tr>
<td><strong>Achievability</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Market interest</strong></td>
<td>Is there evidence that the private sector is capable of delivering the required outcome? Does a significant market with sufficient capacity for these services</td>
</tr>
<tr>
<td>Category</td>
<td>Question</td>
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</tr>
<tr>
<td>Category</td>
<td>exist in the private sector?</td>
</tr>
<tr>
<td></td>
<td>Is there likely to be sufficient market appetite for the projects in the program? Has this been tested? Is there any evidence of market failure for similar projects?</td>
</tr>
<tr>
<td></td>
<td>Have any similar projects been let to the market? Has the procuring Agency’s commitment to a PPTA solution for this type of project been demonstrated?</td>
</tr>
<tr>
<td></td>
<td>Does the nature of the project suggest that it will be seen by the market as profitable?</td>
</tr>
<tr>
<td></td>
<td>Are the risks associated with design, development and implementation manageable?</td>
</tr>
<tr>
<td>Other issues</td>
<td>Is the procurement feasible within the required timetable? Is there sufficient time for: resolution of key Agency issues; production/approval of procurement documentation; selection and evaluation of Proposers, negotiation, approvals and due diligence?</td>
</tr>
<tr>
<td></td>
<td>Is the overall value of the project significant and proportionate to justify the transaction costs?</td>
</tr>
<tr>
<td></td>
<td>Does the nature of the deal and/or the strategic importance of the work and/or the prospect for further business suggest that it will be seen by the market as a potentially profitable venture?</td>
</tr>
<tr>
<td></td>
<td>Does the Agency and OTP3 have the skills and resources to define, deliver and support the service throughout the procurement and the subsequent delivery period?</td>
</tr>
<tr>
<td>Overall</td>
<td>Overall, is the commonwealth satisfied that a PPTA procurement program is achievable, given an assessment of the market, Authority resources and the attractiveness of the proposal to the market?</td>
</tr>
</tbody>
</table>