

THE ADVISORY GROUP ON APEC FINANCIAL SYSTEM CAPACITY-BUILDING

A Public-Private Sector Initiative

Third Meeting 2012

18 July 2012

8:00 AM-10:00 AM

Sheraton Saigon Hotel & Towers

Ho Chi Minh City, Vietnam

Meeting Paper 5-C

Asia-Pacific Infrastructure Partnership: Outcomes of Research Projects and Plans for their Use

Australian APEC Study Centre at RMIT University

PURPOSE	For information and consideration.
ISSUE	Three research papers on issues discussed at the APIP dialogues in 2011, commissioned by ABAC are attached. They provide sound recommendations for consideration by APEC economies. The papers contribute to good practice PPPs and promote regional interest in private sector involvement in PPPs in infrastructure. Decisions as outlined below are now required of the Advisory Group.
BACKGROUND	Plenary agreed at the first meeting of 2012 to funding, under the ABAC Research Fund, of five pieces of research on major issues that arose in APIP dialogues during 2011. It agreed to three projects being undertaken by Mr. Richard Foster and the results are now attached. At the Hong Kong meeting, Plenary authorized the commissioning of two other pieces of research and arrangements are now being processed with the relevant researchers.
PROPOSAL	N.A.
DECISION POINT	(1) Note that the three research papers by Mr. Richard Foster have been satisfactory completed (copies of the papers attached) and endorse to ABAC the payment of agreed fees to Mr. Foster. (2) Endorse that the papers be conveyed to ministers and officials who participated in the APIP dialogues last year in which the issues covered in the papers were discussed, and that the papers be made available publicly by referencing them in the web-site of the Australian APEC Study Centre at RMIT University. (3) Note the state of play of the two other pieces of research – the papers should be available by end September 2012.



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Comparative Study of Contractual Clauses to Provide for the Smooth
Adjustment of Physical Infrastructure and Services through the
Lifecycle of a Public-Private Partnership (PPP) Project

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Contents

1	Executive Summary	3
1.1	Purpose of this Report	3
1.2	PPP Frameworks compared in this Report.....	3
1.3	The need for flexibility in PPP contracts	3
1.4	Features of variation clauses in PPP contracts	3
1.5	Recommendations	4
2	Methodology.....	6
2.1	PPP Frameworks Compared in this Study.....	6
2.2	A Consistent Terminology	9
3	Background – The Need for Flexibility in PPPs	10
3.1	Why does government need flexibility in PPPs?.....	10
3.1.1	The need for flexibility in Economic Infrastructure PPPs	10
3.1.2	The need for flexibility in Social Infrastructure PPPs	11
3.2	The importance the contractual variation process	11
4	Comparison of Contractual Clauses	12
4.1	Variation Clauses in PPPs	12
4.1.1	Government’s right to request variations	12
4.1.2	Processing variation requests.....	12
4.1.3	Limits on the size or nature of variations	14
4.1.4	Ensuring that variation costs represent value for money	17
4.1.5	Paying for variations.....	20
4.1.6	Minor works.....	22
4.1.7	Pre-agreed variations.....	24
4.2	Other Clauses that Provide Flexibility in PPP Contracts	24
4.2.1	Change in Law clauses	24
4.2.2	Government Voluntary Termination clauses.....	24
5	Managing Variations	26
6	Conclusions and Recommendations	28
	Appendix 1 – Source documents compared in this study.....	31
	Appendix 2 – Case Study 1: Flexibility in a toll road PPP.....	32
	Appendix 3 – Case Study 2: The need for flexibility in social infrastructure PPPs	34

Note: This report has been prepared by Foster Infrastructure Pty Ltd for the APEC Business Advisory Council. Copyright in this report is held by the APEC Business Advisory Council.

1 Executive Summary

1.1 Purpose of this Report

This report has been prepared by Foster Infrastructure for the APEC Business Advisory Council. It presents the findings of a desktop research study of standard public-private partnership (PPP) contracts and contractual principles from economies with well-developed PPP programs, comparing the contractual clauses that provide for changes in the physical infrastructure and services through the life-cycle of a PPP project. These findings are intended to provide guidance for government officials from APEC economies on good practice in the drafting of PPP contracts so as to provide flexibility of the life of PPP projects.

1.2 PPP Frameworks compared in this Report

This report compares variation clauses in PPP Frameworks from Australia, the United Kingdom, South Africa and India. These jurisdictions have PPP Frameworks that have been tested through successfully delivered PPP projects and have a variety of levels of economic development. The PPP Frameworks selected apply to a range of different infrastructure sectors and to the range of common PPP models.

1.3 The need for flexibility in PPP contracts

Jurisdictions with well-developed PPP Frameworks have, through experience, developed contractual mechanisms that introduce sufficient flexibility through the life of PPP contracts and allow for variations in the physical infrastructure or the services.

The need for flexibility to implement variations in a PPP typically arises due to one of the following causes:

1. government wishes to implement a new policy initiative
2. government's project-specific needs change.

The types of variations required by government depend upon the nature of the infrastructure. Issues arising due to the project forming part of a wider network are a common driver for variations in economic infrastructure PPPs, whereas issues associated with the interface between public and private sectors are a common driver for variations in social infrastructure PPPs operated by government.

1.4 Features of variation clauses in PPP contracts

The common features of variation clauses in the PPP frameworks examined in this report are as follows:

- Government has a right to request variations to the works and services provided under the contract
- The contract includes limits on the size or nature of variations that government can request
- The contract includes a process for the private party to consider and respond to variation requests

- The variation process includes mechanisms by which government can determine whether variation costs represent value for money
- The contract specifies how government will pay for variations
- In some PPP Frameworks, streamlined processes are provided for small variations
- Some PPP Frameworks contemplate the parties agreeing the terms of foreseeable variations at the time the original PPP contract is agreed.

PPP contracts also contain other clauses that provide flexibility, for example, change in law clauses and government voluntary termination clauses.

1.5 Recommendations

Based on the analysis of PPP Frameworks in this report, Foster Infrastructure has identified the following recommendations for the inclusion of flexibility in PPP contracts:

- 1. PPP contracts should include a right for government to request changes to both the physical infrastructure delivered by the private party and the services provided by the private party.**
- 2. The contractual variation process should allow the private party sufficient time to consult with its subcontractors and financiers before responding to a variation request from government.**
- 3. Government should consider including in PPP contracts an obligation to compensate the private party for a percentage of its verifiable third party costs if government requests a variation but later decides not to proceed with it.**
- 4. PPP contracts should prescribe the limits on the size or nature of the variations that government can require, or preserve the private party's risk/reward outcome if the contract does not prescribe direct limits on the size or nature of the variations that government can require.**
- 5. The variation process under a PPP contract should include a mechanism to enable government to satisfy itself that the variation costs represent value for money.**
- 6. If small and common variations can be foreseen, the parties to a PPP contract should agree a schedule of rates for those variations and include a streamlined "minor works" variation process in the contract.**
- 7. For small and medium sized variations, the PPP contract should fix the margin that the private party can charge on top of its costs.**
- 8. For larger variations, PPP contracts should include a mechanism for establishing that the variation costs reflect market prices.**
- 9. PPP contracts should provide for independent expert resolution of disputes in relation to variation costs.**
- 10. In PPP contracts under which government makes unitary payments, it should consider including an option for government to pay for variations by increasing the amount of the unitary payments, provided the private party can finance the capital costs of the variation.**

- 11. If a significant future variation can be foreseen at the time a PPP project is initially tendered, government should consider asking bidders to price it as a pre-agreed variation during the tender process.**
- 12. Where government proposes a significant policy change that can be implemented through both the variation process and the change in law process in a PPP contract, government should consider the relative merits of using each process, including the impact upon value for money and the long term PPP relationship.**
- 13. Voluntary termination rights can provide some additional flexibility in PPP contracts, but are significantly constrained by compensation obligations and political risk considerations, and should only be used where other mechanisms cannot provide a satisfactory outcome for government.**
- 14. In addition to including appropriate clauses in its PPP contracts to provide flexibility, government should establish appropriate contract management arrangements to effectively manage the variation process.**

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2 Methodology

Jurisdictions with well-developed PPP Frameworks have, through experience, developed contractual mechanisms that introduce a degree of flexibility and allow for variations in the physical infrastructure or the services. To varying degrees, modern PPP contracts may allow government or the contractor to initiate specific variations, and may also provide for variations in the infrastructure or services in response to general changes in laws or government policies that are applicable to the project.

This report documents the outcomes of a desktop research study of PPP contracts and contractual principles from jurisdictions with well-developed PPP Frameworks, comparing the contractual clauses and principles that provide for variations in the physical infrastructure and services through the life-cycle of a PPP project.

2.1 PPP Frameworks Compared in this Study

For the purposes of this study, a number of PPP Frameworks have been selected for comparison. The frameworks have been selected on the following criteria:

- The jurisdictions represented should have PPP Frameworks that have been tested through successfully delivered PPP projects.
- The jurisdictions represented should have a variety of levels of economic development.
- The PPP Frameworks selected should apply to a range of different infrastructure sectors, and to PPP models in which the infrastructure is designed, built, financed and maintained by the private sector but operated by government, as well as those models in which the private sector is responsible for operation of the infrastructure.
- The PPP Frameworks selected should, collectively, be designed for use in projects where the private party's revenue consists of both government payments to the private party and by user charges levied by the private party (for example, tolls).

The PPP Frameworks selected consist of the following:

- Australia's National Public Private Partnership Guidelines, Volume 3: Commercial Principles for Social Infrastructure (referred to in this study as the "Australian Social Infrastructure Principles"), issued by Infrastructure Australia.
- Australia's National Public Private Partnership Guidelines, Volume 7: Commercial Principles for Economic Infrastructure (referred to in this study as the "Australian Economic Infrastructure Principles"), issued by Infrastructure Australia.
- The United Kingdom's Standardisation of PFI Contracts Version 4 (referred to in this study as the "UK SOPC 4"), issued by HM Treasury.
- South Africa's Standardised Public-Private Partnership Provisions (referred to in this study as the "South African Standardised PPP Provisions"), issued by the National Treasury's PPP Unit.

- The National Highways Authority of India's Concession Agreement for projects Rs.100 Crores and above: Updated version as on 23.03.2000 (referred to in this study as the "NHAI Toll Road Contract").
- The National Highways Authority of India's Model Concession Agreement for Annuity Based Project - developed as a sample for Panagarh - Palsit project (referred to in this study as the "NHAI Annuity Road Contract").

Each of these documents is available on the Internet. The relevant websites are listed in Appendix 1.

Key features of the selected PPP Frameworks are summarised in Table 1. They apply to a range of different infrastructure sectors. Some are intended for use in projects where the private party's revenue consists of government payments to the private party, others are intended for use in projects where the private party's revenue consists of user charges levied by the private party. Three of the Frameworks are primarily intended for use in projects in which the infrastructure is designed, built, financed and maintained by the private sector but operated by government. The other three Frameworks include infrastructure operation as a private sector responsibility.

Each of the Frameworks other than the NHAI Toll Road Contract and the NHAI Annuity Road Contract are guidance documents, rather than standard contracts. They identify, as commercial principles, how particular matters should be dealt with in PPP contracts. However, each of the Frameworks has proven to provide appropriate detail of the contractual approaches used in the various jurisdictions to provide for variations over the life of PPP projects.

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Table 1: PPP Frameworks compared in this Study

	Australian Social Infrastructure Principles	Australian Economic Infrastructure Principles	UK SOPC 4	South African Standardised PPP Provisions	NHAI Toll Road Contract	NHAI Annuity Road Contract
Date Released	December 2008	February 2011	March 2007	March 2004	Mach 2000	2003
Infrastructure Sectors	Social Infrastructure	Economic Infrastructure	All except Information Technology	All	Roads	Roads
Private Party's revenue source	Government Payments	User Charges	Government Payments	Government Payments	User Charges	Government Payments
Infrastructure Operator	Government	Private Party	Government	Government	Private Party	Private Party

2.2 A Consistent Terminology

Each of the PPP Frameworks examined in this study uses its own terminology for common PPP concepts. Table 2 sets out the terminology used in each jurisdiction for concepts that are particularly relevant to this study. For each concept, the terminology used in this report has been highlighted in bold text.

Table 2: Terminology used by each Jurisdiction

	Australia	United Kingdom	South Africa	India
The private sector party to the PPP contract	Private Party	Contractor	Private Party	Concessionaire
The public sector party to the PPP contract	Government	Authority	Institution	NHAI
A change in the services or infrastructure provided by the private sector party	Modification	Change in Service	Variation	Change of Scope / Capacity Augmentation
Small changes that can be implemented through a simplified mechanism	Minor Works	[No equivalent]	Small Works Variation	[No equivalent]
Regular payments made by government through the operational phase of the PPP contract for the services provided by the private party	Service Fee	Unitary Charge	Unitary Payment	Annuity

3 Background – The Need for Flexibility in PPPs

A potential criticism of PPPs is that they do not provide long-term flexibility and can impose significant costs on government if there is a need to modify the physical infrastructure or vary the services provided by the concessionaire at some point during the life-cycle of the project. This risk has been widely recognised:¹

Several recent reports on PPP contracting highlight the need for enhanced contractual flexibility, in particular aimed at taking into account possible changes in user needs that – in the presence of rigid contracts – have sometimes triggered very costly contract renegotiation processes. Enhanced flexibility, in particular directed to accommodate changes in user needs, is important for the long-term projects typical of PPP, and may be achievable through well designed change-management contractual clauses necessary to limit potential abuses. However, enhanced flexibility will inevitably come at the cost of lower predictability and higher risk for the investing private-sector party, and of reduced effectiveness of the competitive selection process.

3.1 Why does government need flexibility in PPPs?

The need for flexibility to implement variations in a PPP typically arises due to one of the following causes²:

1. government wishes to implement a new policy initiative
2. government's project-specific needs change.

Examples of variations arising as a result of government wishing to implement a new policy initiative include changing food standards, which may require a variation to the catering services provided by the private party in a social infrastructure PPP, and changes in road surfacing standards, which may require a variation in the private party's maintenance obligations in a highway PPP project. Some policy initiatives are enacted in legislation, and take effect through the "change in law" clause in a PPP contract, rather than being implemented as a variation. "Change in law" clauses are discussed in section 4.2.1 below.

Examples of variations arising as a result of a change in government's project-specific needs include installing additional electrical sockets in a government operated school or hospital to enable government to use additional equipment in the building, and altering cells in a prison PPP to enable the prison to accommodate different categories of prisoners.

3.1.1 The need for flexibility in Economic Infrastructure PPPs

In economic infrastructure PPPs, such as those in the roads and water sectors, variations most commonly arise because the PPP forms part of a wider infrastructure network. When government seeks to make improvements to the wider network, variations to the PPP component may be necessary to ensure that the network as a whole operates effectively and efficiently. Such changes may be relatively infrequent, but can be important to maximise

¹ Iossa, Spagnolo and Velez, "Contract Design in Public-Private Partnerships – Report prepared for the World Bank" (September 2007), page 57. (Available at <http://www.gianca.org/PapersHomepage/Contract%20Design.pdf>.)

² See National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), page 9. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

the economic benefits of the network. Appendix 2 provides a case study of variations in a toll road project.

3.1.2 The need for flexibility in Social Infrastructure PPPs

In social infrastructure PPPs that are designed, built, financed and maintained by the private sector, but operated by the public sector, such as some hospital and education PPPs, variations most commonly arise because of the close interface between the private sector's provision of the infrastructure and the public sector's operation of that infrastructure to deliver public services. As government's operational needs change, variations to the PPP may be necessary to ensure that the infrastructure enables government to deliver services effectively and efficiently. Small variations may be frequently required, while larger variations are less common. The small variations often involve a change in the physical infrastructure without any change in the services provided by the private party. Appendix 3 provides a case study of variations in government operated social infrastructure PPPs.

In social infrastructure PPPs that are operated by the private sector, such some PPPs in the prisons sector, variations are less frequent than for government operated social infrastructure PPPs, and often arise as a result of changes in government's service requirements.

3.2 The importance the contractual variation process

When the private party undertakes a variation requested by government through the contractual variation process, the whole of life risk transfer under the PPP contract applies to that variation. Part of the cost of a variation therefore reflects the cost of this risk transfer. To ensure that the risk transfer remains effective, it is important to utilise the contractual variation process.

It might be possible for government to engage tradespeople such as carpenters and electricians to make minor changes to the infrastructure outside of the PPP contract. However implementing such changes outside of the PPP contract potentially results in government taking risk back from the private party. An example of how this this might occur is included in Appendix 3.

4 Comparison of Contractual Clauses

4.1 Variation Clauses in PPPs

All of the PPP Frameworks examined in this study include a right for government to request variations. However the PPP Frameworks differ significantly in a number of aspects, particularly the limits placed upon government's right to require variations, the means of ensuring that variation costs represent value for money for government, and the process by which government pays for the variation.

4.1.1 Government's right to request variations

Under each of the PPP Frameworks examined in this study, government has a right to request variations to both the physical infrastructure delivered by the private party and the services provided by the private party³, subject to limits described in section 4.1.3 below.

4.1.2 Processing variation requests

Generally, the contractual process by which government may initiate a variation is as follows:

1. Government proposes the variation to the private party⁴
2. The private party provides a response, setting out the basis on which it is willing to undertake the variation⁵
3. Government can either accept the private party's response (in which case the private party then proceeds to implement the variation), or government can reject the private party's response.

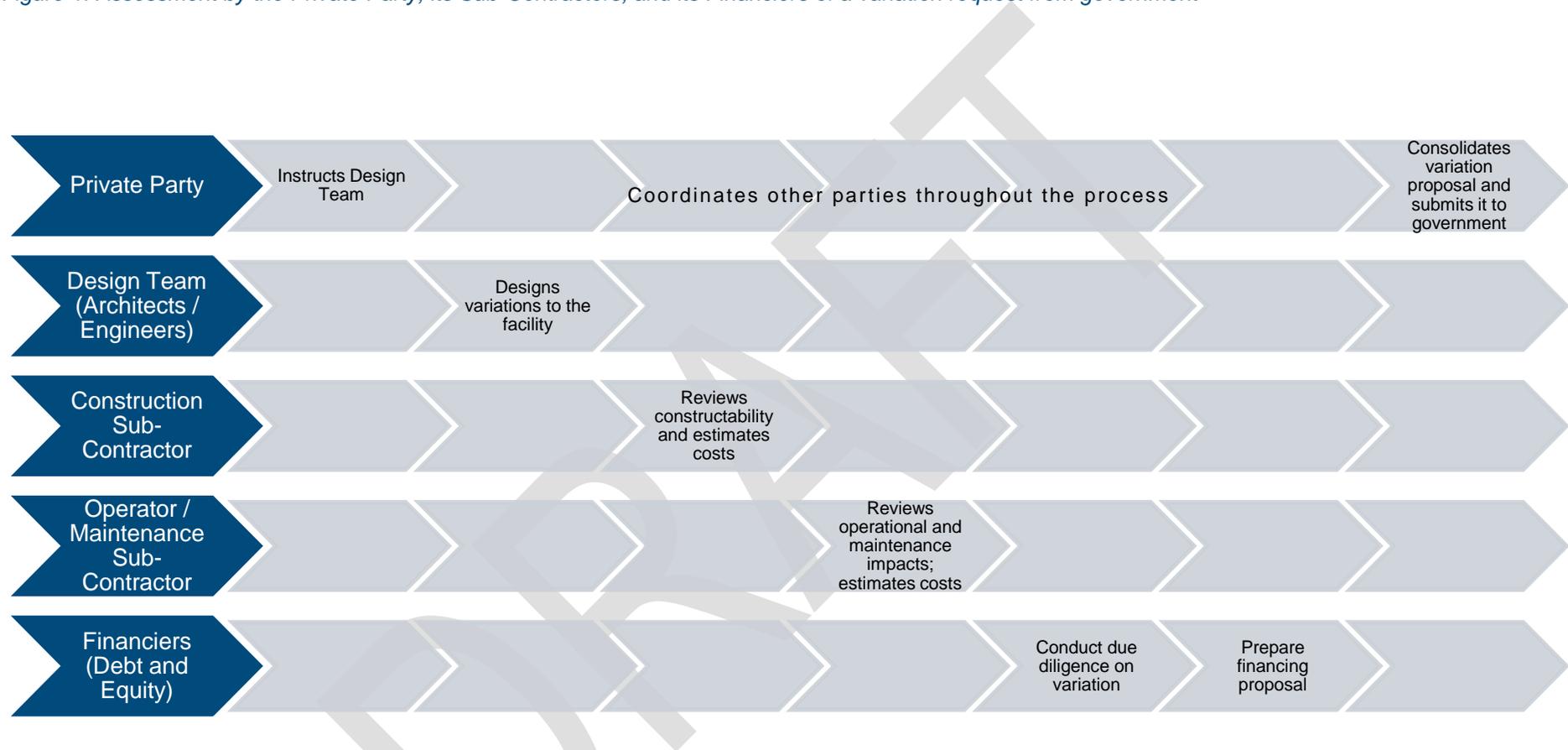
It is important that the private party is allowed sufficient time to prepare its response to government's initial proposal. If the variation involves any significant changes to the physical infrastructure, the private party will generally need to consult with design advisers and a construction sub-contractor. For all material changes to the infrastructure or the services, the private party's operations or maintenance sub-contractor will need to consider the impact upon the services that it provides, and the private party's financiers will need to consider any risk and financing implications. The interaction between the private party, its sub-contractors and its financiers in assessing a variation request from government is set out in Figure 1.

³ Australian Social Infrastructure Principles, section 19.1; Australian Economic Infrastructure Principles, section 18.1; UK SOPC 4, section 13; South African Standardised PPP Provisions, section 50.2.1; NHAI Toll Road Contract, section 17.1; NHAI Annuity Road Contract, section 7.2(b)(i).

⁴ Australian Social Infrastructure Principles, section 19.3.1; Australian Economic Infrastructure Principles, section 18.3.1; UK SOPC 4, section 13.3.3; South African Standardised PPP Provisions, section 50.3.5; NHAI Toll Road Contract, section 17.2(a); NHAI Annuity Road Contract, section 7.2(a).

⁵ Australian Social Infrastructure Principles, section 19.3.2; Australian Economic Infrastructure Principles, section 18.3.2; UK SOPC 4, section 13.3.4; South African Standardised PPP Provisions, section 50.3.5; NHAI Toll Road Contract, section 17.2(b); NHAI Annuity Road Contract, section 7.2(b).

Figure 1: Assessment by the Private Party, its Sub-Contractors, and its Financiers of a variation request from government



As the private party needs to consult with its sub-contractors and its financiers to understand all of the impacts of a variation upon the PPP, assessment of variation requests can be costly for the private party. In projects in which the private party's revenue is received in the form of government payments, the private party has little capacity to bear these costs. Consequently, the private party may be reluctant to receive and assess variation requests from government. To prevent this situation arising, some PPP Frameworks require government to compensate the private party for the costs of assessing a variation request. For example, under the Australian Social Infrastructure Principles, UK SOPC 4 and the NHAJ Annuity Road Contract, if government chooses not to proceed with a variation it must compensate the private party for some or all of its costs in assessing the variation⁶.

4.1.3 Limits on the size or nature of variations

A key question that arises in relation to government's right to request variations is whether there should be some limit on the size or the nature of variations that government can request. Government may wish to retain a high degree of flexibility so that it can request any variations necessary to meet increases in the demand for use of the infrastructure or changes in operational requirements. In contrast, the private party may wish to deliver and operate or maintain the infrastructure with as little disruption or change as possible. The private party's financiers are likely to see variations as a source of potential risk.

Table 3 on page 8 summarises the recommended limits on the size or nature of variations that government can require under each of the PPP Frameworks. There are significant differences in the approaches taken. At one end of the spectrum, the Australian Social Infrastructure Principles and the Australian Economic Infrastructure Principles theoretically enable government to require the private party to implement any variations, regardless of their size or impact upon the project. At the other end of the spectrum, the NHAJ Toll Road Contract and the NHAJ Annuity Road Contract significantly limit government's right to require the private party to implement variations. The NHAJ Toll Road Contract imposes a relatively low cap on the cost of variations, while the NHAJ Annuity Road Contract imposes a cost cap and also only allows variations during the construction stage. The UK SOPC 4 and the South African Standardised PPP Provisions take intermediate positions, allowing the private party to refuse to implement a variation if, for example, it materially changes the nature of the project or its risk profile.

In its practical operation, the Australian approach is not as unfavourable to the private party, as might first appear. It assumes that, in responding to government's initial variation request, the private party will consider any adverse impacts of the variation upon the project or its risk profile, and the private party's response to government will incorporate the cost of managing or mitigating these impacts and risks. Therefore, in theory, the terms on which the variation will be implemented should offer an acceptable risk/return outcome for the private party. Australian PPP contracts typically include detailed modification compensation principles that protect the private party's risk/return outcome.

As noted in section 3 of this report, the need for variations is generally greater in social infrastructure projects than in economic infrastructure projects. This provides one indication as to why the NHAJ Toll Road Contract and the NHAJ Annuity Road Contract place greater limits on the size and nature of variations that government can require compared to the

⁶ Australian Social Infrastructure Principles, section 19.3.2(f); UK SOPC 4, section 13.4.5; NHAJ Annuity Road Contract, section 7.2(d).

Australian Social Infrastructure Principles, the UK SOPC 4 and the South African Standardised PPP Provisions.

The Australian Economic Infrastructure Principles adopt a very different approach to the NHA1 Toll Road Contract, despite both these frameworks having specific application to toll road projects. The difference may be due to differences in the use of the toll road PPP model in these countries. PPP toll roads in Australia have been concentrated in urban areas, where they form parts of metropolitan motorway networks. In contrast, India's national highway network links the individual urban areas across the country. It is possible that the need for variations is greater in Australia's metropolitan motorway networks, compared to India's national highway network.

In summary, the limits on the size or nature of variations that government can require under the selected PPP frameworks reflect the following principles:

1. The need for government to have flexibility to request variations over the life of a PPP project can depend upon the nature of the project, and is generally greater in social infrastructure projects than in economic infrastructure projects.
2. The need for government to have flexibility to request variations can depend upon the setting in which the project is undertaken. For example, toll roads in metropolitan areas may require more frequent and more significant variations as the surrounding road network develops, compared to national highways.

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Table 3: Recommended limits on the size or nature of variations that government can require

Australian Social Infrastructure Principles	Australian Economic Infrastructure Principles	UK SOPC 4	South African Standardised PPP Provisions	NHAI Toll Road Contract	NHAI Annuity Road Contract
<p>There are no limits on the size or nature of variations that government can require. The private party must provide government with a proposal as to how the private party would implement the variation. If the proposal is unacceptable to government, the issue is referred to an independent expert (section 19.5.3-4).</p>	<p>There are no limits on the size or nature of variations that government can require. The private party must provide government with a proposal as to how the private party would implement the variation. If the proposal is unacceptable to government, the issue is referred to dispute resolution (section 18.3.2(f)). However the private party is given some protection against adverse revenue effects (section 18.3.5).</p>	<p>Government should consider the need for monetary limits on the size of variations (section 13.2.8). The private party should be entitled to refuse to implement a variation in certain circumstances, including if it would materially and adversely change the nature of the project (section 13.3.4).</p>	<p>The private party should be entitled to veto any variation that adversely affects the risk profile of the project for the private party (sections 50.2.3; 50.3.6-8).</p>	<p>Variations must not exceed 5% of the total project cost and must not affect the commercial operation date (clause 17.1).</p>	<p>A monetary limit is specified to restrict the size of variations during the construction stage (clause 7.1). During the operations stage of the project, a “capacity augmentation” process applies, under which government invites bids for augmentation of the project (clause 10.1). The private party is not required to bid, but if it is not the successful bidder for the augmentation, its concession is terminated and it receives a termination payment (clause 10.2).</p>

4.1.4 Ensuring that variation costs represent value for money

It is good practice for government to require that any procurement be undertaken through processes to ensure that value for money is received and the outcome is transparent. Where procurement takes the form of a variation under a PPP contract, it is often not possible or not appropriate to apply government's more general procurement processes. Nevertheless, the variation process under the PPP contract should enable government to satisfy itself that the variation costs represent value for money.

Government's general procurement requirements in many jurisdictions vary depending upon the cost of the goods or services being procured. For example, if the costs exceed a particular threshold, a public tender process may be required. For lower cost procurements, a public tender process may not be required, but other measures will be used to ensure that government receives value for money.

Some PPP Frameworks also recognise that less complex processes may be appropriate for low-cost variations. In these Frameworks, minor works variations can be implemented outside of the general variation process. Minor works variations are discussed in more detail on page 22.

For variations other than minor works variations, a variety of approaches are adopted to ensure that the variation costs represent value for money for government. Table 4 on page 19 summarises the approaches under each of the PPP Frameworks. A number of concepts are utilised in these approaches:

- **Open book pricing**, under which the private party must provide government with full details of the costs it will incur in implementing the variation

Open book pricing provides transparency of the private party's costs but does not provide an indication of the reasonableness of the costs and whether they reflect market prices. Consequently, PPP Frameworks generally require another process such as benchmarking, market testing or independent expert determination to verify whether government is receiving value for money for larger variations.

- **Schedules of rates**, which provide pre-agreed standard prices for specific cost components

A schedule of rates is an efficient way of ensuring costs are reasonable for small and common variations, but its effectiveness depends on the extent to which the schedule can be validated at the point of its creation and reviewed regularly through the life of the contract⁷. A schedule of rates can only anticipate the most common variations, and where variations are not included in the schedule, government must use other means of checking costs⁸.

- **Regulation of the margin that the private party can add** to the variation costs

⁷ National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), page 15. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

⁸ National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), page 16. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

The private party often sub-contracts the work required to deliver a variation. Government faces a risk that the private party will add an excessive margin to the sub-contractor costs in order to derive additional revenue. To mitigate this risk, some PPP Frameworks recommend specifying in the PPP contract a fixed margin for small and medium sized variations.

- **Benchmarking** of prices, under which costs are compared with market rates

Benchmarking provides a means of testing whether costs reflect market rates, without the added costs and potential delays that might occur if the variation works are put out to competitive tender by the private party. Benchmarking is particularly applicable during the construction phase of a project, as there is already a construction sub-contractor on site, hence competitively tendering the variation works would be inefficient and potentially risky due to the possibility of introducing a second construction contractor onto the site.

- **Competitive tendering**, under which the private party is required to put the variation works out to tender in order ensure competitive pricing of the variation

Requiring the private party to put the variation works out to tender uses competitive pressures to obtain a value for money outcome for government. However, as the tender process results in additional tendering costs and may delay implementation of the variation, it is generally only suitable for variations that require significant construction activity. Competitive tendering is generally inappropriate for variations during the construction phase (as noted above, there is already a construction contractor on site) or for smaller variations during the operations stage of the project, which can be undertaken more efficiently by the private party's maintenance contractor.

- **Independent expert determination**, under which the parties accept an independent expert's calculation of the costs of the variation.

Many PPP Frameworks provide for an independent expert to determine the cost of variations, either following estimation of the costs by the private party or in circumstances where government and the private party disagree as to the costs. In practice, an independent expert will rely on other techniques such as benchmarking to determine the costs. Use of an independent expert is therefore best regarded as a means of avoiding or resolving disputes in relation to costs, rather than a measure of value for money.

Table 4: Pricing of variations

Australian Social Infrastructure Principles	Australian Economic Infrastructure Principles	UK SOPC 4	South African Standardised PPP Provisions	NHAI Toll Road Contract	NHAI Annuity Road Contract
<p>Variations must be priced on a "fully transparent basis" (section 19.3.2(b)). The private party is not entitled to charge a margin if the variation cost is below a specified threshold (section 19.6(b)). If the parties do not agree upon the cost of the variation, it is determined by an independent expert (during the construction stage of the project) or by conducting a tender for the variation works (during the operations stage) (section 19.3.2(d)).</p>	<p>Variations must be priced on an open book basis. If the parties do not agree upon the cost of the variation, it may be determined by an independent expert (section 17.1). During the operations stage, government may require the private party to price a modification through a tender process (section 18.3.1(c)). The private party's margins for variations are fixed in the contract (section 18.6(a)).</p>	<p>For medium value variations, there should be pre-agreed standard allowances for professional fees, overheads, contingencies and profit margins, a schedule of rates for specialist labour services, market rates for materials and open-book pricing of any specific risks (section 13.4.4.5). Large value variations may be priced through benchmarking, competitive tendering, or by an independent technical adviser.</p>	<p>Pricing of variations must be transparent. If a variation will be implemented by a sub-contractor, the private party must conduct a competitive quotation process. If a variation will be implemented by the private party itself, the cost must be benchmarked (section 50.3.10).</p>	<p>Variations are priced through negotiation based on the national Highway Authority of India's current schedule of rates (clause 17.2(c)), with resort to a dispute resolution process if necessary (clause 17.3).</p>	<p>The cost of a variation is estimated by the private party (clause 7.2(b)(ii)) and settled by an independent engineer (clause 7.2(c)).</p>

Table 4 shows that the PPP Frameworks examined in this study use a variety of combinations of these approaches to ensuring value for money. The Australian Social Infrastructure Principles, Australian Economic Infrastructure Principles, UK SOPC 4 and South African Standardised PPP Provisions provide a number of options for confirming the variation costs, including benchmarking and competitive tendering. In contrast, the NHAI Toll Road Contract and NHAI Annuity Road Contract each adopt one approach and do not provide for benchmarking or competitive tendering. Possible reasons for this include the following:

- the NHAI Toll Road Contract and NHAI Annuity Road Contract are intended for use only for national highway projects while the other PPP Frameworks must provide flexibility for a wider range of projects
- the processes specified in the NHAI Toll Road Contract and NHAI Annuity Road Contract may be well established and tested in India.

4.1.5 Paying for variations

Table 5 sets out how government pays for variations under each of the PPP Frameworks.

The Australian Social Infrastructure Principles, UK SOPC 4, South African Standardised PPP Provisions and NHAI Annuity Road Contract are each intended for use in projects in which government makes unitary payments to the private party. These Frameworks therefore provide the possibility of government paying for a variation by increasing the amount of the unitary payments. However any capital costs required for the variation will be incurred by the private party will have to be paid by the private party at the time the variation is implemented. Therefore, if government intends to pay the capital costs by increasing the unitary payments, the private party will have to raise additional finance to pay the capital costs at the time they are incurred.

The Australian Social Infrastructure Principles, UK SOPC 4 and South African Standardised PPP Provisions all allow or require the capital costs to be paid through the unitary payments (provided the private party can finance the capital costs). In contrast the NHAI Annuity Road Contract only allows for a variation to be paid for through the unitary payments if the variation does not affect capital costs. In practice, the capital element of nearly all variations in the United Kingdom is funded directly by government through a lump sum or staged payments without altering the existing unitary payments⁹. This suggests that the practical operation of the UK SOPC 4 is little different from the NHAI Annuity Road Contract when it comes to payment for variations.

The Australian Economic Infrastructure Principles and the NHAI Toll Road Contract are intended for use in projects in which the private party receives revenue from user charges, such as tolls. These Frameworks are less specific as to how the private party will be paid for variations, compared to the other Frameworks that apply to projects in which government makes unitary payments. This reflects the fact that variations in projects with user charging may positively or negatively affect the private party's revenue, leading to a need for negotiation between the parties in relation to this impact and consideration by government as to whether it should pay for the variation or allow the private party to increase the user charges.

⁹ National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), page 8. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

Table 5: How does government pay for variations?

Australian Social Infrastructure Principles	Australian Economic Infrastructure Principles	UK SOPC 4	South African Standardised PPP Provisions	NHAI Toll Road Contract	NHAI Annuity Road Contract
Government can elect to either pay through the unitary payment, or the capital costs can be paid as a lump sum and the operating / maintenance costs are paid through the unitary payment (section 19.6(a))	Government can make progressive payments, or pay as otherwise agreed (section 18.6(b))	The default position is for government to pay the capital costs as a lump sum and the operating / maintenance costs through the unitary payment, but it is possible for the capital costs to also be paid through the unitary payment (section 13.3.7)	The capital costs are paid through the unitary payments if the initial cost can be financed by the private party; otherwise government must pay the capital costs as a lump sum (section 50.4.1)	The form of payment is not specified	Government can elect to either pay a lump sum or up to 4 half-yearly payments, or can pay through the unitary payments if the variation only affects operating and maintenance costs (not capital costs) (clause 7.2(e))

4.1.6 Minor works

Appendix 3 illustrates the need for government to efficiently implement large numbers of small variations in those social infrastructure PPPs in which government operates a facility designed, built, financed and maintained by a private party. The standard variation processes set out in PPP Frameworks are cumbersome for such small variations. Consequently, the Frameworks that apply to this category of social infrastructure PPPs contain separate streamlined processes for small variations that are classified as minor works.

The minor works processes in the PPP Frameworks included in this study enable the parties to quickly and efficiently request, price and approve these small variations. However, as set out in Table 6, the Australian Social Infrastructure Principles adopt an open book pricing approach whereas the UK SOPC 4 and South African Standardised PPP Provisions adopt a schedule of rates approach.

As noted above in section 4.1.4, a schedule of rates is an efficient way of ensuring costs are reasonable, but its effectiveness depends on the extent to which the schedule can be validated at the point of creation and reviewed regularly through the life of the contract¹⁰, and it can only anticipate the most common variations¹¹. The UK SOPC 4 and South African Standardised PPP Provisions therefore provide greater efficiency for common and predictable variations, but not for those variations that have not been identified in advance and included in the schedule of rates.

By adopting an open book pricing approach, the Australian Social Infrastructure Principles do not provide government with the efficiency of pricing common variations that would be provided by a schedule of rates. However, by including within the unitary payment a provisional sum for minor works variations, the Australian Social Infrastructure Principles provide government with a pre-identified pool of funding for minor works variations and provide the private party with an expectation that the provisional sum will be expended on such variations. As a result, government can request minor works variations without sourcing the funds from elsewhere to meet the costs.

¹⁰ National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), page 15. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

¹¹ National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), page 16. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

Table 6: Pricing of minor works

Australian Social Infrastructure Principles	Australian Economic Infrastructure Principles	UK SOPC 4	South African Standardised PPP Provisions	NHAI Toll Road Contract	NHAI Annuity Road Contract
<p>Minor works are priced on an open book basis, with no margin payable to the private party. The unitary payment includes a provisional sum for minor works, which is rolled over at the end of each year, with any unused amount paid to government at the expiration of the contract (section 19.8).</p>	<p>Not applicable – no minor works regime.</p>	<p>Minor works are priced through a catalogue of fixed costs (that is, a schedule of rates), with costs indexed for inflation over the term of the contract (section 13.3.3).</p>	<p>Minor works are priced through a schedule of rates (agreed at start of each year), plus a pre-agreed margin (section 50.5.2).</p>	<p>Not applicable – no minor works regime.</p>	<p>Not applicable – no minor works regime.</p>

4.1.7 Pre-agreed variations

In some PPP projects, a possible future variation can be identified at the time the project is initially tendered. By asking bidders to offer a fixed price for the variation at the time they lodge their tenders for the project, government can benefit from pricing the variation in a very competitive environment and then request the private party to proceed with the variation at a later date. The Australian Social Infrastructure Principles, Australian Economic Infrastructure Principles, UK SOPC 4, and South African Standardised PPP Provisions each provide for such variations to be included in the PPP contract¹².

4.2 Other Clauses that Provide Flexibility in PPP Contracts

Although variation clauses are the primary means by which PPP Frameworks introduce flexibility into PPP contracts and allow for changes in the physical infrastructure or the services, a number of other clauses found in PPP contracts can also provide flexibility in some circumstances. Common examples include change in law clauses and government voluntary termination clauses.

4.2.1 Change in Law clauses

Governments commonly change laws that affect the cost to the private sector of doing business without compensating private sector businesses for this impact. However, in a PPP, the private party generally cannot unilaterally increase its prices or diversify its business so as to offset the cost impact of the change in law. Consequently, each of the PPP Frameworks examined in this study provides some protection for private parties against the impact of changes in law, either through a specific “change in law” clause or (in the case of the South African Standardised PPP Provisions) through more general provisions concerning risks that the private party can face as a result of government actions¹³.

Where government proposes a significant policy change that will affect a PPP project, it may be possible to implement that change through both the variation process and the change in law process. In these circumstances, government should consider the relative merits of each process, including the impact upon value for money and the long term PPP relationship.

4.2.2 Government Voluntary Termination clauses

The intention of all parties to a PPP contract should be that it will run its full course. There may be circumstances, however, in which government is no longer able to continue the PPP relationship. For example, there may be a policy change which makes further provision of the services specified in the contract redundant¹⁴. For this reason, it can be argued that government should have a right to voluntarily terminate a PPP contract (also known as termination for convenience), even if the private party has fully complied with its obligations.

¹² Australian Social Infrastructure Principles, section 19.7; Australian Economic Infrastructure Principles, section 18.5; UK SOPC 4, section 13.1.4; South African Standardised PPP Provisions, section 50.3.2.

¹³ Australian Social Infrastructure Principles, section 20; Australian Economic Infrastructure Principles, section 19; UK SOPC 4, section 14; South African Standardised PPP Provisions, section 49; NHAJ Toll Road Contract, section 36; NHAJ Annuity Road Contract, section 11.

¹⁴ UK SOPC 4, section 21.5.1.

Allowing voluntary termination of a PPP contract introduces a significant risk for the private party, which has entered into the PPP expecting a long term business opportunity and not wanting this to be cut short. Over-use by government of voluntary termination rights may create perceptions of sovereign risk, leading to the private sector losing confidence in the PPP Framework and not bidding competitively for future projects. There is therefore a tension between government's desire for voluntary termination rights to provide flexibility and the need to strictly control use of such rights in order to give certainty to the private sector.

The Australian Social Infrastructure Principles, Australian Economic Infrastructure Principles, and UK SOPC 4 permit government to voluntarily terminate the PPP contract¹⁵, but oblige government to fully compensate the private party, its subcontractors and investors for doing so¹⁶. As a practical matter, these compensation obligations make voluntary termination unattractive for government from a value for money perspective in all but the most extreme circumstances.

In contrast, the South African Standardised PPP Provisions give greater weight to contractual certainty, prohibiting voluntary termination:

[Government] should not be entitled to terminate the PPP Agreement for convenience even if it is of the view that it is better equipped to render the Services itself.¹⁷

The NHA1 Toll Road Contract and NHA1 Annuity Road Contract do not include voluntary termination rights for government, and hence are consistent with the approach advocated in the South African Standardised PPP Provisions.

In summary, voluntary termination rights can provide some additional flexibility in PPP contracts, but should only be used where other mechanisms cannot provide a satisfactory outcome for government. The need to compensate the private party for voluntary termination by government and the political risk associated with voluntary termination significantly constrain the usefulness of these rights.

¹⁵ Australian Social Infrastructure Principles, section 25.3; Australian Economic Infrastructure Principles, section 24.1.4; UK SOPC 4, section 21.5.

¹⁶ Australian Social Infrastructure Principles, section 26.3; Australian Economic Infrastructure Principles, section 25.2; UK SOPC 4, section 21.5.2.

¹⁷ South African Standardised PPP Provisions, section 60.1.2.

5 Managing Variations

Although PPP contracts allow flexibility for changes in the physical infrastructure or the services, this flexibility is only effective if government appropriately manages the variation process.

Key principles applicable to managing variations (and PPP contract management more generally) include¹⁸:

- **Understand the contract:** Government's contract management team should ensure that they understand the PPP contract. This is essential not just to ensure that rights and obligations in relation to variations are being honoured, but also to verify that a variation request is actually a change and not covered under the existing agreement and pricing structures.
- **Adopt a strategic approach to variations:** Government should adopt a strategic approach to variations and control the flow of variations to avoid overstressing resources on either the government side or private party side of the contract. For example, government can consider bundling similar variations together to reduce costs or planning a variation programme based on anticipated needs.
- **Ensure variation requests are clear and comprehensive:** Government should provide its private sector partners with proper briefs to make it clear what government wants done. This is especially important for larger, more complex variations. For complex variations, government should consider initially having informal non-binding discussions with the private party in order to better understand the private party's ability to implement the variation, prior to issuing a formal variation request. These informal discussions can enable government to then prepare a formal variation request that gives the private party the information it needs to enable it to fully evaluate the variation and provide a detailed plan for its implementation.
- **Establish clear and appropriate roles and responsibilities for requesting and assessing variations:** Government should ensure that appropriate staff have the authority to request and authorise variations, and that staff who do not themselves have the authority to request variations understand this. Potential variations should be assessed thoroughly by suitably experienced personnel, who should consult with relevant stakeholders.
- **Maintain good record keeping practices:** Government should keep good records of the variations and payments made, and ensure that agreed variations are clearly documented with the private party.
- **Maintain a spirit of partnership:** Both government and the private party should comply with their obligations under the PPP contract, but in doing so they can achieve better outcomes by maintaining a spirit of partnership.

We found examples of a genuine partnership ethos displayed by private sector contractors in relation to change requests. A simple example is the

¹⁸ See generally Infrastructure Australia, "National PPP Guidelines: Volume 2 – Practitioners' Guide" (National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), pages 20-21. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

practice of not charging for every change request. Some [private parties] were willing to waive fees for small changes where they felt the request was minimal and a normal part of the day-to-day operation of the building.¹⁹

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¹⁹ National Audit Office, “Making Changes in Operational PFI Projects” (17 January 2008), page 24. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

6 Conclusions and Recommendations

Economies with well-developed PPP Frameworks have, through experience, developed contractual mechanisms that introduce sufficient flexibility through the life of PPP contracts and allow for variations in the physical infrastructure or the services.

The need for flexibility to implement variations in a PPP typically arises due to one of the following causes:

1. government wishes to implement a new policy initiative
2. government's project-specific needs change.

The types of variations required by government depend upon the nature of the infrastructure. Network issues are a common driver for variations in economic infrastructure PPPs, whereas interface issues are a common driver for variations in social infrastructure PPPs operated by government.

Based on the analysis of PPP Frameworks in this report, Foster Infrastructure has identified the following recommendations for the inclusion of flexibility in PPP contracts:

- 1. PPP contracts should include a right for government to request changes to both the physical infrastructure delivered by the private party and the services provided by the private party.**

Some variations affect only the physical infrastructure (for example, installation a new electrical socket in a classroom); some variations affect only the services provided by the private party (for example, a change in the acceptable range of temperature that the private party must maintain in a classroom); some variations affect both the physical infrastructure and the services.

- 2. The contractual variation process should allow the private party sufficient time to consult with its subcontractors and financiers before responding to a variation request from government.**

The assessment of variation requests can be a complex process. If the private party is not given sufficient time to consult with its subcontractors and financiers, its response to the variation request is unlikely to be acceptable to government.

- 3. Government should consider including in PPP contracts an obligation to compensate the private party for a percentage of its verifiable third party costs if government requests a variation but later decides not to proceed with it.**

Sharing costs in this way rather than full compensating the private party provides an incentive for government to refrain from requesting variations if it is not committed to proceeding, and an incentive for the private party to contain the costs of assessing the variation.

- 4. PPP contracts should either directly prescribe the limits on the size or nature of the variations that government can require, or preserve the private party's risk/reward outcome if the contract does not prescribe direct limits on the size or nature of the variations that government can require.**

Government should consider the likelihood and nature of variations that may be required, and assess whether prescribed limits on the size or nature of the variations are acceptable, or whether it requires greater flexibility but is willing to preserve the private party's risk/reward outcome when it requires variations.

5. The variation process under a PPP contract should include a mechanism to enable government to satisfy itself that the variation costs represent value for money.

It is good practice for government to require that any procurement be undertaken through processes to ensure that value for money is received and the outcome is transparent. Where procurement takes the form of a variation under a PPP contract, the variation process should enable government to satisfy itself that the variation costs represent value for money.

6. If small and common variations can be foreseen, the parties to a PPP contract should agree a schedule of rates for those variations and include a streamlined "minor works" variation process in the contract.

A schedule of rates is an efficient way of ensuring costs are reasonable for small and common variations, but can only anticipate the most common variations,

7. For small and medium sized variations, the PPP contract should fix the margin that the private party can charge on top of its costs.

Fixing the private party's margin mitigates the risk that the private party will add an excessive margin to the sub-contractor costs in order to derive additional revenue.

8. For larger variations, PPP contracts should include a mechanism for establishing that the variation costs reflect market prices.

Benchmarking is a mechanism that is particularly appropriate during the construction phase of the project, while requiring the private party to put the variation works out to competitive tender can be appropriate during the operating phase.

9. PPP contracts should provide for independent expert resolution of disputes in relation to variation costs.

Use of an independent expert can efficiently avoid or resolve disputes in relation to costs

10. In PPP contracts under which government makes unitary payments, it should consider including an option for government to pay for variations by increasing the amount of the unitary payments, provided the private party can finance the capital costs of the variation.

Paying for variations through the unitary payments provides a similar level of risk transfer to the variation as that applicable to the original construction of the infrastructure.

11. If a significant future variation can be foreseen at the time a PPP project is initially tendered, government should consider asking bidders to price it as a pre-agreed variation during the tender process.

By asking bidders to offer a fixed price for the variation at the time they lodge their tenders for the project, government can benefit from pricing the variation in a very competitive environment and then request the private party to proceed with the variation at a later date.

- 12. Where government proposes a significant policy change that can be implemented through both the variation process and the change in law process in a PPP contract, government should consider the relative merits of using each process, including the impact upon value for money and the long term PPP relationship.**
- 13. Voluntary termination rights can provide some additional flexibility in PPP contracts, but are significantly constrained by compensation obligations and political risk considerations, and should only be used where other mechanisms cannot provide a satisfactory outcome for government.**
- 14. In addition to including appropriate clauses in its PPP contracts to provide flexibility, government should establish appropriate contract management arrangements to effectively manage the variation process.**

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Appendix 1 – Source documents compared in this study

Australia

National Public Private Partnership Guidelines, Volume 3: Commercial Principles for Social Infrastructure (the "Australian Social Infrastructure Principles")

http://www.infrastructureaustralia.gov.au/public_private/files/National_PPP_Guidelines_Vol_3_Commercial_Principles_Social_Infrastructure_Dec_08.pdf

National Public Private Partnership Guidelines, Volume 7: Commercial Principles for Economic Infrastructure (the "Australian Economic Infrastructure Principles")

http://www.infrastructureaustralia.gov.au/public_private/files/Vol_7_Commercial_Principles_Economic_Infrastructure_Feb_2011.pdf

United Kingdom

Standardisation of PFI Contracts Version 4 (the "UK SOPC 4")

http://www.hm-treasury.gov.uk/d/pfi_sopc4pu101_210307.pdf

South Africa

Standardised Public-Private Partnership Provisions (the "South African Standardised PPP Provisions")

Part 1:

http://www.ppp.gov.za/Legal%20Aspects/Standardised%20PPP%20Provisions/National%20Treasury%20PPP%20Practice%20Note%20No%201%20of%202004;%20Standardised%20PPP%20Provisions;%20First%20Issue;%202011%20March%202004_1.pdf

Part 2:

http://www.ppp.gov.za/Legal%20Aspects/Standardised%20PPP%20Provisions/National%20Treasury%20PPP%20Practice%20Note%20No%201%20of%202004;%20Standardised%20PPP%20Provisions;%20First%20Issue;%202011%20March%202004_2.pdf

India

National Highways Authority of India Concession Agreement for projects Rs.100 Crores and above: Updated version as on 23.03.2000 (the "NHAI Toll Road Contract")

<http://www.nhai.org/fvb.pdf>

National Highways Authority of India Model Concession Agreement for Annuity Based Project - developed as a sample for Panagarh - Palsit project (the "NHAI Annuity Road Contract")

<http://www.nhai.org/annuity.pdf>

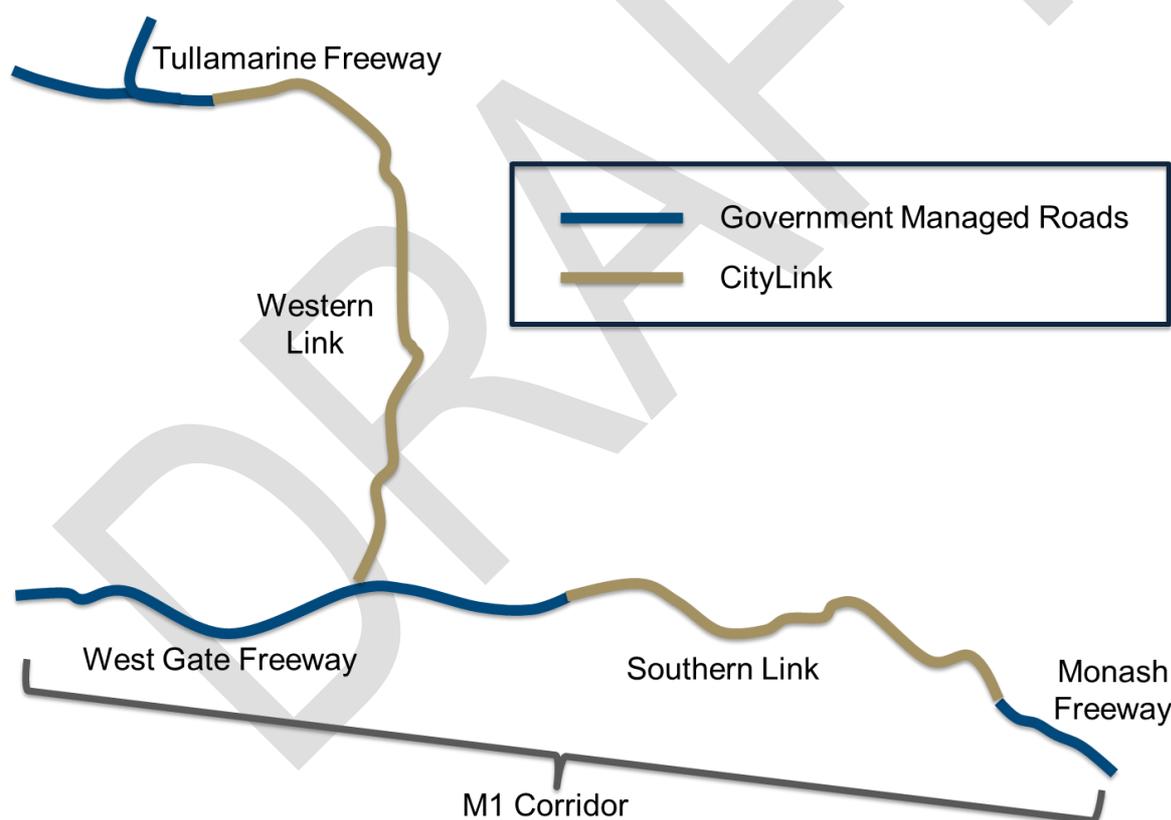
Appendix 2 – Case Study 1: Flexibility in a toll road PPP²⁰

CityLink is a privately-funded toll road that connects three major freeways in Melbourne, the largest city in the State of Victoria, Australia.

The Victorian State Government and the private developer Transurban CityLink, now known as CityLink Melbourne Ltd (CML), are the parties to a Concession Deed pursuant to the Melbourne City Link Act 1995. Under this Deed, CML is required to design, build, finance, operate, levy tolls and maintain City Link for a period of 34 years, ending on 14 January 2034. Construction of the A\$2 billion project commenced in May 1996 and the road was fully opened and tolled in December 2000. At the end of the concession period the toll road is to be transferred to the State in a fully maintained condition.

The Project comprises two parts: the Western Link, which connects the Tullamarine Freeway to the West Gate Freeway; and the Southern Link, which connects the West Gate Freeway to the Monash Freeway. The West Gate Freeway, Southern Link and Monash Freeway together comprise the M1 Corridor.

Figure 2: The CityLink Project and the M1 Corridor



Since entering into the Concession Deed, the State and CML have agreed numerous changes to both the works (that is, the physical toll road infrastructure) and the services (for example, how CML must manage electronic tolling accounts for road users). Two significant variations illustrate the importance of allowing appropriate change over the life of a toll road PPP in order to manage the ongoing development of the broader road network:

²⁰ Sources: VicRoads website (www.roads.vic.gov.au); Foster Infrastructure.

M1 Corridor Redevelopment

In 2006 the State and CML reached agreement on a program to add two new lanes (one in each direction) to the Southern Link and adjoining sections of the Westgate and Monash Freeways. This agreement, known as the M1 Corridor Redevelopment Deed, sets out the responsibilities of the parties in respect of matters such as traffic management and project coordination during the construction works to add the new lanes. For example, clause 8.6(b) states that:

The parties agree to use their best endeavours to consult and co-operate with each other in relation to lane closures in order to produce a result that, to the extent reasonably practicable, maximises traffic flow during construction on the Link and the general road transport network.

Freeway Management System

Technology to better manage traffic flow and incidents is being implemented across Melbourne's freeway system. The Active Freeway Management System uses the latest technologies (for example, electronic signs over each lane advising of speed limits and lane closures) to provide reliable journey times, improved safety, quicker response to incidents, and enhanced information for drivers.

The Active Freeway Management System was first implemented on the M1 Corridor.

The State and CML reached agreement that CML would design, construct and operate certain components of the Active Freeway Management System within the Southern Link section of the M1 Corridor, and the parties would work together to integrate these elements with the broader Active Freeway Management System implemented across the corridor by the State.

The M1 Corridor Redevelopment and implementation of the Active Freeway Management System illustrate that appropriate variation mechanisms can be used during the life of an economic infrastructure PPP to ensure that the relevant network is improved over time to better meet the needs of the community, while preserving the risk allocation and value for money outcomes of the original PPP contract.

Appendix 3 – Case Study 2: The need for flexibility in social infrastructure PPPs

As noted in section 3 of this report, in social infrastructure PPPs that are designed, built, financed and maintained by the private sector, but operated by the public sector, variations most commonly arise because of the close interface between the private sector's provision of the infrastructure and the public sector's operation of that infrastructure to deliver public services. These variations generally:

- Are small;
- Involve a change in the physical infrastructure without any change in the services provided by the private party; and
- Ensure that the infrastructure enables government to deliver services effectively and efficiently as its operational needs change.

The United Kingdom's National Audit Office conducted a survey of variations made to PPP projects during 2006, and found 82 per cent of variation requests cost £5,000 or less, reflecting the importance of small variations to the day-to-day running of serviced buildings (for example hospitals and schools delivered through PPPs but operated by government)²¹. Common variation requests included supplying and fitting electrical sockets and door locks²².

Variations in social infrastructure PPPs in the United Kingdom have been the subject of criticism in the tabloid media, such as the following:

Hospitals have been forced to shell out £242 just to change a padlock and £13,704 to install three lights as a result of Labour's botched [PPP] deals... As part of the deals, hospitals had to sign contracts under which they agreed to pay hyper-inflated prices for maintenance work²³.

In reading such criticism, some key contextual factors should be borne in mind:

1. The costs referred to generally relate to contracts that were drafted prior to the development of the current PPP Frameworks²⁴. These contracts may have contained less sophisticated mechanisms for government to ensure it receives value for money from variations.

²¹ National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), page 10. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

²² National Audit Office, "Making Changes in Operational PFI Projects" (17 January 2008), page 15. (Available at http://www.nao.org.uk/publications/0708/making_changes_operational_pfi.aspx.)

²³ Daniel Martin, "£466 to replace a light, £242 for a new padlock and £75 on an air freshener: Labour's botched PFI deals have sent NHS costs soaring... and there's a £60 BILLION bill for taxpayers", Daily Mail (23 December 2011). (Available at: <http://www.dailymail.co.uk/news/article-2077784/Labours-botched-PFI-deals-sent-NHS-costs-soaring.html>.)

²⁴ Data on United Kingdom PPPs, including financial close dates for each project, can be downloaded at http://www.hm-treasury.gov.uk/ppp_pfi_stats.htm.

2. When the private party undertakes a variation, the whole of life risk transfer under the PPP contract applies to the variation. Part of the cost of a variation therefore reflects the cost of this risk transfer. It might be possible for government to engage tradespeople such as carpenters and electricians to make minor changes to the infrastructure outside of the PPP contract. However implementing such changes outside of the PPP contract potentially results in government taking risk back from the private party. For example, if government engages an electrician to install lights in a PPP hospital and faulty installation results in a fire and damage to the facility, government may have to meet the costs of repairing the damage. In contrast, if the lights were installed by the private party as a variation under the contract, the private party would generally be liable for any costs and damage resulting from faulty installation.

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Best Practice in Design of Public-Private Partnerships (PPPs) for Social Infrastructure, particularly in Health Care and Education

Contents

1	Executive Summary	3
1.1	Purpose of this Report	3
1.2	The importance of design in PPPs.....	3
1.3	Mechanisms to promote good design in social infrastructure PPPs.....	3
1.4	Recommendations	3
2	Methodology.....	6
3	Background – Design in PPPs	7
4	Design-related mechanisms through the PPP lifecycle	8
4.1	Project Development Phase.....	8
4.1.1	Functional Brief Development	9
4.1.2	User Group Input.....	10
4.1.3	Concept Designs	11
4.1.4	Market Sounding	12
4.1.5	Government architects	13
4.1.6	Community Advisory Groups during project development.....	14
4.2	Tender phase	15
4.2.1	Competitive dialogue.....	15
4.2.2	Design standards and templates.....	16
4.2.3	Mandated designs	17
4.2.4	Interactive Tender Process	18
4.2.5	Qualitative design evaluation	19
4.2.6	Government Architects.....	20
4.3	Contract Finalisation Phase	20
4.3.1	Design development during the contract finalisation phase	21
4.4	Construction Phase	21
4.4.1	Government review during construction phase design development	21
4.4.2	Variation Processes	22
4.4.3	Community Advisory Groups	23
4.5	Operations Phase	23
5	Conclusions and Recommendations	25
	Appendix 1 – The European Commission’s Competitive Dialogue Process	27
	Appendix 2 – RIBA Smart PFI Model.....	28
	Appendix 3 – Australia’s Interactive Tender Process	30
	Appendix 4 – Examples of qualitative design evaluation criteria	32
	Appendix 5 – The Design Development Process	34

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1 Executive Summary

1.1 Purpose of this Report

This report has been prepared by Foster Infrastructure for the APEC Business Advisory Council. It presents the findings of a desktop research study of mechanisms used to promote good design outcomes in social infrastructure Public Private Partnerships (PPPs) in economies with well-developed social infrastructure PPP programs. These findings are intended to provide guidance for government officials from APEC economies on best practice in this field so as to deliver successful social infrastructure PPPs, particularly in the healthcare and education sectors.

1.2 The importance of design in PPPs

The design of social infrastructure, particularly in healthcare and education, is of great importance, regardless of whether the infrastructure is delivered through a PPP or by other means. In this context, design considerations can be divided into two broad categories:

- Functional design, which enables the effective and efficient delivery of health and education services.
- Urban design and master planning considerations, which provide an appropriate environment, ensure the facility fits within its surrounds, and allow for potential expansion in the future.

A PPP provides opportunities and incentives for the private sector contractor to innovate in the design of the facility. The PPP also results in the private sector contractor taking much of the design related risk of the project, protecting government against the financial consequences of the design being incapable of delivering the required outputs.

1.3 Mechanisms to promote good design in social infrastructure PPPs

Economies with well-developed PPP Frameworks have, through experience, developed a range of mechanisms to promote good design in social infrastructure PPPs. These mechanisms have been influenced by broader procurement regulations and policy considerations, such as the need for fairness and transparency in government procurement.

Section 4 of this report examines a range of different mechanisms that are used at different stages of the PPP process. The benefits and risks of these mechanisms vary in their significance depending upon a range of factors, including the particular PPP model being used, the applicable legal system, and relative importance of design in comparison to the other outcomes that will be driven through delivery of the project as a PPP.

1.4 Recommendations

Based on the analysis in this report of mechanisms used in PPP Frameworks to promote good design outcomes, Foster Infrastructure has identified the following recommendations for governments wishing to promote best practice in design for social infrastructure PPPs:

- 1. Governments should identify an appropriate combination of mechanisms to promote design outcomes through the stages of the PPP lifecycle, taking into account relevant factors such as the particular PPP model being used, the**

- applicable legal system, and relative importance of design in comparison to the other outcomes that will be driven through delivery of the project as a PPP.
2. Action taken in the earlier stages of the PPP process will have the greatest impact upon design outcomes. Governments should therefore devote sufficient time and allow sufficient resources for proper consideration of design issues during the project development phase of PPPs.
 3. Governments should develop functional briefs to provide a robust foundation for the broad range of other activities that drive good design outcomes in social infrastructure PPPs.
 4. Governments should involve user groups in PPP project development due to their understanding of how design influences service delivery, but should also ensure that project teams carefully manage these groups.
 5. For projects that involve complex design issues, government should consider conducting market sounding in relation to these issues prior to commencement of the formal tender process. However the market sounding process should be carefully managed.
 6. Government architects can provide expertise that enhances the effectiveness of other design related activities throughout the PPP lifecycle.
 7. Governments should consider establishing community advisory groups as a means of two-way communication between the project team and the community, particularly in relation to urban design and master planning issues. However community expectations must be appropriately and efficiently managed.
 8. Governments should establish mechanisms for interaction between government and bidders during the tender process to ensure that the design solutions developed by bidders meet government's needs. This process should not be structured as a negotiation of government's design requirements, as these requirements should have been fully developed prior to the tender process. The focus of the interaction should be on ensuring the bidders understand these requirements.
 9. Governments should only require bidders to follow design templates and standards if there is only one feasible or acceptable solution to the relevant aspect of design. To the extent possible, such templates and standards should be expressed in output terms.
 10. Governments should only mandate the overall design where there is compelling reason to give design considerations priority over other aspects of the project. In circumstances where this is the case, government should reconsider whether PPP delivery is the best delivery model for the project, as the scope for innovation and value for money may be compromised by the mandated design.
 11. Providing the risks can be managed by the project team and it is permissible under the relevant procurement rules, governments should use qualitative evaluation of bidders' designs in order to drive good design outcomes.
 12. Governments should ensure that designs are sufficiently developed by bidders during the competitive tender process so that any subsequent design review need only focus on compliance of the detailed design documentation with the PPP

contract. The design review process must be carefully managed to prevent government taking back risk.

2 Methodology

In 2011, APEC ministers and senior officials identified best practice in design of PPPs for social infrastructure as a key area of interest.

“Design of PPPs” can have a number of different meanings. For example, it may refer to designing the commercial structure of PPP projects, or to architectural and engineering design of the facility. Following discussions with the APEC Business Advisory Council, Foster Infrastructure agreed to develop this report with a focus on the architectural and engineering design elements of PPPs.

This report documents the outcomes of a desktop research study of processes used by economies with well-developed PPP programs to drive high quality design outcomes in social infrastructure. The body of the report is structured as an examination of the mechanisms by which design can be influenced at different stages of the PPP procurement process, drawing on best practice from a range of countries. The key risks and benefits of each mechanism have been identified. This has enabled conclusions to be drawn as to the relative merits of the various mechanisms, and the extent to which they are complementary or substitutes for one another.

3 Background – Design in PPPs

The design of social infrastructure, particularly in healthcare and education, is of great importance, regardless of whether the infrastructure is delivered through a PPP or by other means. In this context, design considerations can be divided into two broad categories:

- **Functional design** of the infrastructure is critical to enable the effective and efficient delivery of health and education services.
- **Urban design and master planning** considerations are also important to provide an appropriate environment, ensure the facility fits within its surrounds, and allow for potential expansion in the future.

When healthcare or education infrastructure is delivered as a PPP, a private sector contractor is typically engaged to design, construct, finance and maintain (and in some cases operate) the facility. The PPP contract is generally expressed in terms of the outputs that the contractor must deliver, rather than the inputs or the design that must be delivered. The bundling together of responsibility for design, construction, finance and maintenance and use of an output specification together provide opportunities and incentives for the private sector contractor to innovate in the design of the facility. The PPP also results in the private sector contractor taking much of the design related risk of the project, protecting government against the financial consequences of the design being incapable of delivering the required outputs.

A question arises as to how government can best drive desirable design outcomes, while ensuring that the private sector accepts an appropriate level of design related risk and is given scope to innovate in designing the infrastructure. If government intervenes inappropriately in relation to design issues, it may take back design risk from the private sector (see Box 1) or constrain innovation. It is therefore important for governments to understand and share best practice PPP procurement methodologies that help to drive high quality design outcomes without compromising risk transfer or innovation.

Section 4 of this paper sets out the benefits and risks of the common mechanisms used by economies with well-developed PPP programs to drive high quality design outcomes in social infrastructure.

Box 1: Taking back design risk

When a private sector contractor designs infrastructure under a PPP contract, it takes the risk that the design will not be constructable or will not enable it to meet the performance requirements under the PPP contract.

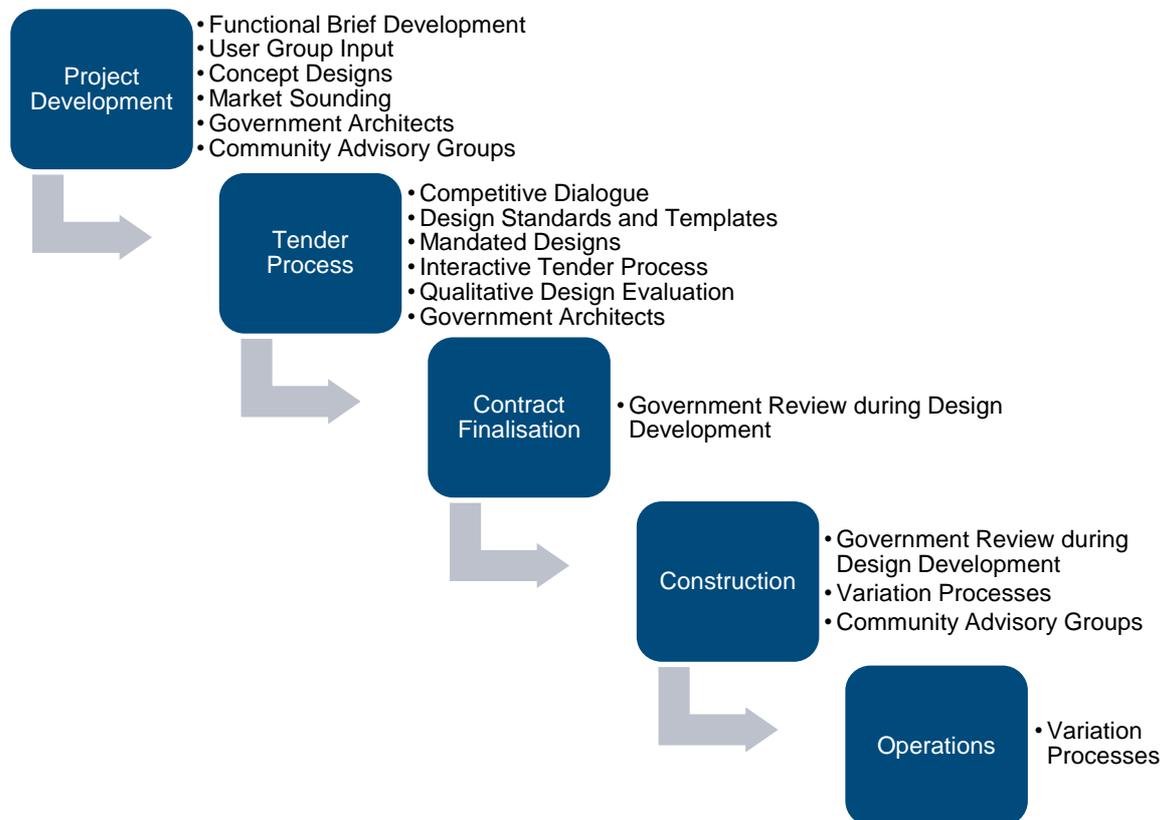
If government inappropriately intervenes in relation to design issues, the private sector contractor may claim that any problems experienced in construction or operation of the infrastructure are a result of government's intervention, not any failure on the part of the private party. The private sector contractor may therefore seek compensation or relief from government in respect of these issues. In effect, government will have "taken back" the design risk that it believed it had transferred to the private sector contractor.

For example, if government engages a private sector contractor to design, build, finance and maintain a PPP school, the contractor would ordinarily take the risk that additional costs are incurred because windows are accidentally broken more often than forecast. However, if government directs the contractor to use a particular window design that is more prone to accidental breakage than the design proposed by the contractor, the contractor may be able to argue that government should bear the additional costs of repairing the windows, as these costs are a result of the government direction.

4 Design-related mechanisms through the PPP lifecycle

Governments with well-developed PPP programs have developed a range of mechanisms that are used at various stages during the PPP lifecycle to drive good design outcomes. The processes examined in this report are set out in Figure 1.

Figure 1: Design-related mechanisms through the PPP lifecycle



The benefits and risks of each of these mechanisms are discussed below.

The government project team for a PPP generally appoints and makes use of technical advisers (such as architects and engineers) at appropriate points through the PPP lifecycle. Engagement of these advisers is not discussed below, as it is common practice and should be a standard part of the process for social infrastructure PPPs.

4.1 Project Development Phase

During the project development phase of a PPP, government assembles the necessary resources for the project and develops the project structure, scope and commercial principles, in readiness for the formal tender process¹. Significant work should be undertaken at this time to develop and document government's design-related requirements.

¹ Infrastructure Australia, "National PPP Guidelines: Volume 2: Practitioners' Guide" (March 2011), page 6. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_2_Practitioners_Guide_Mar_2011.pdf).

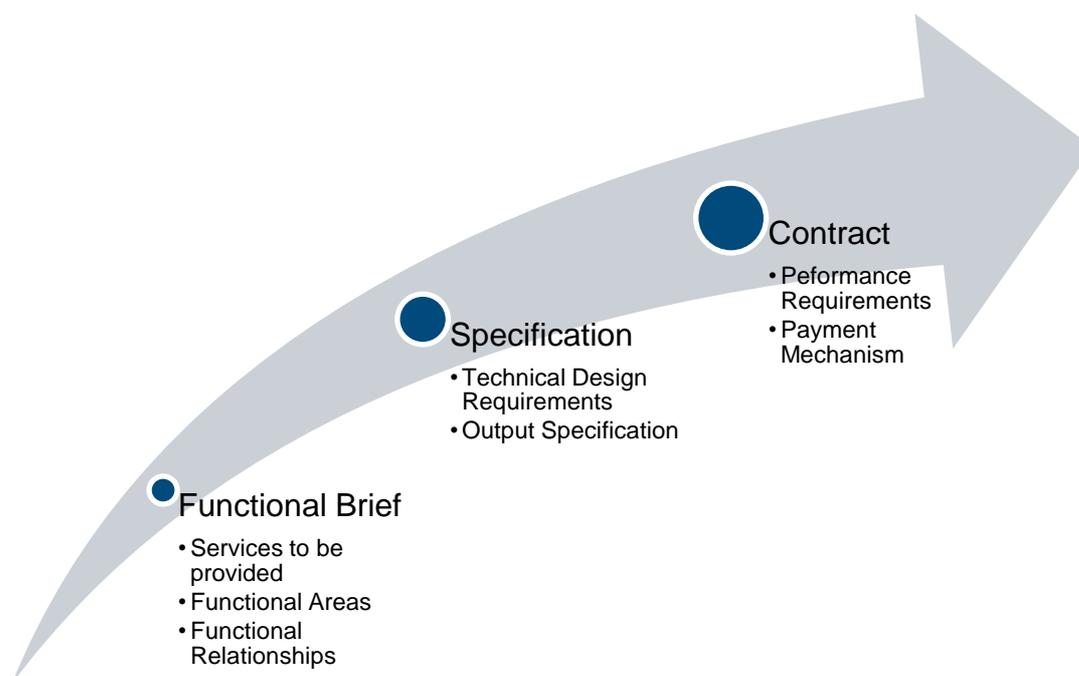
4.1.1 Functional Brief Development

Design activities in the project development phase of a social infrastructure PPP generally commence with the development of a functional brief², which typically sets out:

- The services that will be provided within the facility (for example emergency treatment and surgery are two of the services within a hospital)
- The functional areas required to deliver those services (for example, an emergency department for the delivery of emergency treatment; operating theatres for the delivery of surgery)
- The functional relationships between the different elements of the design (for example, the need for connectivity between the emergency department and operating theatres).

The functional brief is an important input into the subsequent development of the technical design requirements and output specification for the project, and then the performance requirements and payment mechanism that are incorporated into the PPP contract.

Figure 2: The Relationship between the Functional Brief, the Specification and the Contract



The technical design requirements set out the minimum architectural and engineering performance specifications that must be incorporated into the design of the facility³. The

² For an example of a functional brief for a complex hospital project, see South Australian Department of Health, "New Royal Adelaide Hospital Project: Schedule 18 – Design Specifications: Functional Brief". (Available at: <http://www.sahealth.sa.gov.au/wps/wcm/connect/e1466e00479780d68eb9fe2e504170d4/new+RAH+Functional+Brief+1.0.pdf?MOD=AJPERES&CACHEID=e1466e00479780d68eb9fe2e504170d4>.)

output specification defines the service outputs that the contractor will provide. The performance requirements and payment mechanism provide the commercial framework that incentivises the contractor to meet the technical design requirements and deliver the required outputs.

Table 1 sets out the key benefits and risks of functional brief development.

Table 1: Benefits and Risks of Functional Brief Development

Benefits	Risks
<ul style="list-style-type: none"> • A functional brief is a key foundation for ensuring that the specification and the contract will promote desirable design outcomes • A functional brief enables government to “step back” and focus on the functionality that it requires from the design, rather than specific design solutions 	<ul style="list-style-type: none"> • It can be difficult for a project team to develop a functional brief that describes future requirements, rather than reflecting current practices

In summary, the functional brief is an important tool that provides a foundation for the broad range of other activities that drive good design outcomes in social infrastructure PPPs.

4.1.2 User Group Input

For a functional brief to be effective, it must be developed with a strong understanding of the services that will be delivered within the PPP facility. This understanding is best developed through consultation with users of similar facilities, particularly those who will use the new facility once it is built. To secure this input, project teams typically establish user groups and consult with them through workshops and similar processes.

In a hospital PPP, the key user group members are clinical staff, such as doctors and nurses. In a schools PPP, the key user group members are teaching staff.

For example, in a major hospital PPP in Australia:

Staff have been participating in user group workshops to review and update the functional design brief for the hospital, which will include consideration of departmental design, equipment and models of service delivery⁴.

Table 2 sets out the key benefits and risks of user group input.

³ For an example of the technical design requirements for a complex hospital project, see South Australian Department of Health, “New Royal Adelaide Hospital Project: Schedule 18 – Design Specifications: Technical Specification”. (Available at: <http://www.sahealth.sa.gov.au/wps/wcm/connect/beda5080479781bb8ec1fe2e504170d4/new+RAH+Technical+Specification+1.0.pdf?MOD=AJPERES&CACHEID=beda5080479781bb8ec1fe2e504170d4>.)

⁴ Queensland Government, “Sunshine Coast University Hospital FAQs”. (Available at: <http://www.health.qld.gov.au/scuhospital/faqs.asp>.)

Table 2: Benefits and Risks of User Group Input

Benefits	Risks
<ul style="list-style-type: none"> • User group input enables future users of the facility (or users of similar facilities) to provide input to the design requirements, particularly in relation to functional design • User group input can provide future users of the facility with an understanding of the design process and design issues, which contributes to good outcomes in the change management process that occurs when staff transfer into the newly completed PPP facility 	<ul style="list-style-type: none"> • Giving users access to detail of a concept design at the project development phase may lead them to expect that this design is what will be delivered, leading to dissatisfaction if the winning bidder proposes a significantly different design • Unless carefully managed, the user group process may be time consuming for the project team, without making a significant contribution to good design outcomes

User groups generally provide significant value in PPP project development due to their understanding of how design influences service delivery. However user groups should be carefully managed by the project team to mitigate the risks identified in Table 2.

4.1.3 Concept Designs

Following development of the functional brief, involving user groups as required, government's project team can create a concept design that represents one possible design solution that delivers the functional requirements.

The concept design is intended to further develop the project team's understanding of the design issues associated with the project, but it is not a design that the successful PPP bidder will be required to follow.

The level of detail developed in a concept design can depend upon the needs of the project. The more complex the design issues associated with the project, the more value there is in developing a detailed concept design to understand those issues. For example, a primary school with relatively simple functional requirements to be located on a relatively large site may only require a high level concept design, whereas a major hospital with complex functional relationships and a constrained site may benefit from more detailed concept design work.

Table 3 sets out the key benefits and risks of preparation by government of concept designs. The benefits are significant, and indicate that preparation by government of a concept design can play a key role in validating that government understands what design outcomes are required of the project, ensuring that the project delivers its expected outcomes. However care is needed to ensure that the right level of detail is developed in the concept design, so that the benefits are delivered without unnecessary costs and without raising inappropriate stakeholder expectations of the project by promoting a design that will not be built.

Table 3: Benefits and Risks of Concept Designs

Benefits	Risks
<ul style="list-style-type: none"> • Concept designs enable government to better understand potential design outcomes that will deliver the functional requirements • Concept designs provide government with a better understanding of any specific design challenges associated with the project • Concept designs provide a more informed basis on which government can develop the specification • Concept designs can assist government to refine the scope of the PPP and assist government to identify elements that should be procured separately from the PPP⁵ • Concept designs can assist government in engagement with user groups and the community 	<ul style="list-style-type: none"> • Stakeholders may assume the concept design is what will be built, and may be disappointed if the winning bidder proposes a significantly different design • The cost of preparing a concept design may be viewed as a waste of funds, given the concept design will not be built

4.1.4 Market Sounding

Some PPP Frameworks and audit authorities recommend that government should conduct dialogue with potential bidders about the design of assets before conducting a formal tender process⁶. This dialogue commonly forms part of a market sounding process, which might also be used to gauge and develop market interest in the project.

Market sounding must always be carefully conducted to ensure that government procurement rules are not breached and no participant is given (or perceived by others to have been given) a competitive benefit in the subsequent tender process.

Table 4 sets out the key benefits and risks of using market sounding to conduct dialogue with potential bidders in relation to design issues. For market sounding to be effective, it must be carefully planned. Issues for discussion should be identified prior to the process commencing, and market sounding meetings should be scripted so as to draw out useful comment from participants without raising concerns from participants that they are being asked to disclose confidential or commercially sensitive perspectives. If the process is not carefully managed in this way, the market sounding may only result in general positive responses from potential bidders, as they will not want to appear uninterested in a potential project opportunity.

⁵ See, for example (in a transport context) Queensland Government, "Gold Coast Rapid Transit Lessons Learned" (2012). (Available at: <http://gctrllessonslearned.com.au/about/>.)

⁶ National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), page 7. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx.); See also Infrastructure Australia, "National PPP Guidelines: Volume 2: Practitioners' Guide" (March 2011), page 72. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_2_Practitioners_Guide_Mar_2011.pdf).

Table 4: Benefits and Risks of Market Sounding

Benefits	Risks
<ul style="list-style-type: none"> Market sounding can develop government's understanding of the private sector's design capacity and capability, appetite for taking design risk, and expectation of opportunities to innovate in design Market sounding can inform potential bidders at an early stage of design issues and opportunities in the project, which will assist the potential bidders in forming consortia with appropriate design expertise 	<ul style="list-style-type: none"> Unless government carefully focuses the market sounding and asks relevant questions, potential bidders may not provide useful input Unless carefully managed, a market sounding process may be perceived as giving an advantage to some potential bidders over others

Market sounding in relation to design issues can provide significant value in PPP project development, particularly if the project involves design issues that government does not fully understand but private sector organisations may have previously resolved in other contexts. However the market sounding process should be carefully managed by the project team to mitigate the risks identified in Table 4.

4.1.5 Government architects

A number of governments have appointed government architects to provide strategic advice to government about architecture and urban design. This role can include the provision of advice on how to achieve good design outcomes for PPPs. For example:

- In the State of Victoria, Australia, project teams are required to consider the assistance available from the Victorian Government Architect in relation to design matters in the project development phase of PPP projects⁷.
- In Flanders, Belgium, a government architect employed by the Ministry of the Flemish Community ensures the architectural quality of PPP projects in the schools sector⁸.

During the project development phase of a PPP, a government architect can assist the project team to improve the quality of design-related project documentation, such as the functional brief. The government architect can also share lessons from other projects.

The key benefits and risks of using government architects during the project development phase of a PPP are set out in Table 5.

⁷ Infrastructure Australia, "National PPP Guidelines: Volume 6: Jurisdictional Requirements" (March 2011), page 27. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_6_Jurisdictional_Requirements_Apr_2011.pdf.)

⁸ Organisation for Economic Cooperation and Development (OECD), "Public-Private Partnerships in Flanders" PEB Exchange 2006/6. (Available at: <http://www.oecd.org/dataoecd/63/17/37697444.pdf>.)

Table 5: Benefits and Risks of involving Government Architects in Project Development

Benefits	Risks
<ul style="list-style-type: none"> • Involvement of a government architect an assist in incorporating good design practice into the project • A government architect may bring a “whole of government” approach to design 	<ul style="list-style-type: none"> • Involvement of a government architect may conflict with the principle that bidders take design risk and are responsible for development of their own designs

Involvement of government architects during the project development phase of a PPP is best seen as a means of enhancing the effectiveness of the other design related activities that occur during this stage.

4.1.6 Community Advisory Groups during project development

Public participation is important for social infrastructure projects, and hence governments have devised mechanisms for public participation at the planning and design stage of PPP projects⁹. This participation often occurs through a community advisory group or community reference group established by government.

The Sunshine Coast University Hospital Project, undertaken by the State of Queensland in Australia, illustrates the two-way communication that can occur between a project team and the community, particularly in relation to design issues¹⁰:

In July 2010, Queensland Health held four community forums across the coast seeking input about the hospital design from the community. The feedback was very constructive and will be used in the design brief for the hospital where applicable.

A Community Reference Group was also established by Queensland Health in 2010 comprising 15 local residents, health users and health providers.

The Community Reference Group will assist Queensland Health in informing the broader community of progress on the project as well as provide advice and input into the design of the hospital.

The key benefits and risks of community advisory groups during the project development phase of a PPP are set out in Table 6.

⁹ United Nations Economic and Social Commission for Asia and the Pacific, “A Guidebook on Public-Private Partnership in Infrastructure”, page 28. (Available at http://www.unescap.org/ttdw/common/TPT/PPP/text/ppp_guidebook.pdf.)

¹⁰ Queensland Government, “Sunshine Coast University Hospital FAQs”. (Available at: <http://www.health.qld.gov.au/scuhospital/faqs.asp>.)

Table 6: Benefits and Risks of Community Advisory Groups during Project Development

Benefits	Risks
<ul style="list-style-type: none"> • Community advisory groups enable the community to provide input to the design requirements, particularly in relation to urban design and master planning issues • Community advisory groups provide the community with an understanding of the design process and design issues, reducing the likelihood of community opposition to design outcomes when construction takes place 	<ul style="list-style-type: none"> • Giving the community access to detail of possible designs may lead them to expect that these designs are representative of what will be delivered, leading to opposition if the winning bidder proposes a significantly different design • Management of a community advisory group may be time consuming for the project team, without making a significant contribution to good design outcomes

Community advisory groups are a valuable means of two-way communication between the project team and the community, particularly in relation to urban design and master planning issues. However community expectations must be appropriately and efficiently managed.

4.2 Tender phase

The tender process involves formal engagement with the PPP market, seeking bids from consortia capable of delivering the project. To ensure fair and transparent competition, the tender process is conducted under strict procurement rules. A range of mechanisms have been developed to promote good design outcomes within the framework of these rules.

4.2.1 Competitive dialogue

A competitive dialogue procurement process was introduced by the European Commission in March 2004. The key stages in the process include the following¹¹:

- A pre-qualification process is used to select a number of bidders who are invited to participate in the dialogue process
- Successive stages of dialogue are conducted with the invited bidders
- Following completion of the dialogue, government issues its finalised request for tenders and the bidders submit their final tenders.

Further information on this process is provided in Appendix 1. The key benefits and risks of competitive dialogue are set out in Table 7.

While competitive dialogue can help government to secure good design outcomes, it also entails significant risks. It is an option available under the European Commission's general procurement rules, not a process specifically intended to improve design outcomes for PPPs. As a result, it appears to have somewhat greater risks and weaker benefits than a number of the other mechanisms discussed in this report.

¹¹ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 11. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

Table 7: Benefits and Risks of Competitive Dialogue

Benefits	Risks
<ul style="list-style-type: none"> Competitive dialogue may enable government to identify potential issues with bidders' designs at an early stage while bidders are still in a competitive process¹² Competitive dialogue enables government to refine its requirements through dialogue with engaged bidders beyond what can be undertaken through initial market testing¹³ 	<ul style="list-style-type: none"> Competitive dialogue could result in government and bidders incurring significant additional costs without corresponding improvements in outcomes¹⁴ Competitive dialogue can require greater government resources than other procurement processes¹⁵ Care is needed to protect bidders' intellectual property during the competitive dialogue process¹⁶ Competitive dialogue may result in government's design requirements being partially determined by bidders' preferences rather than functionality, master-planning and urban design needs

4.2.2 Design standards and templates

In some social infrastructure PPPs, government may form the view that a particular aspect of design should conform to requirements that have been pre-determined by government. For example, in a schools PPP project, government may require the classrooms to be designed so that they are consistent with classrooms in other schools for students of the same age. This consistency would provide an equivalent environment for all teachers and students across the school system, regardless of how the schools are delivered.

If there really is only one design solution that is feasible or acceptable to government for a particular element of the project, then government should require bidders to follow this solution by prescribing a design standard or template in the tender documents. However,

¹² National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), page 21. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx.); Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 4. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

¹³ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 4. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

¹⁴ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", pages 4-5. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

¹⁵ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 4. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

¹⁶ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 5. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

government should only do this where it is necessary, as the design standard or template will prevent bidders innovating to offer alternative solutions and it may be difficult for government to transfer the risk that the standard or template compromises the functionality of the facility.

If there is a good reason for government to be prescribe detailed design requirements in a design standard or template, it should express those detailed requirements in output terms as far as possible. Government should avoid expressing requirements in input terms or mentioning any particular choice of technology as far as possible, as this may inhibit the private party choosing the most efficient technology and innovation in design¹⁷. For example, a post-implementation review of a schools PPP in the State of New South Wales, Australia, found that government's minimum facility standards (which appear to have been expressed in input terms and were specified in the tender documents) constrained innovation¹⁸. In a subsequent schools PPP project, the New South Wales Government sought to express its minimum facility standards in output terms¹⁹.

The key benefits and risks of prescribing design standards and templates are set out in Table 8.

Table 8: Benefits and Risks of Design Standards and Templates

Benefits	Risks
<ul style="list-style-type: none"> Requiring bidders to follow design standards and templates can help ensure that government's expectations are met if the standard or template is the only value for money solution Requiring bidders to follow design standards and templates can reduce costs that would otherwise be incurred by bidders exploring other solutions 	<ul style="list-style-type: none"> Use of design standards and templates where other solutions may meet government's requirements can constrain innovation by bidders and compromise value for money Government may be unable to transfer the risk that a specified design standard or template compromises functionality

In summary, bidders should only be required to follow design templates and standards if there is only one feasible or acceptable solution to the relevant aspect of design. To the extent possible, such templates and standards should be expressed in output terms.

4.2.3 Mandated designs

The idea of requiring bidders to follow design templates and standards can be taken one step further by government mandating an overall design (pre-prepared by or on behalf of government) that bidders must adopt. A proposal from the United Kingdom for this approach is summarised in Appendix 2.

¹⁷ United Nations Economic and Social Commission for Asia and the Pacific, "A Guidebook on Public-Private Partnership in Infrastructure", page 53. (Available at http://www.unescap.org/ttdw/common/TPT/PPP/text/ppp_guidebook.pdf.)

¹⁸ New South Wales Treasury, "New Schools Privately Finance Project Post-Implementation Review" (December 2005), pages 7, 13 and 51. (Available at: http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0012/5403/trp05-3.pdf.)

¹⁹ New South Wales Treasury, "New Schools Privately Finance Project Post-Implementation Review" (December 2005), page 7. (Available at: http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0012/5403/trp05-3.pdf.)

Australian experience of standard PPP processes in hospital projects indicates that because each bidder submits its own fully developed and costed design, prepared in an extremely competitive environment in response to an output based brief (which encourages design innovation), government can achieve enhanced design outcomes²⁰. The mandated design approach would remove the identified drivers of these enhanced outcomes.

The key benefits and risks of mandated designs are set out in Table 9.

Table 9: Benefits and Risks of Mandated Designs

Benefits	Risks
<ul style="list-style-type: none"> • A mandated design gives government greater certainty of, and control over, design outcomes • A mandated design avoids the expense of each bidder developing their own design 	<ul style="list-style-type: none"> • A mandated design constrains opportunities for design innovation by bidders • A mandated design may compromise the transfer of design risk, or result in bidders charging a risk premium to compensate for adopting risk on a design that they have not themselves prepared and verified

The risks created by mandated designs reflect the fact that mandating a design conflicts with a core feature and value driver of the PPP model, which is the bundling together of design, construction, finance and maintenance under the responsibility of one party. In view of these risks, mandated designs should only be used where there is compelling reason to give design considerations priority over other aspects of the project. In circumstances where this is the case, government should reconsider whether PPP delivery is the best delivery model for the project, as the scope for innovation and value for money may be compromised by the mandated design.

4.2.4 Interactive Tender Process

Australian governments have developed an interactive tender process to improve the quality of bid submissions and ultimately deliver better outcomes for the public, through clear communication of the government's requirements. This process and its risks are described in detail in Appendix 3, and it is now part of standard PPP processes in Australia²¹.

The interactive tender process consists of a series of workshops conducted with each short-listed bidder after government has issued its request for proposals. The workshops provide an opportunity for bidders to seek feedback on their proposals as they are developed, and to clarify the application of government's requirements to their solution. This enables bidders to

²⁰ Tony Lubofsky, "Maximising the Benefits of PPP Procurement", presentation at Design and Health Australasia 2011 (2-4 May 2011). (Available at: http://www.designandhealth.com/uploaded/documents/International-Symposium/Australasia-2010/Australasia-2011/Speaker-Presentations/TonyLubofsky_DHV.pdf)

²¹ New South Wales Treasury, "New Schools Privately Finance Project Post-Implementation Review" (December 2005), page 7. (Available at: http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0012/5403/trp05-3.pdf.)

better understand government requirements without compromising probity (that is, transparency and fairness)²².

Table 10 sets out the key benefits and risks of the interactive tender process.

Table 10: Benefits and Risks of Interactive Tender Processes

Benefits	Risks
<ul style="list-style-type: none"> The interactive tender process enables bidders to seek feedback of whether their solution meets government's requirements, and to clarify those requirements – this increases the likelihood that the bids submitted will all be acceptable to government 	<ul style="list-style-type: none"> Unless the interactive tender process is carefully managed, transparency and fairness of the tender process may be compromised There is a risk that a bidder's intellectual property may be communicated to other bidders or to the public

The interactive tender process has some similarities to the competitive dialogue process referred to in Section 4.2.1 above. However there are two key differences:

- Competitive dialogue occurs prior to government finalising its request for tenders and issuing it to bidders, whereas the interactive tender process occurs after the request for tenders is issued.
- Competitive dialogue potentially leads to changes in government's requirements, whereas the interactive tender process rests on an assumption that government has done sufficient work during the project development phase to have finalised its requirements, with the remaining challenge being to ensure that bidders understand those requirements.

Given the importance of design in social infrastructure PPPs, and the wide scope for bidders to propose alternative design solutions in response to an output specification, the interactive tender process provides an important means to ensure the design solutions developed by bidders meet government's needs.

4.2.5 Qualitative design evaluation

In some PPP processes, government's technical evaluation of the private sector's bids goes beyond an evaluation of whether the bid complies with the specified technical requirements to include an evaluation of aspects of the quality of the design, such as its functionality and architectural merit. Appendix 4 includes samples of such design-related evaluation criteria from an Australia hospital PPP and schools PPP.

Government's ability to undertake broad qualitative evaluation can depend upon whether this is allowable under the relevant procurement rules.

Table 11 sets out the key benefits and risks of the qualitative design evaluation. The benefits are significant. Providing the risks can be managed by the project team and it is permissible

²² New South Wales Treasury, "New Schools Privately Finance Project Post-Implementation Review" (December 2005), page 7. (Available at: http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0012/5403/trp05-3.pdf.)

under the relevant procurement rules, qualitative design evaluation is generally desirable in social infrastructure PPPs in order to drive good design outcomes.

Table 11: Benefits and Risks of Qualitative Design Evaluation

Benefits	Risks
<ul style="list-style-type: none"> • A qualitative evaluation of design incentivises bidders to innovate and deliver high quality design outcomes, rather than merely complying with government's technical requirements • A qualitative evaluation of design enables government to distinguish bids on the basis of the quality of their functional, urban design and master-planning outcomes, not merely on technical compliance and financial criteria 	<ul style="list-style-type: none"> • A qualitative evaluation of design may result in government's tender decision being more open to challenge by unsuccessful bidders • A qualitative evaluation of design may make it more difficult for bidders to identify their best design solution and put this forward • A qualitative evaluation of design may result in it being more difficult for government decision makers to reach a conclusion

4.2.6 Government Architects

In addition to their role discussed in section 4.1.5 above, government architects can also assist PPP project teams during the tender phase of the project. Their expertise can be particularly valuable in the following circumstances:

- When government is interacting with bidders in relation to design issues, such as in a competitive dialogue (see section 4.2.1 above) or an interactive tender process (see section 4.2.4 above)
- When government is conducting qualitative design evaluation (see section 4.2.5 above).

Table 12 sets out the key benefits and risks of involving government architects in these processes.

Table 12: Benefits and Risks of using Government Architects in the Tender Phase

Benefits	Risks
<ul style="list-style-type: none"> • A government architect can bring a high level of design expertise and a "whole of government" perspective to the interaction with bidders and evaluation of bids 	<ul style="list-style-type: none"> • Interaction with bidders and the bid evaluation process may be too time consuming for a government architect to be fully involved

If a government architect is available to participate in relevant activities during the tender phase, they can make a valuable contribution.

4.3 Contract Finalisation Phase

Once PPP bids have been evaluated and a preferred bidder has been selected by government, there may be a time period in which the contractual documentation and financial arrangements are finalised before the contract is executed and financial close

occurs. Ideally, design issues have been resolved prior to the appointment of the preferred bidder. However, that is not always the case.

4.3.1 Design development during the contract finalisation phase

Prior to the introduction of the competitive dialogue process (see section 4.2.1 above), government project teams in the United Kingdom would often request high level designs during the competitive bidding process, and then request detailed designs following appointment of a preferred bidder but prior to entering into a contract²³. Table 13 sets out the key benefits and risks of further development of the design during this phase.

Table 13: Benefits and Risks of Government Review during Design Development (Contract Finalisation Phase)

Benefits	Risks
<ul style="list-style-type: none"> Design development during the contract finalisation phase avoids the need for unsuccessful bidders to incur the expense of preparing detailed designs²⁴ 	<ul style="list-style-type: none"> Design development during the contract finalisation phase may result in changes to designs, including additions and reductions to project scope, at a time when there is no competitive pressure to protect government's value for money position²⁵

Requesting detailed designs following appointment of a preferred bidder but prior to entering into a contract was found to have adverse outcomes in the United Kingdom. With the introduction of the competitive dialogue process (see section 4.2.1 above), the United Kingdom has moved to a system in which any major design issues should be resolved while bidders remain in a competitive environment. This mitigates the risks and offers better outcomes for government. Australia's interactive tender process (see section 4.2.4 above) achieves a similar result through a slightly different process.

4.4 Construction Phase

Once the PPP contract has been signed, the private party should proceed to construct the facility in accordance with the design requirements that were included in the contract. The opportunities for government to influence design outcomes are limited at this stage. However some design related mechanisms are available.

4.4.1 Government review during construction phase design development

Generally, PPP bidders are not required to submit fully detailed "for construction" design drawings during the PPP tender process, as this would impose an unreasonable burden on unsuccessful bidders. It is therefore common for the private party to undertake further design work in order to develop "for construction" drawings after the contract is executed, working from the design documentation that was included in the bid. The PPP contract should give

²³ National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), page 18. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx).

²⁴ National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), page 18. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx).

²⁵ National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), pages 18 and 21. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx).

government the right to review whether these further design documents meet the contractual requirements. An example of such a design review process is set out in Appendix 5.

Table 14 sets out the key benefits and risks of further development of the design during this phase.

Table 14: Benefits and Risks of Government Review during Construction Phase Design Development

Benefits	Risks
<ul style="list-style-type: none"> • Government review during design development enables government to ensure compliance of the detailed design documentation with the PPP contract • Government review during design development provides government with improved understanding of design aspects of the facility before it has been built 	<ul style="list-style-type: none"> • Government may take back design risk if it provides inappropriate feedback to the private party as to how to meet the design requirements and, as a result of the private party relying on that feedback, the facility does not meet the performance requirements

Unless the design is fully documented at the time bids are submitted, a design review process is desirable after the contract is executed to ensure compliance of the detailed design documentation with the PPP contract. However, the process must be carefully managed to prevent government taking back risk.

4.4.2 Variation Processes

PPP contracts typically include variation clauses that allow government to request changes to the facility design during the life of the PPP. Foster Infrastructure has prepared a separate paper²⁶ for the APEC Business Advisory Council, comparing these clauses across a range of jurisdictions and PPP sectors. Table 15 sets out the key benefits and risks of using variation processes

Table 15: Benefits and Risks of Variation Processes during the Construction Phase

Benefits	Risks
<ul style="list-style-type: none"> • Variation processes enable government to request changes to the design of the facility in response to changing needs, or to incorporate new technologies and innovations 	<ul style="list-style-type: none"> • It may be difficult to subject a variation requested during the construction phase to a competitive process or an accurate benchmarking of the price, and therefore it may be difficult to secure value for money for the variation • The variation process may be cumbersome and disrupt the overall progress of the project

²⁶ See Foster Infrastructure, "Comparative Study of Contractual Clauses to Provide for the Smooth Adjustment of Physical Infrastructure and Services through the Lifecycle of a Public-Private Partnership (PPP) Project" (May 2012), paper prepared for the APEC Business Advisory Council.

Before embarking on the tender process for a PPP, government should be confident that it will not need to change the design significantly over the term of the PPP contract. During the tender process, government should use the mechanisms described in section 4.2 above to ensure that the design will be suitable for the long-term. Nevertheless, circumstances can arise during the construction phase in which it is appropriate to request a variation to the design.

4.4.3 Community Advisory Groups

The role of community advisory groups during the project development phase was discussed in Section 4.1.6 above. Interaction with these groups may also be important during the construction phase to inform them of the urban design and master-planning outcomes of the project. A community advisory group may also have some limited input into government's design review process.

The key benefits and risks of community advisory groups during the construction phase of a PPP are set out in Table 16.

Table 16: Benefits and Risks of Community Advisory Groups during the construction phase

Benefits	Risks
<ul style="list-style-type: none"> Community advisory groups enable the community to provide input to government's design development review process, particularly in relation to urban design and master planning issues Community advisory groups provide the community with an understanding of the design process and design issues, reducing the likelihood of community opposition to design outcomes 	<ul style="list-style-type: none"> Management of a community advisory group may be time consuming for the project team without making a significant contribution to good design outcomes, particularly given the constraints of the design review process

4.5 Operations Phase

The variation processes referred to in section 4.4.2 above are usually also available to government during the operations phase of the PPP. The risks of requesting variations during the operations phase are slightly different to those during the construction phase, and are set out in Table 17 on page 24.

As is the case during the construction phase, circumstances can arise during the operations phase in which it is appropriate to request a variation to the design.

Table 17: Benefits and Risks of Variation Processes during the Construction Phase

Benefits	Risks
<ul style="list-style-type: none">• Variation processes enable government to request changes to the design of the facility in response to changing needs, or to incorporate new technologies and innovations	<ul style="list-style-type: none">• It may be difficult to subject a variation requested during the operations phase to a competitive process or an accurate benchmarking of the price, and therefore it may be difficult to secure value for money for the variation – however the difficulty is less acute than during construction• The variation process may be cumbersome and time consuming• The private party may require a relaxation of the contractual performance requirements during the time the variation is being implemented

5 Conclusions and Recommendations

Economies with well-developed PPP Frameworks have, through experience, developed a range of mechanisms to promote good design in social infrastructure PPPs. These mechanisms have been influenced by broader procurement regulations and policy considerations, such as the need for fairness and transparency in government procurement.

The benefits and risks of the various mechanisms identified in this report will vary in their significance depending upon a range of factors including the particular PPP model being used, the applicable legal system, and relative importance of design in comparison to the other outcomes that will be driven through delivery of the project as a PPP.

Some of the mechanisms identified in this report are substitutes for one another – for example, Australia’s form of interactive tender process (discussed in section 4.2.4) and competitive dialogue (discussed in section 4.2.1) serve similar purposes, and it would usually be unnecessary to use both of these mechanisms. Other mechanisms identified in this report are complementary and can be used together – for example, user groups (discussed in section 4.1.2) complement functional brief development (discussed in section 4.1.1).

Based on the analysis in this report of mechanisms used in PPP Frameworks to promote good design outcomes, Foster Infrastructure has identified the following recommendations for governments wishing to best practice in design for social infrastructure PPPs:

- 1. Governments should identify an appropriate combination of mechanisms to promote design outcomes through the stages of the PPP lifecycle, taking into account relevant factors such as the particular PPP model being used, the applicable legal system, and relative importance of design in comparison to the other outcomes that will be driven through delivery of the project as a PPP.**
- 2. Action taken in the earlier stages of the PPP process will have the greatest impact upon design outcomes. Governments should therefore devote sufficient time and allow sufficient resources for proper consideration of design issues during the project development phase of PPPs.**
- 3. Governments should develop functional briefs to provide a robust foundation for the broad range of other activities that drive good design outcomes in social infrastructure PPPs.**
- 4. Governments should involve user groups in PPP project development due to their understanding of how design influences service delivery, but should also ensure that project teams carefully manage these groups.**
- 5. For projects that involve complex design issues, government should consider conducting market sounding in relation to these issues prior to commencement of the formal tender process. However the market sounding process should be carefully managed.**
- 6. Government architects can provide expertise that enhances the effectiveness of other design related activities throughout the PPP lifecycle.**
- 7. Governments should consider establishing community advisory groups as a means of two-way communication between the project team and the community,**

particularly in relation to urban design and master planning issues. However community expectations must be appropriately and efficiently managed.

8. Governments should establish mechanisms for interaction between government and bidders during the tender process to ensure that the design solutions developed by bidders meet government's needs. This process should not be structured as a negotiation of government's design requirements, as these requirements should have been fully developed prior to the tender process. The focus of the interaction should be on ensuring the bidders understand these requirements.
9. Governments should only require bidders to follow design templates and standards if there is only one feasible or acceptable solution to the relevant aspect of design. To the extent possible, such templates and standards should be expressed in output terms.
10. Governments should only mandate the overall design where there is compelling reason to give design considerations priority over other aspects of the project. In circumstances where this is the case, government should reconsider whether PPP delivery is the best delivery model for the project, as the scope for innovation and value for money may be compromised by the mandated design.
11. Providing the risks can be managed by the project team and it is permissible under the relevant procurement rules, governments should use qualitative evaluation of bidders' designs in order to drive good design outcomes.
12. Governments should ensure that designs are sufficiently developed by bidders during the competitive tender process so that any subsequent design review need only focus on compliance of the detailed design documentation with the PPP contract. The design review process must be carefully managed to prevent government taking back risk.

Appendix 1 – The European Commission’s Competitive Dialogue Process

In March 2004 the European Commission published Directive 2004/18/EC, which introduced a new Competitive Dialogue procurement process. The key stages in the process include the following²⁷:

- A pre-qualification process is used to select a number of bidders who are invited to participate in the dialogue process
- Successive stages of dialogue are conducted with the invited bidders
- Following completion of the dialogue, government finalises its request for tenders and the bidders submit their final tenders.

The earliest phase of dialogue typically focuses on the bidders’ proposed technical solutions²⁸, which would include design issues.

Government can structure the process so that the number of bidders can be reduced through the dialogue stages by “down selecting” bidders whose solutions are not expected to meet government’s needs²⁹.

During the dialogue process, bidders refine their proposed solutions and government refines its contractual position in respect of each proposed solution. As a result, when government asks the bidders to submit their final tenders, it may ask each bidder to bid on the basis of a different contract³⁰. Government then needs to consider how to evaluate the bids on a consistent basis³¹.

As the European Commission rules give government only limited ability to negotiate with bidders after the dialogue is completed, government needs to substantially agree all aspects of the project, including design matters, during the dialogue stages³².

²⁷ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 11. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

²⁸ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 20. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

²⁹ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 20. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

³⁰ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 21. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

³¹ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 21. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

³² National Audit Office, “Improving the PFI Tendering Process” (8 March 2007), page 7. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx); Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 24. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

Appendix 2 – RIBA Smart PFI Model³³

In 2005, the Royal Institute of British Architects (RIBA) proposed changes to the United Kingdom's PPP procurement processes. RIBA believed that these changes would rectify problems it claimed existed affecting design quality, and deliver broader benefits in terms of reducing the time and cost of bidding for social infrastructure PPP projects. Following a consultation process, RIBA released details of its preferred "Smart PFI" model in 2006.

Prior to the tender phase

Under the Smart PFI model, prior to the tender phase the public sector client appoints a management and design team, chosen through a competitive process for their creative skills and understanding of the client's area of expertise.

The successful team then works in close collaboration with client representatives and other stakeholders to develop an intimate knowledge of the client's strategic and operational needs and set an appropriate vision for the project supported by research and visits to class-leading facilities.

The design team is required to produce:

- a well-researched and comprehensive design brief
- site analyses and selection
- an outline design for the project, achieving full user-client sign-off on content, layout and quality benchmarks
- an output specification
- an analysis of buildability and construction logistics
- a robust budget for the project based on the outline design solution and taking account of all site specific costs
- a further client sign-off to confirm the affordability of the project
- planning approval (if appropriate).

During the tender phase

Instead of developing an entirely new design, bidders are asked to develop the public sector's design sufficiently to build up a tender.

The consortia are challenged to use their innovation, competing to demonstrate how they could most efficiently deliver the required design solution in terms of building methodologies, value engineering, lean construction, facilities management, financing and the provision of partnering services where appropriate.

³³ Source: Royal Institute of British Architects, "Smart PFI Position Paper" (2006). (Available at: <http://www.architecture.com/Files/RIBAHoldings/PolicyAndInternationalRelations/Policy/SmartPFI/SmartPFIPositionPaper.pdf>.)

They are also invited to identify any areas of the design where they feel improvements could be made or any opportunities for additional income generation offered by the site. Each bidder works with its own design team.

The design team that prepared the outline design for the public sector client may be retained to judge consortium proposals.

Appendix 3 – Australia’s Interactive Tender Process³⁴

Governments in Australia usually conduct an interactive tender process for social infrastructure PPPs. This process involves holding a series of individual interactive workshops with shortlisted bidders after government’s request for proposals has been issued.

The interactive tender process provides shortlisted bidders with an opportunity to discuss the development of their concepts and designs and to seek clarification and feedback in the context of the government’s output requirements, before lodging proposals. The workshops also minimise the risk of any misunderstanding of the government’s requirements.

Objective of the process

The objective of the interactive tender process is to improve the quality of bid submissions and ultimately deliver better outcomes for the public, through clear communication of the government’s requirements to ultimately influence the overall quality of proposals received from shortlisted bidders.

Structure of the process

The interactive tender process typically involves a series of presentations and workshops, usually numbering between three and 10 per shortlisted bidder. The workshops are resource intensive. Each will normally involve representatives of both the project team and a shortlisted bidder. The workshops are held with individual bidders to enable open communication of intellectual property.

Protecting government from the risks associated with the process

The request for proposals specifies the procedures, timetable and protocols for the interactive tender process. Ground rules for the workshops are established and provided to shortlisted bidders before the workshops. Shortlisted bidders notify government in writing of their acceptance of the procedures, protocols and ground rules.

The terms and conditions of tendering require bidders to acknowledge that they will not rely on the representations made by government during the procurement process, nor will they attribute any loss to comments provided. However, a residual risk to government remains, is managed by:

- providing the project team with a clear understanding of the interactive tender process and its boundaries at the outset of the request for proposals period (including a training session if required);
- providing a clear set of objectives and ground rules for bidders at the start of the process. These include an explanation that government’s feedback must necessarily be qualified by its inability to form a full interpretation of a bidder’s proposal prior to bid submission. Government can address particular parts of a proposal separately, but may not be in a position to provide feedback on the ‘sum of the parts’. Ultimately,

³⁴ Source: Infrastructure Australia, “National PPP Guidelines: Volume 2: Practitioners’ Guide” (March 2011), page 24-5 and Appendix E. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_2_Practitioners_Guide_Mar_2011.pdf).

the bidders must take the risk that their proposals as a whole respond adequately to the request for proposals.

Protecting bidders' intellectual property

Particular care is taken by government's project team to protect each bidder's commercial-in-confidence material and intellectual property, as these elements can provide a competitive advantage and often have a commercial value. Ideas from one bidder are not communicated to other bidders.

To the extent that bidders choose to provide information on their proposals to government to seek feedback, the project team is careful about the circulation of this material among team members. Circulation is on an 'as needs' basis only.

Appendix 4 – Examples of qualitative design evaluation criteria

Set out below are examples of the design evaluation criteria for a PPP hospital project and a PPP schools project from Australia. The evaluation criteria for these projects also included examination of matters such as cost, risk, commercial opportunities, service requirements and project management.

Royal Children’s Hospital Project – Design-related evaluation criteria³⁵

Criterion E - Master Plan

The State will evaluate the:

- proposed vision and integration of the master plan;
- Site circulation and provision of appropriate traffic management;
- urban architectural form and fit and relationship to the built and natural environment; and
- the quality and layout of the Site.

Criterion F - Design

The State will evaluate the:

- extent to which the Proposal reflects the Design Principles;
- functionality and operational efficiency of the proposed design;
- contribution of the proposed design towards an efficient whole life cost for the Facility;
- architectural quality of the proposed design;
- process for Equipment selection and appropriateness and quality of the selected Equipment;
- flexibility and expansion capability of the Facility;
- appropriateness and quality of the engineering and building infrastructure services;
- ecological sustainability of the design;
- extent to which the Proposals demonstrate innovation;
- design of any Commercial Opportunities;

³⁵ Department of Human Services and Department of Treasury and Finance (Victoria, Australia), “Partnerships Victoria in Schools Project Summary” (February 2008), page 25. (Available at: www.partnerships.vic.gov.au.)

- extent to which Proposals consider and respond to the planning framework; and
- extent of Departures from the requirements of the Design Brief.

Partnerships Victoria in Schools Project – Design evaluation criteria³⁶

The State will evaluate the designs for each of the Schools. In doing so, the key issues that will be considered include:

- Design solution – the State will evaluate the extent to which the proposal reflects the functionality and operational efficiency of the proposed design and otherwise reflects the design principles;
- Master Planning – the State will evaluate amongst other things:
 - Design documentation – the State will evaluate the extent to which the design documentation and associated information illustrates the proposals in accordance with the requirements of the Output Specification;
 - Flexibility and future expansion capacity – the State will evaluate the flexibility and expansion capability of the Facilities including the extent to which the design facilitates the use of Relocatables;
 - Site access and traffic provisions – the State will evaluate the access and traffic arrangements on and around the sites for pedestrian, bicycle and vehicular interaction;
- Facility architecture – the State will evaluate the architectural quality of the proposed design and will consider as part of this criteria:
 - Whole-of-life design – the State will evaluate the contribution of the proposed design towards an efficient whole life cost for the schools;
- Equipment – the State will evaluate the process for equipment selection and appropriateness and quality of the selected equipment;
- Engineering services – the State will evaluate the appropriateness and quality of the engineering and building infrastructure services;
- Ecological sustainability – the State will evaluate the ecological sustainability of the design;
- Innovation – the State will evaluate the extent to which the proposals demonstrate innovation in each of the above areas; and
- Planning framework – the State will evaluate the extent to which proposals consider and respond to the planning framework.

³⁶ Department of Education and Early Childhood Development and Department of Treasury and Finance (Victoria, Australia), “Partnerships Victoria in Schools Project Summary” (March 2009), page 26. (Available at: www.partnerships.vic.gov.au.)

Appendix 5 – The Design Development Process

In social infrastructure PPPs in Australia, the PPP contract provides for a design development process to occur following financial close. The key features of this process are as follows³⁷:

- The PPP contractor must give government's project director drafts of its detailed design documentation.
- The project director may, but need not, review these drafts and provide comments and recommendations to the PPP contractor. Those comments must only relate to compliance of the draft designs with the PPP contract, and must be provided within 20 days of receiving the drafts.
- The PPP contractor must amend the draft designs to reflect the project director's comments and recommendations, and resubmit the designs.
- The contract protects government against the possibility that, by commenting on the designs, it takes back risk – the PPP contractor remains solely liable for ensuring that its designs comply with the PPP contract.

The design documentation is not reviewed by the project director alone – typically the project director seeks input from a range of experienced “client representatives” within government. For large and complex projects, particularly where the infrastructure will be operated by government, this design review process is, in itself, a major undertaking. For example, in a major hospital PPP in Australia, the process required³⁸:

- Up to 80 individual groups
- Planning group members committing to attend design review meetings, as difficulties were identified with having proxies attend
- Investigation of web based communication to facilitate the flow of design information.

Similarly, another major hospital PPP in Australia involved³⁹:

... input from staff in the design process through the 74 user groups and 15 reference groups... [The builder] met with these groups in excess of 1,500 times to ensure the clinical objectives were met.

³⁷ See, for example, New South Wales Department of Education and Training, “New Schools 2 Public Private Partnership Project – Summary of Contracts” (6 July 2006), page 19. (Available at: https://www.det.nsw.edu.au/detresources/ppp2summary_diWKmKHbAQ.pdf.)

³⁸ Government of South Australia, “The new Royal Adelaide Hospital Project – Next Steps – Design and Development” (May 2011). (Available at: <http://www.sahealth.sa.gov.au/wps/wcm/connect/491f380047541cd38724ff2e504170d4/NRAHOverviewPresentation-SSS-MPO-1105v2.pdf?MOD=AJPERES&CACHEID=491f380047541cd38724ff2e504170d4>.)

³⁹ Lend Lease, “Delivering a World Class Facility to Meet Australia's Future Healthcare Needs” (30 April 2012). (Available at: http://www.hospitalhealth.com.au/index.php?option=com_k2&view=item&id=817:delivering-a-world-class-facility-to-meet-australias-future-healthcare-needs&Itemid=238&tmpl=component&print=1.)



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Comparative Study of Frameworks to protect the Long Term Interests of Pension Funds Investing in Public-Private Partnerships

Contents

1	Executive Summary	3
1.1	Purpose of this Report	3
1.2	The Relationship between Pension Funds and PPPs	3
1.3	Barriers to investment and common responses.....	3
1.4	The impact of different Pension Fund systems.....	3
1.5	Policy responses in Latin American countries	4
1.6	Recommendations	4
2	Methodology.....	6
3	Background – The Relationship between PPPs and Pension Funds	7
3.1	Why might Pension Funds wish to invest in PPPs?.....	7
3.2	Why might PPP Programs benefit from Pension Fund investment?	7
3.3	The Relationship between PPP Frameworks and Pension Fund Regulation.....	7
4	Barriers to Investment and Common Responses	9
4.1	Common barriers to pension fund investment in PPPs	9
4.2	Common policy responses.....	10
4.2.1	Policy actions to address barriers in PPP Frameworks	10
4.2.2	Policy actions to address barriers in Investment and Financial Market Frameworks ...	10
4.2.3	Policy actions to address barriers in Pension Fund Frameworks	10
5	Case Study 1 – A Comparison of Pension Fund Investment in PPPs in Australia and Canada ..	12
5.1	Pension Fund Systems in Australia and Canada.....	12
5.2	Barriers to Pension Fund Investment in Infrastructure in Australia and Canada	13
5.3	Examples of the differences in Australian and Canadian pension fund appetites for PPP investment.....	14
5.3.1	Equity investment in the Australian toll road projects	14
5.3.2	Debt investment by Pension Funds in PPPs in Australia and Canada.....	15
5.4	Implications of differences in the Australian and Canadian Pension Fund Systems for PPP Frameworks.....	15
6	Case Study 2 – Measures undertaken in Latin America to promote Pension Fund Investment in PPPs	16
6.1	Reforms that have promoted Pension Fund investment in Latin American Infrastructure ...	16
6.2	Implications of Latin American reforms.....	17
6.2.1	PPP Framework Initiatives	17
6.2.2	Investment and Financial Market Framework Initiatives	18
6.2.3	Pension Fund Framework Initiatives.....	18
7	Conclusions and Recommendations	19

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1 Executive Summary

1.1 Purpose of this Report

This report has been prepared by Foster Infrastructure for the APEC Business Advisory Council. It presents the findings of a desktop research study of frameworks to protect the long-term interests of pension funds investing in Public Private Partnerships (PPPs). These findings are intended to provide guidance for government officials from APEC economies on good practice in policy and regulatory reform so as to promote investment by pension funds in PPPs.

1.2 The Relationship between Pension Funds and PPPs

Pension funds investing in PPPs typically do so directly or indirectly through financial instruments issued by the PPP contractor. Several policy and regulatory frameworks affect this investment:

- The applicable PPP Framework regulates the PPP contract
- The financial instruments issued by the PPP contractor are regulated by Investment and Financial Market Frameworks
- The pension funds themselves are regulated by the applicable Pension Fund Framework.

1.3 Barriers to investment and common responses

The Organisation for Economic Cooperation and Development (OECD) has identified a range of common barriers to pension fund investment in infrastructure, which are set out in section 4 of this report. Each of these barriers relates to more or more of the frameworks identified in section 1.2.

The OECD has identified three broad policy responses to overcome these barriers to investment:

- Creating policy frameworks supportive of long-term investment – this response can require changes to each of the frameworks identified in section 1.2.
- Providing a transparent environment for infrastructure investment – this response can require changes to the PPP Framework and the Investment and Financial Market Frameworks.
- Reforming the regulatory framework for long-term investment – this response can require changes to the Investment and Financial Market Frameworks and the Pension Fund Framework.

1.4 The impact of different Pension Fund systems

Different pension fund systems result in funds within those systems facing different issues when investing in PPPs. This is illustrated by experience in Australia and Canada, two similar economies with very different pension fund systems.

Australia's pension fund system is dominated by defined contribution funds with individual pension fund members having significant flexibility to determine how their funds are invested. This has led to a focus by Australian pension funds on short term performance and liquidity, with infrastructure investment seen as a means of diversification but constrained by the illiquidity and long-term nature of these assets.

Canada's pension fund system is dominated by defined benefit funds, which require a longer-term strategy of matching assets to future liabilities, rather than short-term performance and liquidity. Canadian pension funds are therefore more concerned that infrastructure investment may result in a mismatch between the return on their investments and the long-term inflation rate.

As a result of these differences in their pension fund systems, the features of PPP Frameworks of particular interest to Australian pension funds differ from the features of PPP Frameworks of particular interest to Canadian pension funds.

1.5 Policy responses in Latin American countries

Pension funds have evolved significantly in Latin America in the last 30 years. As these funds have grown, direct investment by them in infrastructure has been gaining importance. This has been facilitated by a range of reforms to PPP Frameworks, Investment and Financial Market Frameworks, and Pension Fund Frameworks. Latin American countries have generally not relied upon reforms to one Framework in isolation.

Reforms to Latin American PPP Frameworks to promote institutional investment in PPPs have focused on structuring PPP contracts so that projects provide secure and productive investments. In essence, these initiatives ensure that PPP projects are "bankable" – that is, the projects offer risk/reward propositions that are sufficiently attractive to investors.

Reforms to Latin American Investment and Financial Market Frameworks to promote institutional investment in PPPs have focused on the establishment of infrastructure investment funds and new forms of financial instruments. These initiatives enable financial markets to better match the investment appetite of pension funds with the risk reward investment opportunity offered by infrastructure projects.

Experience from Latin America demonstrates that regulatory barriers within the Pension Fund Framework can constrain pension funds' ability to invest in infrastructure, including through PPPs, even if the PPP Framework in itself results in PPP projects offering good investment returns. Removal of these barriers within the Pension Fund Framework is therefore often a necessary element of any initiative to promote pension fund investment in PPPs.

1.6 Recommendations

Based on the analysis in this report, Foster Infrastructure has identified the following recommendations for governments wishing to promote pension fund investment in PPP projects:

1. **Governments wishing to promote pension fund investment in PPPs should consider the impact of each of the following policy and regulatory frameworks:**
 - a. **The PPP Framework**
 - b. **Investment and Financial Markets Frameworks**

c. The Pension Fund Framework.

- 2. Policy changes to PPP Frameworks should support long-term investment and provide transparency for all potential PPP investors, rather than focusing specifically on the needs of pension funds.**
- 3. PPP Frameworks should offer attractive risk/reward propositions to investors, while retaining the underlying benefits of the PPP model, including the allocation of risk, where appropriate, to the private sector.**
- 4. Policy changes to Investment and Financial Markets Frameworks should facilitate the repackaging of the risk/reward investment opportunities offered by PPPs into products that are attractive and available to investors, including pension funds.**
- 5. If PPPs offer attractive investment opportunities, and the Pension Fund Framework allows investment, there will be a strong incentive for the pension fund sector itself to establish new financial instruments and infrastructure investment funds to facilitate investment in PPPs. However, if there are regulatory barriers within the Investment and Financial Market Framework that prevent the pension fund sector acting in this way, there is a case for government to remove those regulatory impediments.**
- 6. Policy changes to Pension Fund Frameworks should balance the benefits of removing barriers to investment (including investment in PPPs) against the fiduciary and prudential protections required in a pension fund system.**
- 7. In reforming policy and regulatory frameworks to promote pension fund investment in PPPs, governments should consider how the unique features of their pension fund systems and PPP markets affect the appetite of pension funds for PPP investments.**

2 Methodology

In 2011, APEC ministers and senior officials identified frameworks to protect the long-term interests of pension funds investing in PPPs as a key area of interest.

Many economies have taken steps to remove barriers to pension fund investment in PPPs, but these steps generally do not involve introducing specific measures within the PPP Framework to protect the long-term interests of pension fund investors. Reasons for not using specific measures to protect the long-term interests of pension fund investors in PPPs may include:

- Concerns that such measures may transfer unacceptable levels of risk back to government
- A preference for market based solutions that do not discriminate between particular classes of investors – such solutions are likely to best promote competition amongst PPP investors and innovation by project sponsors seeking finance, and thus drive lower project costs.

Following discussions with the APEC Business Advisory Council, Foster Infrastructure agreed to conduct a desktop research study that identifies the barriers that typically prevent or limit pension fund investment in PPPs, and the range of approaches that economies have taken to remove these barriers.

This report documents the outcomes of the desktop research study. Foster Infrastructure has:

- Examined the relationship between PPPs and pensions funds, identifying the different regulatory and policy frameworks that affect pension fund investment in PPPs (section 3)
- Analysed the barriers within these frameworks that typically prevent or limit pension fund investment in PPPs, and the range of approaches that economies have taken to remove these barriers (section 4)
- Studied the barriers to pension fund investment in PPPs in Australia and Canada to identify how different pension fund systems result in different barriers to investment (section 5)
- Reviewed the measures taken to facilitate pension fund investment in PPPs in Latin American countries to identify common approaches to reform (section 6)
- Provided recommended actions to remove barriers to pension fund investment in PPPs (section 7).

3 Background – The Relationship between PPPs and Pension Funds

3.1 Why might Pension Funds wish to invest in PPPs?

Infrastructure investments are attractive to pension funds for several reasons¹:

- Infrastructure investments have long terms that can match the long duration of pension fund liabilities
- Infrastructure investments often have returns linked to inflation, and hence can hedge pension fund liabilities that are sensitive to inflation
- Infrastructure investments can generate attractive investment yields in excess of those available in the fixed income market, but with potentially higher volatility
- Infrastructure investments provide portfolio diversification, due to their low correlation with traditional asset classes.

PPPs, through their use of private finance, provide one of the forms in which pension funds can invest in infrastructure.

3.2 Why might PPP Programs benefit from Pension Fund investment?

The infrastructure requirements of many countries are growing, and the required level of investment cannot be financed by traditional sources of public finance alone². PPPs provide a means of accessing private finance to fill the infrastructure “gap”³. In recent years, the financial crisis has also constrained the availability of traditional sources of private finance⁴. This has led to a recognition that institutional investors, including pension funds, can play a more active role in financing infrastructure⁵, particularly PPPs.

3.3 The Relationship between PPP Frameworks and Pension Fund Regulation

Pension funds investing in PPPs typically do so directly or indirectly through financial instruments issued by the PPP contractor. As illustrated in Figure 1 on page 8, several policy and regulatory frameworks can affect this investment:

- The applicable PPP Framework regulates the PPP contract

¹ OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), pages 29, 51-52. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

² OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), pages 27 and 33-35. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

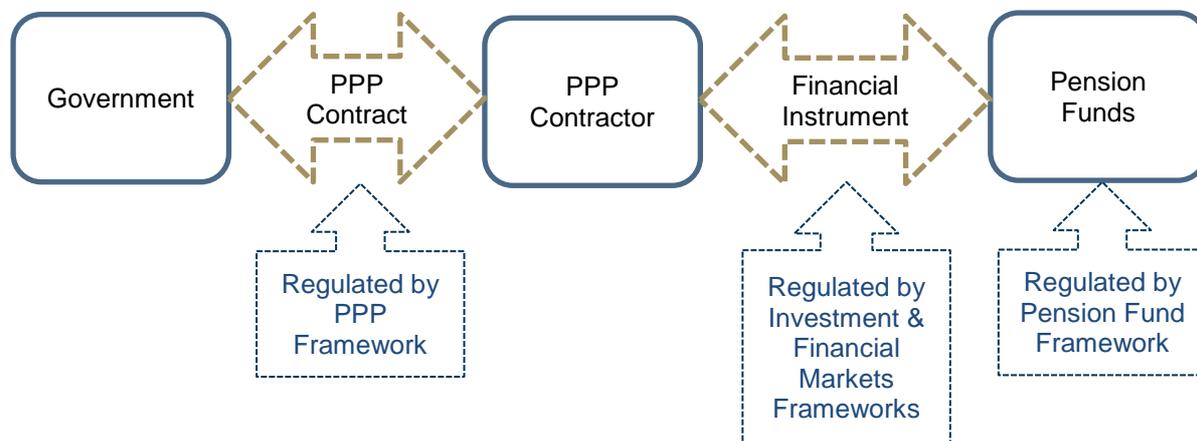
³ OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), pages 36-37. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

⁴ OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), page 39. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

⁵ OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), page 69. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

- The financial instruments issued by the PPP contractor are regulated by Investment and Financial Market Frameworks
- The pension funds themselves are regulated by the applicable Pension Fund Framework.

Figure 1: Frameworks relevant to Pension Fund Investment in PPPs



Economies seeking to encourage pension fund investment in PPPs typically undertake one or more of the following actions:

- Modifying the PPP Framework to enable PPP contractors to offer acceptable risk/reward propositions to investors
- Modifying Investment and Financial Market Frameworks to enable PPP contractors to issue appropriate financial instruments to investors or to create vehicles such as infrastructure investment funds to intermediate between PPP contractors and potential investors
- Modifying Pension Fund Frameworks to broaden the ability of pension funds to invest in PPPs.

These steps remove barriers to pension fund investment in PPPs, but generally do not involve specific measures to protect the long-term interests of pension fund investors in PPPs. Reasons for not using specific measures to protect the long-term interests of pension fund investors in PPPs may include:

- Concerns that such measures may transfer unacceptable levels of risk back to government
- A preference for market based solutions that do not discriminate between particular classes of investors – such solutions are likely to best promote competition amongst PPP investors and innovation by project sponsors seeking finance, and thus drive lower project costs.

4 Barriers to Investment and Common Responses

4.1 Common barriers to pension fund investment in PPPs

The Organisation for Economic Cooperation and Development (OECD), in a 2011 survey, identified a range of common barriers to pension fund investment in infrastructure⁶. Figure 2 illustrates how the identified barriers relate to the three key frameworks that affect the ability of pension funds to invest in PPPs.

Figure 2: Barriers to Investment in Infrastructure (Sources: OECD⁷, Foster Infrastructure)

PPP Framework	Investment & Financial Market Framework	Pension Fund Framework
Lack of Political Commitment		
Regulatory Instability		
Fragmentation of the market among different levels of government		
No clarity of investment opportunities		
High bidding costs in the procurement process		
Investment opportunities are perceived as being too risky		
Lack of transparency of the infrastructure sector		
Shortage of data on infrastructure project performance		
	Misalignment of interests between infrastructure funds and pension funds	
	Negative perception of value	
		Lack of scale of pension funds
		Lack of expertise within pension funds
		Short-termism of investors
		Regulatory barriers

Figure 2 illustrates the following features of the identified barriers to pension fund investment in infrastructure:

- Lack of political commitment and regulatory instability can compromise all three of the Frameworks
- Some of the barriers relate solely to either the PPP Framework or the Pension Fund Framework

⁶ OECD, "Pension Funds Investment in Infrastructure – A Survey" (September 2011). (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

⁷ OECD, "Pension Funds Investment in Infrastructure – A Survey" (September 2011), pages 68-69. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

- Each barrier that relates to the Investment and Financial Markets Framework also relates to either the PPP Framework or the Pension Fund Framework – this reflects the fact that financial markets facilitate pension fund investment in infrastructure, and barriers exist where there is a mismatch between the PPP Framework and ability of financial markets to provide funding, or between the products available in the financial markets and the appetite and ability of pension funds to invest.

4.2 Common policy responses

OECD has identified three main policy actions to promote pension fund investment in infrastructure⁸. Figure 3 identifies how these policies actions relate to the three key frameworks that affect the ability of pension funds to invest in PPPs.

Figure 3: Policy actions to promote long-term investments (Sources: OECD⁹, Foster Infrastructure)

PPP Framework	Investment & Financial Market Framework	Pension Fund Framework
Create policy frameworks supportive of long-term investment		
Provide a transparent environment for infrastructure investment		
	Reform the regulatory framework for long-term investment	

4.2.1 Policy actions to address barriers in PPP Frameworks

The barriers in PPP Frameworks set out in Figure 2 can be addressed through the creation of a supportive and transparent PPP Framework. It should be noted that addressing these barriers does not require any actions specifically designed to protect pension fund investment in PPPs. The policy actions taken should support long-term investment and provide transparency for all potential PPP investors, rather than focusing specifically on pension funds. If pension funds can provide financing for PPPs on terms that offer better value for money for government than other sources of finance, those pension funds should not require any special protections within the PPP framework that are not available to other investors.

4.2.2 Policy actions to address barriers in Investment and Financial Market Frameworks

All three of the policy actions identified in Figure 3 can address the barriers in Investment and Financial Market Frameworks set out in Figure 2. This reflects the role of investment and financial markets in providing a means of intermediation between pension funds and PPPs. These frameworks should facilitate the repackaging of the risk/reward investment opportunities offered by PPPs into products that are attractive and available to investors, including pension funds.

4.2.3 Policy actions to address barriers in Pension Fund Frameworks

Pension funds tend to be heavily regulated due to their fiduciary responsibility, and this regulation is a major driver of pension fund investment strategies¹⁰. Investment restrictions

⁸ OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), page 69. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

⁹ OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), page 69. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

placed upon pension funds vary widely, but can generally be grouped into the following categories¹¹:

- Limits on pension fund investment in selected assets
- Limits on foreign assets
- Other quantitative regulations.

In creating appropriate policy and regulatory environments within the Pension Fund Framework, governments need to balance the benefits of removing barriers to investment (including investment in PPPs) against the fiduciary and prudential protections required in a pension fund system.

¹⁰ OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), pages 54. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

¹¹ OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), pages 54. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

5 Case Study 1 – A Comparison of Pension Fund Investment in PPPs in Australia and Canada

5.1 Pension Fund Systems in Australia and Canada

Australia and Canada have similar economies with similar and well-developed PPP Frameworks and financial markets. They are regarded as leaders in pension fund investment in infrastructure¹². Nevertheless, Australia and Canada have very different pension fund systems. Table 1 sets out key features of the pension fund systems in each country.

Table 1: Key Features of Pension Fund Systems in Australia and Canada (Source: OECD¹³)

	Australia	Canada
Market value of pension funds in USD (2009)	\$808 billion	\$806 billion
Market value as % of GDP (2009)	82.3%	62.9%
Primary Pension Scheme Type	Defined Contribution	Defined Benefit
Pension Funds' primary objective in investing in Infrastructure	Portfolio diversification	Strong long-term income
Percentage of Pension Fund Assets invested in Infrastructure	5% (2012)	3.84% (2009)
Percentage of Infrastructure Portfolio invested in Domestic Assets [sample funds]	< 50%	21.2%

The pension fund systems in Australia and Canada are broadly similar in size and in the proportion of funds invested in infrastructure. However the Australian pension fund system primarily consists of defined contribution schemes, whereas the Canadian system primarily consists of defined benefit schemes.

Under a defined contribution scheme, pension fund members make contributions and receive future benefits based upon the investment return generated from those contributions. Under a defined benefit scheme, pension fund members are entitled to specific benefits defined in the scheme rules. It is the responsibility of the defined benefit pension fund manager to invest contributions appropriately so that the fund can pay these benefits in the future. Therefore, pension fund members directly bear market risks in a defined contribution scheme but not in a defined benefit scheme.

¹² World Bank, "Best Practices in Public-Private Partnerships Financing in Latin America – Conference Report" (September 2011), page 23. (Available at http://einstitute.worldbank.org/ei/sites/default/files/Upload_Files/BestPracticesPPFinancingLatinAmericaConferenceReport.pdf); Inspiratia, "US Pension Funds – A New Class of Investor" (2010), page 2. (Available at: <http://www.inspiratia.com/writable/content/pdf/US%20pension%20funds.pdf>.)

¹³ OECD, "Pension Funds Investment in Infrastructure – A Survey" (September 2011), pages 73-106. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

Under the Australian system, pension fund members have significant choice as to how their funds are invested. Members can switch between investment options at short notice, and can easily move their investment from one pension fund manager to another – this flexibility is often referred to as “member choice and portability”.

5.2 Barriers to Pension Fund Investment in Infrastructure in Australia and Canada

The predominance of defined contribution schemes in Australia and defined benefit schemes in Canada results in there being differences in the barriers to pension fund investment in infrastructure in the two countries. The major barriers are set out in Table 2.

Table 2: Barriers to Pension Fund Investment in Infrastructure in Australia and Canada (Source: OECD¹⁴)

	Australia	Canada
Lack of transparency about project pipeline and investment opportunities	✓	✓
Perception of high risk	✓	✓
Problems of scale	✓	✓
Lack of long term infrastructure plans	✓	
High bidding costs	✓	
Illiquidity constraints	✓	
Long-term investments are not well matched to pension fund liabilities	✓	
Insufficient internal expertise within pension funds	✓	
Pension funds have an excessive focus on short term returns	✓	
Insufficient inflation hedge		✓
Infrastructure does not fit into other asset classes		✓
Negative public perception of infrastructure investment		✓
Foreign investment risks		✓

The predominance of defined contribution funds in Australia, and the member choice and portability features of this system, result in Australian pension funds focusing on short term investment performance and needing significant liquidity in order to respond to instructions from their members. Australian pension funds therefore see infrastructure investment as a means of diversification, but are constrained by the illiquidity and long-term nature of infrastructure investment.

¹⁴ Source: OECD, “Pension Funds Investment in Infrastructure – A Survey” (September 2011), pages 83 and 100. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

Illiquidity and the long-term nature of infrastructure investment are less of a barrier for Canadian pension funds, as defined benefit schemes require a longer-term strategy of matching assets to future liabilities, rather than short-term returns and liquidity. The barriers to Canadian pension funds' investment in infrastructure therefore relate to longer-term risks. For example, a key risk for defined benefit schemes such as those in Canada is the risk of a mismatch between the return on its investments and the long-term inflation rate.

5.3 Examples of the differences in Australian and Canadian pension fund appetites for PPP investment

5.3.1 Equity investment in the Australian toll road projects

The State of Victoria, Australia, has two toll road projects that have been delivered under PPP contracts:

- On 20 October 1995, the State awarded a company named Transurban a 34 year concession for its CityLink toll road.
- On 14 October 2004, the State awarded a company named ConnectEast a 39 year concession for its EastLink toll road.

Both Transurban and ConnectEast listed on the Australian Stock Exchange following the award of their concessions¹⁵. A stock exchange listing enabled them to raise significant amounts of equity while providing investors with liquidity of their investment.

On 27 October 2009, Canada Pension Plan Investment Board ("CPPIB") and Ontario Teachers' Pension Plan ("OTPP") confirmed that they had submitted an indicative proposal to take over Transurban¹⁶. This bid, which would have resulted in Transurban being delisted from the Australian Stock Exchange, was ultimately unsuccessful.

In August 2011, a consortium of eight international investment funds, which included pension funds from the United Kingdom, South Korea, New Zealand and the United States of America, launched a takeover bid for ConnectEast¹⁷. This bid was ultimately successful, and ConnectEast was delisted from the Australian Stock Exchange in late 2011¹⁸.

The ownership history of the CityLink and EastLink toll roads suggests that their initial public listing was desirable to provide liquidity for Australian institutional investors. The subsequent takeover activity suggests that offshore pension funds, including those from Canada, prefer unlisted ownership structures, which provide less liquidity but enable these pension fund investors to take a longer-term view of the investment.

¹⁵ See generally ConnectEast, "Product Disclosure Statement for the Offer of 1,120,000,000 Stapled Units in ConnectEast Investment Trust (ARSN 110 713 481) and ConnectEast Holding Trust (ARSN 110 713 614)" (October 2004). (Available at: <http://www.connecteast.com.au/page.aspx?cid=533>.)

¹⁶ See Canada Pension Plan Investment Board and Ontario Teachers' Pension Plan, "Canada Pension Plan Investment Board and Ontario Teachers' Pension Plan Confirm Indicative Proposal to Acquire Transurban" (27 October 2009). (Available at: <http://www.transurban.com.au/784816.pdf>.)

¹⁷ Damon Kitney, "Toll Road Operator sees Clear Road Ahead", *The Australian* (9 August 2011). (Available at: <http://www.theaustralian.com.au/business/companies/toll-road-operator-sees-clear-road-ahead/story-fn91v9q3-1226111256901>.)

¹⁸ See ConnectEast, "Investor Centre", <http://www.connecteast.com.au/marketdata.aspx>.

5.3.2 Debt investment by Pension Funds in PPPs in Australia and Canada

Pension funds, along with insurance companies, have led the provision of long-term debt for PPPs in Canada¹⁹. In contrast, Australian pension funds tend to view infrastructure debt as an opportunistic investment²⁰. These different perspectives are consistent with the long-term investment view adopted by Canadian pension funds and the short-term focus of Australian funds.

5.4 Implications of differences in the Australian and Canadian Pension Fund Systems for PPP Frameworks

The differing pension fund systems in Australia and Canada result in different aspects of these countries' PPP frameworks being particularly significant for pension fund investment in PPPs.

As Australian pension funds need short-term liquidity, they are likely to be particularly concerned about any elements in the PPP Framework that may reduce liquidity. For equity investment, Australian pension funds would carefully examine restrictions on changes in control or ownership of the project company²¹. For debt investment, Australian pension funds would carefully examine restrictions on refinancing of that debt²².

In contrast, Canadian pension funds focus on a longer-term strategy of matching assets to future liabilities, and therefore are likely to be particularly concerned about any elements in the PPP Framework that may result in returns on PPP assets departing from expectations. For example, these pension funds will carefully consider the mechanism by which government payments to the project company²³ or user-charges such as tolls²⁴ may be escalated to take account of inflation.

¹⁹ Blake, Cassels and Graydon LLP, "2011 Trends – Infrastructure". (Available at: http://blakes.com/english/legal_updates/reference_guides/Infrastructure_Trends.pdf.)

²⁰ OECD, "Pension Funds Investment in Infrastructure – A Survey" (September 2011), page 99. (Available at: <http://www.oecd.org/dataoecd/59/33/48634596.pdf>.)

²¹ Under Australia's PPP Framework, government has developed a standard position on restrictions on changes in control or ownership – see Infrastructure Australia, "National PPP Guidelines: Volume 3: Commercial Principles for Social Infrastructure" (December 2008), pages 118-119. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/National_PPP_Guidelines_Vol_3_Commercial_Principles_Social_Infrastructure_Dec_08.pdf.)

²² Under Australia's PPP Framework, government has developed a standard position on restrictions on refinancing – see Infrastructure Australia, "National PPP Guidelines: Volume 3: Commercial Principles for Social Infrastructure" (December 2008), pages 128-131. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/National_PPP_Guidelines_Vol_3_Commercial_Principles_Social_Infrastructure_Dec_08.pdf.)

²³ Under Australia's PPP Framework, government determines how such payments will be indexed on a project by project basis – see Infrastructure Australia, "National PPP Guidelines: Volume 3: Commercial Principles for Social Infrastructure" (December 2008), page 47. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/National_PPP_Guidelines_Vol_3_Commercial_Principles_Social_Infrastructure_Dec_08.pdf.)

²⁴ Under Australia's PPP Framework, government determines how such payments will be indexed on a project by project basis – see Infrastructure Australia, "National PPP Guidelines: Volume 7: Commercial Principles for Economic Infrastructure" (February 2011), page 44. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_7_Commercial_Principles_Economic_Infrastructure_Feb_2011.pdf.)

6 Case Study 2 – Measures undertaken in Latin America to promote Pension Fund Investment in PPPs

Pension funds have evolved significantly in Latin America in the last 30 years²⁵. As these funds have grown, direct investment by them in infrastructure has been gaining importance. This has particularly been the case in Peru, Colombia and Chile²⁶. As indicated in Table 3, Chile has a large pension fund sector (close in relative size as a percentage of GDP to the pension fund sectors in Australia and Canada), while Peru and Columbia are leaders in infrastructure's share of pension fund assets.

Table 3: Pension Funds and Infrastructure Investment in Peru, Columbia and Chile (Source: World Bank²⁷)

	Peru	Columbia	Chile
Pension Fund Value as % of GDP (2008, estimated values)	13%	12%	55%
Percentage of Pension Fund Assets invested in Infrastructure (2011, estimated values)	27%	24%	14%

6.1 Reforms that have promoted Pension Fund investment in Latin American Infrastructure

The significant level of Latin American pension fund investment in infrastructure has been facilitated by a range of reforms to PPP Frameworks, Investment and Financial Market Frameworks, and Pension Fund Frameworks. Examples of these initiatives in Latin American countries are set out in Table 4 on page 17.

It is notable that the reforms identified in Table 4 include reforms to each of the relevant Frameworks, and the countries examined have generally not relied upon reforms to one Framework in isolation. For example, Peru has undertaken reforms to each of the Frameworks.

²⁵ World Bank, "Best Practices in Public-Private Partnerships Financing in Latin America: The Role of Innovative Approaches" (January 2012), page 126. (Available at: <http://www.ppiaf.org/sites/ppiaf.org/files/publication/BestPracticesroleofinnovativeapproaches.pdf>.)

²⁶ World Bank, "Best Practices in Public-Private Partnerships Financing in Latin America – Conference Report" (September 2011), page 25. (Available at: http://eoinstitute.worldbank.org/ei/sites/default/files/Upload_Files/BestPracticesPPPFInancingLatinAmericaConferenceReport.pdf.)

²⁷ World Bank, "Best Practices in Public-Private Partnerships Financing in Latin America – Conference Report" (September 2011), page 25. (Available at: http://eoinstitute.worldbank.org/ei/sites/default/files/Upload_Files/BestPracticesPPPFInancingLatinAmericaConferenceReport.pdf); World Bank, "Best Practices in Public-Private Partnerships Financing in Latin America: The Role of Innovative Approaches" (January 2012), page 126. (Available at: <http://www.ppiaf.org/sites/ppiaf.org/files/publication/BestPracticesroleofinnovativeapproaches.pdf>.)

Table 4: Examples of Initiatives undertaken to promote Pension Fund Investment in Infrastructure in Peru, Columbia, Chile and Mexico (Source: World Bank²⁸)

	Peru	Columbia	Chile	Mexico
PPP Framework Initiatives				
<ul style="list-style-type: none"> Structuring of PPP contracts so that projects provide secure and productive investments 	✓	✓	✓	
Investment and Financial Market Framework Initiatives				
<ul style="list-style-type: none"> Government facilitation of the establishment of infrastructure investment funds 	✓			✓
<ul style="list-style-type: none"> Pension fund industry facilitation of the establishment of infrastructure investment funds 	✓			
<ul style="list-style-type: none"> Development of new forms of financial instruments 			✓	✓
Pension Fund Framework Initiatives				
<ul style="list-style-type: none"> Relaxation of regulatory barriers to infrastructure investment 	✓			✓

6.2 Implications of Latin American reforms

6.2.1 PPP Framework Initiatives

Table 4 illustrates that governments in Peru, Chile and Columbia have modified PPP Frameworks to promote institutional investment in PPPs primarily by structuring PPP contracts so that projects provide secure and productive investments. In essence, these initiatives are focussed on ensuring that PPP projects are “bankable” – that is, the projects offer risk/reward propositions that are sufficiently attractive to investors²⁹.

Each of Peru, Chile and Columbia have, to some extent, ensured “bankability” of PPP projects by providing government guarantees against certain risks. They have attempted to structure the guarantees so that the necessary finance can be secured, without government taking on all of the risks of the project – if government takes on all of the risks, the PPP contractor is not incentivised through the risk allocation to deliver good outcomes.

²⁸ See generally World Bank, “Best Practices in Public-Private Partnerships Financing in Latin America – Conference Report” (September 2011). (Available at: http://einstitute.worldbank.org/ei/sites/default/files/Upload_Files/BestPracticesPPFinancingLatinAmericaConferenceReport.pdf); World Bank, “Best Practices in Public-Private Partnerships Financing in Latin America: The Role of Innovative Approaches” (January 2012). (Available at: <http://www.ppiaf.org/sites/ppiaf.org/files/publication/BestPracticesroleofinnovativeapproaches.pdf>.)

²⁹ For detailed descriptions of the mechanisms used in Peru, Columbia and Chile to ensure that projects are bankable, see “Best Practices in Public-Private Partnerships Financing in Latin America: The Role of Innovative Approaches” (January 2012), pages 62-83. (Available at: <http://www.ppiaf.org/sites/ppiaf.org/files/publication/BestPracticesroleofinnovativeapproaches.pdf>.)

The experience in Latin American countries demonstrates that PPP Frameworks should offer attractive risk/reward propositions to investors, while retaining the underlying benefits of the PPP model, including the allocation of risk, where appropriate, to the private sector. This approach does not specifically focus on providing investment opportunities to pension funds, but creates an environment in which pension funds will consider investing in PPPs if the Investment and Financial Market Framework and the Pension Fund Framework allow them to do so.

6.2.2 Investment and Financial Market Framework Initiatives

Table 4 highlights the importance of the establishment of infrastructure investment funds and new forms of financial instruments to facilitate pension fund investment in infrastructure. These initiatives enable financial markets to better match the investment appetite of pension funds with the risk reward investment opportunity offered by infrastructure projects. In doing so, these initiatives reduce the following barriers identified in Section 4 above:

- **Investment opportunities are perceived as being too risky:** Infrastructure investment funds reduce this barrier by providing diversification opportunities and professional management; New forms of financial instruments can provide standardised risk positions
- **Lack of transparency of the infrastructure sector:** Infrastructure investment funds reduce this barrier by employing expert analysts to monitor projects and providing transparent reporting of project and portfolio performance; New forms of financial instruments can be approved by regulators subject to the project company providing transparent information to the market
- **Shortage of data on infrastructure project performance:** Infrastructure investment funds can reduce this barrier by developing a research capability; New forms of financial instruments can be structured to only expose investors to specific risks rather than exposing them to overall project performance.

New financial instruments and infrastructure investment funds can be created or facilitated both by governments and by the pension fund sector. If PPPs offer attractive investment opportunities, and the Pension Fund Framework allows investment, there will be a strong incentive for the pension fund sector itself to establish new financial instruments and infrastructure investment funds to facilitate investment in PPPs. However, if there are regulatory barriers within the Investment and Financial Market Framework that prevent the pension fund sector acting in this way, there is a case for government to remove those regulatory impediments.

6.2.3 Pension Fund Framework Initiatives

Experience from Latin America demonstrates the impact of regulatory barriers within the Pension Fund Framework upon the ability of pension funds to invest in infrastructure, including through PPPs. These barriers can prevent investment, even if the PPP Framework in itself results in PPP projects offering good investment returns. Removal of these barriers is therefore often a necessary element of any initiative to promote pension fund investment in PPPs.

7 Conclusions and Recommendations

Pension fund investment in PPP projects is influenced by three regulatory and policy frameworks:

- The PPP Framework
- The Investment and Financial Market Framework
- The Pension Fund Framework.

The different pension fund systems in Australia and Canada result in pension funds in those countries taking different views as to the merits of infrastructure investment and the issues and risks they face in investing in PPPs. This illustrates that the attractiveness of PPP investment opportunities to pension funds is influenced as much by the Pension Fund Framework as by the PPP Framework.

Any government wishing to facilitate pension fund investment in infrastructure must understand how each of the three frameworks affects the ability of pension funds to invest, and must consider what policy, regulatory and transparency initiatives are required to remove barriers within each framework. Governments in Latin America have taken this approach.

Based on the analysis of PPP Frameworks in this report, Foster Infrastructure has identified the following recommendations for governments wishing to promote pension fund investment in PPP projects:

- 1. Governments wishing to promote pension fund investment in PPPs should consider the impact of each of the following policy and regulatory frameworks:**
 - a. The PPP Framework**
 - b. Investment and Financial Markets Frameworks**
 - c. The Pension Fund Framework.**
- 2. Policy changes to PPP Frameworks should support long-term investment and provide transparency for all potential PPP investors, rather than focusing specifically on the needs of pension funds.**
- 3. PPP Frameworks should offer attractive risk/reward propositions to investors, while retaining the underlying benefits of the PPP model, including the allocation of risk, where appropriate, to the private sector.**
- 4. Policy changes to Investment and Financial Markets Frameworks should facilitate the repackaging of the risk/reward investment opportunities offered by PPPs into products that are attractive and available to investors, including pension funds.**
- 5. If PPPs offer attractive investment opportunities, and the Pension Fund Framework allows investment, there will be a strong incentive for the pension fund sector itself to establish new financial instruments and infrastructure investment funds to facilitate investment in PPPs. However, if there are regulatory barriers within the Investment and Financial Market Framework that prevent the pension**

fund sector acting in this way, there is a case for government to remove those regulatory impediments.

- 6. Policy changes to Pension Fund Frameworks should balance the benefits of removing barriers to investment (including investment in PPPs) against the fiduciary and prudential protections required in a pension fund system.**
- 7. In reforming policy and regulatory frameworks to promote pension fund investment in PPPs, governments should consider how the unique features of their pension fund systems and PPP markets affect the appetite of pension funds for PPP investments.**