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Obtaining value for money on rail project extensions





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Summary

A number of major new rail transport systems are presently being delivered under Public Private Partnerships (PPP) contracts. In each case, it was likely from the outset that the system would be extended during the life of the PPP contract. However, PPP contracts can be inflexible, relative to other contractual delivery models, when it comes to making changes to a project. This lack of flexibility can leave government vulnerable to private sector profiteering on the commercial terms of significant extensions. This paper considers how governments can manage this vulnerability when contracting under a PPP contract. It also considers whether alternative contractual models might provide government with better value for money over the longer term.

1 Introduction

Public Private Partnerships (PPPs) appear to have become the contractual model of choice for the delivery of new major rail systems in Australia. Recent examples include the Sydney Metro Northwest and light rail projects on the Gold Coast, in the Sydney CBD and in Canberra. The PPP model was also considered for the Parramatta light rail project.

In each case, it is expected that the system will be extended during the term of the PPP contract. Indeed, the first extension of the Gold Coast light rail project is already under construction, an extension to the Sydney Metro project is currently in the procurement phase, and a business case for the second stage of the Canberra light rail project is currently being prepared.

But the PPP model is known to be inflexible when it comes to making changes to a project. It is inflexible because PPP contracts are long term in nature, and involve many more parties than more traditional publicly funded contract delivery models.

On each of the projects previously referred to, customers will want the extension to be operationally integrated with the part of the network covered by the PPP contract. Customers will not want to switch vehicles at the point where the extension joins on to the network covered by the PPP contract. To achieve this outcome, the relevant government must secure the agreement of the multiple parties involved in the PPP. This creates some very significant challenges for government, which can impair government's ability to obtain value for money on the extension.

This paper unpacks the challenges associated with extending a rail network that is being operated under a PPP contract. It considers the measures that governments can implement in response to these challenges, and their likely effectiveness. The paper also considers whether alternative contractual models might provide better value for money over the longer term, once the cost of extensions are taken into account.



2 The PPP model

2.1 Australian PPP models



In Australia, the PPP model is generally used to describe contracts that incorporate two key features:

- the bundling of design, construction, maintenance and potentially other services into a single contract; and
- the use of private sector finance.

There are two basic PPP models that are applied to infrastructure projects in Australia. The feature that distinguishes one model from the other is the primary source of revenue used to repay the private sector finance. In one case, the primary source of revenue is charges imposed on users of the infrastructure. These PPPs are known as ‘user-charge PPPs’. In the other case, the primary source of revenue is a service (or availability) payment from the government, which are known as ‘service payment PPPs’.

A key difference between the two models is who bears demand risk. In the case of a user-charge PPP, the private sector typically bears the risk of demand by users (and consequently, revenue from user charges), being less than forecast. In the case of service payment PPPs, demand risk is typically borne by the government.

Of course, there are many variants to these two basic models. Indeed, demand risk can be allocated differently under either model.

There have been periods when user-charge PPPs have dominated the Australian PPP landscape. Most Australian toll roads were delivered under a user-charge PPP model. The user-charge PPP model was

also applied to a number of rail infrastructure projects including the Adelaide - Darwin railway, the Brisbane airport rail link, and the Sydney Airport rail link transactions.

However, in more recent years, it has been the service payment PPP model that has dominated, including in relation to road and rail infrastructure. It is the service payment PPP model that is being used on the rail projects mentioned in the introduction.

The service payment PPP model was preferred for each of these projects because private sector investors and lenders had lost their appetite for demand risk on greenfield transport projects, mostly as a result of the failure of numerous toll roads to achieve their patronage forecasts. The service payment PPP model was also preferred over a user-charge model because user charges would only cover a portion of the operating costs in any event. Government also wanted to control fares, service levels, and the development of the surrounding transport network, which was more easily achieved if government bears the demand risk.

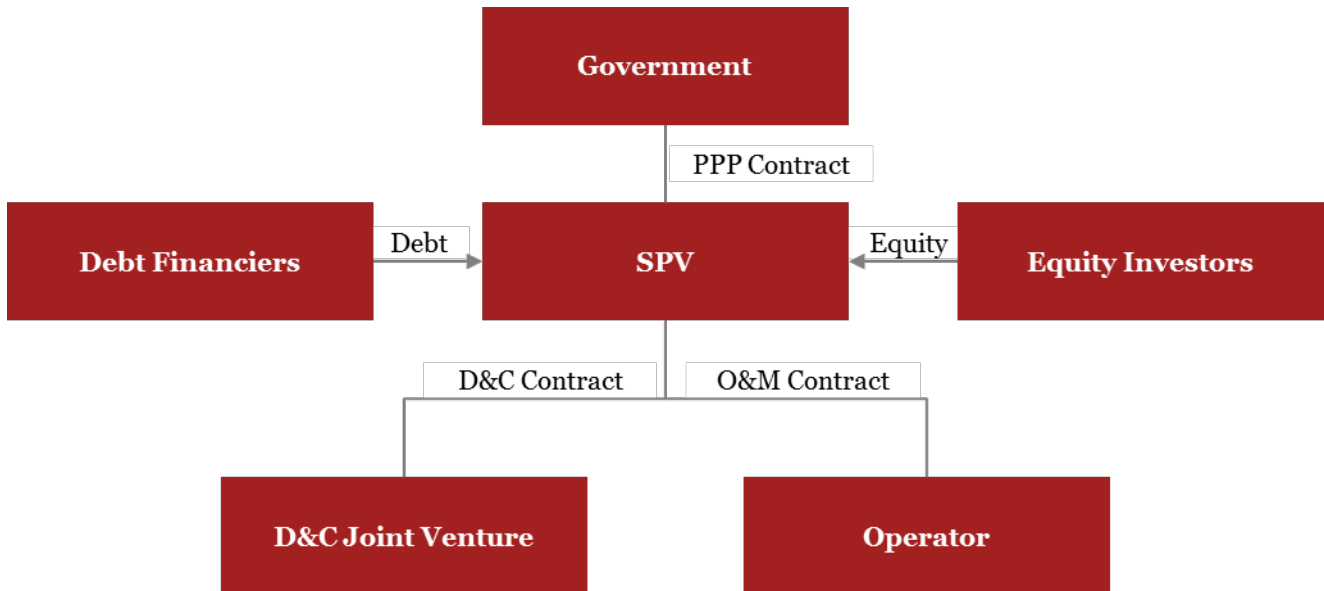
The challenges discussed in this paper apply equally to both user-charge PPPs and service payment PPPs.

Before covering the challenges associated with extending a rail project being operated under a PPP contract, we will explain in more detail the PPP model that has been applied to recent rail projects, and the reasons why government may have chosen to use the PPP model for these projects.

2.2 Overview of PPP model used on recent rail projects

The basic contractual structure that was adopted for Sydney Metro Northwest and the light rail projects in the Sydney CBD, the Gold Coast and Canberra, is shown in figure 1.

Figure 1: Basic PPP structure for recent rail projects



In each case, the relevant government agency entered into a PPP contract with a special purpose vehicle (SPV) established by the successful bidder. The PPP contract requires the SPV to finance, design and construct the rail system (including the rolling stock) and then to operate and maintain it through to the expiry of the PPP contract. In return, the government agency agreed to pay a capital contribution during the construction phase, and monthly service payments during the operation phase. The government agency was also responsible for providing access to site during the construction phase, and a lease or licence of the project site during the operations phase.

The SPV enters into a fixed price Design and Construct (D&C) contract, under which it subcontracts its obligation to design and construct the rail system (including the rolling stock) to an unincorporated joint venture between one or more major civil engineering contractors and, in the case of each light rail project, a light rail vehicle and systems supplier (the D&C Joint Venture). In the case of Sydney Metro Northwest, the rolling stock and rail systems supplier was a subcontractor to the D&C Joint Venture, rather than a member of it. This difference is not material to the analysis that follows.

The SPV also enters into an Operation and Maintenance (O&M) contract under which it subcontracts its obligation to operate and maintain the rail system to an Operator. The Operator either performs the maintenance activities itself, if it has the capability to do so, or it subcontracts these activities to the rolling stock and systems supplier and perhaps one or more members of the D&C Joint Venture.

The SPV raises the finance it needs to fulfil its contractual obligations by entering into:

- an Equity Subscription Agreement with each Equity Investor, under which each Equity Investor agrees to contribute a fixed amount of equity into the SPV; and
- a Loan Facility Agreement with the Debt Financiers, under which the Debt Financiers agree to lend a capped amount to the SPV.

The SPV uses this finance (and the capital contributions it receives from the government agency under the PPP contract) to pay the monthly progress payments due to the D&C Joint Venture under the D&C contract.

When construction is completed and operations commence, the SPV receives monthly service payments from the government agency under the PPP contract, which it uses to:

- pay the fee payable to its Operator for the provision of the operation and maintenance services under the O&M contract;
- meet its interest and principal repayment obligations to the Debt Financiers under the Loan Facility Agreement; and
- if surplus funds exist after making the above payments, distribute the surplus to the Equity Investors as a return on their equity investment.

The service payment payable by the government agency under the PPP contract is performance-based, meaning it is reduced in accordance with an agreed formula in the event the passenger services are not provided to the required standards (for example where services run late).

As already mentioned, fares are set, collected and retained by government on each project. The SPV has no entitlement to the fare revenue collected.

Further details of the contracting structures for Sydney Metro Northwest, and the light rail projects in Sydney, the Gold Coast and Canberra light rail, are provided in the case studies at the end of this paper.

2.3 Why was the PPP model chosen for each project?

The main reason the PPP model was chosen for each project was a belief that the PPP model would deliver a better value for money outcome compared to any alternative delivery model. In each case, the decision was made at a point in time, based in the information available to the relevant government.

According to the Full Business Case for the Canberra light rail project,¹ the PPP model was considered to provide the best value for money outcome because of:

- the heightened degree of risk transfer and cost certainty it offered over other delivery models; and

- the greater scope for innovation it offered, compared to other delivery models.²

The Capital Metro Authority considered these features to be particularly important for its project because of the ACT Government's lack of familiarity with rail projects of that size and complexity.³

But much of the risk that is allocated to the private sector under the PPP contract can also be allocated to the private sector under a publicly funded D&C and O&M contracts, or a Design, Build, Operate and Maintain (DBOM) contract. The additional risk transfer that a privately financed PPP can achieve relative to publicly funded models boils down to the risk of default by or insolvency of the D&C contractor or Operator.⁴ Under the PPP model, the private finance provided by the SPV's equity investors and debt financiers provides government with a buffer against the risks of contractor insolvency, and default for which the contractor's liability is capped or excluded. In particular, government is partially protected under a PPP, because the equity investors and debt financiers will generally invest additional resources in solving problems caused by contractor default or insolvency if failing to do so would reduce the value of their existing investment or loan. The additional resources provided by investors or financiers may be sufficient to solve the problem, in which event government is shielded from the risk. It is only when the investors or financiers are unable or unwilling to provide further resources to solve the problem that the risk shifts back to government.

The bundling of design, construction, operation and maintenance obligations into a single PPP contract also eliminates the interface risk that government bears when it enters into separate D&C and O&M contracts. However, government can also eliminate this risk by bundling these obligations into a single DBOM contract, or by ensuring that its contractor under each of the D&C and O&M contracts is the same entity.

The heightened cost certainty arises from the bundling of all necessary components of the project into a single contract with a fixed price (service payment). With more traditional contracting methodologies, different components of the project are delivered under separate contracts. The cost of some of these contracts is often not known at the time the government commits to the project by signing the first contract.⁵

¹ Capital Metro Full Business Case, p14. Available at http://www.tccs.act.gov.au/_data/assets/pdf_file/0010/887680/Light-rail-Capital-Metro-Business-Case-In-Full.pdf.

² "a comparison between the project's public sector comparator and PPP proxy" was also given as a reason for recommending the PPP model, but this is simply another way of expressing the

risk transfer point. See p16 of the Capital Metro Full Business Case.

³ Capital Metro Full Business Case, p14.

⁴ PwC, *Public Private Partnerships – Improving the Outcomes*, 2017, at p11.

⁵ WestConnex is a good example of this scenario.



The greater scope for innovation on a PPP is often said to arise from government's focus on outcomes and the use of an output/outcome specification. However, the same outcome focussed approach can be applied to the specifications for a traditional government funded D&C contract. In truth, the greater innovation seen on PPP contracts is probably due to the involvement of the Operator in the bidding process, which could also be achieved under a DBOM contract.

It is not possible to report on exactly why it was thought that the PPP model would provide the best value for money for the Sydney Metro Northwest, Sydney light rail and Gold Coast light rail projects, as the procurement/delivery model strategies for those projects are not publicly available.⁶

One would reasonably expect that the reasons mentioned above would have also applied to these projects. Additional reasons as to why it was thought that the PPP model would be appropriate might have included:

- improved scoping and risk assessment by government that tends to occur for PPP projects;
- additional rigour that the use of private finance brings, due to due diligence and monitoring from the lenders and equity investors;
- improved service outcomes due to proper planning and allowance for maintenance costs; and
- industrial relations reform, via the private sector provision of operations and maintenance services.

The downsides associated with PPPs would have also been taken into account, including:

- the reduction in flexibility; and
- the cost of using limited recourse private sector finance.

2.4 PPPs are not as flexible as other contract delivery models

As Figure 1 (in section 2.2) demonstrates, a PPP is not a simple two-party, 'principal and contractor' arrangement. Rather, there are five separate private sector roles with a significant financial interest in the project. Each role has different interests, rights and obligations in relation to the project, so the commercial interests of the private sector parties are not aligned. Further, most roles, such as the D&C Joint Venture, the Equity Investors and the Debt Financiers typically comprise several different companies, each with its own unique objectives.

As a general rule, before the SPV can agree to any changes to its PPP contract with the government, the SPV must first obtain the agreement of its Equity Investors, its Debt Financiers, the D&C Joint Venture and the Operator, if the change to the PPP contract will increase the obligations or otherwise adversely affect the interests of these parties.

Negotiating a deal that enables the SPV to obtain the agreement of all of these parties is a major challenge

⁶ Whilst a high level summary of the business case for the Sydney light rail project has been published, it doesn't recommend a

particular procurement model, as the investment decision was made before the procurement model decision on that project.

for any government that wishes to extend or otherwise make a significant change to a PPP contract after it is signed.

This is the primary reason why PPP contracts are less flexible than more traditional contracting methods. The involvement of private sector finance significantly constrains the ability of government to make changes to the PPP arrangement after it has been signed.

Another reason PPP contracts are less flexible than more traditional contracting methodologies is their long term nature. The long term is driven by a desire to incorporate a fixed price operation and maintenance period of sufficient length to motivate the SPV to optimise the trade-off between lower design and construction costs resulting in higher operating and maintenance costs. Each of the PPP contracts considered in this paper has an operation phase of at least 15 years, on top of the construction phase. Although 15 years is considerably shorter than the 30+ year term associated with most PPP contracts, it still means the option of simply waiting for the current contract to expire and then going out to tender with a new contract incorporating the desired changes won't be available to government until late in the contract term.

2.5 Delivery model analysis for Canberra light rail

The full business case for Canberra light rail includes a detailed analysis of potential delivery and packaging options. Packaging options involving separate contracts for operations (or operations and maintenance) were considered, but the option of bundling the design, construction, operations and maintenance of the rail infrastructure and vehicles into a single package was preferred because it mitigated interface risks between packages. This was '*seen as important and relevant for the ACT, which does not have existing light rail operations or large construction markets (unlike Melbourne and Adelaide where packages have been procured separately)*'.⁷

⁷ Capital Metro Full Business Case, p115.

⁸ Capital Metro Full Business Case, p117.

⁹ Capital Metro Full Business Case, p116.

¹⁰ https://www.sydneymetro.info/sites/default/files/20120626_Med_Rel_Gladys_Berejiklian_-_North_West_Rail_Link_Industry_Briefing.pdf%3Fext%3D.pdf

The full business case states that price certainty, risk transfer, innovation and incentive were the primary drivers for the decision on procurement model, and that time to market and flexibility were considered potentially lesser drivers.⁸ It also stated that the fully integrated model '*can address future flexibility contractually: i.e. the potential inclusion of break points in the operating contract to change operator; competitively bid pricing on changes to frequency/route extensions.*'⁹ The need for future flexibility in relation to extensions, and the challenges associated with obtaining under the fully integrated PPP model, may have been underestimated.

2.6 A late change to extension plans on Sydney Metro Northwest

The decision to procure the operations, trains and rail systems for the Sydney Metro Northwest project via a PPP contract with a 15-year operations phase was announced in June 2012.¹⁰ At this time, it was expected that government funding for the proposed extension of the Metro network south of Chatswood would only become available towards the end of the PPP contract's proposed 15-year operations phase. Accordingly, it was thought that a new contract to operate and maintain the extended metro system in a fully integrated manner could be competitively tendered at this time, which would ensure that NSW taxpayers obtained the best value for money outcome from the operator of the extended metro.

It was not until June 2014, the same month that Northwest Rapid Transit (NRT) was announced as the preferred bidder for the PPP contract,¹¹ that the Baird Government announced it would apply the funds that it would generate from selling its electricity distribution assets (the 'poles and wires') to the extension of the metro south of Chatswood, if it secured a mandate from voters at the March 2015 election.¹² This meant that it was now almost certain, rather than remotely possible, that during the term of the PPP contract, government would need to negotiate with NRT to try to reach agreement

¹¹ <http://www.transport.nsw.gov.au/newsroom/media-releases/major-milestones-reached-north-west-rail-link-preferred-operator-selected>

¹² <http://www.transport.nsw.gov.au/newsroom/media-releases/rebuilding-nsw-government-declares-war-congestion>; <http://www.transport.nsw.gov.au/sites/default/files/b2b/media/Rebuilding%20NSW%20-%20Massive%20investment%20for%20regional%20NSW.pdf>



on commercial terms for the operation of the extended metro system. Accordingly, a more detailed augmentation regime was added to the PPP contract to assist government with these negotiations.

2.7 The challenge of extensions

It is contemplated that there will be linear extensions to each of the projects considered in this paper.

Customers are likely to want the extension to be operationally integrated with the part of the network covered by the PPP contract. It's unlikely customers will want to have to switch vehicles at the point where the extension joins on to the network covered by the PPP contract.

To achieve this outcome, either the incumbent Operator needs to operate both the original line and extended line as a fully integrated service, or a new Operator needs to be engaged to operate both lines as an integrated service - it's not possible to have a different Operator on each part of the network.

This leaves government with two basic options.

Option 1: Strike a deal with the incumbent Operator (and its SPV). It's not possible for government to deal directly with the incumbent Operator (and cut out the SPV), as the Operator will need to reach agreement with the SPV on consequential changes to the operational performance regime in the O&M contract. The SPV won't agree to these changes with the Operator unless corresponding changes are made to the operational performance regime in the PPP contract between the SPV and government.

Option 2: Terminate the existing Operator, and engage a new Operator to operate both the existing railway and the extension. To do this, government will need to either:

- a terminate the PPP contract early - which is very expensive; or
- b get the SPV to terminate its O&M contract with the existing Operator and enter into a new O&M contract with a new Operator - which is less expensive, but very difficult to achieve.

Option 2a is very expensive because PPP contracts generally require government to pay a termination payment for early termination sufficient to enable the SPV to:

- repay its debt (including hedge break costs and the like);
- fully compensate its Operator for early termination of the O&M contract (including profits foregone); and
- give its equity investors a return on their equity investment.¹³

Option 2b is less expensive, as it is only the incumbent Operator that needs to be compensated for early termination (rather than the SPV). However, this is very difficult to achieve as it involves great risk for the SPV and its Equity Investors and Debt Financiers, who will bear the risk of poor performance by the new Operator. These parties will want to be protected against this risk if they are forced by government to switch Operators, which would completely undermine the PPP contract's allocation of operational performance risk to the SPV, and the value for money this provided to government.

Faced with these options, the government will choose to pursue Option 1, i.e. negotiate amendments to the PPP contract to enable the incumbent Operator to operate both the original line and extended line as a fully integrated service, unless the commercial terms demanded by the SPV or the Operator are so extreme that it is cheaper to switch to Option 2.

This is an unenviable negotiating position for the government. Unfortunately, it is the inevitable consequence of entering into a PPP contract.

The solutions to this challenge fall into two basic categories:

- The first is to try to build additional flexibility into the PPP arrangement. This is what has occurred, to varying degrees, on each of the projects considered by this paper. However, for reasons explored later, there is only so much that can be done in this regard, given the inherent features of the PPP model.
- The second solution is to consider an alternative delivery model for the initial project.



¹³ The level of return the equity investors receive varies between projects. For some projects (Sydney Metro, Gold Coast light rail, and Sydney light rail (pre-completion)), they receive the return they expected to receive on their equity investment when the PPP contract was signed. On others (Canberra light

rail, Sydney light rail (post completion)), they receive the fair market value of the equity as assessed by an independent expert.

3 *Building additional flexibility into PPPs*

3.1 *A variation power can provide some flexibility*

The most obvious way to build flexibility into a PPP contract is to include a broad power to order variations in the contract, similar to the variation power found in most construction contracts.

This power allows the government to direct changes to works and services that are to be provided under the contract, on the basis that government will compensate the SPV for any additional costs or loss of revenue arising from the change.

However, the law ordinarily implies a limitation of reasonableness on this power. The courts have said that extent of variations ordered must be reasonable having regard to the extent of the additional work, the time at which it is ordered, and any changes in circumstances since the date of the contract.¹⁴ The courts have also said that the changes cannot go beyond what the parties ought reasonably to have contemplated at the time the contract was signed.¹⁵

Accordingly, a normal contractual power to order variations would not permit a government to direct the SPV to build or operate a significant extension to a railway system.

But like all implied terms, this implied limitation of reasonableness can be over-ridden by clear words to the contrary. Accordingly, if the PPP contract clearly states that the government can direct the SPV to build and operate a significant extension to a railway, the courts will give effect to this.

This explains why the variation power in the Canberra light rail PPP contract expressly permits the ACT Government to direct the SPV to build, operate and/or maintain all or part of an extension to Canberra light rail system. It also explains the inclusion of similar powers in the Sydney light rail PPP contract.

But having an express power to order variations of this nature only gets you so far. The real challenge for government is getting certainty and value for money on the price and other consequences of exercising the power.

It is usually not possible to obtain a fixed price for the construction, operation and maintenance of a potential extension as part of the competitive bidding process for the original PPP contract, as government does not know, at the time when bids are submitted, exactly what it wants in relation to the extension, or when it will require it.

It may be possible to secure fixed prices for certain elements of the extension, such as the supply of extra trains. This was achieved on each of the projects considered in this paper.

However, there will be many significant elements for which this won't be possible, such as the operation and maintenance of the extra trains and the extended network. The pricing for these elements can only be agreed or determined once the scope of the work is known.

For these elements, the best government can get is:

- a commitment from the SPV to negotiate the price and other consequences after government has worked out what it wants; and
- a right to have the price and other consequences determined by an independent expert if the parties can't reach agreement.

Whilst the right to have the price and other consequences determined by an expert in the event the parties can't reach agreement seems a reasonable solution, it would be high risk for government to order the variation before the price is agreed or determined, given the massive costs involved and the possibility that the price determined by the expert could be many millions of dollars different to what government expected.

¹⁴ *Wegan Constructions Pty Ltd v Wadonga Sewerage Authority* [1978] VR 67;

¹⁵ *Bush v The Trustee of the Town & Harbour of Whitehaven* (1988) 52 JB 392.

On some projects, such as Sydney light rail,¹⁶ government also has the option of waiting for the expert's determination before making a final decision on whether to proceed with the variation. But other projects, such as Canberra light rail,¹⁷ have no such option.

Even where the option of waiting for the expert's determination before making a final decision does exist, it is unlikely to be an attractive pathway for government, given the additional time involved, and the damage that the dispute resolution process could cause to the parties' long-term relationship.

3.2 Variation works can be competitively tendered

One way of injecting some competitive tension into the pricing of the variation works is to require the SPV to competitively tender the relevant work.

This is what occurred for Stage 2 of the Gold Coast light rail project, where the SPV ran a competitive tender process for the design and construction of the extension.

Unfortunately, it's generally not possible to apply this approach to the operation or maintenance of the extension, given the need for operations to be integrated with the operations of the SPV's existing Operator.

Getting the SPV to run a competitive tender process for the design and construction of the extension can also be challenging if members of the SPV's original D&C Joint Venture hold significant equity in the SPV.

3.3 Rights to take out non-consenting parties

As mentioned earlier, the main reason changes are difficult to implement on PPPs is the large number of parties that need to agree to the change.

The only way to overcome this is to give government the ability to remove non-consenting parties from the transaction. In particular, government could attempt to include provisions in the PPP contract that give government:

- the right to require SPV to replace the Operator;
- the right to buy-out non-consenting debt financiers; and
- the right to buy-out the equity investors.

These rights are really difficult to obtain, even if government offers to fully compensate the party being taken out, as the knock-on consequences for those remaining in the transaction could be very significant.

That said, they have been obtained to varying degrees on some, but not all, of the projects discussed in this paper.

Even if obtained, they can end up very expensive to exercise, particularly if interest rate swaps and the like are "out-of-the-money" at the time government elects to break these early by taking a party out.

3.4 There is a limit to the flexibility that can be achieved

Whilst it is possible to build extra flexibility into a PPP, there is only so much that can be done given the inherent features of the PPP model. So let's turn to the second solution.

¹⁶ Sydney Light Rail Project Deed, clause 29.12

¹⁷ Capital Metro Project Agreement, clause 33.

4 *Alternative delivery models*

The second solution is to consider an alternative delivery model for the initial project.

The objective of the second solution is to come up with a contracting model that provides as many of the benefits of the PPP model as is possible, without the associated lack of flexibility.

To do this, you need to eliminate the causes of the lack of flexibility, namely:

- the large number of parties during the operation phase; and
- the long-term nature of the operating phase.

The Newcastle light rail project provides some insight into what is possible in this regard, as do the Melbourne train and tram franchises.

On the Newcastle light rail project, Transport for NSW has entered into three separate contracts of

significance. The first two cover the design and construction of the light rail system and the supply of the light rail vehicles. Once built, these assets will be leased to, and operated and maintained by, a private sector operator that Transport for NSW has separately engaged under a short term operating franchise contract.

The operating franchise contract for the Newcastle project incorporates a performance based service payment regime, similar to that found in a PPP contract. But the term is shorter which provides more frequent points at which a new operating franchise contract, covering the operation of an expanded network, can be competitively tendered. A similar approach applies in Melbourne, where the process of re-tendering the operating franchise contract every seven years provides regular opportunities to obtain competitive pricing for the operation and maintenance of network infrastructure changes.



Transport for NSW has recently announced that it will adopt a similar model for the Parramatta light rail project. The civil works are to be procured under a D&C contract, with the vehicles and rail systems to be separately procured, together with the operation and maintenance services, under a separate Supply, Operate and Maintain contract. The term of the second contract is yet to be communicated to the market.

Under these alternative non-PPP models, the build phase contract(s) could take many forms. A fixed price D&C contract with an output specification would provide a similar risk allocation and opportunity for innovation as a PPP contract. Alternatively, other forms of build phase contract (i.e. alliance, managing contractor, delivery partner model etc) can be used if government has a different risk appetite or objectives, especially if there is no private finance during the build phase.

If government wants the rigour that private finance brings to be applied to the build phase, this could be achieved, at least in part, by holding back payment of a significant component of the build price until all commissioning tests have been passed and build phase defects have been closed thereby requiring the SPV or its D&C contractor to finance these costs in the meantime.¹⁸

Maintenance responsibilities can also be incorporated into the build contract. The maintenance term could be aligned with the term of the initial operating franchise contract, but with an option for the maintenance term to be extended out to, say, 15 years, to drive a whole of life approach to the assets.

There is no reason why government could not tender each contract in parallel. The preferred operator could be selected shortly before the selection of a preferred build phase contractor, and involved in the finalisation of the build phase contract. Indeed, the operator could be selected on the understanding that it will enter into and administer the build phase contract, and manage the interface risk between the two contracts.

The build phase contracts for subsequent extensions can be competitively tendered when government is ready to proceed, thereby ensuring value for money in relation to build phase costs.

Eliminating the use of private finance during the operation phase avoids the need to obtain the agreement of equity investors and debt financiers (or to incur the cost of buying them out) when the operating franchise agreement is amended to incorporate the extension.

If the opening of an extension is timed to coincide with the expiry of the Operating Franchise Agreement, the need to obtain the agreement of the incumbent operator can also be avoided.

¹⁸ Limited recourse finance will bring more rigour than finance raised by the build phase contractor on a corporate finance basis, but limited recourse finance will also be more costly.

5 *Which is best?*

There are a number of benefits associated with the PPP model that can't be fully replicated by the alternative models that we have suggested. The main ones are:

- more rigour from involvement of private sector finance over longer term;
- higher cost certainty for initial project; and
- debt and equity provide a buffer against risk of default/insolvency of the operator.

These benefits certainly make it more likely that a PPP will deliver the best value for money outcome for the initial project.

However, the PPP model creates significant challenges when it comes to securing best value for money on extensions. Whilst there are things that can be done to reduce these challenges, they can't be eliminated without destroying the positive features of the PPP model.

Accordingly, if extensions are contemplated during the term of the proposed PPP contract, serious consideration should be given to alternative delivery models. Even though the alternatives discussed in this paper are less likely than a PPP to provide the best value for money outcome for the initial project, they may provide the best longer term outcome, once the cost of extensions are taken into account.

At the end of the day, the decision probably turns on the likelihood of there being an extension, the relative size/cost of the extension, and the level of confidence that government has regarding its capacity to negotiate a good deal on the extension with its incumbent contractors. Until recently, governments have backed themselves. But the recent delivery model decision for the Parramatta light rail project suggest some lessons may be being learned.



Case studies



Sydney Metro Northwest

On 20 June 2012, the NSW Government announced Sydney's Rail Future, its long-term plan to increase capacity on Sydney's heavy rail network to support a growing population and improve customer experience. The NSW Government committed to deliver the Sydney Metro Northwest (then known as the North West Rail Link) as the first of the new rapid transit rail services to connect Sydney's global economic corridor with high growth employment and residential centres.

The Sydney Metro Northwest is being delivered in three major contract packages:

- The Tunnels and Stations Civil Works package, which is being delivered by Thiess Pty Ltd, John Holland Pty Ltd and Dragados Australia Pty Ltd (the TSC Contractor) under a D&C contract between Transport for NSW (TfNSW) and the TSC Contractor, valued at \$1.15 billion.
- The Surface and Viaduct Civil Works package, which is being delivered by Salini Impregilo S.p.A and Salini Australia Pty Ltd (the SVC Contractor) under a D&C contract between TfNSW and SVC Contractor, valued at \$340 million
- The Operations, Trains and Systems package, which is delivered under a PPP contract between TfNSW and NRT Pty Ltd in its own capacity and as trustee of the NRT Unit Trust (NRT), valued at \$3.7 billion.¹⁹

Together, these three packages of work will deliver the Sydney Metro Northwest between Cudgong Road, Rouse Hill and Chatswood.

Each contract package was competitively tendered. The Operations, Trains and Systems (OTS) package was the final package to be tendered.

NRT, the counterparty to the PPP contract, is a special purpose vehicle established by the successful bidder for the OTS package. The owners of NRT are MTR Corporation (20 per cent), Leighton Holdings (10 per cent), Plenary Group (10 per cent) Marubeni (20 per cent) and the Aria Investments Trust (10 per cent), Palisade's Australian Social Infrastructure Fund 2 (10 per cent) and the Partners Group (20 per cent).

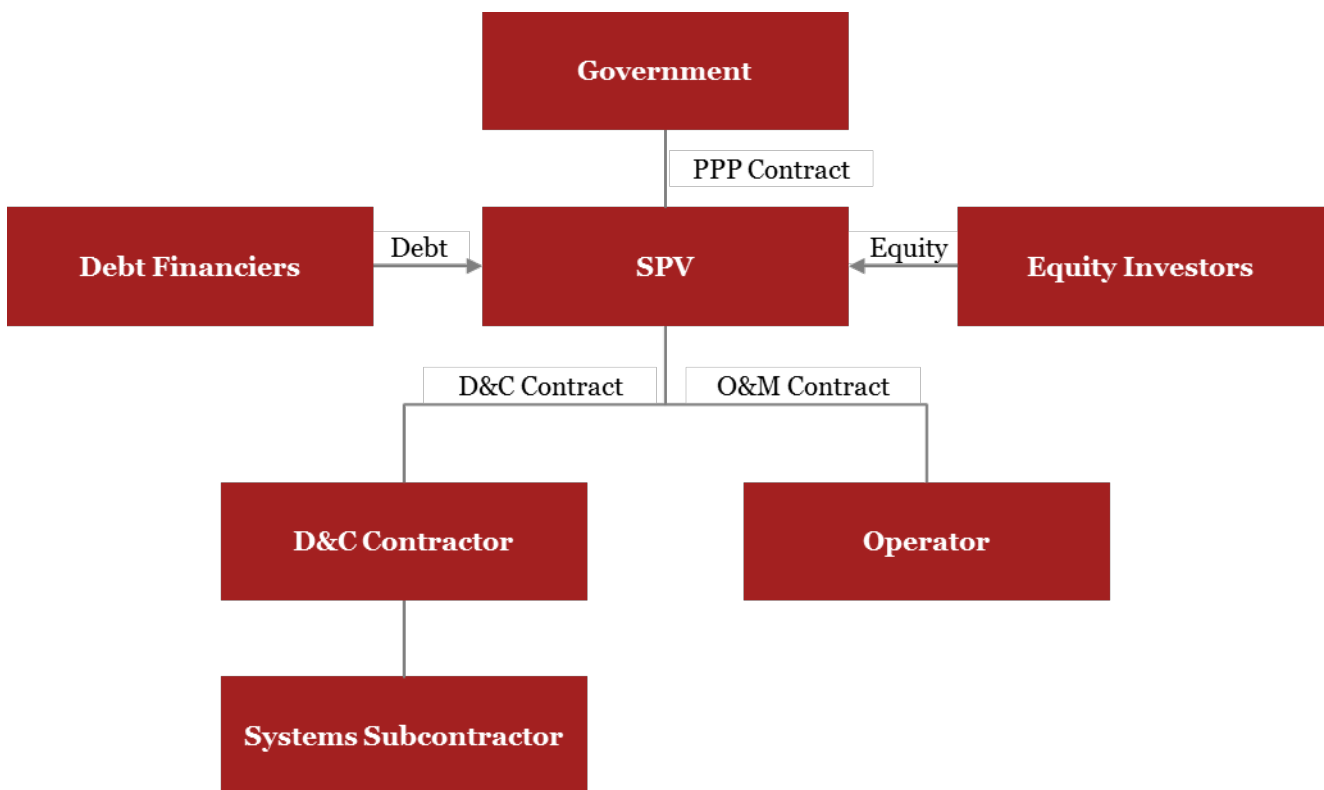
¹⁹ A copy of the operative provisions of the PPP contract is available at this link: <http://www.transport.nsw.gov.au/sites/default/files/b2b/projects/nwrl-ots-project-deed-applied-redaction.pdf>. Other parts of the PPP contract and other contracts relating to the North West Rail Link (now known as the Sydney Metro Northwest) can be accessed at this link: <https://www.transport.nsw.gov.au/industry/contracts-awarded/transport-projects>.

The PPP contract requires NRT to finance, design and construct the rail systems and the trains, and then operate and maintain the metro system for an expected period of 15 years.

In return, TfNSW has agreed to:

- procure the construction of the Tunnels and Stations Civil Works and the Surface and Viaduct Civil Works, on time and in accordance with the relevant contract specifications;
- undertake specified works in connection with the conversion of the existing railway between Chatswood and Epping;
- pay a capital contribution during the construction phase, monthly service payments during the operations phase, and a 'conditional debt pay down amount' between year two and year four of the operations phase, provided certain conditions are met; and
- acquire the land required for the project site and provide NRT with access to it.

Figure 2: Project structure – Sydney Metro Northwest PPP



NRT has subcontracted its obligation to design and construct the rail systems and trains to an unincorporated joint venture between MTR Corporation (Sydney) NRT Pty Ltd, John Holland Pty Ltd, CPB Contractors Pty Ltd and UGL Rail Services Pty Ltd (together, the D&C Contractor).

Two members of the D&C Contractor - MTR Corporation (Sydney) NRT Pty Ltd and UGL Rail Services Pty Ltd (SJV) - have, in turn, subcontracted the design and manufacture the trains and communications based train control systems to Alstom Transport Australia Pty Ltd.

NRT has subcontracted its obligation to operate and maintain the metro system to Metro Trains Sydney Pty Ltd (the Operator). The Operator is owned by MTR Corporation (UK) NRT Ltd (60 per cent holding), John Holland Sydney NRT Pty Ltd (20 per cent holding) and UGL Rail Services Pty Ltd (20 per cent holding).

The Operator has, in turn, engaged Alstom Transport Australia Pty Ltd to provide certain maintenance support for the trains and communications based train control systems.

Augmentation – Sydney Metro City and Southwest



The draft PPP contract issued with the RFT included a short clause that provided a framework under which future extensions of the network (referred to in the contract as 'augmentations') could be discussed and potentially agreed by the parties.²⁰

When the Baird Government announced that the future extension south of Chatswood, under Sydney Harbour, through the CBD and on to Bankstown²¹ would proceed earlier than originally planned if the Government secured a mandate at the March 2015 election to privatise its electricity distribution assets, TfNSW and NRT negotiated a more detailed regime by which the parties could work together on the project definition, planning, development and delivery of this augmentation.²²

The regime does detail a number of principles that the parties intended would be incorporated into any final agreement, such as an obligation on NRT to competitively tender all components of its scope of work other than agreed 'non-contestable components' (i.e. supply of trains, supply of signalling and train control systems (CBTC) and operation and maintenance services), but the parties are free to depart from these.

The regime includes fixed prices (subject to escalation and adjustment for specified events) for the supply of additional trains, and for the supply of CBTC systems for trains and stations, provided TfNSW orders them before a specified date. It also includes an 'O&M target price' for the operation and maintenance for the augmentation which was prepared based on a list of assumptions regarding the augmentation. The intention is that this O&M target price will form a benchmark (or starting point) from which an O&M price can be negotiated and agreed.

Whilst 58 pages are dedicated to this more detailed regime, it fundamentally remains an agreement to negotiate. If the parties can't reach agreement on the terms on which NRT will be involved in the design, construction, operation and/or maintenance of the augmentation, TfNSW cannot force NRT to participate.

If TfNSW forms the view that it is unlikely that the parties will reach agreement on the terms of the augmentation, TfNSW can exercise its right to terminate the PPP contract for its convenience,²³ in which event TfNSW must pay an early termination payment that enables the NRT to prepay its debt (including hedge break costs and the like); fully compensate its Operator for early termination of the O&M contract (including profits foregone); and give its equity investors the return expected to receive on their equity investment when the PPP contract was signed.²⁴

TfNSW also has the right to take control of NRT by purchasing all of the equity in NRT in certain circumstances if the terms of the augmentation are not agreed.

²⁰ See clause 33.

²¹ The extension is now known as the Sydney Metro City and Southwest project.

²² This more detailed augmentation regime is contained in Schedule 46 of the PPP contract.

²³ NWRL OTS Project Deed, Schedule 46, clause 20.

²⁴ NWRL OTS Project Deed, Schedule 31, clause 4.

Canberra light rail

The 12 kilometre light rail project between Gungahlin and the city centre of Canberra is being designed and constructed under a PPP contract.²⁵ The PPP contract also provides for the operation and maintenance of the light rail system over a 20-year period.

A tender process was conducted to ensure value for money was achieved with respect to the award of the PPP contract.



The Australian Capital Territory (ACT) entered into the PPP contract on 17 May 2016 with Canberra Metro PC Pty Ltd in its personal capacity and as trustee for the [Capital] Metro Trust (Canberra Metro) - a special purpose vehicle established by the successful consortium.

The owners of Canberra Metro are John Holland Pty Ltd, Pacific Partnerships, Mitsubishi Corporation and Aberdeen Infrastructure investment.

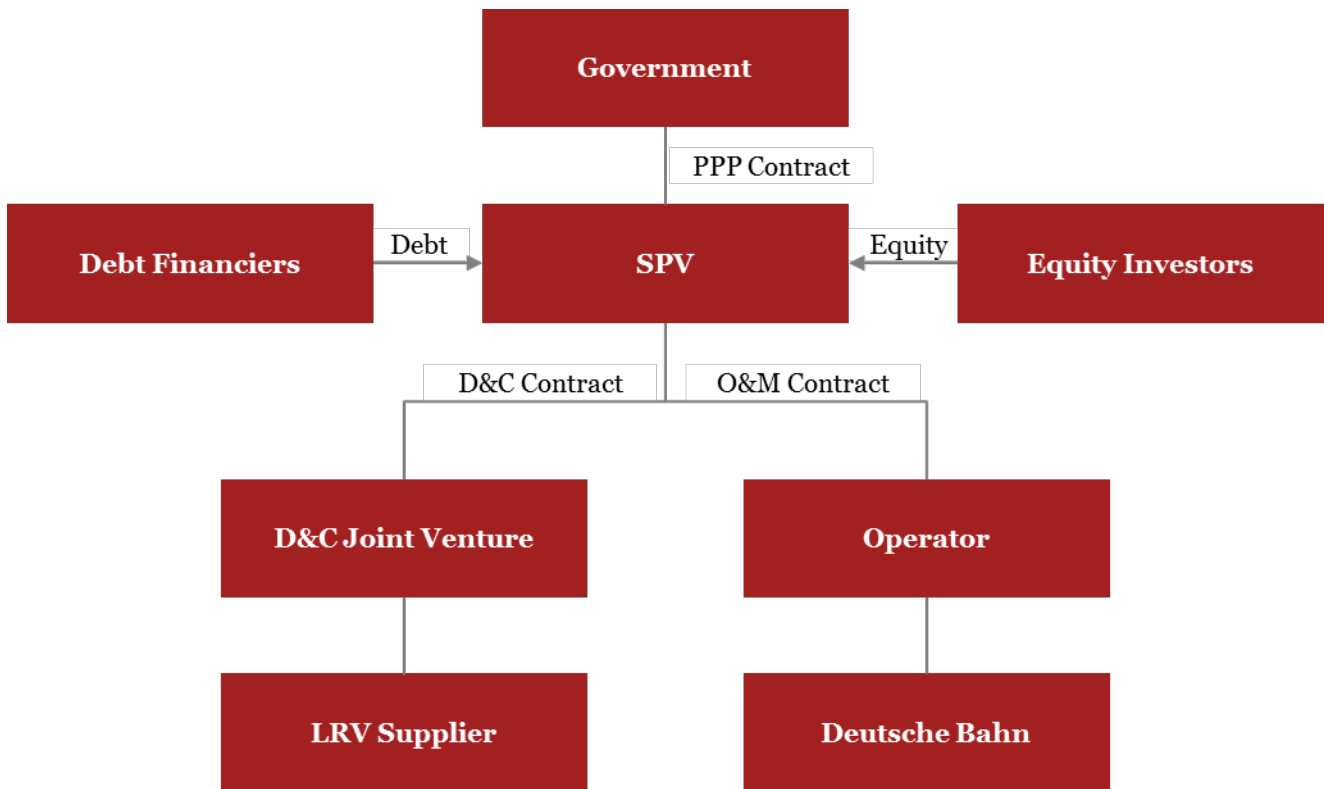
The PPP contract requires Canberra Metro to finance, design and construct the light rail system, and then operate and maintain it for a 20-year period.

In return, the ACT has agreed to pay a capital contribution of \$375 million upon completion of construction, and monthly availability payments during the operations phase. The net present cost of the forecast availability payment is \$520 million. The ACT must also obtain necessary development and works approvals for the works, and provide Canberra Metro with access to the project site.

²⁵ A copy of the PPP contract is available at:

<https://tenders.act.gov.au/ets/contract/view.do?id=42390&returnUrl=%252Fcontract%252Flist.do%253F%2524%257Brequest.queryString%257D>

Figure 3: Project structure – Canberra light rail



Canberra Metro has subcontracted its obligation to design and construct the light rail system (including the vehicles) to an unincorporated joint venture between unincorporated joint venture between John Holland Pty Ltd and CPB Constructions Pty Ltd (together, the D&C Joint Venture). The fixed price payable to the D&C contractor is \$508 million.

The D&C Joint Venture has, in turn, subcontracted the design and manufacture of the light rail vehicles to Construcciones y Auxiliar de Ferrocarriles S.A. (CAF).

Canberra Metro has subcontracted its obligation to operate and maintain the light rail system to Canberra Metro Operations Pty Ltd (the Operator), a joint venture company owned by John Holland Pty Ltd and Pacific Partnerships Pty Ltd.

The Operator has, in turn, engaged Deutsche Bahn Engineering and Consulting to assist it with the operation and maintenance of the light rail system.

Future stages

The ACT Government has mapped out the future potential light rail network. The current master plan is shown below.

In September 2016, the ACT Government announced that the Woden to city corridor would be the next stage of Canberra's light rail network, if the Labor government is re-elected.

The ACT Government has advised that Stage 2, to Woden, will be physically connected to Stage 1, and that the contract methodology will be developed during preparation of the business case.²⁶ It has also said that there would be logical benefit in running Stage 1 vehicles from Gungahlin through the city to Woden.

The PPP contract includes a clause dealing with 'future stages'. The clause allows the ACT to:

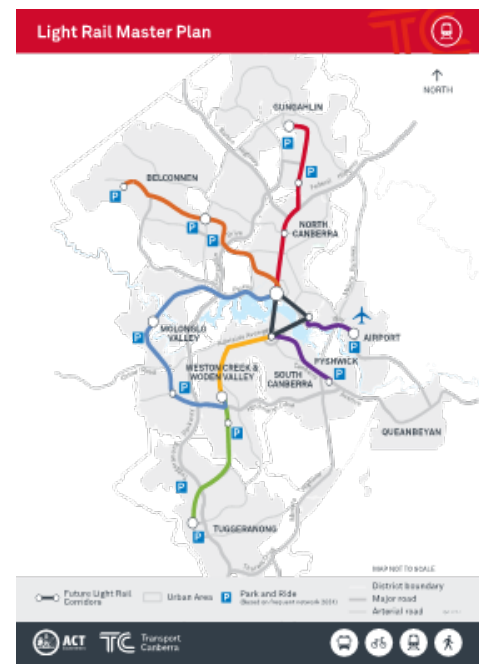
- direct Canberra Metro to design, construct, operate and/or maintain all or part of a 'future stage' pursuant to the ACT's contractual power to order variations; and
- procure the design, construction, operation and/or maintenance of any future stage by a third party (including Capital Metro's contractors), but the ACT must compensate Canberra Metro for any 'unreasonable interference' caused by such third parties.

If the ACT wants the Stage 1 vehicles to be able to operate on Stage 2, the second option ceases to be viable solution, for the reasons explained in section 2.7 of this paper.

If the ACT exercises its contractual power to order variations, and the parties are unable to reach agreement on the variation costs or other consequences of the variation, Capital Metro may refer the dispute to expert determination.

As mentioned in section 3.1 of this paper, it would be a courageous move for the ACT to direct Canberra Metro to implement a future stage as a variation in circumstances where the parties are unable to reach agreement on the variation costs and other consequences of the variation, as doing so would leave the Territory liable to pay whatever the expert determines, which could be well in excess of what the Territory expected or budgeted for.

Accordingly, the PPP contract also allows for the ACT to terminate the PPP contract for its convenience. If it does so, the ACT must pay Canberra Metro a termination for convenience payment equal to Capital Metro's outstanding project debt, plus the fair market value of Canberra Metro's equity, plus any other reasonable costs incurred by Canberra Metro as a result of the termination (including subcontract break costs). This amount is unlikely to represent value for money.



²⁶ Light Rail Stage 2: Frequently Asked Questions, ACT Government and Transport Canberra, available at https://www.transport.act.gov.au/_data/assets/pdf_file/0011/1056926/Light-Rail-stage-2-FAQ.pdf

Gold Coast light rail



The Gold Coast light rail project between Gold Coast University Hospital and Broadbeach was delivered and is now being operated, under a \$1.2 billion, 18 year PPP contract.

A tender process was conducted to ensure value for money was achieved with respect to the award of the PPP contract. The State entered into the PPP contract on 5 May 2011 with GoldLinQ Pty Ltd (the Operator Franchisee) - a special purpose company established by the successful consortium.

The owners of the Operator Franchisee are Aveng Australia Holdings Pty Ltd, International Public Partnerships (Aust) Ltd, Keolis SA, Marubeni Corporation, and the Plenary Group.²⁷

The PPP contract requires the Operator Franchisee to finance, design and construct the light rail system and then to operate and maintain it through to the expiry of the PPP contract on 31 May 2029. In return, the State agreed to pay a capital contribution during the construction phase, and monthly service payments during the operation phase. The State was also responsible for providing access to site during the construction phases, and a lease of the project site during the operations phase.

The State takes ticket revenue risk, sets ticket prices, and retains the ticket revenue. Consistent with this, the State is responsible for the electronic ticketing system. The State entered into a separate agreement with the Translink Transit Authority in relation to ticketing and fare collection arrangements. The Operator Franchisee must take all necessary steps to minimise fare evasion.

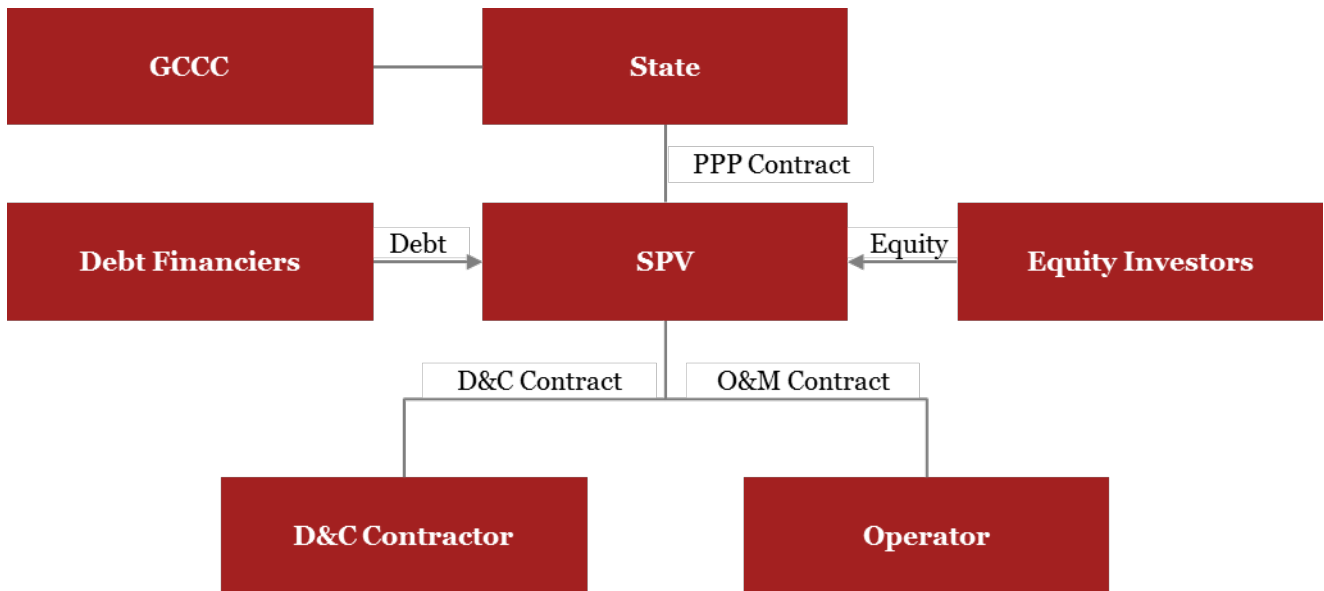
The State also entered into a separate agreement with the Gold Coast City Council (GCCC), regulating the use of GCCC land, GCCC design review rights, works to be returned to GCCC, conditions to be imposed by GCCC on adjoining developments, and changes to traffic signalling priority

²⁷ GoldLinQ web page, visited on 19 June 2017: <http://www.goldlinq.com.au/board.html>. It seems that Palisade has sold down its 16.7% interest.

The Operator Franchisee subcontracted its obligation to design and construct the light rail system (including the light rail vehicles) to an unincorporated joint venture between Bombardier Transportation Australia Pty Ltd and McConnell Dowell Constructors (Aust) Pty Ltd (the D&C Contractor).

The Operator Franchisee subcontracted its obligation to operate and maintain the light rail system to KDR Gold Coast Pty Ltd (the Operator), a company owned by Keolis SA and Downer EDI Ltd. The Operator, in turn, subcontracted its obligation to maintain the light rail vehicles to Bombardier Transportation Australia Pty Ltd.

Figure 4: Project structure – Gold Coast light rail



Future stages

It was always contemplated that the light rail system would be extended north of Gold Coast University Hospital/Griffith University, to connect to the existing heavy railway at Helensvale, and south of Broadbeach to Burleigh Heads and then to Coolangatta. These extensions were contemplated in the Concept Design and Impact Management Plan (CDIMP), published in 2009, two years before the PPP contract was signed. The CDIMP contemplated that the extensions from Gold Coast University Hospital/Griffith University to Helensvale, and from Broadbeach to Burleigh Heads would be delivered between 2016 and 2026, i.e. during the term of the PPP contract. It contemplated that the extension from Burleigh Heads to Coolangatta would occur after 2026.²⁸

Whilst the Operator Franchisee acknowledged in the PPP contract that it had no right to participate in future stages of light rail network, the reality was always going to be quite different, as subsequent events have shown.



²⁸ Gold Coast Rapid Transit Concept Design Impact Management Plan, Volume 2 Chapter 5, p7.

In 2015, the Queensland Government announced that it was progressing with the extension to Helensvale. It asked the Operator Franchisee to commence a procurement process for the design and construction of the extension. Three contractors submitted detailed tenders for the D&C contract. CPB Contractors was announced as the preferred contractor in March 2016, and construction commenced shortly after.

The Queensland Government has indicated that the design and construction of the 7.3 km extension (including four additional light rail vehicles, to be manufactured by Bombardier Transportation) will cost taxpayers \$420 million.²⁹ However, no details have been made publicly available regarding the additional costs that the Government will incur in connection with the operation and maintenance of the extension by the incumbent Operator Franchisee and its incumbent Operator.

Whilst the design and construction costs for the extension have been determined by a competitive tender process, the operating and maintenance costs have not. And although the operating performance regime for Stage 1 would have provided a benchmark for Stage 2, the Operator Franchisee would have been in a strong negotiating position for those aspects of the Stage 2 performance regime that needed to be negotiated.

Sydney light rail

The new CBD and South East Light Rail (CSELR) from Circular Quay along George Street to Central Station to Moore Park, then to Kingsford via Anzac Parade and Randwick via Alison Road and High Street is being delivered by two major contracts:

- a limited 'early works' package, that is being delivered by Laing O'Rourke Australia Construction Pty Ltd under a 'managing contractor' contract; and
- a main works package, that is being delivered as a PPP contract.



The Main Works PPP will cover design, construction, services relocations, operation and maintenance of the 12-kilometre project, as well as the operation and maintenance of the Inner West Light Rail network, from Central to Dulwich Hill.

A tender process was conducted to ensure value for money was achieved with respect to the award of the PPP contract. TfNSW entered into the PPP contract on 17 December 2014 with the ALTRAC Light Rail Partnership (ALTRAC) - a special purpose partnership established by the successful bidder.

The owners of ALTRAC are First State Superannuation Scheme (62.5 per cent), John Laing PLC (32.5 per cent) and Accoina SA (5 per cent).³⁰

The PPP contract³¹ requires ALTRAC to finance, design and construct the CSELR and then to operate and maintain it together with the existing Inner West light rail system through to the expiry of the PPP contract on 16 March 2034. In return, TfNSW has agreed to pay:

- a monthly O&M payment for the operation and maintenance of the existing Inner West light rail system (during the IWLR operations phase);
- monthly service payments during the full operations phase upon completion of the CSELR;
- a 'conditional debt pay down amount' between year two and year four of the operations phase, provided certain conditions are met; and

²⁹ Gold Coast Light Rail – Stage 2 Newsletter, April 2016. Available at:

<https://www.tmr.qld.gov.au/-/media/Projects/G/Gold-Coast-Light-Rail-Stage-2/GCLR2-April-Newsletter.pdf?la=en>

³⁰ Sydney Light Rail Project deed, Schedule A7.

³¹ A copy of the Sydney Light Rail Project Deed is available at: <https://www.transport.nsw.gov.au/industry/contracts-awarded/transport-projects>

- bonus payments for early completion, if applicable.

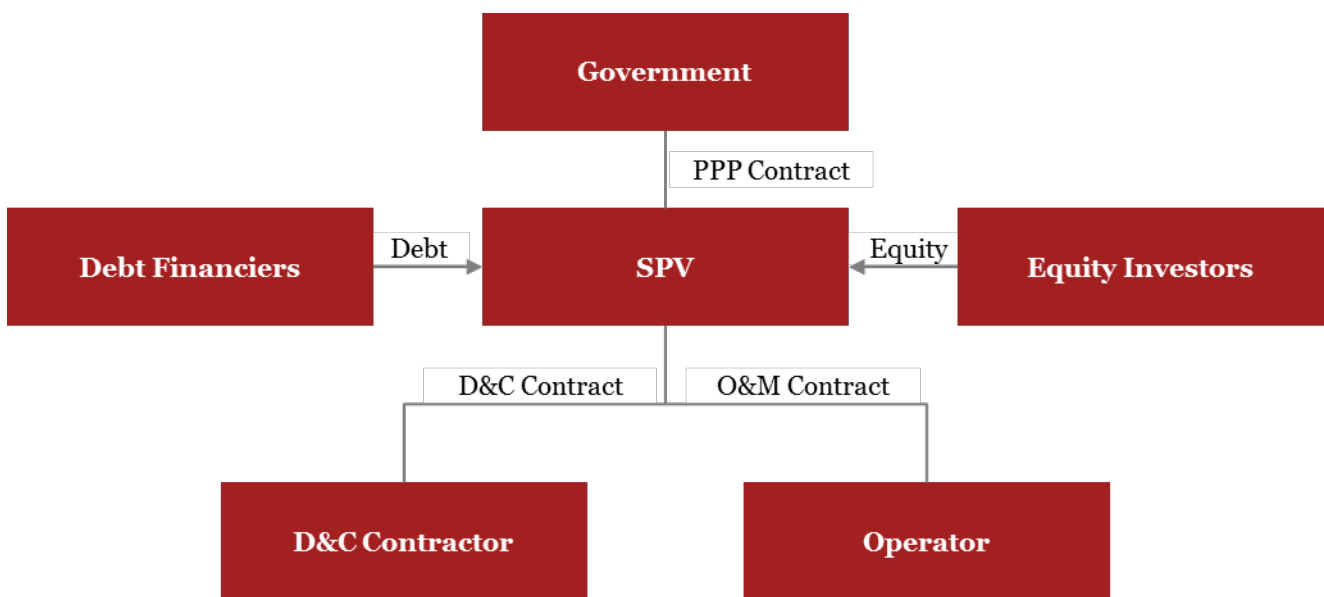
The estimated net present value of the service payments over 19.1 years is \$2.204 billion.³²

TfNSW is also responsible for obtaining the planning approval required for the project and providing access to project site.

ALTRAC has subcontracted its obligation to design and construct the light rail system (including the light rail vehicles) to an unincorporated joint venture between Alstom Transport Australia Pty Limited and Acciona Infrastructure Australia Pty Ltd (the D&C Contractor).

ALTRAC has subcontracted its obligation to operate and maintain the light rail system to Transdev Australia Pty Ltd (the Operator).

Figure 5: Project structure – Sydney CBD and South East light rail

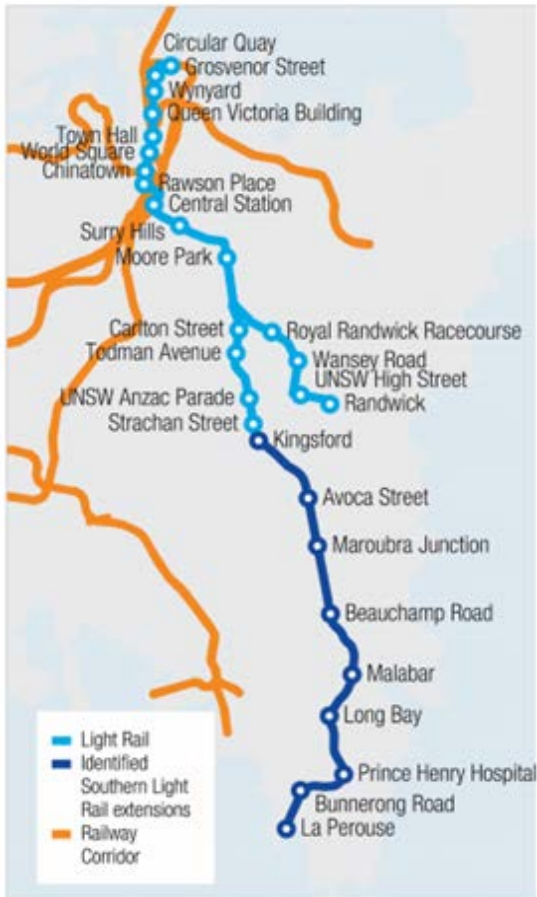


Extensions

TfNSW’s contractual power to order variations allows TfNSW to order:

- a variation that requires ALTRAC to operate and maintain any extension to the Sydney light rail designed and constructed by TfNSW;
- a variation that requires ALTRAC to operate over, but not maintain, any extension to the Sydney light rail designed, constructed and maintained by TfNSW;
- a variation that extends the Sydney light rail by no longer than 20 per cent of its length and requires ALTRAC to design, build, operate and maintain the extension;
- a variation that requires ALTRAC to operate and maintain additional light rail vehicles for the Sydney light rail purchased from ALTRAC’s LRV supplier (Alstom); and
- a variation that requires ALTRAC to operate and maintain additional light rail vehicles for the Sydney light rail purchased by TfNSW from a third party (CAF).

³² Sydney Light Rail Public Private Partnership Contract Summary, p18. Available at: https://www.treasury.nsw.gov.au/sites/default/files/2017-02/Sydney_Light_Rail_PPP.pdf



Source: Transport for NSW

However, the variation costs that TfNSW must pay for these variations have not yet been agreed. Rather, they must be negotiated and agreed having regard to various principles set out in schedules to the PPP contract.³³

The PPP contract includes fixed prices (subject to escalation and adjustment for specified events) for the supply of between four and 16 additional CESLR vehicles, provided TfNSW orders them before 1 March 2024. The fixed price doesn't cover operations or maintenance of the additional vehicles.

The PPP contract also establishes a framework by which an augmentation (which is outside the scope of TfNSW's power to order variations) can be discussed and potentially agreed upon by the parties. The framework is based on the equivalent framework that was negotiated on the Sydney Metro Northwest, and fundamentally remains a non-binding agreement to negotiate.

TfNSW cannot force ALTRAC to implement an augmentation, without ALTRAC's agreement.

If TfNSW forms the view that it is unlikely the parties will reach agreement on an augmentation, TfNSW may terminate the PPP contract for convenience or purchase the equity in ALTRAC.³⁴

³³ Schedule D4 (Net Financial Impact) and Schedule D5 (Pre-Agreed Options)

³⁴ Schedule D9, clause 20

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For further information contact:



Owen Hayford
Partner, Legal
+61 (2) 8266 0239
owen.hayford@pwc.com

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