SCT CRITIQUE
LIGHT RAIL STAGE 1
PROJECT DELIVERY REPORT

Background

On 21 June 2019, the Government released its City to Gungahlin Light Rail Project Delivery Report, prepared by Transport Canberra.

As a past director of and consultant for major capital projects[1], I have always considered the Stage 1 project to have been very well managed and which has delivered a sound technical product, ie a light rail system. However, one cannot say the same for what one may call political manipulation of the project, from its inception, in terms of ideological objectives, one-way promotion, incredible claims in documentation released, grossly understating the real cost of the project, non-publication of information vital to public understanding, eg certain contract details, and the result of sheer political pressure.

Many critics of light rail claim that the only reason that Canberra taxpayers have been saddled for the next 20 years or so with a heavy debt, is due to the requirement of the sole surviving Green MLA of the 2012 election that, under a Greens/Labor coalition, the government would start constructing Stage 1. This requirement was enshrined in the *Parliamentary Agreement for the 8th Legislative Assembly for the Australian Capital Territory*.

Summary and Essential Problems with the Report

The Final Report presents several principal and related difficulties:

- The Government is attempting to convince ACT taxpayers that Light Rail Stage 1 (LRS1) is going to cost only $872 million when the project will in fact have a PPP contract Price of $1.355 billion. Both figures include the $375 million Territory Contribution[2], but each is discounted at different rates to different Base Dates.
- The Report makes two serious miscalculations, namely that the $872 million figure is given in January 2016 prices, rather in 2019 prices, and is the result of erroneous discounting at a rate of 7.52 % pa. Such a rate was relevant only to comparison of the competing tenders for the project and has no place in determining the Present Value of a series of payments (just like mortgage repayments) the Government now has to make.
- The correct PPP Contract Price is $1.355 billion, in April 2019 prices, and comprises the result of discounting the Availability Payments at 2.5% pa, being $980 million and the $375 million Territory Contribution. The 2.5% pa discount rate (also the depreciation rate of money) is the assumed, 20-year weighted average of the wages and material indices, from 2019 through 2039. The PPP contract provides formulae for the calculation and application of these indices but the actual rates negotiated remain confidential to the contractor and Government. One may safely bet that contracted indices are much lower than 7.52% and close to 2.5%.
- Although the Report does say that its estimate is exclusive of other project costs incurred by the Government, outside the PPP contract, it does not attempt to quantify them. However, it can be shown that these additional costs come to about $256 million. Adding this figure brings the total direct cost of LRS1 to ACT taxpayers of $1.611 billion in April 2019 prices.
- The Report neglects to mention the $600 million to rehouse 1,288 public tenants, which could logically be added to the foregoing figure, bringing the total cost to taxpayers to $2.211 billion over 20 years.
- The other major point of concern is that the Report maintains the claim in the original Business Case of a Benefit Cost Ratio (BCR) of 1.2. It also mentions a figure of 1.3 or even

1 Max Flint is a retired senior officer of the RAAF, who is a qualified engineer and has a Master of Science Degree (Logistics Management with distinction). He was an acquisition manager of major capital projects in Department of Defence and for many years was a private consultant, specializing in support systems and life cycle costing for major projects.

2 The Final Report uses the term 'Territory Contribution' that has been known to date as the 'Capital Contribution' ($375m) to be made by the Government

higher being possible, yet saying that the process for evaluating 'benefits' has not changed. In 2016, the Auditor-General evaluated the BCR at only 0.49, which would still be the case. The 1.2 figure included both direct benefits and what is referred to as "wider economic" benefits, the quantification of which is highly suspect. The A-G figure does not include the latter.

Issue of the Project Delivery Report provides the opportunity to refine project cost estimates made by Smart Canberra Transport (and predecessors) over the past five years. It remains only for the Government to validate these estimates or provide actual costs known only to it and the PPP contractor.

The following Critique Table 1 shows the real PPP Contract Price at $1.355 billion and the real, total cost to the taxpayer of $1.611 billion, at the Base Date of 28 April 2019.

Yet the Government is trying to convince the public (the taxpayers) that Stage 1 has cost only $872 million. Readers should think hard about what has been said and explained in this critique.

Critique Table 1		
Summary of Stage 1 Project Costs		
Cost Component	**$M**	**Notes**
Availability Payments (PV 19) @ 2.5%	980	1
Territory Contribution	375	2
Less unused Contingency	0	3
PPP Contract Price (PV19)	**1,355**	4
$Interest on Territory Contribution	106	5
Transport Canberra costs	150	6; 6A
Total Direct Cost to Taxpayer (PV19)	**1,611**	7
Renew 1,288 public housing units	600	8
Real Total Cost to Taxpayers	**2,211**	9
Cost per household pa (PV19)	**$604**	10
Notes:		
1. Figure will vary with assumed escalation (discount rate)		
2. Paid in April 2019		
3. Assumes all $117m contingency in fact used.		
4. PPP Contract Price at Base Date of 28 April 2019		
5. Government borrows at 2.5% pa to pay the $375m		
6. Project costs incurred in addition to the PPP Contract		
6A. Based on ACT Budget papers from FY 2013-14.		
7. Almost double the $872 m claimed by the Government.		
8. A real cost because of LRS1		
9. 2.5 times the $872 m claimed by the Government.		
10. Assumes183,000 households in 2029		

Readers can expect the Government to simply dismiss the foregoing conclusions, as it has always done from early in the project, claiming that its own methodology is sound.

Readers and ACT taxpayers should read closely the content of this critique and then ask themselves and the Government the following questions:

- Is it ethical or even honest for the Government to state the project cost in January 2016 prices or should they be in April 2019 prices?
- Do I/you believe that the rate of inflation (and depreciation of money) will average 7.52% pa over the next 20 years or be more like the 2.5% assumed herein, especially given the very low inflation rates in Australia for several years to date?
- Do I/you really believe a BCR of 1.2 (or more) when the Auditor-General put the figure at 0.49?

Critique

Refer to the table at Annex A and to Annex B for detailed comments on content of the Report and discussion of matters therein.

Conclusions that may be drawn from comments at Annex A are:

- The Final Report is misleading in respect of project costs in that they are clearly given as January 2016 estimates and not in April 2019 prices.

- The Report neglects to mention that the program to rehouse 1,288 public tenants is costing $600 million, which will take a fair chunk from expected Government land sales and taxes. Conversely, this sum could logically be added to the total project cost, bringing it to $2.211 billion over 20 years.
- The claim of a Benefit Cost Ratio (BCR) of 1.2 (or even better) is a complete fiction and was severely criticised when the Business Case was issued in 2016. The Auditor-General's report No 5 of 16 June 2016 says that the BCR was only about 0.49.
- The claim that during the delivery phase, 4,750 workers were inducted into the worksite is completely misleading in that it implies this number was always on the job, whereas the average number on the job at any one time would be more like a maximum of 500 to 750, depending on the split of the construction cost of $675 million between salary costs and material costs.
- The figures in Table 15 of the Report can be shown to be at January 2016, being estimates for each nominal component discounted at 7.52% per annum to January 2016, totalling $872 million. This figure, claimed by the Government to be the cost of Stage 1, is seriously in error.
- In respect of Tables 14 and 15 of the Report, Availability Payments and Net Present Costs, the sum of nominal Availability Payments (AP) at Table 15 is $1.295 billion. This figure discounted at 7.52% to January 2016 gives $501 million (Table 15 says $504 million). What should happen is to obtain the PV at April 2019 by discounting at an agreed inflation figure. Assuming an average inflation rate of 2.5% pa, gives a PV(Apr19) of $980 million. Adding the Territory (Capital) Contribution of $375 million brings the PPP Contract Price (direct project cost) in Apr19 prices to $1.355 billion.
- This real PPP Contract Price of $1.355 billion is exclusive of about $150 million in cost incurred by the project office of Transport Canberra (and predecessors) and about $106 million interest[3] indirectly paid by the Government on the Territory Contribution of $375 million. All up, in April 2019 prices, the Total Cost to Taxpayers for Stage 1 is about $1.611 billion.
- While an average inflation rate of 2.5% is assumed here (based on recent indices), the terms of the PPP contract provide for indexation of costs incurred (rates not known to public). One can be reasonably certain that indexation rates will exceed 2.5% in years to come and that the PPP contractor will not be out of pocket.
- The Government claims transparency in dealing with the public but reality has been very different. Yes, it issued a Business Case in 2014 but one severely criticised by private analysts and the Auditor-General (not that the Government took any notice), to the point that the Case was not worth much. Yes, it issued a Contract Summary in 2016 which added very little of value to the Business Case. Yes, it made public the Project Agreement (PPP Contract) but that published was so heavily redacted that it contained no information of use to the public.
- The report neglects to mention that there were several surveys done to gauge public support for the tram. Those surveys were strongly criticised for being heavily and unduly biased toward evoking a positive response. In particular, none of the surveys mentioned the probable cost. Even with bias, the surveys showed only about a 51 per cent support.

Questions

The following questions are posed for the Government to answer [Final Report page number included]:

1: [p18] What is the exact meaning of development approvals exceeding $394 m?

2: [p26] Why did the Government opt to pay more for the PPP contractor to borrow money than it could pay itself; in this case, at a cost to taxpayers of about $106 million?

3: [p27] What exactly is the total Actual Cost Outcome of design and construction agreed upon delivery in April 2019?

4: [p27] Has the unused $32 million (or other figure) of contingency funds been included in the Availability Payments – if not how will future contingencies be paid for throughout the Operations & Maintenance (O&M) phase?

[3] This interest cost is the 'opportunity cost of' the Territory Contribution (principal of $375m costing 2.5% pa over 20 years)

5: [p32] When is the "final completion" period and what is involved exactly?

6: [p32] Does 'ex-GST' mean that an additional 10% has to be added to stated costs or is the ACT Government exempt?

7: [p32]What exactly is the PPP Contract Price in April 2019 prices?

Max Flint
Co-ordinator, Smart Canberra Transport (SCT)
1 July 2019
0418 69 2331 ; mrflint@iimetro.com.au

Annexes :

A. Detailed Comments on Final Report for Light Rail Stage 1
B. Transport Canberra's Discounting Error
C. Key Tables From Final Report
D. Definitions and Abbreviations

Annex A to
SCT Critique_Stage 1 Report

Detailed Comments on Final Report for Light Rail Stage 1

SN	Page	Report content	Comment
1	9	Table 1. Value of light rail * increase public transport mode share	A Government objective but one that has not been realised; yet to be proved.
2	9	Table 1. Value of light rail * Fulfil the Griffin vision for the city.	A completely irrelevant claim, some 100 years after the original design and for a city that hardly resembles Burley-Griffin's original design. Pure Government promotion.
3	9	3.2. Project Design * High quality seating …to enhance passenger comfort …	Not according to letters to editors complaining about rock-hard seats.
4	10	3.3. Budget etc * Regeneration of Northbourne Ave … Government's decision to renew 1,288 public housing units.	The Report neglects to mention that that program is costing $600 million, which will take a fair chunk from expected Government land sales and taxes. Logically this sum could be added to the total project cost, bring it to $2.211 billion.
5	10	Table 2 … 2014 Business Case * Capital cost - Business Case (2014) $783 m - Contract Summary (2016) $707m - Final Outcome (2019) $675m	These figures are for design and construction only. It does not include: interest over 20 years of loan monies (nominally $300m after deduction of $375m Territory Contribution); Operations & Maintenance (O&M); the opportunity cost of the Territory Contribution; or expenditure by the project office/s on staff, consultancies and preliminary work prior to the PPP contract. The Business case figure is irrelevant; only the PPP contract and final figures are of consequence.
6	10	Table 2 … 2014 Business Case * Benefit Cost Ratio (BCR): - Business Case (2014) 1.2 - Contract Summary (2016) 1.2 - Final Outcome (2019) 1.3	These figures are complete fiction and were severely criticised when the Business Case was issued in 2016. The Auditor-General's report No 5 of 16 June 2016 says that the BCR was only **0.49**, yet the Final Report says that the claimed benefits are essentially the same as in the Business Case.
7	12	4.1. Goals and Aspirations * … travel time of around 24 minutes…	To date, one-way some travel times have been reported from 24 to 28 minutes. Whether these times can be maintained once 'steady state' operation is reached and the impact of Northbourne Ave traffic impediments are known, it remains to be seen.
8	13	Table 4. Project Aspirations *Affordability: Affordable capital and operational costs.	This statement has always been questioned by critics. The Government has claimed that the cost would be only one percent (1%) of ACT budgets, which was about right. However, it is about 8 to 10 per cent of the infrastructure part of budgets. **Note:** Each subsequent stage would be a similar additional burden. The projected cost of Stage 2 is almost twice that of Stage 1. One past Chief Minister has been quoted as saying that light rail is "fiscal suicide".
9	16	5.1. Measuring Benefits – Table 6 *The actual or expected results of many of the project benefits have not been modelled, surveyed or yet available, in particular for: * road traffic congestion and carbon emissions.	Until they are measured, the content of the Report, in respect of claimed benefits, cannot and should not be accepted.

10	17	Public housing renewal: * … the replacement of 1,288 public houses from Northbourne Ave.	See comment at SN 4.
11	18	Table 6. Employment direct * During the delivery phase, 4,750 workers were inducted into the worksite.	This may be so but is completely misleading in that it implies this number was always on the job, whereas the average number on the job at any one time would be more like 500 to 750, depending on the split of the construction cost of $675 million between salary costs and material costs. Even those average numbers appear somewhat high, more like maximums at any one time. Only the PPP contractor knows for sure.
12	18	5.2 . Urban renewal. * From November 2016 to March 2019, the value of development approvals granted along Northbourne Ave exceed $394m.	What does this mean exactly? The value of buildings to be constructed or the value of land/lease sales or what? **Question 1**: [p18] What is the exact meaning of development approvals exceeding $394 m?
13	20	6.3 Table 7. Change in BCR: * Original Business Case 1.2 * Actual 1.3	See comment at SN 6 (p10)
14	26	The Project is being delivered and operated as an Availability Public-Private Partnership ("PPP").	The concept of PPP contracts is not without controversy. In this case, where the Government pays a 'Territory Contribution' of $375 million (about half of the build cost), a legitimate question has always been why the Government has not paid 100% of the capital cost when it can borrow money more cheaply than a PPP contractor, which, not only has to borrow at commercial rates but adds its profit margin onto that component as well. The margin between the government bond rate and what the PPP contractor would pay may be in the order of 2.5%. Thus, over 20 years, the Government would have paid about $106 million in unnecessary interest cost. **Question 2**: [p26] Why did the Government opt to pay more for the PPP contractor to borrow money than it could pay itself; in this case, at a cost to taxpayers of about $106 million?
15	26	7.1. Starting Financial Position 2. The construction-phase contingency held by the Territory is paid during the delivery phase as and when required for certain construction-related costs to be borne by the Territory.	This statement implies that the Contingency amount of $85.1 million was paid progressively throughout the construction phase but Table 10 says that only $1.1m was paid prior to delivery 28Apr19?
16	27	7.2. Actual Financial Position **Table 9** Actual Cost Outcomes: * Design and construction $589m * Contingency $85m * Total $675m	Given that the construction cost of $707m was a January 2016 figure, one must assume that the 'Actual' Cost Outcomes are also in Jan16 figures, rather than 2019 figures. Yet the Report states in Tables 10 that that $84 millions of contingency payments were paid upon delivery in April 2019. Therefore, the total of $675 million is a mixture of Jan16 and Apr19 values and is thus an **invalid** figure. **Question 3**: [p27] What exactly is the total Actual Cost Outcome of design and construction agreed upon delivery in April 2019?
17	27	Table 10. Contingency Usage $85.1m of original $117m.	Although not all of the contingency 2016 figure of $117m has been used, it would be a very safe bet that it would be throughout the life of the project. **Question 4**: [p27] Has the unused $32 million (or other figure) of contingency funds been included in the Availability Payments – if not how will future contingencies be paid for throughout the O&M phase?
18	29	Tables 10. Contingency Usage	This table say that, except for $1.1 million paid for modifications during construction, the remainder of $84 million was paid upon

			delivery April 2019. **Assumption**: Ignoring the $1.1 million paid beforehand, the contingency amount paid in April 2019 was $85 million.
19	32	Construction phase contingency: * … may be need for additional minor contingency usage .. in period of "final Completion". * All figures in this paper are stated ex-GST.	**Question 5**: [p32] When is the "final completion" period and what is involved exactly? **Question 6**: [p32] Does 'ex-GST' mean that an additional 10% has to be added to stated costs or is the ACT Government exempt?
20	32	7.5. Availability Payments: * … timing and quantum of anticipated payments has not changed since the contract summary of June 2016. Table 14 Annual Payments	This is not strictly true. Except for FY 2019-19, the projected Availability Payments in Table 14 are marginally higher than in the Contract Summary of 2016. The ACT 2019-20 budget figures are exactly those on the Contract Summary. In fact, it can be shown that the Report figures are higher each year by $245,000 indexed, as stated in the Report. The index rate can be shown to be 2.5% pa. The ACT Budget figures for Availability payments will need to change in due course.
21	32	7.5. Availability Payments: * … the date for operations commencement was 1 September 2018. … occurred in April 2019. * … Canberra Metro was not granted an extension to the 20-year O&M period, … has foregone $21.9 million in 2018-19.	One could bet safely that the PPP contractor will eventually see 20 years of O&M, and beyond, unless, in the meantime it fails to meet contractual requirements.
22	33	…Territory Contribution of $375 million … was paid in April 2019.	Thus, this figure is erroneously discounted to $295 in Table 15.
23	33	Table 15. * Note 1: Refer to the Australian Government National Public Private Partnership Guidelines, Volume 5, for discount rate methodology	These guidelines on NPV are applicable to comparison only of competing projects. However, once an option is selected, NPV becomes a matter of discounting future (nominal) expenditures at the agreed inflation rate, which is a lot lower than the discount rate (7.52% in this case) used in initial selection of the PPP contractor. This has always been an anomaly in project estimates presented over the years by the Government, which has and is still seriously underestimating the true cost to taxpayers. The error in this methodology can be seen in Table 15, in saying that the Territory Contribution is only $295 million when it has been actually $375 million in April 2019. **See Annex B** hereto for detailed discussion.
24	33	Table 15. NPV Revised for actual costs: * Availability payments $504 m * Territory Contribution $295 m 25* Territory retained risk $73 m * **Total** **$872 m**	These figures can be shown to be at January 2016, being current estimates for each component discounted at 7.52% per annum from April 2019 to January 2016 (3.33 years). Note that it is in error to have discounted the Territory (Capital) Contribution and retained risk provision to Jan16, when paid in 2019.
25	33	Tables 14 and 15 Availability Payments and Net Present Costs.	Availability Payments comprise components of outstanding capital cost recovery, interest payments on that capital (together, just like a mortgage repayment) and O&M costs. The Availability Payments in Table 14 are nominal (future) annual amounts that total to $ 1,259,109. It can be shown that these same payments, discounted at 7.52% pa to January 2016, total $501,101, which tracks closely the figure of $504m given in Table 15. Correctly discounted at an assumed, average industrial index of 2.5% pa, to April 2019, produces a total of $980,000.

			Adding the Territory Contribution of $375 million, brings the direct project cost and PPP Contract Price to $1.355 billion. At Table 15, the Government erroneously claims a figure of $872 million for the total cost. **Question 7**: [p32] What exactly is the PPP Contract Price in April 2019 prices? **Note:** While an average inflation rate of 2.5% is assumed here (based on recent indices), the PPP contract provides for indexation of costs incurred (rates not known to public). One can be reasonably certain that indexation rates will exceed 2.5% in years to come and that the PPP contractor will not be out of pocket.
26	33	Tables 14 and 15 Availability Payments and Net Present Costs.	**See Annex B** hereto for detailed comment on the misapplication of NPV theory by the Government.
27	52	**Release of information**. By comparison to other jurisdictions, the ACT Government has been exceptionally transparent throughout the Project with the release of the Project's business case, Project Agreement, Contract Summary, this document and other materials. However, a challenge does arise in that the desirability of publicly releasing information must be balanced against the public interest to be gained from third-parties having confidence they can deal confidentially with the ACT Government	The Government claims transparency with the public but reality has been very different. Yes, it issued a Business Case in 2014 but one severely criticised by private analysts and the Auditor-General (not that the Government took any notice), to the point that the Case was not worth much. Yes, it issued a Contract Summary in 2016 which added very little to the business case. Yes, it made public the Project Agreement (PPP Contract) in 2016 but it was so heavily redacted that it contained no information of any use to the public.
28	54	14.4. Community engagement and outreach … The engagement effort used as many methods as possible, including social media campaigns to reach as many people as possible …	The report neglects to mention that there were several surveys done to gauge public support for the tram. Those surveys were heavily criticised for being heavily biased toward evoking a positive response. In particular, none of the survey mentioned the cost. Even with bias, the surveys showed only about a 51 per cent support.

TRANSPORT CANBERRA'S DISCOUNTING ERROR

References

A. City to Gungahlin Light Rail Project Delivery Report, Transport Canberra, 21 June 2019. See **Annex C** hereto for copies of relevant tables from the Report.

B. Light Rail Contract Summary, June 2016.

C. National Public Private Partnership Guidelines, Volume 5: Discount Rate Methodology Guidance, August 2013.

D. Capital Metro Full Business Case, June 2014.

Discussion

The Final Report at Reference A continues to use a fallacious discounting methodology that was used in Light Rail Contract Summary (Reference B) and, as a consequence, seriously understates the real cost of the project at today's prices (Apr19).

***Note**: The ACT Budget for FYs 2019-23 uses the same Availability Payment regime from the Contract Summary, rather than the more up-to-date figures give in Table 14 of the Final Report.*

In respect of calculating the Net Present Value (NPV) of project costs, Table 15 of the Final Report (see Annex C) uses a discount rate of 7.52% pa and cites Reference C as the authority for the methodology used.

***Note:** The Business Case (p89) makes a distinction between a discount rate (5.52%) and an escalation rate (2.75%).*

***Note**: The Business Case (p90) says "Economic benefits are discounted at 7%, in accordance with ATC National Guidelines … "*

Ever since preparation and issue of the Business Case and the Contract Summary, the Government has misapplied NPV analysis, either in error or deliberately and, consequently, has seriously underestimated the real cost of the project. This has misled the public (taxpayers) into believing the project was much less costly than in reality.

Transport Canberra (and predecessors) have always insisted that their PV methodology has been valid, citing the guidelines at Reference C.

However, it is clear from Reference C (see extract in box) that these guidelines on NPV are applicable only to comparison of competing tenders for a project and not at all applicable to discounting once the selection decision has been taken. At that point, the problem changes to one of determining the Present Value, at a given Base Date, of a suite of future project expenditures, namely the 20 Availability Payments (Reference A, Table 14).

National Public Private Partnership Guidelines, Volume 5: Discount Rate Methodology Guidance, August 2013

1 Executive Summary

1.1 Overview

For specific processes during a PPP project, Discounted Cash Flow (DCF) Analysis is required to compare different cash flow streams. This guidance provides specific recommendations on calculating and using Discount Rates when undertaking DCF analysis for the purposes of:

• Evaluating the Public Sector Comparator (PSC)

• Evaluating Public Private Partnership (PPP) bids.

As the cash flow profiles of the PSC and private sector bids will differ, DCF analysis is used to compare them on a consistent basis. This Discount Rate Guidance for Public Private Partnerships Projects ('Guidance') provides a methodology ('Methodology') for the development of the Discount Rate used to assess the relative VFM of the PSC compared to the PPP – this is the Financing Decision.

The problem becomes one akin to mortgage financing. In fact, the current acting head[4] of Transport Canberra, has said at public meetings that paying for the tram was just like paying for a mortgage. However, that is not what Transport Canberra has done in erroneously applying Reference C.

The following illustrates the absurdity of the methodology applied in the Final Report:

- Table 15 of the report (see Annex C) discounts the Availability Payments over 20 years, at a rate of 7.52% to a Base Date of January 2016 to a total of $504 million *(this figure has been verified closely by independent spreadsheeting).*
- It also means that each of the future (nominal) Availability Payments, must be escalating at the same rate of 7.52% pa, which cannot be the case, being so much larger than contracted escalation indices. As a corollary, 7.52% is also the implied average depreciation of money over the next 20 years – not really believable.
- The terms of the PPP contract provide for escalation of costs, according to prevailing wage and material cost escalation indices. These indices closely track and are only marginally higher that the Cost Price Index (CPI). The current CPI is currently a bit below 2% pa. Let's assume that the cost escalation indices are a bit higher at 2.5%. This is close to[5] the true discount/depreciation rate (not 7.52% used in the Report) to determine the PV at a Base Date.
- The Base Date should be that of project delivery, namely 28 April 2019, not January 2016, as the Government claims. Therefore, we need to determine the PV at the Base Date of April 2019 (PV19) using a discount rate equal to the assumed future cost escalation rate.
- The error in the government methodology can be seen most readily in Table 15, which claims the Territory Contribution is only $295 million when $375 million has actually been paid in April 2019.

If the reader is not yet convinced, consider the following:

- Table 14 lists the 20 Availability Payments, ranging from a part payment in 2018-19, then from $54,520 in 2019-20 through a maximum of $78, 879 and ending with a part payment in 2038-39. These are all nominal payments to be paid in future years. The average over the 20 years is about $60 million pa ($1,259 million nominal in total).
- Given these future payments, how much should the Government (borrower) identify to save (in a sinking fund) at an assumed interest rate to meet each of the annual payments when due?
- The answer is $980 million, and not $504 million as claimed by the Government.
- As an example, in Year 10 (2027-28), the nominal payment is $62.177 million. The figure in Apr19 that escalates to that amount in 10 years at 2.5% pa is $49.787 million (49.787*(1+2.5%)^9[6]).
- Conversely, the reader should ask how much a dollar today is worth in 1, 2, x years' time. The answer of course is today's dollar depreciated annually at an assumed cost escalation rate (2.5% assumed here).
- The Final Report would have readers believe that the Government could and would invest money at 7.52% pa[7] to meet the Availability Payments, which is obviously nonsense.
- The Report understates the real cost of Availability Payments at April 2019 and, in fact, the PPP Contract Price (direct project costs) by some $483 million (1,355m-872m).

[4] Perhaps now (Jun19) permanent head of Transport Canberra

[5] 2.5% pa is the assumed weighted average of the wages and material indices invoked in the PPP contract, over 20 years. Note, that the actual indices in the contract are confidential and not released to the public. Note also, that that inflation has been very low for years now and should be expected to rise over the next twenty years.

[6] At end of year 10, so discounted for 9 years.

[7] Financial theory assumes that a borrower puts aside an investment sum in a sinking fund, earning at a given rate. However, this rarely happens in reality, governments, companies and other borrowers preferring to pay the sum due at the time.

Summary

The following Critique Table 1 shows the real PPP Contract Price at $1.355 billion and the real, total direct cost to the taxpayer of $1.611 billion, at the Base Date of 28 April 2019.

One could logically add the $600 million to rehouse the 1,288 public tenants, which would bring the total cost to $2.211 billion.

Yet the Government is telling the public (the taxpayers) that Stage 1 has cost only $872 million.

Readers should think hard about what has been said and explained in this critique.

Critique Table 1

Summary of Stage 1 Project Costs

Cost Component	$M	Notes
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Less unused Contingency	0	3
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$Interest on Territory Contribution	106	5
Transport Canberra costs	150	6; 6A
Total Direct Cost to Taxpayer (PV19)	**1,611**	7
Renew 1,288 public housing units	600	8
Real Total Cost to Taxpayers	**2,211**	9
Cost per household pa (PV19)	**$604**	10

Notes:

1. Figure will vary with assumed escalation (discount rate)
2. Paid in April 2019
3. Assumes all $117m contingency in fact used.
4. PPP Contract Price at Base Date of 28 April 2019
5. Government borrows at 2.5% pa to pay the $375m
6. Project costs incurred in addition to the PPP Contract

6A. Based on ACT Budget papers from FY 2013-14.

7. Almost double the $872 m claimed by the Government.
8. A real cost because of LRS1
9. 2.5 times the $872 m claimed by the Government.
10. Assumes183,000 households in 2029

Annex C to
SCT Critique_Stage 1 Report

KEY TABLES FROM FINAL REPORT

TABLE 8 Costs at Contract and Financial Close

Component	Anticipated Cost at Contract Signing ($m)
Base Design and Construction Costs*	589
Contingency	117
Total	**707**

TABLE 9 Actual Cost Outcomes

Component	Business Case Estimated Cost ($m)	Anticipated Cost at Contract Signing ($m)	Actual Cost
Base Design and Construction Costs to the Territory*	610	589	589
Contingency	173	117	85
TOTAL	783	707	675
Difference to Actual Cost:	-108	-32	
* used in the calculation of availability payments, and exclusive of agency and independent certifier costs.			

TABLE 14 Availability Payments

Financial Year Ended 30 June	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Availability Payments ($'000s)	14,400	54,520	54,976	56,104	57,081	59,518	59,600	63,261	60,536	62,177	63,267
Financial Year Ended 30 June	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Availability Payments ($'000s)	64,578	67,355	67,634	78,879	69,326	70,827	71,743	73,712	76,275	13,340	-

	%Disc	%Disc	Years
Additional Data to Table 14	7.52%	2.50%	3.33
Component	**01/01/2016**	**28-Apr-19**	**28-Apr-19**
	$ '000	**$ '000**	**$ '000**
Total (Nominal) [1]		1,259,109	
Total (PV 1Jan16) @ 7.52% [2]	504,000		
Total (PV 28Apr19) @ 7.52% [3]		642,000	
Total (PV 28Apr19) @ 2.5% [4]			**980,000**
Error in Final Report			**476,000**

Notes:
1. Sum of 20 Avail Payments
2. Same as in Table 15
3. Sum if escalated @ 7.52% to 28Apr19
4. Real cost 28Apr19. Assumes average escalation of 2.5 %.

TABLE 15 Net Present Cost — Discount Rate: 7.52% pa — Additional Data to Table 15

Cost Component	Net Present Cost ($ million) Territory Payments per 2016 Contract Summary	Net Present Cost ($ million) Revised for Actual Costs	Net Present Cost ($ million) Actual Costs 28Apr19 @ 7.52% pa
Availability Payments	520	504	642
Territory Contribution	305	295	375
Territory-retained Risk Contingency	114	73	85
Net Present Cost (7.52% discount rate)*	**939**	**872**	**1,102**

* Note 1: Refer to the Australian Government National Public Private Partnership Guidelines, Volume 5, for discount rate methodology

Annex D to
SCT Critique_Stage 1 Report

DEFINITIONS AND ABBREVIATIONS

Abbreviation	Meaning
AP	Availability Payment
BCR	Benefit Cost Ratio
DCF	Discounted Cash Flow
NPV	Net Present Value
PPP	Public Private Partnership
LRS1	Light Rail Stage 1
O&M	Operations and Maintenance
PSC	Public Sector Comparator
VFM	Value for Money
Term	**Definition**
Base Date	The date to which a series of future expenditures are discounted/ depreciated. For Light Rail Stage 1, the Base Date is 28 April 2019.
Benefit Cost Ratio	Claimed benefits, quantified in dollars, divided by the PPP Contract Price, determined at the Base Date.
Net Present Value	The Present Value of future revenues les the Present Value of future expenditures.
Present Value	The value of a series of future expenditures discounted/depreciated at a given percentage rate per annum, to the Base Date
PPP Contract Price	The sum of Availability Payments, discounted to the Base Date, plus the Territory (Capital) Contribution of $375 million and the value at the contingency paid at the Base Date.
Territory Contribution	The erstwhile 'Capital Contribution' of $375m paid to the PPP contractor in April 2019.