



Independent Pricing and Regulatory Tribunal

Review of CityRail fares, 2009-2012

Transport — Final Report
December 2008



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1 Introduction and executive summary

IPART has completed its review of the fares CityRail can charge from 2009. In conjunction with this fare review, IPART examined the economic regulatory framework for CityRail at the request of the NSW Government. The primary objective of this second review was to recommend a regulatory framework that enables the Government and IPART to create effective incentives for CityRail to reduce its total costs by improving its efficiency, while maintaining its service levels.

As part of the review of the economic regulatory framework, IPART examined the approach to fare setting it uses in making its fare determinations. It made substantive changes to this approach, and used the revised approach in making the 2009 fare determination.

The purpose of this report is to explain IPART's 2009 fare determination, and the final decisions that underpin the determination. Box 1.1 outlines the process IPART followed in undertaking both reviews. Appendix D provides the terms of reference for the review of the economic regulatory framework.

1.1 Fare outcomes under the 2009 determination

IPART's fare determination applies to all railway passenger services¹ supplied by RailCorp under the name "CityRail".² Thus, it affects the price of single, return and periodical tickets, TravelPass tickets, FlexiPass tickets, CityHopper tickets, DayTripper tickets, and link and intermodal destination tickets such as Olympic Park tickets.

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¹ By section 18(2) of the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act), RailCorp may not fix a price below that determined by IPART without the approval of the Treasurer.

² Except for the services that are supplied in accordance with the ticket known as the "SydneyPass".

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⁴ Except for the services that are supplied in accordance with the ticket known as the "SydneyPass".

Under IPART's 2009 fare determination, the prices of CityRail tickets increase by a weighted average of 12 per cent in real terms (or 25 per cent in nominal terms)⁵ over the period 4 January 2009 to 31 December 2012. However, the prices of many individual tickets change by more or less than this average due to changes in the structure of CityRail fares.

In particular, IPART decided to price single tickets based on a flat flag-fall charge and a variable distance-based charge that is the same for all distance bands. It also decided to move towards a consistent frequency discount of 20 per cent for all periodical fares. These decisions led to significant variations in how individual fares change over the four-year period. However, no individual fare increases by more than 23 per cent in real terms (or 37 per cent in nominal terms) over this period. In nominal dollars, this means weekly tickets for journeys of less than 175 km (which includes journeys from Newcastle to Central) increase by no more than \$12 over the four-year period.⁶

Based on the current market implied inflation forecast:

- ▼ For distances up to 20 km, single tickets increase by between 20 and 60 cents on 4 January 2009, and by a total of 20 to 80 cents over the subsequent three years. Weekly tickets increase by \$1.00 to \$3.00 per week on 4 January 2009, and by a total of \$3.00 to \$6.00 over the subsequent three years.
- ▼ For distances from 20 km up to 65 km, single tickets increase by up to 40 cents on 4 January 2009, and by a total of 80 cents to \$1.40 over the subsequent three years. Weekly tickets increase by \$2.00 to \$3.00 per week on 4 January 2009, and by a total of \$6.00 to \$9.00 over the subsequent three years.
- ▼ For distances from 65 km up to 175 km, single tickets remain at current levels on 4 January 2009, and increase by a total of 20 cents to \$1.20 over the subsequent three years. Weekly tickets increase by \$3.00 per week on 4 January 2009, and by a total of \$7.00 to \$9.00 over the subsequent three years.
- ▼ For distances 175 km and above, single tickets decrease by up to \$8.00 on 4 January 2009, then remain constant over the subsequent three years. Weekly tickets vary from a decrease of \$25.00 per week to an increase of \$2.00 per week on 4 January 2009, then increase by a total of \$13.00 over the subsequent three years.
- ▼ TravelPasses increase by \$3.00 on 4 January 2009, and by a total of \$8.00 to \$12.00 over the subsequent three years. The Red TravelPass increases by \$3.00 on 4 January 2009 and by a total of \$10.00 over the subsequent three years.
- ▼ Off-peak tickets for journeys up to 175 km increase by up to 80 cents on 4 January 2009, and by up to \$2.20 over the subsequent three years.

⁵ 'In real terms' means before the effect of inflation. 'In nominal terms' means after being adjusted for inflation. Throughout this report, all figures expressed in nominal terms assume inflation of 2.7 per cent per annum, which is the current market implied forecast. If actual inflation differs from this forecast, actual fare outcomes in 2010 to 2012 may differ.

⁶ The price of the 195 km and 215 km train weekly and the pink TravelPass weekly increase by \$15 in nominal terms over the four years.

After ticket prices have been adjusted for inflation in January 2010, 2011 and 2012, these prices will be rounded according to RailCorp's rounding conventions. IPART will publish the new adjusted fares for the coming year in a prices and services report on CityRail in December each year.

1.2 Key differences between the draft and final determination

In its October 2008 draft report, IPART set out a new approach to fare setting. This approach involved a rigorous assessment of the efficient costs of providing CityRail's services, the value of the external benefits generated by these services, and the proportions of the efficient costs to be funded by taxpayers and passengers over the next four years. IPART used the new approach in making its draft determination, taking account of a wide range of matters including (but not limited to):

- ▼ submissions from stakeholders including the NSW Government in response to its issues paper and two discussion papers
- ▼ the impact of fare changes on the affordability of fares and the patronage of CityRail services
- ▼ the urgent need to create effective incentives for CityRail to reduce its costs by increasing its economic efficiency
- ▼ the need for passengers and taxpayers to each fund an appropriate proportion of the costs of providing CityRail services that reflects the level of benefits individual passengers and the wider community derive from these services.

IPART also made a draft decision to change the structure of CityRail fares, to better reflect the different costs of providing services over different distances, promote more equitable outcomes among CityRail passengers, and facilitate the introduction of integrated electronic ticketing in the future. It applied the new fare structure in proposing fares for the draft decision.

In making its final determination, IPART continued to use the new approach to fare setting and the new fare structure. However, it reviewed its draft decisions on individual components of the approach and structure, particularly taking into account:

- ▼ Stakeholder submissions in response to the draft report and comments made at the November public hearing, which focused on the impact of the draft determination on the affordability of CityRail fares (particularly for medium and longer distance commuters).
- ▼ The NSW Government's submission in response to the draft report. This submission also raised concerns about the impact of the draft determination on longer distance commuters in the context of the Government's broader policies for transport. It also put the view that a higher flag fall was appropriate, and that IPART should give more consideration to the nominal increases in fares as a result of the determination as well as the percentage changes.

- ▼ Updated data from RailCorp on forecast ticket sales for the Epping to Chatswood Rail Link (ECRL), which is due to open in early 2009.
- ▼ The impact of recent changes in financial market conditions on the rate of return.
- ▼ The appropriate balance between reforms to fares which provide a more cost reflective and equitable fare structure, the impact on passengers, and an overall revenue outcome that achieves an appropriate balance between passengers and taxpayer's funding rail services.

Under IPART's final determination, the average real cumulative increase in CityRail's fares is 12 per cent over the four-year determination period, which is the same as under the draft determination. However, the individual fare increases provided under the final determination are more evenly distributed. For example, under the final determination, the nominal cumulative increase in the price of single tickets for distances up to 175 km over the determination period range from 20 cents to \$1.40, compared to 60 cents to \$5.00 under the draft determination. For weekly tickets, the nominal cumulative price increase for distances up to 175 km range from \$5.00 to \$12.00, compared to \$5.00 to \$36.00 under the draft determination. For TravelPasses, the nominal cumulative price increase range from \$11.00 to \$15.00 compared to \$14.00 to \$24.00 under the draft determination. However, off-peak fares have increased from the draft to the final decision as a result of IPART's final decision to maintain the existing level of discount at 30 per cent as opposed to the draft decision to increase this to 50 per cent. For off-peak return tickets for distances up to 175 km, nominal prices increase by up to \$2.20 over the determination period, compared to decreases of up to \$2.00 under the draft.

The sections below summarise IPART's final decisions in relation to the approach to fare setting, the key components of this approach and the fare structure, highlighting differences between the final and draft decisions.

1.3 Approach to fare setting

IPART's final decisions on the approach to fare setting represent major revisions to the approach used in the past. The new approach is more rigorous and robust, and provides significantly more scope to create effective incentives for CityRail to improve its economic efficiency. However, the effectiveness of these incentives will be enhanced if all aspects of CityRail's economic regulatory framework are aligned.

After the release of IPART's draft fares and governance reports, the Minister for Transport introduced to Parliament amendments to the *Transport Administration Act 1998* as well as other legislation to de-corporatise RailCorp so it has a management structure and accountabilities similar to those of the State Transit Authority. The Premier announced that the changes are expected to increase RailCorp's accountability, enable greater Ministerial control of the direction of transport services, and ultimately improve service levels. The objectives identified by the Premier are consistent with the key objectives identified by IPART in its draft report

on governance.⁷ While the means of implementing these objectives chosen by Government (ie, de corporatisation) differs from the suggested structure outlined in IPART's draft report, there is no reason why the purchaser-provider model recommended by IPART cannot be applied to a de-corporatised RailCorp.⁸ As noted in its draft report, IPART considers it important for the Minister to exercise strategic control over the direction of passenger rail services in greater Sydney. However, central to IPART's draft recommendations was a clear delineation of control between Government and RailCorp to provide for greater CityRail accountability and to avoid Government being held responsible for issues which are beyond its control such as some of the day to day operations of CityRail.

Nevertheless, IPART supports the Government's decision to adopt a service contract model for RailCorp. This model has the potential to strengthen the economic regulatory framework for CityRail and complement IPART's approach to fare setting by providing effective incentives to improve CityRail's financial performance without decreasing its service performance.

IPART's recommendations on implementing an effective service contract model are discussed in a separate report.⁹ (Box 1.2 provides a summary of the key recommendations.)

IPART's final decisions on the approach to fare setting include:

- ▼ Introducing a multi-year determination period. For this determination, IPART set CityRail's fares for a period of four years, from 1 January 2009 to 31 December 2012.
- ▼ Using the building block approach to determine CityRail's annual revenue requirement over the determination period. In line with this approach, IPART assessed CityRail's efficient operating and capital costs over the determination period, and its potential for efficiency savings, to determine CityRail's revenue requirement over this period.
- ▼ Establishing the share of the revenue requirement to be recovered from CityRail passengers and from taxpayers by estimating the value of the external benefits generated by CityRail services, and considering potential impacts on fare affordability and patronage levels.

⁷ IPART, *Improving CityRail's accountability and incentives through stronger governance arrangements - Draft Report*, October 2008. This report proposed that the Government make these changes by adopting a purchaser provider model, and implement this model by improving the current governance instruments - the Statement of Corporate Intent, the Rail Performance Agreement and the funding agreement. While the Government has chosen to use a different means - de-corporatising RailCorp - its changes are essentially consistent with IPART's draft recommendations.

⁸ IPART, *Improving CityRail's accountability and incentives through stronger governance arrangements - Draft Report*, October 2008.

⁹ IPART, *Improving CityRail's accountability and incentives through an effective service contract - Final Report*, December 2008.

- ▼ Converting the share of CityRail's revenue requirement to be recovered from passengers into fares by setting the maximum fare for each CityRail ticket type.

IPART considers this fare setting approach has clear advantages over alternative options. In particular, it takes account of the full economic costs of providing CityRail services and the external benefits of these services in a rigorous and transparent way.

1.4 CityRail's annual revenue requirement

Table 1.1 provides an overview of IPART's final decision on CityRail's annual revenue requirement (excluding GST), and on each of the cost 'building blocks' that underpin this decision.

Table 1.1 Final decision on net annual revenue requirements (\$million, real \$2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12
IPART determination – operating costs and depreciation only					
CityRail forecast operating expenditure		2,226	2,372	2,400	2,470
LEK recommended efficiency savings		- 59	- 183	- 296	- 454
IPART adjustments (MPM and borrowing costs)		- 140	- 152	- 157	- 140
Forecast efficient operating expenditure	2,060	2,027	2,036	1,947	1,875
Allowance for a return on capital	-	421	571	639	689
Allowance for a return of capital (depreciation)	410	199	286	365	434
Allowance for return on working capital	-	- 17	-19	-16	-12
Total revenue requirement	2,470	2,630	2,874	2,935	2,985
Non-fare revenue	305	285	285	275	271
Net revenue requirement	2,165	2,345	2,589	2,660	2,713

Note: Totals may not add due to rounding.

1.4.1 Efficient operating and maintenance expenditure

In making its final decision on efficient operating and maintenance expenditure, IPART accepted LEK's recommendation that it is both reasonable and achievable for RailCorp to reduce CityRail's operating costs by 18 per cent per annum by 2011/12 by making efficiency savings. This decision implies that RailCorp can make total efficiency savings of around \$1 billion in real terms over the four years to 2011/12, while maintaining or improving its quantity and quality of service. This will bring CityRail's costs more into line with the costs of urban passenger rail operators in Melbourne and Brisbane.

LEK identified a variety of opportunities for CityRail to bring its costs in line with other urban passenger rail system operators. The Government and RailCorp have indicated their intention to pursue many of these efficiency savings, including in the areas of rail maintenance, driver rosters and cleaning.¹⁰ However, IPART notes the NSW Government has indicated it will continue to employ guards on CityRail trains.¹¹ As IPART has emphasised throughout this review, the decision about whether or not to employ guards and staff low patronage stations is a matter for the Government. IPART's role is confined to determining the maximum fares CityRail can charge for its services and, as part of this process, determining the efficient costs of providing those services. This includes considering the extent to which existing assets can be deployed in a more effective manner, and the extent to which additional capital expenditure (eg, installing CCTV cameras and upgraded ticket machines) can achieve operating cost savings. Consistent with an incentive approach to regulation, IPART's aim is to set fares at a level that ensures passengers only contribute to the **efficient** costs of supplying CityRail services.

At present, IPART's view is that the costs associated with employing train guards and staffing low patronage stations are not efficient, and so should not be funded by passengers.

1.4.2 Allowance for a return on capital

The final decision on the allowance for a return on capital reflects IPART's view that:

- ▼ the value of CityRail's regulatory asset base (RAB) as at 1 July 2008 (or its initial capital base) is \$4.3 billion
- ▼ CityRail's forecast efficient capital expenditure over the period to 2011/12 is \$7.0 billion (including \$2.35 billion for the assets associated with the ECRL), and this expenditure should be rolled into the RAB in the year it is incurred
- ▼ an appropriate rate of return for CityRail over the determination period is 7.2 per cent per annum.

¹⁰ Ministry of Transport and RailCorp comments at November 2008 public hearing, transcript available from www.ipart.nsw.gov.au

¹¹ NSW Government submission, 14 November 2008, pp 1-2.

To calculate the value of the initial capital base (ICB) for the draft decision, IPART 'drew a line in the sand' at 1 July 2008, to differentiate capital expenditures incurred in the past (which should be considered in setting the ICB) and future capital expenditures (which should be considered when rolling the RAB forward). It then calculated the value of the ICB using the deprival value approach.

IPART used the same approach in making its final decision. However, it adjusted several inputs to its calculation to ensure consistency with other components of its final determination, including the rate of return and market implied inflation. The net effect of these changes is an increase in the value of CityRail's ICB from \$3.9 billion to \$4.3 billion.

1.4.3 Allowances for depreciation and a return on working capital

To calculate the allowance for a return of capital (or depreciation), IPART assumed straight line depreciation. It established an appropriate depreciation rate for CityRail's three asset groups – existing assets (or the ICB), new assets not associated with major projects, and new assets associated with major projects – then multiplied the annual value of each group by the appropriate rate:

- ▼ the ICB was depreciated at the average depreciation rate implicit in RailCorp's statutory accounts (3.7 per cent)
- ▼ new assets not associated with major projects were depreciated at the weighted average depreciation rate of future capital expenditure (6.5 per cent)
- ▼ new assets associated with major projects – ie, the ECRL – were depreciated at the rate of 1 per cent (based on an average asset life of 100 years).

This is the same as the approach used in making its draft decision; however, new assets other than the ECRL were depreciated by a higher rate than the draft decision (6.5 per cent compared to 5.5 per cent).

1.5 Forecast patronage growth

IPART's decision on CityRail's forecast patronage growth over the determination period has a major impact on the level of fares. This is because IPART determines the share of CityRail's revenue requirement to be recovered from passengers by considering the value of the external benefits of CityRail, and this value is influenced by the forecast number of passenger journeys. In addition, IPART sets fare levels to generate this share of the revenue requirement based on the forecast number of passenger journeys for each fare type. In both cases, higher forecast patronage growth will generally lead to lower fare levels.

IPART's final decision on CityRail's forecast patronage growth is shown on Table 1.2 below. This decision recognises the recent strong growth in CityRail passenger journeys and the expected impact of the opening of the ECRL, but reflects IPART's

view that patronage growth will moderate over the last two years of the determination period due to uncertainties surrounding growth in CBD employment and CityRail's future capacity constraints.

Table 1.2 Final decision on forecast patronage growth (%)

	2007/08	2008/09	2009/10	2010/11	2011/12
Patronage change	5.2	4.3	4.9	2.5	2.5

1.6 Value of the external benefits of CityRail

As well as providing direct benefits to their users, passenger rail services generate substantial indirect benefits that accrue to the wider community – such as reduced road congestion, traffic accidents and greenhouse gas emissions. There is general agreement in Australia and other jurisdictions that these external benefits justify government subsidisation of passenger rail fares. For this reason, the value of CityRail's external benefits was one of the key factors IPART considered in determining the appropriate shares of CityRail's revenue requirement to be funded by taxpayers (through government subsidies) and by passengers (through fares).

IPART's final decision is that the value of these external benefits in 2007/08 was \$1.7 billion, and this value will increase to \$1.9 billion per annum in 2011/12, as shown in Table 1.3.

Table 1.3 Final decision on the value of the external benefits of CityRail (\$billion, real \$2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12
External benefits value	1.7	1.7	1.8	1.9	1.9

Source: IPART calculation based on information provided by LECG.

The final decision on the value of the external benefits is consistent with the draft decision, although IPART made some minor revisions to its calculation of this value to reflect changes in its final decision on forecast patronage growth and market implied Consumer Price Index (CPI) and the Wage Price Index (WPI) forecasts over the determination period.

1.7 Share of the revenue requirement to be funded by passengers through fares

CityRail's revenue from fares and other sources is substantially less than its costs, so the resulting revenue shortfall is made up by taxpayers through government funding. For example, in 2007/08, CityRail received \$1.9 billion in government funding, which is equivalent to a subsidy of \$15 per week from each household in NSW.¹² The question for IPART in making its fare determination is what share of CityRail's revenue requirement is it appropriate for taxpayers to fund? And therefore, what share should be funded by passengers through fares?

IPART's final decision on the value of CityRail's external benefits represents around 70 per cent of CityRail's revenue requirement. This suggests around 70 per cent of the revenue requirement should be funded by government subsidies, and thus the remainder of around 30 per cent should be funded by passengers. After considering the implications of these funding shares for the affordability of fares and the level of patronage, IPART considers that they are broadly appropriate.

However, in making its final decision IPART further considered stakeholder views that the passenger share should be less than 30 per cent in recognition of CityRail's contribution to broader social benefits. While they are hard to quantify, IPART agrees that CityRail services provide social benefits by improving mobility and social inclusion, particularly for disadvantaged groups. In recognition of this, it decided to set fares to recover a lower proportion of CityRail's net annual revenue requirement than it did for the draft determination (28.5 per cent, compared to 30 per cent for the draft determination).

In line with this decision, IPART has set fares for the 2009 determination period to recover 28.5 per cent of CityRail's net annual revenue requirement. This reflects the average difference between CityRail's net annual revenue requirement and the forecast annual value of the external benefits of CityRail services over this period (as a proportion of the net annual revenue requirement) as shown in Table 1.4.

Table 1.4 Difference between net annual revenue requirement and forecast annual value of external benefits (as % of revenue requirement)

	2008/09	2009/10	2010/11	2011/12	Average
Revenue requirement (\$m)	2,345	2,589	2,660	2,713	
External benefits (\$m and as % of revenue requirement)	1,727 (73.7%)	1,820 (70.3%)	1,877 (70.5%)	1,935 (71.3%)	
Passenger funding share = difference as % of revenue requirement	26.3%	29.7%	29.5%	28.7%	28.5%

Note: real \$2008/09.

Source: IPART.

¹² RailCorp and ABS (Cat No. 2068.0).

1.8 Fare structure

As part of its review, IPART examined the current structure of CityRail fares to see if it could be improved, for the benefit of passengers, the Government, and ultimately the taxpayers who fund a significant proportion of CityRail's costs. It considered two key aspects of the fare structure:

- ▼ the spatial aspect, which links the fare charged to the location in which travel is undertaken or the distance travelled by passengers
- ▼ the temporal aspect, which links the fare to the time of day or day of week in which travel is undertaken.

IPART's final decision is to change the spatial aspect of the current fare structure, so CityRail fares better reflect the different cost of providing services to passengers over different distances. IPART considers the new fare structure, which is consistent with the Government's policy on electronic ticketing, will promote more efficient use of the CityRail network and encourage efficient investment in the network. It will also promote more equitable outcomes between passengers travelling different distances and between passengers and taxpayers. In addition, it will begin to transition CityRail's fare structure towards one that will facilitate electronic integrated ticketing.

Under the new fare structure, the price of a single ticket fare includes a fixed flag-fall charge of \$2.80 in 2008/09, plus a variable distance-based charge of 6 cents per kilometre in 2008/09. After carefully considering the submissions from the NSW Government and other stakeholders on the impact of the draft fare determination on medium and longer-distance passengers, IPART increased the flag fall and reduced the kilometre charge compared to its draft decision. IPART considers its final decision on the fare structure provides more equitable outcomes than those under the draft decision.

In addition, the discount for off-peak tickets will remain at 30 per cent, and the conditions related to use of these tickets will not change (ie, off-peak ticket holders can continue to make their return journey during the afternoon peak period). In comparison, under the draft determination the discount for off-peak return tickets increased to 50 per cent and usage was restricted to off-peak periods, including for the return journey. IPART's final decision on the structure of off-peak tickets reflects further analysis of the outcomes of the "SmartSaver" trial which produced little shift in patronage from peak to off-peak times, and the ticketing and other operational limitations of CityRail's current systems.

Finally, the price of weekly tickets is based on the price of 10 single tickets, minus a specified discount. IPART maintains the view expressed in the draft report that the discount applied to weekly tickets should be constant, regardless of the distance travelled. However, it recognises that it is likely to take more than this determination period to implement this approach, because some of the current discounts applied to longer distance weekly fares are substantial. Therefore, IPART's final decision is to

make consistent 20 per cent discounts the target, and transition individual weekly fares towards that target over time. This decision takes into account affordability concerns and that many existing commuters have made decisions on where to work and live based on existing fare levels.

Box 1.1 IPART's review process

IPART has undertaken extensive public consultation for both the fare review and the review of the economic regulatory framework. As part of this process, it has:

- ▼ released an issues paper in October 2007 and received submissions on that paper from the Government and other stakeholders
- ▼ released two discussion papers in June 2008 – one on determining CityRail's revenue requirement and how it should be funded, the other on deciding on the structure and level of CityRail's fares – and received submissions on both papers from stakeholders
- ▼ held a public roundtable discussion in July, to provide stakeholders with a further opportunity to provide their views on the Government's submission to the fare review, and the issues raised in the two discussion papers
- ▼ released a draft report and fare determination in October, held a public hearing in November 2008 and received submission from stakeholders
- ▼ provided its draft report and recommendations to the Government on improving CityRail's accountability and incentives by strengthening its governance arrangement in October 2008 and received submissions from stakeholders.

In conjunction with the release of this final report and fare determination, IPART has released its final report and recommendations to the Government on implementing an effective service contract with RailCorp, to improve CityRail's incentives and accountability, and ensure all elements of the economic regulatory framework are consistent and aligned.

Box 1.2 Summary of IPART's key recommendations on implementing an effective service contract for CityRail

The NSW Government recently announced its intention to adopt a service contract model for RailCorp. Therefore, IPART has focused its final report, *Improving CityRail's accountability and incentives through an effective service contract*, on assisting the Government to develop and implement a service contract that has the greatest possible chance of achieving the Government's objectives for this model – that is, to enable it to exercise more effective control over CityRail's service and financial performance and create strong incentives for RailCorp to improve CityRail's economic efficiency.

IPART has recommended a set of key principles that should be followed in developing and implementing the service contract to ensure its effectiveness. These principles are as follows:

- ▼ the Government should drive the development of the service contract
- ▼ the service contract should have a multi-year term, be signed before it is scheduled to come into effect, and be aligned with IPART's fare determination
- ▼ the service contract should set out the Government's objectives, service and financial targets and funding for CityRail specifically, not just those for RailCorp as a whole
- ▼ as much as possible, the service contract should focus on outputs rather than inputs – that is, it should specify the objectives, service performance targets and financial performance targets the Government expects CityRail to meet, rather than how it should do so
- ▼ the Government should monitor and evaluate CityRail's performance against the service and financial performance targets, and specify the consequences for RailCorp's management of non-performance including providing a period of time for management to return performance to levels specified in the contract
- ▼ the service contract and CityRail's performance against the targets in the contract should be publicly available and reported on.

In line with the principles listed above, IPART has recommended the contract include the following information related to CityRail's service performance, financial performance and funding arrangements:

- ▼ measurable service performance targets and indicators that clearly specify the quantity and quality of service CityRail is to provide, plus any specific policies or practices the Government requires RailCorp to adhere to in providing CityRail services
 - ▼ measurable, detailed financial performance targets for the CityRail business, including efficiency savings targets that are consistent with those determined by IPART
 - ▼ detailed information about the funding arrangements for CityRail. Specifically, the service contract should:
 - clearly and transparently set out the level of funding the Government will provide for CityRail services, and break this funding down into its component parts
 - link the level of funding the Government provides with IPART's fare determination
 - make explicit the costs associated with Government policy
 - establish ex-ante the parameters for compensation if CityRail's farebox revenue is less than forecast.
-

1.9 Structure of this report

The following chapters set out and explain IPART's final decisions and determination in detail:

- ▼ Chapter 2 discusses the services, service standards, policies and other obligations that IPART has taken into account in setting fares
- ▼ Chapter 3 discusses IPART's decisions on how service standards should be incorporated into CityRail's economic regulatory framework
- ▼ Chapter 4 sets out IPART's decisions on the approach to fare setting, including the decision to use the building block approach to determine CityRail's annual revenue requirement
- ▼ Chapter 5 provides an overview of IPART's decision on CityRail's annual revenue requirement
- ▼ Chapters 6 to 9 explain the decisions on the key components of the revenue requirement - including forecast efficient operating and maintenance expenditure, and the allowances for a return on capital, depreciation and working capital
- ▼ Chapter 10 explains IPART's decision on the forecast growth in CityRail's patronage over the determination period
- ▼ Chapter 11 outlines IPART's decision on the estimated value of the external benefits generated by CityRail's services
- ▼ Chapter 12 discusses IPART's decision on the appropriate share of the revenue requirement to be recovered from passengers through fares, and from the taxpayers through government subsidies
- ▼ Chapter 13 outlines IPART's decision on the appropriate fare structure
- ▼ Chapter 14 explains IPART's fare determination, including the price for individual tickets over the 1 January 2009 to 31 December 2012 determination period
- ▼ Chapter 15 explains the likely impact of price changes on the affordability of fares.

2 CityRail's regulatory and policy context

CityRail provides passenger rail services within the greater Sydney region. It provides rail services on the Sydney suburban network and intercity services to Newcastle and Dungog in the north, Lithgow and Bathurst and Goulburn in the west and south west, and Bomaderry (Nowra) in the south.

Because CityRail is a government monopoly provider of passenger rail services, IPART regulates the maximum fares it can charge for its services. In addition, the Ministry of Transport (MoT), the Independent Transport Safety and Reliability Regulator (ITSRR) and several other government agencies influence CityRail's operations through regulation or the implementation of government policy.

The sections below describe the broad regulatory and policy context in which CityRail operates, including its legislative framework, its relationship to other government agencies (including IPART), and relevant NSW Government policy.

2.1 CityRail's legislative and governance framework

CityRail is a division of Rail Corporation New South Wales (RailCorp). When IPART released its draft report on CityRail fares, RailCorp was a Statutory State Owned Corporation (SSOC). After the release of IPART's draft report, the Minister for Transport introduced to Parliament amendments to the *Transport Administration Act 1998* as well as other legislation to reform the governance arrangements for RailCorp (and for Sydney Ferries).¹³ The amendments, which were passed on 25 November 2008, de-corporatise RailCorp so it has a management structure and accountabilities similar to those of the State Transit Authority.

¹³ The *Transport Administration Amendment (Rail and Ferry Transport) Amendment Bill* introduced amendments to the *Transport Administration Act 1988*, the *Passenger Transport Act 1990* and the *State Owned Corporations Act 1989*. The Bill was introduced to Parliament on October 23, 2008 and passed on 25 November 2008.

The Premier announced that the changes are expected to increase RailCorp's accountability, enable greater Ministerial control of the direction of transport services, and ultimately improve service levels.¹⁴ The objectives identified by the Premier are consistent with the key objectives identified by IPART in its draft report on governance.¹⁵ While the means of implementing these objectives chosen by Government (ie, de-corporatisation) differs from the suggested structure outlined in IPART's draft report, there is no reason why the purchaser-provider model recommended by IPART cannot be applied to a de-corporatised RailCorp.

The Minister for Transport also introduced legislative changes to require RailCorp to enter into a service contract with the Government (via the Director General of MoT) for the provision of passenger rail services.¹⁶ The service contract is intended to give the Government more control over RailCorp's strategic direction, specify its expectations for RailCorp's performance, and make RailCorp more accountable for its performance against these expectations.¹⁷

At present RailCorp's performance benchmarks and targets are set out in its Statement of Corporate Intent (SCI) and the Rail Performance Agreement (RPA).¹⁸ However, once a service contract is established, these instruments will no longer be required.

IPART considers that the service contract model has the potential to strengthen the economic regulatory framework for CityRail, and provide effective incentives to improve CityRail's financial performance without decreasing its service performance. IPART notes the Minister's comments that its decision to introduce the service contracting model for RailCorp is consistent with IPART's draft recommendations.¹⁹ In addition, the Government's submission in response to the draft report noted that the changes introduced to Parliament "will allow Government to move towards a governance arrangement along the lines of the ... model proposed by IPART".²⁰

¹⁴ News Release, Premier of NSW, *Rees makes major changes to RailCorp to improve trains*, 8 October 2008.

¹⁵ IPART, *Improving CityRail's accountability and incentives through stronger governance arrangements - Draft Report*, October 2008. This report proposed that the Government make these changes by adopting a purchaser provider model, and implement this model by improving the current governance instruments - the Statement of Corporate Intent, the Rail Performance Agreement and the funding agreement. While the Government has chosen to use a different means - de-corporatising RailCorp - its changes are essentially consistent with IPART's draft recommendations.

¹⁶ This legislative changes involved amendments to the *Transport Administration Act 1988*, the *Passenger Transport Act 1990* and the *State Owned Corporations Act 1989*.

¹⁷ Minister for Transport, Mr David Campbell, First reading speech, *Transport Administration Amendment (Rail and Ferry Transport Authorities) Bill 2008*, 23 October 2008.

¹⁸ The Statement of Corporate Intent for the year ending June 2007 is an attachment to IPART's October 2007 Issues Paper.

¹⁹ Minister for Transport, Mr David Campbell, First reading speech, *Transport Administration Amendment (Rail and Ferry Transport Authorities) Bill 2008*, 23 October 2008.

²⁰ See NSW Government submission, 10 November 2008, p 2.

Given the above, IPART's final report, *Improving CityRail's accountability and incentives through an effective service contract*, focuses on assisting the Government to develop and implement a service contract model for RailCorp that has the greatest possible chance of achieving the Government's stated objectives for this model – that is, to enable it to exercise more effective control over CityRail's service performance and create strong incentives for RailCorp to improve CityRail's economic efficiency for the benefit of RailCorp, the Government, passengers and taxpayers.

As explained in IPART's final report, IPART considers that for this contractual model to be successful in driving performance improvements, the Government would need to clearly specify the quantity and quality of services it would require CityRail to provide, and detail the funding it would provide consistent with these service targets. It would also need to clearly specify the financial performance targets it expects CityRail to meet and monitor CityRail's service and financial performance against the targets.

2.2 CityRail's relationship to other government agencies

A relatively large number of government agencies affect CityRail's operating environment, including ITSRR, IPART, the Minister for Transport and MoT, and NSW Treasury (see Figure 2.1).

ITSRR administers the *Rail Safety Act 2002* and ensures that RailCorp has safety management systems that comply with this Act and conducts rail safety audits, inspections and investigations. ITSRR also provides advice to the Government, publishes reports on CityRail's reliability, and conducts an annual survey of CityRail passengers.

IPART reviews CityRail's fares annually, using its powers under Section 11(1) of the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act), then determines maximum fares for CityRail's services. In fulfilling this role, IPART is required to consider the matters outlined in Section 15 of the IPART Act (see Box 2.1).

Box 2.1 Matters considered by IPART in determining CityRail's fares

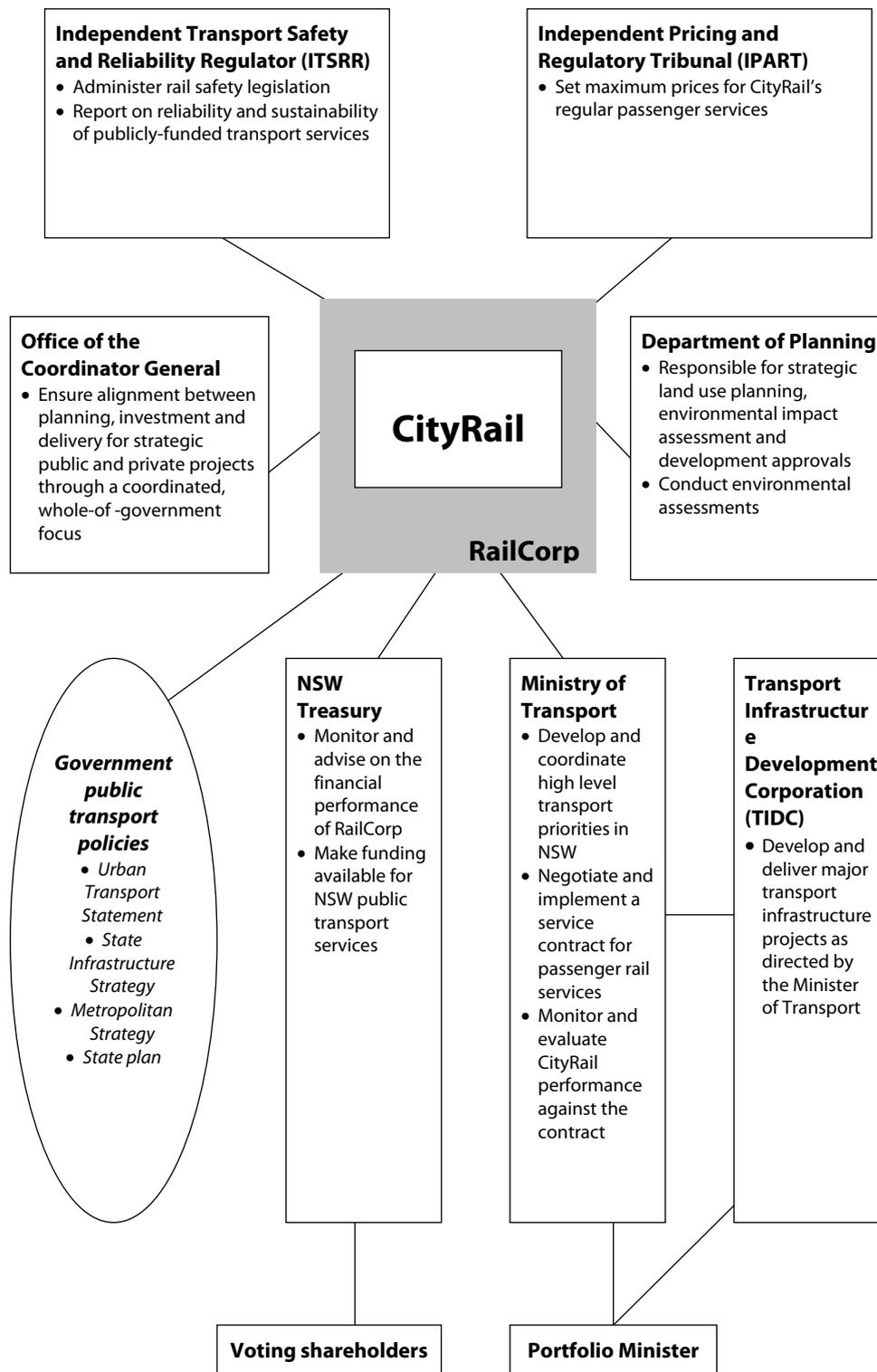
Section 15 of the IPART Act indicates the matters that IPART must consider in making its determination.²¹ These matters relate to:

- ▼ **Consumer protection** — protecting consumers from abuses of monopoly power; standards of quality, reliability and safety of the services concerned; effect on inflation.
- ▼ **Equity** — equity between users and non-users; social impact of decisions.
- ▼ **Economic efficiency** — encouraging greater efficiency in the supply of services; the need to promote competition; effect of functions being carried out by another body.
- ▼ **Financial viability** — cost of providing the services; ensuring an appropriate rate of return on public sector assets, including dividend requirements.
- ▼ **Environmental protection** — promoting ecologically sustainable development via appropriate pricing policies; considering demand management and least-cost planning.

The Minister for Transport, MoT and NSW Treasury are responsible for setting the RailCorp's overall direction and performance targets, and monitoring its performance. IPART's final report on improving CityRail's accountability and incentives recommends the Minister for Transport and MoT enhance their role by driving the development an effective service contract for passenger rail services in Sydney that clearly sets out the Government's strategic objectives for CityRail and measurable service and financial performance targets, and monitoring CityRail's performance against those targets. IPART considers rigorous financial monitoring of CityRail's performance by NSW Treasury (as shareholder and protector of the Government's financial exposure) and the Minister for Transport and MoT (as purchaser of rail services) is essential to create incentives for improved financial performance, especially cost efficiency.

²¹ Appendix C sets out where the relevant section 15 requirements are addressed within IPART's final report.

Figure 2.1 Government agencies and policies that impact on CityRail's operations



Source: IPART.

Note: Following the implementation of the NSW Government's changes to CityRail's legislative and governance arrangements the role of these Government agencies may alter.

2.3 NSW Government policy that relates to CityRail

The NSW Government's public transport policy features prominently in several recent strategic plans and statements, including:

- ▼ the Premier's Urban Transport Statement
- ▼ the State Plan
- ▼ the Transport Strategy for Sydney (part of the Metropolitan Strategy)
- ▼ the State Infrastructure Strategy.

Together, these policies outline the NSW Government's priorities, strategic imperatives and objectives. For example, the Transport Strategy for Sydney indicates that one of the Government's transport objectives is to 'influence travel choices to encourage more sustainable travel'.²² The Urban Transport Statement adds that 'increasing the number of daily trips on public transport is a priority'²³ while recognising that 'maintaining public transport systems at high levels of reliability'²⁴ is a precondition for greater patronage. The State Plan sets the following definitive public transport targets:

- ▼ to increase the share of trips made by public transport to and from the Sydney CBD during peak hours to 75 per cent (72 per cent in 2006) by 2016
- ▼ to increase the proportion of total journeys to work by public transport in the Sydney metropolitan region to 25 per cent by 2016 (20-22 per cent in 2006)
- ▼ to consistently meet public transport reliability targets.²⁵

Other government objectives include improving transport between Sydney's centres, improving the existing transport system and improving transport decision-making (including planning, evaluation and funding).

The recently announced NSW mini-budget reprioritises the Government's transport objectives. It contains several measures that will directly affect CityRail's network, including a staged delivery of the South West Rail Link, additional commuter car parks to be built at train stations across suburban Sydney, the Central Coast, Illawarra and the Blue Mountains, and additional outer suburban carriages (OSCARs).²⁶

IPART has considered the Government's policies on passenger rail services and public transport as part of its review of CityRail's economic regulatory framework.

²² NSW Department of Planning, *City of cities: A plan for Sydney's future*, December 2005, p 160.

²³ Iemma, M, *Urban transport statement: Responding to the challenges of travel and transport within and across Sydney*, November 2006, p 2.

²⁴ Ibid.

²⁵ NSW Government 2006, *State Plan*, November, p 58.

²⁶ Media Release, NSW mini-budget 2008/09, Smarter Public Transport for NSW, 11 November 2008. <http://www.transport.nsw.gov.au/news/releases/081111-transport-mini-budget.pdf>

3 Service standards

As Chapter 2 noted, the IPART Act requires IPART to consider service standards in making its determination on CityRail fares. In addition, the terms of reference for the review of CityRail's broad economic regulatory framework requires IPART to consider and recommend how service standards should be incorporated into the regulatory approach.

IPART notes that service standards – that is, the quantity and quality of service CityRail is required to provide – fundamentally influence the efficient costs of providing CityRail services over the determination period. In general, these costs will be higher if CityRail provides more frequent, more extensive or higher quality services, and lower if it provides less frequent, less extensive or lower quality service.

IPART reviewed CityRail's efficient costs as part of the fare review (discussed in Chapters 6 and 7) and concluded that CityRail is able to provide the same quantity and quality of service for a lower level of costs by improving its level of cost efficiency. Therefore, in making its determination, IPART assumed CityRail will provide the same quantity and quality of service as it currently provides, but that this quantity and quality will improve over the next four years as planned expenditures (such as clearways, the ECRL and new rolling stock) come into operation.

In addition, IPART's review of the economic regulatory framework for CityRail found that the current framework does not clearly specify the quantity and quality of service CityRail is expected to provide, or ensure that CityRail's performance against those expectations is adequately monitored. This means it is not currently possible for the Government to hold RailCorp accountable for CityRail's service performance. It also makes it difficult for IPART to accurately estimate the efficient costs of providing CityRail services.

As discussed above, the Government has announced it will introduce a service contract for RailCorp. IPART believes this has the potential to create incentives for service performance improvements. As discussed in its report, *Improving CityRail's accountability and incentives through an effective service contract*, to ensure the service contract is effective, the Government would need to drive the process, and set specific, measurable targets for the quantity and quality of service CityRail is to provide and also CityRail's financial performance. It would also need to monitor CityRail's performance against the targets, publicly report on CityRail's performance and hold it accountable for this performance.

The section below provides an overview of IPART's decision on incorporating service standards into the regulatory framework. The subsequent sections discuss IPART's considerations in reaching this decision.

3.1 Overview of decision on incorporating service standards into the regulatory framework

IPART's final decision is to recommend that the Government incorporate service standards into the regulatory framework by ensuring the service contract between RailCorp and the Government (via the Director General of the MoT) includes specific service performance targets for CityRail, and that Government monitors and holds CityRail accountable for its performance against these targets.

IPART's final report to the Government, *Improving CityRail's accountability and incentives through an effective service contract*, discusses the principles and content of an effective service contract in detail, and sets out IPART's specific recommendations. These recommendations include (among other things):

- ▼ that the Government drive the development of the service contract
- ▼ that the service contract be a multi-year document that aligns with IPART's fare determination
- ▼ that the service contract clearly specify performance targets for both the quantity and quality of service CityRail is required to provide
- ▼ that the Government monitor and evaluate performance against the service and financial targets
- ▼ that the service contract be made available to the public and CityRail's performance against the targets in this contract be reported on to the public.

IPART considers this approach is the most effective way to incorporate service standards into the regulatory approach. These improvements will ensure RailCorp can be held accountable for CityRail's service performance, and does not respond to incentives for improved efficiency by allowing service standards to deteriorate. They will also enable IPART to more accurately estimate CityRail's efficient costs for future fare determinations.

IPART has recommended that in specifying the quantity and quality of service, the Government should set specific, measurable targets for the following indicators:

- ▼ minimum frequency of services:
 - by line
 - in various time bands (am/pm peak, shoulder, off-peak)
 - by direction (to/from CBD)
 - on weekdays and weekends/public holidays, and
 - by the time of the first and last services
- ▼ peak and off-peak train service kilometres and carriage service kilometres

- ▼ peak and off-peak patronage (passenger journeys)
- ▼ on-time running, skipped stops, and cancelled services:
 - in peak and off-peak periods
 - for each line of the CityRail network
- ▼ total delay minutes in peak and off-peak periods
- ▼ average timetabled train speed, as a proxy for journey time
- ▼ peak period crowding for each line of the CityRail network
- ▼ offences against the person²⁷, derived from the Bureau of Crime Statistics and Research data
- ▼ indices of customer perceptions of safety, information provision and train cleanliness based on the results of ITSRR's annual passenger surveys
- ▼ percentage of fleet less than 10 years old, as a proxy for passenger comfort.

In developing these recommendations, IPART included only indicators for which a time series of data is available, to ensure the Government has the necessary data to set reasonably ambitious but achievable targets for CityRail's performance. It also included indicators that reflect the aspects of service quality that are most important to passengers, based on the results of passenger surveys by the ITSRR and RailCorp.

Please note that while rail safety is a vital, non-negotiable aspect of service, IPART did not review rail safety regulation. This regulation is the responsibility of ITSRR, and RailCorp is legally obliged to meet safety requirements under the *Rail Safety Act 2002*. However, in making its fare determination, IPART determined CityRail's revenue requirements for the next four years based on CityRail operating its rail network safely and at the levels determined by the safety regulations.

In relation to monitoring and evaluation, IPART has recommended that:

- ▼ CityRail continue to report its performance on its website, against the enhanced range of targets and indicators in the new service contract
- ▼ annual CityRail passenger surveys continue to be undertaken and the results publicly reported.

In addition, IPART will publish an annual fares and services report which will publicly report on the fares CityRail will charge for the forthcoming year and the service levels it delivered over the previous 12 months.

In IPART's view, improved monitoring and evaluation is a necessary part of the new economic regulatory framework, to ensure CityRail can be held accountable for its service performance. Public reporting and scrutiny of this performance will also act as a substitute for competitive pressure, counterbalancing any tendency for CityRail

²⁷ 'Offences against the person' includes assault, robbery, sexual offences and stealing from a person which occurs on or next to railway property. Statistics reflect incidents reported and recorded by NSW Police.

to let its quantity or quality of service decline in pursuit of cost savings, and creating effective incentives for it to maintain or improve its service performance.

3.2 Stakeholder views

A range of stakeholders expressed views on CityRail's service performance in submissions. IPART also held a service standards workshop with key organisations to discuss the aspects of service which might be included in a performance agreement. Several individuals submitted that significant CityRail fare increases were not justified because in their view, CityRail's recent performance has been poor.²⁸ For example, they criticised:

- ▼ the slow speed of CityRail services, and the slowing of services (to improve on-time running)²⁹
- ▼ train crowding³⁰
- ▼ a lack of air-conditioned carriages³¹
- ▼ late and cancelled trains, and how CityRail defines 'on-time' running³²
- ▼ the cleanliness of trains³³
- ▼ the low frequency of services, particularly express services.³⁴

Other submissions and stakeholders at the service standards workshop expressed support for clearer specification of the service standards CityRail is expected to meet. For example, the Western Sydney Regional Organisation of Councils (WSROC) supported the specification of service quality measures, such as quantity of service, punctuality in delivering planned upgrades, and performance indicators covering customer satisfaction.³⁵ The Blue Mountains Commuter and Transport Users Association (BMC&TUA) and Action for Public Transport (APT) both argued that an indicator for on-time running outside peak periods should be considered³⁶ on the grounds that it is inappropriate to focus solely on peak period performance.

²⁸ Individual anonymous submission (S08/11460), October 2008; Individual anonymous submission (S08/11462), October 2008; J Vergios submission, October 2008, p 1; M Garner submission, October 2008; M Wettig submission, October 2008.

²⁹ M Fox submission, October 2008, p 1.

³⁰ S Wishart submission, September 2008.

³¹ C Wilson submission, October 2008; A Mclean submission, October 2008.

³² S Buchan submission, October 2008.

³³ J Vergios submission, October 2008, p 1.

³⁴ S Wishart submission, September 2008; R Chapman submission, October 2008.

³⁵ WSROC submission on Issues paper, March 2008, p 5.

³⁶ BMC&TUA submission on Issues paper, March 2008 pp 4-5, and APT submission on Issues Paper, March 2008, p 2.

3.3 IPART's considerations in making its final decision

IPART considered stakeholders' views on CityRail's recent service performance, and examined objective evidence on this performance. It found that overall, the quality of service recently provided by CityRail is largely consistent with its current service targets (ie, those included in the current RPA except in relation to crowding on trains. (See Box 3.1 for more detail.) However, IPART understands that CityRail's service performance varies across the network, and its performance on some lines is worse than on others. Therefore, some stakeholders' experience may be inconsistent with IPART's findings. In addition, IPART notes that indicators and targets for some of the aspects of service criticised by stakeholders are not included in the current RPA.

IPART notes the recommendations made by the Boston Consulting Group (BCG), which the NSW Government and RailCorp engaged to support the design and implementation of a customer service improvement program (CSIP) for RailCorp.³⁷ BCG identified the major areas of poor performance and proposed a strategy aimed at making service performance improvements for customers. IPART notes that BCG's recommendations including the need to improve performance and operational efficiency across all areas of CityRail's operations is broadly consistent with the advice provided by IPART's consultant for this review, LEK.

IPART notes that RailCorp has already started implementing a range of the report's key recommendations. IPART also notes that following BCG's recommendations, the Government has made several key decisions to further improve service performance such as the implementation of the Everyday Service Essentials Program, which will include, among other things, enhanced passenger security, and better utilisation of assets such as ticket vending machines.³⁸

In making its decision, IPART considered whether there should be some form of recompense for passengers if CityRail's service levels fall well below expected levels – for example, by delaying a fare increase or offering a fare rebate or free travel to passengers when and where service falls below a certain level.

However, IPART decided not to pursue this option at present. IPART considers that more clearly specifying the quantity and quality of service CityRail is expected to provide in the service contract, and monitoring and publicly reporting on its performance, should provide a strong incentive for CityRail to maintain or improve its service levels. IPART also considers that the options for providing compensation for lower than expected service levels are not appropriate or practical at this time.

³⁷ The NSW Government released the BCG report on 9 October 2008. BCG recommended 32 initiatives to address passenger concerns and to improve the overall operational efficiency of CityRail.

³⁸ NSW Government submission, 14 November 2008, p 2.

For example, delaying a fare increase would effectively shift costs from passengers to taxpayers, and is likely to lead to larger fare increases in the future to 'catch up' with costs. As part of its fare review, IPART determined the appropriate share of CityRail's costs to be paid by passengers and by taxpayers, based on its estimate of the value of the external benefits created by CityRail services (see Chapter 12). Delaying a fare increase would also distort this funding share and, crucially, effectively reduce CityRail's farebox revenue and the funds the Government has available to allocate to other important areas (such as investment in transport, health and education). Further, a poor service performance by CityRail might indicate a need for additional investment in its network, and if this were undertaken in the context of delayed fare rises, the funding share of passengers and taxpayers would move further away from that determined appropriate by IPART.

In addition, with CityRail's current ticketing system, offering a fare rebate or free travel to passengers would be administratively complex and therefore impractical. However, further consideration could be given to this approach when electronic ticketing is introduced. IPART notes that in Melbourne, passengers with monthly or longer periodical rail tickets are entitled to one or two free daily tickets if the network-wide performance falls below specified levels. However, it considers that a fare rebate system would have some practical advantages over free travel. For instance, it would allow the rebates to be offered only to passengers affected by the poor service (for example, those travelling at particular times or on affected lines). In addition, it could potentially be introduced through a customer charter. Nevertheless, widespread fare rebates for poor service performance would reduce CityRail's revenue and thus might have implications for the availability of funds to improve services.

Box 3.1 IPART's assessment of CityRail's recent service performance

Currently, RailCorp's RPA includes a small number of service performance targets for CityRail. These targets relate to:

- ▼ the reliability of CityRail services, measured by
 - the percentage of suburban train services and intercity train services that run in the am and pm peak periods and pass through Central station which arrive at their final destination within five or six minutes of the timetabled time respectively (target: 92 per cent, based on combined result for suburban and intercity services).³⁹
 - the percentage of timetabled station stops that are skipped on suburban train services that operate during the morning and afternoon peak periods (target: 1 per cent)
 - the percentage of timetabled train services that are cancelled on suburban train services that operate during the morning and afternoon peak periods (target: 1 per cent)
- ▼ the extent of overcrowding on trains, measured by the percentage of suburban trains that operate during the morning and afternoon peak periods that have a load factor of more than 135 per cent (target: 5 per cent by 2008).

Based on its examination of data on CityRail's performance in recent years, IPART found that CityRail has consistently met its network-wide reliability targets, while noting that the level of reliability varies across the network. IPART also found that CityRail has not met the target for crowding on trains, and the incidence of crowded trains has risen. Again, there is variation across the network. There has been a large increase in CityRail patronage which, combined with limited availability of rolling stock, has led to higher incidences of crowding.

Passenger perceptions about CityRail's level of service (measured through annual surveys undertaken by ITSRR) indicate improved or sustained levels of satisfaction with many aspects of CityRail service rated by respondents as important. For example, in 2006 and 2007 there were sustained significant increases in the proportions of people whose expectations were met in relation to:

- ▼ journey time (up from 74 per cent in 2006 to 80 per cent in 2007)
- ▼ frequency of trains (from 63 to 69 per cent), and
- ▼ punctuality (from 64 to 68 per cent).

In 2008, there continued to be a significant increase in satisfaction with punctuality (from 69 to 73 per cent) and levels of satisfaction with journey time and train frequency were maintained. But there was a significant decrease in the proportion of people whose expectations were met in relation to crowding in peak trains (down from 41 per cent in 2006 to around 35 per cent in 2007 and 2008).

IPART's 2009 fare determination includes funding allowances for operating and capital expenditure aimed at maintaining or improving the reliability and capacity of CityRail services over the determination period (eg, by completing the key 'clearways' projects and the ECRL). In addition, more than 600 new carriages are scheduled to come into service between 2010 and 2013. This expenditure should help CityRail maintain or improve its service performance, particularly on the target for crowding on trains. However, even with these new investments it may be difficult for CityRail to achieve its targets for crowding on trains on particular lines if the recent high rate of growth in peak period patronage continues.

Appendix A provides a more detailed assessment of CityRail's recent performance against the targets outlined above, the indicators proposed by IPART for inclusion in future RPAs and ITSRR surveys.

³⁹ In the am peak, services are measured when they arrive in the city either at Central or Wynyard. In the pm peak they are measured at their destination.

4 Approach to fare setting

As part of its investigation of the economic regulatory framework for CityRail, IPART reviewed the approach it uses to set CityRail fares. This approach can be defined as the rules and methodologies a regulator uses to determine, monitor and change fares for regulated services over a determination period. Different approaches to fare setting can create different incentives for the regulated service provider. IPART considered a range of approaches, and compared them to its assessment criteria for this review (see Appendix F). These criteria reflect the terms of reference for the review, and include creating effective incentives for CityRail to improve its economic efficiency, and be more disciplined in its spending.

IPART considered and made final decisions on each of the key components of the approach to fare setting, including:

- ▼ the length of the determination period and the date on which regulated fares will change
- ▼ the approach for determining CityRail's annual revenue requirement
- ▼ the approach for determining what share of the annual revenue requirement should be recovered from passengers through fares
- ▼ the approach for converting this share of the revenue requirement into fares
- ▼ whether there is a need for regulatory mechanisms to allow for additional fare changes during the determination period, such as a cost pass-through mechanism
- ▼ the approach for monitoring CityRail's compliance with the fare determination over the determination period.

The section below provides an overview of IPART's final decisions on each of these components. The subsequent sections discuss each decision, and IPART's considerations in relation to it in more detail including stakeholder submissions on the draft report.

4.1 Overview of final decisions on approach to fare setting

IPART's final decisions on the approach to fare setting for CityRail represent major revisions to the approach used in previous determinations. IPART is confident the revised approach is more rigorous and robust, and will provide IPART with more scope to create effective incentives for CityRail to improve its economic efficiency and be more disciplined in its spending. However, as discussed in Chapter 1 it is important to note that the effectiveness of the incentives IPART aims to create through its approach to fare setting will be enhanced if the Government makes changes to the governance arrangements for CityRail, particularly the implementation of an effective service contract, so all elements of the economic regulatory framework are aligned. IPART's recommended changes to these arrangements are discussed in its final report to the Government, *Improving CityRail's accountability and incentives through an effective service contract*.

IPART has made a final decision to introduce a multi-year determination period. For this determination, it will set CityRail's fares for four years, from 1 January 2009 to 31 December 2012. During this period, fares will be adjusted annually, at the start of each calendar year (ie, on 1 January, or the nearest practicable date). IPART considers a multi-year determination period will result in benefits for RailCorp management, the Government and CityRail passengers.

In relation to the approach for determining CityRail's annual revenue requirement, IPART has made a final decision to use the building block approach. It will then determine the appropriate share of this revenue to be recovered from CityRail passengers through fares by estimating the value of the external benefits of CityRail services, and considering patronage and affordability issues. IPART considers this approach has clear advantages over alternative options. For example, it takes account of the full economic costs of providing CityRail services and the external benefits of these services in a rigorous and transparent way.

In relation to the approach for converting the share of CityRail's revenue requirement to be recovered from passengers into fares, IPART has made a final decision to set maximum fares for each CityRail ticket, as it has done in previous determinations. In contrast to its recent decisions in the energy sector, IPART will not introduce a weighted average price cap or revenue cap. As a result, CityRail will not have the pricing flexibility to alter the relative prices of CityRail tickets. IPART considers setting maximum fares for each CityRail ticket is the most appropriate approach at this time, as it will ensure that its preferred fare structure is implemented. This approach will mean that the fixed and variable components of CityRail tickets approximate the cost of providing the services concerned. It will also assist CityRail in transitioning to electronic ticketing.

In relation to whether there is a need for regulatory mechanisms to allow for additional fare changes during the determination period, IPART has made a final decision not to introduce any such mechanisms. In particular, it decided not to introduce a cost pass-through mechanism (or cost risk sharing mechanism) that

would have allowed CityRail to pass-through to passengers cost increases that are outside its control. IPART considers that this decision will clearly allocate the cost risk between CityRail and its passengers, and will encourage CityRail to 'live within its budget'.

In relation to the approach for monitoring CityRail's compliance with the fare determination, IPART has made a final decision to require RailCorp to provide an undertaking that CityRail fares will comply with the determination and a copy of its proposed fares by 15 November each year, as well as information on actual services levels by 30 October each year of the determination period. The new adjusted fares for the coming year and information on CityRail's service levels for the prior year will be provided in IPART's prices and services report to be released in December each year.

4.2 Length of determination period

IPART's final decision is to adopt a multi-year determination period of four years, from 1 January 2009 to 31 December 2012.

During this period, fares will be adjusted at the start of each calendar year (ie, on 1 January or the nearest practicable date).

4.2.1 IPART's draft decision

IPART's draft decision was the same as its final decision.

4.2.2 Stakeholder submissions

In general, stakeholder submissions in response to the draft report did not comment on IPART's draft decision on the length of the determination period and the date on which fares will be adjusted each year.⁴⁰ However, in submissions in response to IPART's earlier discussion papers, most stakeholders supported moving from annual to multi-year determinations, to provide greater funding certainty for RailCorp management, encourage better planning, and provide a more strategic approach to managing performance.⁴¹ Several participants at IPART's roundtable, including RailCorp and Council of Social Service of New South Wales (NCOSS) also expressed support for a multi-year determination.⁴²

⁴⁰ However, a number of individuals expressed support for moving towards a longer determination period. See confidential individual submission (S08/13410), October 2008.

⁴¹ MoT submission, July 2008, p 3, APT submission, July 2008, p 4, and WSROC submission, July 2008, p 2.

⁴² IPART roundtable, 31 July 2008, transcript, p 9 and 17.

Similarly, submissions in response to IPART's discussion papers noted that fare changes at the start of the calendar year were preferable to the financial year, to align CityRail fare changes to those of other transport modes such as buses and ferries.⁴³ Several participants at IPART's round table also indicated a preference for calendar year fare changes, including RailCorp and NCOSS.⁴⁴

4.2.3 IPART's considerations in making its final decisions

In making its final decision on the length of the determination period, IPART took account of stakeholders' broad support of multi-year determinations. IPART recognises that factors such as CBD employment growth and petrol price volatility affect the patronage of CityRail services and so affect the value of the external benefits these services provide, and that this potentially increases the risk that CityRail's actual patronage, farebox revenue and external benefits will differ from the forecasts IPART used in setting fares. However, it also noted that CityRail's patronage depends on a range of factors, not just petrol prices.⁴⁵

In addition, IPART recognises the other risks associated with longer term determinations – such as the risk that unforeseen events may mean that actual levels of operating and capital expenditure may differ from those forecast and adopted as part of the determination. However, IPART considers that these risks are outweighed by the benefits of longer term determinations when compared to annual determinations. These benefits include:

- ▼ Facilitating long-term planning and providing greater budget certainty, which enables better integration of operating and capital expenditure. LEK indicated that short determination periods (and therefore short-term funding cycles) were not conducive to efficient capital planning, and thus can result in a focus on short-term fixes rather than long-term strategic decisions with delayed but sustainable returns.⁴⁶ This is unlikely to result in an optimal mix of operating and capital expenditure and does not encourage the supply of services at least cost.⁴⁷
- ▼ Providing greater scope for creating incentives for CityRail to pursue efficiency improvements. A longer determination period allows CityRail time to establish management programs that can deliver on efficiency targets built into the fare determination. It also provides a realistic timeframe over which CityRail's performance in meeting these targets can be measured.

⁴³ MoT submission, July 2008, p 3, APT submission, July 2008, p 4, and WSROC submission, July 2008, p 2.

⁴⁴ IPART roundtable, 31 July 2008, transcript, p 9 and 17.

⁴⁵ For example, these factors include employment (particularly CBD employment); the availability, desirability and cost of alternate transport options (including cost of parking and petrol, levels of congestion); the cost of CityRail services; and the quality of these services.

⁴⁶ LEK, *Cost Review of CityRail's Regular Passenger Services*, report to IPART, June 2008, p 10.

⁴⁷ However, IPART recognises that a determination period of 4 – 5 years is still not long, when compared to the life of CityRail's assets.

- ▼ Providing government and taxpayers with greater certainty about the extent to which the provision of CityRail services will require government funding over time.
- ▼ Providing passengers with a better indication of how their funding contributions to the provision of CityRail services (through fares) are likely to change over time. This may assist passengers in making future housing and employment decisions.
- ▼ Reducing the direct costs of regulation in terms of IPART, RailCorp and stakeholder resources.

IPART notes these arguments are consistent with the Government's and other stakeholders' views, as well as the recommendations of the Parry Inquiry into public transport.

IPART considers a determination period of four years is sufficiently long to provide better long-term strategic decision making and planning, and for management to initiate programs to deliver on targeted efficiency savings. It is also a reasonable timeframe over which performance can be measured.⁴⁸

4.3 Approach for determining CityRail's annual revenue requirement

IPART's final decision is to use the building block approach to determine CityRail's annual revenue requirement. That is, IPART has decided CityRail's annual revenue requirement should include efficient operating and maintenance costs, a return of capital or depreciation, a return on capital, and a return on working capital.

4.3.1 IPART's draft decision

IPART's draft decision was the same as its final decision.

4.3.2 Stakeholder submissions

Most stakeholder submissions in response to the draft report did not comment on IPART's draft decision to use the building block method to determine CityRail's revenue requirement. The NSW Government submitted that it supports this decision.⁴⁹ In particular, it argued that the building block method allows consistent and transparent setting of future revenue requirements and its use can help promote efficiency and service improvement through transparently examining each of

⁴⁸ This determination will run from 1 January 2009 to 30 December 2012. While it cannot bind future Tribunal decisions, IPART considers that the next determination would commence on or around 1 January 2013. However, the current final decision does not provide cost and revenue information for the period 1 July to 30 December 2012. Therefore, the next fare determination will need to consider how any under recovery of revenue during this six month period is recovered through fare revenue in the next fare determination.

⁴⁹ NSW Government submission, 10 November 2008, p 10 and comments made by the MoT at the roundtable 17 November 2008, p 9.

CityRail's major cost drivers. However, the Government noted that the building block method can be sensitive to changes in costs over the longer term and proposed that the framework for determining CityRail's revenue requirements should be sufficiently flexible to take into account not only the results of the building block approach but also considerations of wider external benefits, social impacts, affordability and government policy.⁵⁰ An individual stakeholder also expressed support for the use of the building block approach noting the importance of including all of the costs associated with providing CityRail services including capital costs in the revenue requirement.⁵¹

In their responses to IPART's earlier discussion papers, stakeholders expressed a range of views about the most appropriate methodology for determining CityRail's annual revenue requirement. For example, APT supported the building block method as it is the only option that considers both operating and capital costs and thus the full costs of providing CityRail services.⁵² The BMC&TUA recognised that there could be value in the building block approach.⁵³

However, some stakeholders had reservations about the building block approach. The Rail Tram and Bus Union (RTBU) agreed it was important to consider both the operating and capital costs of providing CityRail services, but initially put the view that only operating costs should be recovered from passengers.⁵⁴ It argued that capital investment costs should be borne by taxpayers alone.⁵⁵ At the roundtable, the RTBU agreed with the Government's view that while the building block approach can be sensitive to changes in costs, overall its use appears to be a sensible way forward.⁵⁶ WSROC noted that it is not necessarily opposed to the building block approach, but that the approach is more complex than the operating and maintenance approach.⁵⁷ The RTBU and WSROC also noted the importance of establishing who is accountable for major capital decisions, and that it may be more appropriate to focus on the costs over which CityRail has day-to-day control.⁵⁸

⁵⁰ NSW Government submission, 10 November 2008, p 10 and comments made by the MoT at the roundtable 17 November 2008, p 9.

⁵¹ See confidential individual submission (S08/13410), October 2008.

⁵² APT submission, 9 July 2008, p 4.

⁵³ BMC&TUA submission to CityRail Regulatory Framework Review, February 2008, p 8.

⁵⁴ IPART roundtable, 31 July 2008, transcript, p 16.

⁵⁵ RTBU submission, July 2008 p 3, plus IPART roundtable, 31 July 2008, transcript, p 14.

⁵⁶ Comments made by the RTBU, roundtable 17 November 2008, p 19.

⁵⁷ WSROC submission to IPART, p 2.

⁵⁸ NSW MoT submission on Issues Paper, May 2008, p 11.

4.3.3 IPART's considerations in making its final decision

IPART maintains its view that the building block approach is the most appropriate option for determining CityRail's revenue requirement at this time, as it is more consistent with IPART's assessment criteria for this review than the alternative options. (Box 4.1 below provides an overview of the building block approach. Appendix F provides a detailed assessment of the three methodology options outlined in the issues paper against each of the review's assessment criteria.)

IPART notes the NSW Government's concerns that the building block approach can be sensitive to changes in costs over the longer term. However, IPART considers this criticism can validly be made of all of the three options for determining CityRail's revenue requirement. The operating and maintenance cost approach is sensitive to large changes in operating expenditures (eg, the significant increase in rolling stock maintenance costs stemming from RailCorp purchasing 626 new suburban cars, or the costs associated with maintaining new assets such as the ECRL). Similarly, the marginal cost approach is sensitive to changes in key inputs such as forecasts of patronage and capacity-related capital expenditure.⁵⁹ This is demonstrated in the LECG's final report on the value of the external benefits of CityRail services (based on CRA International's (CRAI's) draft report).⁶⁰ This report shows that including additional capacity-related capital expenditure can have a large impact on marginal cost estimates.⁶¹

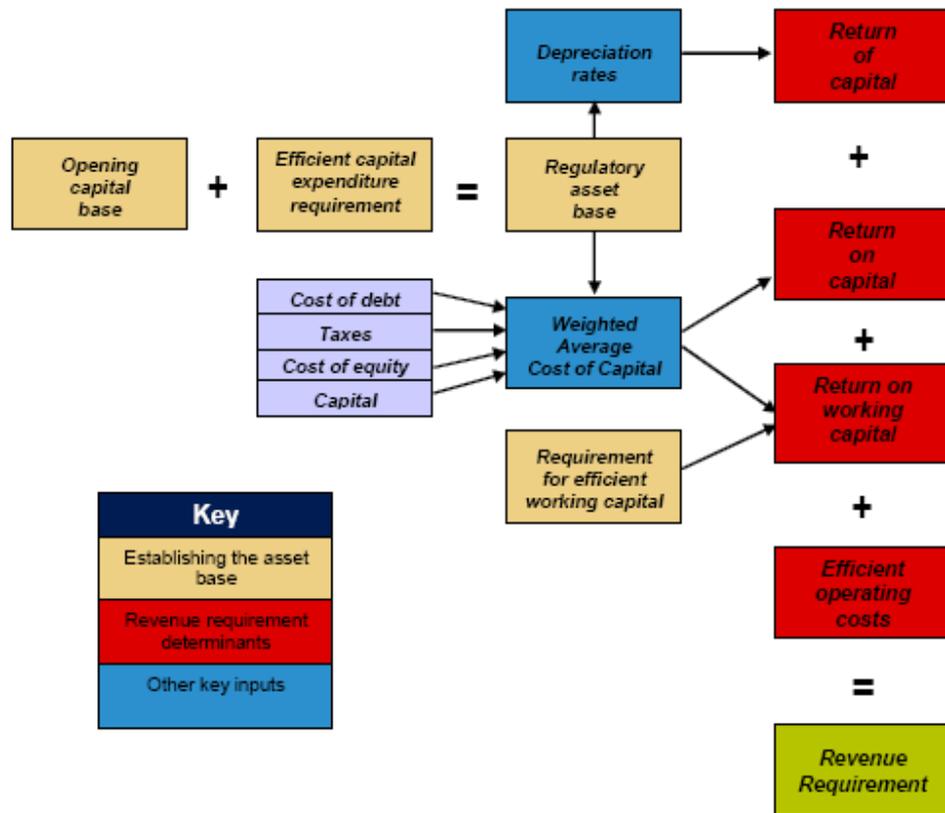
IPART recognises that the building block has some disadvantages. It is most commonly criticised as being an intrusive form of regulation. In addition, by focusing on the particular costs of the regulated business, it may fail to adequately take into account industry or economy-wide improvements in efficiency and productivity, thus reducing its incentive properties. However, on balance, IPART considers the building block approach to be more consistent with IPART's assessment criteria for this review than the alternative options.

⁵⁹ The Government submission on the issues paper noted the practical difficulties associated with the marginal cost approach, particularly in the context of CityRail's emerging capacity constraints and significant capital expenditure requirements. See the NSW Ministry of Transport's submission to IPART, May 2008, p 11.

⁶⁰ Please note that the same expert consultant who conducted the analysis in CRAI's draft report on the value of the external benefits of CityRail prepared LECG's final report on this issue. However, as he moved to a new consulting firm between the release of the draft and final reports, the final report is published under the name of this new firm.

⁶¹ LECG final report, *An empirical estimate of CityRail's marginal costs and externalities*, October 2008.

Box 4.1 Building block approach to determining revenue requirement



The building block approach ensures all of the costs associated with providing CityRail services – both operating and capital expenditure (including capital items within and beyond CityRail’s control) – are measured and monitored in a way that is rigorous and transparent. In addition, it ensures these costs (and the impact of changes in them on fares) are transparently disclosed. These characteristics mean the building block approach can be used effectively to encourage greater discipline in CityRail’s spending and promote economic efficiency. For example, it can be used to:

- ▼ Improve transparency and public scrutiny of CityRail’s costs. This should encourage CityRail to better forecast its operating and capital costs, and better manage its expenditure in line with these forecast costs, and increase its accountability for decisions that affect its costs.
- ▼ Provide transparent targets for efficiency gains by cost category, thus creating strong incentives for RailCorp’s management to meet or exceed these targets. For example, once IPART has estimated CityRail’s efficient operating costs over the determination period, and reviewed CityRail’s forecast operating costs for this period, it can determine the level of operating costs to include in the revenue requirement so as to provide an incentive for CityRail to move its forecast costs towards the efficient costs. This incentive will be even stronger if CityRail is able to retain the benefits generated if it exceeds the efficiency targets over the period of the determination.
- ▼ Create a transparent link between the size of CityRail’s revenue requirement and the level of fares. For example, once IPART decides what share of the revenue requirement is to be funded through fares (discussed in section 4.4 below), any increase in this revenue requirement due to an increase in operating or capital expenditure by CityRail will lead to an increase in fares.⁶² This link should signal to stakeholders that service improvements involving significant capital investment (such as extending the network or upgrading rolling stock) are likely to entail significant fare increases. The likely fare increases can also be taken into account in assessing proposed service improvement projects.

In addition, IPART considers that the building block approach offers a number of other benefits over the alternative approaches, including that it:

- ▼ facilitates consistency between IPART’s fare determination and other elements of the broad economic regulatory framework for CityRail – such as the financial performance targets and funding levels that will be set by the Government in RailCorp’s service contract
- ▼ is consistent with the approach IPART uses in regulating other network industries
- ▼ enables CityRail’s financial ratios to be compared on a like-for-like basis over time and against those other regulated utilities, so providing a better indication of its financial sustainability.

⁶² For example, if IPART determines that it is appropriate that passengers contribute to around one-third of CityRail’s revenue requirement then if government invests \$1bn in additional railway capacity (such as new rail lines or rolling stock), an additional \$300m would need to be recovered from users over the life of asset in NPV terms.

Further, because the building block method incorporates a return on capital, it is the only option that recognises the opportunity cost of capital, and that government funding for CityRail has alternative uses, such as health and education. It should be noted that in capital intensive industries such as rail, it is a distortion to ignore the cost of capital.

In contrast, IPART considers there are too many practical difficulties associated with the long-run marginal cost approach for it to be a realistic option at this time. And while the operating and maintenance approach, which is used in Singapore and Melbourne, is simpler than the building block approach, IPART considers it is less suitable for promoting economic efficiency and accountability in CityRail. This is because it does not allow for the full economic costs of providing CityRail services, including capital costs, to be measured, scrutinised and taken into account in setting fares.

In addition, one of the main reasons the operating and maintenance approach is simpler than the building block approach is that it is less rigorous and less transparent. For example, in Singapore fares are set to recover the entire operating costs of providing rail services, while in Melbourne they are set to recover only a portion of these operating costs. In both cases, governments cover the remaining costs. But there is no attempt to systematically equate the size of this government subsidy with the value of the external benefits associated with the rail services.

IPART acknowledges that the building block approach is more intrusive and time-consuming both for it and for RailCorp. However, it notes this disadvantage will be mitigated by its decision to adopt a multi-year determination period (discussed above), as this will mean there are less frequent fare reviews.

In relation to stakeholder concerns that the building block approach will include the capital costs of projects for which CityRail is not responsible, IPART notes that RailCorp management is responsible for delivering a significant proportion of capital expenditure related to passenger rail services in Sydney. For example, it is responsible for station upgrades (including the Easy Access program), safety programs, and renewal capital expenditure on track, rolling-stock, signalling etc. However, it also recognises that RailCorp is not responsible for **all** capital projects related to passenger rail services. Large capital programs involve whole-of-government decision-making, and the implementation of these programs is often undertaken by other government agencies such as the Transport Infrastructure Development Corporation (TIDC). But this does not necessarily make the building block approach less appropriate. By initially including all capital expenditure required to provide CityRail services, this approach increases the transparency of and accountability for the cost impacts of capital programs largely outside CityRail's control (such as the ECRL) but within the control of Government as the owner of CityRail. This should lead to better investment decision-making, which will benefit both CityRail passengers and taxpayers who fund a significant proportion of major capital items. Further, it is important to recognise that CityRail is responsible for

maintaining the assets built through these large capital programs once they are completed.

In relation to the view that the operating and maintenance approach may result in lower fares,⁶³ IPART considers that this is not necessarily the case. For example, if CityRail fares were set to recover the full operating and maintenance costs (as they are in Singapore), fares would increase significantly. IPART does not consider such an outcome to be realistic, or consistent with assessment criteria for this review.

Alternatively, if fares were set to recover only some of the operating costs (as they are in Melbourne), IPART would need to consider on what basis it would determine the share of these costs to be recovered through fares and through government funding. Given that it is the assets and capital investment that provide for a significant amount of the external benefits of rail, it would not be internally consistent to subtract the total value of the external benefits associated with CityRail services from the total operating and maintenance costs. IPART would then need to use a different approach to determine the share of operating costs to be recovered from users. This may not provide for lower fares, and would reduce the simplicity of the approach without providing any of the advantages of the building block approach.

While IPART has not directly incorporated LECG's optimisation approach in making its final decision on the approach to determining CityRail's revenue requirement, IPART drew on LECG's analysis in determining the appropriate funding share to be recovered from passengers through fares (see Chapter 12). In particular, IPART further considered LECG's final report prior to making its final decision.

4.4 Approach for converting passengers' share of the revenue requirement into fares

IPART's final decision is that it will set maximum fares for each CityRail ticket over the period of the determination.

4.4.1 IPART's draft decision

IPART's draft decision was the same as its final decision.

⁶³ IPART roundtable transcript, 31 July 2008, p 16.

4.4.2 Stakeholder submissions

In general, stakeholder submissions in response to IPART's issues paper for this review did not comment on IPART's view that there were several possible approaches for converting the share of CityRail's revenue requirement to be recovered from passengers into fares, including setting maximum fares, or adopting a revenue or a weighted average price cap. In addition, most stakeholder submissions in response to the draft report did not comment on IPART's draft decision to set maximum fares for each CityRail ticket over the period of the determination. However, APT expressed concern at the roundtable regarding a weighted average price cap and a revenue cap, noting that they could be subject to political interference.⁶⁴

4.4.3 IPART's considerations in making its final decision

As noted above, IPART's issues paper identified three approaches it could use to convert passengers' share of the revenue requirement into fares, including:

- ▼ Setting the **maximum fare** for each CityRail ticket, giving CityRail no flexibility to alter the relative price of tickets.
- ▼ Setting a **weighted average price cap** based on the (percentage) increase in the annual revenue requirement.⁶⁵ This would give CityRail the flexibility to set fares provided that the weighted average fare increase is below the price cap determined by IPART.
- ▼ Setting a **revenue cap** based on the annual revenue requirement. This would give CityRail the flexibility to set fares so that its farebox revenue is below the revenue cap determined by IPART (based on forecast patronage for each ticket type).⁶⁶

All of these approaches are frequently used within an incentive regulatory framework. In the past, IPART has set maximum fares for each individual CityRail ticket. However, in other industries such as energy, it has set a weighted average price cap.⁶⁷

⁶⁴ Public hearing, 17 November 2008, transcript p 48.

⁶⁵ Each ticket type requires a weighting, with the weights typically based on patronage (or revenue) forecasts.

⁶⁶ The key difference between a revenue cap and the other two approaches is that under a revenue cap, the risk that actual farebox revenue will differ from forecast revenue is allocated to the customer. Revenue caps include a correction factor which means that if the actual demand differs from the forecast demand, this will be corrected for in the following year to ensure that only the allowed revenue is collected. That is, prices move inversely to demand (if demand decreases, prices must increase to provide the same level of revenue). Under a revenue cap there is no demand or revenue risk for the regulated business.

⁶⁷ In adopting a weighted average price cap, IPART's 2007 energy retail determination recognised that there was a degree of competition in the NSW metropolitan market.

The most appropriate approach for converting the revenue requirement into fares at this time depends on several factors – such as the objectives for this review, the incentive properties IPART wants to create, the nature of CityRail’s demand, and the party best able to bear the risks of fluctuating demand. IPART maintains its view that setting maximum fares is the most appropriate approach for the following reasons:

- ▼ A revenue cap would allocate the risk that patronage (or demand) is lower than forecast to passengers, and therefore may not encourage CityRail to increase patronage, consistent with Government policy set out in the State Plan.
- ▼ This revenue risk is better allocated to CityRail and the Government, which arguably have more control over the factors that influence demand than passengers, and therefore are better placed to manage the risk.⁶⁸ IPART has recommended that the funding arrangement as part of the service contract between MoT and RailCorp include a revenue risk sharing arrangement that provides RailCorp with incentives to improve CityRail patronage, but also provides for the Government to increase its funding for CityRail in the event that patronage is substantially lower than forecast.
- ▼ A revenue cap may disadvantage existing customers during the determination period if forecast increases in patronage as a result of new investments (such as the ECRL) prove to be over-optimistic or unsustainable.⁶⁹
- ▼ In contrast to a revenue cap or weighted average price cap, setting maximum fares is likely to provide for a stable price path over the determination period. IPART considers a stable price path with known outcomes for passengers has benefits for customers – for example, it will help them in making future housing and employment decisions.
- ▼ Setting maximum fares will ensure that IPART’s preferred fare structure is implemented. IPART considers this fare structure will contribute to greater efficiency in the use of the CityRail network, investment in this network, and equity between different customers, and will facilitate the transition to electronic ticketing.

IPART recognises that setting maximum fares for each individual ticket may reduce CityRail’s incentives to respond to signals from its customers. Both the other options would encourage CityRail to better understand its customers’ responsiveness to changes in fares, and may provide it with an incentive to develop a more

⁶⁸ A number of variables are likely to influence demand for CityRail services, including employment growth (particularly in the CBD); passenger’s alternate transport options (including impacts of road congestion) and the relative price of these options; and the quality (reliability, frequency, cleanliness etc) and price of CityRail services.

⁶⁹ Under a revenue cap, CityRail would be guaranteed to recover all of its investment costs, regardless of whether customers reduce their demand for rail services (or abandon the network altogether). Therefore, the customers who continue to use the network will have to pay more – in effect, those customers who remain pay for (at least part of) the abandonment options of those who stop using the service.

commercial, customer-orientated focus and, in particular, to develop an understanding of the drivers affecting its customers' demand.

However, taking into account the objectives for this review, the incentive properties IPART wants to create, the nature of CityRail's demand, and the party best able to bear the risks of fluctuating demand, IPART considers that on balance, the most appropriate approach for converting passengers' share of the revenue requirement into fares is for it to set maximum fares for each ticket product over the determination period.

4.5 Need for additional regulatory mechanisms

IPART's final decision is not to introduce regulatory mechanisms that provide for additional fare increases during the determination period, such as a cost pass-through mechanism.

4.5.1 IPART's draft decision

IPART's draft decision was the same as its final decision.

4.5.2 Stakeholder submissions

Stakeholder submissions in response to the draft report did not comment on IPART's draft decision not to introduce regulatory mechanisms that provide for additional fare increases during the determination period, such as a cost pass-through mechanism.

4.5.3 IPART's considerations in making its final decision

The allocation of cost and revenue risk between passengers, RailCorp and the Government is fundamentally important to the incentives that are created for CityRail. Therefore it is important that these risks are allocated in a way that creates incentives that are consistent with the objectives for this review – such as encouraging CityRail to increase patronage and reduce its costs by increasing its economic efficiency to a level that is comparable with other similar operators.

IPART's final decision to set maximum fares for each CityRail ticket over the determination period allocates the revenue risk to RailCorp rather than passengers, which creates incentives for CityRail to increase patronage. This decision also allocates the cost risk to RailCorp. That is, setting maximum fares allocates the risk that CityRail's actual costs during the determination period may differ from the forecast costs used in determining prices to RailCorp, because it doesn't allow for fares to change in the event of higher (or lower) than expected costs. IPART considers this appropriate, since the service provider is typically best placed to manage the cost risk, and it creates incentives for RailCorp to keep CityRail's costs at or below the forecast level.

However, IPART recognises that not all CityRail's costs are within its control. Therefore, it considered whether it is appropriate to establish a regulatory mechanism to allow RailCorp to pass-through changes in uncontrollable costs to passengers during the determination period. IPART has taken this approach in other industries it regulates. For example, as part of its 2007 electricity retail determination, it established a pass-through mechanism for costs associated with defined regulatory and taxation change events.⁷⁰

IPART notes that most of CityRail's costs are likely to be within its control. These include the costs of operating train services, maintaining rolling stock and track infrastructure and purchasing additional rolling stock, and its corporate overheads. IPART also considers it questionable whether passengers are in a better position than RailCorp (and its shareholder) to bear the risk of cost changes in uncontrollable items.⁷¹ For these reasons, it has decided not to introduce a cost pass-through mechanism.

It is important to note that because a significant proportion of CityRail's revenue requirement is funded by the Government, it is also critical that the cost risk be allocated between RailCorp and the Government in a way that is consistent with the objectives for this review. In particular, IPART consider it critical that the Government 'cap' the amount of funding it will provide for CityRail services over the determination period in line with IPART's fare determination. This will allocate the cost risk to RailCorp, because the Government will not provide additional funding if RailCorp's management is not able to control the growth in CityRail's costs and move these costs towards efficient levels. If RailCorp's management fails to control costs and the Government is forced to provide additional funding, then the Government should change management, but equally management should be given a free hand to control those costs for which it is responsible.

If unforeseen and unusual circumstances or events impose additional costs on RailCorp, it may be appropriate for the Government to provide additional funding to RailCorp. However, it is important that additional funding is only provided for events outside the control of RailCorp's management, and these events are transparent and clearly defined. The matter of allocating the cost risk between RailCorp and the Government is discussed in IPART's other report, *Improving CityRail's accountability and incentives through an effective service contract*.

⁷⁰ The intention was to ensure that electricity tariffs were cost reflective such that tariffs included changes in costs beyond the retailers control but to discourage retailers from passing through any change in costs by introducing a materiality threshold and strictly defining the eligible events that would trigger the pass through mechanism.

⁷¹ Incentive regulation assumes that in general shareholders are in a better position than customers to diversify their risk by creating diversified investment portfolios.

While IPART's final decision is not to introduce a cost pass-through mechanism, there may be unlikely circumstances where IPART would need to consider whether its determination should be reopened to consider specific events. IPART's view is that the circumstances under which it would consider a reopening of its fare determination would be very narrow, and it would need to be clearly demonstrated that the impact of the events were both financially substantial and unforeseen at the time of the determination. An event which could trigger such an outcome would be the introduction of the national Carbon Pollution Reduction Scheme if it caused a substantial increase in CityRail's energy costs.

4.6 The approach for monitoring compliance with the fare determination

IPART's final decision is to require RailCorp to provide:

- by October 30 each year of the determination period, information on CityRail's service performance over the previous financial year
- by November 15 each year of the determination period, an undertaking that CityRail fares for the upcoming calendar year will comply with the fare determination and a list of the proposed fares.

4.6.1 IPART's draft decision and stakeholder submissions

IPART's draft decision was the same as its final decision. Stakeholder submissions in response to the draft report did not comment on this decision.

4.6.2 IPART's considerations in making its final decision

IPART intends to use the information it requires from RailCorp to prepare a prices and services report that will assess whether CityRail's proposed fares for the forthcoming year comply with the fare determination, and the extent to which CityRail met the service performance targets included in the current RPA and in any future service contract over the most recent financial year. (These performance targets are discussed in IPART's other report, *Improving CityRail's accountability and incentives through an effective service contract*). IPART will make this report publicly available in December each year.

IPART considers that this reporting is necessary during the transition to the new approach to fare setting, particularly to ensure the fares CityRail charges are consistent with IPART's preferred fare structure, and the quality of service CityRail delivers is not deteriorating as it pursues operating cost savings. It will also help to improve transparency of CityRail's performance and RailCorp management's accountability for this performance.

5 CityRail's annual revenue requirements

As Chapter 4 discussed, IPART's final decision is to use the building block approach to determine CityRail's annual revenue requirements over the determination period. To apply this approach, IPART has made final decisions on the value of four cost blocks (*ex-GST*) that represent:

- ▼ CityRail's forecast efficient operating and maintenance costs for each year of the determination period
- ▼ an annual allowance for a return on the capital invested in the CityRail business
- ▼ an annual allowance for a return of capital (or for depreciation of CityRail's assets over the determination period)
- ▼ an annual allowance for a return on the working capital required to operate the CityRail business.

The sum of these values represents CityRail's total annual revenue requirements over the determination period.

IPART then estimated the annual non-fare revenue CityRail will earn in each year of the determination period (including concession payments⁷² and commercial revenue), and subtracted this from the total annual revenue requirements. The resulting amounts represent CityRail's net annual revenue requirements - or the amount that will need to be generated through fares and government subsidies in each year of the determination period.

The section below provides an overview of IPART's final decision on CityRail's annual revenue requirements. The following sections provide a more detailed overview of each aspect of this decision.

5.1 Overview of final decision on net annual revenue requirements

IPART's final decision on CityRail's annual revenue requirements over the determination period is shown in Table 5.1. Please note that government concession payments and CityRail's other revenue have been subtracted from the sum of the cost blocks (or total revenue requirements), to give the net revenue requirements.

⁷² That is, the government funding provided to compensate CityRail for providing concession and half fares to certain users in line with Government policy.

Table 5.1 Final decision on net annual revenue requirements (\$million, real \$2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12
IPART determination – operating costs and depreciation only					
CityRail forecast operating expenditure		2,226	2,372	2,400	2,470
LEK recommended efficiency savings		- 59	- 183	- 296	- 454
IPART adjustments (MPM and borrowing costs)		- 140	- 152	- 157	- 140
Forecast efficient operating expenditure	2,060	2,027	2,036	1,947	1,875
Allowance for a return on capital	-	421	571	639	689
Allowance for a return of capital (depreciation)	410	199	286	365	434
Allowance for return on working capital	-	- 17	-19	-16	-12
Total revenue requirement	2,470	2,630	2,874	2,935	2,985
Non-fare revenue	305	285	285	275	271
Net revenue requirement	2,165	2,345	2,589	2,660	2,713

Note: Totals may not add due to rounding.

IPART's final decision on CityRail's net annual revenue requirements is largely unchanged from the draft report. In making its final decision, IPART:

- ▼ Maintained its draft decision on CityRail's forecast efficient operating expenditure.
- ▼ Revised its decision on the value of CityRail's initial capital base (ICB) from \$3.9 billion in the draft report to \$4.3 billion in the final report. It also decreased the weighted average cost of capital (WACC) from 7.7 per cent in the draft report to 7.2 per cent in the final report as a result of a change in financial market conditions between the draft and final reports. The net effect of these revisions is a small decrease in the allowance for a return on capital.
- ▼ Revised its decision on the average asset life for new capital expenditure not associated with major projects from 18 years in the draft report to 15 years in the final report. The net effect of the increase in the ICB and reduction in the average asset life for new capital expenditure is a small increase in the allowance for a return on capital.
- ▼ Maintained its decision on CityRail's non-fare revenue.

5.2 Forecast efficient operating and maintenance costs

IPART's final decision on forecast operating and maintenance costs represents approximately 69 per cent of the total revenue requirement over the determination period. In making this final decision, IPART has:

- ▼ recognised RailCorp's forecast growth in operating costs under a 'business as usual' scenario
- ▼ accepted LEK's recommendations on the efficient level of operating expenditure over the period, including the achievable operating efficiency savings
- ▼ adjusted LEK's recommendations on the efficient level of operating expenditure by removing a portion of major periodic maintenance expenditure and treating this as renewal capital expenditure
- ▼ adjusted LEK's recommendations on the efficient level of operating expenditure by removing the borrowing costs associated with major periodic maintenance.

IPART also considered the impact of several announcements made by the NSW Government in its November 2008 mini-budget. While these announcements indicate the Government's intention to pursue some of the achievable operating cost savings identified by LEK, IPART considers that there is still further scope for improvement and thus has maintained its draft decision on this building block.

Chapter 6 describes IPART's final decision on the forecast efficient operating and maintenance expenditure in detail.

5.3 Allowance for a return on capital

IPART's final decision on the allowance for a return on the capital invested in CityRail represents approximately 20 per cent of the total revenue requirement over the determination period. This allowance represents compensation for CityRail's shareholder (the NSW Government) for committing capital to the business and bearing the risks associated with the business. IPART notes that under the *Transport Administration Act 1988*, RailCorp is not required to pay a dividend to its shareholder. However, IPART considers it appropriate to include this allowance to recognise the opportunity cost of capital invested in the business.⁷³

⁷³ As both the shareholder and primary source of revenue (through the government subsidy), Government should have regard to CityRail's total revenue requirement, which incorporates an allowance for a return on capital, in determining CityRail's funding requirements each year.

IPART determined this allowance by:

1. calculating a value for CityRail's RAB in each year of the determination period by:
 - establishing the value of the RAB at the start of the determination period (known as the initial capital base, or ICB)
 - establishing the methodology it will use for rolling forward the RAB to the end of the determination period, to reflect changes in its value over this period
 - determining the level of capital expenditure to be incorporated each year when rolling forward the RAB
2. deciding on an appropriate rate of return for CityRail
3. multiplying the annual value of the RAB by the appropriate rate of return.

Chapter 7 describes the final decisions related to the first of these steps in detail; Chapter 8 discusses steps 2 and 3.

5.4 Allowance for a return of capital (depreciation)

IPART's final decision on the allowance for return of capital represents approximately 11 per cent of the total revenue requirement over the determination period.

To calculate this allowance, IPART assumed straight line depreciation. It established an appropriate depreciation rate for CityRail's three asset groups, and then multiplied the annual value of each group by the appropriate rate:

- ▼ the ICB was depreciated at the average depreciation rate implicit in RailCorp's statutory accounts (3.7 per cent)
- ▼ CityRail's forecast efficient capital expenditure over the determination period not associated with major projects was depreciated at the weighted average depreciation rate of future capital expenditure (6.5 per cent)
- ▼ forecast capital expenditure associated with major projects - ie, the ECRL - was depreciated at the rate of 1 per cent (based on an average asset life of 100 years).

Chapter 9 describes IPART's draft decision on the allowance for a return of capital in detail.

5.5 Allowance for a return on working capital

IPART's final decision on the allowance for a return on working capital reduces CityRail's revenue requirement by approximately 1 per cent over the determination period. It reflects that fact that CityRail forecasts a negative net working capital position for each year of the determination period. Chapter 9 discusses IPART's draft decision on the allowance for a return on working capital in more detail.

5.6 CityRail's other revenue

CityRail currently earns non-fare revenue from two sources:

- ▼ Concession payments from the Government. These payments compensate CityRail for providing half-fares and concession fares to certain groups of people, in line with government policy.
- ▼ Commercial revenues generated using assets owned by CityRail but not directly involved in providing its services. These assets include the commercial properties adjacent to train stations, car parking, airspace above stations, and advertising signage areas near railway corridors or stations. In 2006/07, RailCorp earned over \$150 million of revenue on these assets.

IPART considers it appropriate that the revenue from these sources offset the revenue that is required to be generated from fares and from government subsidies over the determination period. Therefore, it forecast the amounts it expects CityRail to generate from these sources over the determination period, as shown in Table 5.2, then subtracted these amounts from the total revenue requirement to give the net revenue requirement. In response to the draft report APT queried why other revenue is forecast to fall over the four years.⁷⁴ A key source of other revenue in recent years has been labour contracted out to TIDC for the construction of the ECRL. As this project will largely be completed in 2008/09 other revenue is forecast to reduce over the four years. IPART's decision on the amount of non-fare revenue to be allowed for in the determination is unchanged from the draft report.

Table 5.2 Final decision on non-fare revenue (\$million, real \$2008/09)

	2008/09	2009/10	2010/11	2011/12
Government concession payments	173	174	176	178
Other revenue	113	110	99	94
Non-fare revenue	285	285	275	271

Note: Rows may not add due to rounding. The figures differ from the draft report due to a change in IPART's market implied inflation forecast from 3.7 per cent to 2.7 per cent.

IPART considers that because concession funding is provided by the Government to make up for farebox revenue CityRail foregoes to comply with government policy, it is appropriate that the revenue required to be recovered from the farebox and government funding be reduced by this amount. IPART also considers that commercial revenues forecast to be earned from activities outside the provision of regular passenger services (such as commercial rentals and advertising) be accounted for as a reduction of the amount of revenue required from the farebox, as this will give CityRail an incentive to grow these revenues above the forecast levels.

⁷⁴ APT submission, 19 October 2008, p 3.

6 Efficient operating and maintenance expenditure

As part of the building block approach, IPART has made a final decision on the efficient level of operating and maintenance expenditure required to provide CityRail services over the determination period, taking into account the service standards CityRail is required to meet, and the potential for CityRail to make efficiency improvements.

In making this decision, IPART considered the final report of L.E.K. Consulting (LEK), which it engaged to estimate and recommend the efficient operating costs of providing CityRail's regular passenger services, taking into account the potential for CityRail to make efficiency improvements, for the years 2008/09 to 2011/12. IPART also considered stakeholders' views, and its own assessment criteria for this review, which were derived from the terms of reference.

The section below sets out IPART's final decision on efficient operating and maintenance expenditure. The subsequent sections discuss this decision and IPART's considerations in making it in more detail.

6.1 Overview of final decision on efficient operating and maintenance expenditure

IPART's final decision is that the efficient operating and maintenance expenditure required to provide CityRail services over the period 2008/09 to 2011/12 is as shown in Table 6.1.

Table 6.1 Forecast efficient operating and maintenance expenditure used in making final decision on CityRail's annual revenue requirements (\$million, real \$2008/09)

	2008/09	2009/10	2010/11	2011/12
Operating expenditure	2027	2036	1947	1875

Note: The figures differ from the draft report due to a change in IPART's market implied inflation forecast from 3.7 per cent to 2.7 per cent.

6.2 IPART's draft decision

IPART's draft decision was largely the same as the final decision. In making this draft decision, IPART accepted LEK's recommendations on CityRail's efficient operating costs and scope for efficiency improvements. However, IPART adjusted LEK's recommendations by:

- ▼ removing a portion of major periodic maintenance expenditure and treating this as renewal capital expenditure, consistent with the treatment of renewal capital expenditure in other industries IPART regulates
- ▼ removing the borrowing costs associated with major periodic maintenance.

IPART also considered stakeholders' views about LEK's recommendations on the scope for efficiency improvements, including concerns that LEK had unfairly targeted 'frontline' staff, and concerns related to the maintenance of infrastructure and rolling stock, staffing of stations and the presence of guards on trains. It also considered whether it is appropriate for passengers to contribute to the costs of staffing low patronage stations and having guards on trains.

IPART did not accept that LEK's recommendations unfairly targeted frontline staff. Rather, it considered these recommendations recognised that there is scope for efficiency savings across **all** CityRail's operating areas, not just those that involve frontline staff. They reflected LEK's finding that passenger rail service providers in other jurisdictions are able to deliver a level of service similar to or higher than CityRail at considerably lower cost. Consistent with an incentive approach to regulation, IPART's draft decision aimed to ensure that fares were set at a level that ensured passengers only contribute to the **efficient** costs of supplying CityRail services from which they benefit.

In addition, consistent with the terms of reference and its assessment criteria for this review, IPART took the view that the costs associated with employing train guards and staffing low patronage stations were not efficient, and so should not be funded by passengers. Therefore, it excluded these costs from its calculation of CityRail's forecast efficient operating and maintenance costs. However, the draft report emphasised that the decisions about whether or not to employ train guards and staff low patronage stations is ultimately a matter for RailCorp and the Government. IPART's only role is to decide whether the associated costs are recovered through passenger fares.

6.3 Stakeholder responses

In general, stakeholder submissions in response to the draft report did not comment on IPART's draft decision on the efficient operating and maintenance costs of providing CityRail services.

However, the NSW Government submitted that it is committed to improving CityRail's efficiency. It also noted that as part of this, it intends to:⁷⁵

- ▼ outsource rolling stock maintenance services if CityRail's in-house services cannot achieve similar benchmarks to the private sector⁷⁶
- ▼ investigate improved options for the management of its cleaning services from the private sector, and rationalise RailCorp's corporate and support functions⁷⁷
- ▼ pursue efficiency savings through improved productivity of train drivers, but will **not** be pursuing savings by transitioning to driver-only train operations (ie, by not having guards on trains)⁷⁸
- ▼ give further consideration to other efficiency improvement initiatives IPART raised in its draft report.⁷⁹

At the roundtable, RailCorp noted that it has developed a range of other initiatives in addition to those put forward as part of the Government's 2008 mini-budget. Together, these initiatives are expected to generate annual savings in excess of \$100 million per annum, including savings in the area of corporate overheads.⁸⁰ RailCorp acknowledged there are improvements to be made in the area of train operations, particularly in terms of the amount of time CityRail drivers spend driving trains.⁸¹

A number of stakeholders commented, both in submissions and at the roundtable, on the need for staff at all stations, guards on trains, and adequate frontline service staff.⁸² A number of individuals expressed concern about the current station staffing levels and the safety of CityRail trains and stations. In particular, they argued that station security at night times was not acceptable.⁸³ Many put the view that guards play an important role in assisting disabled passengers board/alight trains, ensuring people safely board the train before the doors are closed, and providing a level of safety or 'perceived safety'.⁸⁴ However, others argued that guards are not currently effective in ensuring safety.⁸⁵

⁷⁵ Comments made by Mr Glasson, DG Ministry of Transport, Roundtable 17 November 2008, p 7.

⁷⁶ NSW Government submission, 10 November 2008, p 10.

⁷⁷ NSW Government submission, 14 November 2008, pp 1-2.

⁷⁸ NSW Government submission, 14 November 2008, pp 1-2.

⁷⁹ NSW Government submission, 14 November 2008, pp 1-2.

⁸⁰ This figure is a broad estimate provided by RailCorp. Roundtable 17 November 2008, p 11.

⁸¹ RailCorp noted that the mini-budget commits to savings of \$10m per annum in this area. Comments made by RailCorp, roundtable 17 November 2008, p 10.

⁸² RTBU comments at roundtable, RTBU submission, 18 July, p 5.

⁸³ Confidential submissions, October 2008.

⁸⁴ Andrew Kerr submission, 7 October 2008, Comments made by Ms Edmonds from NCOSS and Mr Falzon from the Western Sydney Community Forum at the Roundtable 17 November 2008.

⁸⁵ Confidential submission, October 2008; Anonymous individual submission (S08/11460), October 2008; Deborah Shand submission, 17 October 2008.

Very few submissions stated that passengers are willing to contribute to the costs of providing staff at low patronage stations and guards on trains. However, some supported passengers contributing to these costs if the duties of these staff were expanded – for example, by guards walking the trains and responding to customer inquiries, and station staff having a more active role in fare compliance, customer service and cleaning.⁸⁶ The NSW Government submitted that the Everyday Service Essentials Program is designed to deliver improved frontline service for CityRail customers, including enhanced passenger security.⁸⁷

6.4 IPART's considerations in making its final decision

In previous fare reviews, IPART has noted that CityRail's level of economic efficiency, both in terms of costs and labour productivity measures, is well below international benchmarks.⁸⁸ It has also noted that in recent years, CityRail's costs have increased by significantly more than the rate of inflation, and taxpayers have contributed proportionately more to fund these rising costs than CityRail's passengers. For example, since 2001/02, CityRail's costs have increased by 22 per cent in real terms.

IPART's draft decision noted the cost of providing CityRail services was expected to increase further over the next four years. RailCorp forecast that under a 'business as usual' scenario, CityRail's annual operating and maintenance costs would increase by approximately \$600 million in real terms by the end of the determination period, from around \$1.9 billion in 2006/07 to around \$2.5 billion in 2011/12. This represents a real increase of around 5 per cent per annum.⁸⁹ IPART's discussion paper analysed the drivers of this cost increase.⁹⁰

One of IPART's primary objectives in making this fare determination is to encourage CityRail to contain these cost increases by improving its economic efficiency. There are several reasons for this. First, IPART does not consider the current trend of increasing costs is sustainable. Second, it is conscious that increases in government funding to cover increases in CityRail's costs mean that this funding cannot be directed to other areas, such as health and education, which may be equally or more important. Finally, it is explicitly required both under the IPART Act and by the terms of reference for this review to take account of the need for greater efficiency in the supply of CityRail services, and to identify the scope for efficiency improvements.

⁸⁶ Dr Philip Laird submission, July 2008, p 2.

⁸⁷ NSW Government submission, 14 November 2008, p 2.

⁸⁸ IPART, *CityRail Fares from 11 November 2007 - Final Report and Determination*, October 2007, p 12.

⁸⁹ RailCorp has incorporated a forecast of inflation of 2.5 per cent per annum over the period.

⁹⁰ IPART, *Determining CityRail's revenue requirement and how it should be funded - Discussion Paper*, June 2008.

In line with the terms of reference for this review, LEK considered whether CityRail's costs could grow at a lower rate over the next four years if it could make efficiency improvements to achieve levels of efficiency similar to comparable rail passenger service providers in Australia and overseas. (Full details of the scope of LEK's review, and its methodology and analysis can be found in its public report, which is available on the IPART website.)⁹¹

LEK found that there was considerable scope for efficiency improvements and recommended that CityRail's efficient operating and maintenance costs should be around \$2.2 billion in 2008/09, and should decrease to around \$2.0 billion in 2011/12 in real terms. LEK recommended that it was both reasonable and achievable for RailCorp to reduce CityRail's operating costs by 18 per cent per annum by 2011/12, by making efficiency savings of around \$454 million in real terms, while maintaining or improving its service standards. LEK also identified the potential to make efficiency improvements in each area of CityRail's operations, as outlined in Table 6.2.

Table 6.2 LEK's recommendations on the scope for efficiency improvements in CityRail's operating areas in 2011/12 (\$million real \$2008/09)

Operating area	RailCorp's forecast cost (2011/12)	LEK's recommended efficient cost (2011/12)	Size of efficiency improvement	% saving
Infrastructure maintenance	876	815	60	6.9
Rolling stock maintenance	354	301	52	14.7
Train operations and crewing	460	305	154	33.6
Customer interface (including station staffing)	447	367	80	17.9
Revenue collection	60	33	27	45.3
Overhead and marketing	274	194	80	29.2
Total	2470	2,016	454	18.4

Note: The figures differ from the draft report due to a change in IPART's market implied inflation forecast from 3.7 per cent to 2.7 per cent. Totals may not add due to rounding.

Source: RailCorp forecasts provided to LEK.

In making this final decision, IPART recognised that the significant growth in operating costs RailCorp forecast under a 'business as usual' scenario is partly driven by the fact that CityRail will take on several additional responsibilities over the determination period, such as operating the ECRL and maintaining additional rolling stock. In addition, IPART accepted LEK's recommendations on CityRail's efficient operating and maintenance costs over the determination period, including the recommendations on the scope for efficiency improvements, after:

⁹¹ LEK, *Cost Review of CityRail's Regular Passenger Services*, Report to IPART, June 2008, available at www.ipart.nsw.gov.au.

- ▼ Considering stakeholder concerns about LEK’s recommendations on the scope for efficiency improvements – including concerns that LEK had unfairly targeted frontline staff and concerns related to the maintenance of infrastructure and rolling stock, station staffing and guards on trains – and noting the NSW Government’s decision to continue to employ guards on trains.⁹² IPART’s decision to accept LEK’s recommendations recognises that under an incentive approach to regulation, passengers should only contribute to the efficient costs of providing the services from which they benefit.
- ▼ Adjusting LEK’s recommendations on CityRail’s efficient operating and maintenance costs by:
 - removing a portion of major periodic maintenance expenditure and treating this as renewal capital expenditure, consistent with the treatment of renewal capital expenditure in other industries IPART regulates
 - removing the borrowing costs associated with major periodic maintenance.

IPART considerations in relation to these matters are discussed in more detail below.

6.4.1 Concerns that LEK unfairly targeted frontline staff

In IPART’s view, LEK’s recommendations indicate there is scope for efficiency savings across **all** CityRail’s operating areas, not just those that involve frontline staff (see Table 6.2 above). Indeed, one of the largest efficiency savings LEK identified, both in percentage and dollar terms, was a reduction in the number of head office staff. This was based on its finding that other comparable passenger rail service providers’ overhead costs are around 50 per cent lower than CityRail’s.⁹³ At the roundtable, RailCorp indicated that it was seeking to achieve savings in the areas of corporate overheads.⁹⁴

In addition, LEK’s recommendations in relation to train crews and station staff are based on an objective analysis of the operational efficiency of CityRail and comparable passenger rail service providers, and so “fairness” is not a relevant criterion. For example, LEK found that CityRail’s train drivers spend far less time driving than those employed by other Australian service providers – they spend less than 40 per cent of their shift driving trains, while Melbourne and Queensland drivers spend some 60 to 75 per cent of their shift driving.⁹⁵ The NSW Government and RailCorp have acknowledged that there are savings to be achieved through increasing the productivity of train drivers.⁹⁶ LEK also found that CityRail’s station staffing levels are considerably higher than those in Melbourne, and there is no evidence that this results in higher service levels. The NSW Government has committed to a ‘Station

⁹² NSW Government submission, 14 November 2008, pp 1-2.

⁹³ LEK report, May 2008, p 35.

⁹⁴ Roundtable, 17 November 2008, p 10.

⁹⁵ LEK report, May 2008, p 25.

⁹⁶ NSW Government submission, 14 November 2008, p 2.

Staff Review' under its recently agreed Enterprise Bargaining Agreement to better align staffing levels with demand, as well as to improve job design.⁹⁷

6.4.2 Concerns related to the maintenance of infrastructure and rolling stock

In relation to concerns about the recommended efficiency savings in the areas of rolling stock and infrastructure maintenance, IPART notes that LEK identified that CityRail could make several changes to reduce the costs of maintaining infrastructure and rolling stock to a similar level as other comparable operators' costs **while maintaining service quality**. For example, LEK recommended refurbishing the Tangara fleet, which should extend the life of these assets and reduce on-going maintenance costs. It also noted that the introduction of new rolling stock over the determination period should reduce the average costs of maintaining rolling stock.

As noted above, the NSW Government has committed to benchmarking CityRail's in-house rolling stock maintenance services against the private sector and indicated that if the current maintenance arrangements do not improve, these services will be sourced from the private sector.⁹⁸

6.4.3 Concerns related to station staffing

LEK recommended that CityRail could reduce the costs of operating stations by making changes to bring it into line with other comparable operators. These changes included rationalising the functions undertaken by staff at stations, including greater use of dedicated cleaning teams (rather than being part of existing station staff duties), greater outsourcing of cleaning functions, moving towards a management structure with a higher number of staff to management, and increasing the number of unstaffed stations.

The recommendation that attracted most stakeholder comment was increasing the number of unstaffed stations. Currently, stations with a level of patronage below a certain threshold are not staffed. LEK recommended increasing this threshold so it is in line with the threshold used in Melbourne, which would increase the number of CityRail stations that are unstaffed.

However, IPART notes that it is other recommended changes – greater outsourcing of cleaning functions and increasing the ratio of staff to management at stations – that will generate the most significant efficiency savings in the station staffing area. IPART notes that following recommendations from BCG the Government has decided to investigate moving to dedicated cleaning teams with clearer performance specifications for cleaning of stations and the potential for outsourcing of these functions.⁹⁹

⁹⁷ NSW Government submission, 14 November 2008, p 2

⁹⁸ NSW Government submission, 14 November 2008, p 1.

⁹⁹ NSW Government submission, 14 November 2008, p 2.

IPART recognises that staffing of low patronage stations provides passengers with a sense of security. However, LEK's report highlighted that CityRail could provide a greater level of customer service and security if its existing resources were better deployed. If existing station staff, particularly at major stations, performed revenue protection duties such as checking tickets at gates, a considerable number of transit officers would be freed up to provide greater levels of security across the network, particularly at unstaffed stations. Transit officers are likely to be more effective in providing security than CityRail station staff.

IPART notes that the results of ITSRR's 2008 survey of CityRail customers suggests the current approach to staffing stations (and employing guards on trains) may not be providing customers with the appropriate sense of security. This survey indicates that around one-third of passengers consider that their expectations for personal security on stations and in train carriages at night are not being met.¹⁰⁰ Given that these two issues are consistently ranked as being of high importance to passengers, the Government and RailCorp need to consider how security is currently being provided. IPART notes that the Government is currently considering recommendations made by BCG in relation to improving security on the CityRail network.

6.4.4 Concerns related to guards on trains

Many stakeholders expressed concern that LEK's recommendations in relation to train crewing, particularly removing guards on trains, would have adverse impacts on the level of service CityRail provides, especially for passengers with a disability.¹⁰¹ However, IPART considers CityRail is able to operate at efficient levels consistent with other comparable operators without reducing the quality of service it provides. Furthermore, in submissions and at the public hearings, there was little evidence that the public so values the guards' services that they would be prepared to pay the higher fares consistent with keeping guards on trains.

LEK's recommendations were based on a thorough analysis of passenger rail service providers in other jurisdictions that deliver a level of service similar to or higher than CityRail at considerably lower cost. This includes providing access for passengers with a disability while operating without guards on trains (or staff at low patronage stations). IPART is not aware of any evidence that suggests that the level of service provided in Melbourne, including for passengers with a disability, is inferior to that provided by CityRail.

IPART notes stakeholder views that station upgrades are required before passengers with a disability can use CityRail services independently.¹⁰² At present, around one-third of CityRail stations can be accessed by disabled passengers without assistance. CityRail's capital program for the next four years includes considerable expenditure

¹⁰⁰ ITSRR Survey of CityRail customers 2008, September 2008, p 44.

¹⁰¹ For example, see Andrew Kerr submission, 7 October 2008.

¹⁰² Individual anonymous submission (S08/11460), October 2008

as part of the Easy Access program for improving access to and around stations. This will increase the number of stations that are accessible for passengers with a disability, and so assist them in using CityRail services.

In IPART's view, the fact that so few stations are currently accessible for passengers with a disability is likely to be a far greater limitation on their use of CityRail services than whether a train guard is available to help them board or alight the train. In addition, IPART understands that while some disabled passengers need assistance to board and alight trains, most do not. IPART also understands that currently, most of those who do need assistance receive this help from station staff, not guards. Further, in other jurisdictions, such as in Melbourne, a ramp to assist passengers with a disability to board/alight the train is deployed by the train driver at stations that are unstaffed.

IPART notes comments by some stakeholders that train guards are necessary on the CityRail network due to the curved nature of some stations and the need for guards to 'perform right of way duties' (ensuring passengers are clear from the doors before they are closed). However, IPART understands that in other jurisdictions these functions are undertaken by station staff at larger stations (as they are at larger CityRail staffed stations), or through the use of CCTV cameras and screens at smaller and unstaffed stations. IPART has included the cost of installing CCTV cameras and screens in its capital expenditure forecasts. IPART also notes that CityRail is currently rolling out 'traction inter-locking' on all CityRail trains which will ensure trains do not leave the station if the doors are not closed properly.

In addition, IPART notes that the NSW Government has made a decision to continue to employ guards on CityRail trains.¹⁰³ As IPART has emphasised throughout this review, the decision about whether or not to employ train guards and staff low patronage stations is a matter for Government. IPART's role is confined to determining the maximum fares CityRail can charge for its services and, as part of this process, determining the efficient costs of providing those services, including the optimal mix of operating and capital expenditure. This includes considering the extent to which existing assets can be deployed in a more effective manner, and the extent to which additional capital expenditure (eg, installing CCTV cameras and upgraded ticket machines) can achieve operating cost savings. Consistent with an incentive approach to regulation, IPART's aim is to ensure that it sets fares at a level that ensures passengers only contribute to the **efficient** costs of supplying CityRail services.

At present, IPART's view is that the costs associated with employing train guards and staffing low patronage stations are not efficient, and so should not be funded by passengers. IPART does not consider the costs associated with guards on trains to be consistent with the supply of services at least cost given that other jurisdictions are able to supply a similar or improved level of service through a more optimal mix of operating and capital expenditure. Therefore, it has excluded these costs from its

¹⁰³ NSW Government submission, 14 November 2008, pp 1-2

final decision on the level of efficient operating and maintenance expenditure. These costs will need to be funded by CityRail's owner, the NSW Government, and ultimately taxpayers. IPART has included the efficient capital expenditure required to achieve these operating cost savings in making its final decision on the total revenue requirement (see Chapter 7).

IPART considers that its decision to exclude the costs of employing guards on trains and staffing low patronage stations is consistent with the terms of reference and its assessment criteria for this review – that is, the decision:

- ▼ promotes economic efficiency of rail services, including the supply of services at least cost
- ▼ provides incentives for CityRail to increase its cost efficiency
- ▼ reduces the costs without reducing the quality of passenger rail services for the benefit of consumers and taxpayers.

As noted above, some stakeholders put the view that it might be appropriate for passengers to contribute to the costs of employing guards and staffing low patronage stations if the duties of these staff were expanded in the future. IPART notes the Government is considering BCG's recommendations in relation to the 'on-train staffing model' including the potential to expand the role of guards. If CityRail is able to offer a higher level of customer service in the future, for example as a result of expanding guards' duties, it may be appropriate for passengers to contribute to these costs. Therefore IPART will reconsider this matter if this occurs.

In the meantime, the costs associated with the Government's decision to retain guards on trains should be funded by the Government. In addition, IPART's final report, *Improving CityRail's accountability and incentives through an effective service contract*, recommended that the funding associated with government policy should be made transparent in the service contract between MoT and RailCorp.

6.4.5 Adjusting for major periodic maintenance and borrowing costs

In line with its draft decision on operating and maintenance expenditure, IPART made two adjustments to LEK's recommendation on efficient operating costs. These adjustments are necessary to ensure that the regulatory treatment of expenditure on major periodic maintenance, and of the borrowing costs associated with this expenditure, is consistent with the treatment in other industries IPART regulates using a building block approach.

Adjustment to major periodic maintenance expenditure

LEK included both 'routine maintenance' and 'major periodic maintenance' within the infrastructure cost category of operating expenditure. Major periodic maintenance includes expenditure on the replacement, enhancement and refurbishment of existing assets. However, it also includes expenditure on extending

the overall life of these assets (such as laying new concrete sleepers under tracks, and refurbishing ageing rolling stock). Typically, regulators (including IPART) treat this latter expenditure as renewal capital expenditure.

Therefore, to ensure regulatory consistency, IPART's final decision is that the portion of major periodic maintenance expenditure related to extending the life of existing assets should be treated as renewal capital expenditure rather than operating expenditure. This involves removing this expenditure as well as the efficiency saving from the efficient operating cost estimate and adding it to the efficient capital expenditure estimate. As a result, the costs associated with this expenditure will be recovered over the life of the assets rather than in the year the costs were incurred. The major periodic maintenance expenditure totals between \$109 and 126 million in real terms in each year.¹⁰⁴ This is shown in Table 6.3 below.

Adjustment to borrowing costs

LEK's recommended efficient operating costs also included the borrowing costs associated with expenditure on extending the life of existing assets. Typically, IPART does not include borrowing costs associated with capital expenditure in the efficient capital expenditure estimate. This is because the building block methodology provides for a return on invested capital over the life of the asset that takes into account the cost of debt. Therefore, IPART's final decision is that these borrowing costs should also be removed from the efficient operating cost estimate.

Table 6.3 shows LEK's recommended efficient operating costs after both these adjustments have been made relative to CityRail's 'business as usual' forecast costs. The adjustments mean that CityRail's efficient operating costs reduce by approximately 3 per cent per annum in real terms over the 2008/09 – 2011/12 period.

Table 6.3 IPART-adjusted LEK recommendations on CityRail's efficient operating costs 2008/09 – 2011/12 (\$million, real \$2008/09)

	2008/09	2009/10	2010/11	2011/12
CityRail business as usual forecast	2,226	2,372	2,400	2,470
LEK recommended operating expenditure savings	-59	-183	-296	-454
Adjustment to major periodic maintenance expenditure	-126	-123	-120	-109
Adjustment to remove borrowing costs	-14	-29	-37	-32
Total	2,027	2,036	1,947	1,875

Note: The figures differ from the draft report due to a change in IPART's market implied inflation forecast from 3.7 per cent to 2.7 per cent. Totals may not add due to rounding.

¹⁰⁴ In 2011/12, only \$109 million in real terms has been subtracted from LEK's operating cost forecasts. This represents the removal of \$118 million in real terms for major periodic maintenance but excludes around \$9 million in real terms of efficiency savings on this major periodic maintenance that had been included in LEK's forecasts.

7 Value of the RAB over the determination period

As Chapter 5 discussed, to determine values for the annual allowance for a return on capital, IPART calculated the value for CityRail's regulatory asset base (RAB) in each year of the determination period. This involved:

1. establishing the value of the RAB at the start of the determination period (known as the initial capital base, or ICB)
2. establishing the methodology for rolling forward the RAB to the end of the determination period, to reflect changes in its value over this period
3. determining CityRail's the level of capital expenditure to be incorporated in each year when rolling forward the RAB.

The section below provides an overview of IPART's final decision on the value of the RAB. The subsequent sections discuss IPART's final decisions and considerations in relation to each of the above steps.

7.1 Overview of final decision on the value of the RAB

IPART's final decision is that the value of the RAB over the determination period is as shown in Table 7.1.

Table 7.1 Final decision on the closing value of the RAB used in calculating CityRail's net annual revenue requirements (\$million, nominal)

	2008/09	2009/10	2010/11	2011/12
Closing RAB	7,639	8,925	10,060	10,907

IPART's final decision on the closing value of CityRail's RAB in 2011/12 is approximately 1 per cent lower than proposed in the draft report. This is due to:

- ▼ an increase in the value of CityRail's ICB from \$3.9 billion to \$4.3 billion, resulting from revisions to several inputs to IPART's calculation
- ▼ a small adjustment to the value and timing of inclusion of the ECRL in CityRail's RAB.

7.2 Value of the initial capital base

The first step in determining a value for the RAB over the determination period – establishing the opening value of the RAB, or the ICB – involves valuing the existing assets required to provide CityRail’s services at a certain point in time. This step involved IPART:

- ▼ ‘drawing a line in the sand’, to differentiate between the capital expenditures that were incurred in the past (and so should be considered in setting the ICB) and those that will be incurred over the determination period (and so should be considered when rolling forward the RAB)
- ▼ deciding on the approach to use in calculating the value of the ICB.

A range of approaches could be used to calculate the value of the ICB for an existing business, including estimating:

- ▼ the opportunity cost (or scrap value) of the assets
- ▼ the historical or actual cost of the assets
- ▼ the book value of the assets
- ▼ the deprival value of the assets, which is the lower of the optimised depreciated replacement cost (ODRC) or economic value.

Typically, the estimated value of the ICB will vary widely, depending on which of these approaches is used. The lower band of the potential range for this value is zero. This would occur if all past capital expenditure was considered to be neither efficient nor prudent, and the existing assets were considered to be ‘sunk assets’ with no scrap value or opportunity cost. The upper bound of the potential range is likely to be equal to the ODRC element of the deprival value of the assets.

7.2.1 Final decision on the value of the ICB

IPART’s final decision is to value CityRail’s initial capital base at \$4.3 billion.

In making this decision, IPART:

- ▼ ‘drew a line in the sand’ at 30 June 2008, so that only capital expenditures incurred prior to this date were considered in valuing the ICB
- ▼ used the deprival value approach.

This approach is the same as the one IPART used in making its draft decision. However, IPART made minor adjustments to several inputs to its calculation of the deprival value of the assets to ensure consistency with its final decision in these areas. These adjustments resulted in a \$369 million increase in the value of the ICB compared to the draft decision.

7.2.2 IPART's draft decision

IPART's draft decision was to value CityRail's ICB at \$3.9 billion. It reached this decision by determining the lower of:

- ▼ the ODRC of CityRail's assets, and
- ▼ the economic value of these assets (being the discounted value of the cash flows generated by the assets).

The ODRC represents the optimised value of the replacement cost of the assets, based on the cost of modern equivalent assets. The 'optimised value' means that the replacement cost of the assets is adjusted to remove the value associated with any excess capacity, over-engineering, poor design or poor location in the existing assets. In the case of CityRail, the optimised value of the replacement cost of the assets is likely to be significantly lower than the actual replacement cost. However, because replacing all the assets used to provide CityRail's services - including the entire network of tracks, bridges and stations - would be extremely costly, the ODRC is still likely to be considerably higher than the current economic value or even the book value of the assets. Therefore, IPART estimated the economic value of the assets.

The economic value of CityRail's assets represents the present value of the expected future net benefits flowing from the assets. IPART estimated this value using a discounted cash flow (DCF) analysis.¹⁰⁵ This involved:

- ▼ estimating the free cash flow generated by CityRail as the sum of free cash flows for two periods:
 - 2008/09 to 2011/12 using forecasts of revenue, operating and capital expenditures to estimate its free cash flow
 - beyond 2011/12 estimating a terminal value of RailCorp's business in 2011/12 to capture the value of free cash flows generated beyond 2011/12
- ▼ calculating the value of CityRail as the net present value (NPV) of these future estimates of free cash flow.

¹⁰⁵ A DCF approach values a business based on its ability to generate free cash flows in the future, where free cash flow is calculated as the net of cash inflows and cash outflows. In the case of CityRail, cash inflows include items such as farebox revenue and government subsidies, while cash outflows include items such as operating expenses and capital expenditure. If all other factors remain constant, increases in future cash inflows will increase the future free cash flow available to the business (and thus the value of the business), while increases in future cash outflows will have the opposite effect.

In undertaking this analysis, IPART made several assumptions, including the following:

- ▼ The approach assumed a 'contracting out' model, where the operator earns revenue from passengers and the Government for service delivery and providing concession fares.
- ▼ The future value of the government subsidy included as a cash inflow to CityRail should be commensurate with the external benefits of CityRail services as valued by IPART. IPART's draft decision was that this should be in the range \$1.7 to \$1.9 billion in real terms.
- ▼ Farebox revenue was assumed to grow in line with IPART's draft decision on forecast patronage growth as well as increasing in line with an annual fare increase of CPI+1%.
- ▼ Forecasts of operating and capital expenditure were consistent with the levels included in IPART's draft decision. For capital expenditure, IPART adjusted its DCF forecasts to levels consistent with the assumption that the approach values the current service capacity of CityRail's assets. Therefore, it excluded any growth capital expenditure from its forecasts for its DCF valuation.
- ▼ The terminal value was calculated using the 2011/12 free cash flow forecast and a growth rate consistent with its market implied forecast of inflation of 3.8 per cent.
- ▼ The weighted average cost of capital was assumed to be 7.7 per cent in real pre-tax terms (or 11.8 per cent in nominal pre-tax terms).

IPART considered this approach the most reasonable option for estimating the economic value of CityRail's assets for several reasons. First, the approach is commonly used for valuing private and public companies. Second, it is transparent, because it uses publicly available data and growth forecasts for revenue and expenses. Third, it provides a value greater than zero, which implies that the opportunity cost of CityRail's assets is positive, but is lower than the written-down book value of the assets. This result is primarily due to the fact that CityRail's prices and revenues are significantly lower than could be supported by the written-down book value of its assets. This appears reasonable, given the commonly held view that only some of CityRail's past capital expenditure was prudent and efficient. Finally, the approach provides a value that is not large enough to compromise future cost recovery levels, or to lead to pricing outcomes that are likely to reduce patronage levels.

IPART also noted that using the economic value as part of a deprival approach to setting the ICB has some disadvantages - particularly, the 'circularity' in that the economic value used to set the ICB reflects current revenue, and then the value of ICB is used as a basis for determining future revenue and prices. In this sense, the deprival value approach does not necessarily provide a basis for setting the 'right' price level, independently of current revenue levels.

However, IPART considered that this disadvantage was less important, because its main aim in drawing a ‘line in the sand’ and calculating the value of CityRail’s ICB is to provide the right incentives for future investment, and therefore provide users with the ‘right’ economic signals regarding the costs of future investment.¹⁰⁶ This aim is consistent with the assessment criteria for the review.

7.2.3 Stakeholder responses

In general, stakeholder responses to the draft report did not focus on IPART’s draft decision on the value of CityRail’s ICB, or the approach used to calculate this value. The NSW Government noted that the valuation should be defensible and realistic.¹⁰⁷ One individual argued that IPART had not adequately explained the difference between its preliminary view and draft decision.¹⁰⁸

At the public hearing, RailCorp commented that the written down book value of its assets was approximately \$17 billion at 30 June 2008 and that this is significantly higher than the economic value estimated by IPART in its draft report.¹⁰⁹ This comment is consistent with MoT’s submission to IPART’s June 2008 discussion papers which argued that the whole asset base should be valued on a consistent basis and asked IPART to consider whether CityRail’s existing assets have a significant residual value beyond the value implied by the methodology employed by IPART. For example, the land value of rail corridors and station sites is considerable (especially given this land can be used for alternative modes of transport).¹¹⁰

MoT also asked IPART to consider the contribution made by existing assets towards delivering the external benefits that IPART valued. Arguably, for a like with like comparison, the value of the RAB (and hence the annual revenue requirement) should reflect the actual economic value (or opportunity cost) of the existing assets.¹¹¹

7.2.4 IPART’s considerations in making its final decision on the value of the ICB

In making its final decision on the value of the ICB, IPART reaffirmed its view that the most reasonable approach is to draw a line in the sand at 30 June 2008, and use a deprival value approach, for the reasons outlined in the discussion paper and summarised in section 7.2.2 above. It also reaffirmed its view that the most appropriate way to apply the deprival value approach is to estimate the economic value of the assets using a DCF analysis.

¹⁰⁶ This is important given the size of CityRail’s future capital expenditure (more than \$5bn over the next 5 years).

¹⁰⁷ NSW Government submission, 10 November 2008, p 13.

¹⁰⁸ Confidential submission, November 2008.

¹⁰⁹ RailCorp, 17 November 2008 public hearing, p 12.

¹¹⁰ MoT submission, July 2008, p 5.

¹¹¹ MoT submission, July 2008, p 6.

However, IPART made adjustments to several inputs to its calculation to ensure consistency with its final decisions in these areas. In particular it has decreased the WACC and decreased the market implied inflation forecast. The net effect of these changes is an increase in the value of CityRail's ICB from \$3.9 billion to \$4.3 billion. The sections below discuss each of the adjustments and IPART's other considerations in more detail.

Decrease in the WACC

In making its draft decision, IPART assumed a WACC of 7.7 per cent in calculating the NPV of future free cash flows. In making its final decision, IPART has assumed a WACC of 7.2 per cent (see Chapter 8). IPART considers this WACC is consistent with what an informed stakeholder would have assumed. It is also consistent with the WACC IPART has used in making its final decisions on the allowances for a return on capital and of capital (discussed in Chapter 8).

Decrease in the market implied inflation forecast

In making its draft decision, IPART assumed a market implied inflation forecast of 3.8 per cent per annum. This forecast was consistent with the forecast inflation that an informed stakeholder would have assumed at 30 June 2008. It was used for forecasting nominal cash flows for the period 2008/09 to 2011/12 as well as calculating the terminal value of CityRail's cash flows in 2011/12.

However, IPART has revised its market implied inflation forecast to 2.7 per cent per annum for consistency with the implied inflation in IPART's final decision on the WACC (see Chapter 8).

IPART's other considerations

IPART considered MoT's view that CityRail's existing assets have a residual value that may not have been captured in IPART's draft decision on the ICB valuation. MoT appears to be concerned that IPART's methodology does not allocate a sufficient economic value to the land under rail corridors and station sites.

IPART considers that ideally the opportunity cost of the use of CityRail's network should be reflected in the asset valuation. While some of CityRail's past investments can be considered sunk, some have an ex-ante value as well as an ex-post value, in that they can be sold. This means that there is an opportunity cost in CityRail continuing to use them in providing services.¹¹²

¹¹² Put another way, while assets such as the land on which station sites and rail corridors are situated currently delivers much less than a market rate of return, it may have a higher value to a purchaser who could expect to sell the land and similar assets onto an alternative user.

However, IPART considers including an additional amount in the ICB to reflect this ex-ante value is inappropriate for several reasons. First, a higher residual value does not necessarily mean that an equivalent value should be incorporated into the ICB. The residual value MoT refers to typically occurs in cases where there is a feasible alternative use for the asset that is not restricted by natural, legal or socio-political restrictions on the use and disposal of the asset. These restrictions commonly occur for many state-owned assets such as schools, hospitals and many specialised assets such as water systems.¹¹³ For these assets, the unrestricted market value of the asset may be high, but it is highly unlikely that this value would be realised due to the restrictions on use and disposal of the asset. IPART considers it likely that similar restrictions would apply to most of the CityRail assets MoT refers to, such as land on which rail corridors and station sites are situated. Therefore, IPART considers that MoT's arguments do not justify a higher ICB based on the inclusion of a value for these assets.

Second, IPART's approach needs to provide a consistent methodology to valuing all CityRail assets. It would be inappropriate to include a residual value for these assets in the value of the ICB calculated using a deprival value approach. The land value of rail corridors and station sites has been incorporated into the ICB through the extent to which the assets on these sites contribute to the revenue of CityRail and thus its future free cash flow generating potential.

Finally, IPART questions whether CityRail incurred any cost in acquiring considerable areas of the land under its tracks and stations. Therefore, it questions whether it is appropriate for it to earn a return on and of this asset class.

7.3 Methodology for rolling forward the RAB

As discussed above, IPART's decision on the value of CityRail's ICB represents a valuation of the existing assets required to provide CityRail's services at 30 June 2008. The second step in determining the value of the RAB over the determination period is to decide on the methodology to be used for rolling forward this value to the end of the determination period, to reflect changes in the value of the RAB over this period.

For example, in addition to the impact of general inflation, the value of the RAB can change if:

- ▼ new assets are acquired during the determination period
- ▼ efficient and prudent capital expenditure is incurred to improve or extend the life of existing assets, or
- ▼ existing assets are sold or become redundant.

¹¹³ New South Wales Treasury, *Guidelines for the Valuation of Physical and Non-Current Assets at Fair Value*, 2005, p 7.

IPART considers that adopting a clear methodology (or set of rules) to guide the rolling forward process will simplify and improve the efficiency of the regulatory regime, by improving regulatory certainty and avoiding the subjectivity and cost of future revaluation exercises. It notes that this approach is consistent with the approach IPART takes in regulating prices in other industries, such as electricity, gas and water.

7.3.1 Final decision on methodology for rolling forward the RAB

IPART's final decision is that the methodology for rolling forward the RAB will distinguish between capital expenditure that *is not* associated with major projects and capital expenditure that *is* associated with major projects.

For capital expenditure that *is not* associated with major projects, the following methodology will be used for rolling forward the RAB to 2011/12:

- Capital expenditure that is deemed to be efficient and prudent will be incorporated into the RAB for the purpose of determining the revenue requirement:
 - forecast capital expenditure IPART deems to be efficient will be incorporated into the RAB in the year that it is incurred
 - but this capital expenditure will only be 'locked into' the RAB for the next determination period (ie, from 2012/13) if IPART deems it has been prudent as part of the next fare review.
- IPART will retain the ability to remove the value of assets from the RAB when those assets are no longer used in providing CityRail's services. However, IPART is not disposed towards removing assets from the RAB once incorporated.
- The value of regulatory depreciation of the RAB will be deducted, consistent with previous IPART decisions.
- The movement in the CPI rather than an Asset Index will be used to adjust the RAB for general economy-wide price increases, consistent with previous IPART decisions.

IPART is also not disposed towards revaluing the value of the ICB once established. However, IPART considers that a revaluation of the RAB may be necessary if the benefits derived from CityRail's assets are not commensurate with the costs or if future patronage growth is lower and therefore the associated externalities and assumed future government subsidy proved to be too high.

For capital expenditure that *is* associated with major projects (such as the ECRL), the following methodology will be used for rolling forward the RAB to 2011/12:

- Capital expenditure will be incorporated into the RAB at the time the project comes on stream.
- Capital expenditure will be included at cost unless IPART is provided with sufficient information to warrant including a different value for these assets. Any adjustment

to the value to be included in the RAB would therefore need to be based on a thorough cost-benefits analysis of the relevant capital expenditure.

- IPART will retain the ability to remove the value of assets from the RAB when those assets are no longer used to provide CityRail’s services. However, IPART is not disposed towards removing assets from the RAB once incorporated.
- The value of regulatory depreciation of the RAB will be deducted, consistent with previous IPART decisions.
- The movement in the CPI rather than an Asset Index will be used to adjust the RAB for general economy-wide price increases, consistent with previous IPART decisions.

IPART also notes that in line with its final decision on the appropriate share of the net revenue requirement to be recovered from passengers (discussed in Chapter 12), IPART will assume that as a ‘rule of thumb’ an appropriate passenger share for funding new major capital projects is 30 per cent. This implies that if the Government invests an additional \$1 billion in the CityRail network (for example, to build a South West Rail Link) an additional \$300 million (in net present value terms) would need to be recovered from passengers over the life of the asset. A passenger share that differs from this ‘rule of thumb’ may be appropriate depending on the individual project in question and the external benefits it generates, but this would need to be demonstrated.

7.3.2 Draft decision on methodology for rolling forward the RAB

IPART’s draft decision on the methodology for rolling forward the RAB was the same as its final decision.

7.3.3 Stakeholder responses

Stakeholders provided no comment on IPART’s draft decision on the methodology for rolling forward the RAB. However, in its submission to IPART’s June 2008 discussion papers, MoT noted that the way in which the ECRL is to be incorporated into the RAB highlighted its concerns with the approach used by IPART for valuing assets. It argued that the inclusion of the ECRL at \$2.3 billion results in a significant “lumpy” increase to the asset base with a sharp flow-on effect to fares, whereas including it at a zero value would have no impact on fares.¹¹⁴ IPART notes that its final decision to increase the value of CityRail’s ICB to \$4.3 billion addresses this concern to some extent.

MoT also sought clarification from IPART on the proposed ex-post review of the prudence of CityRail’s actual capital expenditure incurred over the determination period. In particular, it sought further detail on whether the review related only to capital expenditure and not all expenditure.

¹¹⁴ MoT submission, July 2008, p 5.

MoT also put the view that a prudency review such as IPART applies in the energy and water sectors (where costs are fully recovered from users) may not be immediately applicable to rail. Any prudency test for rail capital expenditure would need to take account of the benefits to the user and the broader community, and to be mindful that the benefits are unlikely to be fully realised in the short term.¹¹⁵

7.3.4 IPART's considerations in making its final decision

Methodology for incorporating capital expenditure that is *not* associated with major projects

IPART considers that its final decision on the methodology for incorporating capital expenditure that *is not* associated with major projects is appropriate because it:

- ▼ will ensure that CityRail does not increase its short-term profitability by reducing actual capital investment below the efficient forecasts, which would result in a decline in service standards (ie, that cost savings are not achieved at the expense of service quality)
- ▼ will ensure that users only contribute to prudent capital expenditure incurred in providing CityRail services
- ▼ will ensure that CityRail is not disadvantaged for undertaking unforeseen prudent capital expenditure
- ▼ is consistent with IPART's approach in other capital-intensive industries, such as energy and water.

In relation to MoT's request for further information, IPART notes that the ex-post prudency review would relate only to CityRail's capital expenditure, and not operating expenditure.¹¹⁶ 'Prudent', in its ordinary sense, means "discreet cautious in managing one's activities; practical and careful in providing for the future & exercising good judgement".¹¹⁷ Thus, the ex-post prudency review would:

- ▼ Assess whether the capital expenditure was reasonable, given the information available at the time it was incurred. That is, the review would focus on whether the investment decision was prudent at the time it was made, not with hindsight.
- ▼ Assess the final outcomes of the expenditure, taking account of the quality of, and commitment to, the planning and evaluation procedures. These procedures will typically be benchmarked against industry practice for the planning, provision and utilisation of assets and service standards.

¹¹⁵ MoT submission, July 2008, p 7.

¹¹⁶ Operating expenditure is recovered in the year it is incurred and not rolled into the RAB. However, this is not to say that there will be no consideration of CityRail's actual operating expenditure over the period 2008/09 to 2011/12 as compared to the efficient levels determined by IPART as part of this review. CityRail's ability to meet efficient levels of operating expenditure over 2008/09 to 2011/12 will be considered when IPART determines efficient levels of operating expenditure beyond 2011/12.

¹¹⁷ Collins Concise Dictionary, 2nd Australian Edition, 1990.

Other factors that may be considered in assessing the prudence of capital expenditure include:

- ▼ current and projected system capacity
- ▼ appropriate asset utilisation levels benchmarked against best practice
- ▼ current demand and likely future demand
- ▼ current condition of assets and renewal requirements
- ▼ existing operational requirements
- ▼ current safety standards
- ▼ current and likely future policies in regard to factors such as environmental requirements and contestability
- ▼ relevant legislation and government policies and initiatives.

In addition, IPART notes and agrees with MoT's comment that this prudence test will need to take into account the benefits of capital expenditure to both the user and the broader community, and that some of these benefits are unlikely to be fully realised in the short term.

Methodology for incorporating capital expenditure that *is* associated with major projects

In making its final decision in relation to the methodology for incorporating capital expenditure that *is* associated with major projects, IPART was mindful that this methodology needs to create incentives for efficient investment, and that such incentives are in the long-term interest of both passengers and the Government.

IPART considers that incorporating the capital expenditure into the RAB at the time the project comes on stream is appropriate, given that the development and construction of major projects, such as the ECRL, are managed by the TIDC,¹¹⁸ and thus CityRail incurs no capital costs for these projects until they come on stream. It also notes that this approach would involve capitalising any interest associated with the project that has been incurred between construction commencing and the project coming on stream.

IPART considers it appropriate to incorporate the capital expenditure associated with major project at cost unless provided with sufficient information to warrant including a different value for these projects. As MoT pointed out in its submission in response to IPART's June 2008 discussion papers, major projects are government policy decisions and, as such, are subject to rigorous cost benefit analyses and the Government's Gateway Review process. Therefore it would not be appropriate for IPART to subject them to a further prudence review. Under this decision, the inclusion of a major project in the RAB at a value other than cost would need to be based on a thorough cost-benefit analysis of the relevant capital expenditure.

¹¹⁸ Transport Infrastructure Development Corporation (TIDC) is a State owned corporation which operates under the *Transport Administration Act 1988*.

7.4 Level of capital expenditure to be incorporated when rolling forward the RAB

After determining the methodology for rolling forward the RAB, the third step in determining the value of the RAB over the determination period is to decide how much capital expenditure should be incorporated into the RAB in each year of this period, in line with this methodology. This involved IPART making a decision on CityRail's forecast efficient capital expenditure not associated with major projects, and on the value of the one major capital project expected to come on stream during the determination period – the ECRL.

7.4.1 Final decision on capital expenditure to be incorporated when rolling forward the RAB

IPART's final decision on the level of capital expenditure to be incorporated when rolling forward the RAB is as shown on Table 7.2.

Table 7.2 Final decision on capital expenditure to be incorporated when rolling forward the RAB (\$million, real \$2008/09)

	2008/09	2009/10	2010/11	2011/12
Capital expenditure <i>not</i> associated with major projects	1,087	1,333	1,214	974
Capital expenditure associated with ECRL	2,350			
Total	3,437	1,333	1,214	974

This final decision is largely the same as IPART's draft decision.

In making its final decision on the forecast efficient capital expenditure *not* associated with major projects, IPART:

- ▼ accepted that RailCorp's forecast capital expenditure is efficient, in light of LEK's recommendation that efficiency savings were not achievable
- ▼ added the additional capital expenditure required to achieve LEK's operating cost savings and the renewal capital expenditure removed from the operating cost forecasts (see in Chapter 6).

In making its final decision on the value of the ECRL, IPART valued the ECRL at cost, and incorporated this value into the RAB at the time the project is expected to come on stream, in line with its final decision on the methodology for rolling forward the RAB. IPART revised this cost to \$2.35 billion, based on the most recent project update for the ECRL. IPART also decided to incorporate this value midway through the 2008/09 financial year to better reflect when RailCorp expects this project to come on-line.

7.4.2 IPART's draft decision

IPART's draft report noted that capital expenditure is a significant part of the total cost of providing CityRail's services, and that RailCorp has forecast an extensive capital program for the next five years. It also noted that LEK had found that, unlike CityRail's operating and maintenance costs, there is little scope for efficiency improvements in CityRail's forecast capital expenditure program. This is because most of CityRail's capital projects are competitively outsourced, which means the expenditure they require is determined by the market.

CityRail's forecast capital program is primarily driven by the clearways project, rolling stock upgrades, and infrastructure upgrades (including power supply and stations). These projects are intended to improve the standard and reliability of CityRail's services and address some of the capacity constraints resulting from the high demand for peak period travel to and from the CBD. However, the program did not include some major publicly announced projects such as the North-West and South-West Rail Links, which were not expected to be in operation until after the end of the determination period, and which have now been re-prioritised and deferred under the 2008 mini-budget.

In relation to forecast capital expenditure that is not associated with major projects, IPART's draft decision reflected LEK's recommendation to adopt RailCorp's forecast capital expenditure after making two adjustments:

- ▼ adding the additional capital expenditure CityRail will require to achieve efficiency improvements in its operating costs, and
- ▼ adding the portion of major periodic maintenance expenditure associated with extending the life of existing assets (removed from the efficient operating and maintenance expenditure cost block, as discussed in Chapter 6).

In relation to forecast capital expenditure associated with the ECRL, IPART's draft decision was to incorporate the ECRL into the RAB at a value of \$2.3 billion when it comes on stream. The ECRL is the only major project expected to come on line during the determination period. It is an underground passenger rail service that connects Epping to Chatswood via North Ryde/Macquarie Park. It is designed to improve the capacity of the CityRail network and provide rail access to North Ryde/Macquarie Park with three new stations. The original decision to build this line was made in the mid-1990s and construction commenced in 2002.

The development and construction of the ECRL is being managed by TIDC. The ECRL is expected to be in operation in early 2009, and when this occurs the assets will be transferred from TIDC's balance sheet to RailCorp.

7.4.3 Stakeholder responses

IPART received limited comment on its draft decisions on forecast capital expenditure to be incorporated when rolling forward the RAB. The BMC&TUA noted that the cost of refurbishing the Tangara fleet is likely to exceed the \$500 million included in RailCorp's forecast capital expenditure.¹¹⁹ One individual also noted that passengers should not have to contribute to the capital costs of purchasing or upgrading existing rolling stock as this is the responsibility of the shareholder following years of underinvestment.¹²⁰

As discussed above, MoT expressed concern that incorporating the ECRL at a value of \$2.3 billion would result in a significant "lumpy" increase to the asset base with a sharp flow-on effect to fares, whereas including it at a zero value would have no impact on fares.

7.4.4 IPART's considerations in making its final decision

Capital expenditure not associated with major projects

IPART's final decision reaffirms its draft decision on the forecast efficient capital expenditure not associated with major projects required to provide CityRail services over the determination period. In making this decision, IPART has:

- ▼ Accepted RailCorp's forecast capital expenditure in light of LEK's recommendation that efficiency savings were not achievable.
- ▼ Added the additional capital expenditure required to achieve LEK's operating cost savings. This is important in encouraging the optimal mix of operating and capital expenditure consistent with the supply of services at least cost.
- ▼ Added the renewal capital expenditure removed from the operating cost forecasts, consistent with the treatment of renewal capital expenditure in other industries IPART regulates. This ensures that passengers contribute to this expenditure over the life of the asset rather than in the year the expenditure is incurred.

IPART understands that the Government has foreshadowed changes to CityRail's capital expenditure as part of its November 2008 mini-budget. While detail was not provided to IPART on the specific impact of these announcements on CityRail's forward capital expenditure program, IPART understands these announcements fundamentally relate to a reprioritisation of the program assessed by LEK. The Government has also announced that it will provide funding for additional commuter car parks and interchanges as well as the purchase of 88 additional Outer Suburban Carriage (or Oscar) train sets.¹²¹ Given the timing of these announcements, IPART has not been able to assess their prudence and efficiency. IPART has

¹¹⁹ BMC&TUA submission, July 2008, p 5.

¹²⁰ Confidential submission.

¹²¹ Comments made by RailCorp at public roundtable, 17 November 2008, transcript, p 12.

therefore not included the mini-budget announcements in its final decision on the capital expenditure to be included when rolling forward the RAB. IPART also understands that many of the changes relate to a reprioritisation of program and may not result in a significant change to the total level of capital expenditure over the next four years.

Capital expenditure associated with major projects (the ECRL)

IPART's final decision is to incorporate the ECRL into the RAB at a value of \$2.35 billion when it comes on stream. This is consistent with the final decision on the methodology for incorporating capital expenditure associated with major projects, discussed in section 7.3 above.

When this project comes on stream, the associated assets will be transferred from TIDC's balance sheet to RailCorp, and RailCorp will become responsible for operating and maintaining the infrastructure, and for servicing the debt associated it. The capital expenditure associated with this investment will have an opportunity cost and should be subject to a rate of return via inclusion in CityRail's RAB.

In making its final decision, IPART revised the value of the ECRL to be incorporated in the RAB to \$2.35 billion (compared with \$2.3 billion under the draft determination). It also decided to incorporate this value midway through the 2008/09 financial year (compared with the beginning of the year under the draft determination). These revisions reflect RailCorp's advice that the assets associated with the ECRL (including capitalised interest) will be transferred to it at a value of \$2.35 billion prior to the commencement of the shuttle services in February 2009.

Table 7.3 shows the project status of the ECRL as May 2008.

Table 7.3 ECRL project status

Milestone	Date
May 2008	Construction complete and TIDC infrastructure testing (5 months) begins
October 2008	Final testing commences before commissioning and handover to RailCorp
February 2009	Shuttle operations begin ^a
May 2009	Integrated timetable and services commence

^a Shuttle operations involve only direct service from Epping to Chatswood. Commuters travelling from Hornsby to the city will need to change trains at Epping for the shuttle service.

Source: http://www.tidc.nsw.gov.au/Documents/167_ProjUpdate.pdf

IPART notes that including the ECRL at a value of \$2.35 billion results in CityRail's revenue requirement for 2011/12 being approximately 7 per cent higher than it would have been if the ECRL was valued at zero. IPART considers that this is consistent with good regulatory practice, and sends the appropriate signals to those responsible for making decisions on major capital projects for CityRail, about the need for these decisions to be efficient and prudent.

8 Allowance for a return on capital

The inclusion of an allowance for a return on capital when calculating CityRail's annual revenue requirements over the determination period ensures that the shareholder receives appropriate compensation for committing capital to the business and bearing the risks associated with the business. To calculate the size of this allowance, IPART determined an appropriate rate of return for CityRail, and then multiplied the value of RAB over the determination period by this rate.

The sections below discuss IPART's final decision on the allowance for a return on capital, and its considerations in making this decision.

8.1 Overview of final decision on the allowance for a return on capital

IPART's final decision on the allowance for a return on capital over the determination period is as shown on Table 8.1.

Table 8.1 Final decision on the allowance for a return on capital used in calculating CityRail's net annual revenue requirements (\$million, real \$2008/09)

	2008/09	2009/10	2010/11	2011/12
Return on capital	421	571	639	689

The level of the allowance for a return on capital under the final decision is lower than under the draft decision because:

IPART's final decision used a lower rate of return than the draft decision (7.2 per cent compared to 7.7 per cent), due to the changes in financial market conditions that occurred between the release of the draft and final reports.

- ▼ IPART's final decision on the value of CityRail's ICB was higher than the draft decision (\$4.3 billion compared to \$3.9 billion in the draft report, as discussed in Chapter 7).

The net effect of these two changes was to decrease the allowance for a return on capital.

IPART's final decision on the value of the RAB in each year of the determination period is discussed in Chapter 7. Its final decision on the appropriate rate of return for CityRail is discussed below.

8.2 Final decision on appropriate rate of return

IPART's final decision is that for the purposes of calculating the allowance for a return on capital, a real pre-tax rate of return of 7.2 per cent is appropriate.

This final decision reflects IPART's view that:

- ▼ the appropriate weighted average cost of capital (WACC) is in the range 6.5 to 9.7 per cent
- ▼ given the current market conditions, a WACC below the mid-point of this range is appropriate for CityRail.

8.2.1 IPART's draft decision

IPART's draft decision was that a rate of return of 7.7 per cent was appropriate, based on the WACC approach.¹²² This figure was based on IPART's initial assessment of the various input parameters used to calculate a WACC for CityRail shown in Table 8.2.

Table 8.2 Parameters used to calculate CityRail's WACC – draft decision

Parameter	Value
Nominal risk free rate	6.3%
Real risk free rate	2.6%
Implied inflation forecast	3.7%
Market risk premium	5.5 to 6.5%
Debt margin	2.3 to 3.2%
Debt funding	50 to 40%
Gamma	0.5 to 0.3
Tax rate	30%
Equity beta	0.8 to 1.0
Cost of equity	10.7 to 12.8%
Cost of debt	9.4 to 10.5%
WACC (real pre tax)	6.8 to 8.8%
WACC (midpoint)	7.7%

Note: Input parameters for IPART preliminary view were as at 4 August 2008.

8.2.2 Stakeholder responses

No stakeholder submissions in response to the draft report commented on IPART's draft decision on the appropriate rate of return for CityRail.

¹²² The weighted average cost of capital approach calculates the cost of capital as the expected cost of the various classes of capital (debt and equity) weighted to take into account the relative share of debt and equity in the total capital structure.

However, several stakeholders commented on the rate of return in their responses to IPART's June 2008 discussion papers. They put the view that a WACC of 8 per cent was excessive, in the context of the public transport industry.¹²³ For example, one stakeholder argued that a WACC of 7 per cent is more appropriate for calculating a return on infrastructure projects, as this level is in line with the NSW Treasury Guidelines.¹²⁴ This stakeholder also argued that under the WACC approach, estimating the cost of equity through a combination of the capital asset pricing model (CAPM) and market approaches (as IPART did in its discussion paper) is inappropriate, because spare government funds will be invested in alternative government projects which do not earn a market rate of return.

8.2.3 IPART's considerations in making its final decision

IPART considered stakeholders' comments about the optimal level of the return on capital element of CityRail's revenue requirement. It noted that one stakeholder suggested that NSW Treasury's hurdle rate of 7 per cent should be used as the rate of return. However, IPART maintains its view that it more appropriate to use the WACC approach to determine an appropriate range for this rate as it is intended to identify the best alternative rate of return. This is consistent with the approach IPART uses in regulating the energy and water sectors.

IPART also considered the impact of current market conditions on CityRail's WACC. In particular, IPART was concerned that current market conditions in the Australian debt market may not reflect the actual cost of debt a commercial public rail transport operator would face in a competitive market. As a result, the debt margin range generated by IPART's traditional methodology used in the draft decision¹²⁵ may currently overestimate the actual cost of debt a commercial public rail transport operator would face in present conditions. IPART is concerned that the upper bound of the debt margin range generated using the traditional methodology may not be relevant for CityRail.

IPART's final decision is that a real pre-tax WACC of 7.2 per cent reflects IPART's view that the industry weighted average cost of capital is in the range of 6.5 to 9.7 per cent. IPART has had regard to a broader group of securities issued only by utilities that it considers is more commensurate with current market conditions faced by a commercial public transport operator.¹²⁶ Taking this additional information into account, IPART considers that a WACC below the mid-point of this range is appropriate for CityRail. Further information on IPART's considerations is contained in Appendix G.

¹²³ APT submission, 9 July 2008, p 6 and Confidential submission.

¹²⁴ Confidential submission.

¹²⁵ Based on the BBB and BBB+ fair yield curves and the corporate bond issues from Santos, Snowy Hydro and Coles.

¹²⁶ This broader group of securities is focussed on utilities but has a wider range of terms to maturity and credit ratings than provided under IPART's traditional methodology.

The parameters IPART used to calculate this WACC range are shown in Table 8.3 and were based on market conditions as at 29 October 2008.

Table 8.3 Parameters used to calculate CityRail's WACC – Final decision

Parameter	Value
Nominal risk free rate	5.2%
Real risk free rate	2.5%
Implied inflation forecast	2.7%
Market risk premium	5.5 to 6.5%
Debt margin	2.9 to 6.0%
Debt funding	60%
Gamma	0.5 to 0.3
Tax rate	30%
Equity beta	0.8 to 1.0
Cost of equity	9.6 to 11.7%
Cost of debt	8.1 to 11.2 %
WACC (real pre-tax)	6.5 to 9.7%

Note: Input parameters for IPART final decision were as at 29 October 2008.

9 Allowances for a return of capital (depreciation) and on working capital

To determine the allowance for a return of capital (or depreciation), IPART assumed straight line depreciation. It established an appropriate depreciation rate for CityRail's three asset groups - existing assets, new assets not associated with major projects, and new assets associated with major projects - then multiplied the annual value of each group by the appropriate rate.

To determine the allowance for a return on working capital, IPART estimated an appropriate level of net working capital for CityRail for each year of the determination period, and multiplied this amount by the appropriate rate of return for CityRail (as discussed in Chapter 8).

The sections below discuss IPART's final decisions and considerations in relation to each of these allowances.

9.1 Allowance for a return of capital (depreciation)

9.1.1 Final decision on allowance for a return of capital

IPART's final decision on the allowance for a return of capital is as shown on Table 9.1.

Table 9.1 Final decision on the allowance for a return of capital used in calculating CityRail's net annual revenue requirements (\$million, real \$2008/09)

	2008/09	2009/10	2010/11	2011/12
Return of capital	199	286	365	434

Overall, the final decision on the allowance for a return of capital is higher than the draft decision. The key differences in IPART's calculation of this allowance are as follows:

- ▼ As Chapter 7 discussed, IPART's final decision on the value of ICB (\$4.3 billion) was higher than the draft decision (\$3.9 billion). As the ICB represents the value of the existing assets group, this resulted in a higher allowance for depreciating this asset group over the determination.
- ▼ As also discussed in Chapter 7, IPART revised its assumption about when the ECRL should be incorporated into the RAB. For the final decision the ECRL was incorporated in the middle of the 2008/09 financial year rather than at the

beginning of the year as in the draft decision. This affected the depreciation profile for this asset group.

- ▼ IPART increased the depreciation rate applied to new assets not associated with major projects from 5.5 per cent in the draft decision to 6.5 per cent in the final decision. This resulted in a higher allowance for depreciating this asset group.

9.1.2 Draft decision

In making its draft decision, IPART assumed straight line depreciation. The straight line method of depreciation takes an equal amount from the asset value in each year of the assets' economic life, so the real written-down value describes a straight line over time, from the initial value of the investment to zero at the expiry of the asset life.

IPART then established an appropriate depreciation rate for CityRail's three asset groups, and then multiplied the annual value of each group by the appropriate rate:

- ▼ existing assets (ie, the ICB) were depreciated at the average depreciation rate implicit in RailCorp's statutory accounts (3.7 per cent)
- ▼ new assets not associated with major projects were depreciated at the weighted average depreciation rate of future capital expenditure (5.5 per cent)
- ▼ new assets associated with major projects (ie, the ECRL) were depreciated at the rate of 1 per cent (based on an average asset life of 100 years).

9.1.3 Stakeholder responses

Stakeholder submissions in response to the draft report did not comment on the allowance for a return of capital.

9.1.4 IPART's considerations in making its final decision on the return of capital allowance

In making its final decision on the allowance for a return of capital, IPART reaffirmed its draft decisions to:

- ▼ determine CityRail's return of capital allowance by applying straight line depreciation
- ▼ depreciate existing assets (ie, the ICB) at the average depreciation rate implicit in RailCorp's statutory accounts (3.7 per cent)
- ▼ depreciate new assets associated with major projects (ie, the ECRL) at the rate of 1 per cent (based on an average asset life of 100 years).

However, IPART reconsidered its draft decision on the depreciation rate to be applied to new assets not associated with major projects, and decided to increase the depreciation rate from 5.5 per cent in the draft decision to 6.5 per cent in the final decision.

The following sections outline IPART's considerations on depreciating CityRail's three asset groups.

Depreciating existing assets (the ICB)

IPART considers that the remaining asset life of the ICB is different from the remaining asset life of new assets. Therefore, it applied a different depreciation rate to the ICB. This depreciation rate is based on the average remaining asset life of the ICB of 27 years, which corresponds to an annual depreciation rate of 3.7 per cent on the written down value of CityRail's assets. The average depreciation rate will apply until the full amount of asset value implicit in the ICB is fully depreciated.

Depreciating new assets not associated with major projects

IPART considers that new assets associated with the forecast efficient capital expenditure not associated with major projects have a different average remaining asset life to the ICB, and thus should be depreciated at a different rate. RailCorp provided its estimates of the remaining asset lives for all of its six separate asset categories. In making its draft decision, IPART calculated a weighted average depreciation rate of 5.5 per cent (or an average asset life of 18 years) and applied this to forecast efficient capital expenditure.

IPART has reconsidered the average asset life for new assets and considers that a shorter life than that applied in the draft report is more appropriate. IPART considers that given the shorter-term nature of many of CityRail's new assets which include communication and information technology systems, a weighted average depreciation rate of 6.5 per cent (or an average asset life of 15 years) better reflects the useful life of these assets. IPART has therefore applied this rate to forecast efficient capital expenditure not associated with major projects.

Depreciating new assets associated with major projects (the ECRL)

IPART considers the ECRL should be depreciated at a rate specific to this asset, as it will result in a significant increase in the value of the RAB when it comes on stream (ie, it will add \$2.35 billion to the ICB of \$4.3 billion). In addition, RailCorp has advised that the average asset life of the assets associated with the ECRL to be transferred to CityRail in 2008/09 is significantly higher than the weighted average life of its other asset classes. The ECRL has a higher proportion of longer lived assets (for example, tunnels and other infrastructure) and thus RailCorp estimates an average life of 100 years compared to the weighted average of 18 years. In view of this, IPART made a final decision that the ECRL should be depreciated at an annual rate of 1 per cent.

9.2 Overview of final decision on the allowance for a return on working capital

IPART's final decision on the allowance for a return on working capital is as shown in Table 9.2.

Table 9.2 Final decision on allowance for a return on working capital used in calculating CityRail's net annual revenue requirements (\$million, real \$2008/09)

	2008/09	2009/10	2010/11	2011/12
Return on working capital	-17	-19	-16	-12

This allowance is largely unchanged from IPART's draft report. The small difference between revenue outcomes under IPART's draft and final reports has resulted in a small change in the forecast levels of accounts receivable, which in turn has affected the return on working capital allowance.

In general, the rationale for including an allowance for a return on working capital is that, if the business' net working capital is positive, it has invested capital to facilitate this and so should earn a regulatory return on this capital. However, if the business' net working capital is negative, its trade creditors are providing working capital to the business, and so it should earn a negative regulatory return to offset the returns being earned by the business on the capital provided by other parties.

To make its final decision, IPART:

- ▼ estimated CityRail's forecast level of net working capital in each year of the determination period, as shown in Table 9.3
- ▼ multiplied this by the appropriate rate of return for CityRail, as discussed in Chapter 8.

Table 9.3 Forecast levels of net working capital used in calculating the final decision on the allowance for return on working capital (\$million, real \$2008/09)

	2008/09	2009/10	2010/2011	2011/12
Accounts payable	341	369	346	312
Inventory	43	46	43	39
Accounts receivable	118	126	135	144
Net working capital	-181	-197	-168	-129

These levels are based on CityRail's forward estimates for the elements of net working capital relating to passenger services. These are:

- ▼ accounts payable at 40 days of operating and capital expenditure
- ▼ accounts receivable at 20 days of revenue
- ▼ inventory at 5 days of operating and capital expenditure.

As Table 9.3 indicates, CityRail's net working capital is negative for each year of the determination period. CityRail has low levels of accounts receivable and inventories compared to payables, resulting in a *negative* level of net working capital. This is largely driven by the nature of CityRail's business where all farebox revenue is received before the travel occurs and thus results in a low level of accounts receivables. Given this negative net working capital position, it is appropriate that the allowance for a return on working capital be negative.

10 Forecast patronage growth

IPART's decision on CityRail's forecast patronage growth over the determination period is an important part of the fare review, and has a major impact on the level of fares. This is because IPART sets the level of fares to generate the share of CityRail's net revenue requirement to be recovered from passengers, based on the forecast number of passenger journeys for each fare type. In general, a higher patronage growth forecast will lead to lower fare increases, because the revenue requirement can be recovered from a higher number of ticket sales.

IPART's forecast patronage growth also affects the value of the external benefits of CityRail services over the determination period. Generally speaking, a higher forecast number of passenger journeys will lead to a higher value for the external benefits (because more passenger journeys should mean that higher levels of costs associated with private vehicle use are being avoided). And a higher value for the external benefits will lead to lower fare increases, because it suggests that a higher share of CityRail's annual revenue requirement should be recovered from taxpayers through Government subsidies rather than passengers.

Over the last 15 years, the average annual growth in the total number of CityRail passenger journeys has been 1.9 per cent.¹²⁷ However, in recent years, the annual growth has been much stronger than this long-term average. In 2006/07, it was 3.1 per cent, while in 2007/08, it was 5.2 per cent.¹²⁸

IPART would like to see this strong growth in demand for CityRail's services continue over the determination period because, as noted above, higher patronage growth will partly offset the need to increase fares. However, the key question is whether this is likely, or will the growth rate revert back to a level more consistent with the long-term average?

The section below provides an overview of IPART's final decision on CityRail's annual forecast patronage growth over the determination period. The subsequent sections discuss this decision and IPART's considerations in more detail.

¹²⁷ RailCorp, Annual Report 2007-08, p 13.

¹²⁸ Information provided by RailCorp.

10.1 Overview of final decision on forecast patronage growth

IPART's final decision on forecast patronage growth is as set out in Table 10.1.

Table 10.1 Forecast patronage growth over the 2009 determination period (%)

	2008/09	2009/10	2010/11	2011/12
Baseline patronage change (excl ECRL)	4.0	2.5	2.5	2.5
ECRL impact	0.3	2.4	0	0
Total patronage change	4.3	4.9	2.5	2.5

Source: RailCorp and IPART.

IPART's final decision on forecast growth in baseline patronage (ie, excluding the impact of opening the ECRL) is the same as its draft decision. However, since releasing its draft report, IPART has received revised ticket sales forecasts from RailCorp for the ECRL. The opening of this new rail link is now expected to have a smaller positive impact on patronage levels in 2008/09 and a considerably higher positive effect in 2009/10. In line with these forecasts, IPART revised its forecast impact of the ECRL down in 2008/09 (from 1.0 per cent to 0.3 per cent) and up in 2009/10 (from 0 to 2.4 per cent). As a result, IPART's final decision on forecast patronage growth is higher than its draft decision.

10.2 IPART's draft decision

IPART reached its draft decision on forecast patronage growth, shown in Table 10.2 below, after considering the range of factors likely to influence CityRail's patronage over the determination period. (IPART considered the same factors in making its final decision on the patronage growth forecast – see section 10.4 below).

In the draft report, IPART noted that its draft decision on forecast baseline patronage growth of 2.5 per cent per annum in the final three years of the determination period was consistent with RailCorp's forecast and the State Plan. However, its forecast growth of 5.0 per cent in 2008/09 was higher than RailCorp's forecast of 2.5 per cent, and was consistent with recent trends in CityRail's patronage growth. IPART also noted that its forecast annual patronage growth over the determination period was higher than of the long-term average growth in CityRail's patronage of 1.9 per cent per annum.¹²⁹

¹²⁹ RailCorp, Annual Report 2007-08, p 13.

Table 10.2 IPART's draft decision on forecast patronage growth over the 2009 determination period (%)

	2008/09	2009/10	2010/11	2011/12
Baseline patronage change (excl ECRL)	4.0	2.5	2.5	2.5
ECRL impact	1.0	0	0	0
Total patronage change	5.0	2.5	2.5	2.5

10.3 Stakeholder responses

Several stakeholder submissions in response to the draft report commented on IPART's decision on forecast patronage growth. In general, these stakeholders argued that IPART's forecast patronage growth was too low, given recent trends in patronage growth, rising petrol prices, and the likelihood that the Federal Government will introduce a carbon trading scheme over the determination period.¹³⁰ Stakeholders considered IPART's forecast should be higher, and therefore that its estimated value for the external benefits of CityRail services should be higher and the level of fares should be lower.

10.4 IPART's considerations in making its final decision

In making its final decision, IPART took into account the following factors which it considers will affect patronage growth over the next four years:

- ▼ recent trends in CityRail's patronage growth
- ▼ macroeconomic factors such as growth in CBD employment over the determination period
- ▼ the impact on ticket sales of the completion of the ECRL
- ▼ the fare increases that result from this determination (including the conditional fare elasticities estimated by Booz and Co (Booz) in Table 10.3)
- ▼ the quantity and quality of CityRail services
- ▼ ongoing growth in patronage during peak periods, and the constraints of CityRail's network
- ▼ increases in fuel prices and road congestion.

IPART also considered stakeholders' responses to its draft decision on forecast patronage growth, particularly concerns that its forecast patronage growth was too low. However, IPART maintains its view that the strong growth in baseline patronage CityRail has experienced over recent years is likely to continue during 2008/09, then slow to 2.5 per cent per annum over the rest of the determination period. IPART considers forecast patronage growth of 2.5 per cent per annum in the

¹³⁰ WSROC submission, July 2008, p 3 Eco Transit submission, July 2008, p 5 and confidential individual submission (S08/13410), October 2008.

final three years of the determination period is a robust medium-term forecast, given it is the forecast used internally by RailCorp and implied by the NSW Government's State Plan targets.

In addition, while precisely forecasting patronage growth is difficult, particularly with the current financial market instability, IPART considers the forecast slowing in CityRail's patronage growth to 2.5 per cent per annum over the medium term reflects the current macroeconomic risks – such as uncertainties surrounding growth in CBD employment and GDP – and CityRail's future capacity constraints. In IPART's view, attaining higher annual growth rates (eg, 5 per cent or higher) over the medium term is unlikely to be possible if economic and employment growth slow considerably in the future. Nevertheless, stakeholders should note that IPART's medium-term patronage growth rate of 2.5 per cent per annum is still above CityRail's long-term average patronage growth of 1.9 per cent per annum.

The sections below discuss in detail the key factors IPART considers will affect patronage growth over the coming four years.

10.4.1 Recent trends in CityRail's patronage growth

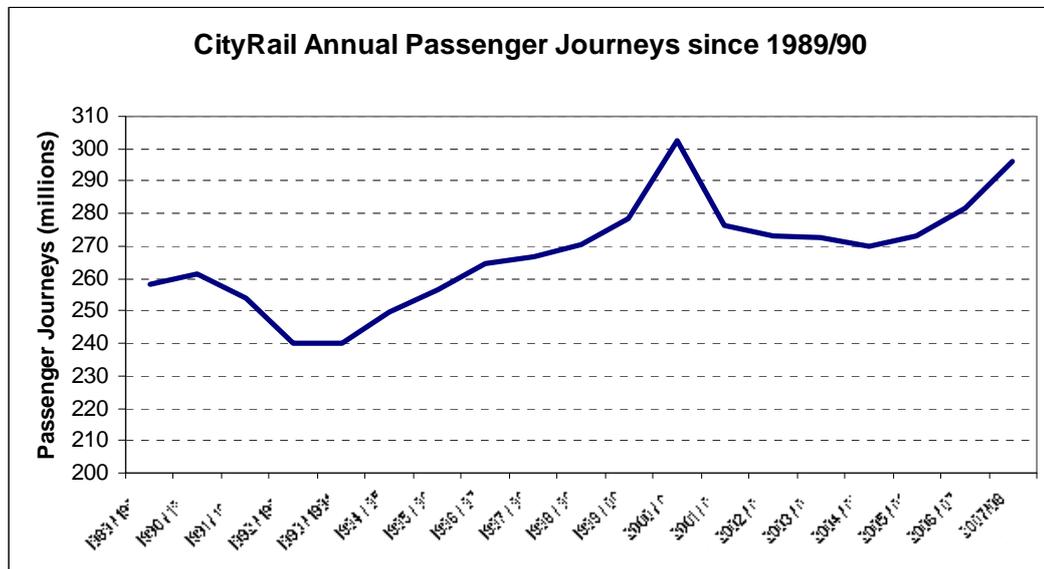
CityRail has experienced strong patronage growth over the last two years. In 2007/08, the estimated number of passenger journeys grew by 5.2 per cent,¹³¹ while in 2006/07 this number grew by 3.1 per cent. Growth in the first three months of the 2008/09 financial year has also been strong.¹³² In 2007/08, there was a higher level of growth in passenger journeys during peak periods than during off-peak periods. In addition, there was higher growth in the weekly and other commuter tickets (8.4 per cent) and full fare tickets (5.4 per cent) than in off-peak tickets (3.2 per cent).¹³³

However, as Figure 10.1 below illustrates, the change in CityRail's annual number of passenger journeys has been fairly volatile over the last 20 years.

¹³¹ Information provided by RailCorp.

¹³² Information provided by RailCorp.

¹³³ Information provided by RailCorp.

Figure 10.1 Changes in CityRail's annual number of passenger journeys

Source: RailCorp.

10.4.2 Growth in CBD employment

The strong recent growth in employment in Sydney's CBD is likely to have been a major contributor to CityRail's recent strong patronage growth. Over half of CBD commuter journeys are undertaken on CityRail services, so any changes in the CBD employment market can be expected to flow through to CityRail's patronage levels.

Despite the recent strong growth, the level of employment growth in the CBD over the next four years is uncertain. IPART expects that both economic and employment growth in general will slow as the global financial instability affects the economy. For example, recent economic forecasts provided by the Australian and NSW Governments suggest a general slowing in economic and employment growth in the near term.¹³⁴

In addition, the econometric modelling of demand for CityRail services IPART commissioned as part of this review (see section 10.4.4 below) found a statistically significant negative relationship between the unemployment rate in Sydney and this demand.¹³⁵ Figure 10.1 above shows that the last time the Australian economy entered a recession – in 1990 – CityRail's patronage growth declined substantially.

¹³⁴ Australian Government 2008/09 Mid-Year Economic and Fiscal Outlook, October 2008 and NSW Government's 2008 Mini Budget, November 2008.

¹³⁵ LECG report, *An empirical estimate of CityRail's marginal costs and externalities*, October 2008.

While precisely forecasting CBD employment growth is difficult with the current financial market instability, IPART considers that its forecast of strong growth in CityRail's patronage continuing in 2008/09 and then a slowing to 2.5 per cent per annum over the medium term reflects the current macroeconomic risks.

10.4.3 Completion of the ECRL

Since the release of IPART's draft report, RailCorp has provided updated ticket sales forecasts for the ECRL. The opening of this new rail link is now expected to have a minor positive impact on patronage levels in 2008/09 (0.3 percentage points), and a considerable positive effect in 2009/10 (2.4 percentage points).¹³⁶

IPART adopted these ticket sales forecasts as part of its final decision on CityRail's forecast patronage growth. It also took account of the updated timing for the opening of the ECRL, and how this is expected to affect CityRail's overall network capacity when the new timetable is introduced in the middle of 2009.

10.4.4 Fare increases that result from this determination

IPART considered how the fare increases that result from this fare determination are likely to affect CityRail's patronage growth over the determination period. It commissioned Booz to estimate the price elasticities of a range of CityRail ticket products (Table 10.3). It also commissioned CRAI/LECG, as part of its review of the value of the external benefits provided by CityRail services, to undertake econometric modelling to estimate these price elasticities and provide a demand model.

The results of both consultants' work suggest there is a negative relationship between demand for CityRail services and the level of CityRail fares (eg, demand tends to come down as fares go up). However, both pieces of work also suggest that demand is not very responsive to changes in price. For example, Booz found that overall fare elasticity in the short to medium term to be -0.29 per cent (see Table 10.3).¹³⁷ CRAI/LECG found fare elasticity to be -0.24 in the short term, and -0.35 in the long term. Based on these estimates, a 10 per cent increase in fares would be associated with a fall in patronage of around 2-3 per cent (all other factors being equal).

¹³⁶ Information provided by RailCorp.

¹³⁷ Booz and Co report to IPART, May 2008 available from IPART's website www.ipart.nsw.gov.au

Table 10.3 Booz's conditional fare elasticities by ticket type

Ticket type	Elasticity
Single (return)	-0.48
Off-peak return	-0.23
RailPass/FlexiPass	-0.28
TravelPass	-0.12
Total	-0.29

Source: Booz and Co report, May 2008, p.ii.

However, the impact of higher fares on CityRail's demand also depends strongly on the price of alternative travel modes. The fare elasticity effects suggested above assume the costs of using buses and private cars are unchanged. But this is clearly not realistic. For example:

- ▼ IPART has determined fares for metropolitan and outer-metro bus services will increase by an average of 5.5 per cent on 4 January 2009.¹³⁸
- ▼ The price of petrol has increased significantly in recent years. However, oil and petrol prices have decreased in recent months due to the slowdown in world economic growth.
- ▼ The NSW Government's recent mini-budget included increases in some road use tolls and parking levies that are likely to increase the cost of driving a car to work in the CBD.

In IPART's view, any increase in the price of competing modes of transport would substantially diminish the impact of higher CityRail fares on its patronage levels. It has undertaken some modelling using the demand model provided by CRAI/LECG which supports this view.

In addition, while accepting there is a negative relationship between demand for CityRail's services and fare levels, IPART considers other factors are also likely to play a substantial role in determining patronage growth. For example, fare changes in recent years seem to have had little effect on patronage growth. In particular, during the 2003-2006 period when fares were frozen and therefore decreased in real terms, CityRail's patronage fell or remained stable. In 2007, when fares increased by an average of 5.9 per cent (nominal), patronage grew by around 5 per cent. In IPART's view, this suggests that other factors – particularly growth in CBD employment, the quantity and quality of CityRail services, and the price of competing transport modes – are likely to have a more significant impact on patronage than fare levels.

Overall, IPART considers the fare increases arising from its fare determination will not substantially impact on CityRail's patronage growth over the determination

¹³⁸ IPART's report and determination, *Review of metropolitan and outer-metro bus services from 4 January 2009*, December 2008, available from IPART's website www.ipart.nsw.gov.au

period, particularly if the price of competing transport modes such as private cars and buses also increase as expected over the next four years.

10.4.5 Quantity and quality of CityRail's services

Recent surveys of CityRail users suggest that at current fare levels, the quantity and quality of CityRail services has a greater influence on demand for these services than the level of fares. For example, ITSRR's 2008 survey found that 80 per cent of respondents were satisfied with the cost of train travel.¹³⁹ In addition, respondents did not indicate that this cost was one of the most important issues for them. Rather, their responses suggest that issues such as train frequency and reliability, personal safety, and the provision of information to customers are far more important.¹⁴⁰ These findings are consistent with the results of internal RailCorp surveys, which suggest that quality and quantity of service is more important than price to existing users.¹⁴¹

The findings are also consistent with the changes in CityRail's patronage growth over recent years (see Figure 10.1). For example, at the time of the 2000 Olympic Games both the quantity and quality of CityRail's service and growth in demand were particularly high. In the years immediately after this, service levels deteriorated markedly and patronage declined significantly. However, in 2005, when a new timetable was introduced and service quality improved, patronage levels began to grow again.

Overall, IPART expects that CityRail will either maintain or increase its service performance over the determination period, as projects included in its cost allowance (such as new rolling stock and clearways) are implemented unless the network reaches full capacity, as discussed below.

10.4.6 Ongoing growth in patronage during peak periods and capacity constraints on CityRail's network

IPART's final decision on CityRail's annual revenue requirement over the determination period includes a considerable amount of funding for implementing capital projects that will increase the capacity of the CityRail network. These projects include the purchase of new rolling stock and the completion of the ECRL.

However, if patronage during peak periods continues to grow at current levels, this additional capacity will be exhausted by 2012 at the latest. And as the network reaches full capacity, the quality of service will inevitably go down – for example, crowding on trains and in stations will increase, and ultimately reliability will decrease. This is likely to lead to a reduction in patronage growth.

¹³⁹ ITSRR Survey of CityRail customers 2007, September 2008, p 42.

¹⁴⁰ Ibid, p 42.

¹⁴¹ Information from RailCorp.

The relationship between service quality and patronage growth means that the capacity constraints on CityRail's network create a natural limit to how much patronage can grow in line with recent trends. Achieving growth rates above this forecast, as suggested by some stakeholders, may require new investments that are likely to be both expensive and take considerable time to implement.

10.4.7 Increases in oil prices and road congestion

Several stakeholders suggested that factors such as increasing petrol prices and levels of road congestion are contributing to the current high patronage growth. They also suggested that, taking these factors into account, the patronage growth will be higher than IPART's forecast.

IPART acknowledges that these factors are likely to be contributing to patronage growth. However, it considers that their effects may be overstated by some stakeholders. In addition, IPART considers that the risks associated with a higher forecast which proves to be incorrect are greater than those of using a more conservative forecast that proves to underestimate patronage growth.

As noted above, IPART's forecast of patronage growth affects two main components of its final fare decision:

- ▼ It is used in financial and fares modelling. The forecast patronage growth has an important impact in the modelling used to set fare levels, as changes in patronage (as well as changes in fare levels) affect the amount of farebox revenue CityRail will collect over the determination period.
- ▼ It is also used in inflating the value of the external benefits provided by CityRail services over the determination period. As Chapter 11 will discuss, IPART estimated the value of these external benefits at the start of the determination period based on actual data, including patronage data. It then increased this value annually by the forecast annual patronage growth and the market implied forecast of the Wage Price Index (WPI) and the Consumer Price Index (CPI) to derive the total value of these benefits over the determination period.

In both cases, a higher patronage growth forecast would lead to lower fares. This would be a good thing if the forecast proved to be correct, but would be problematic for RailCorp and the Government if it proved to be incorrect. For example, a higher forecast patronage growth implies that CityRail will collect a higher level of farebox revenue over the determination period. If actual patronage growth is less than forecast, CityRail could be left with a funding shortfall and so would require additional Government funding, given that CityRail is unlikely to be in a position to easily absorb reduced farebox revenue. On the other hand, if the forecast patronage growth is more conservative and actual growth is higher than forecast, CityRail could collect additional fare revenue. IPART considers the latter is more appropriate, as it provides greater funding certainty to CityRail.

IPART's report to the Government, *Improving CityRail's accountability and incentives through an effective service contract*, recommends the new service contract between MoT and RailCorp place a 'cap' on the level of funding for CityRail services, but include a revenue risk sharing arrangement. It also recommends that this arrangement specify ex-ante the extent to which the Government will compensate RailCorp (ie, provide it with additional funding) if CityRail's actual patronage growth is less than forecast as part of the fare determination.¹⁴² While such an arrangement will provide some protection for CityRail (given that RailCorp can exert only limited influence over demand for CityRail services through the quality of service it delivers)¹⁴³, IPART nevertheless considers that it should be conservative in forecasting CityRail's patronage growth as it would be better to avoid the need for additional Government funding if possible.

¹⁴² IPART, *Improving CityRail's accountability and incentives through an effective service contract - Final Report*, December 2008.

¹⁴³ Demand for CityRail services depends on a number of factors including employment growth (particularly in the CBD); passenger's alternate transport options (including impacts of road congestion) and the relative price of these options; CityRail service quality (reliability, frequency, cleanliness etc); and the price of CityRail services.

11 Value of external benefits of CityRail

Public transport services play an important role in functional, liveable and sustainable cities. For example, the availability of these services improves people's access to work, education, health, recreation and other services, and provides them with an alternative to using private cars. The passenger rail services CityRail provides perform a key part of the public transport task in Sydney, especially in transporting people from the suburbs where they live to employment in the CBD.

Most people readily understand that passenger rail services provide direct benefits to the people who use the services. However, they also generate substantial indirect benefits that accrue to the wider community – including reduced road congestion, reduced traffic accidents and reduced greenhouse gas emissions. (These benefits are known as external benefits, because they are external to those who use the services.)

There is general agreement in Australia and other jurisdictions that the external benefits generated by passenger rail services justify government subsidisation of passenger rail fares (see Box 11.1 for more detail). IPART shares this view, and considers the size of the government subsidy should be related to the estimated value of the external benefits.

Given this view, IPART examined and made a final decision on the forecast value of the external benefits of CityRail services over the determination period. It then considered this value in making its final decision on the appropriate share of CityRail's revenue requirement to be funded by taxpayers (through government subsidies) and by passengers (through fares).

IPART's final decision on the value of the external benefits of CityRail, and its considerations in making this decision are discussed in the sections below. IPART's final decision on the share of the revenue requirement to be funded by taxpayers and passengers is discussed in Chapter 12.

11.1 Overview of final decision on the value of the external benefits of CityRail

IPART's final decision is that the value of the external benefits of CityRail services in 2007/08 was \$1.7 billion (real \$2008/09), and the forecast value of these benefits over the determination period is as shown on Table 11.1.

Table 11.1 Final decision on the value of the external benefits of CityRail (\$billion, real \$2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12
External benefits value	1.7	1.7	1.8	1.9	1.9

Note: Numbers are presented in real \$2008/09.

Source: IPART calculation based on information provided by CRAI/LECG.

This final decision is consistent with the draft decision, but has been adjusted to reflect the increase in IPART's final decision on CityRail's forecast patronage growth (see Chapter 10) and decreases to the market implied forecasts of CPI and WPI in line with current market expectations. Overall, these adjustments had only a minor impact on the value of the external benefits.

In making its draft decision, IPART largely accepted the recommendations of its expert consultant, CRAI. After the draft decision, IPART asked the same consultant to reconsider and update its analysis of the value of the external benefits, marginal costs and optimisation results to take into account any new information or data. The updated advice on the value of the external benefits in 2006/07 is summarised on Table 11.2 below. In making its final decision, IPART accepted this advice. (Please note that same expert consultant who conducted the CRAI analysis used for the draft report conducted the analysis used for the final report. However, as he moved to a new consulting firm between the release of the draft and final reports, the final report is published under the name of this new firm - LECG. A copy of LECG's report is available on IPART's website.)

Table 11.2 LECG's estimate of the value of the external benefits of CityRail in 2006/07 (\$million, 2006/07)

Source of benefit	Recommended value
Avoided road congestion*	1390.8
Avoided air pollution	111.6
Avoided greenhouse gas emissions	25.9
Avoided noise pollution	-
Avoided road accidents	-
Avoided road damage	-
Total external benefits	1,528.2

Note: * Calculated using modelling results obtained from the TDC's Sydney Strategic Travel Model.

Source: LECG report.

As the table shows, LECG's final estimate of the value of the external benefits of CityRail was based on estimates of the value of avoided road congestion costs and avoided air pollution and greenhouse gas emissions due to the use of CityRail services. LECG considered including values for a broader set of external benefits, including avoided noise pollution, road accidents and road damage. However, it

concluded that the value of these benefits was too small to warrant inclusion, or was ambiguous (ie, it could be either positive or negative).

LECG also considered including external benefits related to improved social mobility and agglomeration benefits in its calculation. However, it decided not to do so because the value of these benefits was too difficult to accurately measure and/or the link between CityRail's services and the generation of these benefits could not be established.

Box 11.1 The external benefits of rail passenger services, and why these benefits justify government subsidisation of fares

The external benefits of any action are the positive impacts of that action that accrue to parties external to the action (ie, to people who were not involved in taking the action or deciding to take the action). The external benefits associated with passenger rail services are the benefits that accrue to the community as a whole (rather than to the individuals who use those services). In general, these external benefits are equivalent to the external costs associated with private car use that are avoided when people choose to travel by train rather than private car.

When commuters decide to drive their own cars to work, their decision contributes to the level of congestion on the roads, and therefore imposes an external cost on other motorists (such as longer trip times). But if some commuters decide to take the train to work instead, then this external cost to other motorists is avoided. The same applies to other external costs associated with road use, including greenhouse gas emissions and local air pollution, traffic accidents, and traffic noise.

There are a number of tools available to governments to manage the external costs associated with road use. Economic theory suggests the most effective and efficient tool is to signal to road users (through some sort of road use pricing) the value of the extra road congestion their decision to make a trip by private car causes. In principle, the same approach can be used to signal the other external costs resulting from road use, such as greenhouse emissions and traffic accident costs. However, to date, there have been no attempts to introduce a comprehensive area-based road-use charging scheme in any Australian city for a range of reasons, including the complexity of this task.

Another tool for managing the external costs of road use is the provision of reasonably priced public transport services that enable people to avoid imposing these external costs. In many cities throughout the world, public transport services are subsidised to differing degrees, as a second-best solution to managing the external costs associated with road use.

In the Greater Sydney area, CityRail's provision of regular passenger services (and the Government's subsidisation of fares for these services) undoubtedly leads some people who might otherwise travel by car to travel by rail instead. Therefore, the provision of CityRail's services does avoid some of the external costs of road use, such as greenhouse emissions, health-related impacts and urban road congestion, particularly on traffic corridors to and from the CBD.

11.2 IPART's draft decision

IPART's draft decision was that the value of the external benefits of CityRail in 2007/08 was around \$1.7 billion in real terms, and that this value would increase to \$1.8 to \$1.9 billion per annum in real terms over the 2008/09 – 2011/12 period.

To derive this value, IPART started with CRAI's 2006/07 estimated value of \$1.1 billion and adjusted this value:

- ▼ to reflect CityRail's actual patronage in 2007/08 of 296 million passenger journeys
- ▼ to reflect its view that, for the purpose of calculating the value of external benefits related to avoided road congestion, the appropriate value of time is \$15.80 per hour (rather than CRAI's estimate of \$13.15 per hour).

To attain the value of the external benefits for the 2008/09 – 2011/12 period, IPART then inflated the 2007/08 value by a combination of the market implied forecast change in the WPI and CPI over the determination period, to maintain its value in nominal terms. It also adjusted the value to reflect its preliminary view on forecast patronage growth over the period.

11.3 Stakeholder responses

Many stakeholders commented on the value of the external benefits of CityRail, both in submissions and at the public hearings. In most cases, they argued that IPART had either underestimated the value of these benefits, or had not included all the relevant benefits in its calculation. The most frequently expressed views were that:

- ▼ IPART had not adequately considered external benefits related to improved mobility and social inclusion, particularly for disadvantaged groups.¹⁴⁴
- ▼ IPART had not taken proper account of the role of passenger rail services in reducing greenhouse gas emissions, or had underestimated the value of the external benefits associated with avoided emissions.¹⁴⁵
- ▼ IPART had failed to fully take into account of other social benefits, such as avoided road expenditure which would be required if CityRail services were not available,¹⁴⁶ avoided health care costs and the impact on property values from being in close proximity to a railway station.¹⁴⁷

Several stakeholders also argued that IPART had underestimated CityRail's forecast patronage growth over the determination period, given the current patronage growth, rising petrol costs and the planned introduction of the national Carbon

¹⁴⁴ APT submission, 9 July 2008, p 7 and comments by NCOSS at public hearing on 17 November 2008, transcript p 37.

¹⁴⁵ WSROC submission, July 2008, p 3 and Eco Transit submission, July 2008, p 3.

¹⁴⁶ Confidential submission, November 2008.

¹⁴⁷ Comments by NCOSS and Mr Falzon from Western Sydney Community Forum at public hearing 17 November 2008, transcript, pp 36 and 41.

Pollution Reduction Scheme. They noted that a higher patronage growth forecast would lead to a higher estimated value for the external benefits over the determination period.

In its submission in response to IPART's June 2008 discussion papers, MoT put the view that IPART had not adequately considered the contribution CityRail services make to the economic prosperity of Sydney, by enabling businesses to locate in high-density clusters within the CBD and other centres such as Parramatta, which leads to efficiency and productivity benefits, often referred to as agglomeration benefits. MoT suggested IPART examine the findings of the United Kingdom Eddington Transport Study, which examined the links between transport and the broader economy.¹⁴⁸

11.4 IPART's considerations in making its final decision

In making its final decision on the forecast value of the external benefits of CityRail services, IPART:

- ▼ Accepted LECG's final recommendation that the total value of the external benefits in 2006/07 was \$1.5 billion, noting that LECG's recommended value is higher than CRAI's initial recommendation. This is largely because in updating its analysis, LECG adopted IPART's view that, for the purpose of calculating the value of avoided road congestion, an appropriate value for time is \$15.80 per hour (rather than the \$13.15 per hour estimate used in preparing the initial analysis). IPART notes that \$15.80 is well within LECG/CRAI recommendation that the appropriate value of time is in the range of \$9.23 per hour to \$22.60 per hour. (A summary of LECG's final advice in relation to the value of the external benefits is provided at Appendix B.)
- ▼ Determined that the total value of the external benefits in 2007/08 was \$1.7 billion by adjusting LECG's recommended value for 2006/07 to reflect CityRail's actual patronage in 2007/08 of 296 million passenger journeys.
- ▼ Determined the value of the external benefits in 2008/09 to 2011/12 by adjusting the previous year's value:
 - to reflect IPART's final decision on forecast patronage growth (4.3 per cent in 2008/09, 4.9 per cent in 2009/10, and 2.5 per cent per annum in the remaining two years)
 - by 3.5 per cent based on a combination of the market implied forecast annual change in the WPI (3.7 per cent) and the CPI (2.7 per cent).

¹⁴⁸ MoT submission, May 2008, p 8.

IPART also considered all stakeholder comments, including concerns related to its consideration of the external benefits associated with improved mobility for disadvantaged groups, avoided greenhouse gas and other emissions, avoided road costs and other social benefits, and agglomeration. It also asked its consultant to review its estimate of the value of the external benefits in light of these comments. However, IPART's final decision that the forecast value of the external benefits is \$1.8 billion in 2008/09, increasing to \$1.9 billion in 2011/12 reaffirms its draft decision. IPART's considerations in relation to these comments are summarised below.

11.4.1 Benefits related to improved mobility and social inclusion

Some stakeholders argued that IPART did not adequately consider the external benefits associated with improved mobility and social inclusion. IPART agrees that CityRail services improve the mobility of those who can access its network, particularly those who do not have access to private forms of transport. Access to affordable public transport services is important for disadvantaged groups, who may be less able to access other forms of transport. Therefore, IPART considered CityRail's contribution to improved social mobility and inclusion when determining the appropriate funding shares of passengers and taxpayers (see Chapter 12). However, in IPART's view most of the benefits associated with improved mobility are private benefits (ie, they accrue to the individuals concerned, rather than the community as a whole) and therefore should not be considered in calculating the value of the external benefits of CityRail. However, the benefit that improved mobility provides to the community as a whole (rather than to particular individuals) is an external benefit.

While access to affordable public transport is important for mobility and social inclusion, buses may contribute more than rail in providing affordable transport for those unable to access a private motor vehicle in Sydney. This is because CityRail's network is primarily set up to bring commuters to and from the Sydney CBD or other major centres such as North Sydney for work purposes. This is reflected in the fact that, during peak periods when most of CityRail's passengers use its services, around 80 per cent of trips are work or education related. In contrast, more bus passengers use bus services for trips which could increase social mobility and inclusion. This suggests that CityRail's contribution to any external benefits of mobility/social inclusion is likely to be much smaller than that provided by buses.

At IPART's public hearing on its draft fare decision, NCOSS raised the issue of vertical equity and progressive and regressive policies in the context of affordable public transport fares.¹⁴⁹ IPART considers that the extensive concession fare arrangements that are currently provided for disadvantaged groups by the NSW Government is a progressive policy aimed to ensure that disadvantaged groups such

¹⁴⁹ NCOSS comments at public hearing, 17 November 2008, transcript p 36.

as the unemployed and pensioners have access to affordable public transport, and therefore have improved mobility.

As MoT's submission on IPART's discussion paper noted, NSW's public transport concession fare funding scheme is the most comprehensive and generous in Australia. It enables around one third of CityRail's passengers to travel for less than the standard fare, and costs taxpayers around \$800 million per annum.¹⁵⁰ From societal point of view, this scheme undoubtedly provides substantial benefits. Indeed, the key reason the Government provides this scheme is likely to be to improve the mobility of disadvantaged groups. IPART considers there could be considerable 'double counting' if these benefits were included in valuing the external benefits of CityRail for the purpose of justifying government funding for CityRail services in general, when they are already used to justify government funding for concession fares.

Given this risk of double counting and the difficulty of precisely estimating CityRail's contribution to improved social mobility, IPART has been unable to include social mobility benefits in valuing the external benefits of CityRail. However, it considered this issue further in the context of the appropriate passenger funding share. As Chapter 12 explains, IPART considered the possible external benefits associated with social mobility in making its final decision on a slightly lower passenger funding share.

11.4.2 Benefits associated with avoided greenhouse gas and other emissions

In relation to stakeholder comments about external benefits associated with avoided emissions, IPART notes its estimated value of the external benefits of CityRail included avoided costs associated with adverse health impacts from automobile-related air pollution, and with contributions to global warming from automobile-related CO₂ emissions. Given stakeholder concerns that it had underestimated the value of the latter benefits, IPART re-examined its expert's advice. However, it reaffirmed its view that a carbon price of \$25/tonne of CO₂ is still appropriate, as this price is consistent with the available evidence.

It should be noted that the contribution of avoided greenhouse gas emissions to the total value of the external benefits estimated by LECG/CRAI and IPART is very small. Even increasing the carbon price to \$40/per tonne of CO₂ (the higher end of the realistic range at present) would only have a small impact on the total estimated value of the external benefits (the increase would be around \$20 million).¹⁵¹ This is essentially because only 5 per cent of the average number of weekday travel trips made in the greater Sydney area is by CityRail.¹⁵²

¹⁵⁰ MoT submission, July 2008, p 13.

¹⁵¹ Information provided by LECG/CRAI.

¹⁵² TDC, 2006 Household Travel Survey Summary Report 2008, p 10.

11.4.3 Benefits associated with avoided road costs and other social benefits

Some stakeholders put the view that IPART's draft decision on the value of the external benefits was too low because IPART had not taken account of benefits such as the additional road costs that would be required if CityRail services were not available, improved health impacts due to lower road congestion, reduced health expenditure as a result of improved mobility for disadvantaged groups, and the positive impact on property values from being in close proximity to a railway station. IPART did assess all these potential external benefits, and found either that their value was too small to warrant inclusion, or that the link between CityRail's services and the potential benefit was not proven, or that they were private not external benefits. IPART considers that higher property values associated with being in close proximity to a railway station are private benefits as the benefits accrue to the home owner not to society as a whole.

11.4.4 Benefits associated with agglomeration

Given MoT's view that IPART should give further consideration to the potential agglomeration benefits generated by CityRail services, IPART re-examined this issue prior to releasing its draft decision. As noted in the draft report, IPART reviewed the findings of the Eddington Transport Study undertaken in the UK, and a similar study undertaken in Victoria in relation to the East West Link. IPART found that while the Eddington Transport Study provides some interesting results, the study confirms its view that the benefits are not readily quantifiable and the role of transport services in attaining agglomeration benefits is not established.

IPART considers some of the key points from the Eddington Study are as follows:

- ▼ The key economic benefit associated with agglomeration is improved productivity due to:
 - better matching of labour market skills through access to a pool of skilled workers as a result of denser labour markets
 - connection to suppliers and markets
 - information spillovers and growth in ideas.¹⁵³
- ▼ A high proportion of benefits generated by transport infrastructure are related to travel time savings to users.¹⁵⁴
- ▼ The role of transport infrastructure in facilitating productivity benefits associated with agglomeration is not clear. The study's results suggest that transport alone cannot generate agglomerations but can play a role in facilitating their expansion by reducing travel time and costs, and bringing workers, firms and consumers closer together.¹⁵⁵

¹⁵³ See the Eddington Transport Study Main Report, December 2006, p 26.

¹⁵⁴ Ibid, p 23.

¹⁵⁵ Ibid, p 26.

On balance, IPART concluded that agglomeration benefits should not be included in estimating the value of the external benefits of CityRail. In reaching this conclusion, IPART formed the following views:

- ▼ The main agglomeration benefits associated with the Sydney CBD stem from its development as a financial services centre, and although these benefits are likely to be substantial they are not primarily driven by CityRail.
- ▼ CityRail's largest contribution to the agglomeration benefits is reduced travel times for CBD workers. The external benefits generated by this contribution are already included in IPART's draft decision (in the value of avoided road congestion), and the private benefits (which accrue to the workers themselves) should not be included.
- ▼ CityRail is also likely to have contributed to the development of a dense labour market in the CBD, but it is unlikely to have been the main driver in Sydney's development as a financial services centre. A range of other factors – for example, the location of the Reserve Bank of Australia and the Australian Stock Exchange, the proximity of Australia's most important international airport, and the supply of skilled labour – would have been significantly more important.
- ▼ Sydney is likely to have developed as a major financial services centre without CityRail. While some of the back-office and lower skilled functions may have been conducted outside of the CBD without a mass rail system, the majority of the higher skilled functions would have remained in the CBD. For highly skilled professionals in the finance sector other forms of transport such as buses, ferries and the road network may be as substantial contributors as rail to the agglomeration benefits. In addition, with the introduction of new technological services the benefits of co-locating all financial services functions in the CBD is probably reduced considerably.
- ▼ The agglomeration benefits generated by the financial services industry are not necessarily external benefits that justify government subsidisation of passenger rail services. Many are likely to be private benefits, such as higher wages and increased rents.

Overall, IPART considers that its estimate of the value of the external benefits of CityRail is substantial, particularly those related to avoided congestion costs. However, it recognises that this value may not be as high as some stakeholders assume it to be. There are several reasons for this, including the following:

- ▼ While CityRail plays an important part in meeting the transports needs of Sydney, and more commuters travel by public transport in Sydney than in any other Australia city, private motor vehicles are still the most popular form of transport by far. For example, more than 70 per cent of workers use private motor vehicles to commute.¹⁵⁶

¹⁵⁶ TDC report, 2006 *Employment and commuting*, Transfigures April 2008, p 6.

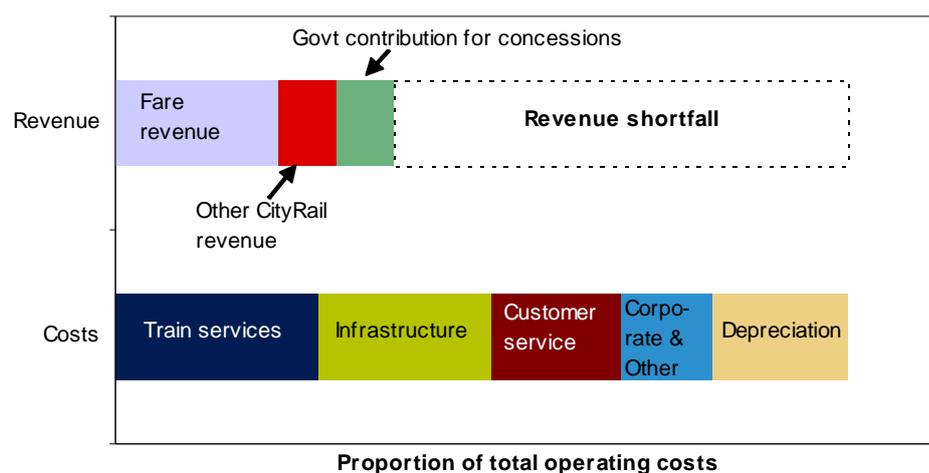
- ▼ Most of the external benefits associated with avoided road congestion are generated by passenger journeys to and from the CBD in peak periods. The avoided congestion on roads other than those in the CBD or leading to and from the CBD, and outside of peak periods are likely to be small, due to the lesser role CityRail plays in Sydney's non-CBD transport task.¹⁵⁷

¹⁵⁷ This conclusion is borne by the results of the TDC modelling presented in CRAI's report which finds that under an extreme scenario of no rail, there would be profound changes in the way traffic into the CBD is orchestrated, however these changes would not be so drastic as to prevent Sydney from functioning. The majority of commuter journeys are not to or from the CBD, and rail's share of total passenger kilometres is only 11 per cent. See CRAI's report, *Value of CityRail externalities and optimal Government subsidy*, June 2008, p 91.

12 Share of the revenue requirement to be funded by passengers through fares

CityRail's revenue from fares and other sources is substantially less than its total costs. The resulting revenue shortfall is made up by taxpayers through government funding of CityRail. For example, in 2007/08, the level of government funding for CityRail was \$1.9 billion. This is equivalent to a subsidy of \$15 per week from each household in NSW,¹⁵⁸ even though only 20 per cent of Sydney's population are regular users of CityRail services.¹⁵⁹

Figure 12.1 CityRail's revenue relative to its total operating costs (2007/08)



Note: Total costs do not include interest payments.

Source: IPART discussion paper, *Determining CityRail's revenue requirements and how it should be funded*.

As Chapter 11 discussed, IPART considers that government subsidisation of CityRail services is justified on the grounds that the provision of these services does not only benefit those who use them, it also provides external benefits to the community as a whole. The question IPART has to answer in making its fare determination is what share of CityRail's revenue requirement should be funded by taxpayers through government funding in recognition of these external benefits? And therefore, what share should be funded by passengers through fares?

¹⁵⁸ IPART calculation based on RailCorp information.

¹⁵⁹ RailCorp, *A Compendium of CityRail Statistics*, Fifth Edition, April 2006, p 32.

The section below sets out IPART’s final decision on this question. The subsequent sections discuss this decision and IPART’s considerations in more detail.

12.1 Overview of final decision on the share of the net revenue requirement to be funded by passengers through fares

IPART’s final decision is that it is appropriate for taxpayers to fund around 70 per cent of CityRail’s net revenue requirement through government subsidies, and therefore passengers should fund the remainder of around 30 per cent through fares.

For the 2009 determination, IPART decided to set fares to recover 28.5 per cent of CityRail’s net annual revenue requirement, in line with the above decision. This reflects the average difference between CityRail’s net annual revenue requirement and the forecast annual value of the external benefits of CityRail services over the determination period (as a proportion of the net annual revenue requirement) as shown in Table 12.1 below.

Table 12.1 Difference between net annual revenue requirement and forecast annual value of external benefits (as % of revenue requirement)

	2008/09	2009/10	2010/11	2011/12	Average
Revenue requirement (\$m)	2,345	2,589	2,660	2,713	
External benefits (\$m and % of revenue requirement)	1,727 (73.7%)	1,820 (70.3%)	1,877 (70.5%)	1,935 (71.3%)	
Passenger funding share = difference as % of revenue requirement	26.3%	29.7%	29.5%	28.7%	28.5%

Note: real \$2008/09.

Source: IPART.

In making this final decision IPART took into account:

- ▼ its final decision on CityRail’s net annual revenue requirement over the determination period (see Chapter 5)
- ▼ its final decision that the value of the external benefits provided by CityRail over the determination period (see Chapter 11)
- ▼ the impact of different funding shares on the affordability of fares and forecast patronage levels
- ▼ LECCG’s expert advice on the appropriate share of the revenue requirement to be funded by passengers, in particular its optimisation recommendations and policy conclusions (see section 12.4 below and LECCG’s report).

IPART further considered the views argued by stakeholders that the passenger share should be less than 30 per cent in recognition of CityRail’s contribution to broader social benefits. While IPART remains sceptical that CityRail’s direct contribution to agglomeration benefits is significant, it acknowledges that CityRail services provide

social benefits by improving mobility and social inclusion, particularly for disadvantaged groups. As discussed in Chapter 11, these social benefits are hard to quantify. However, after further considering these benefits and the impacts of a 70:30 funding share between government and passengers on the affordability of CityRail fares, IPART decided to set fares to recover 28.5 per cent of CityRail's net revenue requirement rather than the 30 per cent as in the draft determination.

12.2 IPART's draft decision

IPART's draft decision was that it is appropriate for passengers to fund around 30 per cent of CityRail's total revenue requirement. This view reflected IPART's decision that the most appropriate approach to determining passengers' funding share was to use its judgement after considering a number of relevant factors, including the estimated value of the external benefits of CityRail services, CRAI's optimisation approach, and the impacts of different funding shares on the affordability of fares and patronage levels. A key input to this decision was IPART's draft decision that the estimated value of the external benefits of CityRail services over the determination period was \$1.8 to \$1.9 billion, which was equivalent to around 70 per cent of CityRail's revenue requirement over that period.

IPART also noted that its draft decision on passengers' funding share could affect the Government's assessment of major new rail infrastructure projects, and the impact of these projects on fare levels. It noted its preliminary view that passengers fund 30 per cent of CityRail's revenue requirement implied that a government decision to invest an additional \$1 billion in the CityRail network (for example, on a South West Rail Link) would result in the need to recover an additional \$300 million (in Net Present Value terms¹⁶⁰) from passengers over the life of the asset.¹⁶¹ IPART put the view that RailCorp and the Government should consider this broad 'rule of thumb' cost sharing ratio, and the associated impact on fare levels, when evaluating new infrastructure investments. IPART envisages that it will apply 70:30 ratio in future pricing decisions, unless it can be established that the new investment will provide exceptionally high external benefits to justify taxpayers funding more than 70 per cent of the associated costs.

¹⁶⁰ Net present value (NPV) reflects the present value of cash flows recovered over the life the asset taking into account the time value of money.

¹⁶¹ This includes recovery of both the return of capital (depreciation) and the return on capital (opportunity cost of capital).

12.3 Stakeholder responses

A number of stakeholders commented on the IPART's draft decision that passengers should fund around 30 per cent of CityRail's revenue requirement. Some stakeholders considered that a 30 per cent share for passengers was reasonable.¹⁶² The NSW Government supported IPART's 70:30 funding split for the current determination period.¹⁶³ APT argued that 30 per cent was reasonable provided that CityRail properly manages its costs and delivers a visible improvement in services.¹⁶⁴

However, most stakeholders put the view that taxpayers should fund more than 70 per cent of the revenue requirement. The rationale for this view varied, but included that:

- ▼ Social disadvantage and equity considerations should be given more weight, as public transport provides a key social service for the disadvantaged.¹⁶⁵
- ▼ Public transport should be considered as a social good, similar to public health, education and law enforcement, which are all fully funded by government. Full government funding of CityRail services is justified to ensure all people have reasonable access to economic and social opportunities, including those who are elderly, have impaired mobility, are on lower incomes, or do not have access to a car.
- ▼ Road users are not required to cover the capital or maintenance cost associated with their use of roads, as the fuel excise goes into general revenue rather than being hypothecated to road expenditure.¹⁶⁶

Many stakeholders considered CityRail should be more active in pursuing alternative sources of revenue.¹⁶⁷ Many considered that additional non-fare revenue would offset the need for fare increases. Stakeholders also suggested a number of additional means by which the Government could earn additional taxation revenue to enable it to increase its funding of CityRail.¹⁶⁸

¹⁶² See confidential individual submission (S08/13410), October 2008.

¹⁶³ NSW Government submission, November 2008, p 2.

¹⁶⁴ APT submission, 9 July 2008, p 8.

¹⁶⁵ RTBU submission, July 2008, p 4, and NCOSS submission, July 2008, p 2.

¹⁶⁶ Dr P Laird submission, July 2008, p 2.

¹⁶⁷ S Hession submission, July 2008, p 2.

¹⁶⁸ Ibid, p 2.

12.4 IPART's considerations in making its final decision

After considering all stakeholder comments both in submissions and at the roundtable, IPART reaffirms its draft decision that it is appropriate for passengers to fund around 30 per cent of CityRail's total revenue requirement, and that the remainder of around 70 per cent should be funded by taxpayers through government subsidies. In line with this decision, IPART decided to set fares to recover 28.5 per cent of CityRail's net annual revenue requirement over the determination period. As Table 12.1 above shows, this reflects the average difference between the net annual revenue requirement and the annual forecast value of the external benefits of CityRail (as a proportion of the revenue requirement).

In making this decision, IPART considered the views expressed by many stakeholders that more weight should be given to equity issues in determining passengers' funding share. However, IPART considers that in both making its draft and final decisions, it placed considerable weight on equity and affordability issues. IPART is satisfied that the fare outcomes provided by its final decision on the funding shares will not overly impact on the affordability of fares or patronage growth (see Chapters 10 and 15 for a more detailed discussion of these issues).

IPART also considered some stakeholders' view that public transport is a public good, similar to public education, public health and law enforcement, and so CityRail services should be fully subsidised by government as is the case for other public goods. However, IPART does not agree with this view, as it considers there are substantial differences between CityRail services and these other services.

In IPART's view, public health, public education and law enforcement provide internal and external benefits that are both more substantial and more widespread than the benefits generated by CityRail services. For example, all NSW citizens are likely to use public health, law enforcement and public education services at some point in their lives. In contrast, CityRail services are used by a relatively small proportion of NSW citizens – they are only accessible to those who live in or near Sydney, and over 70 per cent of Sydneysiders either never use or use these services less than once a month. In addition, while CityRail services generate substantial external benefits (see Chapter 11), IPART considers that the value of these benefits is nowhere near the order of magnitude of those generated by public education, public health and law enforcement.

Furthermore, when users use health or education services which are less widely accessed (eg, universities) they are charged a fee which contributes to the funding of these services. This is essentially the same approach being used for CityRail services. The vast majority of funding is provided by the Government and passengers are asked to provide a contribution in recognition of the direct benefits they receive from their use of CityRail's services.

While the funding arrangements for roads is beyond the scope of this review, IPART noted the view put by some stakeholders that road users are not required to contribute to the capital and maintenance costs of roads. IPART disagrees with this view, as road users pay a number of charges and taxes, including registration charges and fuel excise, which are considerable revenue items for governments and thus contribute to the costs of roads.

IPART agrees with stakeholders that CityRail should be encouraged to maximise its non-fare revenue as a means of providing additional funding for its services. To this end, IPART's approach to determining CityRail's revenue requirement over the determination period involves calculating its forecast total costs (using the building block method) then subtracting forecast non-fare revenue (including revenue from rent, advertising and government funding related to concessions). This reduces the amount of revenue that needs to be recovered through fares over the determination period. It also creates an incentive for CityRail to increase its non-fare revenue, as it is able to keep any non-fare revenue in excess of the forecast amount.

In addition, one of the potential sources of non-fare revenue for CityRail is the land or air space around major stations. In calculating the value of the CityRail's RAB (to calculate the allowance for a return on capital) IPART excluded the value of this land or air space. It also excluded the forecast costs associated with earning commercial revenue sources from its calculation of the forecast efficient operating and capital costs. IPART considers that as the costs associated with earning commercial revenue (including the opportunity cost of the land) are excluded from the revenue requirement, it is also appropriate to exclude the revenue from these sources.

Finally, in making its final decision, IPART drew on LECG's analysis of the optimum fare, patronage and government subsidy but did not directly apply its optimisation approach. While IPART considers that the optimisation approach used by LECG is innovative and thought-provoking, IPART also considers that the data limitations which constrained LECG's ability to accurately estimate long-run marginal costs and the precise marginal benefits make the optimisation approach difficult to apply in setting fares at present.

Nevertheless, IPART considers that LECG's analysis and results supports its decision to increase fares by 12 per cent real over four years. In particular, in deciding on a 12 per cent real increase over four years IPART had regard to the results generated by LECG's central or most likely case which recommended an optimum fare which is 10 per cent above the then average fare in 2005/06. IPART also noted LECG's observation that the welfare function has broad and flat peaks. This means that the loss of economic welfare from not having precisely the optimal fare is not very great. MoT made a similar point in its submission on IPART's discussion paper.¹⁶⁹

¹⁶⁹ MoT submission, July 2008.

13 Fare structure

As part of its review, IPART examined the current structure of CityRail fares to see if it could be improved, for the benefit of passengers, the Government, and ultimately the taxpayers who fund a significant proportion of CityRail's costs. It considered two key aspects of the fare structure:

- ▼ the spatial aspect, which links the fare charged to the location in which travel is undertaken or the distance travelled by passengers
- ▼ the temporal aspect, which links the fare to the time of day or day of week in which travel is undertaken.

IPART considers its final decisions on the fare structure will mean CityRail fares better reflect the different cost of providing services to passengers over different distances, which will promote more efficient use of the CityRail network and encourage efficient investment in the network. It will also promote more equitable outcomes between passengers travelling different distances, and between passengers and taxpayers. In addition, it will begin to transition CityRail's fare structure towards one that will facilitate electronic integrated ticketing.

The section below summarises IPART's final decisions related to the fare structure. The subsequent sections discuss these decisions and IPART's considerations in detail.

13.1 Overview of final decisions on fare structure

In relation to the spatial aspect of the fare structure, IPART's final decision is that CityRail fares will include:

- ▼ distance-based fares, comprising:
 - a fixed 'flag-fall' charge of \$2.80 in 2008/09, which will be held constant in real terms to 2011/12
 - a variable distance-based charge, which reflects a per kilometre charge and distance bands, of 6 cents in 2008/09 rising to 8 cents (real \$2008/09) in 2011/12
 - frequency discounts ranging from 20 per cent to 54 per cent in 2012, depending on the distance travelled, as part of a transition towards a constant 20 per cent frequency discount for all distance bands, consistent with the frequency discount for Sydney bus tickets

- ▼ zone-based weekly/quarterly/yearly TravelPass products, which include a frequency discount comparable to that of distance-based products
- ▼ flat fare products such as Pensioner Excursion Tickets, DayTrippers and the CityHopper.

IPART's final decision on the temporal structure of fares is that off-peak fares will continue to be available in their current form. That is, off-peak fares will be discounted at 30 per cent, and will apply to return tickets purchased after 9 am, valid up to 4 am the following day.

In June 2008, the NSW Government approved, in principle, testing the market for options for an electronic ticketing system.¹⁷⁰ The new electronic fares will be structured to provide:¹⁷¹

- ▼ consistent, mode-specific, distance-based fares
- ▼ automatic discounting to reward frequent public transport users
- ▼ fare concessions
- ▼ differential pricing for peak/off-peak services.

IPART's final decision transitions CityRail's fare structure towards a structure that is consistent with the planned electronic ticketing system. For example, under this system, a single fare will be structured around a flag-fall and per kilometre charge, as are single CityRail fares under the 2009 determination.

IPART considers there may be further scope to simplify CityRail's fare structure once electronic ticketing is introduced. For example, it may be possible to explore further reform, particularly in relation to the temporal structure, once the electronic ticketing technology is in place - for example, introducing an afternoon peak period, and providing off-peak fares for contra-peak journeys or services with significant excess capacity, as well as shoulder-period fares (for the periods adjacent to peak periods).

¹⁷⁰ MoT submission, July 2008, p 10.

¹⁷¹ See Expressions of Interest for New Electronic Ticketing System documentation available from www.pttc.nsw.gov.au.

13.2 The spatial aspect of the fare structure

IPART considered a range of options for improving the spatial aspect of fare structure (which links the fare for a trip to the location in which the trip is undertaken or the distance travelled). These options included:

- ▼ A flat fare structure, where fares are charged at a uniform rate, regardless of the distance travelled.
- ▼ A zone-based fare structure, where the network is divided into defined geographical zones. Fares are based on the number of zones the passenger travels through, and a flat fare is charged per zone. The number of zones or fare increments in the system can vary substantially.
- ▼ A flag-fall and distance-based fare structure, where fares comprise a flat flag-fall charge and a variable distance-based charge. Distance can be measured in a variety of ways (eg, as the crow flies, or train kilometres travelled). The distance charge can also be applied on a pure per kilometre basis, or according to distance bands.

13.2.1 IPART's draft decision on the spatial aspect

IPART's draft decision was that CityRail's fare structure needs to be simpler and more transparent and consistent, and that a flag-fall and distance-based fare structure is the most appropriate option for CityRail's core products. In making its draft determination, IPART adopted:

- ▼ a uniform flag-fall charge of \$2.50 in 2009 which remained constant in real terms over the determination period
- ▼ a variable distance-based charge of 9 cents per kilometre in 2009, rising to 10 cents (2008/09 real) in 2012 (with distance being measured in bands).

In relation to frequency discounts, IPART's draft decision was that a constant 20 per cent discount for all periodical tickets, regardless of the distance travelled, was equitable, transparent, easier to understand and consistent with frequency discounts on other modes of transport. However, IPART recognised that applying a 20 per cent frequency discount to all periodical tickets as part of this determination would result in very large increases in the price of long-distance tickets, as the current prices of these tickets include much higher frequency discounts than those for shorter distances. Therefore, IPART's draft decision decreased the frequency discount on weekly tickets by up to 10 per cent, but by 2012 the frequency discount still would range from between 20 per cent and 52 per cent, depending on distance travelled.

In relation to CityRail's non-distance-based products (including TravelPasses, which are multi-modal weekly tickets), IPART's draft decision was to retain these products. However, it decided to transition the frequency discount for TravelPasses to a level more consistent with the frequency discount provided on other weekly products.

13.2.2 Stakeholder responses

Most stakeholder submissions in response to IPART's June 2008 discussion papers and draft report supported a simplified fare structure, consistent with the assessment criteria. However, many argued that this would be best achieved with a zone-based fare structure.¹⁷² These stakeholders also considered a zone-based structure would better facilitate integrated ticketing than a flag-fall plus distance-based fare structure. APT disagreed with IPART's view that a zone-based system does not suit Sydney due to its many regional centres. It pointed to the success of the zone-based structure in Melbourne, where there are also several regional centres.¹⁷³ Although fares based on a small number of zones are simple, IPART's view is that they are less cost reflective and equitable – see further analysis in section 13.2.3 below.

In relation to the flag-fall plus distance-based fare structure, many stakeholders raised concerns about the impact of IPART's draft determination on the affordability of fares for long-distance commuters. In its submission, the NSW Government proposed alternative flag-fall and distance-based charges to those in IPART's draft decision, primarily to address these concerns, and noted the importance of considering the dollar increase in fares, as well as the percentage increase.

The Government proposed:

- ▼ a higher flag-fall charge of \$3.25 (compared to IPART's draft decision of \$2.50 and final decision of \$2.80), and
- ▼ a lower variable distance-based charge that declines with the distance travelled.

A higher flag-fall charge as proposed by the Government allows more revenue to be collected from shorter-distance passengers, and thus enables a lower distance-based charge. This reduces fares and fare increases for long-distance passengers. Under the Government's proposal, single fares up to 15 km would increase significantly, while fares between 15 and 45 km would increase by a small amount, and fares over 45 km would decrease in real terms over the determination period.

The Government also argued that a higher flag-fall charge is justified, as CityRail must provide a certain quantity of service as expressed through the CityRail timetable, and the costs of this are fixed as long as the timetable and service specifications remain unchanged. In addition, it argued the flag-fall is partly representative of the inherent value of the ability to access the entire rail network.

¹⁷² APT submission, 9 July 2008, p 12; J Strauch submission, 16 June 2008, p 1; Individual anonymous submission S08/12738, 5 November 2008.

¹⁷³ APT submission, 9 July 2008, p 13.

In relation to the frequency discount, most stakeholders put the view that periodical tickets should include a significant discount. Some stakeholders supported IPART's argument that the level of this discount should be constant, regardless of the distance travelled.¹⁷⁴ The Government agreed in principle that a frequency discount for weekly tickets should be transitioned towards a constant 20 per cent discount on the equivalent 10 single tickets, to facilitate the introduction of electronic ticketing while protecting long-distance commuters from price shocks. The Government proposed a faster transition to a consistent discount than IPART's draft decision. But because it also proposed lower underlying single fares for longer distance trips, the price of periodical tickets under its fare proposal are generally lower than those under the draft determination.

A number of stakeholders argued the current very large frequency discounts for long-distance fares should continue, given the passengers who buy these tickets generally live at Sydney's extremities (eg, in Western Sydney, Newcastle and the Blue Mountains) and tend to have lower socio-economic status than passengers who live closer to the CBD. These stakeholders were concerned that any reduction of the discount would result in increased wealth disparity between inner city and outer suburban/intercity areas.¹⁷⁵

APT argued that larger discounts on longer distance journeys reflect the different way inner-city and longer distance passengers tend to use periodical tickets. It contended that inner city passengers are more likely to use their ticket more than 10 times a week, so their effective discount is higher than 20 per cent. It also suggested that this justified a higher discount for longer distance passengers, as it reflected their lower use of their periodical tickets.¹⁷⁶

Several stakeholders supported an approach similar to the TravelTen tickets on Sydney buses, where passengers receive a discount if they bulk-buy single tickets rather than if they buy a periodical ticket. They considered this method of discounting to be fairer as passengers paid for the trips they actually used.¹⁷⁷ They also noted that these tickets are better suited to the travel patterns of part-time workers who, for example, might travel to work three days a week instead of five.

In relation to fares for TravelPass tickets, some stakeholders argued the discount applied to TravelPasses should extend beyond frequency discounts, as many users of these products cannot complete a single journey by train alone. They submitted that the TravelPass discounts should include a 'flag-fall rebate', so that the cost of changing modes is not reflected in the TravelPass fare.¹⁷⁸

¹⁷⁴ BMC&TUA, 14 July 2008; p 2; Confidential submission.

¹⁷⁵ APT submission, 9 July 2008, p 14; M Skeggs submission, 18 July 2008, p 2; Confidential submission.

¹⁷⁶ APT submission, 9 July 2008, p 15.

¹⁷⁷ APT submission, 9 July 2008, p 12; P Mills submission, 17 July 2008, p 4; M Skeggs submission, 18 July 2008, p 1; M Wellings submission, 19 July 2008, p 1; S Wishart submission, 29 September 2008; Individual submission - Joanne, 17 October 2008.

¹⁷⁸ APT submission, 9 July 2008, p 14; P Mills submission, 17 July 2008, p 4; confidential submission, November 2008.

13.2.3 IPART's considerations in making its final decision on the spatial aspect

After considering all stakeholder comments, and the Government's policy on electronic ticketing, IPART reaffirms its draft decision that a fare structure comprising a fixed flag-fall charge and a variable distance-based charge calculated according to distance bands is the most appropriate fare structure for most CityRail ticket products. However, after considering the Government's and other stakeholders' concerns about the affordability of fares for long-distance passengers, and having greater regard to the value of the dollar increase in fares, IPART decided to increase the level of the flag-fall charge from \$2.50 to \$2.80, and reduce the distance-based charge. As a result, both the average and maximum price increase for single and weekly fares are significantly lower under the final determination than under the draft. However, as a result of its final decision to leave the off-peak discount at 30 per cent as opposed to increase it to 50 per cent the price increases for off-peak tickets are higher under the final determination (see section 13.3 below).

IPART also reaffirms its draft decision to transition towards a constant 20 per cent frequency discount across all distances. However, it has reconsidered the level of discount provided under the 2009 determination at some distances, given the impact of the higher flag-fall charge and lower distance-based charge on the underlying single fares.

In relation to TravelPasses and other non-distance-based products, IPART reaffirms its draft decision that these products should be retained under the existing paper-based technology, and the frequency discount should be consistent with the frequency discount provided for other periodical tickets. As a result the changes to the flag-fall and distance-based charges for some distance-based fares (outlined above), the fares for corresponding TravelPasses have fallen slightly compared to those under the draft determination.

Retaining a distance-based rather than zone-based fare structure for core products

IPART's final decision is that a distance-based fare structure comprising a flat flag-fall charge and a variable distance-based charge is most appropriate for CityRail. This structure is the most cost reflective and equitable option. The flag-fall charge can be set to reflect the fixed costs of providing the CityRail network, and the distance-based charge can be set to reflect the variable costs of providing the services. As a result, the overall fare for a particular trip is closely tied to the costs of providing that trip. This fare structure is also consistent with the Government's policy for electronic ticketing.

IPART recognises that a zone-based fare structure is often simpler for passengers. However, it notes such a fare structure has to have a very small number of zones to achieve significant simplicity advantages. For example, Brisbane has a zone-based fare structure with 23 zones, which is comparable to the number of distance bands under Sydney's current distance-based fare structure.

But IPART considers that moving to a zone-based fare structure with a small number of zones (such as Melbourne's, which has only two zones) will result in winners and losers among passengers. If an area with multiple fare increments under a distance-based fare structure is converted to a single zone under a zone-based fare structure, the fares paid by passengers travelling shorter distances within that zone will need to increase to achieve the same level of farebox revenue from this area. In contrast, the fares paid by passengers travelling longer distances in the zone will decrease. As a result, the amount passengers within the zone pay per kilometre will vary significantly, depending on the distance they travel. IPART considers this would be an inequitable outcome for passengers.

Where there are multiple zones, substantial fare differences between zones can also generate negative zone-boundary effects – for example, by creating incentives for significantly more passengers to use the stations on the boundaries of each zone so as to avoid crossing a zone boundary (and therefore paying a much higher fare). Thus, the boundary stations may require additional infrastructure and parking spaces to cope with an influx of passengers.

IPART agrees that historically, zone-based fare structures have better facilitated integrated ticketing, because they have made it easy for service providers to offer a single ticket that can be used across all modes of transport, priced according to the number of zones crossed during the journey. However, when electronic ticketing is introduced, this advantage will no longer exist. This is because the Government's policy under electronic ticketing is for a uniform ticketing infrastructure to be used on trains, buses and ferries.

South Korea offers an example of integrated ticketing under a distance-based fare structure. South Korea originally moved from a distance-based fare structure to a zone-based fare structure to facilitate integrated ticketing using paper-based technology. However, when electronic ticketing made distance-based integrated fares possible, it chose to revert back to the distance-based fare structure because of the cost reflectivity and equity advantages of this structure, while maintaining a simple and integrated transport network.

Setting the level of the flag-fall and distance based charges

In making its final decision to adjust the levels of flag-fall and distance-based charges to achieve a more equitable distribution of fare increases across all distance bands IPART was persuaded by the Government's and other stakeholders' concerns about the draft decision's affordability impacts on medium and long-distance passengers. In particular, IPART increased the flag-fall charge, which allowed it to reduce the

distance-based charge and led to lower increases in medium and long distance fares over the determination period.

This decision is in line with the approach the Government proposed in response to the draft report. However, IPART refined the Government's approach to deliver what it considers to be more equitable fare increases. IPART set the flag-fall component at \$2.80 (rather than \$2.50 under the draft determination and \$3.25 under the Government's proposal) and decided to hold this charge constant in real terms to 2012. It set the distance-based charge at 6 cents in 2009 (compared to 9 cents under the draft determination) and 8 cents (real \$2008/09) in 2012 (compared to 10 cents under the draft determination). In addition, it decided to maintain a consistent distance-based charge over all distance bands (compared to the Government's proposal that this charge decrease per kilometre travelled).

After balancing the percentage increases and the dollar increase of individual fares, IPART considers its final decision to set the flag-fall to \$2.80, rather than \$3.25 as the NSW Government proposed, creates a fairer outcome for all passengers. Under the Government's proposal, the average real increase for fares up to 15 km would have been 32 per cent for single fares and 28 per cent for weekly fares. IPART considers such increases are too high, particularly given the high number of passengers affected.¹⁷⁹ IPART also considers such increases are likely to risk adverse impacts on shorter distance patronage, as shorter distance passengers are more likely to switch to cheaper modes of transport. IPART notes that buses are already considerably cheaper than rail for short-distance trips, and the elasticities of shorter distance discretionary travel are consistently found to be higher than for longer distance commuter journeys.¹⁸⁰ The potential loss of patronage for shorter distance trips is of particular concern because a substantial proportion of CityRail's fare revenue is derived from fares for these trips.

For single fares, the average fare increases under IPART's final determination are higher than under the Government's proposal. However, the maximum fare increase in dollar terms is the same as under the Government's proposal, and in percentage terms is less than under this proposal. For weekly fares, the average fare increase under the final determination is lower in both dollar and percentage than under the Government's proposal. The maximum fare increase is also significantly lower than the maximum increase in dollar and percentage terms than under the Government's proposal.

IPART agrees with the Government's view that a slightly higher flag-fall charge is broadly reflective of RailCorp's substantial fixed costs. However, IPART has not adopted the Government's proposal for a variable charge that declines with distance travelled, as it has not been provided with any evidence that the variable cost of providing CityRail services decline with distance.

¹⁷⁹ In 2007/08, the sales of single tickets for distances up to 15 km were 16 million, compared to 10 million for distances over 15 km (with only 2 million of these for distances over 45 km).

¹⁸⁰ Booz and Co report, May 2008, Attachment A, pp 27-30.

IPART's final decision is to continue to apply the variable distance-based charge in distance bands. The following distance bands will be used:

- ▼ for journeys up to 35 km, each band is 5 km
- ▼ for journeys from 35 km up to 135 km, each band is 10 km
- ▼ for journeys from 135 km up to 175 km, each band is 20 km
- ▼ for journeys 175 km and above, a flat charge will be applied.

Under this approach, the distance-based component of an individual fare is calculated by multiplying the number of kilometres travelled by the uniform per kilometre charge, and the number of kilometres would be equal to the upper boundary of the relevant distance band. For example, for a journey of 40 km, the distance-based charge (which is 6 cents per kilometre in 2009), would be applied to 45 km, as this is upper boundary of the 35 - 45 km distance band. IPART has elected to continue with distance bands due to data limitations, as IPART's demand forecasts are broken down in accordance with the existing distance bands rather than in kilometre increments. Distance is measured in terms of track kilometres, as opposed to 'as the crow flies', consistent with the existing fare structure. This approach allows the distance-based charge to be set to reflect the costs of the infrastructure used.

Under the current fare structure, the highest distance band is 255 to 305+ km. Very few tickets are sold for these distances. To simplify the structure and allow for fare restructuring while still having regard to affordability concerns, IPART applied a flat fare to journeys 175 km and above.

The stations contained within each distance band as measured from the City are provided in Appendix E.

Transitioning towards a constant frequency discount

IPART considers the price of periodical tickets, including weekly, monthly, and yearly tickets, should be discounted compared to the price of single tickets. Such frequency discounts are appropriate, to encourage and reward regular patronage of CityRail services. This is consistent with government policy on electronic ticketing and increasing patronage on rail services. Periodical tickets also reduce queuing at stations, and reduce CityRail's ticketing costs.

IPART's final decision is to transition the frequency discounts for trips of all distances towards a constant level of 20 per cent compared to the price of purchasing 10 single tickets, consistent with the current frequency discount provided on buses. IPART considers a constant 20 per cent discount is cost reflective, equitable, transparent and easy to understand. It would mean that where the ticket holder undertakes 10 trips, they pay the fare equivalent to 8 trips.

The discounts on long-distance periodical tickets are currently much higher than 20 per cent (for the longest distance band, the discount is more than 60 per cent). This means applying a constant 20 per cent frequency discount to all periodical tickets as part of this determination would result in very large increases in these fares. In addition, some users of long-distance periodical tickets live in relatively low-income areas such as Wollongong, Newcastle and the Blue Mountains, and may have made decisions about where to live and work in part based on access to, and the price of public transport. IPART considers a sudden, significant increase in the price of periodical tickets would not be fair to these passengers, and so has decided to transition discounts for longer distance periodical tickets towards 20 per cent over several determinations.

Table 13.1 compares the existing frequency discounts for periodical tickets for journeys of different distances to those that apply in 2012 under the final determination. In IPART's view, these discounts are an appropriate first step towards implementing a constant frequency discount taking into account affordability and patronage impacts.

Table 13.1 Final decision on frequency discount to apply to weekly tickets

Distance up to (km)	Existing discount 2008 fares	Discount for 2012 fares
5km	19%	20%
10km	17%	20%
15km	18%	20%
20km	18%	20%
25km	19%	20%
30km	22%	20%
35km	20%	20%
45km	27%	25%
55km	33%	30%
65km	33%	32%
75km	41%	35%
85km	44%	38%
95km	47%	40%
105km	47%	43%
115km	51%	45%
125km	54%	45%
135km	50%	45%
155km	53%	47%
175km	56%	50%
175km+	61-62%	54%

Note: The weekly ticket has been compared to the price of 10 single tickets in order to calculate the discount.

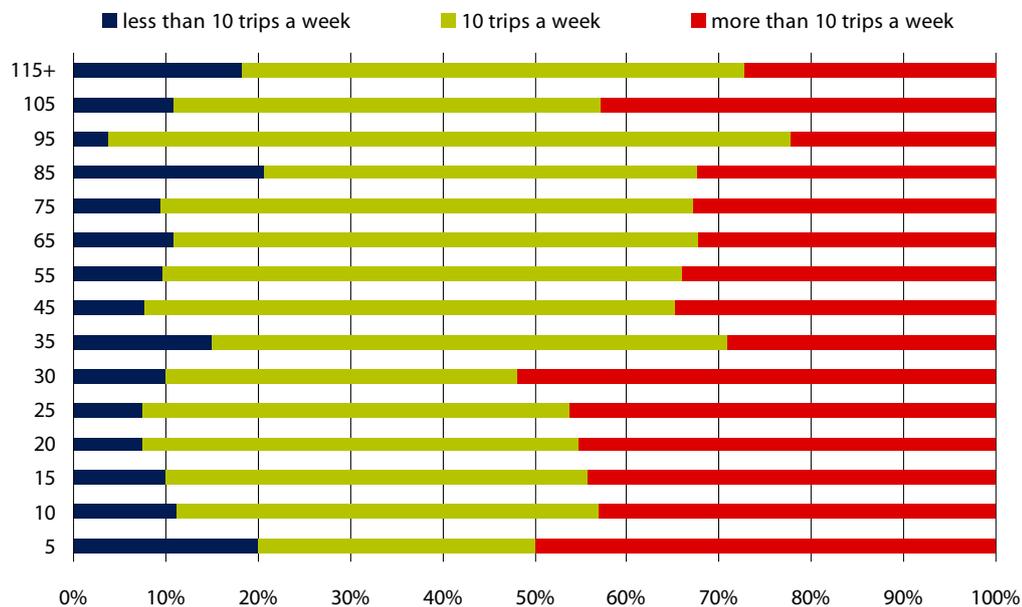
Source: IPART.

IPART's final decision reflects a slightly slower rate of transition towards a constant 20 per cent frequency discount than under the NSW Government's proposal. This is intended to address affordability concerns of regular commuters, who remain CityRail's primary market. Weekly fares comprise a much higher proportion of income than single fares, therefore IPART has contained weekly fare increases to a maximum \$15 increase in nominal terms over the period or 17 per cent in real terms.

IPART examined the claim by some stakeholders that people travelling shorter distances generally use a weekly ticket to undertake more than 10 trips, and therefore receive higher effective discounts than longer distance commuters. IPART analysed RailCorp survey data to compare the usage patterns of weekly ticket holders. These data show that weekly tickets are often used for more than 10 trips a week, regardless of distance travelled. The overall average number of trips taken on weekly tickets is 10.83. And the average number of trips taken in every distance band except one is more than 10. The exception is 85 kms; but even in this distance band, more than 30 per cent of passengers use their weekly ticket for more than 10 trips.

Figure 13.1 summarises the weekly ticket usage at each distance band.

Figure 13.1 Number of trips made using a Weekly ticket



Note: The sample size varies considerably for each distance band, from 20 passengers to 190 passengers. The distance bands over 115 km have been amalgamated due to the very small sample sizes in each band.

Source: RailCorp survey.

Retaining TravelPasses and other non-distance-based products

CityRail currently offers a number of ticket products with a zone-based or flat fare structure (shown on Table 13.2). All of these products except the CityHopper are integrated products, allowing for one ticket to be used for travel on trains, buses, and ferries. They offer a convenient alternative to flag-fall plus distance-based tickets, which must be purchased individually on each mode. IPART's final decision is to retain these products under the existing paper-based technology. However, it has reduced the frequency discount applied to TravelPass tickets to align this discount with that provided for other periodical products.

Table 13.2 CityRail's non-distance-based products

Product	Fare Structure	Modes	Area	Period
TravelPass	Zone-based	Train, Bus, Ferry	Suburban network bounded by Cowan, Emu Plains, Richmond, Carlingford, Macarthur, Cronulla, Otford and Bondi Junction, divided into 5 zones.	Weekly, quarterly, annually
DayTripper	Flat fare	Train, Bus, Ferry	Suburban network bounded by Cowan, Emu Plains, Richmond, Carlingford, Macarthur, Cronulla, Otford and Bondi Junction	1 day
CityHopper	Flat fare	Rail	11 stations within the city area - Central, Martin Place, Museum, Town Hall, St James, Circular Quay, Kings Cross, Wynyard, Redfern, Milsons Point and North Sydney.	1 day
SydneyPass	Flat fare	Train, Bus, Ferry, Sydney Explorer, Bondi Explorer, River Cat, JetCat	Red TravelPass zone	3,5, or 7 days within an eight day period
PETa	Flat fare	Train, Bus, Ferry	Entire CityRail network	1 day

^a These products are not part of the IPART's review.

Source: RailCorp.

IPART noted MoT's submission which stated that:

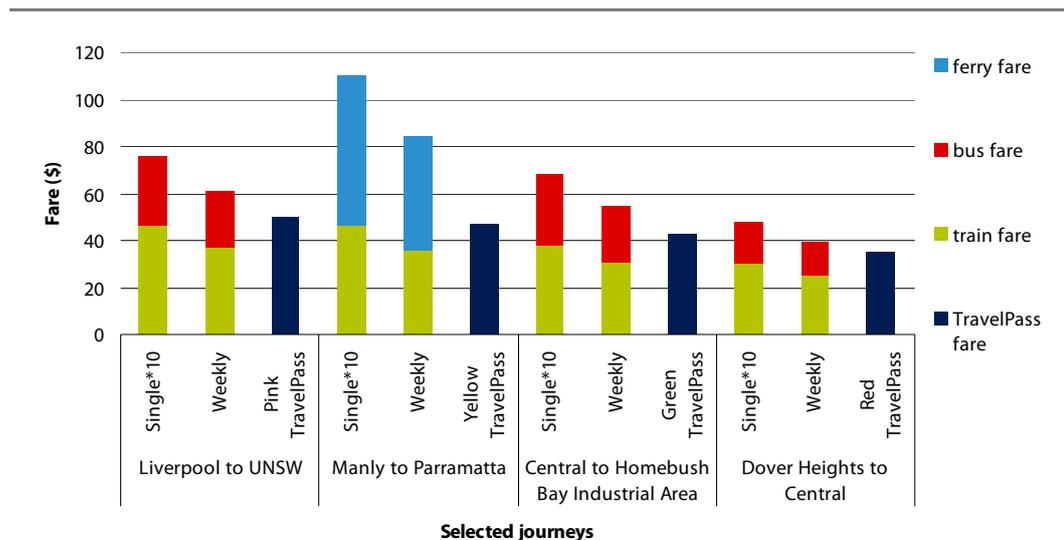
The Government considers the fare structure across the network should reward frequent users and encourage multi-modal travel, but also improve equity. The level of discount available to FlexiPass and TravelPass users beyond the standard commuter discount on a weekly pass, therefore, requires consideration.¹⁸¹

TravelPass discounts are currently greater than other frequency discounts. Figure 13.2 uses sample multi-mode journeys that may be taken within TravelPass zones to illustrate the TravelPass fare versus the distance-based non-integrated fare for the same journey (assuming that the weekly and TravelPass tickets are used for

¹⁸¹ MoT submission, July 2008, p 12.

10 journeys per week).¹⁸² The figure shows that the level of discount embedded in TravelPasses exceeds the discounts included in distance-based weekly tickets for the same journey. However, due to the unlimited nature of TravelPasses, some passengers can attain even greater discounts when they use the TravelPass for more than 10 trips

Figure 13.2 TravelPass fares compared to distance-based fares for selected multi-modal journeys (2008)



Source: RailCorp.

To bring the frequency discount of TravelPasses more in line with that of other products, IPART's final decision is to transition these fares so that in 2012 they will be equal to the sum of:

- ▼ the weekly train fare at the average station distance from the City (weighted by station usage) in each zone, plus
- ▼ the 1-2 section TravelTen bus fare.¹⁸³

As a result of this decision, TravelPass fares will increase by more than the corresponding periodical tickets over the 2009 determination period. Table 13.3 shows the TravelPass discounts compared to the price of the corresponding weekly fares (rail weekly and TravelTen) and single fares (10 rail fares and 10 single bus cash fares). It shows that in 2012, TravelPasses will provide no additional discount compared to the weekly fares.

¹⁸² These sample journeys are not necessarily representative of "typical" journeys that are undertaken by CityRail passengers.

¹⁸³ IPART has increased the bus fare component of the TravelPass by 5 per cent in 2009. For each year thereafter, IPART has assumed that TravelTens will increase by 2.7 per cent (in line with IPART's current market implied CPI forecast).

Table 13.3 TravelPass discount compared to 10 x single and weekly fares 2008-2012

		Red	Green	Yellow	Pink	Purple
	Discount compared to:	10 km rail 1-2 section bus	20 km rail 1-2 section bus	25 km rail 1-2 section bus	35 km rail 1-2 section bus	55 km rail 1-2 section bus
2008	10 * single	27%	23%	22%	22%	32%
	Weekly	11%	5%	3%	3%	2%
2009	10 * single	29%	24%	22%	24%	29%
	Weekly	11%	5%	3%	3%	3%
2010	10 * single	26%	22%	21%	22%	27%
	Weekly	8%	3%	3%	3%	2%
2011	10 * single	23%	21%	20%	21%	28%
	Weekly	4%	2%	1%	1%	2%
2012	10 * single	20%	20%	20%	20%	28%
	Weekly	0%	0%	0%	0%	0%

Source: IPART.

IPART has not included a 'flag-fall rebate' in discounting the TravelPass fares compared to the alternative single mode options, as suggested by some stakeholders. However, it has taken a conservative view of the usage assumptions underlying the TravelPass fares and discounts. For example, passengers who travel further than the minimum bus journey of 1-2 sections, and passengers who also use the TravelPass for ferry journeys will attain frequency discounts that are significantly higher (discounts of up to 65 per cent¹⁸⁴ in 2012) than the discounts on the corresponding weekly fares. Further, IPART has used a conservative estimate of the bus fare component of TravelPasses. From 2010 onwards, IPART has inflated bus fare component of the TravelPasses by the current market implied forecast annual change in the CPI only (2.7 per cent) (See Appendix H for more details on IPART's approach).

Newcastle offers two TravelPass products that are currently priced equivalent to the yellow and pink Sydney suburban TravelPass fares. IPART reviewed these passes and decided to consolidate the Newcastle TravelPass products into one. It also decided that this new product should be priced in line with the **green** Sydney suburban TravelPass. IPART considers this will help address affordability impacts of the increase in TravelPass prices for Newcastle passengers. The low volume of Newcastle TravelPasses sold means that this will have a very low impact on farebox revenue.

¹⁸⁴ This figure has been calculated using the FerryTen fare from Circular Quay to Parramatta, a 16+ TravelTen at a 20 km weekly rail ticket compared to the price of a green TravelPass.

13.3 The temporal aspect of the fare structure

The temporal aspects of the fare structure link fares to the time of day or day of week in which travel is undertaken. In reviewing these aspects, IPART considered:

- ▼ how the peak and off-peak periods are defined
- ▼ the products for which off-peak fares are available
- ▼ whether there should be a peak premium or an off-peak discount
- ▼ whether the peak/off-peak differential should be location or direction specific.

13.3.1 IPART's draft decision on the temporal aspect

IPART's draft decision was that the temporal aspect of fare structure should be improved to better reflect the cost of providing CityRail services at different times of day and week, in order to promote economic efficiency of CityRail services and help manage demand. In particular, given significant crowding issues in the peak periods, IPART considered that while off-peak fares should continue to apply to return tickets, they should be discounted at 50 per cent compared to peak return tickets order to provide a stronger incentive for passenger to shift their travel outside of the peak periods. It also proposed morning off-peak fares for services that arrived at Central before 7 am. In addition, it proposed restricting the use of off-peak tickets for trains departing from Central between 4 pm and 6:30 pm.

13.3.2 Stakeholder responses

Stakeholder submissions generally agreed that there are crowding issues on CityRail's peak services. Several stakeholders suggested off-peak-fares should be set at approximately half the cost of base fares to encourage a growth in demand for off-peak services.¹⁸⁵ The NSW Government's submission acknowledged that pricing has a role to play in managing customer demand. However, the Government put the view that more work needs to be done to improve the quality of CityRail's services before changing the discount levels and restricting off-peak ticket usage in the afternoon peak period. This position is largely in response to the failure of RailCorp's three month off-peak trial to deliver a substantial shift in patronage through increased off-peak discounts.

¹⁸⁵ Confidential submissions.

Other stakeholders expressed a similar view to the Government, arguing that increasing the price differential for peak and off-peak fares would not lower demand for peak services in the short term. For example, BMC&TUA, APT, and several individuals noted the difficulty in shifting behaviour, and considered that the reliability and frequency of the off-peak services needs to be improved to achieve a shift in demand.¹⁸⁶

Stakeholders expressed mixed views about restricting the use of off-peak tickets in the afternoon peak period. Some stakeholders supported this move, as it was consistent with the rationale for providing off-peak tickets.¹⁸⁷ Others opposed it, on the grounds that it would reduce passengers' flexibility, or increase their inconvenience by making it necessary for them to purchase two single tickets if their return journey is during the afternoon peak¹⁸⁸.

13.3.3 IPART's considerations in making its final decisions on the temporal aspect

In making its final decision on the temporal aspect of CityRail's fare structure IPART had regard to:

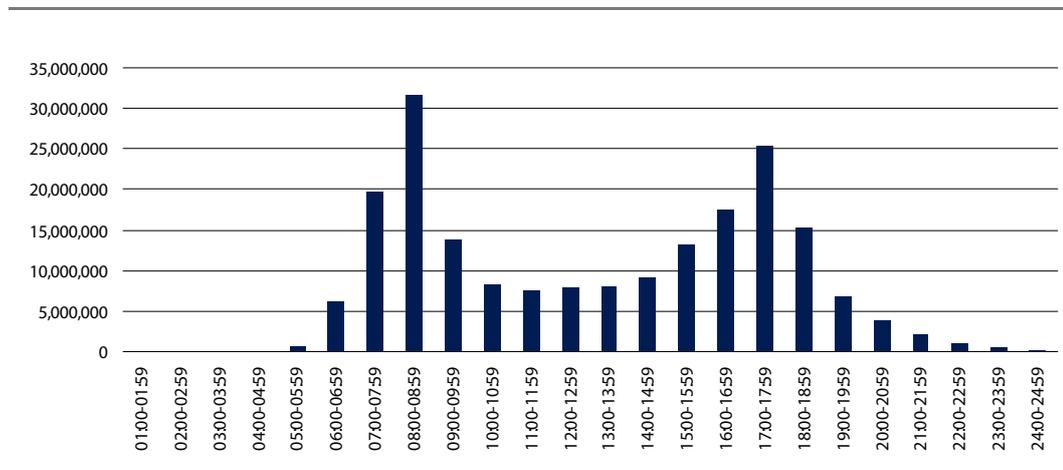
- ▼ the costs of providing services in peak periods relative to off-peak periods in order to promote economic efficiency in the use of rail services
- ▼ patronage growth and the impact the fare structure may have to manage demand
- ▼ equity and fairness between peak and off-peak passengers
- ▼ the results of RailCorp's SmartSaver trial, which increased the off-peak discount from 30 to 50 per cent and restricted its use so it could not be used for services between 4 pm and 6:30 pm
- ▼ ticketing and implementation issues
- ▼ stakeholder comments.

As Figure 13.3 demonstrates, demand for CityRail services increases sharply during both the morning and afternoon peak periods. Around two-thirds of the weekday use of CityRail services occurs in these peak periods.

¹⁸⁶ BMC&TUA, 14 July 2008; APT, 9 July 2008, p 12, Individual submission from Joanne, 17 October 2008.

¹⁸⁷ D Trinh, 30 June 2008, p 6; Confidential submission.

¹⁸⁸ NCOSS submission, 17 July 2008, p 3.

Figure 13.3 Weekday passenger entries and exit, 2006/07

Source: RailCorp.

Costs of providing peak and off-peak services

A cost-reflective temporal structure should encourage prudent investment in the network because it should create a more transparent link between increases in peak fares and the capital expenditure incurred by CityRail to expand the capacity of the network to meet peak demand.

In line with many other network businesses, CityRail's network capacity must be designed to meet peak requirements. Therefore peak demand is a primary driver of CityRail's capital and operating costs. Increasing peak demand when capacity is scarce drives the need for further increases in capital and operating expenditure to expand capacity, increasing the unit cost of providing services. Around 80 per cent of CityRail's \$7 billion (real \$2008/09) capital program over the next five years is intended to address peak period constraints on the network. This program includes the Clearways projects, the ECRL and new rolling stock to increase 4 and 6 car trains to 8 car services in peak times.

Analysis of data provided by RailCorp indicates it costs 30 to 50 per cent more to transport a passenger in peak periods than in off-peak periods. IPART considers that given that the cost of providing peak services is broadly the same for both the afternoon and morning peaks, it is inequitable for only morning peak passengers to carry the costs of the service. Therefore, it is fairer and more cost reflective for passengers travelling in either peak periods to be subject to peak fares. IPART also notes that the Brisbane and regional Victorian train operators restrict the use of off-peak tickets in the afternoon peak period.

Encouraging growth in off-peak patronage and shifting demand to off peak services

In 2007/08 the number of journeys increased 5.2 per cent, and much of this growth occurred in the peak periods.¹⁸⁹ As patronage growth pushes CityRail's peak services nearer to their maximum capacity, greater capital expenditure will be required to increase the capacity of the network, increasing the costs of providing peak services.

IPART considers that high levels of crowding on CityRail peak services reduces the quality of these services, and can also have adverse affects on on-time running. Despite the significant funding provided to CityRail for its capital expenditure program in this determination period, the effect on crowding may not be significant if peak patronage growth continues as current levels for a sustained period.

In the draft report, IPART indicated it would have regard to the results of RailCorp's off-peak SmartSaver trial to inform its final decision on the level of discount appropriate for off-peak fares. Between August and October, RailCorp trialled increasing the off-peak discount from 30 to 50 per cent discount on the Western and Richmond lines. This trial allowed for the 50 per cent discounted SmartSaver fares to be used on services that arrived at Central before 7:15 am, and after 9:15 am, but not on services that departed Central between 4 and 6.30pm.

RailCorp reported that initial interest in SmartSaver fares was high, with 8 per cent or 2000 passengers shifting their travel patterns outside the off-peak period. However, by the final month of the trial, the number of passengers shifting their travel to the off-peak period fell to less than one per cent or 250 passengers.¹⁹⁰

While a survey of CityRail passengers found there was general support for the initiative to increase the off-peak discount, it found also there were significant barriers to passengers changing their travelling behaviour, including lower availability of alternative services in the off-peak periods. Customers reported that the lower frequency of train services, especially express services, in these periods meant that they had to shift their travel significantly earlier or later in order to travel in the off-peak. The lack of available parking spaces was also a barrier to those wanting to shift their travel to after the morning peak.¹⁹¹

IPART agrees with the Government's submission that an increase in the discount alone will not be sufficient to shift travel to the off-peak periods, given the current operational environment. After considering the results of the trial, government policy and stakeholder comments, IPART decided to retain the existing discount of 30 per cent on peak fares, rather than the 50 per cent discount proposed in the draft decision.

¹⁸⁹ Information provided by RailCorp.

¹⁹⁰ Information provided by RailCorp.

¹⁹¹ Information provided by RailCorp.

A 30 per cent discount remains at the lower end of the range of cost differential of providing services in the off-peak compared with the peak. As explained below, given that the peak period will apply to the morning peak only, IPART considers that this discount is appropriate.

IPART supports the Government's view that further work must also be done in the longer term with businesses to promote more flexible working hours to enable passenger to shift travelling times more readily.

Peak and off-peak conditions

IPART's final decision is that return off-peak tickets may be used on CityRail services after 9 am, as well on weekends and public holidays, which is consistent with the current off-peak conditions. This is a departure from the draft decision, which proposed allowing their use during a morning off-peak period before 7 am, and restricting their use on journeys from the CBD in the afternoon peak period between 4 pm and 6:30 pm.

While IPART considers it would be more equitable and cost reflective to require passengers to use a peak ticket for travel from the CBD in the afternoon peak period, CityRail's current ticketing infrastructure makes this not feasible. (For example, it cannot be configured so passengers are unable to travel from the city during the afternoon peak on an off-peak ticket, but can travel to the city during this period on an off-peak ticket, even though many of services to the city have spare capacity at this time.)

In addition, implementing a restriction on using off-peak tickets on journeys from the city during the afternoon peak period may worsen queuing at CityRail stations. RailCorp's ticketing infrastructure is not able to accommodate additional products, therefore they are unable to provide a peak return ticket outside the morning peak, alongside an off-peak return ticket. This means passengers purchasing their ticket before or after the morning peak, but wishing to undertake their return trip in the afternoon peak period, cannot purchase a return peak ticket. Instead, they must queue twice for two single tickets, which is a considerable inconvenience for passengers.

IPART continues to support restrictions on the use of off-peak tickets for journeys from the CBD during the afternoon peak period, consistent with the conditions of use for these tickets in other states. However, it considers that given the current ticketing limitations, this will be best implemented in the future, when electronic ticketing systems are introduced.

14 | New fares

Under IPART's 2009 fare determination, the prices of CityRail tickets increase by weighted average of 12 per cent in real terms (or 25 per cent in nominal terms)¹⁹² over the period 4 January 2009 to 31 December 2012. However, the price change for a large number of individual tickets departs from this average as a result of IPART's final decisions on fare structure (see Chapter 13). In particular, the decisions to implement a fare structure comprising a flat flag-fall charge and a variable distance-based charge that is the same for all distance bands, and to transition the frequency discount for periodical fares towards a constant level of 20 per cent have resulted in significant variations in fare changes over the determination period. However, no individual fare increases by more than 23 per cent in real terms (or 37 per cent in nominal terms) over the four year period to 31 December 2012. For weekly train fares less than 175 km, which includes a journey from Newcastle to Central, this equates to a maximum cumulative increase of no more than \$12 in nominal terms over the same period.¹⁹³

Based on the current market implied inflation forecast:

- ▼ For distances up to 20 km, single tickets increase by between 20 and 60 cents on 4 January 2009, and by a total of 20 to 80 cents over the subsequent three years. Weekly tickets would increase by \$1.00 to \$3.00 per week on 4 January 2009, and by a total of \$3.00 to \$6.00 over the subsequent three years.
- ▼ For distances from 20 km up to 65 km, single tickets increase by up to 40 cents on 4 January 2009, and by a total of 80 cents to \$1.40 over the subsequent three years. Weekly tickets increase by \$2.00 to \$3.00 per week on 4 January 2009, and by a total of \$6.00 to \$9.00 over the subsequent three years.
- ▼ For distances from 65 km up to 175 km, single tickets remain at current levels on 4 January 2009, and by a total of 20 cents to \$1.20 over the subsequent three years. Weekly tickets increase by \$3.00 per week on 4 January 2009, and by a total of \$7.00 to \$9.00 over the subsequent three years.

¹⁹² 'In real terms' means before the effect of inflation. 'In nominal terms' assumes a current market implied inflation of 2.7 per cent per annum. If actual inflation differs from this forecast, actual fare outcomes in 2010 to 2012 may differ.

¹⁹³ The price of the 195 km and 215 km train weekly and pink TravelPass weekly increase by \$15 in nominal terms over the four years.

- ▼ For distances 175 km and above, single tickets decrease by up to \$8.00 on 4 January 2009, then remain constant over the subsequent three years. Changes in weekly tickets in this group vary from a decrease of \$25.00 per week on 4 January 2009 to an increase of \$2.00 per week on 4 January 2009. Weekly tickets in this group increase by a total of \$13.00 over the subsequent three years.
- ▼ TravelPasses increase by \$3.00 on 4 January 2009, and by a total of \$8.00 to \$12.00 over the subsequent three years. The Red TravelPass increases by \$3.00 on 4 January 2009 and by a total of \$10.00 over the subsequent three years.
- ▼ Off-peak tickets for journeys up to 175 km increase by up to 80 cents on 4 January 2009, and by a total of up to \$2.20 over the subsequent three years.

The sections below set out (in nominal terms) the maximum fares IPART has determined for single and return tickets, weekly tickets, off-peak tickets, TravelPasses, CityHopper tickets, Day Tripper tickets and other CityRail tickets covered by the determination. (The stations contained within each distance band are provided in Appendix E.)

Please note that the nominal fares set out below are based on the current market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. In addition, they will be rounded according to RailCorp's rounding conventions. IPART will publish the new adjusted fares for 2010, 2011 and 2012 in an annual prices and services report released in December of the preceding year.

Also note that half fares for all fares are half of the full fare. Concession fares cannot be more than half of the full fare. However, IPART does not determine the rules associated with concession fares. Nor does it regulate fares for the pensioner excursion ticket (PET) or the School Student Transport Scheme (SSTS).

14.1 Single and return tickets

The maximum prices for CityRail single tickets are shown in Table 14.1. Return tickets are twice the single ticket price.

Table 14.1 Single tickets

Distance up to (km)	2008	From 4 Jan 2009	From Jan 2010	From Jan 2011	From Jan 2012	Cumulative change (\$ nominal)	Cumulative change (% nominal)
	Fare (\$ nominal)	Fare (\$ nominal)					
5	2.60	3.20	3.20	3.40	3.40	0.80	31%
10	3.00	3.40	3.60	3.80	3.80	0.80	27%
15	3.40	3.80	4.00	4.20	4.40	1.00	29%
20	3.80	4.00	4.20	4.60	4.80	1.00	26%
25	4.20	4.40	4.60	5.00	5.20	1.00	24%
30	4.60	4.80	5.00	5.40	5.60	1.00	22%
35	4.60	5.00	5.40	5.80	6.00	1.40	30%
45	5.60	5.60	6.00	6.40	7.00	1.40	25%
55	6.60	6.60	6.80	7.20	7.80	1.20	18%
65	7.20	7.20	7.40	8.00	8.60	1.40	19%
75	8.60	8.60	8.60	8.80	9.60	1.00	12%
85	9.60	9.60	9.60	9.60	10.40	0.80	8%
95	10.60	10.60	10.60	10.60	11.20	0.60	6%
105	11.00	11.00	11.00	11.20	12.20	1.20	11%
115	12.20	12.20	12.20	12.20	13.00	0.80	7%
125	13.60	13.60	13.60	13.60	13.80	0.20	1%
135	13.80	13.80	13.80	13.80	14.80	1.00	7%
155	15.80	15.80	15.80	15.80	16.40	0.60	4%
175	18.00	18.00	18.00	18.00	18.20	0.20	1%
175+	22.00-30.00	22.00	22.00	22.00	22.00	-8.00 to 0.00	-27 to 0%

Note: Fares from January 2010 to 2012 are presented in nominal dollars assuming a market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. Fares will be rounded according to RailCorp's rounding conventions.

14.2 Weekly tickets

Weekly tickets allow unlimited journeys between the stations shown on the ticket for seven consecutive days. The new fares for weekly ticket products compared to the existing fares are shown in Table 14.2.

Table 14.2 Weekly tickets

Distance up to (km)	2008	From 4 Jan 2009	From Jan 2010	From Jan 2011	From Jan 2012	Cumulative change (\$ nominal)	Cumulative change (% nominal)
	Fare (\$ nominal)	Fare (\$ nominal)					
5	21.00	24.00	25.00	26.00	27.00	6.00	29%
10	25.00	27.00	29.00	30.00	30.00	5.00	20%
15	28.00	30.00	32.00	34.00	35.00	7.00	25%
20	31.00	32.00	34.00	37.00	38.00	7.00	23%
25	34.00	36.00	38.00	40.00	42.00	8.00	24%
30	36.00	38.00	40.00	43.00	45.00	9.00	25%
35	37.00	40.00	43.00	46.00	48.00	11.00	30%
45	41.00	44.00	47.00	50.00	53.00	12.00	29%
55	44.00	47.00	50.00	52.00	55.00	11.00	25%
65	48.00	51.00	54.00	56.00	58.00	10.00	21%
75	51.00	54.00	57.00	59.00	62.00	11.00	22%
85	54.00	57.00	60.00	62.00	64.00	10.00	19%
95	56.00	59.00	62.00	65.00	67.00	11.00	20%
105	58.00	61.00	64.00	67.00	70.00	12.00	21%
115	60.00	63.00	66.00	69.00	72.00	12.00	20%
125	63.00	66.00	69.00	72.00	75.00	12.00	19%
135	69.00	72.00	75.00	78.00	81.00	12.00	17%
155	75.00	78.00	81.00	84.00	87.00	12.00	16%
175	79.00	82.00	85.00	88.00	91.00	12.00	15%
175+	86.00-113.00	88.00	92.00	97.00	101.00	12.00 to 15.00	-11% to 17%

Note: Fares from January 2010 to 2012 are presented in nominal dollars assuming a market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. Fares will be rounded according to RailCorp's rounding conventions.

CityRail also offers periodic tickets which are valid for travel over periods longer than a week, for example, monthly, quarterly or yearly. IPART has not changed the method for calculating fares for these long periodical tickets. The price for these tickets is based on multiples of the weekly ticket for the relevant distance scaled by a discount factor associated with the period for which the ticket is purchased.¹⁹⁴ CityRail's 14 Day Rail Pass remains as twice the price of the corresponding weekly ticket.

14.3 Off-peak tickets

The maximum prices for adult off-peak tickets are shown in Table 14.3, and those for child off-peak tickets are shown in Table 14.4. Off-peak tickets are only sold as return tickets, and under this final determination are not to be used in the morning peak period.

¹⁹⁴ The exact formula can be found in IPART's final determination (see attached determinations).

Table 14.3 Adult off-peak tickets

Distance up to (km)	2008	From 4 Jan 2009	From Jan 2010	From Jan 2011	From Jan 2012	Cumulative change (\$ nominal)	Cumulative change (% nominal)
	Fare (\$ nominal)	Fare (\$ nominal)					
5	3.60	4.40	4.60	4.60	4.80	1.20	33%
10	4.20	4.80	5.00	5.20	5.40	1.20	29%
15	4.60	5.20	5.60	5.80	6.00	1.40	30%
20	5.20	5.80	6.00	6.40	6.60	1.40	27%
25	5.80	6.20	6.60	6.80	7.20	1.40	24%
30	6.40	6.60	7.00	7.40	7.80	1.40	22%
35	6.40	7.00	7.40	8.00	8.40	2.00	31%
45	7.60	8.00	8.40	9.00	9.60	2.00	26%
55	9.00	9.20	9.40	10.20	11.00	2.00	22%
65	10.00	10.00	10.40	11.20	12.20	2.20	22%
75	11.80	12.00	12.00	12.40	13.40	1.60	14%
85	13.20	13.40	13.40	13.40	14.60	1.40	11%
95	14.60	14.80	14.80	14.80	15.80	1.20	8%
105	15.20	15.40	15.40	15.60	17.00	1.80	12%
115	16.80	17.00	17.00	17.00	18.20	1.40	8%
125	18.80	19.00	19.00	19.00	19.40	0.60	3%
135	19.00	19.40	19.40	19.40	21.00	2.00	11%
155	22.00	22.00	22.00	22.00	23.00	1.00	5%
175	25.00	25.00	25.00	25.00	25.00	0.00	0%
175+	30.00-41.00	31.00	31.00	31.00	31.00	-10 to 1.00	-24% to 3%

Note: Fares from January 2010 to 2012 are presented in nominal dollars assuming a market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. Fares will be rounded according to RailCorp's rounding conventions.

Table 14.4 Child off-peak tickets

Fare zone	2008	From	From	From	From	Cumulative change (\$ nominal)	Cumulative change (% nominal)
	Fare (\$ nominal)	4 Jan 2009	Jan 2010	Jan 2011	Jan 2012		
Sydney suburban	2.60	2.80	3.00	3.20	3.40	0.80	31%
Newcastle suburban	2.60	2.80	3.00	3.20	3.40	0.80	31%
Outer metropolitan	3.70	4.00	4.20	4.60	4.80	1.10	30%
CityRail network	6.10	6.60	7.00	7.40	8.00	1.90	31%

Note: Fares from January 2010 to 2012 are presented in nominal dollars assuming a market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. Fares will be rounded according to RailCorp's rounding conventions.

14.4 TravelPasses

TravelPasses are available for unlimited travel on the CityRail, State Transit and Sydney Ferries for the zone specified on the ticket purchased. The maximum prices for these products are shown in Table 14.5.

Table 14.5 Sydney TravelPass tickets

TravelPass type	2008	From	From	From	From	Cumulative change (\$ nominal)	Cumulative change (% nominal)
	Fare (\$ nominal)	4 Jan 2009	Jan 2010	Jan 2011	Jan 2012		
Red	35.00	38.00	41.00	44.00	48.00	13.00	37%
Green	43.00	46.00	48.00	51.00	55.00	12.00	28%
Yellow	47.00	50.00	52.00	55.00	58.00	11.00	23%
Pink	50.00	53.00	57.00	61.00	65.00	15.00	30%
Purple	57.00	60.00	64.00	67.00	71.00	14.00	25%

Note: Fares from January 2010 to 2012 are presented in nominal dollars assuming a market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. Fares will be rounded according to RailCorp's rounding conventions.

IPART has not changed the method for calculating the fare for longer period TravelPasses. For quarterly TravelPasses the fare is equivalent to 11 times the relevant weekly TravelPass. The fare for the yearly TravelPasses is the relevant weekly TravelPass multiplied by 40.

IPART has also considered which of the TravelPasses should apply to the ECRL when in operation. IPART's final decision is that the Green TravelPass should apply to travel on the ECRL.

As explained in Chapter 13 IPART's final decision is that the existing two TravelPasses for Newcastle services be combined into a single TravelPass zone and priced in line with Sydney's green TravelPass. The maximum fares for the Newcastle TravelPass are shown in Table 14.6 below.

Table 14.6 Newcastle TravelPass tickets

TravelPass type	2008	From	From	From	From	Cumulative change (\$ nominal)	Cumulative change (% nominal)
	Fare (\$ nominal)	4 Jan 2009	Jan 2010	Jan 2011	Jan 2012		
Newcastle TravelPass	47.00 – 50.00	46.00	48.00	51.00	55.00	5.00 to 8.00	10% to 17%

Note: Fares from January 2010 to 2012 are presented in nominal dollars assuming a market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. Fares will be rounded according to RailCorp's rounding conventions.

14.5 CityHopper

CityHopper tickets are valid for unlimited travel within the CityHopper zone on the day purchased and up to 4 am the following day. If CityHopper tickets are purchased outside the CityHopper zone, an add-on must be purchased. The maximum prices for CityHopper tickets compared to existing prices are shown in Table 14.7.

Table 14.7 CityHopper tickets

Ticket type	2008	From	From	From	From	Cumulative change (\$ nominal)	Cumulative change (% nominal)
	Fare (\$ nominal)	4 Jan 2009	Jan 2010	Jan 2011	Jan 2012		
CityHopper	7.40	8.00	8.40	8.80	9.20	1.80	24%
CityHopper child	3.70	4.00	4.20	4.40	4.60	0.90	24%
CityHopper off-peak	5.20	5.60	5.80	6.20	6.40	1.20	23%
CityHopper child off-peak	2.70	2.80	3.10	3.20	3.30	0.60	22%
CityHopper add-on	2.20	2.40	2.40	2.60	2.80	0.60	27%
CityHopper add-on child	1.10	1.20	1.20	1.30	1.40	0.30	27%

Note: Fares from January 2010 to 2012 are presented in nominal dollars assuming a market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. Fares will be rounded according to RailCorp's rounding conventions.

14.6 DayTripper

DayTripper tickets are valid for unlimited travel on CityRail, Sydney Buses and Sydney Ferries within the boundaries of the Purple TravelPass zone on the day purchased and up to 4 am the following day. The maximum prices for DayTripper tickets are shown in Table 14.8.

Table 14.8 DayTripper

Ticket type	2008	From	From	From	From	Cumulative change (\$ nominal)	Cumulative change (% nominal)
	Fare (\$ nominal)	4 Jan 2009	Jan 2010	Jan 2011	Jan 2012		
DayTripper	16.00	17.00	18.20	19.40	21.00	5.00	31%
DayTripper child	8.00	8.60	9.20	9.80	10.40	2.40	30%

Note: Fares from January 2010 to 2012 are presented in nominal dollars assuming a market implied inflation forecast of 2.7 per cent. Actual fares in these years will be adjusted for the difference between this forecast and actual inflation in accordance with IPART's legal determination. Fares will be rounded according to RailCorp's rounding conventions.

14.7 Other CityRail tickets

CityRail offers a number of other fares that use more than one transport mode such as the Moore Park ticket (train and bus) or the Manly ticket (train and ferry). These tickets are calculated as the sum of the single/return price of the relevant distance

fare travelled on the CityRail network plus the ad-on fare for the other transport mode used in the relevant Link ticket.

The fares for these tickets will increase annually, in proportion to the distance travelled on the CityRail network based on the type of fare used and the fares applying for each year (for example adult single or return). For Link tickets using public buses or ferries, the add-on proportion of the fare depends on IPART's relevant determinations of public buses and ferries.

14.8 Impact on the consolidated fund of no fare increase

Under section 16 of the IPART Act, IPART is required to report on the likely impact to the Consolidated Fund if prices are not increased to the maximum levels permitted. If this is the case, IPART estimates that a total of approximately \$350 million (real 2008/09) in revenue will be foregone by CityRail from the period 4 January 2009 to 30 June 2012.

15 Social impact of the fare determination

Before finalising its determination, IPART considered the impact of this determination on the affordability of fares taking into account the income and employment profile of CityRail passengers, average weekly expenditure on CityRail fares, as well as the availability of concession and off-peak fares. In particular, IPART considered the impacts of the fare restructuring on particular groups of passengers. IPART's analysis of how its final fare determination will affect passengers is set out below.

IPART is also required to consider other matters, such as environmental impacts and managing demand as set out in Section 15 of the IPART Act (see Appendix C). Analysis of these aspects has been provided throughout this report.

15.1 Profile of CityRail passengers

IPART considers that its fare determinations primarily affect regular users of CityRail services. About 20 per cent of the population of the Greater Sydney Metropolitan Area (GMA) use CityRail services at least once a week (shown in Table 15.1). Less than 6 per cent of the Sydney population travel by train five days a week or more.¹⁹⁵ This is consistent with earlier data which shows that around 40 per cent of Greater Sydney's population use CityRail services less than once a month, and more than 30 per cent never use these services.¹⁹⁶

¹⁹⁵ RailCorp, *A Compendium of CityRail Statistics*, Sixth edition, April 2008, p 32.

¹⁹⁶ RailCorp, *A Compendium of CityRail Statistics*, Fifth Edition, April 2006, p 26.

Table 15.1 Rail usage of the Sydney Greater Metropolitan Area (GMA) Residents^a 2005

Days used train in last week	persons	%
0	3,216,975	79%
1	327,352	8%
2	129,928	3%
3	80,614	2%
4	69,377	2%
5	177,057	4%
6	30,909	1%
7	21,356	1%
Total	4,053,568	100%

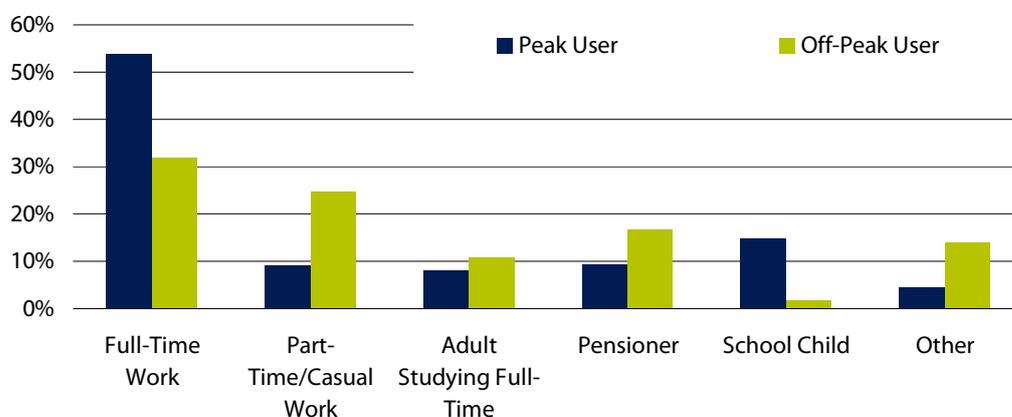
^a Sydney GMA includes the Sydney and Illawarra Statistical Divisions and the Newcastle Statistical Subdivision.

Source: RailCorp, *A Compendium of CityRail Statistics*, Sixth edition, April 2008, p 37.

15.1.1 Labour force status of CityRail's passengers

The Travel Data Centre's (TDC's) 2005 Household Travel Survey found that during peak periods, 54 per cent of CityRail passengers are full-time workers, while 9 per cent are part-time or casual workers (Figure 15.1). This suggests the primary market for CityRail services is the commuter market, which is made up of passengers who use these services for non-discretionary travel for work or education purposes. Significant proportions of other passengers who use peak period services are likely to be eligible for concession fares or free travel, notably pensioners (10 per cent) and school children (15 per cent).

During off-peak periods, higher proportions of CityRail passengers are part-time and casual workers (25 per cent), pensioners (17 per cent), and adult students (11 per cent). However, due to the nature of school hours, a smaller proportion of passengers are school children (2 per cent).

Figure 15.1 Labour force status of CityRail's passengers 2005

Source: TDC, Household Travel Survey 2005.

15.1.2 Income profile of CityRail passengers

The TDC's 2005 Household Travel Survey found that 80 per cent of CityRail passengers belong to households with an annual income of more than \$32,037, as shown in Table 15.2.

Table 15.2 Annual incomes of CityRail passengers 2005 (real \$2008/09)

	Percentile 20	Percentile 40	Percentile 60	Percentile 80	Mean	Median
<i>Household</i>	\$31,728	\$68,206	\$98,760	\$155,413	\$96,973	\$78,410
<i>Personal</i>	\$3,577	\$20,468	\$43,516	\$68,206	\$42,135	\$31,669

Source: TDC, Household Travel Survey 2005.

The TDC's 2005 Household Travel Survey also found that the average household income of CityRail passengers on the average weekday was \$96,973, and the average personal income was \$42,135. Many stakeholders disputed the finding about the average household income. But while IPART acknowledges that many of those who use CityRail's services may have lower household incomes than the average, it nevertheless considers the TDC finding to be an informative and reliable measure of income that is broadly representative of CityRail passengers.

The TDC's survey also found that the median household income of CityRail passengers was just under \$80,000 per year. The median income is the income in the middle of the distribution of survey customers, so that half the incomes are above the median, and half the incomes are below the median. The median is less sensitive than the average to outlying values – for example, the very high incomes of a small group of people increase the average, but not the median.

IPART attempted to gather comparable data on average household incomes in the Sydney region, to assess how CityRail passengers' incomes compare to those in the general population. Unfortunately, there is no data which is directly comparable. The best approximation IPART could find was ABS census data. The data from the 2006 census indicate that the median annual household income in Sydney was \$65,580,¹⁹⁷ which is around \$13,000 less than the median income of CityRail passengers indicated by the 2005 Household Travel Survey. These data indicate that the median personal income in Sydney was \$29,437,¹⁹⁸ which is also less than the median personal income of CityRail passengers indicated by the 2005 Household Travel Survey.

IPART considers that these results make intuitive sense. Most of CityRail's passengers are employed full-time and commute to the CBD. It is highly likely that those working in the CBD receive higher wages than workers in other areas of Sydney, as this is one of the reasons so many people commute long distances to work in the CBD rather than working in jobs located closer to where they live.

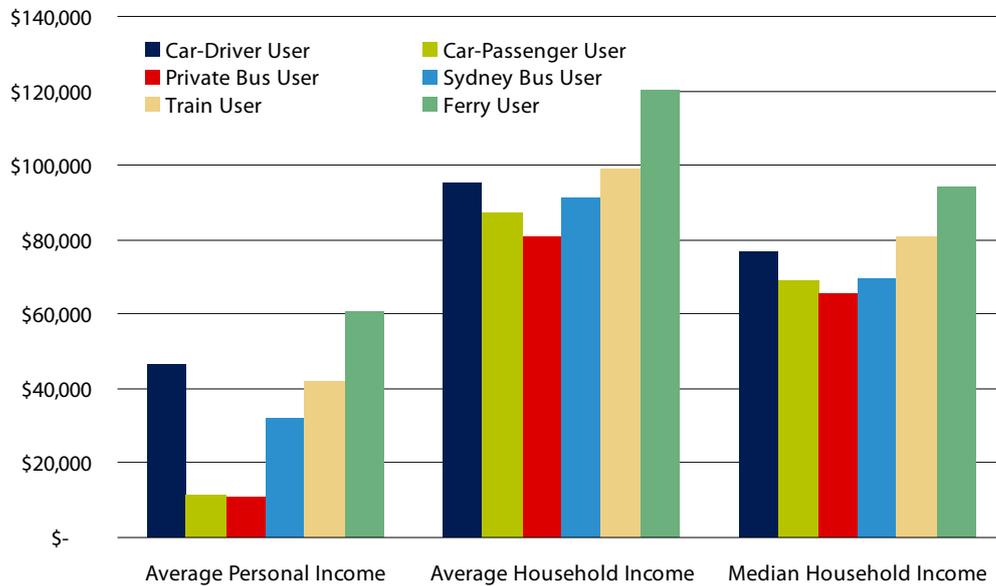
However, caution must be exercised in drawing conclusions from these data, as the difference in the median household income findings may be due to differences in the survey methodologies, rather than indicating households that use CityRail's services have higher incomes. For example, the TDC's findings are based on the household income of users per trip, rather than measuring distinct CityRail users. Therefore if members of households with high incomes use CityRail services more frequently than households with low incomes it would lead to the TDC to overstate the median (and average) household income of CityRail passengers. Nevertheless, the data suggest that the median income of CityRail users is not less than the Sydney median income.

This is borne out by the 2005 Household Travel Survey results on the incomes of users of other transport modes in Sydney. Figure 15.2 suggests that CityRail passengers have higher household incomes than car drivers and car passengers, although they have lower personal incomes than car drivers. It also shows that CityRail passengers tend to have higher personal and household incomes than Sydney metropolitan bus passengers and lower incomes than Sydney Ferries passengers.

¹⁹⁷ In \$real 2008/09, based on the median weekly household income for the Sydney Statistical Division of \$1,261.

¹⁹⁸ In \$real 2008/09, based on the median weekly personal income for the Sydney Statistical Division of \$566.

Figure 15.2 Average and median incomes by transport mode 2005 (real \$2008/09)

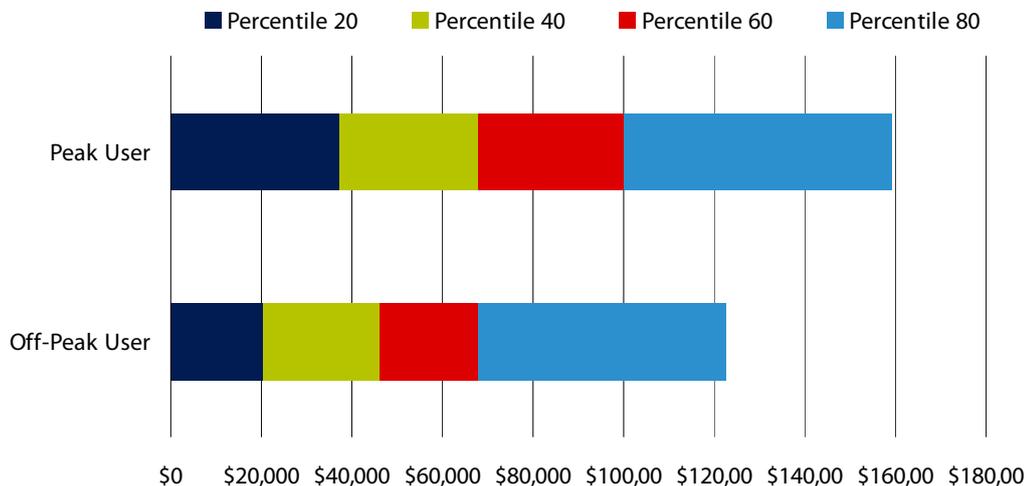


Source: TDC, Household Travel Survey 2005.

Off-peak users

IPART also examined income data broken down by peak and off-peak times, in recognition that the purpose of journeys differs between these periods. Figure 15.3 shows the median household income for off-peak users is \$51,843 compared with \$82,515 for peak users, which is consistent with a significantly lower level of full-time employment for CityRail’s off-peak passengers.

Figure 15.3 Comparison of peak^a and off-peak user household incomes 2005 (real \$2008/09)



^a a peak user for the purposes of this survey is a person on a train arriving at Central between 0631 and 930 or departing between 1501 and 1800.

Source: TDC, *Household Travel Survey 2005*.

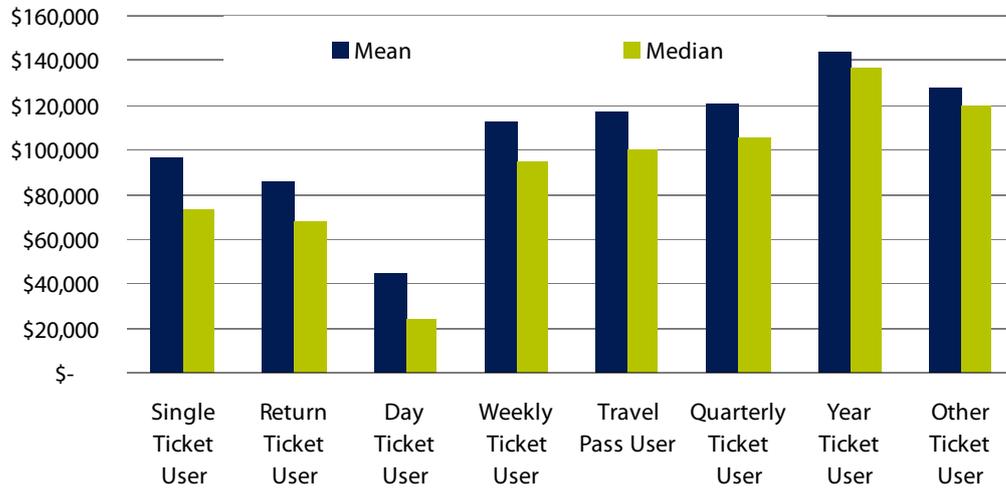
Given the lower off-peak household income, IPART considers that off-peak fare discounts of 30 per cent will assist in mitigating the fare increases for off-peak passengers. Part-time and casual workers, unemployed persons and students make up 51 per cent of off-peak users, reflecting that many of these users are in a position to take advantage of cheaper fares and travel outside the peak. In addition, as IPART decided not to restrict the use of off-peak tickets in the afternoon peak period (as proposed in the draft report), off-peak ticket holders will retain significant flexibility in their travel patterns.

Periodical ticket users

The Household Travel Survey shows that users of periodical tickets (TravelPass/weekly/quarterly, yearly), which attract increasing discounts with longer time periods, typically earn higher incomes than single ticket users (shown in Figure 15.4). Commuters, who are generally engaged in full-time employment, are likely to be the main purchasers of these tickets.

IPART has taken this into account in its final decision to transition the frequency discount for periodical tickets and TravelPasses towards a consistent level as part of its fare restructuring. However, in recognition of stakeholder concerns about the affordability impacts of its draft determination on regular commuters, IPART has set fares so the maximum nominal increase to weekly fares is \$15 over four years, rather than \$36 as under the draft determination.

Figure 15.4 Average household income for train users by ticket type 2005 (real \$2008/09)



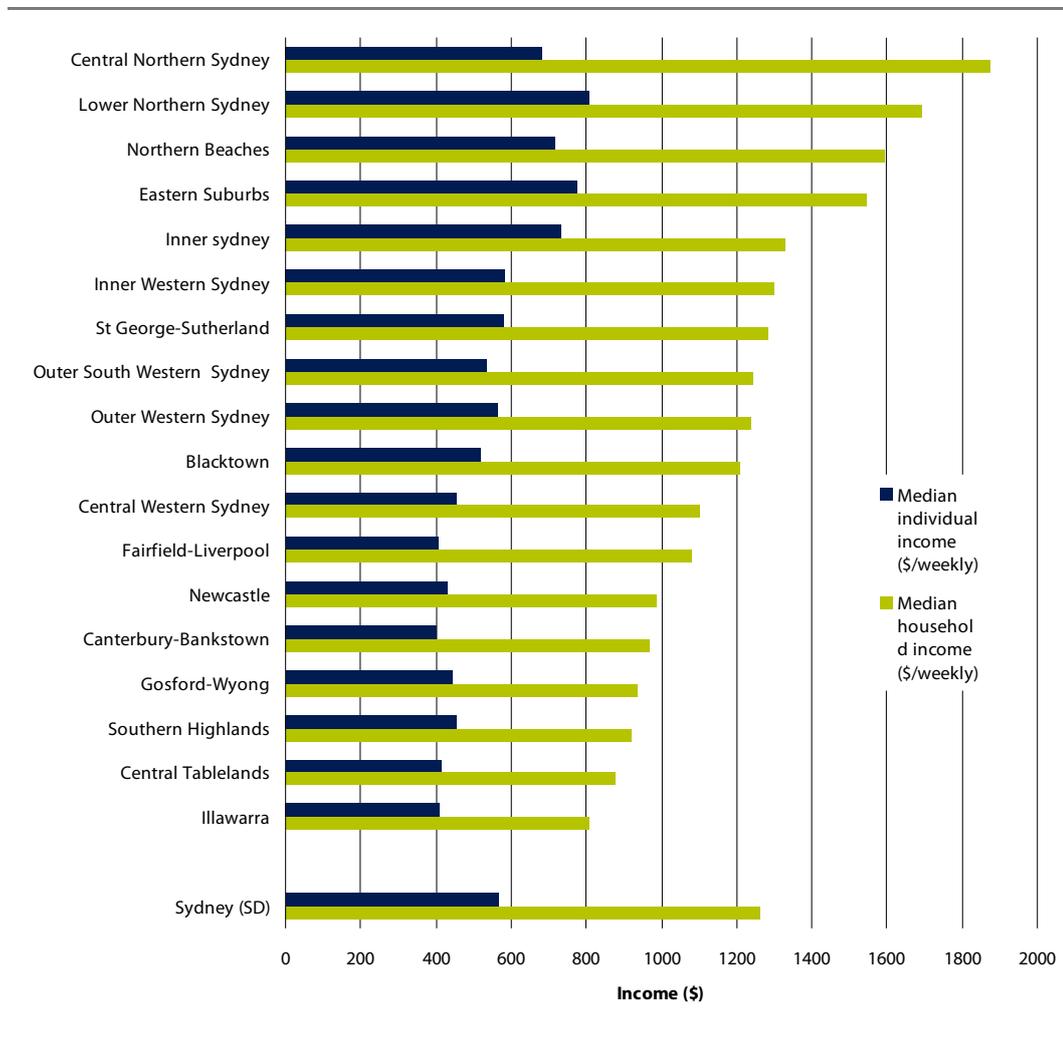
Note: "Day Ticket user" includes City Hopper, PET and Day Tripper.

Source: TDC, Household Travel Survey 2005.

Income by region

The CityRail Network spans suburban Sydney, the Hunter, Central Coast, Blue Mountains, Southern Highlands and South Coast regions. Incomes vary among these regions, as shown in Figure 15.5.

Figure 15.5 Median incomes within the Sydney Greater Metropolitan Area 2006 (real \$2008/09)



Source: 2006 census.

In the submissions, some stakeholders argued that the fare structure should not be consistent across all distances, as people travelling longer distances typically have lower incomes. However Figure 15.5 demonstrates that this argument is not straightforward. For example, Hornsby station, which is 30 km from the City, is located within the Central Northern Sydney statistical subdivision which has the highest median household weekly income in the Sydney Greater Metropolitan area, whereas Canterbury station, in the Canterbury-Bankstown statistical subdivision is only 15 km from the City and is located in the Sydney statistical subdivision with one of the lowest median incomes. IPART's final determination is that consistent fares (per kilometre charges and a 20 per cent frequency discount) are applied up to 35 km of travel.

Further, not all passengers located in the outer areas of the CityRail network travel to the city. As APT noted at IPART's public hearing, larger increases to longer distance fares would only adversely affect passengers from Wollongong if they are travelling

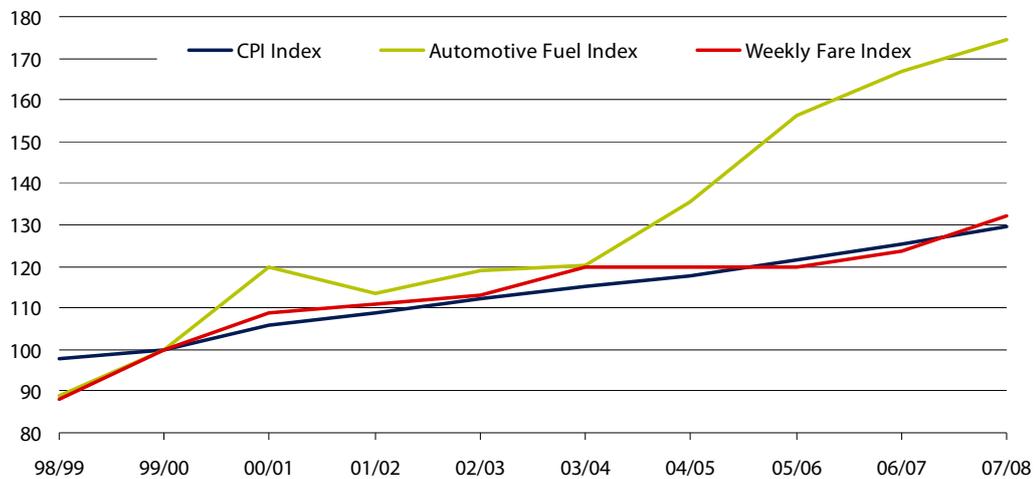
to Sydney, but not those passengers travelling to Corrimal.¹⁹⁹ Equally, if shorter distance fares increases are greater than increase for longer distance fares, it is not only passengers from the higher income areas which are close to the city, such as Bondi Junction, that are affected, but also those passengers from Wollongong travelling within their local areas.

However, IPART agrees with the Government submission that there are substantial numbers of commuters who do travel long distances into the CBD, and that it is likely that in general incomes reduce as you move further from the city. In particular average incomes in the intercity regions of Newcastle, Gosford-Wyong, Illawarra, and the Southern Highlands are all significantly lower than the Sydney Statistical Division median incomes. In addition, for these commuters the weekly fare is a higher proportion of their incomes although this may be compensated for in some cases by lower housing costs. In restructuring fares, IPART has had particular regard to affordability concerns for these commuters. IPART has not applied a consistent frequency discount for passengers that travel more than 35 km. Instead, as part of the transition to consistent discounts, for distances between 45 km and 175+ km IPART has applied a frequency discount that ranges from 25 per cent to 54 per cent. In addition, from 4 January 2009, IPART has reduced the single fare for passengers travelling 215 km and above.

15.2 Relative costs of CityRail fares

Fare increases for CityRail's services have been modest over the past eight years relative to price movements in the Sydney economy. Since 2000, compared to the price of automotive fuel, CityRail fares have increased at a much slower rate. Throughout the period, fare increase levels for weekly tickets have been comparable to the CPI (shown in Figure 15.6).

¹⁹⁹ APT comments at public hearing, 17 November 2008, transcript, p 49.

Figure 15.6 Index of CityRail weekly fares, CPI and petrol prices (base year 1999/00)

Note: Weekly fares are weighted by distance using 2007/08 ticket revenue.

Source: ABS and IPART.

As well as the much higher rate of petrol price increases compared to train fares, car trips account for much higher proportion of all journey made in Sydney, magnifying the social impact of increased petrol prices compared to train fare increases. In 2005, rail accounted for only 5 per cent of all trips by residents of the Sydney Statistical Division on an average weekday. This contrasts with 69 per cent of all trips being made by car. On an average weekend day, the figure for rail trips as a proportion of all trips made in Sydney falls to 2 per cent, compared to 76 per cent of trips made by car for vehicle drivers.²⁰⁰

15.2.1 CityRail commuter fares compared to rail fares in Melbourne and Brisbane

A comparison of CityRail fare levels with fare levels in Melbourne and Brisbane is not straightforward due to the different fare structure in each city; however, IPART has attempted to show how fares for rail commuters vary by distance travelled for each state.

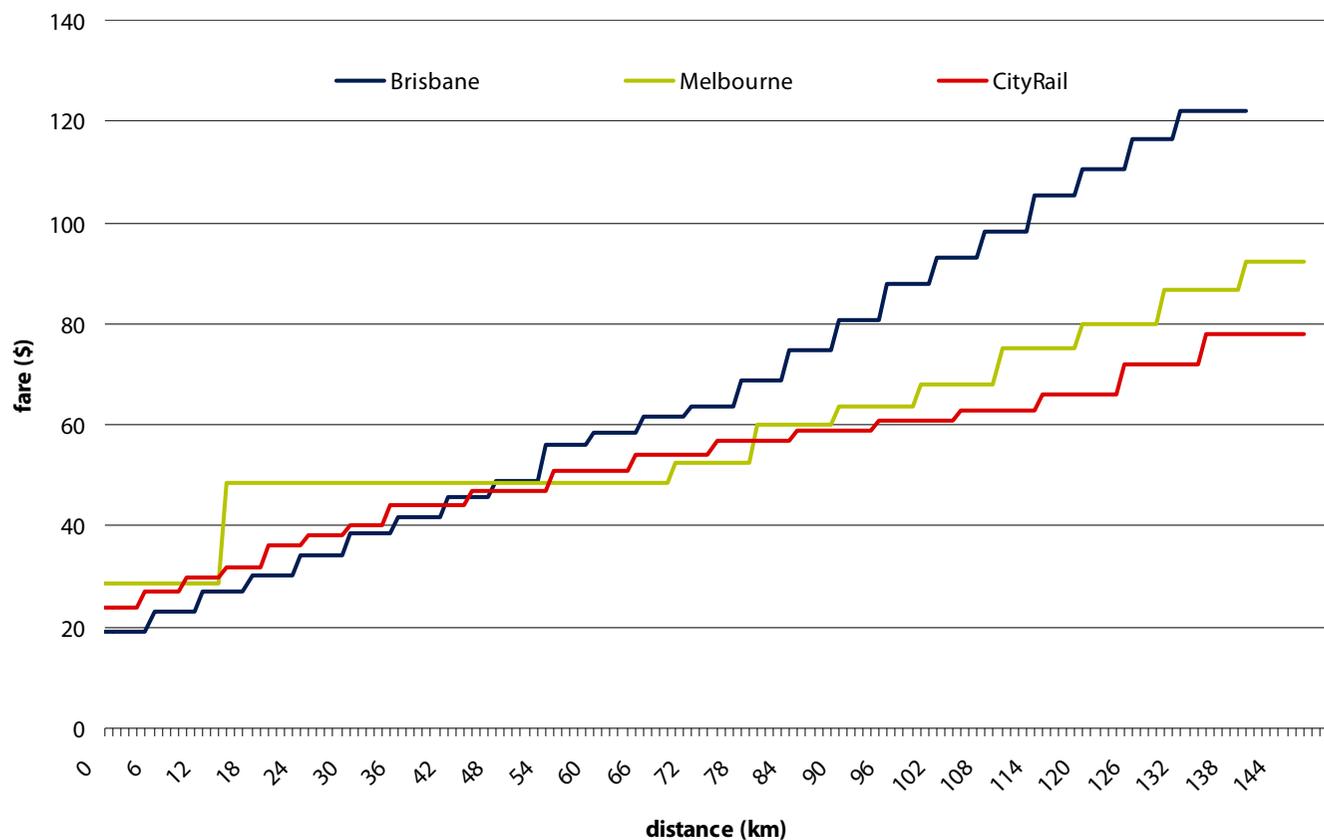
Figure 15.7 compares Sydney, Melbourne and Brisbane weekly train fares in 2009 for journeys made into the city centre, assuming that 10 journeys are made in one week. Using the current fares it shows that:

- ▼ The weekly fare for Sydney and Brisbane is comparable up to 60 km of travel. Brisbane's fares increase at close to a constant rate for all distances, whereas from 60 km, the rate of increase for CityRail's weekly fares is significantly lower. This means that the greater the distance travelled, the wider the discrepancy between Sydney and Brisbane fares, with Brisbane's fare significantly higher over longer distances.

²⁰⁰ RailCorp, *A Compendium of CityRail Statistics*, Sixth Edition, April 2008, p 25.

- ▼ CityRail fares are cheaper than fares in Melbourne for most distances except for a small number of distance bands where Melbourne's fares are equivalent or cheaper.

Figure 15.7 Comparison of Brisbane, Melbourne, and Sydney weekly fares (2009)

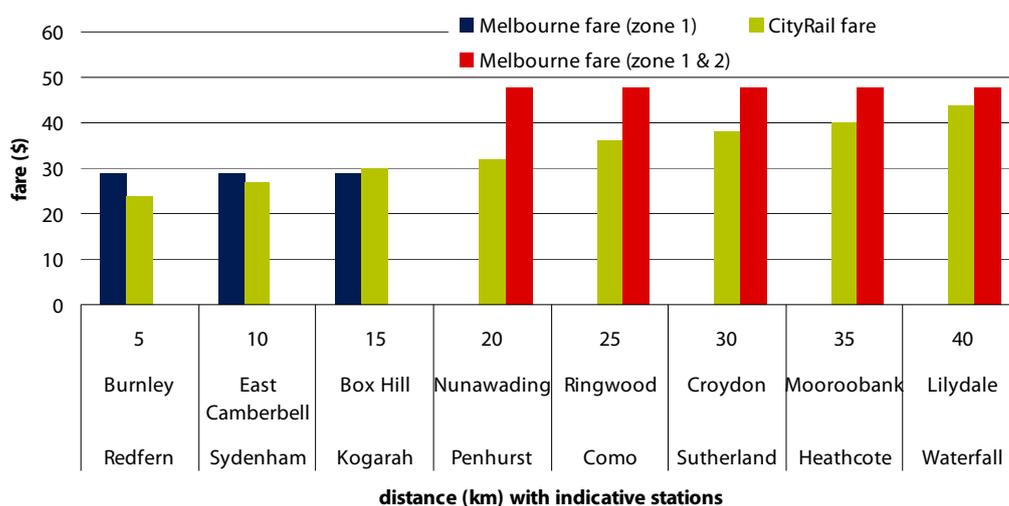


Note: A CPI increase has been applied to Melbourne fares. Brisbane 2009 fares are consistent with current 2008 fares. Each Brisbane fare zone is assumed to be 6 km wide. From 70 km, the v/line fares are applied for Melbourne. "Distance" refers to distance from the City.

Data source: Connex, V/line, Translink, CityRail.

Figure 15.8 uses the example of the Lilydale line in Melbourne, and the Illawarra line in Sydney to show fares over the distance of the line.

Figure 15.8 Weekly fares Melbourne and Sydney (2009)



Data source: Connex, CityRail.

It should be noted that the weekly fares in Melbourne and Brisbane also include travel on other modes (tram and bus in Melbourne, and ferry and bus in Brisbane) – it is not possible to purchase a rail **only** weekly ticket in these cities. Therefore the extent to which the CityRail fares are cheaper is overstated if rail passengers in these other cities also use other modes of public transport.

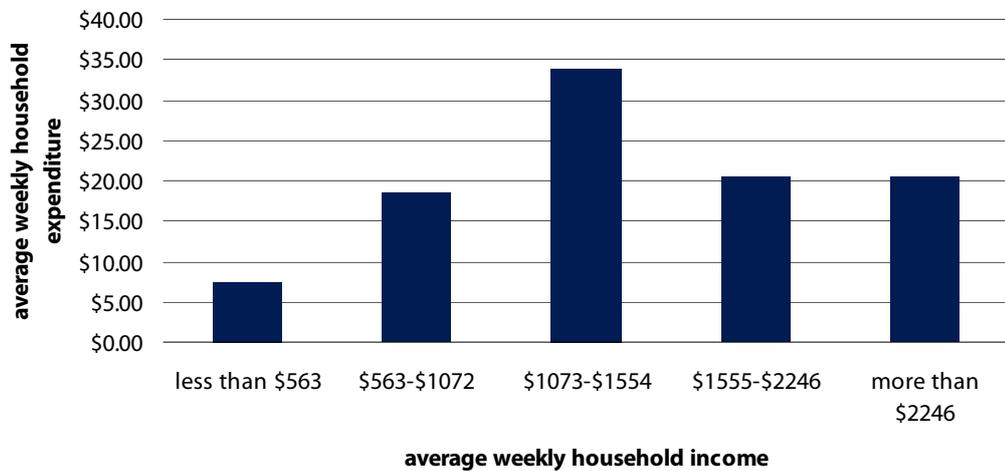
15.2.2 Average expenditure on CityRail fares

According to the most recent Household Expenditure Survey, which was conducted in 2003/04, the average weekly household expenditure on train fares by train users²⁰¹ in Sydney was \$21.05 (08/09 real), equating to 2 per cent of the average household expenditure in NSW.

Figure 15.9 shows that average weekly expenditure on train fares is lowest for train users in the lowest weekly household income quintile, and highest for train users with a weekly income of \$1,073 to \$1,554. This is likely to reflect that the majority of CityRail users are in full time employment. It may also reflect that the lowest income users (such as pensioners) have greater access to off-peak and concessional discounts.

²⁰¹ "Train users" are defined as people that have reported a positive weekly expenditure on train fares.

Figure 15.9 Average weekly household expenditure on train fares of train users by weekly household income 2003/04 (real \$2008/09)

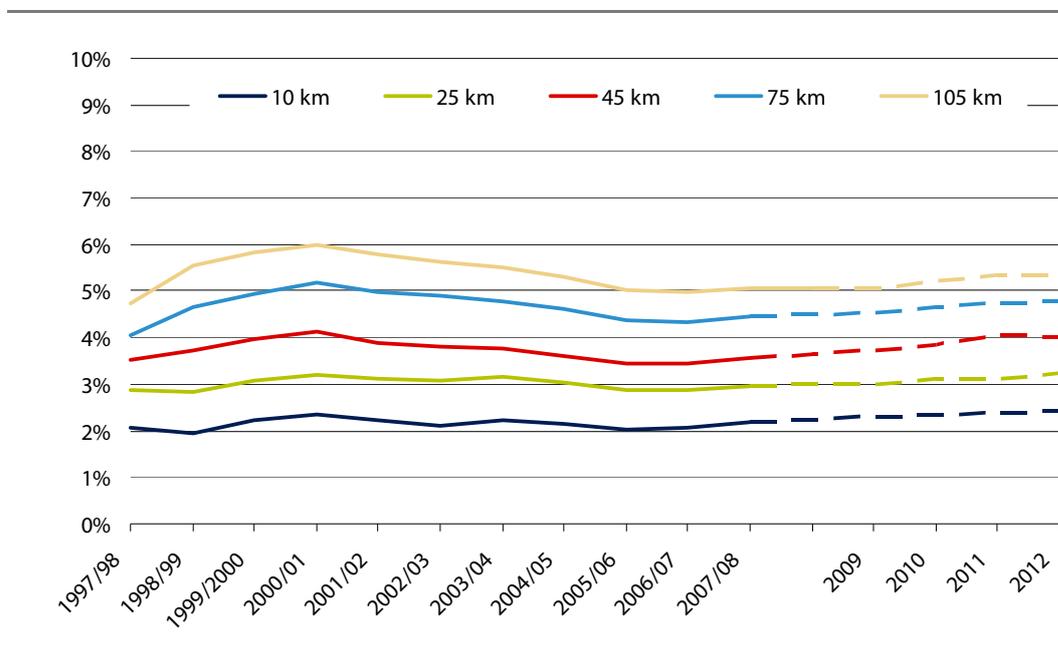


Note: The estimate for the income range \$929-\$1345 has a relative standard error of 25% to 50% due to the small sample size, and should be used with caution.

Source: Household Expenditure Survey 2003/04, Commonwealth of Australia 2008.

For most distances, current fares represent a slightly higher proportion of weekly wages in NSW than in 1997/98, but remain less than 2000/01 levels. Current fares lie between 2 and 6 per cent of average weekly adult earnings for distances less than 105 km, however this proportion is expected to increase slightly over the regulatory period (shown in Figure 15.10).

Figure 15.10 Selected CityRail weekly fares as a proportion of average adult ordinary time weekly earnings in NSW 1997/98 – 2012 by distance bands



Note: Earnings for 2009-2012 are assumed to increase at the current market implied forecast annual change in the CPI of 2.7 per cent. The timing of the fare changes are approximate between 1997/98 and 2007/08.

Source: ABS, RailCorp and IPART.

IPART recognises that, as NCOSS noted at the public hearing, fares comprise a substantially higher proportion of minimum wages, as distinct from average wages, particularly for longer distance commuters. NCOSS used the example of commuters travelling from Faulconbridge, which is 95 km from the city (the same distance as Wollongong) to show that under the draft determination weekly fares would increase by 3 percentage points as a proportion of the NSW minimum full-time wage.²⁰² As a result, a weekly fare would represent 13 per cent of the minimum full-time wage, compared to only 6 per cent of the average full-time adult ordinary time earnings. IPART notes that under the final determination, the weekly fare for a 95 km trip increases by only 1 percentage point as a proportion of present minimum wages, as a result of a more even distribution of the dollar increase across all distances in the final decision.

²⁰² NCOSS comments at public hearing, 17 November 2008, transcript, p 53.

Table 15.3 Real weekly fares at 95 km under the draft and final decisions as a proportion of income (\$08/09)

		2008	2012	cumulative change 2008- 2012
Fares (real)	Draft decision	\$56.00	\$71.83	\$15.83
	Final decision	\$56.00	\$62.31	\$6.31
As percentage of Federal Minimum wage \$543.78				
	Draft decision	10%	13%	3%
	Final decision	10%	11%	1%
As percentage of NSW Minimum wage \$552.70				
	Draft decision	10%	13%	3%
	Final decision	10%	11%	1%
As percentage of average full-time adult ordinary time earnings \$1,145.10				
	Draft decision	5%	6%	1%
	Final decision	5%	5%	1%

Source: Federal awards, NSW awards, IPART.

15.3 Concession fares and PET

IPART considers that the social impact of any fare increases should be considered in the context of the availability of concession fares, other social policies (for example, the Pensioner Excursion Ticket (PET) and School Student Transport Scheme) which may mitigate the impact of fare increases on particular groups.

The Government is responsible for determining social policy relevant to train travel and for determining the eligibility criteria for concession fares. However IPART does have a role in the implementation of such policies. For example, if the Government were to reduce the level of the concession it would first require a determination from IPART so that it could set concession fares above their maximum levels.

The Government's concession fare policy provides a 50 per cent discount to the adult ticket price for concession card holders, including

- ▼ primary school and high school students (child off-peak tickets are also capped)
- ▼ full-time university, TAFE or private college students provided that they are:
 - NOT engaged in business or employment
 - NOT a full-fee paying overseas student;
 - NOT an external study student; and
 - NOT in receipt of remuneration (excluding Austudy, allowances, etc)
- ▼ 1st, 2nd or 3rd year apprentices/trainees
- ▼ persons in receipt of Commonwealth benefits (including the unemployed)
- ▼ Seniors cardholders (NSW only)

- ▼ War widow/er concession cardholders (NSW and Victoria only).

The NSW Government also provides free travel to a range of CityRail passengers, and a \$2.50 PET, shown in Box 15.1.

Box 15.1 Other concession fare entitlements^a

The NSW Government provides free travel for the following CityRail passengers:

- ▼ blind or severely vision impaired persons
- ▼ Australian and New Zealand War Veterans who have service related disabilities for which they receive a disability pension from the Department of Veteran Affairs (DVA)
- ▼ Australian War Veterans (and endorsed attendant) who reside permanently in NSW are classified by the Department of Veterans Affairs as blinded due to war service
- ▼ WW1 veterans and their spouse/widow and Victoria Cross/George Cross award holders and their spouse/widow
- ▼ children travelling to and from school – however, the Government has recently announced that an annual charge will be payable from 2009
- ▼ children under 4 years of age (when accompanied by a paying adult)
- ▼ any additional child when accompanied by a fare paying adult and fare paying child

The following groups are eligible for a Pensioner Concession card, which allows access to the \$2.50 PET

- ▼ Aged Pensioners,
- ▼ Persons in receipt of the Mature Age Allowance,
- ▼ Disability Support Pensioners,
- ▼ Persons receiving the Parenting Payment (single),
- ▼ Persons receiving the Carer Payment,
- ▼ Persons over 60 on long term payments including Newstart Allowance, Sickness Allowance, Widow Allowance, Partner Allowance, Parenting Payment or Special Benefit.

a: The concession policies are not set by IPART.

Source: Ministry of Transport, <http://www.transport.nsw.gov.au/concessions/>

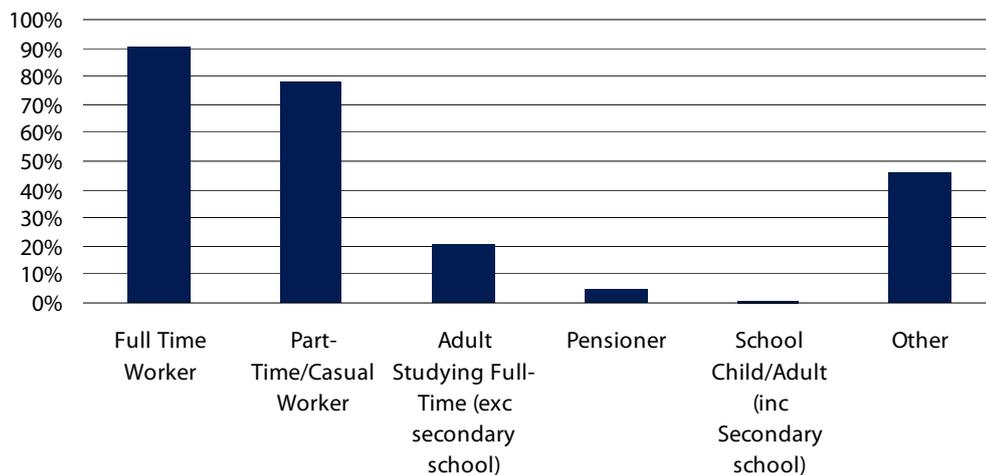
While IPART's determination increases concession fares at the same rate as adult fares, IPART notes the extensive concession scheme in place. In 2005, 40 per cent of CityRail's passengers used concessions, concession pensions, free school, child fare and family discounts. Thus, the full adult fare was purchased by only 60 per cent of CityRail's passengers.²⁰³

Figure 15.11 shows that while 91 per cent of full time workers purchased full fare tickets, this figure drops to 78 per cent of part time and casual workers, 20 per cent

²⁰³TDC, Household Travel Survey 2005.

for adults studying full time, 5 per cent for pensioners and 1 per cent of school children.

Figure 15.11 CityRail users of full fare tickets 2005



Source: TDC, *Household Travel Survey 2005*.



Appendices

A IPART's assessment of CityRail's recent service performance

As part of its fare review, IPART examined evidence provided by RailCorp on CityRail's recent performance against the service performance indicators and targets included in the current RPA, and the indicators that IPART has recommended be included in the service contract (with targets to be set by the Government). Its findings are summarised below.

A.1 Performance against targets in current RPA

As Chapter 3 discussed, RailCorp's current RPA includes a small number of service performance indicators and targets for CityRail. These relate to the reliability of CityRail services and the level of crowding on CityRail trains.

A.1.1 Reliability of services

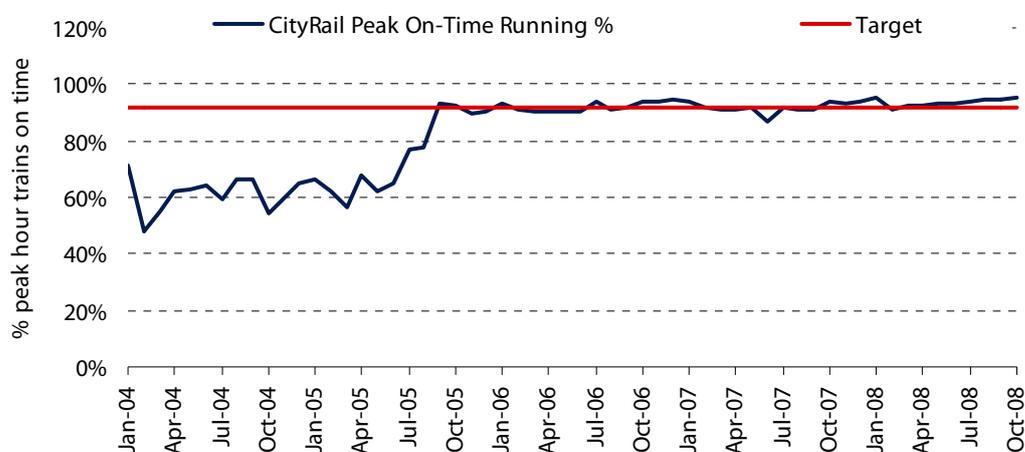
The RPA includes three network-wide indicators plus targets related to the reliability of services:

- ▼ **On-time running.** For this indicator, CityRail's performance is measured as the percentage of suburban and intercity peak period train services passing through Central station that run on time at their destination. 'Suburban train services' are defined as those on the Eastern Suburbs, Illawarra, Bankstown, Inner West, Airport, East Hills, South, North Shore, Western and Northern lines. 'Peak period services' are defined as those arriving at Central station between 6 and 9 am, and those departing Central station between 4 and 6 pm. 'On time' is defined as within 5 minutes of the timetabled time for suburban services, and within 6 minutes of the timetabled time for intercity services. The target is for 92 per cent of the defined services to run on time, based on the combined results for the suburban and intercity networks.
- ▼ **Skipped stops.** CityRail's performance is measured as the percentage of CityRail stations at which a suburban peak period train service does not stop but is timetabled to do so. Suburban train services and peak period services are defined as above. 'Skipped stops' includes those skipped due to a cancelled service and the early termination of a service. The target is for not more than 1 per cent of the total stops on the suburban network during peak periods to be skipped.

- ▼ **Cancelled services.** CityRail's performance is calculated as the number of suburban peak period train services that are cancelled per month as a percentage of timetable suburban peak period train services per month. The target is for not more than 1 per cent of these services to be cancelled.

Since mid 2006, CityRail has fairly consistently met the target for on-time running, although there have been occasional months where performance has fallen below the target (Figure A.1). CityRail has also consistently met the targets for skipped stops and cancelled services (Figure A.3).

Figure A.1 CityRail peak period on-time running



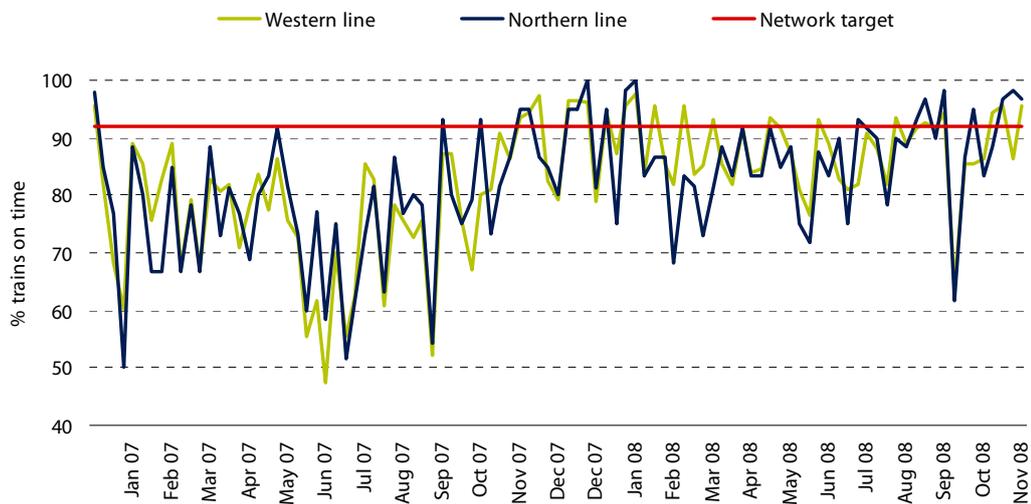
Source: RailCorp.

However, on-time running on the Western and Northern lines has consistently been poorer than the network-wide target of 92 per cent. At times, on-time running in the pm peak period on the Western and Northern lines has been below 70 per cent. IPART considers that variability in performance across the network should be addressed, and has recommended that the Government set on-time running targets and monitors performance by line and in peak and off-peak periods. It has also recommended that the definition of peak periods is reviewed, to make this definition more consistent with the periods of peak demand. (See IPART's final report *Improving CityRail's accountability and incentives through an effective service contract.*)

IPART's cost allowances for CityRail include funds for undertaking or completing capital projects, such as the clearways projects, which should allow CityRail to maintain or improve its on-time running performance over the determination period. IPART notes also that CityRail is also putting in place a Customer Services Improvement Program which aims to improve key areas of CityRail performance, including reliability, particularly on the Western and Northern lines, within its current budget. For example, it has introduced a package of measures (including

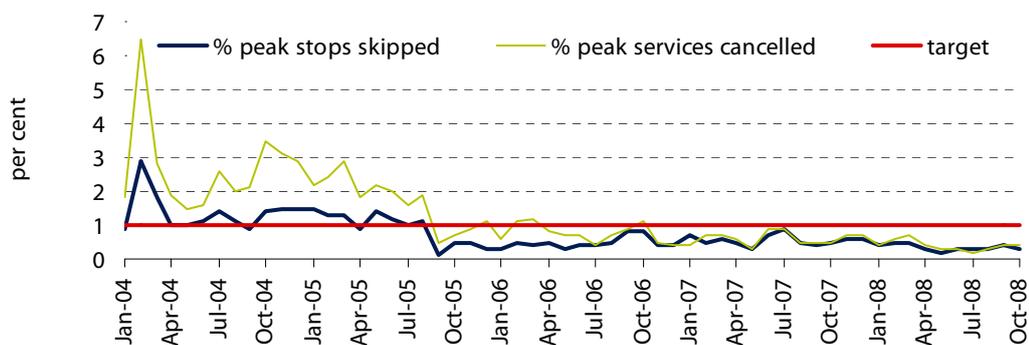
staff to direct the flow of passengers, signage, reconfigured seating) aimed at reducing dwell times at key city stations.

Figure A.2 PM peak hour on-time running – selected lines 2007-2008



Source: CityRail website.

Figure A.3 CityRail peak period stops skipped and peak period services cancelled



Source: CityRail website.

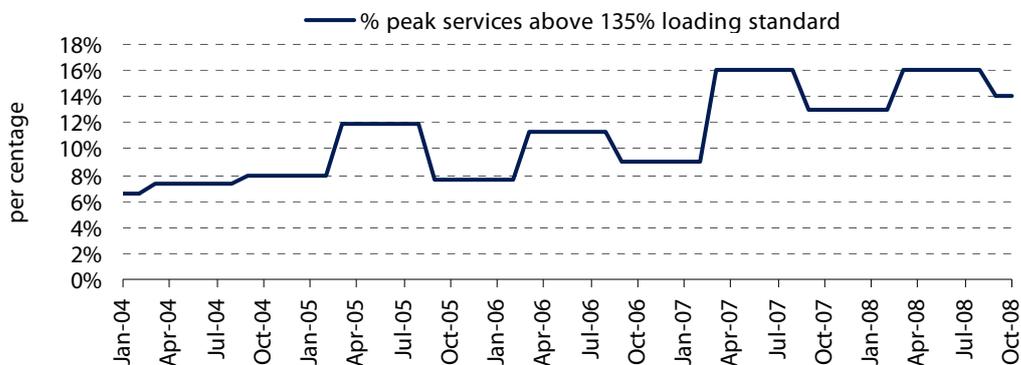
A.1.2 Crowding on trains

The current RPA includes one indicator related to crowding on trains – the percentage of suburban peak period trains at a load factor above 135 per cent – and sets a target of 5 per cent by 2008.

Per centIn 2008, approximately 13-16 per cent of peak period trains carried loads above 135 per cent of their seating capacity, so CityRail did not meet the target for this indicator. ITSRR's 2006, 2007 and 2008 surveys of passengers found that crowding was the most common area of dissatisfaction among train users, with 55 per cent of train users in the 2008 survey stating that their expectations on crowding had not been met.

IPART's estimation of CityRail's efficient costs over the determination period has included allowances for operational and capital expenditure which may help to relieve crowding. There also exists fare discounts to encourage passengers to shift the time of their travel to off-peak periods to reduce crowding. However, in the short term, IPART expects crowding above the target level will continue. In the longer term, the acquisition of additional rolling stock will allow some currently six car services to run as eight car services. The opening of the ECRL will also increase the number of services on the Western and North Shore lines. Nevertheless, CityRail may continue to find it difficult to meet its 5 per cent target for crowding.

Figure A.4 CityRail percentage of peak period trains above 135 per cent loading, 2004-2008



Source: RailCorp.

A.2 Performance against indicators recommended for inclusion in the service contract

IPART has made a recommendation that in addition to the reliability and crowding indicators and targets discussed above, a greater range of indicators and targets should be included in the service contract RPAs.²⁰⁴ These additional indicators relate to service quantity, journey delays, journey time, passenger security, train cleanliness, the provision of information to passengers, and passenger comfort. IPART has attempted to assess CityRail's recent performance against these additional indicators (based on available data). It notes that CityRail's past performance, in conjunction with the Customer Service Improvement Plan and other planned improvements, will guide the Government in setting performance targets for these indicators in future service contracts.

A.2.1 Service quantity

In relation to service quantity, IPART has recommended that the Government set specific, measurable targets for the following indicators:

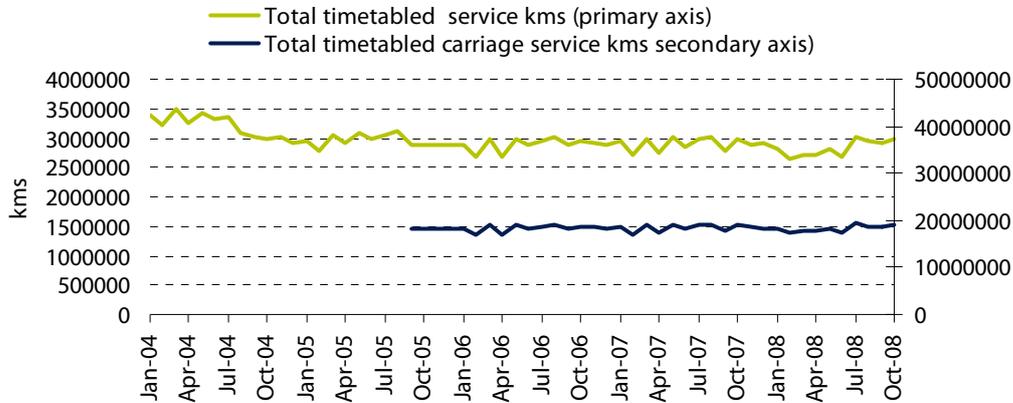
- ▼ minimum frequency of services:
 - by line
 - in various time bands (am/pm peak, between peaks, evening)
 - by direction (to/from CBD)
 - on weekdays and weekends/public holidays, and
 - by the time of the first and last services
- ▼ peak and off-peak train service kilometres and carriage service kilometres
- ▼ peak and off-peak patronage (passenger journeys).

Figure A.5 shows the quantity of service CityRail provided since 2004, in terms of train service kms and carriage service kms.

In 2006/07, CityRail experienced an overall increase in passenger journeys of around 8 million (around 3 per cent). In 2007/08, this increase was 5 per cent. Patronage growth is also occurring in other Australian capital cities. IPART considers that this growth is likely being driven by a number of factors, including strong growth in CBD employment, rising oil prices, increasing road congestion and improved train reliability.

²⁰⁴ See IPART's, *Improving CityRail's accountability and incentives through an effective service contract – Final Report*, December 2008.

Figure A.5 CityRail timetabled service kilometres, 2004-2008

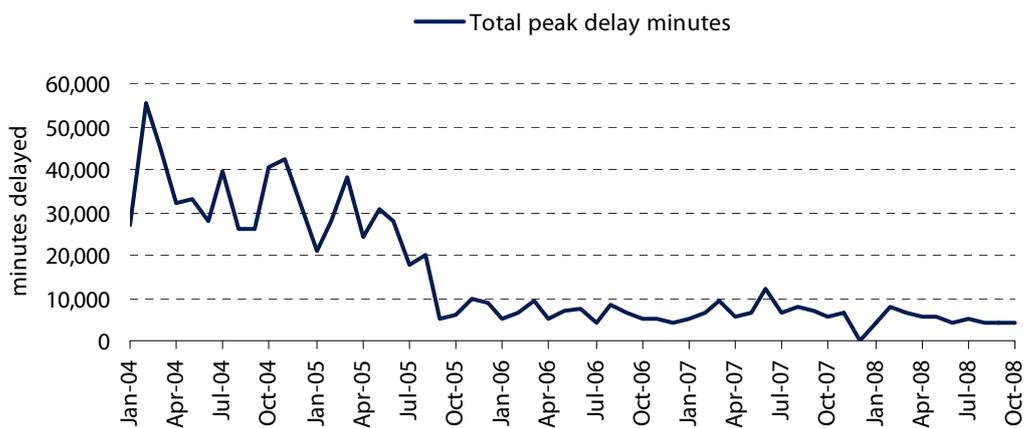


Source: RailCorp.

A.2.2 Journey delays

IPART has recommended that an indicator related to journey delays be included in the service contract -- total delay minutes in peak and off-peak periods. In recent years, CityRail's performance against this indicator during peak periods has improved significantly (Figure A.6).

Figure A.6 Total peak delay minutes 2004-2007



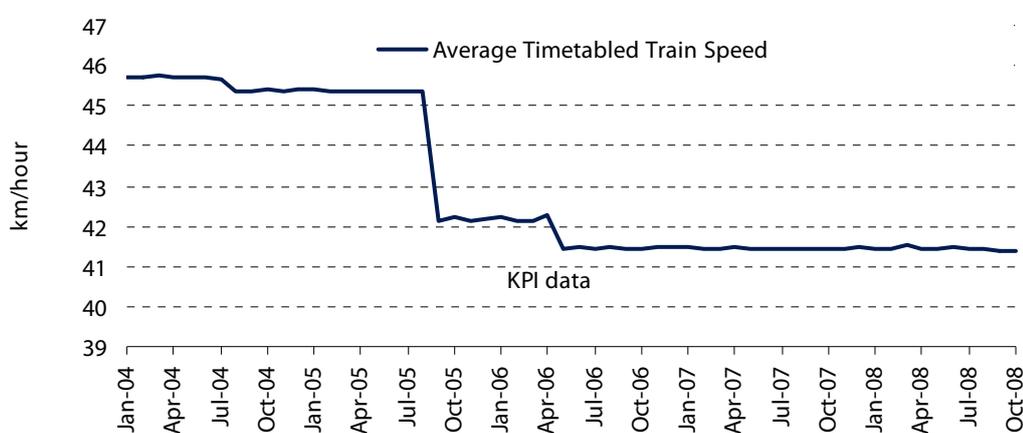
Source: RailCorp.

A.2.3 Journey time

IPART has recommended that the service contract include as an indicator average timetabled train speed, as a proxy for journey time. Timetabled trains speed fell in late 2005 (Figure A.7). The new timetable now allows for longer dwell times at stations which reduces the average timetabled train speed. On the other hand, the new timetable has delivered significant improvements in reliability and reductions in delays. Train crowding also influences speed as overcrowded trains take longer to load and unload.

It should also be noted that there is a trade-off between train speed and reliability.

Figure A.7 CityRail – average timetabled train speed, 2004-2008



Source: RailCorp.

Longer journey times are more likely to be an issue for people making longer trips (such as intercity travellers) than for people making short suburban trips. Despite slower services and cuts in some train services introduced with the 2005 timetable changes, ITSRR surveys of CityRail users indicate the proportion of train users whose expectations were not met with regard to journey time and frequency of trains has *fallen* since 2006 (from 20 per cent in 2006 to 14 per cent in 2008 for journey time, and from 34 per cent to 28 per cent for frequency).²⁰⁵ ITSRR has suggested that that frequency and journey time might be less of an issue for train users if they can depend on their train being on time.²⁰⁶

²⁰⁵ ITSRR Survey of CityRail Customers 2006, 2007 and 2008, Appendix 5.

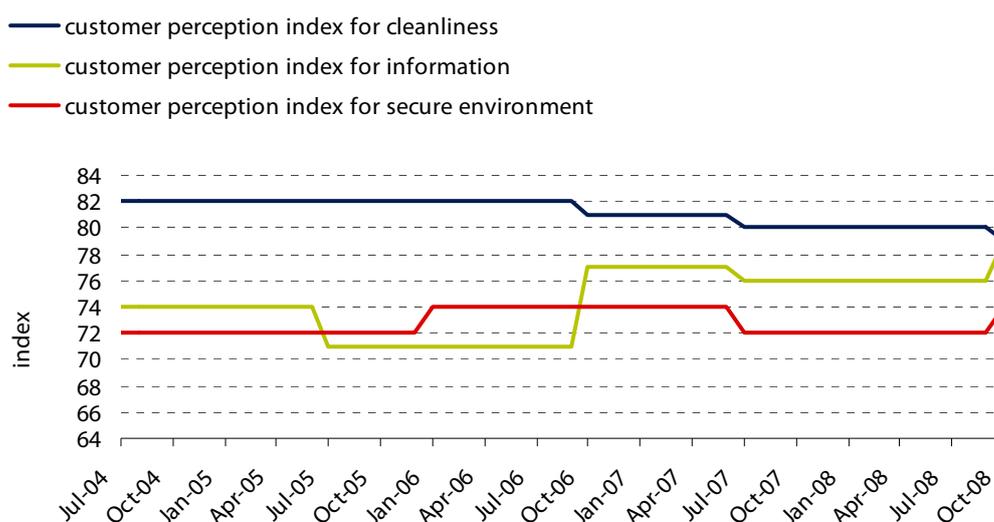
²⁰⁶ ITSRR Survey of CityRail Customers 2007, p 19.

A.2.4 Passenger security, train cleanliness and provision of information to passengers

IPART has recommended that the number of offences against persons (derived from the Bureau of Crime Statistics and Research data) and indices of customer perceptions of safety, information provision and train cleanliness (based on the results of ITSRR's annual passenger surveys) be included in the service contract.

Bureau of Crime Statistics and Research (BOSCAR) data indicate that 'offences against persons' occurring on or adjacent to railway property per million passenger journeys has steadily declined in recent years – from 10.3 offences per million passenger journeys in 2004/05, to 8.7 in 2007/08.²⁰⁷ However, passengers' perceptions of security, based on ITSRR surveys, have remained fairly steady (see Figure A.8).

Figure A.8 Customer perceptions for cleanliness, information and security



Note: These indices are based on results of ITSRR annual surveys of CityRail passengers.

Source: RailCorp.

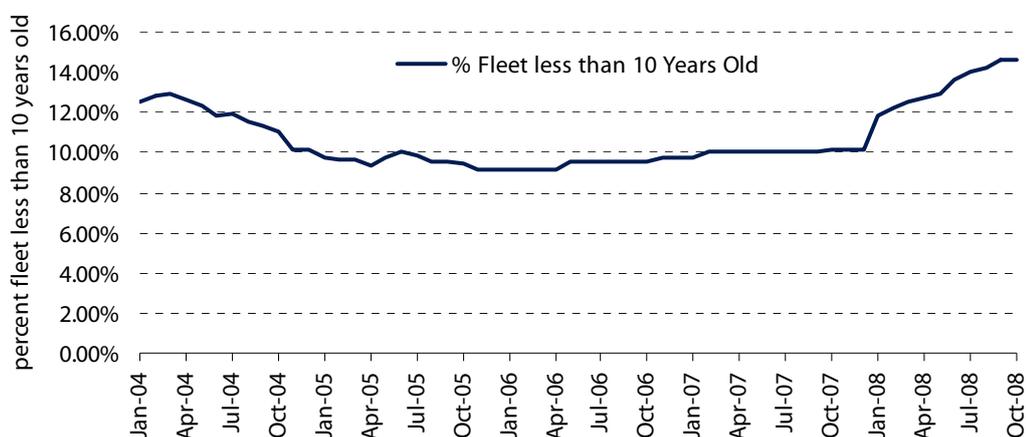
Customer perceptions of the quality of information provided by CityRail have improved since 2006, while perception of cleanliness appears to have declined slightly (Figure A.8).

²⁰⁷ Based on CityRail website information - safety and security – BOCSAR statistics, 14 August 2008.

A.2.5 Passenger comfort

Passenger comfort encompasses a range of characteristics - for example, temperature/air conditioning, and comfort of seating and smoothness of ride. IPART has recommended that the percentage of the fleet less than 10 year old be included in the service contract as a proxy indicator for passenger comfort. Since the end of 2007, there has been a marked increase in the proportion of fleet less than 10 years old. IPART's calculation of CityRail's revenue requirement has included allowance for operating expenditure for the procurement and maintenance of over 600 new carriages in a PPP contract which should see improvements in the modernity of the fleet and so in average passenger comfort by the end of the determination period.

Figure A.9 Age of CityRail fleet



Source: RailCorp.

A.3 Perceptions of CityRail services

ITSRR has conducted annual surveys of perceptions of CityRail travellers since 2004, asking respondents to rate the importance and quality of 37 aspects of service. Table A.1 indicates that since 2004 the proportions of people with expectations met remained constant or improved for 11 out of the 13 aspects of services rated in 2008 as most important.²⁰⁸ Since 2006 crowding has been the aspect of service about which the highest proportion of train users said their expectations were not met.

²⁰⁸ The changes are not necessarily statistically significant.

Table A.1 ITSRR surveys – CityRail Aspects of service – percentage of train users with expectations met ^{(a)(b)}

	Percentage with expectations met					Importance ranking
	2004	2005	2006	2007	2008	2008
Personal safety on stations in the evenings	66	71	70	66	68	1
Personal safety in train carriages, evenings	64	67	64	62	61	2
Station information about arrival/departure times	71	66	78	79	84	3
Punctuality of trains	44	38	64	68	73	4
Frequency of trains	56	52	63	69	69	5
Quality of information about delays and cancellations	63	57	69	68	74	6
Removal of litter from the train	79	80	78	77	77	7
Clarity of announcements on platform	64	61	64	64	69	8
Timeliness of delay/cancellation announcements	62	58	67	70	72	9
Staff effectiveness in dealing with security problems	63	65	69	64	68	10
Delays and cancellations	41	38	59	62	66	11
Facilities for calling for help in carriages/on platform	63	68	66	64	65	12
Personal safety on stations, non-peak, day	81	81	82	82	83	13
<i>Aspect of service with highest % of expectations not met (c)</i>	<i>delays and cancellations (56%)</i>	<i>punctuality (59%)</i>	<i>crowding (50%)</i>	<i>crowding (55%)</i>	<i>crowding (55%)</i>	

Notes:

a ITSRR surveys 37 aspects of service. Aspects included in this table were those ranked most important by customers surveyed in 2007. The aspect of service with lowest levels of satisfaction that year is also included.

b percentage of train users who rated that aspect of service as being desirable or higher in importance and acceptable or better in quality.

c percentage of train users who rated the service as being high in importance and low in quality.

Statistically significant (at 1% significance) increase from the previous year.

Statistically significant (at 1% significance) decrease from the previous year.

Source: ITSRR Surveys of CityRail Customers 2004, 2005, 2006, 2007 and 2008.

B CRAI's estimate of the value of the external benefits of CityRail

Prior to releasing its draft report, IPART engaged CRAI to assist it in estimating the external benefits of CityRail services and to provide advice on an appropriate range for the allocation of costs between CityRail passengers and government.²⁰⁹ CRAI's findings formed a key input into IPART's decision making for its draft fare decision. CRAI's report was released in June 2008 and is available on IPART's website.²¹⁰ After the CRAI report was finalised, its author Mr Mike Smart moved from CRAI to LECG. Mr Smart was asked by IPART to update his analysis for IPART's final fare decision. Mr Smart's updated findings are set out in LECG's report to IPART available on IPART's website.²¹¹ The revised report by LECG builds on the analysis provided in the CRAI report but includes revised findings. IPART considered this analysis and the report's findings in making its final fare decisions.

LECG used a marginal approach to estimate CityRail's external benefits. First, it used the TDC's Sydney Strategic Travel Model (SSTM) output to calculate the external benefit per road vehicle kilometre. LECG estimated that this benefit varies continuously with rail patronage: that is, as more commuters choose to take the train, roads become less congested, so the marginal external benefit falls as rail patronage increases. Second, LECG calculated the total externality benefit of CityRail as the sum of the marginal external benefit every train user brings to the wider community in the form of avoided road congestion, air pollution and greenhouse gas emissions.

LECG's estimate of CityRail's total external benefits in 2006/07 is higher than RailCorp's, at approximately \$1.5 billion (Table B.1). It is also higher than CRAI's previous estimate mainly as a result of LECG adopting a higher value of time estimate of \$15.80 (as opposed to \$13.15) which increases the road congestion benefit. LECG's estimate of the value of reduced road congestion was substantially higher than RailCorp's (approximately \$1.39 billion compared with \$0.74 billion).

²⁰⁹ CRAI International, *Value of CityRail externalities and optimal Government subsidy*, Report to IPART, June 2008.

²¹⁰ <http://www.ipart.nsw.gov.au>

²¹¹ LECG, *An empirical estimate of CityRail's marginal costs and externalities*, 20 November 2008.

**Table B.1 Comparison of RailCorp's and LECG's estimate of benefits of CityRail
(\$2006/07 million)**

	RailCorp 2006/07	LECG 2006/07
Road congestion	740.5	1,390.8
Air pollution	71	111.6
Greenhouse gas emissions	52.1	25.9
Noise pollution	20.4	-
Accidents	114.6	-
Road damage	3.7	-
Total external benefits	1,002.3	1,528.2

Source: RailCorp 2007 and LECG 2008.

C Section 15 requirements of the IPART Act

Table C.1 indicates where the relevant section 15 requirements are addressed within IPART's report.

Table C.1 IPART's considerations of section 15 matters

Section 15	
a) cost of providing the service	Chapters 6 to 8
b) protection of consumers from abuse of monopoly power	Chapter 4
c) appropriate rate of return and dividends	Chapter 8 s17B of the Transport Administration Act prohibits RailCorp from paying dividends
d) effect on general price inflation	Chapter 14
e) improved efficiency in supply of services	Chapter 6
f) ecologically sustainable development	Chapter 11
g) impact on borrowing, capital and dividend requirements	Chapters 5 to 8
h) additional pricing policies	Chapter 12 and 13
i) need to promote competition	NA
j) considerations of demand management	Chapters 10 and 12
k) the social impact on customers	Chapter 15
l) standards of quality, reliability and safety of the services	Chapter 3

D Terms of Reference

Review of CityRail regulatory framework

I, Morris Iemma, Premier of New South Wales, under Section 12A of the *Independent Pricing and Regulatory Tribunal Act 1992* ('the Act'), refer to the Independent Pricing and Regulatory Tribunal (Tribunal) for investigation and report the following matter:

The Tribunal is to recommend a regulatory framework which will provide CityRail with the incentives to provide efficient passenger rail services.

In conducting this review, the Tribunal is to consider the matters listed under Section 15 of the Act, in particular the need for greater efficiency and reliability in the supply of services so as to reduce costs and improve quality, safety and reliability for the benefit of consumers and taxpayers.

Other issues the Tribunal is to consider in undertaking this review are:

1. the appropriate regulatory period for the Tribunal's fare decisions;
2. the efficient costs of providing CityRail's services and the scope for greater efficiency in the supply of these services;
3. NSW Government policy on passenger rail services and public transport, including the future investment in CityRail set out in the *Urban Transport Statement*, and the *State Plan*;
4. an appropriate range for the allocation of costs between government and users, taking into consideration the positive environmental, economic and social benefits for the community generated by CityRail's services;
5. how service standards can be incorporated into the regulatory approach;
6. appropriate fares for CityRail which take into account the cost of providing CityRail's services, the capacity of users to pay and current and future government policy on public transport fares; and
7. if necessary, transitional arrangements from the current form of regulation to the new regulatory approach.

A draft report is to be publicly released by 12 September 2008, with a final report due by 12 December 2008.

The Tribunal has indicated that it intends to conduct this review in conjunction with the 2008 determination of fares for CityRail services, conducted in accordance with the Tribunal's standing reference under Section 11 of the Act. This reference under Section 12A of the Act is in addition to, and does not replace, the Tribunal's standing reference under Section 11 of the Act.

E Stations by distance bands

Table E.1 Stations contained in each distance band (measured to/from the City)

Distance band Up to (km)	Stations
5	Edgecliff, Redfern
10	Bondi Junction, Erskineville, Green Square ^a , Domestic Terminal ^a , Lewisham, Macdonaldtown, Marrickville, Mascot ^a , Milsons Point, Newtown, North Sydney, Petersham, St Leonards, St Peters, Stanmore, Sydenham, Waverton, Wollstonecraft
15	Arncliffe, Artarmon, Ashfield, Banksia, Bardwell Park, Bexley North, Burwood, Campsie, Canterbury, Chatswood, Croydon, Dulwich Hill, Hurlstone Park, International Terminal ^a , Kogarah, Rockdale, Roseville, Strathfield, Summer Hill, Tempe, Turrella, Wolli Creek
20	Allawah, Belmore, Beverly Hills, Carlton, Concord West, Flemington, Gordon, Homebush, Hurstville, Killara, Kingsgrove, Lakemba, Lidcombe, Lindfield, Narwee, North Ryde, North Strathfield, Olympic Park, Penshurst, Punchbowl, Rhodes, Wiley Park
25	Auburn, Bankstown, Berala, Birrong, Clyde, Como, Denistone, Eastwood, Granville, Macquarie Park, Macquarie University, Meadowbank, Mortdale, Oatley, Padstow, Pymble, Regents Park, Revesby, Riverwood, Sefton, Turramurra, Wahroonga, Warrawee, West Ryde, Yagoona
30	Asquith, Beecroft, Camellia, Carramar, Cheltenham, Chester Hill, Dundas, East Hills, Epping, Guildford, Harris Park, Hornsby, Jannali, Kirrawee, Leightonfield, Loftus, Merrylands, Normanhurst, Panania, Parramatta, Rosehill, Rydalmere, Sutherland, Telopea, Villawood, Waitara, Wentworthville, Westmead
35	Cabramatta, Canley Vale, Caringbah, Carlingford, Engadine, Fairfield, Gymea, Holsworthy, Miranda, Mt Colah, Mt Kuring-Gai, Pendle Hill, Pennant Hills, Thornleigh, Toongabbie, Warwick Farm, Yennora
45	Berowra, Blacktown, Casula, Cowan, Cronulla, Doonside, Glenfield, Heathcote, Ingleburn, Liverpool, Macquarie Fields, Marayong, Minto, Quakers Hill, Rooty Hill, Seven Hills, Waterfall, Woollooware
55	Campbelltown, Hawkesbury River, Helensburgh, Leumeah, Macarthur, Mt Druitt, Riverstone, Schofields, St Marys, Vineyard, Werrington
65	Clarendon, Coalcliff, East Richmond, Emu Plains, Kingswood, Menangle, Menangle Park, Mulgrave, Otford, Penrith, Richmond, Stanwell Park, Windsor, Wondabyne
75	Austinmer, Blaxland, Coledale, Douglas Park, Glenbrook, Gosford, Koolewong, Lapstone, Point Clare, Scarborough, Tascott, Thirroul, Wombarra, Woy Woy
85	Bellambi, Bulli, Corrimal, Fairy Meadow, Lisarow, Narara, Niagara Park, North Wollongong, Ourimbah, Picton, Springwood, Towradgi, Valley Heights, Warrimoo, Woonona
95	Buxton, Coniston, Couridjah, Cringila, Falconbridge, Kembla Grange, Linden, Lysaghts, Port Kembla, Port Kembla North, Tahmoor, Thirlmere, Tuggerah, Unanderra, Wollongong, Woodford, Wyong
105	Balmoral, Bargo, Bullaburra, Dapto, Hazelbrook, Lawson, Warnervale

Distance band Up to (km)	Stations
115	Albion Park, Colo Vale, Dunmore, Hill Top, Katoomba, Leura, Oak Flats, Wentworth Falls, Wyee, Yerrinbool
125	Blackheath, Bombo, Dora Creek, Kiama, Medlow Bath, Minnamurra, Morisset
135	Awaba, Bowral, Burradoo, Fassifern, Gerringong, Mittagong, Mt Victoria, Robertson
155	Adamstown, Bell, Berry, Blackalls Park, Booragul, Cardiff, Cockle Creek, Exeter, Kotara, Moss Vale, Teralba, Toronto, Zig Zag
175	Beresfield, Bombaderry (Nowra), Broadmeadow, Bundanoon, Civic, Hamilton, Hexham, Lithgow, Newcastle, Penrose, Sandgate, Tarro, Thornton, Wallerawang, Warabrook, Waratah, Wickham, Wingello
175+	Aberdeen, Bathurst, Branxton, Dungog, East Maitland, Goulburn, Greta, High St, Hilldale, Kelso, Lochinvar, Maitland, Martins Creek, Marulan, Meadow Flat, Metford, Mindaribba, Mt Lambie, Muswellbrook, Paterson, Raglan, Scone, Singleton, Tallong, Telarah, Victoria St, Wirragulla, Yetholme

a These stations incur a "gate pass" or station access fee which is not set by IPART.

Note The City stations comprise of Central, Town Hall, Circular Quay, St James, Museum, Martin Place and Kings Cross. The distance between any station outside the City stations to any City station, will be the distance to the designated "gateway station" or closest City station plus 3.21 km.

Table E.2 TravelPass zone

TravelPass Zone	Stations bounded by
Red TravelPass	Chatswood, Bondi Junction, Rockdale, Bardwell Park, Canterbury and Croydon
Green TravelPass	Bondi Junction, Chatswood, Kogarah, Kingsgrove, Epping, Olympic Park and Bankstown via Lidcombe or via Sydenham
YellowTravelPass	Bondi Junction, Waitara (via North Sydney), Epping, (via North Strathfield), Olympic Park, Camellia, Parramatta, Granville, Chester Hill, Panania and Jannali
Pink TravelPass	Bondi Junction, Hornsby (via Epping or via North Sydney), Carlingford, Olympic Park, Seven Hills, Liverpool, Holsworthy (via East Hills), Engadine and Caringbah
Purple TravelPass	Bondi Junction, Cowan, Carlingford, Olympic Park, Richmond, Emu Plains, Macarthur (via Granville, via Regents Park or via East Hills), Otford and Cronulla

F | Approaches to regulation against selection criteria

Methodology to determine the revenue requirements

IPART's selection criteria	Building blocks	Operating and maintenance	Long-run marginal cost
Encourages CityRail to be more disciplined in its spending	By including all costs including building blocks provides the greatest disciplines	Provides less discipline than building blocks because some costs are excluded	Does not provide the same transparency as building blocks so creates less discipline
Encourages CityRail to reduce the costs of providing its services while also improving the quality, reliability and safety of these services	By including all costs including capital building blocks provides the greatest incentive powers	Provides less incentives than building blocks because some costs are excluded	Does not provide the same transparency as building blocks so creates less incentives
Promotes economic efficiency of rail services	For the same reasons as above promotes the most economic efficiency	For the same reasons as above promotes less economic efficiency than building blocks	For the same reasons as above promotes less economic efficiency than building blocks
Is consistent with government policy objectives	Has regard to Government policy objectives	Has regard to Government policy objectives	May not factor in Government policy objectives as well as the other two approaches
Is targeted to and proportionate with the problem	Meets this criteria by transparently setting out all costs, funding shares etc	Meets this criteria but provide less transparency than building blocks on capital costs	Does not provide the same transparency as building blocks
Promotes clear and appropriate accountabilities	Meets this criteria by transparently setting out all costs, funding shares etc	Meets this criteria but provide less transparency than building blocks on capital costs	Does not provide the same transparency as building blocks
Increases transparency of decisions	Transparently includes all costs and externalities	Meets this criteria but provide less transparency than building blocks on capital costs	Does not provide the same transparency as building blocks
Is internally consistent, and consistent with regulatory approaches used in other industries	Widely used by regulators in many industries	Used in some other jurisdictions but with different circumstances to CityRail	Not as widely used as building blocks
Is practical, pragmatic and feasible	Meets this criteria	Meets this criteria	This approach is not suitable for CityRail at present because of impracticality
Is simple and understandable	Meets this criteria but arguably the operating and maintenance costs is more simple and understandable	Meets this criteria but arguably the operating and maintenance costs is more simple and understandable	Hard to understand for the average stakeholder

Source: IPART.

G Weighted average cost of capital (WACC)

IPART uses a real pre-tax WACC to determine the appropriate return on capital on the regulatory asset base. The WACC for a business is the expected cost of the various classes of capital (debt and equity), weighted to take into account the relative share of debt and equity in the total capital structure.

There are a number of input parameters to consider in determining an appropriate WACC range. Interest rates, inflation and the debt margin are dependent on current market rates. However, the market risk premium, tax rate and dividend imputation factor do not vary with the nature of the business. The equity beta, capital structure and debt margin can vary with the nature of the business.

In the draft report, IPART calculated the rate of return as 7.7 per cent, which was based on market conditions as at 4 August 2008. IPART has updated its estimate of the rate of return to reflect market conditions as at 29 October 2008. On the basis of this update and its decision on the appropriate debt margin for CityRail, IPART has determined that the rate of return for its final determination is 7.2 per cent. IPART did not receive any submissions on the values of the WACC parameters. The draft and final decisions are summarised in Table G.1.

Table G.1 CityRail WACC draft and final decisions

WACC Parameters	Draft decision (20-day average debt margin)	Final decision (based on IPART's traditional method of estimating the debt margin)
Nominal risk free rate	6.3 %	5.2%
Real risk free rate	2.6%	2.5%
Inflation	3.7%	2.7%
Market risk premium	5.5 - 6.5%	5.5 - 6.5%
Debt margin	2.3 - 3.2%	2.9-6.0%
Debt to total assets	50 to 40%	60%
Dividend imputation factor (gamma)	0.5 - 0.3	0.5 - 0.3
Tax rate	30%	30%
Equity beta	0.8 - 1.0	0.8 - 1.0
Cost of equity (nominal post tax)	10.7 - 12.8%	9.6 - 11.7%
Cost of debt (nominal pre-tax)	9.4 - 10.5%	8.1 - 11.2%
WACC range (real pre-tax)	6.8 - 8.8%	6.5 - 9.7%
WACC (real pre-tax)	7.7%	7.2%

IPART's final decisions in respect of each of the WACC parameters are discussed below.

G.1 Nominal and real risk free rates and inflation

In its draft decision, IPART used the 20-day average yield on the 10-year Commonwealth Government Bond Rate Index for the risk free rate. It determined the long-term inflation forecast by using the difference between the nominal and real risk free rates, with the real risk free rate being measured as the 20-day average yield in Treasury indexed bonds with a 20 basis points adjustment for a potential bias in real yields.

For its final decision, IPART has continued to estimate the nominal risk free rate using the 20-day average yield on the 10-year Commonwealth Government Bond Rate Index. IPART has derived the long-term inflation forecast by using the difference between the nominal and real risk-free rates, with the real risk-free rate being measured as the 20-day average yield in Treasury indexed bonds.

IPART has considered issues recently raised by NERA²¹², the Allen Consulting Group (ACG)²¹³, the Reserve Bank of Australia (RBA)²¹⁴ and the Australian Treasury²¹⁵ regarding the bias in the yields on inflation-indexed bonds.

To test whether there is a bias in the real risk free rate used by Australian regulators, NERA calculated the margin that the real and nominal corporate bonds were yielding over the equivalent real and nominal government bonds. NERA found that the margin for real corporate bonds became larger than the margin for nominal corporate bonds from the last quarter of 2004 and increased until it reached a value of approximately 20 basis points by March 2007.

NERA considers that given this evidence of an emerging bias, both nominal and real government bonds are becoming poor proxies for nominal and real-risk free rates under the CAPM, and that upward adjustments should be made to their yields to correct for the biases.

²¹² NERA, *Bias in inflation -indexed CGS yields as a proxy for the CAPM risk-free rate*, March 2007; NERA, *Absolute bias in (nominal) Commonwealth Government Securities*, June 2007.

²¹³ ACG, *Relative bias of inflation indexed CGS yields as a proxy for the CAPM risk-free rate*, July 2007.

²¹⁴ RBA "Letter to ACCC", 9 August 2007.

²¹⁵ Australian Treasury, *The Treasury bond yield as a proxy for the CAPM risk-free rate*, Letter to the ACCC, 7 August 2007.

ACG believes that there is evidence that the yields on real government bonds result in a downward-biased estimate of the real risk-free rate. The reasons offered for this view by ACG were as follows:

- ▼ The forecasts of inflation implied by returns on government bonds are generally above the target inflation range of the RBA of two per cent to three per cent. As at 28 June 2007, the average annual level of inflation implied by the 2010, 2015 and 2020 inflation indexed bonds were 2.8 per cent, 3.3 per cent and 3.5 per cent respectively. The level of inflation implied by the 10 year nominal and real risk-free rates calculated using the Fisher equation was 3.3 per cent.
- ▼ ACG's consultation with a number of financial market participants on the conditions in the market for real government bonds indicated that most market participants consider that there is an element of downward bias in yields of these bonds.

The RBA and the Australian Treasury's views are that that:

- ▼ demand for inflation indexed bonds has increased as supply has fallen
- ▼ turnover for these bonds is low and the market is not liquid, and
- ▼ as Treasury Indexed Bonds mature without replacement, their usefulness for estimating long term real risk free rates will diminish.

IPART is of the opinion that there currently is a bias in the real bond market due to severe shortages of supply. Given this, IPART has adjusted its inflation forecast downwards by 20 bps. IPART will continue to monitor developments in the area of market-based inflation forecasts and undertake further research and analysis.

Table G.2 demonstrates how IPART arrives at its expected inflation rate of 2.7 per cent.

Table G.2 IPART – expected inflation

percent	20-day average yield as at 29 October 2008
Nominal risk free rate	5.2
Real risk free rate	2.3
Scarcity adjustment	0.2
Expected inflation	2.7

G.2 Debt margin

The debt margin represents the cost of debt a company has to pay above the nominal risk-free rate. The debt margin is related to current market interest rates on corporate bonds, the maturity of debt, the assumed capital structure and the credit rating.

IPART did not receive any submissions on the debt margin. However, IPART has reviewed this parameter because it believes that it may be unrepresentative of the cost of debt incurred by CityRail.

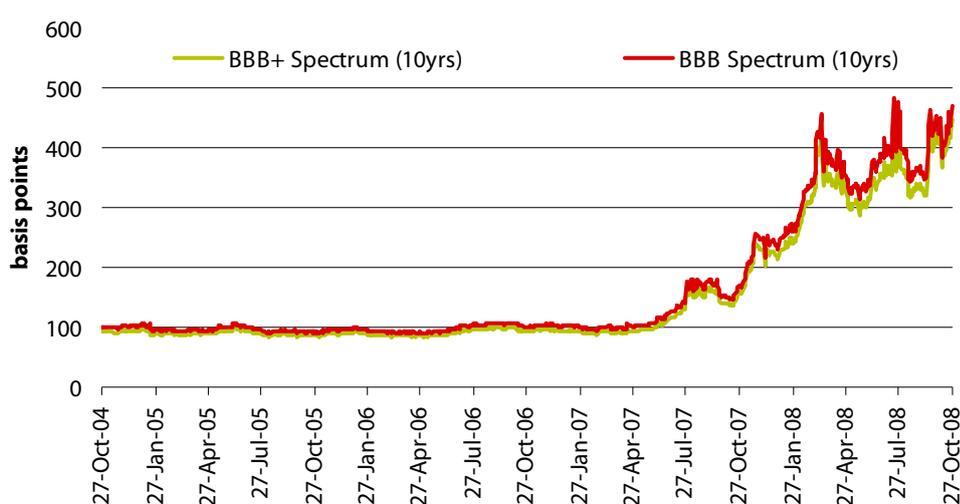
G.2.1 IPART's analysis

The cost of debt in the WACC estimates the expected future returns required by debt providers. It is measured as a margin above the risk free rate, or the marginal rate at which a company can raise debt financing (rather than using the actual weighted average of the existing cost of debt of the entity). A risk averse utility will refinance around the time of the decision so that their actual debt costs equal allowed debt costs.

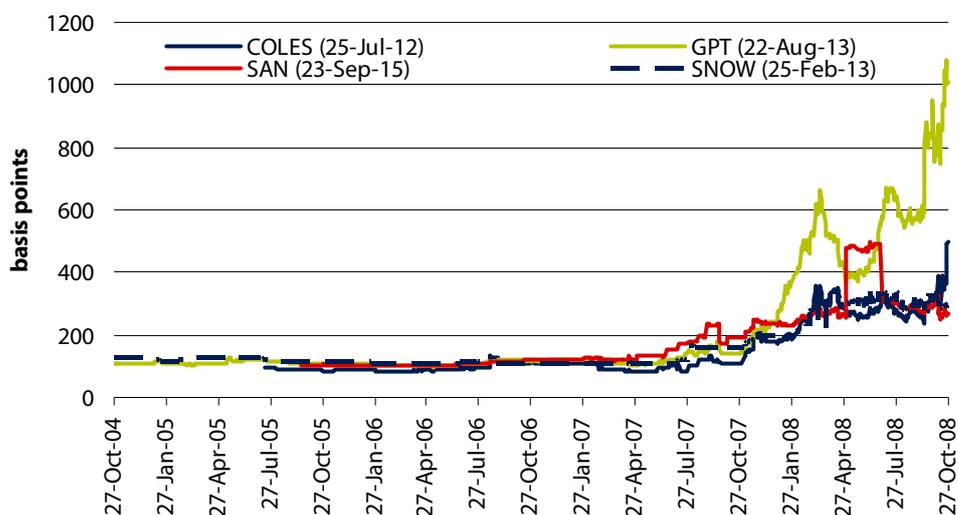
IPART in the past has based its debt margin estimates on *fair yield curve* data from CBASpectrum for investment grade BBB and BBB+ rated Australian corporate bonds with a maturity of up to 10 years. IPART averages the yield for twenty days prior to a date close to the time of its decision. A fair yield curve is a forecast of the yield curve which can be used to assess whether bonds are over -or under-priced, or used to price new bond issues. The 10 year maturity benchmark is used because it matches the 10 year Commonwealth bond yield that is used to calculate the nominal risk free rate in the WACC model.

The current financial crisis has resulted in very volatile yields on corporate debt. As an illustration of current market volatility, IPART has computed the 20-day average debt margins of the proxy securities it uses (Figures G.1 and G.2).

Figure G.1 BBB+ and BBB fair yields



Data source: CBASpectrum.

Figure G.2 BBB+ and BBB corporate bonds yields

Data source: CBASpectrum.

Figures G.1 and G.2 show that yields have substantially increased since the middle of 2007²¹⁶.

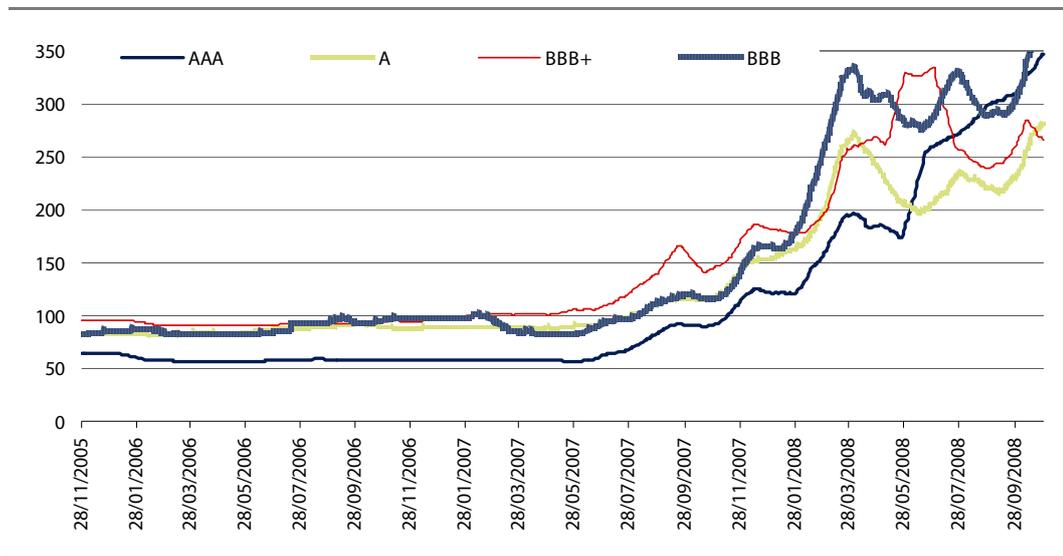
Yields prior to the middle of 2007 were fairly stable. Since then, a re-pricing of risk is evident, in particular with regards to:

- ▼ industry-specific issues (property and financial services) and
- ▼ business-specific issues (mainly debt and its re-financing).

IPART also considered historical yields on corporate bonds by credit rating of all corporate debt issues in Australia excluding financial, property and foreign government issued securities (Figure G.3)²¹⁷.

²¹⁶ IPART did not use the GPT issue in its CityRail draft decision.

²¹⁷ IPART has removed financial and property-related issues to isolate its analysis from the current credit crisis as much as possible.

Figure G.3 Australian debt margins by credit rating

Data source: CBASpectrum.

Figure G.3 indicates that there has been a narrowing in the debt margins between AAA and BBB rated debt. There is one occasion where the AAA yield curve is actually higher than the BBB yield curve (in August 2008). If the credit rating is a reliable indicator of credit risk, one would assume that AAA rated debt is always cheaper than BBB rated debt. One possible explanation could be that the term to maturity of the two credit ratings is different. However, this is not the case as:

- ▼ AAA rated bonds include term to maturities between less than 1 to 7 years and
- ▼ BBB rated bonds include term to maturities between 1 and 4 years.

Table G.3 shows the securities included in the analysis in Figure G.3.

Table G.3 Australian corporate bond issues excluding financials, property and foreign issues

Issuer	Term	Rating	Industry
SPI Australian Finance Pty Ltd [AUSTRAN]	0.3	A	Util.
Transco [TRAN]	0.4	A	Util.
Australia Post [AUSPOST]	0.7	AAA	Ind.
Gasnet Australia (wrapped by MBIA) [GPUW]	0.7	AAA	Util.
CSR Limited [CSR]	0.7	BBB+	Ind.
Australian Gas and Light Company [AGL]	1.2	BBB	Util.
Electranet (wrapped by FSA) [ELC]	1.3	AAA	Util.
Transurban Finance Company [TCLAU]	1.4	BBB+	Ind.
Citipower (wrapped by AMBAC) [CPOWWRAP]	1.6	AAA	Util.
Snowy Hydro (wrapped by XL Capital) [SNOWWRAP]	1.6	AAA	Util.
Telstra Corp Limited [TEL]	1.7	A	Telecom
Fosters Group Limited [FOSTERS]	1.7	BBB	Staples
Southcorp [SCRP]	1.7	BBB	Staples
Brisbane Airport Corporation (wrapped by MBIA) [BACL]	2	AAA	Ind.
Network Rail (Gtd) [NRAIL]	2	AAA	Ind.
Alinta (wrapped by FSA) [ALINTA]	2.2	AAA	Util.
Fairfax (John) Holdings Limited [FFAXH]	2.9	BBB	Discr.
EPG (wrapped by AMBAC) [EPG_AMBAC]	3	AAA	Util.
TABCORP Holdings Limited [TABCOHL]	3.2	BBB+	Discr.
SPI Electricity and Gas [SPI EL]	3.3	A	Util.
SPI Australian Finance Pty Ltd [AUSTRAN]	3.4	A	Util.
Lane Cove Tunnel Finance (wrapped by MBIA) [LCTF]	3.4	AAA	Ind.
Australia Post [AUSPOST]	3.7	AAA	Ind.
Coles Group Limited [COLES]	4	BBB	Discr.
Southern Cross Airports (wrapped by MBIA) [SCA]	4.2	AAA	Ind.
Telstra Corp Limited [TEL]	4.3	A	Telecom
Snowy Hydro [SNOW]	4.6	BBB+	Util.
Telstra Corp Limited [TEL]	5.3	A	Telecom
Lane Cove Tunnel Finance (wrapped by MBIA) [LCTF]	5.4	AAA	Ind.
Telstra Corp Limited [TEL]	6.7	A	Telecom
Santos [SAN]	7.2	BBB+	Energy
Australian Pacific Airports Corp (wrapped by MBIA) [MACL]	7.4	AAA	Ind.

Source: CBASpectrum.

IPART considers that a re-pricing of credit risk may be taking place in the Australian debt market. It considers that the debt margin range generated by IPART's traditional methodology used in the draft decision²¹⁸ would overestimate the actual

²¹⁸ Based on the BBB and BBB+ fair yield curves and the corporate bond issues from Santos, Snowy Hydro and Coles.

cost of debt a commercial public rail transport operator would face in current conditions. In order to cross-check the current approach, IPART constructed an alternative portfolio based on Australian utility-issued debt only (excluding telecommunications)²¹⁹.

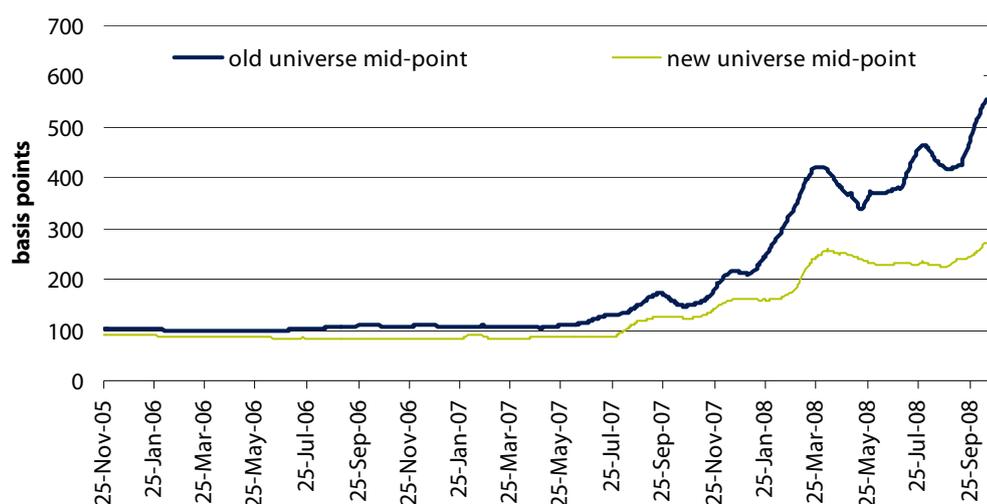
Table G.4 Australian utility issued corporate debt (as at 29 October 2008)

Issuer	Term	Issue Date	Rating	Industry
Snowy Hydro [SNOW]	4.6	25-Feb-03	BBB+	Util.
Australian Gas and Light Company [AGL]	1.2	1-Aug-02	BBB	Util.
Gasnet Australia (wrapped by MBIA) [GPUW]	0.7	12-Jan-06	AAA	Util.
Electranet (wrapped by FSA) [ELC]	1.3	12-Jan-06	AAA	Util.
Citipower (wrapped by AMBAC) [CPOWWRAP]	1.6	28-Feb-03	AAA	Util.
Snowy Hydro (wrapped by XL Capital) [SNOWWRAP]	1.6	25-Feb-03	AAA	Util.
Alinta (wrapped by FSA) [ALINTA]	2.2	22-Sep-05	AAA	Util.
EPG (wrapped by AMBAC) [EPG_AMBAC]	3	29-Jul-04	AAA	Util.
SPI Australian Finance Pty Ltd [AUSTRAN]	0.3	11-Jun-04	A	Util.
Transco [TRAN]	0.4	28-Mar-02	A	Util.
SPI Electricity and Gas [SPI EL]	3.3	3-Nov-04	A	Util.
SPI Australian Finance Pty Ltd [AUSTRAN]	3.4	30-Nov-04	A	Util.

Source: CBASpectrum.

IPART then compared the 20-day average debt margins generated using its traditional methodology and the universe of securities presented in Table G.4.

Figure G.4 Debt margin mid-points (traditional and new universe of securities)



Data source: CBASpectrum.

²¹⁹ Including the telecommunication issues would not affect the debt margin range. However, the telecommunication companies are not a good proxy for the businesses IPART regulates.

Figure G.4 demonstrates the pick-up in yields inherent in IPART's traditional methodology compared to a portfolio of utility-issued debt. IPART also notes that prior to mid-2007, the difference between the two estimates was minimal.

IPART does not, at this stage, propose to change its methodology to estimate the debt margin. However, the analysis derived from the CBASpectrum data indicates that there has been a considerable pick-up in corporate credit spreads of proxy bonds that are included in IPART's traditional methodology. IPART is concerned that in the current environment the traditional approach is particularly volatile due to the small number of proxies included. In particular, IPART's analysis of credit spreads of only utility-issued bonds indicates that while there has been a pick-up in yields since mid-2007, this pick-up is considerably less than that evident using IPART's traditional methodology (Table G.5).

Table G.5 Debt margins as at 29 October 2008

Includes 12.5 bps debt raising cost	Lower bound	Upper bound
Traditional methodology	2.9%	6.0%
Utility issued bonds only	2.5%	3.4%

Source: CBASpectrum and IPART analysis.

Table G.5 indicates that the differential between IPART's traditional methodology and the only utility-issued bond portfolio is driven by the upper-bound of the debt margin range. IPART is concerned that the upper-bound of the traditional debt margin estimate may not be relevant for CityRail. It notes that the debt margin estimate generated using the only utility-issued bond portfolio is more consistent with historical averages (Figure G.4).

IPART will be conducting more work in the future on how it should estimate the debt margin. For the purpose of this decision, IPART has continued to use its traditional approach to determining the range for the debt margin, but has had regard to the alternative approach in setting the point estimate within that range.

G.3 Equity beta

Beta (β_e) is a measure of the risk of the asset relative to the market index. It is measured as the covariance of the excess returns of the asset with the excess returns of the market. Thus, beta measures the risk of the asset relative to the co-movement with the overall market that cannot be eliminated by the investor through diversification.

The equity beta for a business that is not publicly traded is usually estimated using data from comparable Australian publicly traded companies using the following approach:

- ▼ Removing the effect of the comparable business's gearing and tax regime by de-levering the equity beta to obtain the asset beta. This is done by using the Monkhouse formula:

Box 1 Monkhouse formula²²⁰

$$\beta_e = \beta_a + (\beta_a - \beta_d) \times \left[1 - \left(\frac{R_d}{1 + R_d} \right) \times (1 - \gamma) \times Tc \right] \times \frac{D}{E}$$

Where β_e is the equity beta; β_a is the asset beta; β_d is the debt beta; R_d is the cost of debt; γ is the value of imputation tax credits; Tc is the statutory tax rate; E is the proportion of equity in capital structure and D is the proportion of debt in the capital structure.

- ▼ Adjusting (re-levering) the asset beta to reflect the gearing and tax rate applicable to the not publicly traded business. Again, the Monkhouse formula is used to do this.

Market practitioners, in estimating a beta point for an unlisted company, then either adjust for known differences in undiversifiable risk, or would use a range of beta estimates.

In its draft decision, IPART adopted an equity beta range of 0.8 to 1.0. This value is consistent with the value assigned to other businesses IPART regulates.

IPART did not receive any submissions on the equity beta and is not aware of any new information on the value of equity beta for CityRail.

G.4 Imputation tax credits (gamma)

Under the Australian dividend imputation system, investors receive a tax credit (franking credit) for the company tax they have paid. This ensures that the investor is not taxed twice on their investment returns (ie, once at the company level and once on the personal tax level).

²²⁰ The Monkhouse formula is one of several different re- and de-levering formulae available. It is the most commonly used formula and was first published in: Monkhouse, P. "Adapting the APV valuation methodology and the beta gearing formula to the dividend imputation tax system", *Accounting and Finance* 37, 1 May 1997, pp 69 - 88.

The value of the imputation tax credits is represented in the CAPM by 'gamma'. The rationale behind this, including the value of gamma in the CAPM, is that as investors are receiving a tax credit from their investment, they would accept an investment with a lower return than if there were no tax credits attached to this investment. The gamma is an important input in the CAPM, as a high value (for example, one) would reduce the cost of capital considerably.

In its draft decisions, IPART assumed a gamma value range of 0.5 to 0.3. This range was based on:

- ▼ the fact that in a fully segregated market, the value of gamma should be close to 1
- ▼ academic studies which valued gamma at between 1 and zero and
- ▼ independent expert reports which assign no value to gamma.

IPART did not receive any submissions on the value of gamma and is not aware of any new information on the value of gamma.

G.5 Market risk premium

The Market Risk Premium (MRP) represents the additional return over the risk free rate of return that an investor requires to compensate for the risk of investing in a diversified equity portfolio.

In its draft decision, IPART used a market risk premium range of 5.5 to 6.5 per cent.

IPART did not receive any submissions on the market risk premium and it is not aware of any new information on the value of gamma.

G.6 Capital structure and the tax rate

When determining the level of gearing used to calculate the WACC, IPART adopts a benchmark capital structure, rather than the actual financial structure, to ensure that customers will not bear the cost associated with an inefficient financing structure.

In its draft decision, IPART used a benchmark capital structure of 60 per cent debt and a tax rate of 30 per cent.

IPART did not receive any submissions on the capital structure or the tax rate and is not aware of any new information on the value of gamma.

H | TravelPass sample journeys

H.1 TravelPass discounts on selected journeys

Chapter 13 explains the methodology that IPART has adopted for pricing TravelPasses. Tables H.1 and H.2 below use the Red TravelPass example to illustrate the effective discounts that will be obtained compared to the price of purchasing weekly tickets on each mode of transport individually. IPART has undertaken similar analysis for each of the other TravelPass, which produces similar results with regard to discounts obtained for different journeys.

In 2012, Red TravelPasses will be equal to the price of the “assumed journey” undertaken using a TravelPass:

- ▼ 10 km weekly rail fare
- ▼ 1-2 section bus TravelTen.

This means that for the assumed journey, there is no additional discount on the TravelPass compared to the price of purchasing weekly fares separately for each mode.

In formulating the assumed journeys for each TravelPass, IPART has taken a conservative view of TravelPass travel patterns. As shown in Tables H.1 and H.2, many users may travel more than the minimum 1-2 sections on the bus, and some users will also use the ferry as part of their journey.

In 2009, TravelPass fares will be transitioning to the assumed journey fare, and so for a passenger undertaking the assumed journey, they will still access a discount of 10 per cent.

However, IPART notes that many other combinations of journeys can be undertaken using the Red TravelPass. This means that in reality, a variety of discounts will apply to Red TravelPasses depending on the actual journey. Table H.1 shows that in 2009, for the selected journeys, the discounts range for 3 per cent to 40 per cent compared to the price of purchasing weekly fares for each mode separately.

Table H.1 TravelPass discounts in 2009 for typical journeys that may be undertaken using the Red TravelPass

Route	Weekly fare using individual fares for each mode	Rail distance	Bus distance	Ferry fare	TravelPass fare	Discount compared to the weekly fares
<i>Dover Heights to City</i>						
Dover Heights to Bondi Junction	\$15.20	1-2 sections				
Bondi Junction to Central	\$27.00	10 km				
Sum	\$42.20				\$38.00	10%
<i>Marrickville to UNSW</i>						
Marrickville to Central	\$27.00	10 km				
Central to UNSW	\$25.60	3-5 sections				
Sum	\$52.60				\$38.00	28%
<i>Maroubra to Strathfield</i>						
Maroubra Junction - Central	\$33.60	6-9 sections				
Central - Strathfield	\$30.00	15 km				
Sum	\$63.60				\$38.00	40%
<i>Glebe to Kings Cross</i>						
Glebe to Central	\$15.20	1-2 sections				
Central to Kings Cross	\$24.00	5 km				
Sum	\$39.20				\$38.00	3%
<i>Ashfield to Watsons Bay</i>						
Ashfield to Circular Quay	\$30.00	15 km				
Circular Quay to Watsons Bay	\$33.50			Inner city		
Sum	\$63.50				\$38.00	40%

Note: Bus journeys are denoted in green, train journeys are denoted in orange, and ferry journeys are represented in blue.

Source: IPART fare determinations.

Table H.2 shows the discounts that will be obtained using a TravelPass compared to the price of purchasing fares for each individual mode in 2012. These discounts are lower than for 2009, and if a TravelPass is purchased for the assumed journey, which accords with the journey from Dover Heights to the City, there is no additional discount compared to purchasing fares on each mode. This means that the frequency discount on the TravelPass will be equal to the frequency discount on other weekly fares.

Table H.2 TravelPass discounts in 2012 for typical journeys that may be undertaken using the Red TravelPass

Route	Weekly fare using single mode fares (real \$08/09)	Rail distance	Bus distance	Ferry fare	TravelPass fare	Discount compared to the weekly fares
<i>Dover Heights to City</i>						
Dover Heights to Bondi Junction	\$15.20		1-2 sections			
Bondi Junction to Central	\$29.00	10 km				
Sum	\$44.20				\$44.00	0%
<i>Marrickville to UNSW</i>						
Marrickville to Central	\$29.00	10 km				
Central to UNSW	\$25.60		3-5 sections			
Sum	\$54.60				\$44.00	19%
<i>Maroubra to Strathfield</i>						
Maroubra Junction - Central	\$33.60		6-9 sections			
Central - Strathfield	\$32.00	15 km				
Sum	\$65.60				\$44.00	33%
<i>Glebe to Kings Cross</i>						
Glebe to Central	\$15.20		1-2 sections			
Central to Kings Cross	\$26.00	5 km				
Sum	\$41.20				\$44.00	-7%

Route	Weekly fare using single mode fares (real \$08/09)	Rail distance	Bus distance	Ferry fare	TravelPass fare	Discount compared to the weekly fares
<i>Ashfield to Watsons Bay</i>						
Ashfield to Circular Quay	\$32.00	15 km				
Circular Quay to Watsons Bay	\$33.50			inner city		
Sum	\$65.50				\$44.00	33%

Note: Bus journeys are denoted in green, train journeys are denoted in orange, and ferry journeys are represented in blue.

Source: IPART fare determinations.