



Independent Pricing and Regulatory Tribunal

Review of fares for metropolitan and outer metropolitan bus services from January 2014

IPART's proposed fare setting approach

Transport — Issues Paper
May 2013



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The Tribunal members for this review are:

Dr Peter J Boxall AO, Chairman

Mr James Cox PSM, Chief Executive Officer and Full Time Member

Mr Simon Draper, Part Time Member

Inquiries regarding this document should be directed to a staff member:

Melanie Mitchell (02) 9113 7743

Fiona Towers (02) 9290 8420

Independent Pricing and Regulatory Tribunal of New South Wales

PO Box Q290, QVB Post Office NSW 1230

Level 8, 1 Market Street, Sydney NSW 2000

T (02) 9290 8400 F (02) 9290 2061

www.ipart.nsw.gov.au

Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due by Friday 14 June 2013.

We would prefer to receive them electronically via our online submission form <www.ipart.nsw.gov.au/Home/Consumer_Information/Lodge_a_submission>.

You can also send comments by fax to (02) 9290 2061, or by mail to:

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QVB Post Office NSW 1230

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We may choose not to publish a submission—for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. IPART will then make every effort to protect that information, but it could be disclosed under the *Government Information (Public Access) Act 2009* (NSW) or the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW), or where otherwise required by law.

If you would like further information on making a submission, IPART's submission policy is available on our website.

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1 Introduction

The *Passenger Transport Act 1990* requires that the Independent Pricing and Regulatory Tribunal of NSW (IPART) investigates and reports on appropriate maximum fares for bus services in NSW. This includes government and private bus services in Sydney, Newcastle, the Central Coast, Wollongong, the Blue Mountains and the Hunter regions.

Transport for NSW is responsible for providing metropolitan and outer metropolitan bus services in NSW. These services are delivered through contracts with a number of bus service providers across 25 regions. The operator for a particular region or regions is paid an amount by the Government to provide bus services in that region to the standard required in the contract and must report on their service performance regularly to Transport for NSW.

IPART has no role in setting or enforcing the bus service contracts. Under the Government's fare harmonisation policy, the same fares apply to all 25 contract regions. Farebox revenue obtained from IPART determined fares does not impact on an operator's revenue and is used for reducing the cost to taxpayers of payments under the bus service contracts. Therefore IPART's role in setting maximum fares is effectively to allocate the cost of providing these services between bus passengers and taxpayers.

In its 2010-2013 determination, IPART set maximum bus fares over a 4-year period based on a detailed, 'building block' cost analysis of the 4 largest contract regions. IPART's current determination is due to be replaced at the end 2013 and we have commenced a review of fares to apply from 1 January 2014. This issues paper discusses the key issues that we have identified for this review and seeks feedback on our proposed approach.

1.1 Overview of IPART's proposed approach

Our proposed approach to this review is broadly consistent with the method we used to determine bus fares from 2010 to 2013. We propose to continue to use the building block method, based on the costs of providing bus services in the 4 largest contract regions, to set fares over a multi-year period. However, we propose to set a maximum average increase across tickets, rather than setting a maximum allowable fare for each ticket type, similar to that used in our recent fare determinations for CityRail and Sydney Ferries.¹

¹ IPART, *Review of maximum fares for CityRail services from January 2013 – Final Report*, November 2012; IPART, *Review of maximum fares for Sydney Ferries' services from January 2013 – Final Report*, November 2012.

The building block approach maintains consistency with the methodology used in our 2010-2013 determination. It provides a rigorous and transparent analysis of the efficient costs of providing bus services in the 4 largest contract regions, which are not subject to competitive tender. In our previous bus fare determination, we considered other forms of regulation, including a cost index and Total Factor Productivity approach and concluded that they were not obviously superior to a building block approach.

We propose to continue to base our analysis on the 4 largest contract regions, which are the STA metropolitan regions in Sydney's eastern suburbs, northern beaches, inner west and lower northern suburbs. These regions account for around 70% of all bus trips made by fare-paying passengers, so this approach is most likely to result in fares that ensure the majority of passengers make a fair contribution to costs, and encourage the optimal use of bus services. Fares will be set on the basis of the costs of providing bus services in these regions and then applied to other metropolitan and outer metropolitan regions to ensure fare harmonisation across regions. We consider that reviewing the efficient costs and benefits of providing bus services in an expanded sub-set of the 25 contract regions would result in much higher fares that do not reflect the efficient costs of providing services for the majority of passengers.

To determine fares, we will:

- ▼ identify how much it would cost an efficient bus operator to provide contracted bus services in the 4 largest contract regions
- ▼ decide how much of this total efficient cost should be paid for by taxpayers (through government subsidies) and how much should be paid for by bus passengers (through fares), after considering:
 - the total value of the external (community) benefits generated by the contracted bus services
 - the optimal revenue required from fares to balance the benefits that passengers, motorists and the environment receive from lower fares and the benefits that the service provider (Transport for NSW) and the community receive from higher fares
 - the likely implications for fare affordability and patronage levels
- ▼ determine fares for tickets so that passengers and taxpayers each pay their fair share of the efficient costs.

We propose to determine an average change in fares rather than determine maximum individual fares for each ticket type. This provides the Government with greater flexibility to set individual fares to facilitate the introduction of electronic ticketing (the Opal card). This approach still gives passengers certainty that average fares will not increase above the maximum cap. This is the approach we took in our recent CityRail and Sydney Ferries' fare determinations.

We propose to set bus fares for the next 3 to 5 years. We consider that a multi-year determination provides greater certainty to passengers and Government regarding fare levels and the level of Government funding required for bus services in the medium-term. It is a better use of resources than revisiting the determination on an annual basis and is also consistent with our recent fare determinations for CityRail and Sydney Ferries.

1.2 Review process

As part of our review, we will consult with the public on our approach to setting bus fares. We invite interested parties to make written submissions on this issues paper by 14 June 2013. Late submissions may not be accepted. All submissions will be published on our website along with the release of our draft report.

We will engage consultants to assist us in estimating efficient costs and external benefits generated by bus services in the 4 largest contract regions. We will publish these consultants' reports on our website.

We will release a draft report and recommendations and invite further submissions from interested parties. We will hold a public roundtable discussion to give stakeholders further opportunity to contribute their views. After considering stakeholder comments and submissions, we will provide a final report and fare determination. The indicative timetable for our review is in Table 1.1.

Table 1.1 Indicative timetable for review

Action	Date
Release issues paper	16 May 2013
Receive submissions on issues paper	14 June 2013
Release draft report and determination as well as consultants' reports on costs and external benefits	August/ September 2013
Hold public roundtable discussion	September 2013
Receive submissions on draft report and determination and consultants' reports	October 2013
Provide final report and fare determination to Government	Late November 2013

Details on how to make a submission can be found on page iii of this issues paper.

1.3 Purpose and structure of this issues paper

This issues paper is to assist stakeholders to make submissions by identifying and explaining the key issues for this review. It is structured as follows:

- ▼ Chapter 2 outlines the context for the review, including the policy environment in which bus fares are regulated
- ▼ Chapter 3 sets out our proposed approach to this review in greater detail
- ▼ Chapter 4 discusses how we intend to establish the efficient costs of providing contracted bus services over the determination period
- ▼ Chapter 5 discusses our approach to sharing the efficient costs between passengers and taxpayers
- ▼ Chapter 6 discusses our approach to determining the appropriate level of fares to recover passengers' share of costs and how we will assess the impacts of our fare decision.

Each of these chapters highlights one or more issues on which we seek stakeholder comment. For convenience, a complete list of these issues is also provided below. However, please note that the list is not exhaustive and stakeholders are free to raise and discuss any other issues they consider relevant to this review.

1.4 List of issues for comment

The specific issues on which IPART seeks comment are listed below.

- | | | |
|---|---|----|
| 1 | Should we base our determination of fares on the costs and benefits of providing bus services in the 4 largest contract regions (STA regions)? | 15 |
| 2 | Should the length of the determination period be 3, 4 or 5 years? | 16 |
| 3 | We propose to use a building block approach to establish the efficient costs of providing bus services in the 4 largest contract regions. Do stakeholders agree with this approach? | 19 |
| 4 | Have there been any changes in the 4 largest regions (STA regions) that would warrant a revaluation of existing assets that make up the RAB? | 20 |
| 5 | We propose to allocate the efficient costs to be recovered from passengers and taxpayers on the basis of the external benefits of bus services in the 4 largest contract regions. Do stakeholders agree with this approach? | 25 |
| 6 | Should we determine the average change in fares rather than determine maximum individual fares for bus services? | 29 |

7	Should we allow a 'catch up' factor so that if fares increase by less than the maximum allowed amount in one year, the foregone revenue can be recovered in subsequent years?	29
8	Should we apply additional price limits to any individual fare type(s)?	29
9	Should we consider the merits of introducing peak and off-peak fares for buses?	29
10	Are our proposed pricing principles relevant to determining fares for buses? Are there any other factors that we should take into account?	31
11	Are there any other factors we should consider when determining forecast patronage growth over the next 3 to 5 years?	32

2 Purpose and context for this review

IPART conducts its reviews of bus fares subject to section 28J of the *Passenger Transport Act 1990* (Passenger Transport Act). Under the Passenger Transport Act, IPART is required to have regard to a number of factors in our review. In addition, there are a number of contextual factors that will influence our approach. These stem primarily from the contractual arrangements that the Government has in place for delivering bus services, as well as Government policy decisions that affect bus services. These include the roll out of electronic ticketing, planned expansion of light rail services in the CBD and expansion and redesign of bus services.

These factors will have an impact on our approach to determining fares and the extent to which we can influence incentives for an efficient supply of bus services through fare regulation. Section 2.1 outlines the legislative requirements that we are required to have regard to under the Passenger Transport Act. Section 2.2 explains the bus contracting regime. Section 2.3 sets out the Government's policy on fare harmonisation and section 2.4 outlines our current form of fare regulation. Sections 2.5 and 2.6 discuss changes in Government policy since our last fare determination and changes that will affect our new determination, including the Government's Transport Master Plan.

2.1 Legislative requirements

The Passenger Transport Act gives IPART powers to determine appropriate maximum fares for bus services supplied under the service contracts as well as conduct periodic reviews of fare pricing policies with respect to these services.

In making its determinations, IPART is required to consider:

- ▼ the cost of providing the services concerned
- ▼ the protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standards of service
- ▼ the need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers
- ▼ the need to maintain ecologically sustainable development by appropriate pricing policies that take account of all of the feasible options to protect the environment
- ▼ the social impact of the determination
- ▼ standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise) and any suggested or actual changes to those standards
- ▼ contractual arrangements prevailing in the industry
- ▼ such other matters as the Tribunal considers relevant.²

2.2 Bus service contracting regime

Transport for NSW is responsible for providing bus services in the Sydney metropolitan and outer metropolitan regions. These services are delivered through contracts with a number of bus service providers across 25 regions. Operators hold a contract for a particular region or regions and are paid an amount by the Government to provide specified bus services in that region. The operators must deliver these services to the standard required in the contracts and must report on their service performance regularly to Transport for NSW.

This regime was introduced in 2005/06 as part of the former Government's bus reform program. Contracts were issued for 7 years and are due to expire in 2012/13 and 2013/14. The operators holding contracts include a number of private bus operators and one public operator, the State Transit Authority of NSW (STA). The STA has three businesses that provide bus services in metropolitan and outer metropolitan areas:

- ▼ Sydney Buses, which provides bus services in 4 metropolitan regions covering Sydney's inner west, lower north, eastern suburbs and northern beaches
- ▼ Newcastle Buses and Ferries Services, which provides bus services in Newcastle (and operates the Newcastle or Stockton Ferry service)
- ▼ Western Sydney Buses, which operates the Liverpool to Parramatta transit way (T-way).

² http://www.austlii.edu.au/au/legis/nsw/consol_act/pta1990248/s28j.html, accessed 3 May 2013.

Appendix A shows a map of the metropolitan and outer metropolitan contract regions.

On 1 May 2012, the Government announced that:

Private bus operators in Sydney will be required to competitively tender for existing metropolitan bus contracts to drive service improvements for customers... Ms Berejiklian said the introduction of tendering for private bus operator regions will be staged over two tender rounds over three years, commencing July 2012.³

To date, 4 new contracts have been awarded in metropolitan bus regions. Of these, 2 were re-awarded to existing contract holders and 2 were awarded to new operators. These contracts have been awarded for 5 years, with a 3-year right of renewal subject to performance. The new operators began to take over transport operations in April 2013. A further 4 metropolitan bus contracts have been opened to competitive tender in 2013.⁴

The main source of revenue for operators under the contracts is a monthly payment from Transport for NSW. This payment is determined according to a formula to compensate operators for the costs incurred in fulfilling their service obligations under their contract. Farebox revenue collected by operators is returned to Transport for NSW.

Table 2.1 lists the bus operators and share of total boardings by region in 2011/12.

³ NSW Minister for Transport, Media Release, *New Bus Contracts to drive improvements for customers*, Tuesday 1 May 2012.

⁴ NSW Minister for Transport Media Release, *New bus contracts benefit customers and taxpayers*, Wednesday 7 November 2012.

Table 2.1 Current bus operator and share of boardings by region in 2011/12

Metropolitan Buses			Outer metropolitan buses		
Region	Operator	Share of boardings	Region	Operator	Share of boardings
1	Busways	4.0%	1	Rover Coaches	0.1%
2	Management Company	1.2%	2	Hunter Valley Buses	0.3%
3	Transit Systems Australia	2.7%	3	Port Stephen Coaches	0.1%
4	Hillsbus Co.	5.8%	4	Toronto Bus Services, Sugar Valley Coaches, Morisset Bus Service	0.3%
5	Punchbowl Bus Co.	1.2%	5	STA – Newcastle	2.3%
6	STA south (Sydney Buses)	21.1%	6	Busways Central Coast	1.7%
7	STA west (Sydney Buses)	11.3%	7	Red Bus Services	0.8%
8	STA north (Sydney Buses)	10.2%	8	Blue Mountains Bus Company	0.2%
9	STA east (Sydney Buses)	27.7%	9	North Wollongong Area Management (Dions Buses)	0.3%
10	Veolia Transport NSW	1.9%	10	Wollongong South (Premier Illawarra)	1.1%
11	Veolia Transport South	0.1%			
12	Veolia Transdev	0.7%			
13	Veolia Transport NSW	2.6%			
14	Forest Coach Lines	1.2%			
15	Busways Campbelltown	1.1%			
MBS	All operators	92.7%	OMBS	All operators	7.3%

Sources: Transport for NSW, *Annual Report, 2011-12*, Appendix 31; IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 Government and private bus services in Sydney, Newcastle, the Central Coast, Wollongong, the Blue Mountains and the Hunter regions, Final report*, December 2009, p 140; NSW Minister for Transport Media Release, *New bus contracts benefit customers and taxpayers*, Wednesday 7 November 2012.

2.3 Government policy on fare harmonisation across regions

Since 2007, the Government’s policy has been to harmonise metropolitan and outer metropolitan bus fares. This means that the same fares apply to all regions. This policy is designed to address equity concerns as well as aid the introduction of electronic ticketing. Our previous bus fare determinations implemented the Government’s policy of fare harmonisation across all contract regions (except Newcastle, which has time-based tickets).

2.4 Current form of regulation

In our 2010-2013 determination, we adopted a 'building block' approach to set bus fares. The building block approach involved:

- ▼ using efficiency reviews based on benchmarking to establish the efficient costs of providing bus services in the 4 largest contract regions
- ▼ establishing the share of efficient costs to be recovered from bus passengers and from taxpayers by estimating the value of external benefits generated by bus services in the 4 largest regions, and considering potential impacts on fare affordability and patronage levels
- ▼ converting the portion of the 4 largest regions' efficient costs to be recovered from passengers into fares by setting the maximum fare for each ticket type
- ▼ indexing fares by CPI-X during the 4-year determination period.

2.5 Changes in Government policy since 2009

A number of changes in Government policy since 2009 have affected the costs of bus transport services and the farebox revenue collected from bus passengers. These include:

- ▼ the introduction of MyZone in April 2010
- ▼ fare increases that are below the maximum outlined in our current determination
- ▼ the expansion of bus passenger services.

2.5.1 MyZone

In April 2010, the Government introduced a new fare structure called MyZone. MyZone reduced the number of products that could be used to travel on buses by:

- ▼ Reducing the number of distance-based fare bands from 5 to 3.
- ▼ Introducing 3 time-based multi-mode tickets covering travel on rail, bus and ferry that offered an expanded range of services compared to the equivalent TravelPass in IPART's determinations (Blue, Red, Orange, Pittwater, Green, Yellow, Pink, 2-zone and Purple TravelPasses).⁵ These TravelPasses were subsequently phased out.

⁵ Prices for most TravelPasses were set under IPART's previous CityRail determination.

The impact of MyZone was to substantially reduce the fares paid for travelling longer distances (more than 9 sections). For example, in April 2010, the price of a single bus ticket for travelling more than 15 sections fell from \$6.30 to \$4.30. In addition, all MyMulti tickets are valid for unlimited bus travel for a week, regardless of the number of journeys.⁶

2.5.2 Bus fare increases 2011 to 2013

Our 2010-2013 determination allowed for maximum fares to increase by a weighted average of around 1.4% plus inflation each year. Since 2010, the majority of bus fares have not increased above inflation as:

- ▼ the former Government decided not to increase fares for 2011 above the levels implemented for MyZone
- ▼ the current Government has increased fares to offset increases in inflation (CPI) only since 2010 (no real increase).

Bus fares increased in January 2012 by an average of 5.1% (to compensate for 2 years of CPI increases in 2010 and 2011, including rounding) and in January 2013 by a further average of 3.0% (CPI, including rounding).⁷ Consequently, fares for all bus tickets except MyBus1 tickets are still below the maximum level allowed by IPART for 2013.⁸

The Government has stated that:

(It) has always been clear that public transport fares will only increase in line with CPI until there are demonstrable improvements in customer service.⁹

⁶ IPART, *CityRail and Metropolitan and Outer Metropolitan Bus Services: Prices and Services Report 2010 – Final Report*, December 2010.

⁷ These are the average increases over all ticket types including the effects of rounding. Some fares will have increased more or less than these averages.

⁸ MyBus1 tickets are for short distance rides (1 – 2 sections). Other single tickets are currently between 10c and 30c below IPART's maximum allowed fares, and other MyBus TravelTen tickets are currently between 80c and \$2.40 below IPART's maximum allowed fares. See Appendix C.

⁹ NSW Minister for Transport Media Release, *Fares to increase in line with CPI*, Tuesday 18 December 2012.

2.5.3 The expansion of bus services

There have been a number of expansions in bus services since 2009. Transport for NSW advised that bus service kilometres¹⁰ increased by 8.7% in 2010/11 as a result of the introduction of integrated network plans, new growth buses, Metrobuses and free Shuttle bus services.¹¹ In 2012, the Minister for Transport announced that additional bus services had been introduced and services extended in the growth areas of North West and South West Sydney.¹² Improvements have also been made to bus links to the employment centres of Parramatta, Liverpool, Macquarie Park, Western Sydney Employment area, North Sydney and the Sydney CBD.¹³ Consequently, bus service kilometres grew by 19.5% between 2008/09 and 2011/12.

Most of this growth occurred outside the 4 largest contract regions. Service kilometres in the 4 largest contract regions grew by 11% over the 3-year period.¹⁴ However, substantial growth in bus kilometres related to special events, particularly in regions 8 and 9, means that total kilometres for the 4 largest contract regions grew by 31% over the same period.

2.6 The NSW Long Term Transport Master Plan

In December 2012, the Government released its *NSW Long Term Transport Master Plan* (the Master Plan), which sets directions for transport in NSW for the next 20 years. The policies announced in the Master Plan have a number of implications for our review. Initiatives that are most likely to affect bus operations in upcoming determination period include:

- ▼ the introduction of electronic ticketing (the Opal card)
- ▼ the planned introduction of light rail
- ▼ plans specifically related to bus services.

¹⁰ Kilometres travelled to provide bus timetable services. Excludes school services, dead running, charter and special event kilometres.

¹¹ IPART, *CityRail and Metropolitan and Outer Metropolitan Bus Services: Prices and Services Report 2011*, December 2011, p 39.

¹² Minister for Transport, 20 November 2012, Media Release: 3000 Extra Public transport services a week for Sydney, available from <http://www.transport.nsw.gov.au/media-releases/3000-extra-public-transport-services-week-sydney>, accessed 24 April 2013.

¹³ IPART, *Metropolitan and Outer Metropolitan Bus Services: Prices and Services Report 2012*, December 2012, p 2.

¹⁴ Calculated by IPART from information provided by Transport for NSW.

2.6.1 Electronic ticketing (the Opal card)

Currently, electronic ticketing is being phased in for public transport users. A trial of the Opal card on Sydney Ferries commenced in December 2012 and is expected to be available to all Sydney Ferry customers by the end of 2013. The rollout to trains is due to start on the City Circle in second half of 2013 and it will be introduced on buses after that. By 2015, the Government expects electronic ticketing to be available on all buses, trains and ferries.¹⁵

A customer will 'tag on' at a reader or gate with their Opal card at the start of a journey and 'tag off' at the end of their journey. The fare will be calculated and deducted from the money stored on the card. The Opal card will offer free travel after 8 paid trips per week; a cap of \$15 per day and a cap of \$2.50 on Sundays.¹⁶

The introduction of the Opal card has implications for the structure and level of bus fares.

2.6.2 Light rail

Inner West Light Rail extension

The 5.6km Inner West light rail extension, currently under construction and on track for completion in 2014, will extend light rail services from Lilyfield to Dulwich Hill.¹⁷ Once the light rail extension is operational it may mean changes to bus services operating in that region.

CBD and South East light rail

The Government announced that light rail will be built through the Sydney CBD to Randwick and Kingsford. This involves redesigning the bus network. The redesigned network will include changes to bus interchanges, more cross-city Metro-style routes, reconfigured bus stops and higher priority for buses on roads.¹⁸

Work on the CBD light rail network is expected to begin in 2014 and is likely to take 5 or 6 years to complete.¹⁹ As such, it is unlikely to be operational in the next determination period. However, the construction phase may mean disrupted traffic flows, which may increase bus operating costs and additional capital expenditure associated with the changes to the bus network in the next determination period.

¹⁵ <http://www.transport.nsw.gov.au/opal>, accessed 24 April 2013.

¹⁶ Ibid.

¹⁷ NSW Government, *NSW Long Term Transport Master Plan Summary*, December 2012, p 7.

¹⁸ NSW Government media release, *Building for the future: light rail to reduce congestion and revitalise Sydney*, Thursday 13 December 2012.

¹⁹ Ibid.

2.6.3 Plans specifically related to buses

The Master Plan includes a commitment to redesign the bus network to include more services to the North West and South West growth centres, greater priority for bus services and the expansion of Bus Rapid Transit systems on the busiest corridors (starting with the Northern Beaches). It also proposes feasibility studies for new bus interchanges in the CBD (at Wynyard and Town Hall) and, in the short-term, better kerbside management at major CBD interchanges.

The Master Plan indicates fleet upgrades and the roll-out of better real-time information for customers. Some expenditure has already occurred on these 2 services: the Government allocated \$127 million for new buses in the 2012/13 budget and real-time information has already been made available in a number of areas.²⁰

These initiatives may mean higher capital expenditure, but potentially also efficiency savings, a better service quality and increased patronage. The impact of the plans during the new determination period will depend on when and how they are implemented.

3 IPART's proposed approach

Given the context for this review outlined in Chapter 2, we are seeking comments on our approach to setting bus fares from January 2014. We propose to take a similar approach to setting fares as we did in our previous determination, drawing lessons from IPART's recent CityRail and Sydney ferries' fare decisions. Under our proposed approach, we will consider the total efficient cost of providing contracted bus services in the 4 largest contract regions, and the share of this cost that should be funded by bus passengers through fares. Rather than setting maximum ticket prices for each individual ticket type, we propose to set a weighted average price cap for a multi-year period.

This chapter explains our proposed approach to setting bus fares from January 2014. Section 3.1 discusses our reasoning for basing our assessment on the costs and benefits of bus services in the 4 largest contract regions only. Section 3.2 considers the length of the determination period.

²⁰ NSW Government, *NSW Long Term Transport Master Plan*, December 2012, pp 339 - 340.

3.1 Basing our analysis on the 4 largest contract regions

The Government's fare harmonisation policy means that it is not possible for us to set different fares for each region, based on the costs and benefits of providing bus services in that particular region. Our options are therefore to set fares based on the efficient costs and benefits in all 25 contract regions or a sub-set of regions.

Setting fares based on the costs and benefits in all 25 contract regions is likely to lead to higher than appropriate bus fares for the majority of passengers. This is because a number of outlying contract regions have higher costs per passenger journey than the more centrally located regions. These differences in costs and benefits arise from differences in operating conditions faced by each region: the number and proportion of fare-paying passengers, kilometres travelled, CBD-focussed routes and traffic congestion.

A majority of passenger journeys are taken in the 4 largest contract regions. These regions - which are operated by STA and include Sydney's eastern suburbs, northern beaches, inner west and lower northern suburbs - incorporate most of the key CBD-focused bus routes. They account for around 70% of patronage and 49% of contract payments (excluding SSTS²¹). The next largest region (region 4 - Hillsbus) accounts for around 6% of patronage and 11% of contract payments.

Contract payments per fare paying passenger give an indication of the difference in costs per passenger between the regions. Contract payments per fare paying passenger in the STA regions are less than half of those in all other metropolitan regions combined, and only about a quarter of those in the outer metropolitan regions (Table 3.1).²² These figures suggest that, if the costs and benefits of all regions are taken into account when setting fares, the majority of bus passengers would be penalised because these other regions would add proportionately more to costs than to patronage or to external benefits. This may discourage the optimal use of bus services in these regions.

²¹ School Student Transport Scheme.

²² Noting that contract payments are only a proxy for efficient costs and trips tend to be longer in non-STA regions than in STA regions. In addition, boardings data in non-STA regions are unreliable.

Table 3.1 Proportion of contract costs per passenger boarding (excluding SSTS)^a

	Share of boardings	Share of contract costs	Contract payments per fare paying passenger (\$) ^a
STA metropolitan (regions 6-9)	70%	49%	4.10
Metropolitan (excluding STA)	22%	34%	10.60
Outer metropolitan	7%	17%	16.30

^a Contract payments are an indication of efficient costs and trips tend to be longer in non-STA regions than in STA regions. In addition, boardings data in non-STA regions is unreliable as not all buses are fitted with electronic ticket readers. SSTS refers to the School Student Transport Scheme.

Source: Calculated by IPART from information provided by Transport for NSW.

Therefore, basing fares in all metropolitan and outer-metropolitan regions on the costs and benefits in the 4 largest contract regions is likely to result in fares that reflect the costs and benefits of bus travel for the majority of passengers.

In addition, information on patronage and benefits in outlying regions is less reliable than in the 4 largest contract regions. Not all regional operators are fitted with electronic ticket validating machines – boardings are recorded manually by the bus driver or staff member checking tickets. Determining a robust estimate of external benefits in each region would be difficult due to the limitations of the Bureau of Transport Statistics’ (BTS) Sydney Strategic Transport Model.

IPART seeks comments on the following

- 1 Should we base our determination of fares on the costs and benefits of providing bus services in the 4 largest contract regions (STA regions)?

3.2 Length of the determination period

Our preliminary view is to set bus fares for the next 3 or 4 years. A multi-year determination has several benefits compared with an annual determination. For example, it:

- ▼ reduces the direct costs of regulation in terms of the time and resources used by IPART, Transport for NSW and other stakeholders in providing information, analysing costs and benefits and making submissions
- ▼ provides the Government and taxpayers with greater certainty about fares and levels of government funding over the medium-term.

A multi-year determination period is also consistent with our recent approach to setting fare determinations for CityRail and Sydney Ferries.

One consideration is whether there is any benefit in the future in determining fares for all public transport modes - rail, light rail, ferries and buses - at the same time. Such a determination would be affected by key initiatives such as the light rail extension and implementation of the Opal card. Since these initiatives are still some years away from being fully implemented, we consider that it would be pragmatic to set a multi-year determination for buses now and review whether a joint determination should be made at a later date.²³

IPART seeks comments on the following

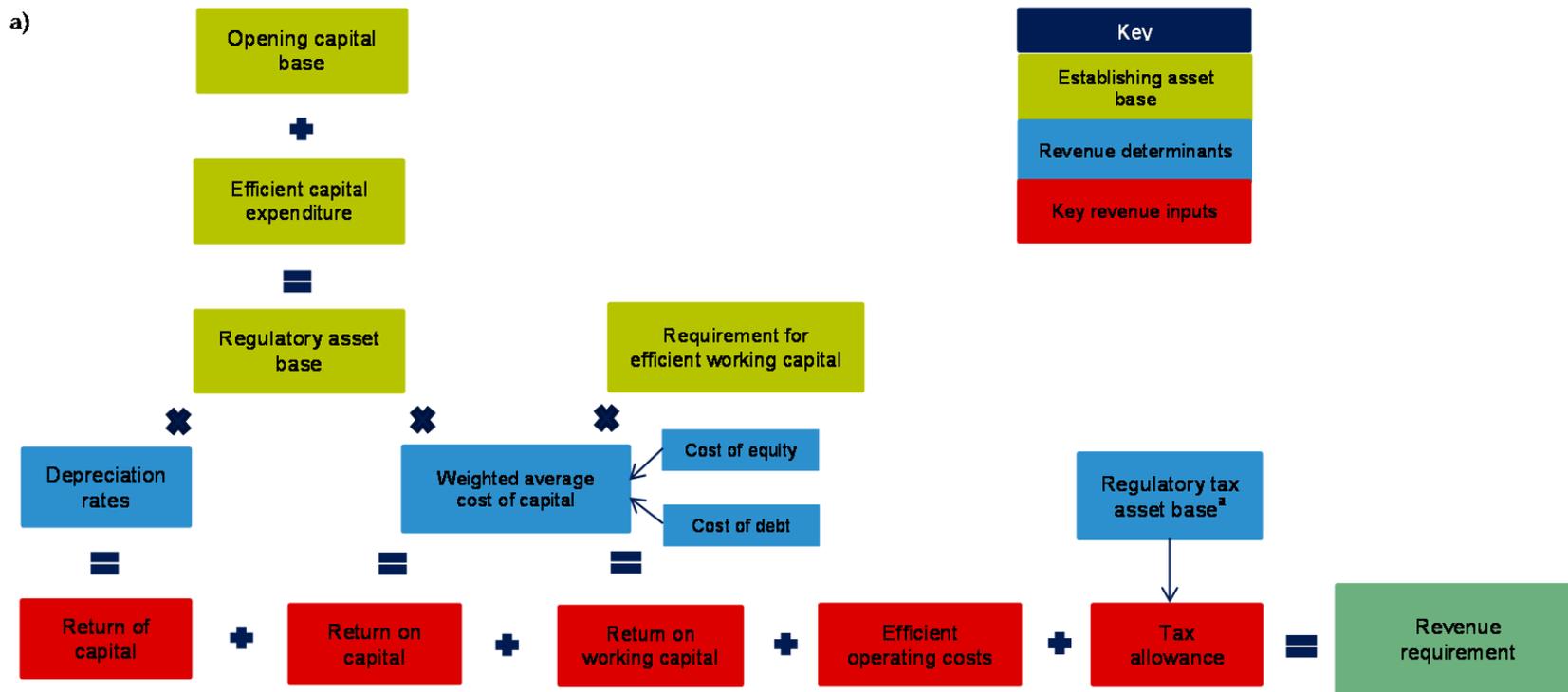
- 2 Should the length of the determination period be 3, 4 or 5 years?

4 Establishing the efficient costs of bus services

Having decided to focus our analysis on the 4 largest contract regions, the first step is to establish the efficient costs of providing bus services in those regions over the determination period. We use the building block method to do this in most other industries we regulate, by 'building up' the revenue required by the business to cover the efficient costs of meeting the contractual service requirements. The building block approach is illustrated in Figure 4.1 below.

²³ We note that the *Passenger Transport Act 1990* is currently being reviewed and amendments have been suggested to make allowance for pricing determinations to be non-mode specific.

Figure 4.1 Overview of the process to establish efficient costs



^a The regulatory tax asset base, from which the tax allowance is calculated, may not be the same as the regulatory asset base.

Source: IPART.

Section 4.1 discusses the types of costs involved in providing bus services. Sections 4.2 to 4.7 discuss our preliminary views on how we will go about estimating the efficient level of these costs for the 4 largest contract regions.

4.1 What costs are involved in providing bus services?

The costs of providing contracted bus services fall into the following categories:

- ▼ **Operating expenditure.** This includes the day-to-day costs of operating the business and maintaining its assets – for example, the wages paid to bus drivers, mechanical repairs and insurance costs.
- ▼ **Return on assets.** Bus operators need to invest in assets such as buses, equipment and depots to keep the business operating. It may also require government investments in bus only and bus lanes, priority traffic signals and bus bays along major bus corridors. A return on assets provides compensation to the operator (or its shareholder) for investing capital in these assets and bearing the risks associated with the business.
- ▼ **Return on working capital.** A return on working capital is given to provide compensation to the operator for holding any working capital required.
- ▼ **Return of assets or depreciation.** Depreciation is a means of spreading the net cost of the assets (other than land) over their estimated useful life. It enables the operator to eventually recover the capital invested in the business.
- ▼ **Tax.** All private companies pay tax. While STA is a government business, we think it is important to apply the same approach to all businesses we regulate. Hence, we will include an allowance for tax costs.

The level of these costs depends on the service and performance obligations the operator has to meet. These obligations include the number of services it needs to provide and the minimum performance standards it must meet (such as the proportion of the bus services that must be wheelchair accessible, bus reliability and information that must be provided to passengers). These obligations are specified in the bus service contracts and in published timetables.

4.2 Establishing the efficient value of these costs

Efficient costs may differ from the actual costs of providing bus services. In this determination, we will focus on the efficient costs rather than actual costs, because we consider that passengers should not pay for poor business decisions or inefficient operating practices.

The level of costs depends on the service and performance obligations the operator has to meet. We will determine efficient costs based on the performance obligations outlined in the bus contracts.

The cost of meeting obligations depends on internal and external factors. External factors include things like the cost of parts for buses, which are sourced in a competitive market. The operator has little control over these costs other than to choose the best-priced option available. Internal factors include the organisation of drivers' shifts, maintenance procedures and corporate overheads, over which the operator has greater control. How these internal factors are managed will have a greater impact on the efficiency of the costs of providing bus services.

Where bus contracts are subject to competitive tender, contract costs are a good approximation of efficient costs as operators will tender the least cost amount that meets the service obligations and covers their expenses. The Government will contract with the operator whose tender offers the best value.²⁴ However, the contracts for the 4 largest contract regions were not market-tested. Therefore, in the absence of competition between providers to supply bus services in these regions, we will need to review actual costs in more detail to ensure that they are efficient.

In our previous bus fare review, we engaged a consultant to review the efficiency of the actual and forecast costs of the current operator in the 4 largest contract regions. The consultant calculated the costs that a hypothetical efficient benchmark operator would incur in providing the contracted bus services in the 4 largest contract regions. These costs were based on a weighted average of private bus operators' costs in metropolitan Sydney, Melbourne, Perth and Adelaide. These costs were then adjusted to take account of some of the differences between operators' operating environments, such as average speed of buses, the spread of service hours required to meet timetable requirements, the amount of fuel used and road tolls.

For this review, we propose to engage a consultant to conduct a similar assessment of the actual and forecast costs of providing bus services against contractual service requirements in the 4 largest contract regions. We will ask the consultant to recommend efficient costs of meeting these requirements and identify areas where efficiency savings could be made. We will take the consultant's findings and advice into account when forming our judgment on the level of efficient costs.

IPART seeks comments on the following

- 3 We propose to use a building block approach to establish the efficient costs of providing bus services in the 4 largest contract regions. Do stakeholders agree with this approach?

²⁴ This may not be the case where there are certain constraints imposed on tenderers - eg, constraints on labour costs or employee numbers.

4.3 Rolling forward the Regulatory Asset Base (RAB)

In our 2010 determination, we established a notional RAB for the 4 largest contract regions of \$601 million at 30 June 2009.²⁵ We used depreciated historical costs to value assets and market value to value operator land based on its existing use. We valued government assets (owned by the former Roads and Traffic Authority (RTA), now Road and Maritime Services (RMS)) at zero.²⁶

We also set out a methodology for 'rolling forward' the value of the assets to the end of the determination period to reflect changes in this value. We considered that the RAB should be updated when:

- ▼ assets are bought, sold or retired
- ▼ capital expenditure is undertaken to improve or extend the life of existing assets
- ▼ the impact of inflation.

We consider that once the RAB is established, existing assets should not be re-valued, except if there are significant changes to the boundaries or number of contract regions we review.

Given our predisposition to base our determination on the same 4 contract regions, we do not propose to re-open the RAB for revaluation. We propose to roll forward the existing value of assets using the following methodology:

- ▼ include prudent and efficient capital expenditure undertaken over the previous regulatory period in the year that it was incurred
- ▼ deduct value of assets that are no longer used to provide bus services (if any)
- ▼ deduct the value of regulatory depreciation of assets, consistent with other IPART decisions
- ▼ adjust the value of assets for general economy-wide price increases using the movement in the CPI.

IPART seeks comments on the following

- 4 Have there been any changes in the 4 largest regions (STA regions) that would warrant a revaluation of existing assets that make up the RAB?

²⁵ IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 – Final Report*, December 2009, p 47.

²⁶ We considered that historical expenditure by the RTA may not necessarily have been made with a view to being recovered through passenger fares and as such, should not be included in the RAB.

4.4 Establishing efficient capital and operating costs

We will seek actual and forecast estimates of operating and capital expenditure required to meet service and performance obligations from the operator of the 4 largest contract regions. We will also seek actual and forecast estimates of costs incurred by RMS and/or the Government in providing bus-specific services and infrastructure to meet these obligations. These actual and estimated costs will be subject to an efficiency review as described in section 4.2. Efficient historical capital investment will be rolled into the RAB at the start of the determination period. Efficient forecast operating and capital costs will determine the revenue requirement over the determination period.

We will be guided by our consultant's findings and advice in forming our judgment on the efficient level of capital and operating costs. We will also have regard to the operator costs in other regions, which operate in a similar environment, where reliable information is available.

4.5 Establishing the allowance for depreciation

In the past, we have adopted a straight-line depreciation methodology to calculate the return of capital (depreciation) under the building block model. Depreciation is calculated by breaking the asset base into different asset classes and assigning asset lives to each asset class. We have previously stated that 'this approach is superior to alternatives in terms of simplicity, consistency and transparency'.²⁷ We propose to use a straight-line depreciation methodology in this fare review.

4.6 Establishing the return on assets and working capital

The return on assets and working capital provides compensation to the operator (or its shareholder) for investing capital in these assets and bearing the risks associated with the business. A rate of return is provided to a regulated business in recognition of the opportunity cost of investing in capital. This reflects the fact that the money could be invested in alternative income-generating assets.

Since our 2010-2013 determination, we have developed our approach to determining a return on assets and working capital. We have now adopted a post-tax financial model. Instead of accounting for tax through the rate of return, it is now included as a separate building block. We use a Weighted Average Cost of Capital (WACC) to determine the appropriate return on capital.

²⁷ For example, IPART, *Prices of water supply, wastewater and stormwater services – Final Determination and Report*, May 2006, Sydney, p 63.

There are a number of input parameters to consider in determining an appropriate WACC (see Appendix B). Since our previous determination, we have updated our method of estimating some of the market-based parameters in the WACC (risk-free rate, debt margin and inflation adjustment).

We are currently further reviewing our method for calculating the WACC to determine whether (and if so how) we should change our current methodology to improve its robustness under changing market conditions, such as those since the global financial crisis (GFC). Subject to the interim outcomes of our WACC review, we propose to establish the rate of return using a post-tax WACC approach, consistent with our approach in other transport fare reviews and other industries.

4.7 Including a tax allowance

Under our post-tax model, tax liability is estimated outside of the WACC, based on revenue and expenses of regulated business activities. It is a separate building block component. We consider that this more accurately estimates the tax liability for a similar well-managed privately-owned business.

5 Establishing the share of efficient costs to be borne by passengers and taxpayers

There is a strong argument that passengers on public transport services should not have to pay the full cost of providing these services. This is because the availability of accessible and effective public transport services provides benefits for the community at large, not just those who use these services. These benefits are known as external benefits.

In our 2010-2013 determination, we engaged a consultant to estimate the value of external benefits generated by bus services in the 4 largest contract regions. We then apportioned the value of efficient costs between passengers and taxpayers based on the proportion of external benefits to passenger benefits. We deducted the value of external benefits generated in the 4 largest contract regions (as well as government funding for concession holders) from the total efficient revenue requirement and the remaining amount was set to be recovered from passengers through fares.

Section 5.1 reviews the share of efficient costs that was apportioned between passengers and taxpayers in our 2010-2013 determination and compares it to the actual share of costs currently paid by passengers through fares. Section 5.2 discusses how we propose to assess the current external benefits of bus services for our determination of fares from January 2014.

5.1 Current share of costs borne by passengers and taxpayers

In our 2010-2013 determination, our estimated value of external benefits for the 4 largest contract regions was just under 50% of the total efficient costs of providing bus services in those regions (excluding government funding for concession holders).

Since then we have observed a decline in the proportion of contract costs recovered from fares.²⁸ In 2008/09, about 37% of contract costs across all 25 regions were recovered through fares, falling to 27% in 2011/12.²⁹

Total contract costs increased from about \$1,014 million in 2008/09 to \$1,243 million in 2011/12, an increase of 23% in real terms (Table 5.1). Payments to operators for additional service kilometres and growth buses accounted for \$37 million (37%) of the increase in costs in 2011/12.³⁰

Most of the increase in contract costs occurred outside the 4 largest contract regions. Contract costs in the 4 largest contract regions increased by about 8% in real terms between 2008/09 and 2011/12.³¹

In 2011/12, fare revenue was \$337 million, which was 14% lower than our forecast of \$391 million (in 2011/12 prices) in our 2010-2013 decision. This was an increase on fare revenue collected from the previous year, but lower in nominal and real terms than fare revenue in 2008/09 and 2009/10.³²

Table 5.1 illustrates how contract costs and farebox revenue have changed over the last 3 years, leading to a steady decline in passenger cost recovery.³³

²⁸ We note that there is some difference between contract costs and efficient costs. Information about the efficient costs of providing bus services in each contract region is not currently available. However, we can observe changes in the proportion of contract costs to farebox revenue over the determination period and use this as a proxy for the change in efficient costs recovered from fares.

²⁹ IPART, *Metropolitan and Outer Metropolitan Buses – Costs and Service Performance Report 2012 – Final Report, December 2012*, p 3.

³⁰ *Ibid*, p 2.

³¹ Calculated by IPART using information provided by Transport for NSW.

³² IPART, *Metropolitan and Outer Metropolitan Buses - Costs and Service Performance Report 2012 – Final Report, December 2012*, p 2.)

³³ We are unable to estimate cost recovery for the 4 largest contract regions at this time. The reason for this is that farebox revenue is the revenue collected from ticket sales through STA outlets and their agents. Revenue from ticket sales is not a good indicator of revenue from boardings. For example, STA sells MyBus tickets that can be used in other contract regions and passengers can board STA buses using MyMulti tickets from a CityRail outlet. We do not yet have sufficiently detailed information on boardings by ticket type to calculate revenue from boardings for the 4 largest contract regions (ie, boardings x ticket price = revenue).

Table 5.1 Revenue and cost recovery for 25 contract regions 2008/09 to 2011/12 (\$2011/12, millions)

	2008/09	2009/10	2010/11	2011/12	Cumulative change
Total contract costs (\$m)	\$1,014	\$1,060	\$1,156	\$1,243	\$228
Farebox revenue (\$m)	\$372	\$362	\$330	\$337	-\$35
Farebox as a % of total contract costs	37%	34%	29%	27%	-10%
Increase in contract costs (%)		5%	9%	8%	23%
Increase in farebox revenue (%)		-3%	-9%	2%	-9%

Source: IPART calculations based on information provided by Transport for NSW.

5.2 The external benefits of bus services

The benefits that passengers receive from an accessible bus service are immediate and obvious. They include access to a place of work, business, essential services and leisure facilities. When people make decisions on how to travel, they factor the costs and benefits to themselves into their decision – they will travel by bus when the costs and benefits are such that it is the best option for them.

External benefits are the indirect benefits that accrue to the community as a result of the provision and use of those services. The most important external benefits of bus travel are reduced road congestion, traffic accidents and air pollution. The level of external benefits can differ depending on factors such as whether travel is undertaken in peak or off-peak periods.

In 2010, we engaged a consultant, LECG, to estimate the external benefits generated by providing bus services for fare-paying passengers in the 4 largest contract regions. LECG quantified the external costs avoided when people travel by bus instead of car in circumstances where bus services are available and reasonably priced (Box 5.1). We based our decision on LECG's recommendations.

Box 5.1 External benefits of bus services in our 2010 bus fare determination

In 2010, we engaged a consultant, LECG, to estimate the external benefits generated by providing bus services for fare-paying passengers in the 4 largest contract regions. This involved quantifying the external cost avoided when people travel by bus instead of car in circumstances where existing bus services are available and reasonably priced.

The former Transport Data Centre (TDC) (now the Bureau of Transport Statistics) provided information on how many people currently travel by car, train and bus and information about their journey length and time. The TDC modelled what would happen if existing bus services were unavailable or significantly more expensive. From these results, LECG estimated the costs associated with increased traffic congestion, car pollution and accidents that would occur. LECG deducted the additional revenue that would result from collecting more fuel excise and parking space levies.

We based our decision on external benefits on LECG's recommendation (Table 5.2).

Table 5.2 External benefits generated by providing bus services for fare-paying passengers in the 4 largest contract regions (\$2009/10, millions)

	2009/10	2010/11	2011/12	2012/13	2013/14
Avoided road congestion costs	\$174.3	\$175.7	\$177.1	\$178.5	\$179.9
Reduced air pollution costs	\$60.3	\$60.7	\$61.2	\$61.7	\$62.2
Avoided road accidents costs	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Adjustment for fuel excise & parking levy foregone	-\$19.7	-\$19.9	-\$20.1	-\$20.2	-\$20.4
Total external benefits	\$214.8	\$216.5	\$218.2	\$220.0	\$221.7

Note: Totals may not add due to rounding.

Source: IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 – Final Report*, December 2009, p 76.

We did not include any value of social benefits as we considered that the Government funds an extensive concession program to improve mobility for specific passenger groups and that this was a more appropriate way to incorporate the needs of these groups. We did not include any value of agglomeration benefits as we considered that they were not readily quantifiable and the role of transport services in attaining them was not established.

For this review, we have engaged Sapere Research Group (formerly LECG) to update the calculation of external benefits of bus passenger transport using a similar methodology.

IPART seeks comments on the following

- 5 We propose to allocate the efficient costs to be recovered from passengers and taxpayers on the basis of the external benefits of bus services in the 4 largest contract regions. Do stakeholders agree with this approach?

6 Our proposed approach to setting bus fares

Once we have determined how much of the efficient costs of providing bus services should be funded by passengers, the next step is to translate this decision into fares. Section 28J of the Passenger Transport Act requires us to set maximum fares for bus services.

As discussed in Chapter 2, the Government is currently developing an electronic ticketing system for public transport in the greater Sydney region – the Opal card. As part of the introduction of the Opal card, the Government will make decisions on the number of tickets offered, frequency discounts, how the level of electronic fares compare to paper fares and policies for concessions and seniors. In our recent CityRail and Sydney Ferries’ decisions, we decided to give the Government the flexibility to decide on fare structures and levels within an overall maximum average price cap. We consider that it is appropriate to apply the same flexibility to bus fares.

Section 6.1 discusses current bus fare structure and levels and compares this to our maximum fares determined in 2010. Section 6.2 discusses the transition to electronic ticketing and the impact this will have on how we should set fares in this determination. Section 6.3 considers principles for fare setting. Section 6.4 discusses how we intend to determine growth in passenger journeys over the determination period. Section 6.5 discusses factors we will take into account on considering the implications of fare changes on passengers, Government and the environment.

6.1 Current structure and level of fares

Our current determination sets maximum prices for bus services by determining a maximum for each individual fare (ie, specifying fares for individual ticket type such as single, periodical and special event tickets). The introduction of MyZone in April 2010 consolidated tickets for travel on buses into the following fare structures:

- ▼ MyBus single and TravelTen tickets (MyBus 1-3)
- ▼ Newcastle only time-based single tickets and a periodic TravelPass
- ▼ Other single and return tickets, eg, sports, school term pass.

A list of current fares and their levels is in Appendix C.

Currently, passengers receive a 20% discount for pre-purchasing TravelTen tickets, which can be used for 10 single bus journeys. As such, the discount is not based on frequency of use, which is the case for periodic rail tickets, but for pre-purchasing the ticket. Fares for Pensioner Excursion Tickets (PETs) and other concession fares that can be used for bus travel are set by the Government.

The Government has previously indicated that fares for public transport will increase by no more than inflation until service quality improves.³⁴

6.2 Setting bus fares in light of the transition to electronic ticketing

Our 2010 determination set prices for bus services by determining a maximum for each individual fare (ie, specifying fares for individual ticket types such as single, weekly or other periodical). However, to facilitate the introduction of the Opal card for CityRail and Sydney Ferries, we determined an average change across all fares rather than maximum individual fares. Under this approach, we:

- ▼ set a maximum average increase rather than setting maximum fares for individual tickets
- ▼ allowed a 'catch-up' factor, so that if fares increase by less than the maximum allowed amount in one year, the foregone revenue can be recovered in subsequent years
- ▼ allowed fares to be increased more than once a year
- ▼ did not impose any additional constraints on changes in individual fare types.

We considered that this would allow the Government the flexibility to alter fares (both the structure and level) during the transition to e-ticketing, without forgoing farebox revenue in the longer term.

In light of the similar circumstances we face in setting bus fares, we propose to adopt a similar approach with a 'catch up' allowance, without additional side constraints on individual fares.

6.2.1 Setting an average change in fares with a 'catch up' factor

Generally, an average change in fares or prices is used because a business knows its cost structure and customers better than the regulator. As such, it is in a better position to make decisions about products and prices, leading to better price signals for customers.

³⁴ Minister for Transport, Media Release: *3000 Extra Public transport services a week for Sydney*, available from <http://www.transport.nsw.gov.au/media-releases/3000-extra-public-transport-services-week-sydney>, accessed 22 November 2012.

Determining an average change in fares or prices allows a regulated business the flexibility to alter individual prices within an overall cap on the average increase. Similarly to rail and ferry fares, we consider that bus fares are likely to undergo some reform as a result of the transition to electronic ticketing. As such, the Government would benefit from a more flexible approach to setting bus fares under this determination.

While the Government cannot set fares such that the average increase exceeds the determined cap, it has the discretion to set fares below the cap. Since 2010, the Government has not increased bus fares by any real amount; that is, above the level of inflation. This has led to shortfalls in farebox revenue collected against the targets for passenger contribution set out in our 2010-2013 determination.

We consider that in the instance that the Government increases bus fares by less than the cap in one year, it should be able to increase fares by more than the average in the next year, so long as the increase does not exceed the cap that would have applied if fares were increased by the average amount in the preceding year. This means that any revenue forgone in one year will be added to the revenue allowance in the next year.

In addition, if the Government increases bus fares by less than the cap at the start of the year, it should be able to propose a subsequent increase later in the same year, so long as the average increase does not exceed the cap. We consider that this will mitigate any revenue losses it may sustain as a result of increasing fares by less than the average amount in any year, while still ensuring that passengers are not paying more than the average cap that would otherwise apply for that particular year.

6.2.2 Imposing additional constraints on individual fares

The main disadvantage of determining an average increase is that it provides less price certainty to passengers as their individual fare may increase more (or less) than the average increase. One way to prevent significant increases in any individual fare type is to use additional price limits known as side constraints. Side constraints limit the change in each individual fare type to a threshold amount; for example, +/- 10%.

In our recent CityRail fare determination, we considered the use of side constraints and decided not to set any limits on individual fares. We considered that applying individual fare limits would inhibit the Government from undertaking fare reform as part of the implementation of the Opal card. For example, higher than average fares may be appropriate for phasing out products where there are alternative fares and the fares significantly understate the relative costs of providing the services. In addition, pricing can play an important role in signalling the costs of providing services. For example, higher than average fare increases could be used to manage demand in peak times.

We considered that price limits would be unlikely to provide additional consumer protection in this instance as governments are already accountable to their constituents in setting fares.

For the same reasons, we consider that additional price limits on individual bus fares would be unnecessary.

IPART seeks comments on the following

- 6 Should we determine the average change in fares rather than determine maximum individual fares for bus services?
- 7 Should we allow a 'catch up' factor so that if fares increase by less than the maximum allowed amount in one year, the foregone revenue can be recovered in subsequent years?
- 8 Should we apply additional price limits to any individual fare type(s)?

6.2.3 Peak and off-peak pricing

Bus services travelling into and from the Sydney CBD during peak periods are becoming increasingly congested. Different fare prices in peak and off-peak times can assist in alleviating this congestion during peak periods. Relatively lower fares in off-peak periods encourage some passengers to shift their travel into off-peak times. In addition, peak period pricing can also highlight that the existing system is meeting its capacity constraints and that future investment is needed. The introduction of electronic ticketing would make it technically possible for these types of price differentials or signals to be observed for buses. An average price increase would also support peak and off-peak pricing, so long as the average increase across all ticket types did not exceed the overall cap. Currently, a limited form of price signalling exists for CityRail users. Passengers travelling in off-peak periods may purchase an off-peak return ticket for around two thirds of the full fare adult ticket price.³⁵

IPART seeks comments on the following

- 9 Should we consider the merits of introducing peak and off-peak fares for buses?

³⁵ <http://www.131500.com.au/tickets/fares/fares#mytrain>, accessed 3 May 2013.

6.3 Pricing principles for fare setting

The Passenger Transport Act sets out a range of factors that IPART must have regard to in making its fare determination. This includes “such other matters as the Tribunal considers relevant”³⁶. In our recent CityRail and Sydney Ferries’ fare determinations, we proposed some additional pricing principles to assist us in making our fare decisions:

- ▼ **Simplicity.** One of the most common criticisms of Sydney’s fare system is that it is too complex. However, we note that MyZone simplified the previous fare structure.
- ▼ **Cost reflectivity.** For efficiency reasons it is important that the prices charged for the services reflect the efficient costs of providing the services. Generally, the cost of providing public transport services such as bus services increases with the distance travelled because of fuel costs, etc. Therefore, to be cost reflective the fares should also increase with the distance travelled. Cost reflectivity is related to the following principles: revenue sufficiency and price signalling.
- ▼ **Revenue sufficiency.** Fares should not only reflect the efficient costs of providing the service, they must also ensure that sufficient revenue is received to enable the services to be provided. While the majority of revenue to run bus services and most of the other public transport service providers in NSW is provided by taxpayers, fare revenue is an important contributor to meeting the costs of the services.
- ▼ **Price signalling (including peak and off-peak pricing).** Fares can assist in alleviating congestion on trains, buses and ferries during peak periods and can demonstrate where money should be invested in the future. For example, public transport services travelling into and from the Sydney CBD during peak periods are becoming increasingly congested. To ease this congestion, peak and off-peak pricing differentials could be used to incentivise passengers to change their travel patterns so that more travel occurs outside peak times. In addition, peak and off-peak pricing can indicate that the existing system is meeting its capacity constraints and that future investment is needed. An electronic ticketing system will have the ability to provide these types of price signals.
- ▼ **Consistency with existing fares.** While this should not necessarily be a key objective of any new fare structure, consistency is important and substantial changes from the existing fare structure and levels could lead to implementation problems. For example, passengers who find themselves considerably worse off as a result of the change to electronic ticketing may be reluctant to use the Opal card.
- ▼ **Equity.** While efficiency is important, to ensure that a fare structure receives support from passengers and the general public it should also be equitable.

³⁶ Section 28J *Passenger Transport Act 1990*.

We consider that these pricing principles are relevant to, and will be used in, our review of bus fares.

IPART seeks comments on the following

- 10 Are our proposed pricing principles relevant to determining fares for buses? Are there any other factors that we should take into account?

6.4 Projected demand for bus services

To allocate the appropriate share of efficient costs across passengers, we need to consider how the number of passenger journeys is likely to change over the determination period. Our decision on forecast patronage growth has a major impact on the maximum average fare change because higher growth will lead to a smaller change per passenger journey and lower growth will lead to a larger change per passenger journey. It also affects our estimates of external benefits generated by bus travel, as discussed in Chapter 5.

In our 2010-2013 determination, we assumed patronage growth of 0.8% per annum over the period. This was based on the mid-range estimate of the Transport Data Centre (now Bureau of Transport Statistics (BTS)) modelling.³⁷

In 2009/10, the number of fare paying passengers fell by -3.2% (-2.2% in the 4 largest contract regions). Patronage recovered slowly in the next 2 years, but in 2011/12, it was only 0.4% higher than in 2008/09 (-1.8% down from 2008/09 levels in the 4 largest contract regions). Transport for NSW advised that the downturn in patronage was a result of the global financial crisis and its effect on employment, particularly in the CBD. As such, the STA regions were affected more than some of the other metropolitan regions as they service the central areas of Sydney and account for most of the key CBD-focussed routes.

**Table 6.1 Patronage growth 2008/09 to 2011/12
(% annual change in fare paying passengers)**

	2009/10	2010/11	2011/12	Cumulative change
STA metropolitan (regions 6-9)	-2.2%	0.1%	0.3%	-1.8%
Metropolitan (excluding STA)	-7.0%	9.7%	7.8%	9.9%
Outer metropolitan	-4.5%	2.5%	1.1%	-1.0%
All 25 regions	-3.2%	1.9%	1.7%	0.4%

Source: IPART calculations based on Transport for NSW information.

³⁷ IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 – Final Report*, December 2009, p 66.

For our determination, we propose to use a long-term average growth forecast that is consistent with BTS forecasts of bus patronage. We will consider this forecast in light of forecast employment and population growth, bus service changes and performance levels, fare increases, petrol prices and road congestion.

IPART seeks comments on the following

- 11 Are there any other factors we should consider when determining forecast patronage growth over the next 3 to 5 years?

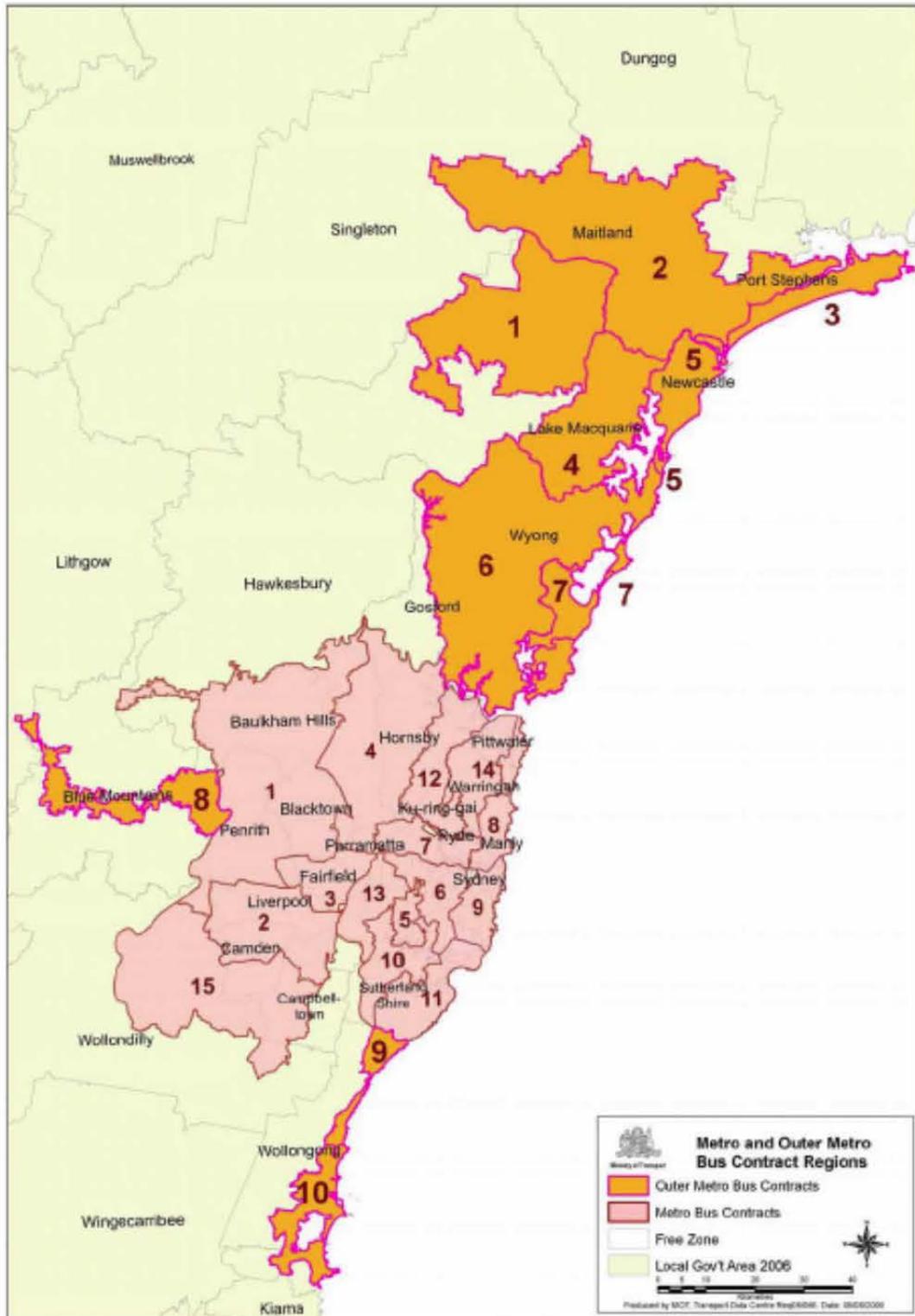
6.5 Implications of fare changes for passengers, Government and the environment

Prior to finalising our determination, we will consider the implications of fare changes on passengers, government and the environment. These implications include the affordability of our fares for passengers, changes in patronage and farebox revenue.



Appendices

A Current bus contract regions



B Weighted Average Cost of Capital (WACC)

Under a building block approach to determine a regulated business's revenue requirement, we calculate the compensation or return on capital for funds invested by shareholders in the business and for bearing the risks associated with that investment.

Current regulatory practice is for the return on capital to be calculated by applying a rate of return that reflects the cost of capital invested in the assets of the regulated business.

We use the post-tax Weighted Average Cost of Capital (WACC) approach to determine a rate of return.³⁸ Under the post-tax WACC approach, tax liability is estimated separately from the WACC, based on revenue and expenses of regulated business activities. Although the STA is not under the Government's tax-equivalent scheme, the rationale for using a post-tax WACC model is that we are calculating a rate of return required for an efficient commercial business.

A post-tax real WACC can be estimated using the following formula:

$$WACC^{post-tax} = \frac{\left(1 + \left\{R_e \cdot \left(\frac{E}{D+E}\right) + R_d \cdot \left(\frac{D}{D+E}\right)\right\}\right)}{(1 + \Pi)} - 1$$

where R_e is the return on equity, R_d is the return on debt, $\frac{E}{D+E}$ is the proportion of equity, $\frac{D}{D+E}$ is the proportion of debt, and Π is the inflation adjustment.

$$R_e^{real\ post-tax} = \frac{1 + [Rf + (\beta_e \times MRP)]}{1 + \Pi} - 1$$

$$R_d^{real\ post-tax} = \frac{1 + [(Rf + DM) \times (1 - t)]}{1 + \Pi} - 1$$

The parameters in the above formulas are explained below:

1. Parameters determined by financial market data:

- ▼ nominal risk free rate (Rf)
- ▼ debt margin (DM)
- ▼ adjustment for expected inflation (Π).

³⁸ In December 2011, we changed our approach from a pre-tax WACC model to a post-tax WACC model, which better estimates the tax liability for regulated business. IPART, *The incorporation of company tax in pricing determinations – Final Decision*, December 2011.

2. Parameters determined through other methods:

- ▼ the market risk premium (*MRP*)
- ▼ the correlation between common equity returns and that of the overall market (*β_e* equity beta)
- ▼ the level of gearing (*D* debt, *E* equity)
- ▼ Corporate tax rate (*t*).

We are currently reviewing our existing WACC methodology (see Box B.1) to address concerns that the use of current market data to estimate the expected cost of debt and long-term average data to estimate the expected cost of equity may be problematic in more uncertain and changeable market conditions. We expect to release an interim report in June 2013. A draft report is planned for release in September 2013 and a final report in December 2013.

Box B.1 Existing WACC methodology

Our existing WACC methodology (which we are currently reviewing) involves the following 3 steps:

- ▼ Estimating a range for the expected cost of debt over the determination period using current data (based on a short-term average of 20 days) to calculate the risk-free rate and the debt margin.
- ▼ Estimating a range for the expected cost of equity using the Capital Asset Pricing Model (CAPM), long-term average data for the market risk premium (MRP), and current data (based on a short-term average of 20 days) for the risk-free rate.
- ▼ Adding these estimates together to establish the feasible range for the WACC, then using our judgement to select a point within this feasible range that reflects the efficient cost of capital for our benchmark utility. In recent decisions, we have had regard to the long-term averages for the costs of debt and equity in setting the WACC within this range.

Although we have not finalised the review of WACC methodology, we have reached the view that in the current market conditions, our existing methodology yields estimates of the WACC that are too low by market standards. Hence we decided that our best view in the interim is to:

1. Estimate a WACC range based on current market data (using a 40-day averaging period rather than the 20-day period we have previously used) and Bloomberg's estimate of the current forward-looking MRP (instead of using the historical MRP as a proxy for current expectations).
2. Continue to estimate a WACC range based on long-term averages (with a 10-year averaging period) using the methodology used in our recent decisions.

3. Select a point estimate of the WACC within the range established by the midpoints of these 2 WACC ranges (in Steps 1 and 2), having regard to relevant market data. This is a change from the existing approach, which had regard to the WACC estimated using long-term averages, but constrained the WACC to be no more than the upper-bound of the WACC range derived from our existing WACC methodology. The approach used in this draft decision gives greater weight to the WACC estimated using the long-term averages.

Table B.1 provides more detail on how we estimated the market-based parameters (in steps 1 and 2 above) for our recent draft report in our review of regulated retail prices for electricity from 2013 to 2016.³⁹ This is followed by a short explanation of the individual WACC input parameters.

Table B.1 Estimating the expected cost of capital using current market data and long-term averages for recent electricity and gas retail price reviews

Parameter	Expected cost of capital using current market data	Expected cost of capital using long-term averages
Risk-free rate	40-day average of 10-year Commonwealth Government bond yield	10-year average of 10-year Commonwealth Government bond yield
Inflation	40-day average of swap market implied inflation with a 10-year term-to-maturity	Breakeven inflation from bond markets using 10-year term-to-maturities averaged over 10 years
Debt margin	Our current bond portfolio and the Bloomberg fair value curve	10-year average of 7-year Bloomberg fair value curve
MRP	40-day average of the implied MRP from Bloomberg	Historical arithmetic average MRP of 5.5-6.5%

Source: IPART, *Review of regulated retail prices for electricity, 2013 to 2016 – Draft Report*, April 2013, Appendix B, Table B.3, p 161.

Risk free rate

The risk-free rate is used as a point of reference in determining both the expected cost of equity and the cost of debt within the WACC. In both the CAPM and the cost of debt calculation, the risk-free rate is the base to which a premium or margin is added to reflect the riskiness of the specific business for which the rate of return is being derived.

Inflation rate

The inflation rate is used to convert nominal parameters into real parameters.

³⁹ IPART, *Review of regulated retail prices for electricity, 2013 to 2016 – Draft Report*, 2013, April 2013, Appendix B.

Debt margin

The debt margin represents the premium a business pays 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.

Market risk premium (MRP)

The market risk premium (MRP) is the expected return over the risk free rate that investors would require for investing in a well-diversified portfolio of risky assets. The MRP is an expected return and is not directly observable. It therefore needs to be estimated through proxies.

Gearing

Gearing is a measure of financial leverage and is defined as the ratio of the value of debt to total capital (that is, debt plus equity). Gearing is used to weigh the costs of debt and equity when formulating the WACC.

When determining the level of gearing used to calculate the WACC, we adopt 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.

Imputation tax credits (Gamma)

Under the Australian imputation tax system, shareholders may receive imputation tax credits with dividends which can be used to offset tax liabilities. Domestic investors would accept an investment with a lower rate of return if there were imputation tax credits, since imputation tax credits provide value by offsetting personal income tax liabilities.⁴⁰ International investors cannot utilise imputation credits.

Under a post-tax WACC approach, gamma is modelled as part of the tax liability, which is a component of building block revenue and not a parameter of the WACC. A point estimate of gamma will be required for estimating tax liability.

In a recent decision the Australian Competition Tribunal (ACT) held that the appropriate gamma to use for determining the WACC for the Queensland gas network was 0.25.

⁴⁰ Under IPART's pre-tax WACC framework, gamma was a WACC parameter. Under a post-tax WACC framework, gamma is not a WACC parameter, but an input into the calculation of tax liabilities.

Equity beta

The equity beta measures the riskiness of the business relative to the overall market. It can be estimated from observing how the return of traded securities varies with the overall return of the market. It represents the systematic or market wide risk of an asset that cannot be avoided by holding it as part of a diversified portfolio. The equity beta does not take into account business specific or non-systematic risks.

Most businesses we regulate are not publicly traded and we cannot observe an equity beta. We estimate industry-specific equity betas using data obtained from proxy firms.

Information required under a post-tax WACC model

We will need to calculate/obtain the following:

- ▼ expenses and revenues of regulated business activities
- ▼ any capital contributions that form part of regulated activities
- ▼ tax depreciation
- ▼ interest expense -based on the same assumptions as the WACC for gearing, nominal risk free rate and the debt margin
- ▼ regulated asset base.

Choice of a WACC

In making our WACC decisions, we often choose the mid-point from the WACC range. However, we are not bound to choose the mid-point for all our pricing reviews. We make use of market information to assist us in situating the WACC within our range. Often our choice is the midpoint but we have in the past chosen values below or above the midpoint if we found compelling evidence to do so.

Worked example of WACC calculation

Table B.2 shows an example of how we calculated the WACC in our recent electricity retail price determination. We will need to determine values for the various parameters that form the calculation of the real post-tax WACC for our decision on metropolitan and outer metropolitan buses, including updated market parameters, closer to the time of the draft decision.

Table B.2 Example of estimating a WACC using current market data and long-term averages for electricity retailing

Parameter	Current market data	Long-term averages
Averaging period	40 days	10 years
Nominal risk free rate	3.5%	5.2%
Inflation	2.8%	2.7%
Debt margin	1.8-2.7%	2.4%
MRP	7.4%	6.0%
Debt funding	20%	20%
Equity beta	0.90-1.10	0.90-1.10
Cost of equity (real post-tax)	7.1-8.6%	7.3-9.5%
Cost of debt (real pre-tax)	2.4-3.2%	4.9%
WACC (real post-tax)	6.2-7.5%	6.8-8.5%
Midpoint WACC (real post-tax)	6.8%	7.6%

Source: IPART, *Review of regulated retail prices for electricity, 2013 to 2016 – Draft Report*, 2013, April 2013, Appendix B, Table B.18, p 184.

C Fares for Metropolitan and Outer Metropolitan Bus services from January 2013

Table C.1 Metropolitan and outer metropolitan bus full fares

Ticket type	2013 Maximum allowable fare	Full fare from 6 January 2013
Single		
MyBus1	\$2.20	\$2.20
MyBus2	\$3.70	\$3.60
MyBus3	\$4.90	\$4.60
TravelTen		
MyBus1	\$17.60	\$17.60
MyBus2	\$29.60	\$28.80
MyBus3	\$39.20	\$36.80
Newcastle time-based		
1 hour	\$3.70	\$3.60
4 hour	\$7.20	\$7.00
All day	\$11.10	\$10.60
TimeTen 1 hour	\$30.40	\$29.00
Newcastle TravelPass tickets		
Orange TravelPass (Weekly)	\$39.60	\$38.00
Orange TravelPass (Quarterly)	\$435.60	\$416.00
Orange TravelPass (Annual)	\$1584.00	\$1513.00
Other ticket types		
Sports special single	\$3.70	\$3.50
Sports special return	\$6.50	\$6.00
School term pass	\$52.50	\$50.00

Source: IPART, Compliance Statement, *Fares for CityRail, Sydney Ferries and Metropolitan and Outer Metropolitan Bus services from January 2013*, December 2012.