

# **Maximum fares for metropolitan and outer metropolitan buses from January 2014**

Applies to contracted bus services in Sydney,  
Newcastle, Wollongong, Central Coast, Hunter and  
Blue Mountains

**Transport — Draft Report**  
September 2013





Independent Pricing and Regulatory Tribunal

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## 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 25 October 2013.**

We would prefer to receive them electronically via our online submission form <[www.ipart.nsw.gov.au/Home/Consumer\\_Information/Lodge\\_a\\_submission](http://www.ipart.nsw.gov.au/Home/Consumer_Information/Lodge_a_submission)>.

You can also send comments by mail to:

**Review of fares for metropolitan and outer metropolitan buses from January 2014**

Independent Pricing and Regulatory Tribunal

PO Box Q290

QVB Post Office NSW 1230

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



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# 1 Executive summary

The Independent Pricing and Regulatory Tribunal (IPART) is responsible for setting maximum fares for metropolitan and outer metropolitan bus services in NSW. This includes services provided by government (State Transit Authority (STA)) and private operators under contracts with Transport for NSW (TfNSW) in Sydney, Newcastle, the Central Coast, Wollongong, the Blue Mountains and Hunter regions. (A map of the regions covered is included in Appendix A.)

This draft report and the accompanying draft determination set out annual average increases to maximum fares for these services over the next 4 years. We are now seeking feedback from interested parties on our draft decisions before finalising our determination in December. New fares will apply from January 2014.

The remaining sections of this chapter provide an overview of the draft decisions set out in this report.

## 1.1 How fares would change under our draft determination

Under the draft determination, metropolitan and outer metropolitan bus fares can increase by an average of 2.8% per year, including inflation.<sup>1</sup> Under these average fare changes passengers will fund around 40% of the efficient costs of providing bus services in the 4 largest contract regions in each year of the determination period. Taxpayers will fund 40% in line with our estimate of the external benefits attributable to bus services, and a further 20% for the cost of concession tickets.

## 1.2 Overview of our draft decisions

Our approach to this draft determination is similar to the approach we took in making our 2010-2013 determination. However, we have decided to set an average maximum fare change rather than to set individual ticket prices as we have done in the past. This approach is similar to our approach to setting fares for CityRail and Sydney Ferries, which we determined last year.

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<sup>1</sup> Based on expected annual inflation of 2.5%.

Our draft determination gives an average fare change per year for a 4 year period commencing in January 2014. We decided to determine maximum fares for all 25 regions based on analysis of the costs and external benefits in the 4 largest regions, which account for around 70% of all bus trips made by fare-paying passengers. We used a 'building block' approach to estimate costs. We then considered the proportion of those costs that passengers should fund through fares. We determined this share by considering the benefits of bus services to the wider community, including to those that do not use them (external benefits). We took this revenue requirement and divided it by forecast patronage to give a required annual fare change. This approach yielded an increase in fares of 2.8% per year including inflation (Table 1.1), which we applied to all 25 contract regions.

**Table 1.1 Summary of outcomes using our approach (\$million, \$2013)**

	2014	2015	2016	2017
Total efficient costs of providing bus services in the 4 largest regions	660	669	676	682
Less the efficient cost of providing school services	51	52	52	53
Less non-fare revenue	20	20	20	20
Net efficient costs of providing bus services	590	597	604	610
Less value of external benefits for the 4 largest regions	233	236	240	243
<b>Revenue requirement</b>	<b>356</b>	<b>361</b>	<b>364</b>	<b>367</b>
<b>Annual real increase in maximum fares to meet the revenue requirement in 2017</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.3%</b>
Contribution from Government for concession fares	81	82	84	85
Total amount funded by passengers with a 0.3% fare increase <sup>a</sup>	274	276	279	281
Share of costs that will be funded by passengers				41%

<sup>a</sup> Note that this amount increases each year in real terms even though fares do not because the number of passengers using bus services grows.

**Note:** Columns may not add due to rounding.

### 1.3 How our draft determination would affect what passengers pay

Under the draft determination, TfNSW can increase or decrease fares for individual bus tickets, so long as the overall change in fares is no greater than 0.3% per annum above the rate of inflation over the next 4 years. This means that some passengers may see their bus fare increase by more than this amount and some by less. TfNSW may choose to charge less than the maximum increase determined by IPART in every year of the determination period, or may choose to increase fares by less than the allowed average in the early years of the determination period and more in the later years.

Multi-modal tickets, such as the MyMulti, can also be used to travel on buses. These fares are not set in this draft determination as they are set under the CityRail determination. Fares for Pensioner Excursion Tickets (PETs) and other concession fares that can be used on bus services are also not included as they are set by TfNSW.

#### **1.4 How our draft determination would affect the NSW Government**

Under the maximum fares in our draft determination, the Government would contribute around 60% of the efficient cost of providing bus services. This is consistent with our estimate of the external benefits generated by bus services and the expected level of concession funding over the determination period.

The draft determination gives TfNSW the flexibility to change the price of individual bus tickets as it sees fit, provided the overall average change in prices across all tickets is not more than 0.3% per annum above the rate of inflation over the next 4 years. We chose this approach to facilitate the introduction of Opal – the Government’s electronic ticket for public transport services in the greater Sydney area. It is likely that the structure and level of some fares will need to be adjusted to optimise the efficiency of electronic ticketing, and we do not wish to prevent this from happening.

#### **1.5 Our review process**

The process we have followed so far in conducting this fare review included public consultation and detailed analysis. As part of this process, we:

- ▼ released an issues paper in May 2013, which outlined our proposed approach to the review, discussed the key issues to be considered, and invited all interested parties to make a submission in response to this paper, and
- ▼ considered all submissions and stakeholder comments we received.

We are now seeking submissions on the draft report and draft determination and invite comments from interested parties. We will hold a public hearing on 15 October and submissions are due by 25 October 2013. We encourage you to participate in both processes. Details on how to make a submission can be found on page iii at the front of this report and interested parties can register for our public hearing on our website. We will consider all the submissions we receive before finalising our report and determination in December 2013.

## 1.6 Structure of this report

This report explains our draft decisions and the reasons for them in detail. The report is structured as follows:

- ▼ Chapter 2 sets out the scope and context for the review
- ▼ Chapter 3 explains the approach we used, including our decision to set a 4 year determination and to focus on the 4 largest contract regions, and why we consider this is the best way to set maximum fares
- ▼ Chapter 4 gives an overview of our analysis of the efficient cost of providing bus services in the 4 largest regions over the next 4 years
- ▼ Chapter 5 explains our estimate of the external benefits of the bus services in the 4 largest regions over the next 4 years
- ▼ Chapter 6 discusses likely patronage growth in the 4 largest regions over the next 4 years
- ▼ Chapter 7 outlines the fare change under our draft determination and discusses our draft decision to determine a maximum average fare change rather than to set a maximum fare for each individual ticket
- ▼ Chapter 8 discusses the impact that the fare changes in our draft determination would have for the affordability of fares, the Government and the environment.

## 2 Scope and context for this review

This review focuses on maximum fares for metropolitan and outer metropolitan bus services in NSW. Its scope includes single and TravelTen tickets available on these services together with a number of other bus-only tickets.

Maximum fares for multi-modal tickets that can be used on metropolitan and outer metropolitan bus services, including MyMulti tickets, are set under our train fare determination and as a result, are not being considered in this review. IPART is not responsible for setting fares or conditions for concession or free travel including the pensioner excursion ticket (PET), school student transport scheme (SSTS) or other concession fares and as a result, these are also not being considered in this review.

In making our draft determination on maximum fares for metropolitan and outer metropolitan bus services we considered the matters in section 28J of the *Passenger Transport Act 1990* and section 15 of the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act). Appendix B sets out these requirements in full. We also considered other contextual matters including:

- ▼ NSW Government policies on public transport fares and operations
- ▼ bus service contracts in the metropolitan and outer metropolitan regions
- ▼ actual and planned investments
- ▼ the way fares have been set in the past and for rail and ferry services.

The sections below discuss these matters in more detail.

### 2.1 NSW Government policies on public transport fares

The NSW Government has a number of policies on public transport fares including:

- ▼ the current level and structure of fares under MyZone
- ▼ bus fare increases since MyZone was introduced
- ▼ electronic ticketing (the Opal Card)
- ▼ fare harmonisation.

### 2.1.1 Current level and structure of fares under 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
- ▼ replacing 9 existing multi-modal time based tickets (TravelPasses<sup>2</sup>) with 3 new tickets (MyMulti 1, 2 and 3) that provide an expanded range of services compared with the equivalent TravelPass.<sup>3</sup>

MyZone substantially reduced the fares paid for travelling longer distances (more than 9 sections). For example, in April 2010, the maximum price of a single bus ticket for travelling more than 15 sections fell from \$6.50 to \$4.30.<sup>4</sup> In addition, all MyMulti tickets are valid for some rail travel and for unlimited bus travel for a week anywhere across the metropolitan and outer metropolitan network.

### 2.1.2 Bus fare increases since MyZone was introduced

Our 2010-2013 determination allowed for maximum fares to increase by a weighted average of around 1.4% plus inflation each year.<sup>5</sup> 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).<sup>6</sup>

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).<sup>7</sup> The Government's view has been that public transport fares should increase in line with CPI until there are demonstrable improvements in customer service.<sup>8</sup>

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<sup>2</sup> IPART set maximum fares for most TravelPasses (Blue, Red, Orange, Pittwater, Green, Yellow, Pink, 2-zone and Purple TravelPasses) under our 2009 CityRail fare determination.

<sup>3</sup> Ibid.

<sup>4</sup> IPART, *CityRail and Metropolitan and Outer Metropolitan Bus Services: Prices and Services Report 2010 – Final Report*, December 2010, p 8.

<sup>5</sup> IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010, Transport – Final Report*, December 2009, p 89.

<sup>6</sup> NSW Minister for Transport, *Public transport fare rise half IPART's recommendation*, 15 December 2011; NSW Minister for Transport, *Fares to increase in line with CPI*, 18 December 2012.

<sup>7</sup> 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.

<sup>8</sup> NSW Minister for Transport, *Public transport fare rise half IPART's recommendation*, 15 December 2011; NSW Minister for Transport, *Fares to increase in line with CPI*, 18 December 2012.

### 2.1.3 Electronic ticketing (the Opal card)

The NSW Government is in the process of implementing electronic ticketing for Sydney's train, bus and ferry services. The Opal card was introduced at the end of 2012 and is being progressively rolled out to Sydney public transport services.<sup>9</sup>

The Opal card is currently available on ferry services and a limited number of train lines. The fares under Opal are based on, but are not exactly the same as, the current MyZone fares (which in some cases are below the maximum fares determined by IPART). For many journeys, Opal users receive a discount compared with what they would pay under existing paper tickets.

The first trials on buses are due to start in October 2013. It is currently expected that it will be available on all metropolitan and outer metropolitan bus services by the end of 2014.<sup>10</sup>

### 2.1.4 Fare harmonisation

Since 2007, the Government's policy has been to charge consistent bus fares across all metropolitan and outer metropolitan bus regions.<sup>11</sup> This policy is designed to address equity concerns as well as aid the introduction of electronic ticketing. Our previous bus fare determinations have implemented the Government's policy of fare harmonisation across all contract regions (except Newcastle, which has time-based tickets).

## 2.2 NSW Government policies on public transport operations

In 2011, the NSW Government released its NSW 2021 plan – a 10-year strategic business plan to guide its policy and budget decision making. The NSW 2021 plan included the following goals that are relevant to the provision of bus services:

- ▼ **Reduce travel times:** increase frequency of services on key corridors during peak and off-peak and reduce the difference between scheduled and actual public transport travel times.
- ▼ **Grow patronage on public transport by making it a more attractive choice:** increase the share of commuter trips made by public transport and consistently meet the target of 95% of Sydney buses run on time across the network.
- ▼ **Improve customer experience with transport services:** improve customer satisfaction and increase real time travel information to customers.<sup>12</sup>

<sup>9</sup> [Link to information about Opal](#), 24 September 2013.

<sup>10</sup> Ibid.

<sup>11</sup> <http://www.transport.nsw.gov.au/content/buses-and-coaches>, accessed 24 September 2013.

<sup>12</sup> NSW Government, *NSW 2021*, September 2011, pp 18-21.

### 2.3 Bus service contracts

Transport for NSW (TfNSW) 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 operators 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 TfNSW. Operators do not retain fare revenue, and as a result, the level and structure of fares has no impact on the incentives or financial viability faced by operators.<sup>13</sup>

This regime was introduced in 2005/06 as part of the former Government's bus reform program. Contracts were issued for 7 years and the first of those expired during 2012/13. The operators holding contracts include a number of private bus operators and one public operator, the State Transit Authority of NSW (STA).<sup>14</sup>

Appendix A shows a map of the metropolitan and outer metropolitan contract regions. Appendix C provides more background on the current contract regime.

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.<sup>15</sup>

The 2 tender rounds are now complete and 8 new contracts have been awarded via tender process to private operators of metropolitan bus regions. These contracts have been awarded for 5 years, with a 3-year right of renewal subject to performance. Four of the new contracts have already begun<sup>16</sup> and the other half will commence mid-2014.<sup>17</sup> For the remaining metropolitan and outer metropolitan regions contracts have been, or will be, negotiated with existing operators.<sup>18</sup>

Under the contracts, operators receive monthly payments from TfNSW. The payments are determined according to a formula that is designed to compensate operators for the costs incurred in fulfilling their service obligations under their contract. Farebox revenue collected by bus operators is effectively returned to

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<sup>13</sup> [Link to more information about bus contracts in NSW](#), 24 September 2013.

<sup>14</sup> The STA has 3 businesses that provide bus services in different areas including Sydney Buses, Newcastle Buses and Ferries and Western Sydney Buses.

<sup>15</sup> NSW Minister for Transport, *New Bus Contracts to drive improvements for customers*, 1 May 2012.

<sup>16</sup> *Ibid.*

<sup>17</sup> NSW Minister for Transport, *More than 60 new buses and improved customer service with new bus contracts*, 29 August 2013.

<sup>18</sup> [Link to more information about bus contracts in NSW](#), 24 September 2013.



TfNSW, leaving bus operators largely unaffected by the level of fares paid by passengers.

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

**Table 2.1 Operator and 2012/13 share of boardings by region**

Metropolitan buses			Outer metropolitan buses		
Region	Operator	Share of boardings	Region	Operator	Share of boardings
1	Busways Blacktown	3.9%	1	Rover Motors	0.1%
2	Ingleburn Bus Services	1.2%	2	Hunter Valley Buses	0.3%
3	Transit (NSW) Liverpool	2.7%	3	Port Stephen Coaches	0.1%
4	Hillsbus Co.	6.2%	4	Hunter Valley Buses	0.3%
5	Punchbowl Bus Co.	1.1%	5	STA – Newcastle	2.2%
6	STA south (Sydney Buses)	21.1%	6	Busways Central Coast	1.6%
7	STA west (Sydney Buses)	11.2%	7	Red Bus Services	0.9%
8	STA north (Sydney Buses)	10.0%	8	Pearco Omnibus	0.2%
9	STA east (Sydney Buses)	27.6%	9	North Wollongong Area Management (Dions Buses)	0.3%
10 + 11	Transdev NSW	2.1%	10	Premier Illawarra	1.1%
12	Transdev NSW	0.7%			
13	Transdev NSW	2.6%			
14	Forest Coach Lines	1.2%			
15	Nevilles Bus Services	1.1%			
	All operators	92.8%		All operators	7.2%

**Source:** Information provided by TfNSW, August 2013.

## 2.4 IPART fare setting approach in other public transport reviews

In our 2010-2013 metropolitan and outer metropolitan bus fare determination, we adopted a 'building block' approach to set bus fares.<sup>19</sup> 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.

Our approach to this draft determination is similar to the approach we took in making our 2010-2013 determination. However, we have decided to set an average maximum fare change rather than to set individual ticket prices as we have done in the past. This approach is similar to our approach to setting fares for CityRail and Sydney Ferries, which we determined last year.

## 2.5 Actual and planned investments

Relevant to the cost and usage of bus services is expansion and investment in bus services – both to date and predicted for the future – and planned investment in substitute services, such as light rail.

### 2.5.1 Expansion of bus services since we last reviewed fares

There have been a number of expansions in bus services since we last reviewed fares. TfNSW advised that bus service kilometres<sup>20</sup> 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.<sup>21</sup> 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.<sup>22</sup> Improvements have also been made to bus links to the employment centres of Parramatta, Liverpool, Macquarie Park, Western Sydney Employment area,

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<sup>19</sup> IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010, Transport – Final Report*, December 2009.

<sup>20</sup> Kilometres travelled to provide bus timetable services. Excludes school services, dead running, charter and special event kilometres.

<sup>21</sup> IPART, *CityRail and Metropolitan and Outer Metropolitan Bus Services: Prices and Services Report 2011*, December 2011, p 39.

<sup>22</sup> Minister for Transport, *3000 Extra Public transport services a week for Sydney*, 20 November 2012.

North Sydney and the Sydney CBD.<sup>23</sup> Consequently, between 2009/10 and 2012/13, bus service kilometres grew by around 15% in metropolitan regions and 17% in outer metropolitan regions.<sup>24</sup>

Most of this growth occurred outside the 4 largest contract regions. Between 2009/10 and 2012/13, service kilometres grew by around 9% in the 4 largest contract regions.<sup>25</sup> A large proportion of this growth was in region 6, which encompasses the inner western suburbs of Sydney.<sup>26</sup>

### 2.5.2 Planned future investments

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.

The Master Plan includes a commitment to redesign the bus network to include more services to the North West and South West growth centres,<sup>27</sup> greater priority of bus services and the expansion of Bus Rapid Transit systems on the busiest corridors.<sup>28</sup> 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.<sup>29</sup>

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.<sup>30</sup>

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.

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<sup>23</sup> IPART, *Metropolitan and Outer Metropolitan Bus Services: Prices and Services Report 2012*, December 2012, p 2.

<sup>24</sup> Information provided to IPART by Transport NSW, August 2013.

<sup>25</sup> Ibid.

<sup>26</sup> Ibid.

<sup>27</sup> NSW Government, *NSW Long Term Transport Master Plan*, December 2012, p 206.

<sup>28</sup> Ibid, p 196.

<sup>29</sup> Ibid, pp 339 - 340

<sup>30</sup> Ibid.

### 2.5.3 Expansion of light rail services in Sydney

The 5.6km Inner West light rail extension, on track for completion in 2014, will extend light rail services from Lilyfield to Dulwich Hill.<sup>31</sup> Once the light rail extension is operational it may mean changes to bus services operating in that region.

The Government has also announced light rail in the CBD and South East that is proposed to run 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.<sup>32</sup>

Work on the CBD light rail network is expected to begin in 2014 and is likely to take 5 or 6 years to complete.<sup>33</sup> As such, it is unlikely to be operational in the upcoming determination period.

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<sup>31</sup> NSW Government, *NSW Long Term Transport Master Plan*, December 2012, p 345.

<sup>32</sup> Premier and Minister for Transport, *Building for the future: light rail to reduce congestion and revitalise Sydney*, 13 December 2012.

<sup>33</sup> *Ibid.*

## 3 Our approach to setting maximum fares

Our approach to determining bus fares is similar to the approach we took in making our 2010-2013 determination. It is also consistent with our approach to setting fares for rail and ferry services, which we determined last year. It takes account of all the matters we are required by legislation to consider in determining bus fares, as well as the contextual factors discussed in Chapter 2.

The sections below discuss our draft decisions on our fare setting approach and provide an overview of the approach.

### 3.1 Draft decisions on our fare setting approach

#### Draft Decision

- 1 Our fare-setting approach is to:
  - set a 4-year determination from 2014 to 2017
  - use a building block approach to determine the efficient costs of providing bus services in the 4 largest contract regions
  - determine the passenger share of those costs after considering the external benefits generated by bus services in the 4 largest contract regions
  - decide how much fares should change over the next 4 years, having regard to the costs to be funded by passengers, expected patronage over the next 4 years and the implications of fare changes for passengers, the Government and the environment
  - apply a maximum average price cap, rather set the fares for individual ticket types.

### 3.2 Overview of our approach to setting fares

We determine maximum fares so that passengers and taxpayers each pay a fair share of efficient costs. We estimate the efficient costs of providing bus services and the external benefits associated with buses to calculate the amount of revenue that should be collected from fares – the ‘revenue requirement’. This fare revenue is used to recover some of the costs of providing bus services, with the remaining costs paid for by taxpayers.

This approach involves the following steps:

- ▼ estimate the efficient costs of providing bus services over the next 4 years using a 'building block' approach, focussing our analysis on the 4 largest contract regions, net of:
  - the costs of providing services for passengers in these regions under the school student transport scheme (SSTS)
  - a portion of revenue earned in these regions through advertising, charter services, and other sources
- ▼ subtract a government subsidy equal to the value of the external benefits generated by these services
- ▼ taking into account expected changes in patronage, use a 'glide path' approach to calculate annual fare increases so that in 2017, which is the last year of our determination, the amount recovered in fares is equal to the revenue requirement.<sup>34</sup>

We then determine what annual change in maximum fares should apply after considering the results of the building block analysis, the implications of fare changes for passengers, the Government and the environment.

### 3.2.1 The length of the determination period

Our draft determination is for a 4-year period, the same length as the current determination. A determination period that runs for several years provides greater certainty to passengers about the maximum bus fares that may be charged in future compared with a shorter period (for example, an annual fare determination). It also provides greater certainty to TfNSW to plan for and implement the Opal electronic ticket.

In response to our issues paper, stakeholders generally agreed with a multi-year determination period. Action for Public Transport (NSW) stated that the determination should be 3 or 4 years, because by the end of 4 years the Opal card should be fully implemented.<sup>35</sup> Mr Banyard, an individual, suggested that all public transport fares should be set in unison.<sup>36</sup>

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<sup>34</sup> In each year prior to 2017, there is a small under recovery from fares.

<sup>35</sup> Action for Public Transport (NSW), 8 June 2013, p 2.

<sup>36</sup> R. Banyard, 10 June 2013, p 3.

### 3.2.2 Contract regions included in the building block analysis

Although there are 25 metropolitan and outer metropolitan contract regions, we again decided to focus our analysis on the 4 largest regions. These are currently operated by the NSW Government-owned State Transit Authority (STA). These regions cover Sydney's eastern suburbs, northern beaches, inner west and lower northern suburbs. Together they account for around 70% of all bus trips made by fare-paying passengers (see Table 2.1).

Some stakeholders disagreed with our proposed approach to focus our analysis on the 4 largest contract regions. Save our Rail NSW Inc. stated that:

The fare structure for the Hunter, with low population, long distances and a tradition of high car use with easy road movement cannot be based on cost/benefits of any Sydney Metropolitan region with very different types of route needs and factors such as efficient alternate transport provision, including rail.<sup>37</sup>

Mr Banyard, an individual, stated that there are major variants between regions and suggested that IPART should use 2 STA regions, 1 private and 1 mixed region such as Newcastle.<sup>38</sup>

There are differences between the 25 contract regions. Typically, those outside the 4 largest regions have higher costs and lower patronage than the more centrally located regions. The differences arise from differences in operating conditions faced by each region, including, the number and proportion of full fare-paying and concession passengers, kilometres travelled, CBD focussed routes and traffic congestion.

We consider that setting fares for everyone based on the costs, external benefits and bus use in the 4 largest regions will result in fares that reflect a fairer contribution to costs for most passengers and encourage more optimal use of bus services. Including all 25 contract regions or an expanded sub-set of regions in our analysis would result in higher fares that do not reflect the efficient costs of providing services for the majority of passengers.

### 3.2.3 Efficient costs of providing bus services in the 4 largest regions

The first step in our building block approach was to establish the efficient costs of providing regular passenger services in the 4 largest contract regions. In our view, the relevant costs are what a stand-alone operator would incur in providing bus services in the quantity and at the level of service specified in the contract, whether or not these costs are actually incurred by the operator, by Transport for NSW (TfNSW) or by Roads and Maritime Services (RMS).

<sup>37</sup> Save our Rail NSW Inc., 17 June 2013, p 3.

<sup>38</sup> R. Banyard, 10 June 2013, pp 2-3.

In July 2013, the operator negotiated new contracts with TfNSW for the right to operate bus services in the 4 largest regions for a 5-year period. The contracts incorporate a reduction in contract payments.<sup>39</sup>

We considered, but did not rely on these estimates in forming our view on efficient costs for the draft determination. Since 2011/12, a number of the operator's corporate functions related to providing bus services have been transferred to TfNSW.<sup>40</sup> These costs are no longer incurred by the operator and as such, are not reflected in contract payments. However, these costs continue to be incurred and in our view, should be reflected in our efficient cost estimate.

TfNSW does not have a detailed breakdown of its expenditure on these functions and as a result, we decided not to engage a cost consultant to conduct a review of the costs incurred by the operator or TfNSW. Instead, we relied on the efficient cost estimate for 2013/14 that was produced by our cost consultant, Indec Consulting, for the 2010-2013 determination. This estimate captures the cost of bus-related functions that have recently been transferred to TfNSW. We adjusted the 2013/14 efficient cost estimate to account for the increased service obligations in place under the operator's new contracts and then kept it constant in real terms for the remainder of the determination period.

We also rolled forward our estimates from our 2010-2013 determination of RMS-incurred operating costs in providing and maintaining bus priority infrastructure.

We estimated forecast capital costs based on historical capital expenditure.

We made adjustments for the efficient costs of providing bus travel for school students under the SSTS and for a portion of commercial revenue.

### **3.2.4 Share of costs to be recovered from passengers**

Once we established the efficient costs of providing bus services, we determined how much of the efficient costs passengers should contribute by considering the benefits of bus services to the wider community and deducting the value of these benefits from total efficient costs.

In our issues paper, we indicated that we would engage a consultant to update the external benefits figure we used in our 2010-2013 determination. Since 2008, we have engaged Sapere Research Group (formerly LECG) to estimate the external benefits associated with either rail, bus or ferry services as relevant at each fare review.

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<sup>39</sup> Information provided by Transport for NSW, August 2013.

<sup>40</sup> STA, *Annual Report 2011/12*, October 2012, p 3.



On further consideration, we have decided that it would be more consistent to consider the external benefits of all modes of public transport simultaneously. This work will be undertaken separately to this review. As this work will not be completed prior to finalisation of our review of bus fares, we have rolled forward the external benefit value from our 2010-2013 determination for buses, updating it to take into account:

- ▼ changes in the number of full-fare, concession-fare and student passengers
- ▼ the change in dollar value of the benefits using a weighted average of the Wage Price Index (WPI) (75%) and the Consumer Price Index (CPI) (25%).

### **3.2.5 Patronage growth in the 4 largest regions**

The next step in our approach was to estimate the number of passengers that will travel on buses over the determination period, as this is used to translate the revenue requirement into fares. We asked the Bureau of Transport Statistics (BTS) to provide a long-term forecast of bus patronage growth in the 4 largest regions. We considered the estimates provided by BTS as well as historical growth in patronage in forming a judgment about the expected change in patronage over the next 4 years.

### **3.2.6 Deciding on the maximum average change in fares**

We considered the outcome of the building block analysis described above and decided on maximum fares that result in passengers and taxpayers each paying a fair share of the efficient costs. In coming to this decision we had regard to the implications of fare changes for passengers, the Government and the environment.

We then considered whether to determine maximum fares for individual tickets or to set a maximum average fare change. We decided to set a maximum average price change, consistent with our decisions on fares for rail and ferry services.

## 4 Efficient costs of providing bus services

As Chapter 3 explained, we used a building block approach to estimate the efficient costs of providing bus services in the 4 largest contract regions. In our view, the relevant efficient costs are what a stand-alone operator would incur in providing bus services in the quantity and at the level of service specified in the service contract. These costs include operator-incurred costs, as well as costs relevant to the provision of bus services that are incurred by Roads and Maritime Services (RMS) or Transport for NSW (TfNSW). They also include a return on assets, regulatory depreciation and an allowance for taxation in line with our decision to base the rate of return on a post-tax WACC.

We also estimated the efficient cost of providing bus services under the school student transport scheme (SSTS) in the 4 largest contract regions. This cost is deducted from the overall cost estimate, along with a portion of commercial revenue earned by the operator.

The operator of the 4 largest contract regions, the State Transit Authority of NSW (STA), is a government entity, integrated within TfNSW. In July 2013, the operator negotiated new contracts with TfNSW for the right to operate bus services in the 4 largest regions for a 5-year period.<sup>41</sup> TfNSW advised us that the contracts to provide bus services in these regions were not opened up to competitive tender, but that TfNSW negotiated a contract payment reduction. TfNSW provided information on historical costs, and the payments and service requirements under the contracts.

We considered using the contract payments made by TfNSW to the operator as the basis for our estimate of efficient costs. However, we decided not to, because in our view, the contract payments do not cover all relevant bus-related costs. Since 2011/12, the establishment of TfNSW and subsequent reform of corporate and shared services has resulted in a number of corporate functions being transferred to TfNSW. These include bus service planning, marketing, payroll, recruitment, workers compensation and ticketing. Further reform of non-service delivery functions including human resources, IT, finance, audit and risk was to take place from 2012/13.<sup>42</sup>

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<sup>41</sup> The contracts are for 5 years with an option to renew for 3 years.

<sup>42</sup> STA, *Annual Report 2011/12*, October 2012, p 3.

TfNSW does not have a detailed breakdown of its expenditure on these functions and as a result, we decided not to engage a cost consultant to conduct a review of the costs incurred by the operator or TfNSW. We decided instead to estimate efficient operating costs for the determination period using the efficient operating costs from our 2010-2013 determination. These costs incorporate costs incurred by the operator and the cost of bus-related functions now transferred to TfNSW.

The sections below provide an overview of our draft decision on each component of efficient costs and explain how we updated or calculated these costs.

#### 4.1 Draft decision on efficient costs

Draft Decision

- The efficient costs of providing bus services in the 4 largest contract regions are as shown in Table 4.1.

**Table 4.1 Draft decision on efficient costs of providing bus services in the 4 largest contract regions (\$'000, \$2013/14)**

	2013/14	2014/15	2015/16	2016/17
Operating expenditure	538,236	538,236	538,236	538,236
Allowance for depreciation	66,735	72,616	78,303	83,279
Allowance for return on capital	56,269	58,763	60,789	61,443
Allowance for return on working capital	-1,114	-1,251	-1,070	-1,087
Allowance for tax	4,069	4,496	5,114	5,660
<b>Total efficient costs</b>	<b>664,195</b>	<b>672,858</b>	<b>681,371</b>	<b>687,530</b>

#### 4.2 Efficient operator-incurred operating expenditure

For our 2010-2013 determination, we engaged Indec Consulting to conduct a total cost review of regular bus services operated in Sydney's 4 largest regions. Indec recommended efficient levels of expenditure required to provide the necessary quantity and quality of services specified in the contracts (see Box 4.1). For the 2010-2013 determination, we decided to implement a transition path to Indec's level of efficient costs, taking into account Indec's recommendations about the ability of the operator to make changes to its operating and management practices with the support of the Government.

#### **Box 4.1 Indec's 2009 total cost review of providing bus services in the 4 largest regions**

For our 2010 determination, we engaged Indec Consulting to conduct a review of the costs of providing regular bus services in Sydney's 4 largest regions. Indec compared the operator's operating and capital costs to that of an efficient benchmark operator, based on a weighted average of costs of comparable market-tested operators in Sydney, Melbourne, Perth and Adelaide. The comparison of operators was adjusted to take into account different operating conditions such as speed, fuel, charter, tolls and spread of service hours.

Indec categorised and quantified the differences between the operator's forecast costs and the efficient benchmark. Indec determined that some of these costs arose from the unique operational requirements that would be experienced by any operator contracted to provide services in the 4 regions. These costs were added to the efficient benchmark cost. However, Indec determined that some of the cost differences arose from apparent inefficiencies.

Indec identified a range of potential savings initiatives that could be achieved by the operator, within the existing technological, managerial and government policy constraints. The main areas of inefficiency related to driver working conditions such as generous leave provisions, lower than efficient levels of driver utilisation and more onerous governance and procurement practices. Indec recommended a transition path from the operator's current costs towards its efficient benchmark costs. Indec's recommended efficient costs and IPART's final decision on a transition path to efficient costs are displayed below.

#### **Indec's recommended operating costs and IPART's final decision (\$million, \$2009/10)**

	2009/10	2010/11	2011/12	2012/13	2013/14
Efficient benchmark operator costs	375.8	383.0	388.6	394.6	400.7
Additional efficient costs incurred as a result of service obligations or operating environment	67.9	68.6	69.2	69.9	70.6
<b>Indec recommended efficient operator-incurred costs</b>	<b>443.7</b>	<b>451.6</b>	<b>457.9</b>	<b>464.5</b>	<b>471.3</b>
IPART decision on transition path to efficient operator-incurred costs	486.0	485.1	483.7	480.8	475.6

**Source:** IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 - Final Report*, p 41 and p 43.

For this draft determination, we reviewed the service requirements under the operator's new contracts and established an efficient benchmark cost for 2013/14 as the starting point for determining efficient operating costs over the coming determination period. In establishing that starting point we considered that:

- ▼ we should use Indec's recommended efficient cost, rather than the transition path cost for 2013/14

- ▼ we should adjust the efficient cost estimate to take into account differences in service requirements between what was considered in our 2010-2013 determination and what is required by the operator's new service contracts.

We also decided that it is appropriate to inflate these costs by the change in the CPI over the coming determination period. These issues are explained in more detail in the sections below.

#### **4.2.1 Using Indec's recommended operator-incurred efficient cost benchmark rather than the transition path adopted by IPART at the last review**

In our 2010-2013 determination, we used a transition path that resulted in costs being between the operator's actual costs at the time and Indec's efficient cost estimates. At the time, the operator's historic operating costs were significantly higher than Indec's recommended efficient costs. The transition path represented the annual savings that Indec considered were achievable, taking account of the ability of the operator to make changes to its operating and management practices with the support of the Government.

We consider that it is more appropriate to use Indec's efficient costs (adjusted by CPI in order to bring them into \$2013/14), rather than using the existing transition path.

#### **4.2.2 Increased service requirements**

For our 2010-2013 determination, Indec assumed an average 1.5% per annum increase in bus kilometres over the 2010-2013 determination period – or a cumulative increase of 7.8% from 2008/09 to 2013/14.<sup>43</sup>

Under the operator's new contracts, the service kilometres the operator is required to provide in 2013/14 are around 2.4% higher than those implied by Indec's forecast.<sup>44</sup> These requirements are a condition of service that is specified in the contract with TfNSW. Service kilometres are a major cost driver (for example, influencing fuel costs and repair and maintenance on vehicles). As such, we consider that Indec's efficient cost benchmark should be adjusted to reflect these additional service requirements.

<sup>43</sup> Information provided by Indec, 2009.

<sup>44</sup> Information provided by TfNSW, August 2013.

We have used the unit cost estimates developed by Indec and recalculated the efficient cost benchmark based on a 2.4% increase in 2013/14 service kilometres. This resulted in a 0.6% increase in the efficient operating cost benchmark for 2013/14.

### **4.3 Roads and Maritime Services' operating expenditure**

In our 2010-2013 determination, we included an annual allowance for RMS to provide and maintain bus priority measures. These measures include priority traffic signals and the Public Transport Information and Priority System (PTIPS) which aims to improve bus reliability by giving buses traffic signal priority.

We consider that these measures provide a direct benefit to passengers through shorter journey times. As such, they are an important part of the efficient costs of providing bus services in the 4 largest regions and should be included for our purpose of determining maximum fares.

RMS does not separately identify operating expenditure on bus priority measures. As such, we have rolled forward the allowance for RMS-incurred operating expenditure from our 2010-2013 determination, keeping it constant in real terms over the determination period.

### **4.4 Allowances for depreciation and return on assets**

Various assets are used to provide bus services, including buses, depots and ticketing infrastructure, as well as bus lanes, priority traffic signals and bus bays along major corridors. We have included an allowance for depreciation of these assets as a way of spreading the cost of the assets over their expected life. We have also included an allowance for a return on these assets to compensate the investor (in this case, the NSW Government) for investing in the capital required to provide bus services. This recognises that the investor bears risks associated with providing bus services.

To make our draft decision we:

- ▼ calculated an annual value for the total pool of assets used in providing bus services in the 4 largest regions (known as the Regulatory Asset Base (RAB))
- ▼ decided on the appropriate methodology for depreciating the RAB, including the length of the asset lives
- ▼ decided on an appropriate rate of return.

Each of these issues is discussed in more detail below.

#### 4.4.1 Value of assets used in providing bus services in the 4 largest regions

In our 2010-2013 determination, we established the opening value of assets at the start of the period. We updated the RAB to take into account actual capital expenditure, depreciation and disposals over the period. We forecast the RAB in each year of the upcoming determination period based on our forecast of capital expenditure for the operator and RMS over the period.

Draft Decision

- 3 The value of assets used in providing bus services in the 4 largest regions is shown in Table 4.2.

**Table 4.2 Draft decision on the value of assets used in providing bus services in the 4 largest contract regions (\$million, \$2013/14)**

	2013/14	2014/15	2015/16	2016/17
Regulatory asset base	1,044	1,100	1,166	1,175

#### Historical capital expenditure

Draft Decision

- 4 The value of the capital expenditure to be incorporated into the RAB from 30 June 2013 is shown in Table 4.3.

**Table 4.3 Draft decision on historic capital expenditure to be incorporated into the RAB (\$'000, \$nominal)**

	2009/10	2010/11	2011/12	2012/13
Buildings and improvements	55,180	5,951	8,484	10,596
Buses	71,506	156,237	37,508	49,739
Other assets	5,839	8,605	3,196	4,089
RMS bus priority measures	39,144	30,924	36,446	21,941
Inner West Busway	0	94,382	0	0
<b>Total</b>	<b>171,669</b>	<b>296,099</b>	<b>85,634</b>	<b>86,365</b>

#### Operator-incurred expenditure

The operator's actual capital expenditure, compared to our 2010-2013 determination forecasts, is shown in Table 4.4.

**Table 4.4 Historical capital expenditure (STA) (\$'000, \$nominal)**

	2009/10	2010/11	2011/12	2012/13
Buildings and improvements	55,180	5,951	8,484	10,596
Buses	71,506	156,237	37,508	49,739
Other assets	5,839	8,605	3,196	4,089
<b>Total</b>	<b>132,525</b>	<b>170,793</b>	<b>49,188</b>	<b>64,424</b>
<b>Our 2010 determination forecasts<sup>a</sup></b>	<b>176,424</b>	<b>153,953</b>	<b>91,978</b>	<b>90,170</b>

<sup>a</sup> Adjusted for actual inflation.

On average, over the 2010-2013 determination period, actual capital expenditure was lower than what we had forecast. Around 75% of capital expenditure was on buses. TfNSW advised us that the way buses must be purchased by the operator has changed since 2012/13. All new buses must be supplied, manufactured or purchased from the Bus Procurement Panel, which was established in 2012 as TfNSW's panel for the supply and manufacture of buses. In 2008/09, the average amount spent on a bus by the operator was \$588,777 (\$2012/13),<sup>45</sup> around 26% higher than the current average cost of \$465,956 (\$2012/13)<sup>46</sup> under the new arrangements.

Buses are manufactured and sold in a global market as so the price paid depends on a number of factors, including the global price of materials, supply and demand and the relative value of the Australian dollar. In 2010/11, the operator acquired a number of growth buses, including for its cross-regional metro routes. Therefore, we have included all historic operator-incurred expenditure in the RAB using the actual price paid.

### RMS-incurred expenditure

In our 2010-2013 determination, we included an allowance for capital expenditure undertaken by RMS in providing bus priority measures. We considered that all expenditure that was directly attributed to providing bus services in the 4 largest regions should be included in the revenue requirement, regardless of who incurs the cost. We also included an allowance for 50% of the cost of duplicating the Iron Cove Bridge (inner west bus way). RMS' actual expenditure on bus priority measures was higher than our forecasts (Table 4.5).

<sup>45</sup> Information provided by TfNSW, 2009.

<sup>46</sup> Information provided by TfNSW, August 2013.



**Table 4.5 Historical capital expenditure (RMS) (\$'000, \$nominal)**

	2009/10	2010/11	2011/12	2012/13
RMS bus priority measures	39,144	30,924	36,446	21,941
<b>Our 2010-2013 determination forecasts<sup>a</sup></b>	<b>25,000</b>	<b>25,950</b>	<b>26,286</b>	<b>26,969</b>
Inner west bus way	-	94,382	-	-
<b>Our 2010-2013 determination forecasts<sup>a</sup></b>	<b>-</b>	<b>90,824</b>	<b>-</b>	<b>-</b>

<sup>a</sup> Adjusted for actual inflation.

### Forecast capital expenditure

#### Draft Decision

- 5 The value of the forecast capital expenditure to be incorporated when updating the RAB to the end of the determination period is shown in Table 4.6.

**Table 4.6 Draft decision on forecast capital expenditure over the 2014 determination period (\$'000, \$2013/14)**

	2013/14	2014/15	2015/16	2016/17
Buildings and improvements	21,838	21,838	21,838	21,838
Buses (replacement + growth)	51,154	63,105	41,592	49,719
Other assets	5,820	5,820	5,820	5,820
RMS forecast capital expenditure on bus priority measures	17,942	19,512	20,940	21,358
Western Sydney bus depot (70% of total cost)	-	31,441	-	-
<b>Total</b>	<b>96,754</b>	<b>141,717</b>	<b>90,190</b>	<b>98,736</b>

We have forecast capital expenditure based on historical expenditure over the last determination period in the following way:

- ▼ **Buildings and improvements and other assets:** We averaged the last 4 years of capital expenditure and kept it constant in real terms over the determination period.
- ▼ **Buses:** We forecast expenditure on buses using the actual number of replacement buses to be acquired under the operator's contracts and a 4-year average of the annual number of growth buses (excluding 2010/11), multiplied by the average panel purchase price for 2012/13 as advised by TfNSW.

### Forecast expenditure on buses

In 2009, the NSW Government commenced a 10-year program of delivering growth buses to metropolitan and outer metropolitan operators. Forecasting the number of growth buses is difficult as the number of growth buses acquired is determined on an annual basis based on need. Over the last 4 years, the operator has acquired the following number of growth buses (see Table 4.7).

**Table 4.7 Number of growth buses commissioned in the 4 largest contract regions**

	2009/10	2010/11	2011/12	2012/13
Growth buses	52	164	0	0

Source: Information provided by TfNSW.

A large number of growth buses were approved for the operator in the first 2 years of the Government's growth buses program, but none in the last 2 years. We consider that averaging all annual figures from the 2010-2013 determination period to forecast the number of growth buses would lead to an unrealistically high level of expenditure, given forecast patronage growth (see Chapter 6). There were a high number of growth buses purchased in 2010/11, which corresponds to the introduction of a number of new cross regional metro bus routes<sup>47</sup> and as such appears to be a one-off event. As a result, we forecast growth buses for the operator using a 4-year average, but excluding the 2010/11 bus purchases.

### RMS forecast expenditure and major projects

We have included an allowance for RMS' forecast expenditure on bus priority infrastructure as advised by RMS. We have also included a proportion of the cost of the new Western Sydney bus depot. We consider that the depot will provide benefits to bus passengers and so it should be taken into account when determining fares. TfNSW has advised us that the depot will be used a number of metropolitan bus operators. As such, we have apportioned the expenditure based on the share of total passenger boardings that occur in the 4 largest regions (approximately 70% as noted in Table 2.1).<sup>48</sup>

<sup>47</sup> According to Sydney Buses' website: Sydney's Metrobus network comprises of 13 routes, providing high-frequency, high-capacity links between key employment and growth centres across Sydney. These extra Metrobus routes provide 400,000 additional bus passenger spaces a week. <[www.sydneybuses.info/metrobus/metrobus.htm](http://www.sydneybuses.info/metrobus/metrobus.htm)> accessed 5 September 2013

<sup>48</sup> In line with our usual treatment of major projects, we have included expenditure on the Western Sydney bus depot from 2014/15 (the expected year of completion). We consider that bus passengers will not benefit from the expenditure until the project is completed so it is not appropriate to incorporate the expenditure until that time. This is consistent with our treatment of the costs of the South West Rail Link in our 2013 CityRail determination.

#### 4.4.2 Asset disposals and depreciation

##### Draft Decision

- 6 To use the straight line depreciation method and the asset lives shown in Table 4.8 to calculate the depreciation to be deducted when updating the RAB and the allowance for depreciation to be included in the operating expenditure.

**Table 4.8 Draft decision on the expected economic lives and remaining lives of assets used to calculate depreciation (years)**

	Expected lives (years)	Remaining lives (years)
Buildings and improvements	22.0	25.5
Buses	17.5	12.4 <sup>a</sup>
Other assets	11.6	5.0
Inner west bus way	75.0	72.2
RMS bus priority measures	20.0	18.0
Western Sydney bus depot	40.0	n/a

<sup>a</sup> This is a weighted average of the remaining asset values for buses purchased before 2005 and buses purchased after 2005.

To calculate the depreciation to be deducted when updating the RAB and the allowance for depreciation, we used the straight line method. We multiplied the annual value of each asset group by the depreciation rate using the appropriate asset lives. We have made an adjustment for asset disposals in line with our standard approach.

##### Expected asset lives

The service contracts stipulate that the average age of the operator's bus fleet must be no greater than 12 years and no bus should be older than 25 years. New buses are leased over a period of 15 years while the operator's estimate of the average expected life of a new bus is 20 years, compared to 25 years under private bus contracts. On balance, we consider that 17.5 years is a reasonable estimate of the expected life of a new bus and is consistent with what we used in our 2010 determination.

Data provided for this review includes building refurbishments, which have an average asset life of 5-10 years, in the 'buildings and improvements' category, whereas previously it was not included.<sup>49</sup> This reduces the average expected asset life from 40 years (used in our 2010 determination) to 22 years. We have adopted this updated asset life for buildings and improvements.

We consider that expenditure associated with the Western Sydney bus depot should be depreciated based on an asset life of 40 years consistent with the expected asset life of buildings.

<sup>49</sup> Information provided by TfNSW, July 2013.

### Remaining asset lives

We have calculated the remaining asset lives based on the methodology used in our 2010-2013 determination. That is, we determined the remaining lives of existing assets according to the proportion of the historical cost yet to be depreciated and on the economic lives for equivalent new assets.

#### 4.4.3 Allowance for a return on assets

The inclusion of a rate of return on the asset used in providing bus services recognises the opportunity cost of the capital invested in these assets. We determined an appropriate rate of return and multiplied the value of assets in each year of the determination by this rate.

Draft Decision

- 7 For the purpose of calculating the allowance for a return on assets, a real post-tax WACC of 5.1% is appropriate, based on the parameters in Table 4.9.

**Table 4.9 Draft decision on weighted average cost of capital (WACC)**

Parameter	Short-term	Long-term	2010-2013 determination
Nominal risk free rate	3.0%	5.0%	5.50%
Inflation adjustment	2.5%	2.7%	2.80%
Debt margin	2.3 to 3.1%	2.4%	1.7 to 3.8%
Market risk premium	7.9 to 7.9%	5.5 to 6.5%	5.5 to 6.5%
Debt to total assets (gearing)	60.0%	60%	60%
Gamma	0.25	0.25	0.5 to 0.3
Equity beta	0.7 to 1.0	0.7 to 1.0	0.7 to 1.0
Cost of equity (nominal post-tax)	8.5 to 10.9%	8.8 to 11.5%	9.4 to 12.0%
Cost of debt (nominal pre-tax)	5.3 to 6.1%	7.4 to 7.4%	7.2 to 9.4%
WACC range (real pre-tax)	4.9 to 6.6%	6.2 to 7.5%	5.8 to 8.7%
WACC midpoint (real pre-tax)	5.7%	6.8%	7.2%
WACC range (real post-tax)	4.0 to 5.4%	5.2 to 6.2%	5.1 to 7.4%
WACC midpoint (real post-tax)	4.6%	5.6%	6.2%
<b>Recommendation</b>	<b>5.1%</b>		

**Note:** The 2010 determination did not use a real post-tax WACC. The pre-tax WACC has been converted into a real post-tax WACC for comparison only.

**Source:** IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 - Final Report*, December 2009; IPART modelling.

The WACC should capture the required rate of return for a stand-alone private business in providing bus services in the 4 largest contract regions. Since our 2010-2013 determination, we have developed our approach to the following aspects of calculating the WACC:

- ▼ the use of short-term and long-term market information
- ▼ changing from a pre-tax to a post-tax framework (including a post-tax WACC)
- ▼ reducing the gamma, from a range of 0.5 to 0.3 to a point estimate of 0.25
- ▼ using a 5-year term to maturity assumption for market-based parameters, instead of a 10-year term
- ▼ including bonds issued in the US market when estimating the debt margin and increasing debt raising costs to 20 basis points per annum.<sup>50</sup>

We have calculated the WACC using IPART's standard parameter valuations and methodologies, as set out in the June 2013 Interim Methodology Paper.<sup>51</sup> In particular, the recommended WACC is the mid-point of the range:

- ▼ the upper bound of the range is calculated as the mid-point of the WACC range using long term averages of market data
- ▼ the lower bound of the range is calculated as the mid-point of the WACC range using short-term averages of market data.

The parameters that are industry specific are the risk of the assets (either measured through an equity beta or asset beta), the level of gearing allowed and the credit rating. These factors are inter-related. We have adopted the same industry-specific parameters as were used in our 2010 determination for the following reasons:

- ▼ There is no evidence from market data for comparator companies to warrant a change to the approach adopted in our 2010-2013 determination.
- ▼ The risks associated with metropolitan bus services are likely to be marginally lower than for CityRail services. This reflects that bus demand appears to be less responsive to economic downturns and that there should be greater scope to adjust costs for providing services in response to changes in demand.

Further details on our approach to calculating the WACC are provided in Appendix D.

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<sup>50</sup> IPART, *WACC methodology – Interim Report*, June 2013.

<sup>51</sup> Ibid.

## Working capital

The allowance for a return on working capital recognises that some businesses incur costs in funding the short-term capital required for the day-to-day activities of the business (such as accounts payable, inventories and accounts receivable). If the business' net working capital is positive, it has invested capital to facilitate its day-to-day activities and should earn a return on that capital. However, if the business' net working capital is negative, then its trade creditors are providing working capital to the business and it should earn a negative return to offset returns being earned on the capital provided by other parties.

Consistent with our past practice to calculating working capital, we have used:

- ▼ Receivables = 20 days of required revenue (including revenue from fares and government payments)
- ▼ Inventory = 6 days of operating expenditure plus capital expenditure
- ▼ Payables = 30 days of operating expenditure plus capital expenditure.

### 4.4.4 Allowance for taxation

We have included an allowance for tax costs in line with our move to a post-tax financial model. The tax expense has been calculated as follows:

- ▼ The tax asset base has been set equal to the regulated asset base for a base year. We have chosen the starting RAB for 2013/14 as the base year and allowed for testing on a base year from the start of the 2010-2013 determination period.
- ▼ The tax asset base is rolled forward by adding nominal capital expenditure and deducting nominal depreciation (based on the same depreciation rates as allowed in the regulated asset base) and nominal asset disposals.
- ▼ The tax deductible interest is calculated from the nominal cost of debt and applied to an amount of debt that reflects the level of gearing used in the WACC multiplied by the nominal RAB.
- ▼ No capital contributions are included and the value of franking credits ( $\gamma$ ) is set at 0.25.

## 4.5 Removing the cost of providing free school student travel

Under the SSTS, bus operators provide free services to students travelling to and from school.<sup>52</sup> There are around 8.5 million journeys made in the 4 largest contract regions per year, which is about 5.4% of all journeys.

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<sup>52</sup> For more information on SSTS see <http://www.transport.nsw.gov.au/ssts>, accessed 25 September 2013.

To ensure that fare-paying passengers do not cross-subsidise services to SSTS students, we deducted the estimated efficient costs attributable to the SSTS in the 4 largest contract regions from the overall cost estimate, shown in Table 4.10.

**Table 4.10 Efficient cost of SSTS (\$million, \$2013)**

	2014	2015	2016	2017
Costs of providing SSTS	51	52	52	53

These costs include:

- ▼ efficient operating costs for:
  - **dedicated school services**, based on Indec’s advice for our 2010-2013 determination, and increased by inflation
  - **non-dedicated services**, based on the average operating costs per boarding for passengers and the number of SSTS boardings on non-dedicated services
  - **RMS operating costs attributable to SSTS boardings**, based on the average RMS operating costs per boarding for passengers and the number of SSTS boardings
- ▼ efficient capital costs attributable to SSTS boardings, based on the proportion of total operating costs attributable to SSTS services, and using the same proportion of capital costs.

For the 2014 determination period, we applied the percentage increase in total building block costs to total SSTS costs.

The cost of providing services for SSTS has fallen slightly compared to our 2010-2013 determination (which allowed for \$52.9 million (\$2009/10) in 2012/13),<sup>53</sup> because our data shows fewer SSTS boardings than were included in our 2010-2013 cost estimates (11.2 million journeys in 2008/09 compared to 8.9 million journeys in 2012).

## 4.6 Adjusting costs to reflect other revenue

We subtracted 50% of the net revenue earned from advertising, charter services, and other sources/activities and the profit made from the disposal of assets. This revenue is unregulated income that is not determined by IPART.

We also subtracted all of the unregulated fare revenue (such as the portion of the ticket price for the Easter show), because it largely intended to offset the costs of providing bus services, so it is appropriate that 100% of this revenue be deducted.

<sup>53</sup> IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 – Final Report*, December 2009, p 39.

**Table 4.11 Non-fare revenue (\$'000, \$2013)**

	2014	2015	2016	2017
Charter revenue	3,760	3,760	3,760	3,760
Advertising revenue	8,524	8,524	8,524	8,524
Other commercial revenue	2,942	2,942	2,942	2,942
Unregulated fare revenue <sup>a</sup>	4,966	5,022	5,078	5,136
Profit on sale of assets	-365	-365	-365	-365
<b>Total</b>	<b>19,827</b>	<b>19,884</b>	<b>19,940</b>	<b>19,998</b>

<sup>a</sup> This has been estimated by multiplying the number of boardings taken on 'event tickets' by the average fare in each year.

We estimated non-fare revenue for the operator by taking the average of the last 4 years and maintaining this in real terms. Deducting some or all of this revenue from the total efficient costs provides an appropriate balance between passing the benefits of additional revenue onto customers (through lower prices) and providing the business with an incentive to pursue further opportunities.



## 5 External benefits of bus services

Once we have calculated the efficient costs of providing bus services in the 4 largest regions, our next step is to estimate the value of external benefits generated by these services. This value is one of the main factors we consider in deciding how much of the efficient costs passengers should fund through fares.

In general, the external benefits of a service are indirect benefits that accrue to the wider community as a result of the availability and use of that service (as opposed to the internal benefits, which accrue to the individuals who use the service). For example, the external benefits of public transport services may include reduced road congestion, reduced cost of traffic accidents and reduced air pollution.

We consider that the external benefits generated by public transport services (including bus services) justify government subsidisation of the fares for these services. We also consider that the level of the government subsidy should be linked to the value of the external benefits generated by the services.

This chapter discusses what the external benefits of bus services are and why they justify government subsidy. It explains our draft decision on the value of external benefits that we have used for this review and our plan to undertake a broader review of external benefits across all public transport modes.

### 5.1 Draft decision on external benefits

Draft Decision

- 8 Our estimate of the value of the external benefits of bus services in the 4 largest contract regions is set out in Table 5.1.

**Table 5.1 IPART estimated value of external benefits (\$million, \$2013)**

	2014	2015	2016	2017
Total external benefits	233	236	240	243

Our draft decision is based on rolling forward our estimate of the value of external benefits used in our 2010-2013 determination.

In our issues paper, we indicated that we would engage a consultant to update the external benefits figure we used in our 2010-2013 determination. Since 2008, we have engaged Sapere Research Group (formerly LECG) to estimate the external benefits associated with using rail, bus and ferries services individually at each fare review.

On further consideration, we have decided that it would be more consistent to consider the external benefits of all modes of public transport simultaneously. This work will be undertaken in a separate review. In the meantime, we have rolled forward the external benefit value from our 2010-2013 determination for buses, updating it to take into account:

- ▼ changes in the number of full-fare paying, concession-fare paying and student passengers
- ▼ the change in dollar value of the benefits using a weighted average of the Wage Price Index (WPI) (75%) and the Consumer Price Index (CPI) (25%).

## 5.2 The external benefits of bus services and why they justify Government subsidisation

It is relatively easy to identify the direct benefits that passengers receive from public transport services. For example, access to their place of work, essential services, and shopping and leisure facilities, plus the personal benefits that flow from this level and type of mobility. However, the external benefits of public transport services – those that accrue to the wider community can be difficult to quantify.

Our last review of bus fares found that the major external benefits generated by bus services fall into 2 categories:

- ▼ reduced (or avoided) road congestion, and
- ▼ reduced (or avoided) general air pollution and greenhouse gas emissions.<sup>54</sup>

The external benefits of bus services are the same as the external costs associated with car use. If these external costs were priced into the cost of car travel, they would be taken into account when the decision to drive was made. As a result, subsidising bus services would no longer be justified. Without such a system, government subsidisation for bus (and other public transport) services based on the value of the external costs of car use/external benefits of bus use is generally regarded as the next-best approach for encouraging efficient choices between modes of transport. See Box 5.1 for more information on the relationship between external benefits and subsidisation of public transport fares.

<sup>54</sup> Other potential external benefits, including avoided road accidents and social and agglomeration benefits were considered but were not directly quantified. See IPART, *Review of fares for metropolitan and outer metropolitan bus services from 2010 - Final Report*, December 2009, pp 75-88.

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**Box 5.1 The external benefits of public transport services, and why these benefits justify government subsidisation of fares**

When people make decisions on how to travel, they consider the costs and benefits to themselves – they will travel by bus when the costs and benefits of bus travel mean it is the best option for them. People do not usually take into account the costs and benefits to other people that are created by their decision. The costs and benefits that other people experience as a result of someone's decision on how to travel are called external costs and benefits because they are external to the decision maker.

The external benefits of bus use result from people avoiding the external costs associated with car travel. There are no or negligible external benefits from people catching a bus if they chose to catch the bus instead of walking, cycling or catching the train, because unlike car travel, these alternative forms of transport do not impose costs on other people.

To get people to take into account the external costs and benefits in their decisions, the relative prices of bus and car travel can be altered to include the value of the external cost. This can either be done by increasing the cost of car travel or by reducing the cost of public transport.

If there were a system of road use pricing that priced car travel equal to the internal and external costs it imposes, then it would not be necessary to take the external costs of car travel (ie, the external benefits of bus travel) into account in deciding on the optimal bus fare and subsidy levels. However, without such a system, government subsidisation for bus (and other public transport) services based on the value of the external costs of car use/external benefits of bus use is generally regarded as the next-best approach for encouraging optimal choices between modes of transport.

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### 5.3 The external benefits we included in our 2010-2013 determination

For our 2010-2013 determination, LECG (now Sapere) estimated the value of the external benefits of providing bus services in the 4 largest contract regions. The steps involved included:

- ▼ using the Bureau of Transport Statistics' (BTS) (formerly the Transport Data Centre) Sydney Strategic Travel model<sup>55</sup> (STM) to estimate the number of people who would have driven had they not caught the bus
- ▼ quantifying the external costs avoided when people travel by bus instead of car (through lower congestion, pollution and external accident costs)
- ▼ adjusting this benefit for the road charges which are already levied upon drivers (and thus offset any external costs of driving).

Using this approach, LECG (Sapere) estimated the net external benefits of bus services set out in Table 5.2. A summary of each of these components is provided in the sections below. LECG (Sapere)'s final report on its analysis and recommendations is available on our website.<sup>56</sup>

**Table 5.2 2010-2013 external benefits of bus services (\$2009/10)**

Source of benefit	Adult	Concession/ pensioner
Avoided road congestion costs	\$1.74	\$0.00
Reduced air pollution costs	\$0.39	\$0.39
Avoided road accidents costs	\$0.00	\$0.00
Reduced fuel excise & parking levy	-\$0.13	-\$0.13
<b>Total external benefits</b>	<b>\$2.00</b>	<b>\$0.26</b>

**Source:** IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 – Final Report*, December 2009, p 78.

#### 5.3.1 Avoided road congestion costs

The provision of bus services makes it possible for many people in the greater Sydney area to travel by public transport rather than use their car. This reduces traffic congestion and as a result decreases the travel time of all road users.

<sup>55</sup> The Sydney Strategic Travel Model (STM) was developed by the Bureau of Transport Statistics. It projects travel patterns in the Greater Metropolitan Area of Sydney under different land use, transport and pricing scenarios.

<sup>56</sup> LECG, *Value of Sydney bus externalities and optimal Government subsidy - Final Report*, September 2009.

LECG (Sapere) asked BTS to model what would happen if the existing bus services were not available or were significantly more expensive. BTS modelled how many extra people would travel by car and train under these circumstances and the length of their trips. Using this information, LECG (Sapere) found that each bus journey saved around 5.4 kilometres of automobile driving.<sup>57</sup>

### 5.3.2 Reduced air pollution costs

When fuel is burned to power motorised vehicles (including buses), it produces harmful pollutants – fine particulates, volatile organic compounds and nitrous oxides – which damage public health. It also releases greenhouse gases into the atmosphere which contribute to climate change.

The quantity of harmful pollutants depends largely on the type and amount of fuel burned. LECG (Sapere) quantified the value of the reduction in air pollution and greenhouse gas pollution by taking the following into account:

- ▼ most buses run on diesel and most cars run on unleaded petrol
- ▼ buses generally use more fuel than cars and diesel is more polluting than petrol
- ▼ the average number of people who catch buses is greater than a typical car.

### 5.3.3 Avoided road accident costs

Statistics on transport-related deaths show that rail and bus are the safest forms of land transport in Australia<sup>58</sup> – for example, bus travel results in significantly fewer deaths than car travel.<sup>59</sup>

However, LECG (Sapere) found that it is likely that motorists already on the road do not experience any increased risk of accidents. It considered that the extra congestion may make it easier to avoid accidents and reduces the severity of the accidents that do occur. In other words, the increased risk of accidents from travelling by car instead of bus is to the individual, and the road network overall is made safer from a reduction in the average speed.

<sup>57</sup> LECG, *Value of Sydney bus externalities and optimal Government subsidy - Final Report*, September 2009, p 17.

<sup>58</sup> Australian Transport Safety Bureau, *Discussion Paper – Cross modal safety comparisons*, 1 January 2005, pp 1-2.

<sup>59</sup> *Ibid*, p 3.

### 5.3.4 Reduced fuel excise and parking levy

If the Government levied road charges equal to the external costs of car travel on drivers there would be no justification for subsidising bus services. Governments already do this to a degree by levying charges on parking spaces and an excise on fuel. These charges raise the costs of a car trip and expose driver to some of the external costs of their choice of transport. In 2009, LECG (Sapere) adjusted its calculation to take this into account.

## 5.4 Why we have decided to review our approach to externalities

In 2008, we developed our current methodology for determining the external benefits in all our subsequent public transport fare reviews.

Since then this methodology has undergone a number of refinements. For example, as part of the review of CityRail fares in 2012, we updated the estimates of the amount of pollution per litre of fuel consumed and included road tolls as an offsetting charge.<sup>60</sup> In 2011, BTS also revised the STM, which improved the way non-work trips and congestion effects were modelled.

Recently we also commissioned an independent expert review of Sapere's methodology and inputs undertaken by Sapere for our review of fares for Sydney Ferry services. This review was undertaken by Professor Henry Ergas and Dr Mark Harrison. We have also received a response from Sapere. We will publish both documents on our website shortly.

The independent review proposed suggested a number of adjustments to the methodology for estimating external benefits but consider that these adjustments would have no material effect on Sapere's overall conclusion on the external benefits of Sydney Ferries services.

We consider refinements to our methodology are appropriate as we want the best estimate of the value of external benefits. However, we note that to date, these refinements have led to slightly different approaches being used over time for each public transport review.

In light of these factors, we have decided that it would be more consistent to consider the external benefits of all modes of public transport simultaneously. We propose to undertake a separate, comprehensive review of the external benefits that we will apply in our future transport determinations. This is consistent with our approach to reviewing the other inputs, such as the weighted average cost of capital and financeability arrangements, which apply across multiple pricing determinations.

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<sup>60</sup> IPART, *Review of maximum fares for CityRail services from January 2013 - Final Report*, November 2012, pp 43-45.

Also, our consultation process for this review has raised further issues that are relevant to our methodology for calculating external benefits. For example, stakeholders questioned our treatment of accident costs and the social benefits of bus services.<sup>61</sup>

The independent review of Sapere's methodology suggested refining the methodology with respect to accident costs. We will consider the issue of accident costs across modes in our comprehensive externality review. A separate review of external benefits will give stakeholders the opportunity to engage and consult on these issues.

The social benefits of public transport services (including bus services) relate to the improved access and mobility they provide to particular users, such as those with low incomes and less access to alternative modes of transport. While we accept that these social benefits may be associated with bus services, we do not consider they should be included in the estimated value of the external benefits for the purpose of setting bus fares. In our view, the best way to achieve these social benefits is for the government to consider the costs and benefits of passengers with limited access to other transport modes when investing in bus services, and that a well-targeted concession program is in place. We consider that this is more appropriate and likely to be more effective in generating social benefits than increasing taxpayer subsidisation of the fares paid by all passengers.

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<sup>61</sup> Action for Public Transport, 23 June 2013, pp 3-7; NCOSS, 13 June 2013, p 6.

## 6 Forecast patronage growth

The next step in our approach is to estimate how many passengers we expect will use bus services over the 2014 determination period. This is used to determine the average fare change required which is calculated by dividing the required revenue (based on the costs and benefits outlined in Chapters 4 and 5) by the number of tickets sold.

To obtain an estimate of bus patronage growth we considered long-term average growth forecasts produced for us by the Bureau of Transport Statistics (BTS). We also considered historical patronage growth, particularly growth in recent years, and other relevant information including issues raised in submissions.

This chapter explains our draft decision on patronage growth and how we arrived at that decision.

### 6.1 Draft decision on patronage growth

Draft Decision

- 9 To adopt a patronage growth estimate of 0.8% per year over the coming determination period.

Our draft decision is based on a combination of long-term patronage growth estimates produced by BTS, which were slightly higher than our draft decision, and historical patronage, which has been flat over the past 10 years.

### 6.2 Bureau of Transport Statistics forecast patronage

BTS publishes patronage forecasts for different modes of transport across the Sydney Statistical Division. Its most recent forecast is for bus trips (average weekday) to rise by an average of 1% per year between 2006 and 2036. This is based on expected changes in service frequency, population growth and employment growth over this time.<sup>62</sup>

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<sup>62</sup> BTS, *TransFigures – Travel forecasts 2006-2036*, February 2012, p 4.



We asked BTS to model the equivalent patronage growth for the 4 largest contract regions. The estimates are drawn from the BTS Sydney Strategic Travel Model (STM), which:

- ▼ is set up on a 5-yearly basis (2006, 2011, 2016, 2021) – BTS has used the information for these years to interpolate patronage growth for the intervening years
- ▼ is based on current predictions regarding new service improvements (including new roads) and forecasts of population changes and employment growth.
- ▼ assumes relative fares do not change (bus, train, ferry fares rise in line with CPI).

The STM estimates of growth are relatively high in the next 5 years, after which they reduce to around half of the initial rate. BTS has advised that this is a result of the impact of employment and population growth forecasts.

BTS provided the estimates set out in Table 6.1.

**Table 6.1** BTS forecast average annual growth in boardings from the Sydney Strategic Travel Model (% per annum)

	2011-2016	2016-2021	2011-2021	2011-2021 (existing network)
Region 6 – inner west	2.1	0.6	1.4	1.0
Region 7 – lower north	1.0	0.8	0.9	1.2
Region 8 – northern beaches	0.6	0.4	0.5	0.7
Region 9 – eastern suburbs	2.1	0.7	1.4	1.1
<b>Total 4 largest regions</b>	<b>1.6</b>	<b>0.7</b>	<b>1.1</b>	<b>1.0</b>
<i>For comparison:</i>				
<i>Rest of Sydney metro area (total)</i>	3.2	1.5	2.4	1.6
<i>Total Sydney metro area</i>	2.5	1.1	1.8	1.3

**Note:** Except for the final (existing network) scenario all runs include proposed service changes. The runs for 2016 and 2021 include the inner west light rail extension from Lilyfield to Dulwich Hill. The 2021 runs do not include north-west rail link or CBD/eastern suburbs light rail.

**Source:** BTS custom model run.

Actual patronage growth between 2010/11 and 2012/13 has been around half of the 1.6% annual growth BTS has modelled for the 2011 – 2016 period<sup>63</sup> suggesting that the forecast for the 2011 – 2016 years may be a little high. This might be due to short-term economic conditions that are not captured in the BTS model. However, as BTS predicts slower growth from 2016 (around 0.7% per annum), we consider that patronage growth over the next 10 years is likely to be below 1% a year on average.

### 6.2.1 Service changes included in the estimates

We asked BTS to provide an estimate of 2021 patronage based on the existing network for comparison, as we expect the inner west light rail extension (due for completion next year) to have an impact on patronage in the inner west STA region. However, the predicted impact of the inner west light rail extension is small with high average annual growth predicted for this region to 2016.

BTS did not model other major changes that are part of the Government's longer term strategy (see Chapter 2), because the details of these changes are not finalised (for example, patronage impact depends on delivery date, location of stops and service frequency).

The modelling does not estimate any increase in patronage as a result of implementation of the Opal card for buses.

### 6.2.2 Impact of economic conditions on patronage in the short-term

BTS advises that in the short-term, patronage growth is strongly linked to employment conditions in the Sydney CBD and argues that a short-term forecast (3-5 years) should take this cyclical nature into account. Our view is that forecasts based on longer-term estimates of patronage growth that do not incorporate economic cycles are more appropriate for our purposes.<sup>64</sup>

Short-term forecasts that factor in the economic cycle are likely to lead to fares that fluctuate depending on the economic cycle. We do not consider this to be a desired outcome. Due to the difficulties involved in forecasting employment conditions we are also not convinced that taking a short-term approach, which uses expected employment conditions over the determination period, would improve the accuracy of the patronage forecasts. A longer term approach is also consistent with the approach taken in the CityRail determination.<sup>65</sup>

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<sup>63</sup> We estimate patronage growth of 0.8% over this time.

<sup>64</sup> The STM includes longer term employment and population growth so using a longer term forecast does include an employment effect, it just does not capture any cyclical nature in employment.

<sup>65</sup> CityRail patronage is also strongly linked to employment conditions in the CBD.

However, we note that the 2013/14 NSW budget papers estimate employment growth in NSW to be around trend for the next 2 years.<sup>66</sup>

### 6.3 Historical patronage growth

In our 2010-2013 determination, we adopted patronage growth of 0.8% per annum. This was the mid-range estimate provided by the Transport Data Centre (now the Bureau of Transport Statistics).<sup>67</sup> At the time we noted that this rate was slightly below the long-term trend in actual patronage growth of 1% per annum. However, actual patronage growth since the 2010-2013 determination has been significantly lower than 1% per annum.

In 2009/10, the number of fare paying passengers fell by around 2.1% in the 4 largest contract regions. Patronage recovered slowly in the next 3 years, but in 2012/13, it was still 1.9% lower than the 2008/09 level. TfNSW advised that the downturn in patronage was a result of the global financial crisis and its effect on employment, particularly in the CBD.<sup>68</sup> The 4 largest regions service the central areas of Sydney and account for most of the key CBD-focused routes.

**Table 6.2 Patronage growth 2008/09 to 2011/12 (% annual change in fare paying passengers)**

	2009/10	2010/11	2011/12	2012/13	Cumulative change
Metropolitan regions 6-9	-2.1	0.1	0.3	-0.1	-1.9
All other metropolitan regions	1.9	9.3	9.3	2.8	16.6
Outer metropolitan	-4.4	3.4	2.8	-1.0	0.7
All 25 regions	-2.9	2.1	2.3	0.5	2.0

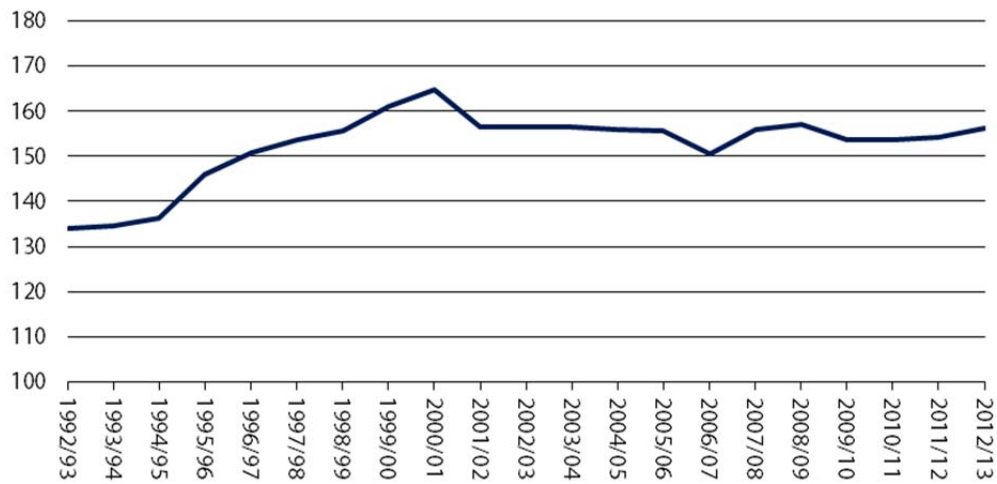
**Source:** IPART calculations based on TfNSW information.

Taking a longer term view, patronage has not grown at all over the past 10 years, according to boarding data provided by the operator. Over the past 20 years it has grown by an average of 0.8% per year (see Figure 6.1).

<sup>66</sup> NSW Treasury, *Budget Statement 2013/14*, 2-8.

<sup>67</sup> The Transport Data Centre provided 3 estimates based on different short term employment growth scenarios for the CBD.

<sup>68</sup> IPART, *CityRail and Metropolitan and Outer Metropolitan Bus Services: Prices and Services Report 2011 - Final Report*, December 2011, p 17.

**Figure 6.1 Boardings per year in the 4 largest contract regions (millions)**

**Data source:** Boardings excluding SSTS passengers provided by TfNSW.

#### 6.4 Other relevant factors

Our issues paper indicated that we would consider how forecast population growth, bus service changes and performance, fare increases, petrol prices and road congestion may affect bus patronage.

We also received stakeholder submissions about the factors they considered most relevant to bus patronage. The comments included:

- ▼ quality and quantity of service<sup>69</sup>
- ▼ demographic change – particularly ageing population, potentially increasing off-peak use, and trends among young people to use private cars less<sup>70</sup>
- ▼ changes to policies on land use, planning and resulting changes in density<sup>71</sup>
- ▼ policies to encourage mode shift away from private cars.<sup>72</sup>

<sup>69</sup> Action for Public Transport, 23 June 2013, p 8; Save our Rail NSW Inc., 17 June 2013, p 8; R. Banyard, 10 June 2013, p 7.

<sup>70</sup> Action for Public Transport, 23 June 2013, pp 8-9; R. Banyard, 10 June 2013, p 7.

<sup>71</sup> Action for Public Transport, 23 June 2013, pp 8-9.

<sup>72</sup> Ibid.

The BTS estimates are forward looking and take many of these factors into account. The BTS continually updates the model for changes to population, demographics and employment forecasts. The model is broken down into travel zones, and as a result has the capacity to consider the impact of local issues and traffic congestion. It also considers changes in relative cost between different modes of transport (including car travel).

Other factors, such as the impact of policies to encourage mode shift are difficult to predict and would require assumptions to be input into the STM. These policies would tend to raise the level of patronage growth compared with what would occur if those policies were not in place. However, quantifying their impact is very difficult. For this reason, we have not taken these into account in our draft decision.

## 7 Maximum average change in fares

Once we determined the efficient costs, external benefits and expected number of passengers over the 2014 determination period, we decided on the appropriate share of costs to be paid for by passengers through fares and translated that into annual fare changes. We then considered whether to determine maximum fares for individual tickets or to set a maximum average fare change.

Consistent with our 2013 CityRail and Sydney Ferries determinations, we have decided that we will not set maximum fares for individual tickets, but will allow Transport for NSW (TfNSW) to set the individual fares, subject to a maximum average price cap (weighted by ticket sales).

The sections below provide an overview of our draft decision on the average annual fare change for the 2014 determination period and explains how this is consistent with our pricing principles and how it will be implemented.

### 7.1 Draft decision on fare changes

#### Draft Decision

- 1 The average change in maximum fares over the 2014 determination period is 0.3% per annum above the rate of inflation (weighted by ticket sales) with no limits on the change in individual fares.
- 2 Fares can be increased more than once a year provided the average fare increase does not exceed the annual weighted average price cap.

These draft decisions mean that TfNSW will have the ability to set the fare for each individual ticket. TfNSW can increase all fares by 0.3% each year plus an adjustment for inflation.<sup>73</sup> Alternatively, it can increase some fares by more than this amount, provided that these increases are offset by changes in other fares that are lower than the weighted average price cap. TfNSW may choose to charge at or below the maximum increase determined by IPART in every year of the determination period, or may choose to increase fares by less than the allowed average in the early years of the determination period and more in the later years.

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<sup>73</sup> Expected to be around 2.5% per annum. Fares are also subject to rounding.

Our draft decision is designed to give TfNSW the flexibility to restructure fares and adjust the price of individual tickets to facilitate the introduction of the Opal card, without limiting its ability to recover the passengers' share of revenue allowed under our determination. TfNSW will be able to make decisions on the number of fares offered, any discounts, how the level of electronic fares compare to paper fares and policies for concessions and seniors.

## 7.2 Annual fare changes under our draft determination

We estimate the revenue required from fares based on:

- ▼ our estimate of efficient costs, less the cost of providing the school student transport scheme (SSTS) and a share of non-fare revenue (see Chapter 4)
- ▼ our estimate of external benefits (see Chapter 5).

Taking into account the expected changes in patronage (see Chapter 6), we used a 'glide path' approach, to calculate annual fare increases so that in 2017, which is the last year of the determination period, the amount to be recovered in fares will be equal to the revenue requirement.<sup>74</sup>

This approach yielded an increase in fares of 0.3% per year above inflation, which will mean passengers will fund around 40% of the efficient costs of providing bus services in the 4 largest contract regions in each year of the determination (Table 7.1).

Taxpayers will fund 40% in line with our estimate of the external benefits attributable to bus services, plus a further 20% for the cost of concession tickets. In our view, this is an appropriate sharing of costs for these services.

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<sup>74</sup> In the first 3 years of the determination there is a small under-recovery compared to the revenue requirement.

**Table 7.1 Summary of outcomes using our approach (\$million, \$2013)**

	2014	2015	2016	2017
Total efficient costs of providing bus services in the 4 largest regions	660	669	676	682
Less the efficient cost of providing school services	51	52	52	53
Less non-fare revenue	20	20	20	20
Net efficient costs of providing bus services	590	597	604	610
Less value of external benefits for the 4 largest regions	233	236	240	243
<b>Revenue requirement</b>	<b>356</b>	<b>361</b>	<b>364</b>	<b>367</b>
<b>Annual real increase in maximum fares to meet the revenue requirement in 2017</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.3%</b>
Contribution from Government for concession fares	81	82	84	85
Total amount funded by passengers with a 0.3% fare increase <sup>a</sup>	274	276	279	281
Share of costs that will be funded by passengers				41%

<sup>a</sup> Note that this amount increases each year in real terms even though fares do not because the number of passengers using bus services grows.

**Note:** Columns may not add due to rounding.

### 7.3 The principles we considered in making our draft decisions

In Chapter 2, we noted the matters under section 28J of the Passenger Transport Act and section 15 of the IPART Act that we take into account when making our draft determination, including “such other matters as the Tribunal considers relevant”. In our issues paper, we proposed some additional pricing principles that we would take into account when making our draft determination. These were simplicity, cost reflectivity, revenue sufficiency, price signalling (including peak and off-peak pricing), consistency with existing fares and equity.

We have taken these pricing principles into consideration in making our draft decision on the weighted average price cap. However, our draft decision to implement fare changes through a weighted average price cap means that TfNSW has responsibility for how to apply these changes to individual fares. As such, we consider that it would be worthwhile for TfNSW to consider the same pricing principles when setting individual fares.

We considered the comments from stakeholders about our proposed pricing principles and decided that we would make no changes.



Stakeholders generally agreed with our proposed pricing principles. Action for Public Transport supported the principle of simplicity, but stated that it would seem to be compromised by the ‘flexibility’ adjustments proposed by IPART as part of its weighted average price cap approach to fares.<sup>75</sup>

In our previous approach to setting bus fares, we set a *maximum* fare for individual tickets and TfNSW set actual fares so that they were less than or equal to our maximum fare. Under our weighted average price cap approach, TfNSW will still set the actual fares for individual tickets, subject to the constraints of the cap. In terms of simplicity, the outcome for passengers is the same.

Action for Public Transport also noted that fares should be set to encourage a modal shift from private motor cars to public transport.<sup>76</sup> The Council of Social Services of NSW (NCOSS) also supported the inclusion of a principle to encourage modal shift from cars to public transport as well as ‘affordability’.<sup>77</sup>

We consider that encouraging a mode shift from cars to public transport is a matter of government policy. We note that the NSW Government’s NSW 2021 plan includes the goal of growing patronage on public transport by making it a more attractive choice. How we have taken into account the affordability of our draft decision on fares is discussed further in Chapter 8.

Both NCOSS and Action for Public Transport expressed concern about the principle of price signalling. NCOSS argued that it should be used primarily to stimulate and extend bus patronage, not solely to stimulate or shift demand to off-peak.<sup>78</sup> Action for Public Transport noted that proposals for peak pricing would need to be carefully determined so that passengers travelling during peak periods are not penalised for travelling against the principal flow and that older people may be penalised for travelling during the peak.<sup>79</sup>

As we have decided not to set individual fares, we have not made any draft decisions about peak and off-peak pricing. We consider that price signalling should be a matter for TfNSW to consider in setting individual fares.

Save our Rail NSW Inc. suggested that IPART could consider some form of incentive for bus operators to increase patronage, improve efficiency of operation and punctuality.<sup>80</sup> In Chapter 2, we noted that we have no role in setting or enforcing the conditions in the contracts that TfNSW has with bus operators to provide bus services. Therefore, we have no ability to influence the incentives for bus operators to increase patronage or efficiency through our draft determination.

<sup>75</sup> Action for Public Transport, 23 June 2013, p 8.

<sup>76</sup> Action for Public Transport, 8 June 2013, p 5.

<sup>77</sup> NCOSS, p 7.

<sup>78</sup> Ibid.

<sup>79</sup> Action for Public Transport, 23 June 2013, p 8.

<sup>80</sup> Save our Rail NSW Inc., 17 June 2013, p 5.

#### 7.4 Why we chose to apply a weighted average price cap rather than set fares for individual tickets

Some stakeholders considered that we should set the fares for individual tickets.<sup>81</sup>

We consider that setting individual fares would not provide TfNSW any flexibility to change the structure and level of fares as required to facilitate the introduction of Sydney's public transport electronic ticket, Opal. The introduction of the Opal should not limit TfNSW in recovering the passenger share of revenue. If we set the maximum prices for each ticket, a fare restructure may require a larger contribution from taxpayers than is justified by the external benefits generated by bus services.

TfNSW's decision on the price of individual fares will be subject to the average price cap (weighted by ticket sales). If some fares increase by more than the average, they will need to be offset by a change in other fares by less than the average. We consider that this provides passengers with sufficient certainty about how fares are likely to change. We also consider that additional consumer protection is unlikely to be necessary given that governments are accountable to their constituents for decisions on individual fare increases.

We have also decided that if the TfNSW increases bus fares by less than the allowed cap at the start of the year, it will be able propose further increases in the same year, so long as the total annual increase does not exceed the cap. Further, if TfNSW increases fares by **less** than the allowed increase in one year, in the following year TfNSW can increase fares by more the allowed increase in the next year provided that average fares do not exceed what would have been charged had TfNSW increased fares by the maximum increase in the previous year.

Action for Public Transport considered that this may encourage the Government to forgo approved fare increases for political purposes leading up to an election and would then apply the normal plus foregone increase after the election.<sup>82</sup> Under our draft determination, TfNSW cannot catch up on forgone **revenue** from previous years. They can only increase the fares more than the price cap to collect the same amount of revenue had the fares been increased by the maximum in the previous year. This means that passengers will be no worse off regardless of the timing of the fare increase.

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<sup>81</sup> Save our Rail NSW Inc., 17 June 2013, p 4; Mr R. Banyard, p 5.

<sup>82</sup> Action for Public Transport, 8 June 2013, p 3.

## 7.5 Which fares are included in the price cap

The same fare schedule applies in all metro and outer metro bus regions (except Newcastle) as a result of the Government's fare harmonisation policy.

In all regions except Newcastle, the average fare change applies to the following **adult** tickets:

1. MyBus single tickets
2. TravelTen tickets, which can be used for 10 single bus trips
3. The weekly, monthly, quarterly and yearly MyMulti1 tickets (50% of ticket sales through all ticket outlets), which are periodical tickets that allow an unlimited amount of bus trips across the entire metropolitan bus region, and for train trips up to 10 km
4. Special event sports ticket
5. School Term Pass
6. New fares that are not trial products.<sup>83</sup>

Fares for Pensioner Excursion Tickets (PETs), Family Funday Sundays, and other concession fares that can be used for bus travel are set by the Government, but they cannot exceed the equivalent adult fare.<sup>84</sup>

All of the MyMulti fares are set under the rail determination. However, we have decided to include the MyMulti1 fare in the bus price cap calculation, because it is often used by passengers who exclusively or primarily use it for bus trips (see Box 7.1 for more information). This means that if the price of a MyMulti1 goes up by more than the cap in the bus fare determination, then the price of other bus tickets will need to increase by less than this (or decrease) to compensate.<sup>85</sup>

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<sup>83</sup> A trial product is a fare:

- that is forecast to contribute less than 1% of ticket sales and 1% of fare revenue
- for which there is already an approved product that can be used on the route.

A fare will cease to be a 'trial fare' if it exceeds the revenue or ticket sales thresholds, or is continued in the next pricing period.

<sup>84</sup> For the purposes of calculating the average change in fares, all journeys made on concession fares will be added to the journeys taken on the equivalent adult fare.

<sup>85</sup> This has no effect on the fare or revenue from ticket sales associated with the MyMulti1 ticket. The maximum price of MyMulti tickets is set under the 2013 CityRail determination and so they are subject to the cap that applies under that determination. However, if they increase by more than the cap that applies in the 2014 bus determination, then other bus fares will need to offset this increase.

We have not included the MyMulti DayPass, and MyMulti2 and MyMulti3 fares in the cap, because they are primarily rail and ferry tickets.<sup>86</sup> Because a customer can catch a bus anywhere in Sydney with a MyMulti1 ticket, the only reason that a bus passenger would purchase the more expensive MyMulti2 and MyMulti3 tickets would be if they were also catching a train or a ferry.<sup>87</sup> This means that there is no relationship between the price of these MyMulti tickets and that of other bus fares.

In Newcastle, we propose a separate average price cap subject to the same limit – so that on average Newcastle tickets can increase by no more than 0.3% above inflation each year. We have included 50% of the revenue from sales of Orange TravelPasses in this average price cap. If Newcastle tickets were included under the same price cap as Sydney tickets, Newcastle fares could potentially be increased significantly without exceeding the average cap, because the volumes of Newcastle ticket sales are so small in comparison to Sydney bus ticket sales.

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#### **Box 7.1      How the MyMulti1 ticket can be used on buses**

The MyMulti1 ticket is likely to be used by bus customers who regularly have to catch more than one bus per journey as it works out cheaper than purchasing multiple TravelTen tickets, whether or not they also use any rail or ferry services. For example, a MyMulti1 (currently \$44) can be cheaper than using a TravelTen where a passenger makes more than 15 bus trips in a week, on a MyBus2 Travel 10, or more than 12 trips on a MyBus3 TravelTen trips in a week. This most often applies when a passenger has to change buses to complete their journey.

For example, to travel from Mosman to Randwick to and from work every day, a passenger would have to buy a \$36.80 MyBus3 TravelTen, and a \$28.80 MyBus2 TravelTen, equal to \$65.60. These TravelTens provide a 20 discount compared to if all of these journeys were travelled on a single ticket.

While the discount provided by the MyMulti1 compared to the single fares is greater than the 20% discount provided by the TravelTens (\$44 compared to \$65.50), we consider that this is fair because if a single bus travelled the entire route, they could use one MyBus3 TravelTen ticket only (\$36.80). We understand that the Opal card will be able to price the 2 trips as a single 8km+ journey if the passenger boards the second bus within 60 minutes of alighting the first bus.

**Source:** <https://www.opal.com.au/en/fare-information/>

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<sup>86</sup> The boardings on these tickets will be treated as trips made on MyBus2 tickets for the purposes of calculating the average fare changes.

<sup>87</sup> Excluding the other MyMulti tickets means that any changes to these fares do not need to be offset by changes to other bus fares. However, these MyMulti fares must still comply with the weighted average price cap for rail fares.

For the annual fare changes, we will check that the fares proposed by TfNSW comply with our determination by:

1. calculating the revenue in the current year (current price multiplied by the current number of ticket sales<sup>88</sup>)
2. calculating the revenue in the next year (proposed prices also multiplied by the **current** number of ticket sales)
3. making sure the difference does not exceed 0.3% above the rate of inflation.

Box 7.2 gives an example of how we do this.

For fare changes proposed during the year, we make sure that the revenue in the current year does not exceed the revenue in the previous year by more than 0.3% above the rate of inflation (using the ticket sales for the previous year).

The compliance process is discussed further in Appendix F.

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<sup>88</sup> The number of ticket sales is based on the number of boardings. For example, 1 boarding on a single ticket is equivalent to 1 ticket sold, and 10 boardings on a MyBus TravelTen are equivalent to 1 ticket sold.

### Box 7.2 How we check that the proposed fares comply with our fare determination

Consider there are 3 different hypothetical bus fares. In year 1 the revenue is calculated by multiplying the fares by the number of tickets sales made on each fare during that year.

#### Fares and revenue for year 1

Fare	Price	Number of ticket sales (year 1)	Revenue
	a	b	a * b
MyBus1	\$2.20	100	\$2.20*100 = \$220
MyBus2	\$3.60	70	\$3.60*70 = \$252
MyBus1 TravelTen	\$17.60	15	\$17.60*15 = \$264
<b>Total revenue</b>			<b>\$736</b>

We increase the total revenue in year 1 by the average fare increase allowed to calculate the revenue allowed for year 2. With a 2.8% fare increase (equal to our forecast of inflation +0.3%), the total revenue allowed in year 2 will be  $\$736 * (1 + 2.8\%) = \$756.61$ .

The fares for year 2 must be set so that the revenue does not exceed \$756.61. The table below shows that the revenue for year 2 is the product of the proposed fares, and the number of tickets sales for each fare from **year 1**.

#### Fares and revenue for year 2

Fare	Price	Number of ticket sales (year 1)	Revenue
	c	b	c * b
MyBus1	\$2.20	100	\$2.20*100 = \$220
MyBus2	\$3.80 (increased)	70	\$3.80*70 = \$266
MyBus1 TravelTen	\$17.80 (increased)	15	\$17.80*15 = \$267
<b>Total revenue</b>			<b>\$753</b>

The proposed fares for year 2 in the table above would comply with our average fare increase because the total revenue is less than the allowed revenue - \$753 is less than \$756.51. In year 3, the price can increase to what it would have been if the previous year's prices had increased to the maximum allowable amount. However, foregone revenue cannot be recovered.

## 7.6 Why we have we not imposed price limits on individual fares

Because we have determined an average increase, rather than set prices for every fare, some fares may increase by more than 0.3% above inflation. Action for Public Transport stated that in some instances it may be desirable to cap maximum movement in individual fares. They added that an average change in fares should be contingent upon IPART applying additional price limits or 'side constraints'.<sup>89</sup>

We have decided not to apply additional price limits on individual fares, because we consider that it may inhibit TfNSW's ability to undertake important fare reform and is unlikely to provide additional protection to customers.

Fare increases that exceed the average increase may be appropriate for individual tickets as a way of phasing out products where there are alternative fares available (in order to simplify the ticketing system), or where the current fare significantly understates the relative costs of providing the services. For example, TfNSW recently phased out the MyMulti1 tickets on Sydney Ferries because, depending on how the ticket was used, it provided a discount of more than 40% compared to purchasing single journeys, which is significantly higher than the discounts for other modes of transport.<sup>90</sup>

We also consider that relatively higher fares in peak periods may encourage some passengers to shift their travel into off-peak times as a way to manage congestion. The introduction of electronic ticketing would make it technically possible for different fares to be charged for different times.

We also note TfNSW is accountable to its constituents for its decisions on fares. In the past, the Government has generally proposed modest increases in individual fares. For example, in 2013 when TfNSW had flexibility to set individual fares for CityRail and Sydney Ferries, the largest increase for a single trip was 20 cents.<sup>91</sup>

As discussed in section 7.3, we consider that TfNSW should have regard to the same pricing principles when it sets individual fares.

<sup>89</sup> Action for Public Transport, 8 June 2013, p 3; Action for Public Transport, 23 June 2013, p 7.

<sup>90</sup> <http://www.131500.com.au/tickets/fares/mymulti-changes>, accessed 24 September 2013.

<sup>91</sup> IPART, *Compliance Statement for CityRail, Sydney Ferries and Metropolitan and Outer Metropolitan Buses*, December 2012.

## 8 Implications of fare changes for passengers, Government and the environment

Before finalising our draft determination, we considered its impact on stakeholders, as required by section 28J of the Passenger Transport Act and section 15 of the IPART Act.

In particular, we assessed the impact of our draft determination on the affordability of fares for passengers and the levels of bus patronage. We also assessed the likely impact this fare change has on Government expenditure and the likely implications for the environment.

Overall, we consider that our draft determination will have minimal impact on passengers, the NSW Government (taxpayers) and the environment.

The sections below provide an overview of our conclusions and the data and analysis which support them.

### 8.1 Implications for passengers

We consider that our draft decision to allow fares to increase by 0.3% above the rate of inflation, on average, is not likely to reduce the affordability of bus travel. While bus users in general have the lowest incomes of users of all modes of transport, many low income bus users travel on some form of concession fare. We consider that Government concession fares (for example, the Pensioner Excursion Ticket) mitigate the impact of our fare changes on many of these lower income passengers.

In assessing the implications of our draft determination for passengers and coming to these views, we considered:

- ▼ the use of bus services
- ▼ the employment and income profile of bus passengers
- ▼ the relative cost of bus fares to income
- ▼ the use of concession fares.

From this data, we concluded that the maximum average fare increase allowed under the draft determination is not likely to have a significant impact on bus users.



We also note that under the maximum average fare increase allowed under the draft determination, passengers contribute only 40% of the efficient cost of providing bus services, with Government funding the remaining efficient costs. This is consistent with our estimates of the external benefits of bus services and the expected cost of concession funding.

## 8.2 Use of bus services

On an average weekday, residents of the Sydney Greater Metropolitan Area (GMA) catch a bus for 4.2% of their trips. The proportion of trips made by bus is higher during the busy morning peak (5.7%), when traffic is at its busiest, and drops to 1.7% on weekends. This is shown in Table 8.1.

**Table 8.1 Incidence of bus travel in Sydney Greater Metropolitan Area**

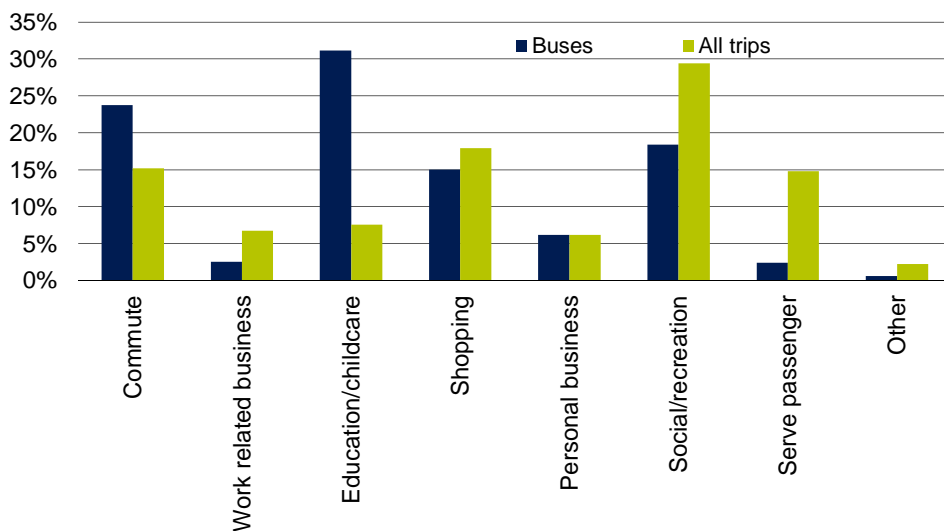
	AM Peak	Weekday	Weekend
Number of bus trips	331,675	1,043,692	343,447
Bus trips as a percentage of total trips	5.7%	4.2%	1.7%
Bus use as a proportion of public transport and taxi use <sup>a</sup>	48%	48%	37%

<sup>a</sup> Most trips are organised through private means such as cars, walking or cycling. For example, on a typical weekday 91.2% of trips are made through private means.

**Source:** Bureau of Transport Statistics, *Household Travel survey, 2011/12*. This is pooled over the period from 2007/08 to 2011/12, weighted to June 2011 population.

Sydney residents are most likely to take the bus to commute to work and for education or childcare; more than half of bus trips are taken for these non-discretionary purposes (see Figure 8.1). This accounts for the spike of bus use in the AM peak.

**Figure 8.1 Purpose of bus travel in Sydney Greater Metropolitan Area**



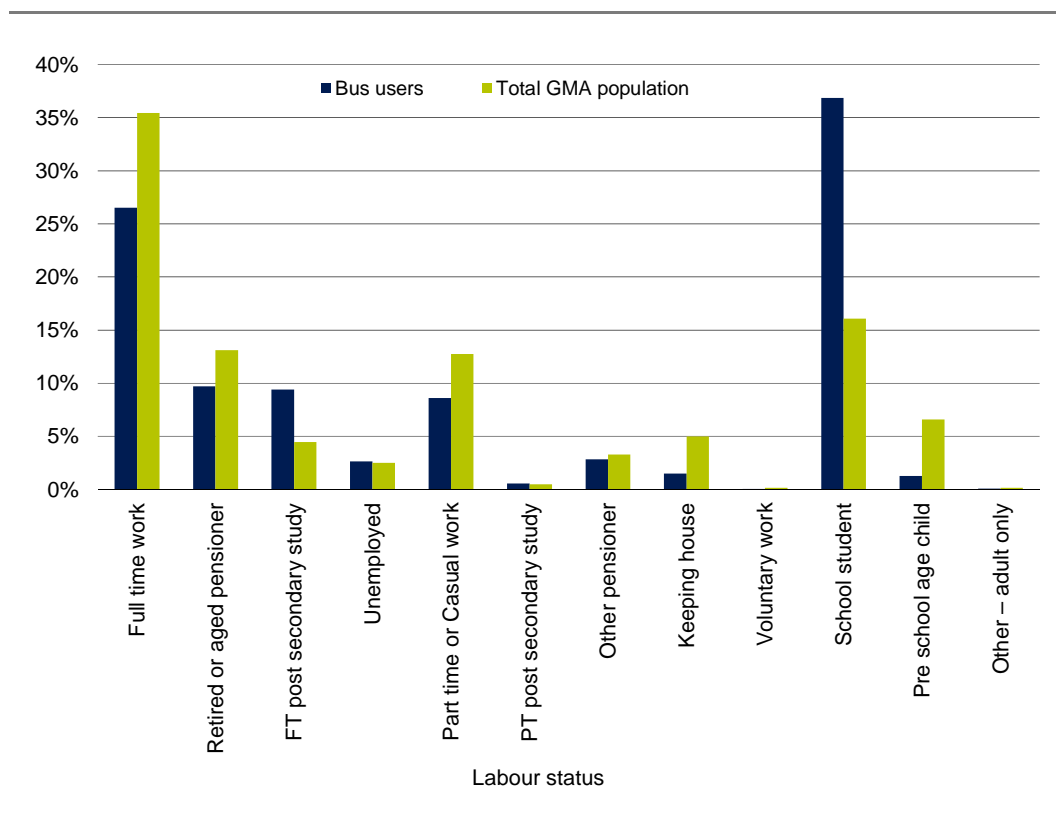
**Data source:** Bureau of Transport Statistics, Household Travel survey, 2011/12.

This is pooled over the period from 2007/08 to 2011/12, weighted to June 2011 population.

### 8.2.1 Labour force status of bus users

On weekdays, the primary users of bus services are school students (37% of total bus trips) and full-time workers (27% of total bus trips). Together they make up more than 60% of trips made – see Figure 8.2.

**Figure 8.2 Labour status of weekday bus users in Sydney Greater Metropolitan Area**



**Note:** A person may be more than 1 type of user.

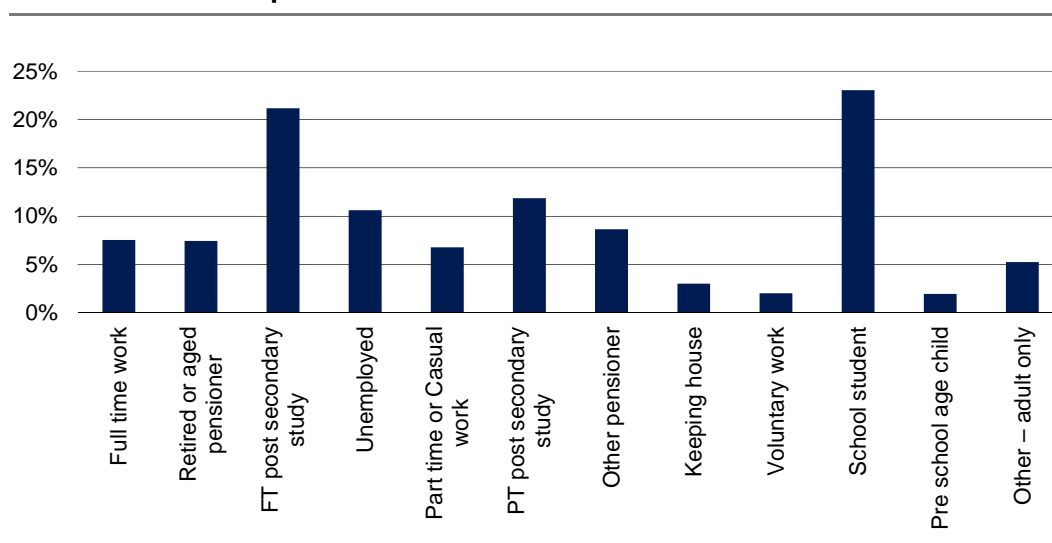
**Data source:** Bureau of Transport Statistics, Household Travel survey, 2011/12. This is pooled over the period from 2007/08 to 2011/12, weighted to June 2011 population.

Expressed as a proportion of each user group, on an average weekday, the bus is used by:

- ▼ 23% of school students
- ▼ 20% of university students
- ▼ 11% of unemployed people
- ▼ 9% of pensioners
- ▼ 8% of full time workers.

This is shown in Figure 8.3.

**Figure 8.3 Percentage of bus users by labour force status in Sydney Greater Metropolitan Area**



**Data source:** Bureau of Transport Statistics, *Household Travel Survey, 2011/12*. This is pooled over the period from 2007/08 to 2011/12, weighted to June 2011 population.

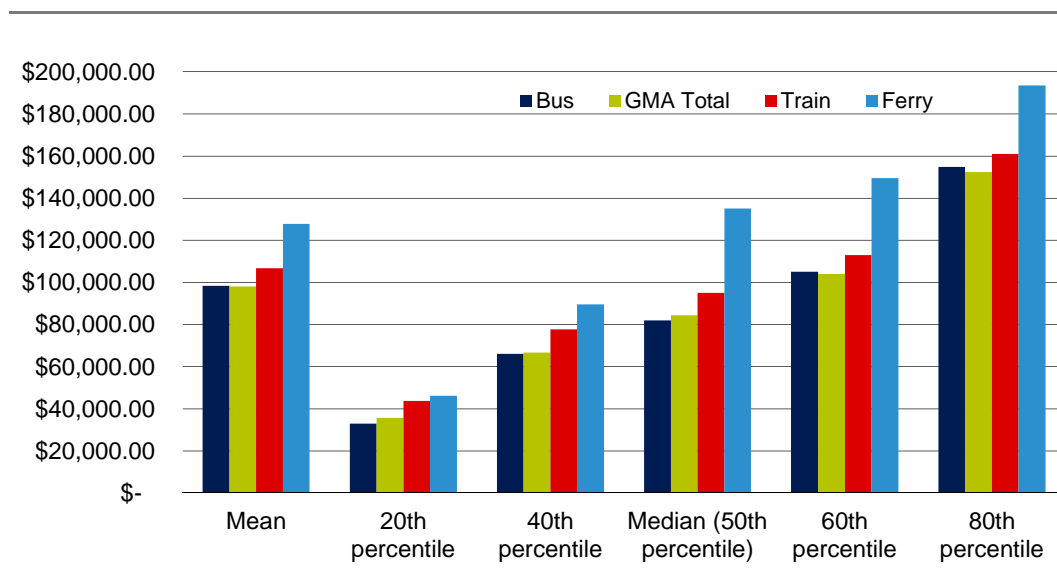
### 8.2.2 Income profile of weekday bus users

The income of the average weekday bus user is 14% lower than the average income in the Sydney GMA, 22% lower than the income of the average train user, and only half the average income of ferry and taxi users. However, it is important to note that the lower income of bus users is at least partly explained by the high number of students who catch the bus.<sup>92</sup>

We consider that the household income of bus users, which may include parents' income, is a more reasonable representation of the socio-economic profile of bus users. Bus users' household income is more in line with the average household income across the GMA: the average bus user's household income is \$98,433 compared with the GMA total average of \$98,047 (\$2011/12). Nevertheless, bus users still have the lowest household incomes compared with users of other modes of public transport (see Figure 8.4).

<sup>92</sup> The income section of the Housing Travel Survey is answered by every member of a household aged 15 years or over.

**Figure 8.4 Household income of weekday bus users in 2011/12 in Sydney Greater Metropolitan Area (\$2011/12)**



**Note:** People may use more than 1 mode of transport. Excludes children under 15. A percentile indicates the value which a given percentage of a population falls below. For example, 20% of all weekday bus users have a household income below \$33,030.

**Data source:** Bureau of Transport Statistics, Household Travel Survey, 2011/12. This is pooled over the period from 2007/08 to 2011/12, weighted to June 2011 population. Income profiles vary between peak and off-peak users.

### 8.2.3 Fares as a proportion of average earnings in NSW

Metropolitan and outer metropolitan bus fares represent between 1.6% and 3.3% of the average adult (ordinary time) weekly earnings in NSW for a TravelTen ticket, depending on the distance travelled.

Given that our draft determination is for annual price increases 0.3% above inflation, the expenditure on bus fares relative to income is likely to change very little. Table 8.2 shows the current costs of TravelTens as a share of weekly earnings.

**Table 8.2 TravelTen tickets as a share of average weekly earnings (% , \$2013)**

Distance travelled (number of sections <sup>a</sup> )	2013 cost of TravelTen	Relative to average weekly earnings NSW (full-time, %)	Relative to average weekly earnings NSW (all, %)
1-2 sections	\$17.60	1.3%	1.6%
3-5 sections	\$28.80	2.0%	2.6%
6+ sections	\$36.80	2.6%	3.3%

<sup>a</sup> A section is approximately 1.6km.

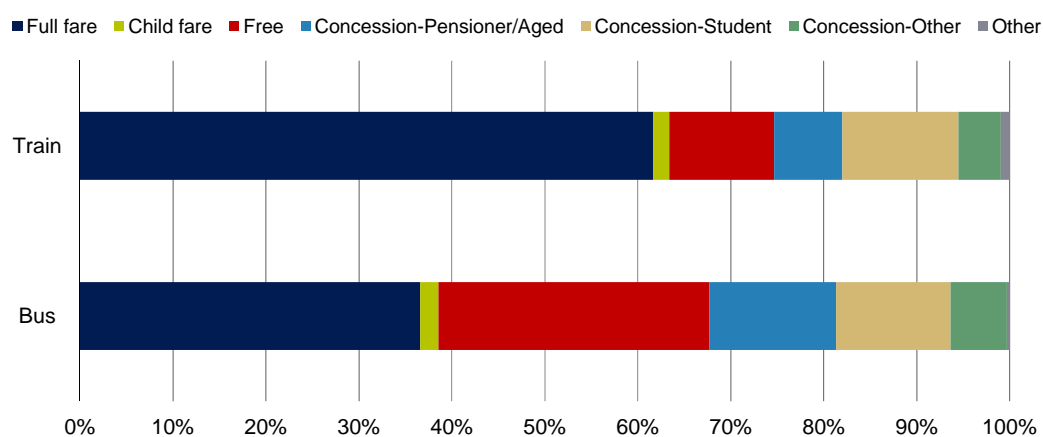
**Note:** average weekly earnings are from May 2013.

**Source:** IPART; ABS Catalogue No. 6302.0, Table 13A.

### 8.2.4 Use of concession tickets

As Figure 8.5 shows, only around 37% of bus trips are made by passengers paying the full fare. Of the remaining trips, 31% are made by school students or other groups travelling for free (mainly as a result of the school student transport scheme (SSTS)) and a further 30% by pensioner, students, and other concessions.

**Figure 8.5 Trips made using bus compared to those made by train**



**Data source:** Bureau of Transport Statistics, *Household Travel survey, 2010/12*. Includes 5 waves (2007/08 to 2011/12) of data weighted to the June 2011 population.

Even though we don't set concession fares<sup>93</sup>, they are generally linked to the level of adult fares. In our view, the availability of concession fares will mitigate the impact of the proposed fare increases for lower income passengers. Our fare determination will have no impact on the 31% of passengers who travel for free.

### 8.3 Implications for the NSW Government

Under the maximum fares in our draft determination, the Government would contribute approximately 60% of the efficient cost of providing bus services. The Government's contribution is made up of 40% of efficient costs in line with our estimate of the external benefits of bus services and 20% for the cost of social policies that involve the provision of free or reduced fares for some passengers (such as pensioners, children, job seekers and people with disabilities). While these social policies are a matter for Government, we consider that it is appropriate that these policies be paid for by taxpayers rather than by full fare paying passengers.

<sup>93</sup> As these fares are set by the Government.

**Table 8.3 Expected revenue from passengers shares (\$million, \$2013)**

	2014	2015	2016	2017
Amount passengers should fund through fares	356	361	364	367
Amount Government contributes for external benefits	233	236	240	243
Amount Government contributes for concession fares	81	82	84	85
Amount passengers fund through fares as a of total costs				41%

#### 8.4 Implications for the environment

We considered the implications of our draft determination on the environment. Our approach for making the draft determination integrates environmental considerations by valuing the external benefits of bus services (which includes the impact to the environment of passengers travelling by bus instead of driving) and using this to guide our draft decision on how much of the efficient costs of these services should be funded by Government.

However, it is our view that there is limited potential for pricing policies - such as the structure and level of bus fares - to help protect the environment. There is evidence that demand of bus services is relatively unaffected by fare changes so it is unlikely that different fare policies will significantly affect the environment.<sup>94</sup> Therefore, we consider that our draft determination would be unlikely to have significant implications (either positive or negative) for the environment.

<sup>94</sup> In 1996, we commissioned Professor David Hensher of the Institute of Transport and Logistics Studies to estimate the effect of price has on demand (price elasticity of demand) for all public transport fares in the Sydney region. Professor Hensher found that the price elasticity of demand for bus travel was around -0.38. This suggests that a 1% increase in fares would reduce patronage by 0.38%, other things being equal.



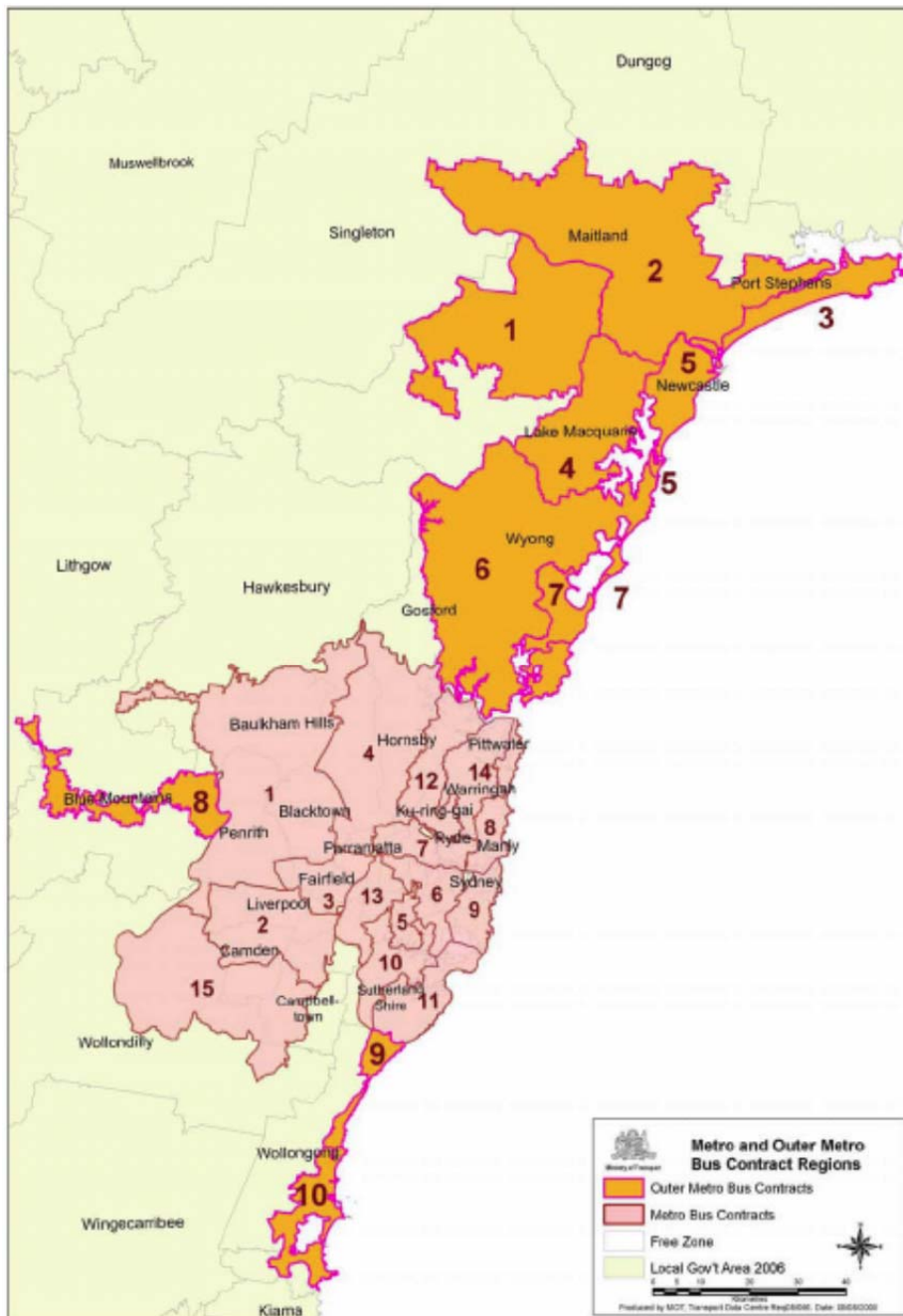




## **Appendices**



## A Map of bus contract regions



## B Legislative requirements for the review

### B.1 Requirements of the *Passenger Transport Act 1990*

Section 28J of the *Passenger Transport Act 1990* states that:

1. This section applies to any service contract for a regular bus service that authorises or otherwise permits the holder (or a person providing the service for the holder under a subcontract or other arrangement) to charge passengers of the service a fare for the use of the service.
2. The Independent Pricing and Regulatory Tribunal (the Tribunal) is to conduct investigations and make reports to the Minister on the following matters:
  - a) the determination of appropriate maximum fares for regular bus services supplied under service contracts to which this section applies,
  - b) a periodic review of fare pricing policies in respect of such services.
3. In respect of an investigation or report under this section, the Minister may require the Tribunal to consider specified matters when making its investigations.
4. Division 7 of Part 3 of the Independent Pricing and Regulatory Tribunal Act 1992 is taken to apply to an investigation under this section in the same way as it applies to an investigation under Part 3 of that Act.
5. In making a determination under this section, the Tribunal is to consider the following matters:
  - a) the cost of providing the services concerned,
  - b) the protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standards of service,
  - c) the need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers,
  - d) the need to maintain ecologically sustainable development (within the meaning of section 6 of the Protection of the Environment Administration Act 1991) by appropriate pricing policies that take account of all of the feasible options to protect the environment,
  - e) the social impact of the determination,
  - f) 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,

- g) contractual arrangements prevailing in the industry,
- h) such other matters as the Tribunal considers relevant.

### **Protection of the Environment Administration Act – section 6(2)**

Section 6(2) of the Protection of the Environment Administration Act (1991) states that:

2. For the purposes of subsection (1) (a), ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:
  - a) the precautionary principle – namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

- i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
  - ii) an assessment of the risk-weighted consequences of various options,
- b) inter-generational equity – namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,
  - c) conservation of biological diversity and ecological integrity – namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,
  - d) improved valuation, pricing and incentive mechanisms – namely, that environmental factors should be included in the valuation of assets and services, such as:
    - i) polluter pays – that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,
    - ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,
    - iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

## B.2 Section 15 requirements of the Independent Pricing and Regulatory Tribunal Act (1992)

Section 15 of the IPART Act (1992) states that:

- (1) In making determinations and recommendations under this Act, the Tribunal is to have regard to the following matters (in addition to any other matters the Tribunal considers relevant):
  - (a) the cost of providing the services concerned,
  - (b) the protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standard of services,
  - (c) the appropriate rate of return on public sector assets, including appropriate payment of dividends to the Government for the benefit of the people of New South Wales,
  - (d) the effect on general price inflation over the medium term,
  - (e) the need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers,
  - (f) the need to maintain ecologically sustainable development (within the meaning of section 6 of the *Protection of the Environment Administration Act 1991*) by appropriate pricing policies that take account of all the feasible options available to protect the environment,
  - (g) the impact on pricing policies of borrowing, capital and dividend requirements of the government agency concerned and, in particular, the impact of any need to renew or increase relevant assets,
  - (h) the impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body,
  - (i) the need to promote competition in the supply of the services concerned,
  - (j) considerations of demand management (including levels of demand) and least cost planning,
  - (k) the social impact of the determinations and recommendations,
  - (l) standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).

(2) In any report of a determination or recommendation made by the Tribunal under this Act, the Tribunal must indicate what regard it has had to the matters set out in subsection (1) in reaching that determination or recommendation.

(3) To remove any doubt, it is declared that this section does not apply to the Tribunal in the exercise of any of its functions under section 12A.

(4) This section does not apply to the Tribunal in the exercise of any of its functions under section 11 (3).

## C Overview of bus contract regime

In 2005/06, the NSW Government simplified the bus contract system to concentrate a multitude<sup>95</sup> of bus regions into 15 metropolitan and 10 outer metropolitan regions. This reform emphasised providing services to major centres and links to other modes of transport. It also moved to a form of service contracting that sees operators receive monthly payments that do not depend on the fares they collect (ie Transport for NSW (TfNSW) effectively takes the fare revenue and uses it to off-set some of the costs of contract payments).

TfNSW entered into individual contracts to provide services for each of these regions. The contracts negotiated under these reforms are now progressively coming to an end. Recently, TfNSW put out competitive tenders to provide bus services in several of the metropolitan contract regions, as well as renegotiating new contracts with other private metropolitan providers and with the State Transit Authority (STA), the government-owned transport operator, which provides bus services for the largest 4 regions by passenger volume. Transport for NSW has now renegotiated or tendered contracts for services in all metropolitan bus regions and the new service contracts should come into effect by the end of August 2014. Several service contracts have already commenced.

The 10 outer metropolitan regions presently remain on the old service contracts, however, these contracts will expire over the coming years and TfNSW is now in the process of renegotiating these contracts.

The new Sydney Metropolitan Bus Service Contracts place a greater emphasis on improved services. They require operators to achieve higher levels of performance, including improved on-time running and performance reporting. As a result of the tender process some operators provided additional services such as the following:

- ▼ improve fleet and service optimisation
- ▼ introduce some contingency services in case of operational issues during peak times
- ▼ add bus services on selected routes (eg. Routes 565, 577, M61 & Transitway)
- ▼ improve running times on many services
- ▼ improve customer information and interfaces.

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<sup>95</sup> For example, previously there were 87 metropolitan bus regions.



This appendix provides an overview of the new metropolitan bus contracts.

### **C.1 Contract duration**

The contracts' terms begin at various times. They are initially valid for 5 years, though they may be extended for a further 3-year period if certain conditions are met, or at the discretion of TfNSW.

### **C.2 Bus services**

Under the contracts, the operator is required to efficiently and effectively meet the approved timetables. These include regular passenger services and dedicated school services.

### **C.3 Additional services**

The contracts also require operators to perform other supplementary duties. Of note, the contracts require operators to:

- ▼ develop and publish accurate timetables and route maps and ensure these are passed to the transport info hotline 131500
- ▼ monitor security on buses
- ▼ inform passengers and TfNSW of service delays
- ▼ develop, implement and comply with passenger relations plans
- ▼ provide a service desk (though it may elect that it be provided by Transport Info 131500)
- ▼ administer school students travel schemes.

### **C.4 Contract payments**

In exchange for the provision of these services, TfNSW pays the operators a monthly contract payment.

Operators receive an incentive payment of 5 cents for every fare-paying passenger on their contracted bus services and they can lose some of their contract payment if they fail to achieve certain key performance indicators.

The contract payments are not offset by other revenue earned by operators – advertising revenue, coach charter revenue, etc. In the previous contracts TfNSW had an 'other revenue' sharing arrangement with the operators.

## C.5 Adjustments to contract payments

### C.5.1 Cost inflators

The contract payments will be adjusted periodically to account for the inflation of costs. Each contract payment cost element is aligned with its own inflator.

### C.5.2 Service variations

From time to time, TfNSW will make a variation to the services required.<sup>96</sup> In that case, the operator and TfNSW will come to an agreement about the variation in bus service kilometres and bus service hours needed to accommodate the change.

The operator will be paid for these extra services according to scheduled rates for extra bus hours and kilometres. These rates vary by the time of day, the day of the week, and the type of bus needed to carry out the change in services.

### C.5.3 New buses

New buses are bought or leased directly by operators. Any approved new bus procured under the contract term entitles operators to 15 years of monthly payments equivalent to the upfront cost of a bus (determined by TfNSW's procurement panel) - even if the bus is leased - borrowed at an agreed interest rate. The interest rates vary by contract region.

## C.6 Key Performance Indicators

TfNSW judges the operators' services provision against key performance indicators (KPIs). The emphasis of the KPIs is on the delivery of service outcomes to customers as set out in the contract which included safe and reliable services.

There are 4 classes of KPIs. Class 1 KPIs - outlined in Box C.1 - are the most important; these are the KPIs that operators must comply with or else they face financial penalties. Each breach of a class 1 KPI will result in 0.75% of the monthly contract payment being deducted from the monthly payment. There is a loading factor that means that multiple breaches of a KPI result in harsher penalties.

In addition, repeated failure to meet class 1 KPIs can trigger a termination of contract.

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<sup>96</sup> The operator may request a service variation, though this is subject to TfNSW's approval.

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**Box C.1 Class 1 KPIs**

- a) In a reporting period, at least 95 of published timetable trips and headway trips commence the trip on time.
  - b) In a monthly period, less than 1% of trips are incomplete and less than 1% of trips are cancelled.
  - c) In an annual period, there are less than 22 complaints per 100,000 passenger boardings.
  - d) In a monthly period, there are no major defects to contract buses.
  - e) In a monthly period, at least 99.5% of passengers inspected have paid for their Trip boarding.
  - f) In a monthly period, there are no errors in the information on the operator's website and or on Transport for NSW's operational database.
  - g) All incidents that required an image from closed circuit television were retrievable and all duress alarms were responded to within 30 seconds.
- 

Operators are required to monitor class 2 and class 3 KPIs<sup>97</sup> and provide detailed reports on their performance to TfNSW. TfNSW can redesignate up to a maximum of 2 Class 2 KPIs to a Class 1 KPI at its discretion.

There is only one Class 4 KPI and it measures customer satisfaction. If it is not met over a set year period, the operator will have to pay 0.3% of their annual contract payment to TfNSW.

## C.7 Reporting and Governance

Periodically, operators must provide the following information to TfNSW:

- ▼ Monthly operational reports - value of ticket sales, bus service kilometres, performance data, incomplete trips, passenger data by bus route, customer feedback, timetable changes, contract buses, patronage by time of day.
- ▼ Monthly performance reports for all KPIs, including corrective action plans for failed KPIs, forecasts, trends, progress against improvement plans, recommended improvements to operational processes.
- ▼ Monthly commercial reports - organisational changes, commercial changes, service variation financial summary and trend analysis.
- ▼ Monthly invoice reports.

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<sup>97</sup> Class 2 and 3 KPIs relate to performance of accessible services, complaints resolution and responses to requests for information, 131500 database management and updates, notifying Transport for NSW of bus crowding, cleanliness of buses, maintenance, incident resolution, reporting, project delivery, scheduling and passenger growth.

- ▼ Quarterly Executive Report – Achievement (completed activities and projects), performance scorecards, improvement opportunities, lists of upcoming activities and projects.
- ▼ Annual and biannual financial reports.
- ▼ Continual data transfers including:
  - Operational and Spatial Database – timetable, route, bus stop and shift data, and data from automated and electronic ticketing systems.
  - Public Transport Information and Priority System – GPS data.
  - SSTS data – full details of students to whom the transport operator has issued passes and those which remain current.

Accompanying these reports are regular forums to ensure that operators are complying with the contract and TfNSW's long-term objectives. The following forums attended by senior management occur throughout the contract:

- ▼ Monthly service delivery forum – focuses on the ongoing delivery of the services required including service management, customer satisfaction, and KPI performance and reporting.
- ▼ Monthly commercial forum – focuses on payments, service credits, disputes, contract negotiations and contract variations.
- ▼ Quarterly executive forum – focuses on the ongoing relationship between TfNSW and the operator, the alignment of the operator and the contract towards Transport for New South Wales's business strategies and objectives, management of issues and alignment of governance requirements.

## C.8 Contract buses

All contract services must be performed by contract buses, ie buses that are listed in the contract. At all times, the contract bus fleet must average less than 12 years of age and each bus must be withdrawn from the contract at 25 years of age.

New buses can be added to the contract if a bus needs to be replaced, because a contract bus has reached its retirement age or because a contract bus has been irreparably damaged, or a new bus is needed to adequately supply services in the event of a service variation. All new contract buses must be approved by TfNSW and must comply with Sydney Metropolitan Bus Service Contract Specification and be purchased from the TfNSW bus procurement panel unless approved otherwise.

At the beginning of the contract, and every year thereafter, the operator of the bus fleet provides TfNSW with a New Bus Program.

If the new bus is:

- ▼ leased by the operator then there must be an Operator Bus Lease Agreement between the operator, lessor and TfNSW as set out in the contract
- ▼ purchased by the operator then there must be an Operator Financier Agreement between the secured financiers and TfNSW as set out in the contract.

At the end of the term, if the contract is not renewed then the operator must sell all buses or transfer its bus leases to the successor operator or a TfNSW Lessor. For the tendered contract regions, all buses funded in the previous contract and during the new contract will be made available and transferred to a successor operator. Any buses brought into the contract that were owned by the operators are not subject to transfer. For the new contracts that were negotiated, all contract buses will be made available and transferred to a successor operator.

### **C.9 Other noteworthy conditions**

- ▼ Tickets and fares must be charged at the rates set out in the fares and ticketing schedule.
- ▼ TfNSW maintains ownership of new and some existing systems and equipment and the data collected by these machines.
- ▼ There is a separate electronic ticketing system agreement between operators and TfNSW to facilitate the installation and maintenance of electronic ticketing system equipment on contract buses.

If the contract went to a new operator then it must offer employment to all employees except for general managers and the board of directors.

## D Weighted average cost of capital (WACC)

The weighted average cost of capital (WACC) determines 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.

Since our 2010 determination, we have developed our approach to setting the WACC. We now use a post-tax WACC to determine a rate of return.<sup>98</sup> Under the post-tax WACC, tax liability is estimated separately from the WACC, based on revenue and expenses of regulated business activities. Although the STA may not be 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.

We are currently reviewing our WACC methodology 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.

Although we have not finalised our review of the 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 approach in the interim is to:

- ▼ 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).
- ▼ 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.

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<sup>98</sup> 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.

- ▼ 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.

We released a draft decision on our WACC methodology on 23 September 2013. The main differences between our interim methodology and the draft decision are:

- ▼ the forward-looking MRP based on current market data will be estimated using 6 different methodologies compared to one methodology (Bloomberg) in our interim methodology
- ▼ use of an uncertainty index to cross-check our midpoint WACC against current expectations.

The final decision on our WACC methodology will be released in early December and we will take this into account in preparing our final report on metropolitan bus fares.

## D.1 Summary of our draft decision on WACC

Our draft decision is that the real post-tax WACC that should apply to the operator of the 4 largest contract regions is 5.1%. This represents the mid-point of the short-term and long-term approaches as set out in our June 2013 interim report. This value is based on:

- ▼ the same industry-specific parameters that were adopted for our 2010 determination
- ▼ market-based parameters<sup>99</sup> updated over the 40-trading day period to 24 July 2013.

Our draft decision on the WACC is summarised in Table D.1. Our draft decisions on individual parameters are discussed in the following sections.

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<sup>99</sup> The market-based parameters are the risk free rate, the inflation adjustment and the debt margin.

**Table D.1 WACC range and parameters**

Parameter	Short-term	Long-term	2010-2013 determination
Nominal risk free rate	3.0%	5.0%	5.50%
Inflation adjustment	2.5%	2.7%	2.80%
Debt margin	2.3 to 3.1%	2.4%	1.7 to 3.8%
Market risk premium	7.9 to 7.9%	5.5 to 6.5%	5.5 to 6.5%
Debt to total assets (gearing)	60.0%	60%	60%
Gamma	0.25	0.25	0.5 to 0.3
Equity beta	0.7 to 1.0	0.7 to 1.0	0.7 to 1.0
Cost of equity (nominal post-tax)	8.5 to 10.9%	8.8 to 11.5%	9.4 to 12.0%
Cost of debt (nominal pre-tax)	5.3 to 6.1%	7.4 to 7.4%	7.2 to 9.4%
WACC range (real pre-tax)	4.9 to 6.6%	6.2 to 7.5%	5.8 to 8.7%
WACC midpoint (real pre-tax)	5.7%	6.8%	7.2%
WACC range (real post-tax)	4.0 to 5.4%	5.2 to 6.2%	5.1 to 7.4%
WACC midpoint (real post-tax)	4.6%	5.6%	6.2%
<b>Recommendation</b>	<b>5.1%</b>		

**Note:** The 2010 determination did not use a real post-tax WACC. The pre-tax WACC has been converted into a real post-tax WACC for comparison only.

**Source:** IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 - Final report*, December 2009; IPART modelling.

### D.1.1 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.

We estimated the risk-free rate using both the 40-day and 10-year averages of 10-year Commonwealth Government bond yields. This resulted in a nominal risk-free rate of 3.0 - 5.0%.

### D.1.2 Inflation rate

The inflation rate is used to convert nominal parameters into real parameters. We estimated inflation using a 40-day average of swap market implied inflation with a 10-year term-to-maturity and breakeven inflation from bond markets using 10-year term-to-maturities averaged over 10 years. This resulted in an inflation rate of 2.5 to 2.7%.



### D.1.3 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.

We estimated the debt margin based on our current bond portfolio, the Bloomberg fair value curve and the 10-year average of the 7-year Bloomberg fair value curve. This resulted in a debt margin of 2.3 to 3.1% and 2.4% respectively.

### D.1.4 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.

We estimated the MRP using a 40-day average of the implied MRP from Bloomberg, which resulted in an MRP of 7.9 to 7.9%, and a historical arithmetic average MRP of 5.5 to 6.5%.

### D.1.5 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.

We used the same gearing of 60 as we used for rail services in our 2012 CityRail determination.

### D.1.6 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.<sup>100</sup> 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.<sup>101</sup> As such, we have applied a gamma of 0.25.

### D.1.7 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.

We consider that buses have a slightly lower risk profile than rail services, with an equity beta range of 0.7 – 1.0, compared to 0.8 – 1.0. In our 2010 report, we stated that:

Bus companies have a lower proportion of fixed costs, compared to rail companies, which means that hypothetically, they are better able to adjust their operations according to the level of economic activity. This characteristic results in a lower level of profit variability, which should be reflected in a lower equity beta range.<sup>102</sup>

We consider that there are good reasons for continuing to view bus services as having a lower risk profile than urban rail, because:

- ▼ bus journeys were less impacted by the slower economic growth in NSW at the time of the global financial crisis than were rail journeys (see Figure D.1)

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<sup>100</sup> 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.

<sup>101</sup> Australian Competition Tribunal, Application by ENERGEX Limited (Gamma) (No 5) [2011], ACompT 9.

<sup>102</sup> IPART, *Review of fares for metropolitan and outer metropolitan bus services from January 2010 – Final Report*, December 2009, p 59.

- ▼ buses have lower operating leverage than rail (ie, a smaller share of costs are fixed) due to their smaller proportion of capital costs and the fact that bus assets (buses and depots) are more easily sold than rail assets if there is a persistent downturn in demand driven by systematic factors.

#### D.1.8 Patronage and economic conditions

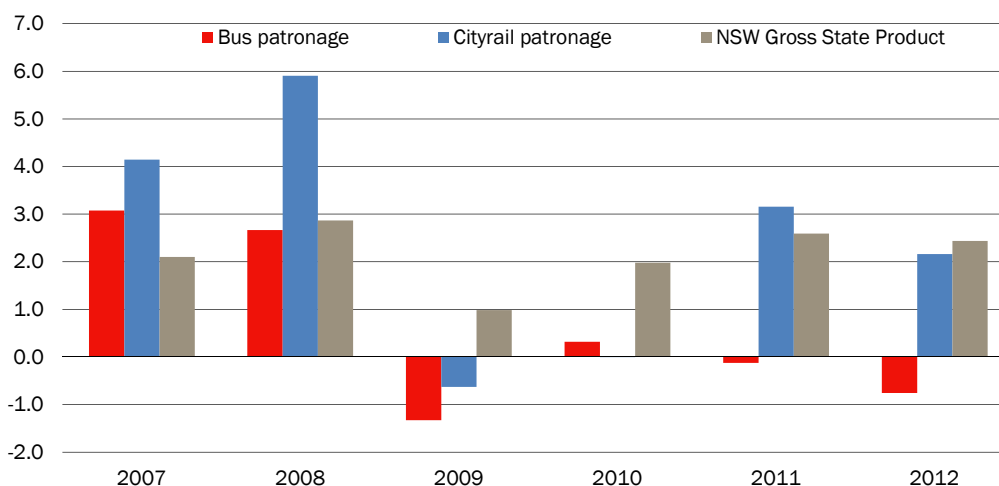
One measure of the level of systematic risk of an asset is the extent to which its returns are related to changes in broader economic conditions, such as the level of economic activity.

Bus patronage and rail patronage are both impacted by economic conditions. When economic growth slows, there are changes in the level of employment and decentralisation of employment to locations not well serviced by public transport. This then reduces the number of people using these services.

The closest that NSW and the Australian economy have come to an economic contraction in recent years was in 2008/09 following the Global Financial Crisis. In that year NSW Gross State Product grew by 1%.

Both rail patronage and bus patronage contracted in the 2009 calendar year (Figure D.1). This was particularly pronounced for rail, which had been achieving stronger growth in 2007 and 2008. Following 2009, bus patronage has not recovered, while rail patronage began increasing in 2011.

The response of patronage growth to a 1% change in the growth of gross state product is measured at 1.3% for buses and 3.0% for rail. While this is based only on a very short period, this does reflect the intuition that rail would be more impacted by an employment downturn in the CBD because of the focus of the rail network in providing CBD trips. Based on this, bus assets would tend to be considered as lower risk than rail assets and hence have lower equity beta (for the same gearing level).

**Figure D.1 Changes in patronage and economic conditions (2007-2012)**

**Note:** Bus data is for the 4 largest metropolitan regions.

**Data source:** Bureau of Transport Statistics (CityRail patronage); ABS National Accounts: State Accounts 5220.0; Transport for NSW (buses).

The patronage changes that are observed also reflect changes in the bus and rail networks. The most significant change was the opening of the rail line to Macquarie Park during 2009. This meant that the reduction in rail journeys that occurred in 2009 was less than would have occurred in the absence of the new line, and strengthens the argument that rail patronage is more impacted by economic conditions than is bus patronage.

### Operating leverage

Operating leverage is the proportion of the costs of a business that are fixed versus those that are variable. A higher operating leverage is likely to increase risk and the equity beta.<sup>103</sup> Operating leverage is higher where:

- ▼ capital costs and fixed operating costs are a larger share of the costs of a business
- ▼ capital is less able to be redirected to other uses if there is a change in demand.

### Capital intensity of bus and rail services

A business that has a higher capital costs relative to operating costs is generally considered to have greater risk.

<sup>103</sup> McKenzie M and G. Partington 2012, *Estimating of the equity beta for a gas regulatory process in 2012*, prepared for the AER.

A greater portion of the costs of providing rail services is capital-specific than for bus services. While roads are used by buses, this capital is generally not specific to providing this service. In terms of the amount of capital that is part of regulated decisions rail is also more capital intense. In 2012/13, we allowed for capital costs that were around 30% of the total costs for CityRail.<sup>104</sup> In this draft report, we have calculated that capital costs are around 19 of total costs for bus services in the 4 largest regions.

Having a higher share of costs that are operating costs instead of capital costs would suggest that bus services could respond to changes in demand by reducing costs better than rail.

#### Ability to redirect capital

Major bus assets include buses and depots. These assets are not specific to providing services in NSW. There is the potential that buses can be traded (either in Australia or overseas) if not required for use in NSW. Depots could also be used for other purposes. Bus assets included in the regulated asset base also include assets that could be easily shifted to be used by cars, such as the inner west bus way.

Passenger rail assets are highly specific to providing rail services in NSW. The rolling stock is tailored for the NSW rail network. Below-rail assets would take many years and high cost to convert to another use – they are effectively sunk. (IPART only includes a small amount of capital for below-rail assets in its regulated asset base.)

These factors suggest that if there was a systematic downturn in demand for bus and rail services then buses would be able to recover a greater amount of the capital than would rail. This means that, other things equal, buses would be considered less risky than rail.

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<sup>104</sup> IPART, *Review of maximum fares for CityRail services from January 2013 – Final Report*, November 2012.

## E Our analysis of the service performance of metropolitan and outer metropolitan bus operators

Bus operators' incentives for maintaining or improving service quality are not directly affected by our determinations. However, we are required to take into account standards of quality, reliability and safety of services when making our decision.

Operators are required to meet certain key performance indicators (KPIs) outlined in their service contracts. Transport for NSW (TfNSW) monitors performance against these KPIs. From 2013, the new service contracts include additional KPIs compared with earlier contracts. These include passenger crowding, information provision and presentation of buses. The new contracts also include greater detail around KPIs for punctuality and handling of customer complaints.

In past years we have drawn upon the findings of annual surveys of public transport passengers to provide a picture of customer satisfaction with bus services.<sup>105</sup> However, the Government has not yet released results of the 2012 and 2013 passenger surveys that were undertaken. We consider that this information should be made public on a timely basis so it is relevant to holding operators to account and comparing performance across regions.

This appendix provides a summary of performance reported by operators over the 2010-2013 determination period, focussing on performance in 2012/13.

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<sup>105</sup> The 2012 passenger survey was undertaken by the Bureau of Transport Statistics. In 2013 TfNSW took on responsibility for the passenger survey.

## E.1 Summary of performance outcomes for 2012/13

TfNSW has provided data<sup>106</sup> that shows:

- ▼ The number of timetabled services increased by 1.2% overall, higher in both metropolitan and outer metropolitan contract areas compared with 2011/12.
- ▼ On-time running KPIs were met in half of the 14 metropolitan contract regions and all of the 10 outer metropolitan regions:
  - On time running is measured at key transport hubs in metropolitan regions (so relates to various points during a journey) whereas in outer metropolitan regions it is measured as buses leaving the depot on time.
  - On time running improved in the majority of metropolitan regions but varied considerably on a month by month basis.
  - On-time running, as measured by the number of buses leaving the depot on time, remained at similar levels to 2011/12 in the outer metropolitan regions.
- ▼ The number of services reported as incomplete or cancelled was low and within the required standard for all operators:
  - 0.21% of trips across metropolitan regions
  - 0.01% of trips across outer metropolitan regions.
- ▼ Wheelchair accessibility has increased:
  - The proportion of buses that is wheelchair accessible is higher in metropolitan regions (77% on average) than in outer metropolitan regions (50% on average) but is rising for all contract regions.
  - The majority of timetabled services are wheelchair accessible according to the timetable.
- ▼ There was an average of 18 complaints per 100,000 boardings across the metropolitan contract regions and 27 complaints per 100,000 boardings across outer metropolitan regions.

## E.2 Number of timetabled services and service kilometres

In 2012/13 the number of timetabled bus services and service kilometres grew. This is part of a rising trend in both metropolitan and outer metropolitan regions over the past few years (Figure E.1).

In 2012/13 there were:<sup>107</sup>

- ▼ 8.4 million bus services were timetabled in the metropolitan bus regions:
  - a 0.8% increase compared with 2011/12
  - a 7% increase since 2009/10

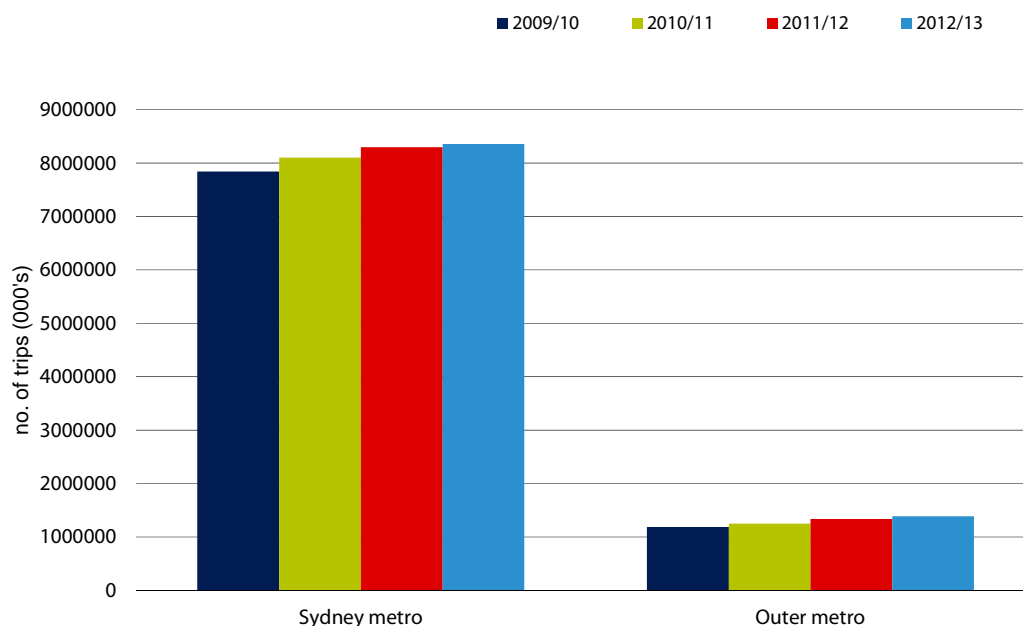
<sup>106</sup> Data provided to IPART from TfNSW, 10 September 2013.

<sup>107</sup> Data provided to IPART from TfNSW, 10 September 2013.

E Our analysis of the service performance of metropolitan and outer metropolitan bus operators

- ▼ 1.4 million bus services timetabled in the outer metropolitan bus regions:
  - a 4% increase on 2011/12
  - a 17% increase since 2009/10.

**Figure E.1 Timetabled bus services 2009/10 to 2012/13**



**Data source:** Transport for NSW.

In 2012/13 there were:

- ▼ 128.7 million kilometers of bus services were timetabled in the metropolitan bus regions:
  - a 1.6% increase since 2011/12
  - a 15% increase since 2009/10.
- ▼ 28.7 million kilometers of bus services scheduled in the outer metropolitan bus regions:
  - Reflecting a slight reduction since 2011/12
  - a 17% increase since 2009/10.

### E.3 On-time running

The NSW Government's 2021 plan sets a target of 95% of Sydney buses running on time across the network.<sup>108</sup> This standard is also reflected in the current bus service contracts.

<sup>108</sup> NSW Government, *NSW 2021*, September 2011.

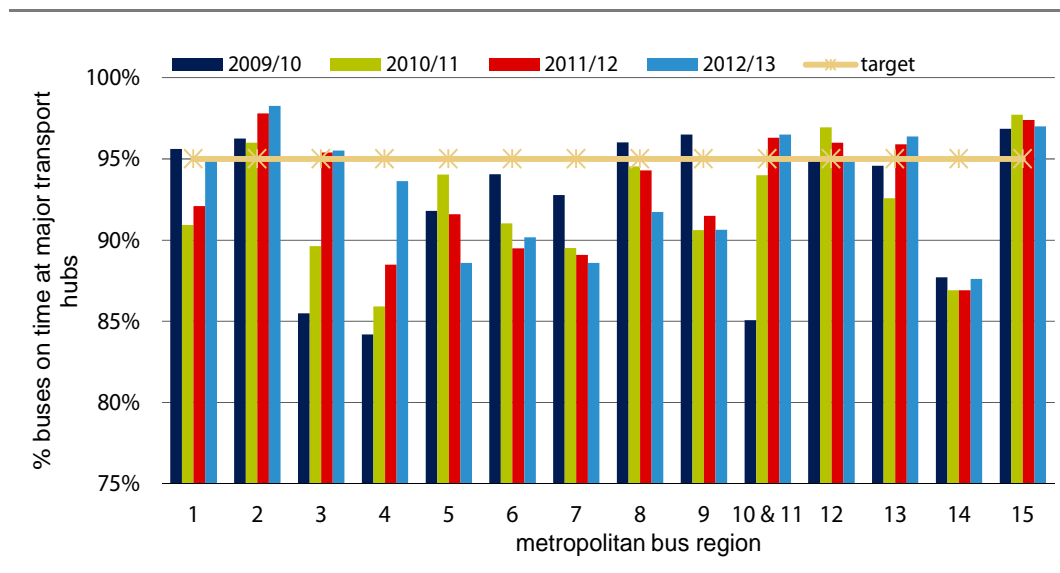


On-time running KPIs were met in 6 of the 14 metropolitan contract regions but were met in all of the 10 outer metropolitan regions. However, measurement of compliance with the standard is more stringent in metropolitan regions than in outer metropolitan regions. In metropolitan regions, Transport for NSW has independent surveyors carry out checks of metropolitan bus service departures at major transport hubs across the Sydney Region and operators' review and sign off on monthly data. In outer metropolitan regions operators report only on whether buses left the depot on time.

### E.3.1 Metropolitan contract regions

Figure E.2 shows the average percentage of buses on time<sup>109</sup> by metropolitan contract region.

**Figure E.2 On-time running by metropolitan bus contract regions, 2010/11 to 2012/13**



**Note:** Performance is not measured in January. In 2009/10 information was collected separately for regions 10 and 11 and the 2009/10 figure in this chart for this region reflects performance in region 10 only.

**Data source:** Transport for NSW.

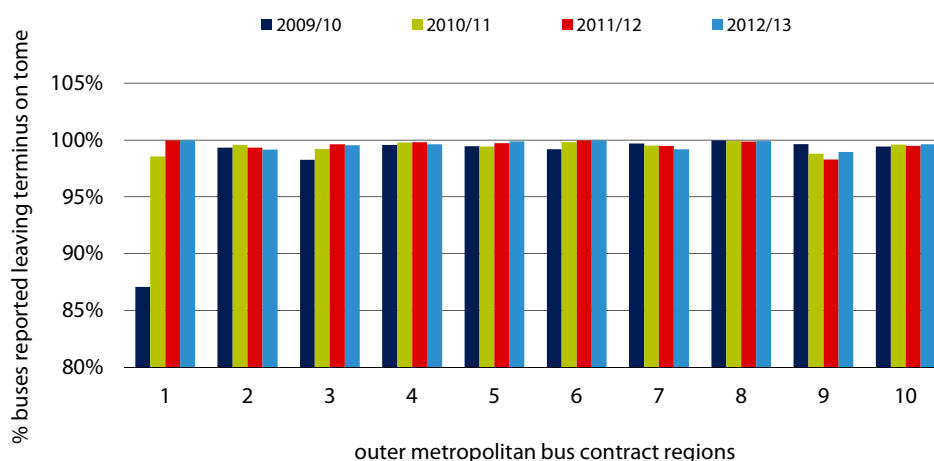
<sup>109</sup> The 2013 Sydney Metropolitan Bus Contract defines on time as a bus departing a Transit Stop no more than 1 minute 59 seconds early and no more than 5 minutes 59 seconds late compared to Timetable and for Headway Trips means commencing each Headway Trip within 5 minutes 59 seconds of published Headway. Where Contract Buses link with train services in the Timetable, time is measured from when passengers arrive at the Transit Stop.

### E.3.2 Outer metropolitan contract regions

In outer metropolitan bus regions on-time running is measured by operators' reporting the incidence of buses leaving the terminus early or late. This is limited as a measure of service outcomes for passengers. While we recognise that there is a cost of collecting actual data, we do not consider on-time running measured solely at the trip's origin to be a good indicator of the bus network's actual on-time running performance or the level of service actually experienced by passengers.<sup>110</sup> We note that buses can run early and late at different points throughout a journey but that this is not captured.

In each outer metropolitan region 99% or more services were reported to have left the terminus on time, well above the target of 95% (see Figure E.3).

**Figure E.3 Buses reported leaving the terminus on time, outer metropolitan bus contract regions, 2009/10 to 2012/13**



**Note:** In 2009/10, TfNSW identified that Region 1 had applied a different definition of this measure to other regions and its results were not able to be compared to other regions. From 2010/11 Region 1 applied a definition consistent with other regions.

**Data source:** Transport for NSW.

<sup>110</sup> IPART, *Review of fares for metropolitan and outer metropolitan bus services from 2 January 2008, December 2007* and IPART, *Review of fares for metropolitan and outer metropolitan services from January 2010 - Final Report, December 2009*, p 49.

#### E.4 Proportion of services incomplete or cancelled

The number of services reported as incomplete or cancelled is very low and within the required standard for all operators. In 2012/13 in the metropolitan bus contract regions 0.21% of services were incomplete or cancelled (that is, 99.79% ran in their entirety). In the outer metropolitan regions 0.01% of bus services were cancelled or not completed. Most outer metropolitan regions report that 0% of services were incomplete or cancelled.

#### E.5 Wheelchair accessibility

Wheelchair accessibility has increased. The proportion of buses that is wheelchair accessible is higher in metropolitan regions (77% on average) than in outer metropolitan regions (50% on average) but is rising for all contract regions. The majority of timetabled services are wheelchair accessible according to the timetable.

The TfNSW Disability Action Plan 2012 provides:<sup>111</sup>

- ▼ Buses that do not comply with the Transport Standards under the *Disability Discrimination Act 1992* are progressively being replaced with accessible buses built to design standards that have been tested by customers with disabilities and comply with Transport Standards under the Disability Discrimination Act.
- ▼ All operators of contracted bus services are required to comply with Transport Standards under the Disability Discrimination Act and produce a Disability Action Plan (p 12). Operators are required to report on progress against accessible targets and these reports will be available to the public.
- ▼ Accessible buses will be placed on priority routes and timetabled accessible services will be expanded as buses become available.

The proportion of the fleet that is wheelchair accessible has been steadily increasing over the last few years (Figure E.4 and Figure E.5). All new growth and replacement buses are wheelchair accessible.<sup>112</sup>

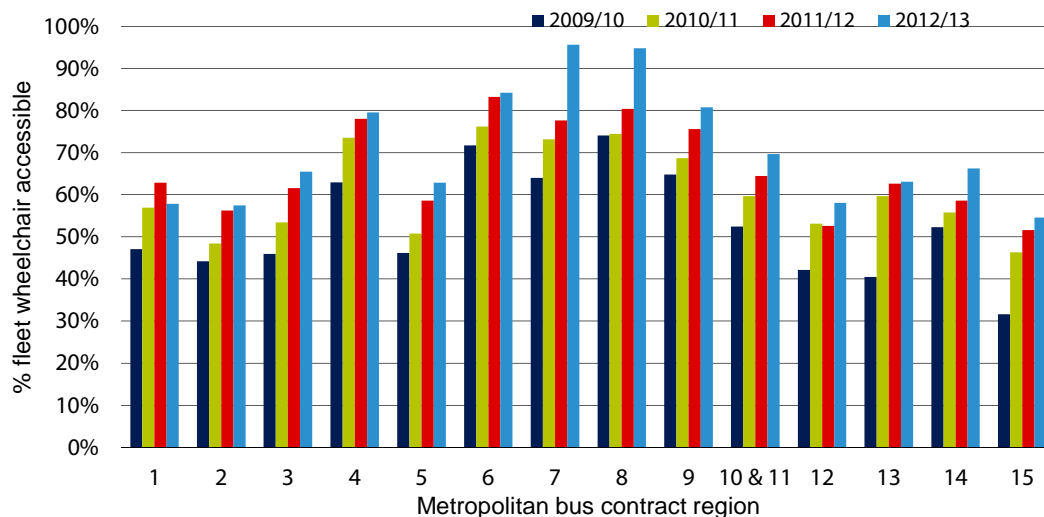
77% of buses in the metropolitan contract areas are now wheelchair accessible (up from 59% in 2009/10). In some regions this is now over 95% of buses.

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<sup>111</sup> Transport for NSW Disability Action Plan 2012-2017, accessed 4 September 2013 <http://www.transport.nsw.gov.au/sites/default/files/b2b/publications/tfnsw-disability-action-plan-2012-2017.pdf> p 6, 12.

<sup>112</sup> Correspondence with Transport for NSW, December 2011.

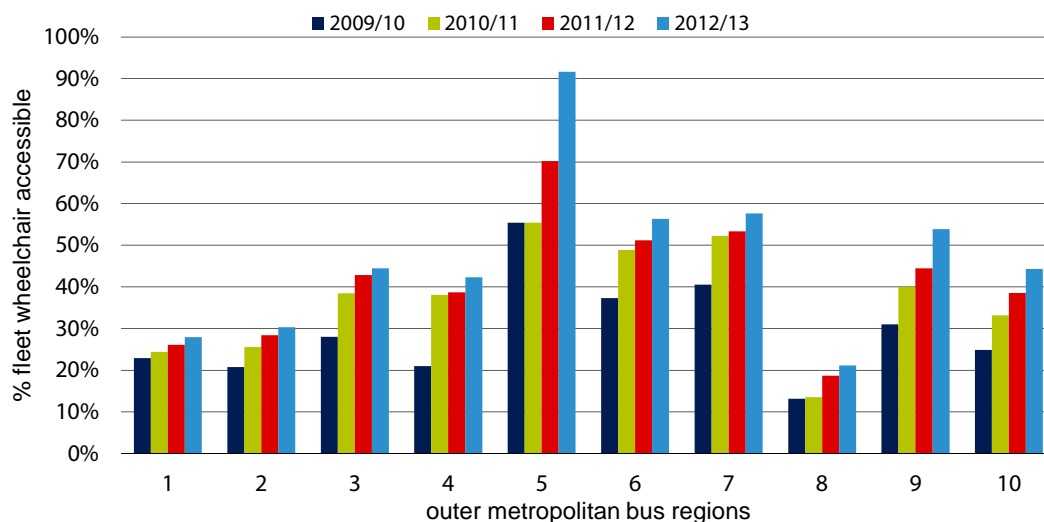
**Figure E.4 Proportion of bus fleet that is wheelchair accessible, metropolitan bus contract regions, 2009/10 to 2012/13**



Data source: Transport for NSW.

Figure E.5 presents data on the proportion of fleet that is wheelchair accessible for the outer metropolitan regions.

**Figure E.5 Proportion of bus fleet that is wheelchair accessible, outer metropolitan bus contract regions, 2009/10 to 2012/13(a)**

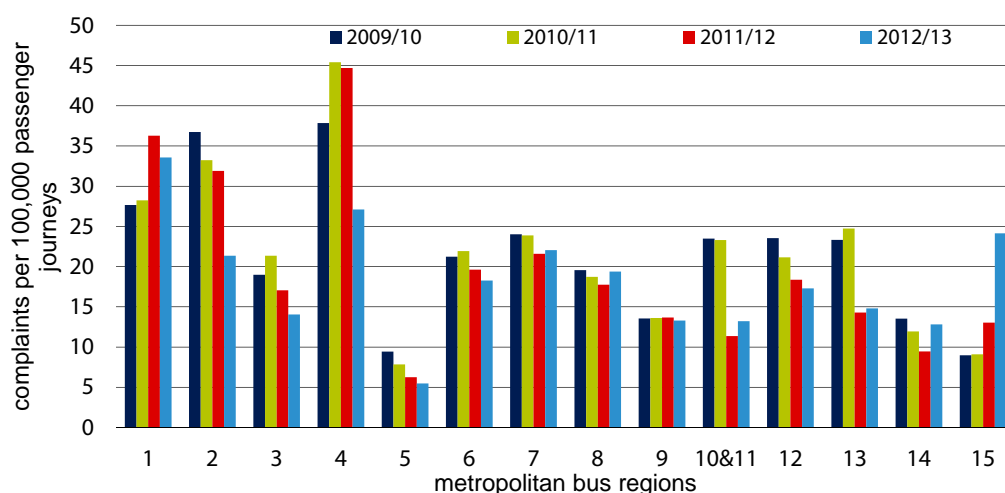


Data source: Transport for NSW.

## E.6 Customer feedback

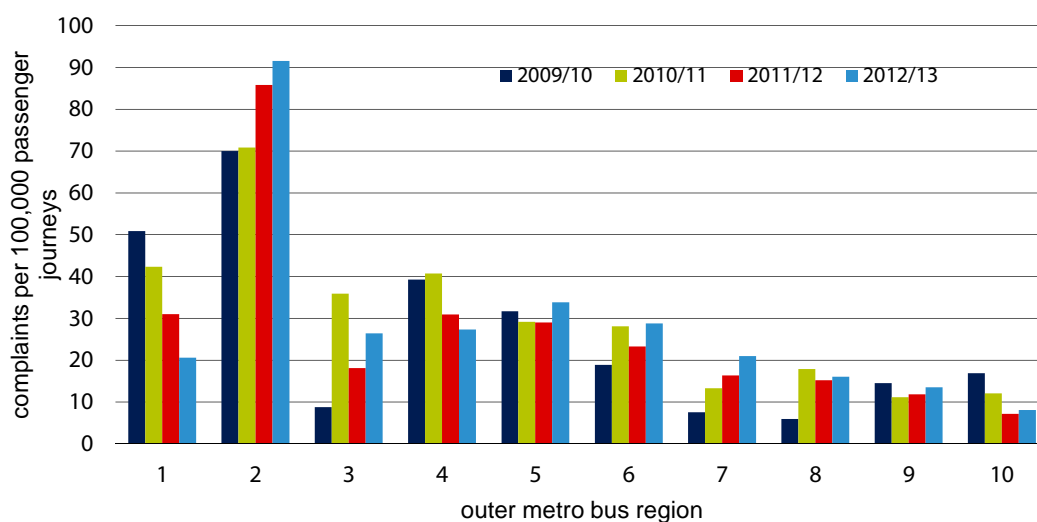
In 2012/13 there was an average of 18 complaints per 100,000 boardings across the metropolitan contract regions. On average there were 27 complaints per 100,000 boardings across outer metropolitan regions.<sup>113</sup>

**Figure E.6 Complaints in metropolitan bus regions, 2009/10 to 2012/13**



Data source: Transport for NSW.

**Figure E.7 Complaints in outer metropolitan regions, 2009/10 to 2012/13**



Data source: Transport for NSW.

<sup>113</sup> Data provided to IPART from Transport for NSW, 10 September 2013.

E Our analysis of the service performance of metropolitan and outer metropolitan bus operators

Almost half of all feedback (47%) in the metropolitan regions and a third (33%) in the outer metropolitan regions concerned bus reliability (bus late, missed stop bus failed to operate and bus too early).

## F Process for changing fares

Chapter 7 explained that our draft decision is that each year fares can increase by an average of 0.3% above CPI.

Transport for NSW (TfNSW) will set fares for individual tickets so that the average fare increase is equal to, or below 0.3% above CPI. It must submit the new ticket prices to IPART in a pricing proposal.

This section explains the process for ensuring that the individual fares proposed by TfNSW comply with our determination, including:

- ▼ the timing for fare changes
- ▼ what we require from TfNSW before fares can change
- ▼ calculating the change in fares when substantial changes are made to fare structure.

### F.1 When can fares change?

Under our final determination, TfNSW can change fares at any time up to the maximum average increase allowed by IPART, however we expect normally that fares would change only once a year. Typically, public transport fares (bus, rail and ferries) change each January. However, as the Opal card is rolled out on buses, other one off changes may be made.

Table F.1 shows the timing for a January 2014 fare change.

**Table F.1 Compliance process for a January 2014 fare change**

	<b>Date</b>
Government submits its pricing proposal to IPART	6 December 2013
IPART approves the new fares where they comply with the determination and publishes the new fares on its website	20 December 2013
New fares apply	5 January 2014

## F.2 Pricing proposals

TfNSW is required to submit all proposed fare changes to IPART before fares can change, including when any new fares are introduced, or when any fares are removed.<sup>114</sup>

Pricing proposals must be received by IPART 20 business days before a proposed change and approved by IPART before the changes apply. We will publish the proposed fares on our website.

We will review compliance in order to ensure that fare levels do not exceed the increases allowed under our determination.

For the annual fare changes, we check that the fares proposed by TfNSW comply with the determination by:

- ▼ calculating the revenue in the current year (current price multiplied by the current number of ticket sales<sup>115</sup>)
- ▼ calculating the revenue in the next year (proposed prices also multiplied by the **current** number of ticket sales)
- ▼ making sure the difference does not exceed 0.3% plus CPI.

An example of how we do this is provided in Chapter 7.

For one off fare changes, we make sure that the revenue in the current year does not exceed the revenue in the previous year by more than 0.3% above CPI (using the ticket sales **for the previous year**).

As explained in Chapter 7, if TfNSW increases fares by **less** than 0.3% above CPI, in the following year TfNSW can increase fares up to the average fare that would have been charged **had TfNSW increased fares by the maximum increase**.

<sup>114</sup> Pricing proposals will be not required for the introduction of a 'trial product'. Where a trial fare is introduced, the Government should notify IPART of the trial fare, its conditions of use, and the forecast revenue impacts.

<sup>115</sup> The number of ticket sales is based on the number of boardings. For example, one boarding on a single ticket is equivalent to one ticket sold, and 10 boardings on a MyBus TravelTen are equivalent to one ticket sold.



If the fares submitted by TfNSW do not comply with our determination we will notify TfNSW and publish a report on our website. It is TfNSW's role to ensure that the bus operators comply with our determination.

### **F.2.1 Information that should be provided in the pricing proposal**

The pricing proposal should explain the reasons for any large relative movements in individual fares and the impact on customers. It should also set out the medium term directions for prices and standards of service. This will allow current and potential users to take account of prices and service standards in their usage and locational decisions.

When TfNSW proposes to introduce or removes fares, TfNSW should explain the changes, and include:

- ▼ details of any proposed new fare, including the routes on which it is valid, the number of journeys included on the fare, the period for which it is valid, and any other conditions of use
- ▼ details of any removed fare
- ▼ information on how the addition or removal of fares will affect the number of journeys made on other fares
- ▼ forecast revenue impacts.

As discussed in Chapter 7, we consider that TfNSW should consider the following pricing principles when it sets the individual fares: simplicity, cost reflectivity, revenue sufficiency, price signalling, consistency with existing fares and equity.

## **F.3 Weightings for proposed fares when there are substantial changes to fares**

### **F.3.1 Adding and removing fares**

For the introduction of any new fares, we will require TfNSW to make a reasonable estimate of the number of journeys that would have been taken in the previous financial year had the fare existed. TfNSW should reasonably reallocate existing journeys taken in the previous year from other tickets, so that the total number of journeys taken on buses is held constant across the 2 periods.

Similarly, if a fare is removed, TfNSW should reallocate those journeys that were taken on that fare to fares that would have been used had the ticket not existed.

The reallocations of journeys must be approved by IPART.

### **F.3.2 Substantial changes in the relativities between fares**

As explained in section F.1.1, if the ticket types do not change between price changes, fares should be weighted by the number of journeys in the most recent financial year. However, if the relativities between fares after the price change are significantly altered, some passengers may switch between ticket types. For example, if the MyMulti DayPass reduced below the price of a return fare, many passengers may switch from buying the return fare to the MyMulti DayPass. In this hypothetical situation it would be appropriate to reallocate journeys made on return tickets to journeys made on the MyMulti DayPass.

An explanation of the substitution between fares must be provided, and the new weighting must be approved by IPART. The reallocations of journeys must be approved by IPART.