IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Review of fares for metropolitan and outer metropolitan bus services from January 2010

Proposed changes to IPART's fare setting approach

Transport — Issues Paper
May 2009

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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 24 June 2009.

We would prefer to receive them by email <ipart@ipart.nsw.gov.au>.

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

2009 Review of metropolitan and outer metropolitan bus fares
Independent Pricing and Regulatory Tribunal
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Our normal practice is to make submissions publicly available on our website <www.ipart.nsw.gov.au>. If you wish to view copies of submissions but do not have access to the website, you can make alternative arrangements by telephoning one of the staff members listed on the previous page.

We may choose not to publish a submission—for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. IPART will then make every effort to protect that information, but it could be subject to appeal under freedom of information legislation.

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

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1 Introduction

The *Passenger Transport Act 1990* requires that the Independent Pricing and Regulatory Tribunal of NSW (IPART) investigate and report on appropriate maximum fares for bus services in NSW. IPART also periodically reviews fare pricing policies that relate to bus services.

Over the past couple of years, the Government has progressively introduced new contractual arrangements for the provision of bus services in metropolitan and outer metropolitan areas, and adopted a policy of fare harmonisation for these services. During this transition period, IPART determined bus fares by considering how the Government's costs in providing bus services (ie, its contract payments to bus operators), and bus patronage and quality of service have changed over the previous year. It then made a judgment on the fare changes required to maintain the existing level of cost recovery (ie, to ensure that passengers and taxpayers continue to contribute the same proportion of the costs).

However, now that the transition to these new arrangements is complete, IPART considers it timely to review and revise this approach. IPART's goal is to develop a new fare setting approach that is more robust and transparent than the current approach, and will better enable it to meet its regulatory objectives and legislative obligations in relation to bus services. The new approach will also need to be consistent with the bus contracts between the Government and bus operators that are in place, and the Government's policies on bus fare harmonisation and the introduction of electronic ticketing.

At this stage, IPART has developed a proposed approach, on which it is seeking stakeholder comments. After carefully considering these comments, IPART intends to decide on its final approach and then use this approach in making its multi-year 2010 determination on maximum bus fares.

1.1 Overview of IPART's proposed approach

Under the proposed approach, IPART would determine appropriate fares for a selected group of contract regions in the Sydney metropolitan area. It would then extend the fares determined for these regions to other metropolitan and outer metropolitan areas to ensure fares are harmonised across regions. IPART considers that reviewing the efficient costs and benefits of bus services in all (or at least most)

of the 25 contract regions would be impractical and involve large costs in terms of the information and time required to analyse this information.

IPART proposes to use the four largest contract regions – Sydney's eastern suburbs, northern beaches, inner west and lower northern suburbs – as its selected group for determining fares. Together, these regions account for most of the cost of bus services, ticket sales, revenue and patronage. They also incorporate most of the key CBD-focused bus routes. IPART is seeking comment on its proposed approach and may consider including additional contract regions.

To determine fares for these regions, IPART would:

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

IPART proposes to set bus fares for the next three or four years. A multi-year determination has several benefits compared with the annual determinations previously issued by IPART. For example, it:

- reduces the direct costs of regulation in terms of IPART, Ministry of Transport and other stakeholder resources
- provides government and taxpayers with greater certainty about fares and the level of government funding required for bus services
- is a better fit with the term of contracts that are in place.

IPART's proposed approach is broadly consistent with the method it used to determine CityRail fares from 2009 to 2012.

1.2 Review process

As part of its review of the fare setting approach for bus services IPART is conducting public consultation. As the first step in this consultation process, it invites all interested parties to make submissions to the review. It will also hold a public roundtable discussion, to provide stakeholders with a further opportunity to contribute their views.

In addition, IPART has engaged a consultant, LECG to quantify the value of the external benefits generated by the contracted bus services in the Sydney metropolitan area. LECG's draft report is available on IPART's website. IPART will also engage a consultant to assist it in estimating the efficient costs of providing bus services in the four largest contract regions, and will publish this consultant's report on its website.

IPART intends to release a draft report and recommendations and invite comments from interested parties. After considering these comments, it will provide its final report and fare determination.

The proposed timetable for the review is provided on Table 1.1.

Table 1.1 Timetable for review

Action	By
Release issues paper and LECG's draft report and invite submissions	May 2009
Receive public submissions on issues paper and LECG's draft report	24 June 2009
Release draft report and determination	Early October 2009
Receive public submissions on draft report and determination	Early November 2009
Hold public roundtable discussion	Mid November 2009
Provide final report and fare determination	Mid December 2009

Details on how to make a submission can be found on page iii, at the front of this paper.

1.3 Purpose and structure of this issues paper

This issues paper is intended to assist stakeholders in making submissions to the review of IPART's bus fare setting approach by identifying and explaining the key issues IPART will consider. It is structured as follows:

- Chapter 2 sets out the purpose and context for the review
- Chapter 3 provides an overview of IPART's proposed approach for setting bus fares
- Chapter 4 discusses the first step of the proposed approach - establishing the total efficient costs of providing the contracted bus services over the determination period

- Chapter 5 explains the second step - deciding how much of this total cost should be funded by taxpayers and by passengers
- Chapter 6 discusses the third step - developing options for the structure and level of fares to recover passengers' share of costs
- Chapter 7 discusses the final step of the proposed approach - determining the appropriate structure and level of fares after considering the social and environmental impacts of each option and the impacts on bus patronage.

Each of these chapters highlights one or more issues on which IPART particularly seeks stakeholder comment. For convenience, a complete list of these issues is also provided in section 1.4 below. However, please note that the list is not exhaustive and stakeholders are free to raise and discuss any other issues they consider relevant to this review.

1.4 List of issues for comment

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

2 Purpose and context of the review

As Chapter 1 discussed, IPART is currently reconsidering its approach to setting fares for metropolitan and outer metropolitan bus services in NSW. The outcome of the review will be a clear and more robust methodology for determining bus fares, plus a multi-year determination on the bus fares to apply from January 2010.

IPART considers that it is good regulatory practice to periodically review its approach to regulation across all industries. The time period between such reviews should strike a balance between providing regulatory certainty and ensuring that the approach is as relevant and robust as possible. Now that the Ministry of Transport has completed rolling out the bus contracting regime, IPART considers that it is a good time to conduct a more detailed review of its approach to determining bus fares.

Last year, IPART undertook a similar review of its approach to determining CityRail fares and put in place a four-year rail fare determination. This review established a more thorough and transparent framework for determining rail fares (see Box 2.1). It also established a valuable framework for considering how the costs of public transport services can be allocated between passengers and taxpayers to best encourage greater efficiency in the supply of services and ensure passengers pay an appropriate share of efficient costs. IPART considers that this approach can and should be extended to other modes of public transport, particularly to metropolitan and outer metropolitan bus services.

IPART recognises that several contextual factors will impose constraints on the approach it can adopt for bus determinations, and the benefits it can achieve through this approach. These factors are primarily a result of Government policy decisions. For example, the design of the current bus contracting regime limits the extent to which IPART can influence incentives for more efficient supply of services directly through fare regulation, as its fare determinations do not directly affect the payments bus operators receive.

Nevertheless, IPART considers there are significant potential benefits to be gained by adopting a new approach for determining bus fares. For example, IPART's proposed approach will better ensure that passengers make a fair contribution to the efficient costs of providing bus services. In addition, the proposed approach involves a more detailed review of the efficient costs of providing bus services. When the time comes to renegotiate the bus service contracts in metropolitan and outer metropolitan areas,

the findings of this review will help the Government better understand the achievable efficiency gains.

Box 2.1 IPART's approach to setting CityRail fares

In making its determination on CityRail fares from 2009, IPART used a building block approach to establish the revenue CityRail will require to efficiently provide passenger rail services in Sydney. As part of its review, IPART engaged a consultant, LECG, to assist in estimating the value of the external benefits provided by CityRail services. IPART considered this estimate as well as fare affordability and the impact of higher fares on patronage to determine what share of this revenue should be funded by passengers through fares. It also considered work on an optimisation approach to fares that had been undertaken by LECG.

- IPART determined that CityRail would require $2.3 billion in 2008/09, increasing to $2.7 billion in 2011/12 to provide an efficient rail service.
- IPART determined that the wider community would receive external benefits worth $1.7 billion in 2008/09 increasing to $1.9 billion in 20011/12 from the provision of the rail service. These benefits include reduced road congestion, traffic accidents and greenhouse emissions.
- The value of the external benefits was approximately equal to 70% of the cost of providing the services, which suggested that around 70% of the service should be funded through government subsidies and 30% should be funded by passengers.
- Stakeholders submitted that social benefits such as improved mobility and social inclusion were additional external benefits and should also be considered.
- In recognition of these additional but hard to quantify external benefits, IPART set 2009 train fares to recover 28.5% of the cost of providing the services.

The most important contextual factors IPART will need to take account of in developing its new approach are discussed below. They include the current contracting regime, and government policies on fare harmonisation and integrated electronic tickets. To be effective, IPART's approach will need to fit within the existing constraints that these factors impose.

2.1 Current bus contracting regime

The NSW Ministry of Transport is responsible for providing bus services in NSW. To deliver these services, the Ministry of Transport has in place contracts with a number of different bus companies (operators). Operators hold a contract for a particular region or regions and are paid a monthly 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 the Ministry of Transport.

The current contract regime commenced in 2005/06, when bus service contracts were introduced in the 15 Sydney metropolitan regions. The contracts were then gradually introduced in the 10 outer metropolitan regions, starting in 2006/07. The first full year in which all of the metropolitan and outer metropolitan contracts were in place was 2007/08.

The operators holding contracts include a number of private bus operators and one public operator, the State Transit Authority (STA). The STA has three businesses that provide bus services in metropolitan and outer metropolitan areas:

- Sydney Buses, which provides bus services in four metropolitan regions covering Sydney's inner west, lower north, eastern suburbs and northern beaches
- Newcastle Buses and Ferries Services, which provides bus services in Newcastle (and operates the Newcastle or Stockton Ferry service)
- Western Sydney Buses, which operates the Liverpool to Parramatta TransitWay.

Appendix B provides a map of the metropolitan and outer metropolitan contract regions and a full list of bus operators in each region.

The general structure of the contracts is consistent across all regions. The contract specifies the terms and conditions of the agreement between the Government (represented by the Ministry of Transport) and the individual bus operator to provide bus services in a given contract region. However, specific aspects of the contracts vary from region to region. Individual operators negotiated the exact nature of their contract with the Ministry of Transport, especially with regard to the various initial and ongoing payments.

The NSW Government pays the operators to provide the bus services specified in the contracts. The payments operators receive are intended to cover the fixed and variable costs of providing the bus service. They are determined according to a formula specified in the contract, but the base (bid) amounts were negotiated as part of the terms of the contract. Payments do not directly depend on the fares paid by passengers. The Ministry of Transport retains all the revenue generated by fares, to offset some of the costs of paying bus operators to provide Sydney's bus services.

The level of service operators must provide is a fundamental part of the contracts. Operators need to report performance against their contractual obligations to the Ministry of Transport on a regular basis. However, much of the data provided under the contracts is self-reported by operators and is not reported publicly. In the past, IPART has expressed concerns about the quality of some of the data and/or the Ministry of Transport's failure to enforce reporting obligations (eg, reporting on full buses).

Appendix C provides more information on the bus contracts, and Appendix D summarises the service performance reported by operators for 2007/08.

2.2 Fare harmonisation

The NSW Government has in place a policy of bus fare harmonisation whereby the price of single tickets are equal for an equal distance travelled in all metropolitan and outer metropolitan regions except Newcastle.[1] This policy is intended to address equity concerns. It is also intended to facilitate the introduction of integrated ticketing and strategic corridors, both of which require consistent fare regimes to operate effectively.

In the past, there were differences between the fares charged by private bus operators and the STA. The introduction of the current bus contracting regime gave the Government opportunity to bring the fares of different operators into line with each other, as all the fare revenue is collected by the Ministry of Transport rather than by operators. IPART's recent bus fare determinations have implemented the Government's policy of fare harmonisation across all metropolitan and outer metropolitan contract regions (except Newcastle).

The Government's policy of fare harmonisation does not currently extend beyond single trip tickets due to the lack of ticketing infrastructure in place in some areas. (For example, some private bus operators do not have electronic ticket readers to accept multi-trip tickets.)

2.3 Integrated electronic ticketing

In June 2008, the NSW Government began testing the market for options for an electronic ticketing system.[2] A total of 15 submissions were received and evaluated by the Public Transport Ticketing Corporation (www.pttc.nsw.gov.au), resulting in a shortlist of three potential providers of the electronic ticketing service and infrastructure.

The Government's policy on integrated electronic ticketing is that it will:

- be multi-modal (useable on all metropolitan and outer metropolitan bus services, CityRail services and Sydney Ferries services)
- incorporate contactless smartcard-based technology
- have a fare structure independent of that currently in place, with discounts for regular customers
- have the capacity to vary fare levels according to criteria such as the type of customer, time of day, location and frequency of travel
- have the ability to offer special event fares.

1 Newcastle fares are time-based, not distanced based.
2 Government released and EOI in August 2008.

The introduction of an electronic smartcard ticketing system will allow a consistent approach to fares to be introduced. However, to some extent the approach will be affected by both government policy on electronic fares and the technological limitations of the system selected. Any decision made by IPART in the course of this review should facilitate the smooth introduction of the planned electronic ticketing system.

3 IPART's proposed approach

As Chapter 1 indicated, IPART has developed a proposed new approach for setting metropolitan and outer metropolitan bus fares from 2010 and is now seeking stakeholder comments. Under the proposed approach, IPART would set fares based on its assessment of the total efficient cost of providing contracted bus services in the four largest contract regions in the state, and the share of this cost that should be funded by bus passengers through fares. In addition, IPART would set fares for a multi-year period and align the date on which fares change with when other public transport fares change. In undertaking its bus fare review and making pricing decisions, IPART would be guided by a set of assessment criteria that reflects its objectives for the review and the principles of good regulation.

IPART considers that together, the proposed approach and assessment criteria will assist it in making better pricing decisions, and ensure it takes appropriate account of the contextual factors discussed in Chapter 2 and each of the matters it is required to consider under section 28J of the Passenger Transport Act. The section below provides an overview of IPART's proposed approach. The subsequent sections discuss why IPART proposes to focus its review on the four largest contract regions, and its proposed assessment criteria. Appendix A provides the matters listed in section 28J.

3.1 Overview of proposed approach

Under the proposed approach, IPART would determine fares for metropolitan and outer metropolitan bus services by undertaking a detailed review of the costs of providing bus services in a selected group of contract regions. IPART proposes to focus on the four largest contract regions where the bus contracts are held by Sydney Buses. For these regions, IPART would:

1. Establish how much it would cost an efficient bus operator to provide the contracted bus services (including meeting the performance standards specified in the contract).
2. Decide how much of this total efficient cost should be paid for by taxpayers (through government subsidies) and how much should be paid for by bus passengers (through fares). In making this decision, it would consider:
   - the total value of the external benefits generated by the contracted bus services

- the average 'optimal' level for fares in order to balance the benefits that passengers, motorists and the environment receive from lower fares and the benefits that the service provider (the Ministry of Transport) and the community receive from higher fares
- the likely implications for fare affordability and patronage levels.

3. Develop options for the structure and level of fares to recover the share of the total efficient costs allocated to passengers.
4. Decide on the most appropriate fares after considering the impacts of the various options on customers, patronage levels and the environment.

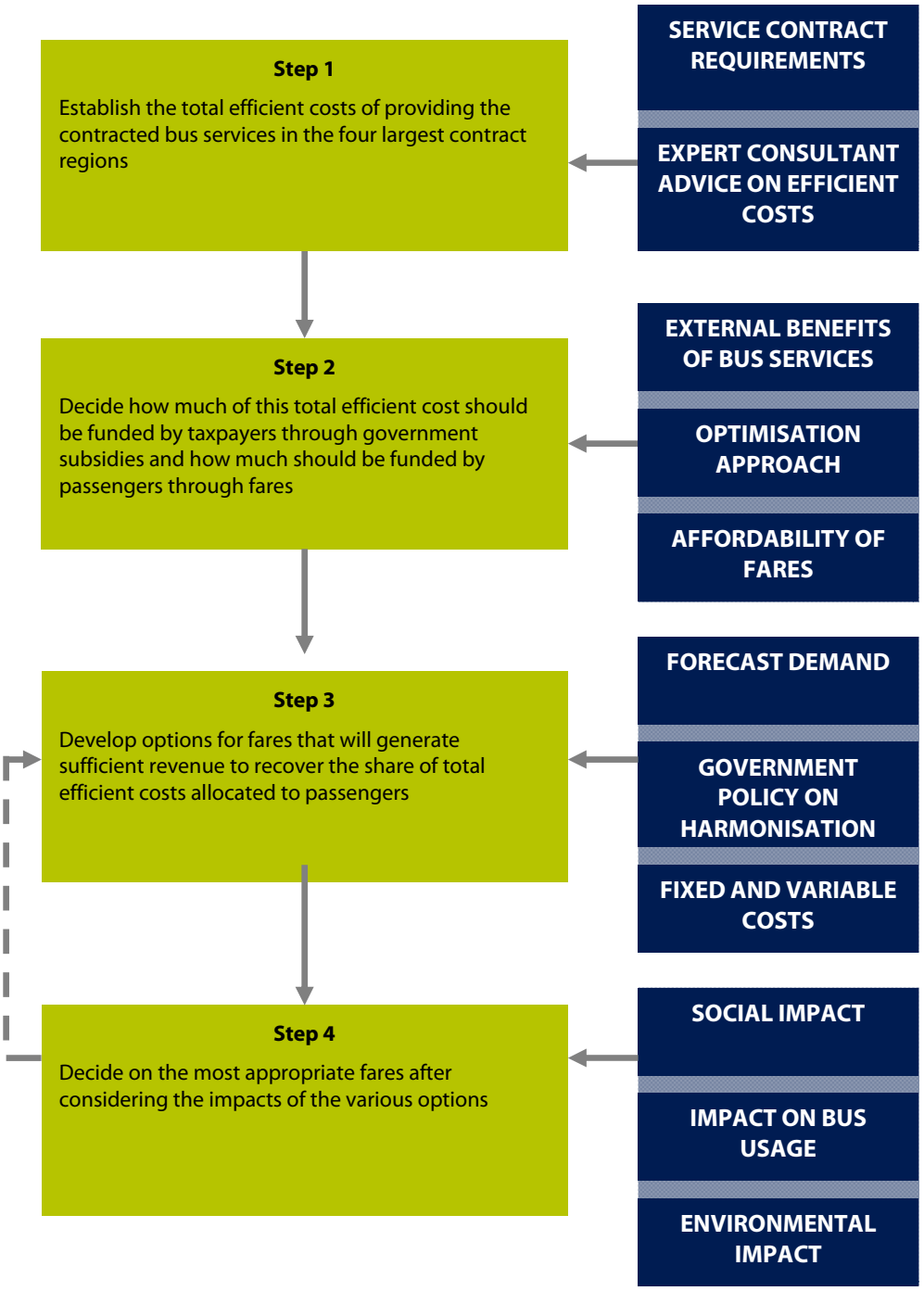
This approach is broadly consistent with the approach IPART used in setting CityRail fares from 2009 to 2012.

IPART's preliminary view is that the fare for tickets in the four largest contract regions would then be extended to all metropolitan and outer metropolitan regions, in accordance with the Government's policy of fare harmonisation.

A significant proportion of bus journeys are provided free of charge to school students. As part of this review, IPART will consider how to incorporate the costs and benefits of school student travel when determining fares for other passengers.

This proposed approach and the factors that IPART would consider at each step are set out in Figure 3.1. The steps are discussed in more detail in Chapters 4 to 7.

Figure 3.1 IPART's proposed approach for determining bus fares



3.2 Why IPART would focus on the four largest contract regions

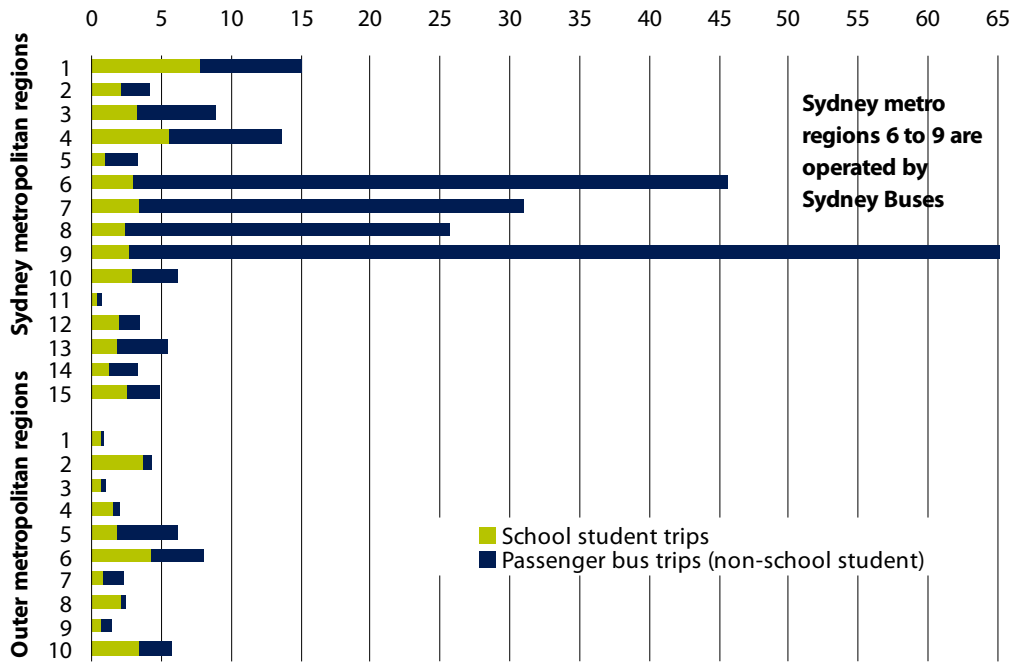
Whatever approach IPART used, some form of 'averaging' would be required to determine bus fares. This is because the fare harmonisation policy means it is not possible for IPART to base fares in each region on the costs and benefits determined for that region.

One option would be for IPART to review the efficient costs and benefits of bus services in all (or at least most) of the 25 contract regions, and set fares based on the average costs and benefits in these regions. However, IPART does not favour this network-wide averaging approach for two main reasons. First, it would involve large costs in terms of the information bus operators would need to provide and the time required to analyse this information. Second, it is likely to lead to higher than appropriate bus fares for the majority of bus routes in NSW, because a number of the more outlying contract regions are likely to have higher costs per passenger trip than the more centrally located contract regions.

Another option is to review the efficient costs and benefits of the contracted bus services in a selected group of contract regions. In selecting how many regions to review, IPART needs to strike a balance between several factors including the cost and time required to analyse more regions and the extent to which the relevant costs and benefits are captured. It is important that the fares that result from IPART's analysis send the right signal to bus passengers and ensure optimal use of the existing bus services.

At this stage, IPART considers that focusing on the four largest contract regions is the most pragmatic and appropriate approach. These regions – which include Sydney's eastern suburbs, northern beaches, inner west and lower northern suburbs – incorporate most of the key CBD-focused bus routes and account for the majority of bus trips made in the metropolitan and outer-metropolitan regions (Figure 3.2).

Figure 3.2 Bus trips made in each contract region – 2007/08 (millions)



Data source: Ministry of Transport.

Together, the four largest regions accounted for most of the bus contract payments made by the Government, most of the passenger boardings, and almost half the bus kilometres travelled across all the contract regions in 2007/08. (See Table 3.1 below; Appendix E provides more information on the relative importance of the four largest contract regions.)

Table 3.1 Annual contract payments, farebox, patronage, and kilometres travelled in four largest contract regions compared with all contract regions, 2007/08

	Four largest regions	Total for all regions	Four largest regions share of total
Contract Payments[a]	$470.8m	$883.0m	53%
Farebox revenue	$235.0m	$325.7m	72%
Patronage (fare paying boardings)	155.8m	208.0m	74%
Patronage (all boardings)	167.5m	270.6m	62%
Total kilometres	57.0m	127.6m	45%

[a] Contract payments are total contract payment before deducting farebox revenue.

Note: Includes School Student Transport Scheme payments, passengers and kilometres.

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

IPART also expects that the fares determined using the four largest contract regions would be lower than fares based on an average of the costs and benefits in all 25 contract regions because:

- the average number of passengers on each bus service is higher for the four largest contract regions than for the other regions, so the cost of running each bus service is spread over more passengers
- many of the external benefits of bus travel are associated with avoided road congestion, which is likely to be significantly higher where services operate in congested areas like the Sydney CBD.

In these circumstances, applying a network-wide average would require passengers in the Sydney Buses regions to pay more because of the higher costs and lower benefits in other contract regions. Higher bus fares would send the wrong price signal for the majority of passengers who use public transport and particularly for those who catch buses in the most congested regions.

IPART is seeking comment on its proposed approach and may include additional contract regions if it is persuaded that doing so would better meet its objectives or the review.

IPART seeks comments on the following

1 For the purpose of setting bus fares in the metropolitan and outer metropolitan regions, is it reasonable for IPART to focus on the four largest contract regions as the foundation for estimating the costs and benefits of bus services?

2 Should IPART consider a broader set of contract regions in its review of the costs and benefits of bus services? If so, which additional contract regions should IPART include?

3.3 Length of the determination period and date of fare changes

IPART's preliminary view is to set bus fares for the next three or four years, and that fares should change on 1 January to match the fare change date for rail fares and three-mode TravelPasses.

Historically, IPART has set bus fares on an annual basis. This has involved seeking annual submissions from the Ministry of Transport requesting a fare increase and setting out the reasons for the increase sought. The annual fare increases allowed by IPART have been based on retaining the current level of cost recovery, so have largely been in line with the change in contract payments made to operators.

A multi-year determination has several benefits compared with an annual determination. For example, it:

- reduces the direct costs of regulation in terms of IPART, the Ministry of Transport and other stakeholder resources

- provides government and taxpayers with greater certainty about fares and levels of government funding
- is a better fit with the term of the contracts that are in place.

IPART will ask its cost consultant to forecast efficient costs over a five-year period. IPART will consider whether it should align its determination with the current CityRail fare determination, so that both will next be reviewed in 2012. There are pros and cons of aligning the two reviews. The key benefit is that IPART can consider changes in the structure of fares and the relativities between single and multi-modal tickets at the same time. However, running both reviews in parallel will require significant resources within IPART and other interested parties. In addition, the legislative arrangements for rail and bus fare reviews are different, and these arrangements plus Government policy in relation to electronic ticketing may restrict IPART's ability to integrate the fare reviews.

IPART seeks comments on the following

3 What is the appropriate length for the fare determination?

4 Is it better to align the end of the bus fare determination with the end of the CityRail determination, so that fares for both modes of transport can be considered together in 2012?

3.4 Proposed assessment criteria for the review

IPART is required to consider the factors set out in section 28J of the Passenger Transport Act (see Appendix A), and set fares in a way that achieves an appropriate balance between these considerations. However, the Act does not tell IPART how to take these factors into account or which factors to prioritise where the objectives embedded in them conflict.

This means that for each review, IPART needs decide which factors are the most important and therefore should receive most weight in its decision making. For this year's review, IPART has done this by developing a set of proposed criteria which, subject to the factors in section 28J of the Passenger Transport Act, will guide its decision-making (see Box 3.1). IPART intends to decide on a fare setting approach that it considers best meets these criteria.

In IPART's view, the proposed criteria clearly target the particular objectives for this review and reflect the principles of regulatory best practice. In addition, together with other elements of the proposed approach, they will ensure that IPART takes appropriate account of each of the factors listed in the Act. (Appendix F discusses how IPART will consider each of these factors under its proposed approach.)

IPART seeks comments on the following

5 Are IPART's proposed assessment criteria for the review reasonable? Should IPART reconsider the criteria, or prioritise them differently?

Box 3.1 Proposed assessment criteria

The fare setting approach and resulting fares should:

1. Ensure bus passengers make a fair contribution to the efficient cost of providing bus services – thereby encouraging optimal use of bus services (including optimal for the environment).
2. Facilitate the introduction of integrated ticketing by maintaining a simple fare structure to enable a smooth transition to the new e-ticket regime.
3. Provide useful information to inform future contractual arrangements for bus services in order to achieve greater efficiency, provide appropriate incentives for new investment, minimise costs and improve services.
4. Be consistent with principles of regulatory best practice by:
   a) Ensuring that where possible, decisions are made by parties in the best position to make those decisions (avoid regulatory micro-management).
   b) Being practical, pragmatic and feasible.
   c) Being simple and understandable.
   d) Being targeted at the regulatory objectives.
   e) Being proportionate with the problem.

4 Establishing the efficient costs of bus services

As Chapter 3 discussed, the first step in IPART's proposed approach for determining bus fares from 2010 is to establish the efficient costs of providing contracted bus services in a selected group of contract regions over the determination period. At this stage, IPART considers that this group would be made up of the four largest contract regions. However as part of this process IPART will consider data in other contract regions, where it is made available. In addition, if it decides to increase the number of contract regions used to determine fares IPART would need to follow the process outlined in this chapter for these regions as well.

Efficient costs may be different from the actual cost to Government of ensuring that bus services are delivered. IPART will focus on efficient costs rather than actual costs because it considers that passengers should not have to pay for poor decisions or operating practices made by bus operators or government.

The sections below discuss the type of costs involved in providing bus services and IPART's preliminary views on how it might establish the efficient value of these costs in the four largest contract regions.

4.1 What costs are involved in providing bus services?

Bus operators are businesses that must recover their costs either from passengers or from government payments (which are made ultimately by taxpayers). They are businesses that need to earn enough revenue from providing their services to cover their costs. Even Sydney Buses, which is a Government entity, must account for its costs as if it were a privately owned business.

The main costs operators incur in providing contracted bus services fall into the following categories:

- **Operating expenditure.** This includes the day-to-day costs of operating the business and maintaining its assets – for example, the wages paid to bus drivers, and mechanical repairs and insurance costs.
- **Return on working capital.** Bus operators need working capital to keep the business operating. The return on working capital provides compensation to the operator for holding any working capital required.

- **Return on assets.** Bus operators need to invest in assets like buses and bus depots, and provide working capital to keep the business operating. The return on assets provides compensation to the operator (or its shareholder) for investing capital in these assets and bearing the risks associated with the business.
- **Return of assets or depreciation.** Depreciation is a means of spreading the net cost of the assets (other than land) over their estimated useful life. It enables the operator to eventually recover the capital invested in the business.

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

The value of the total costs also depends on the costs of meeting the obligations – such as buying or leasing a sufficient number of buses, paying wages, undertaking maintenance on the buses, etc. These costs are affected by both external factors over which the operator has little control (like the cost of parts) and internal factors over which the operator has some control (such as how it organises drivers' shifts, its maintenance procedures, and corporate overheads). These internal factors will affect the efficiency of the costs of providing the contracted bus services.

4.2 How might IPART establish the efficient value of these costs?

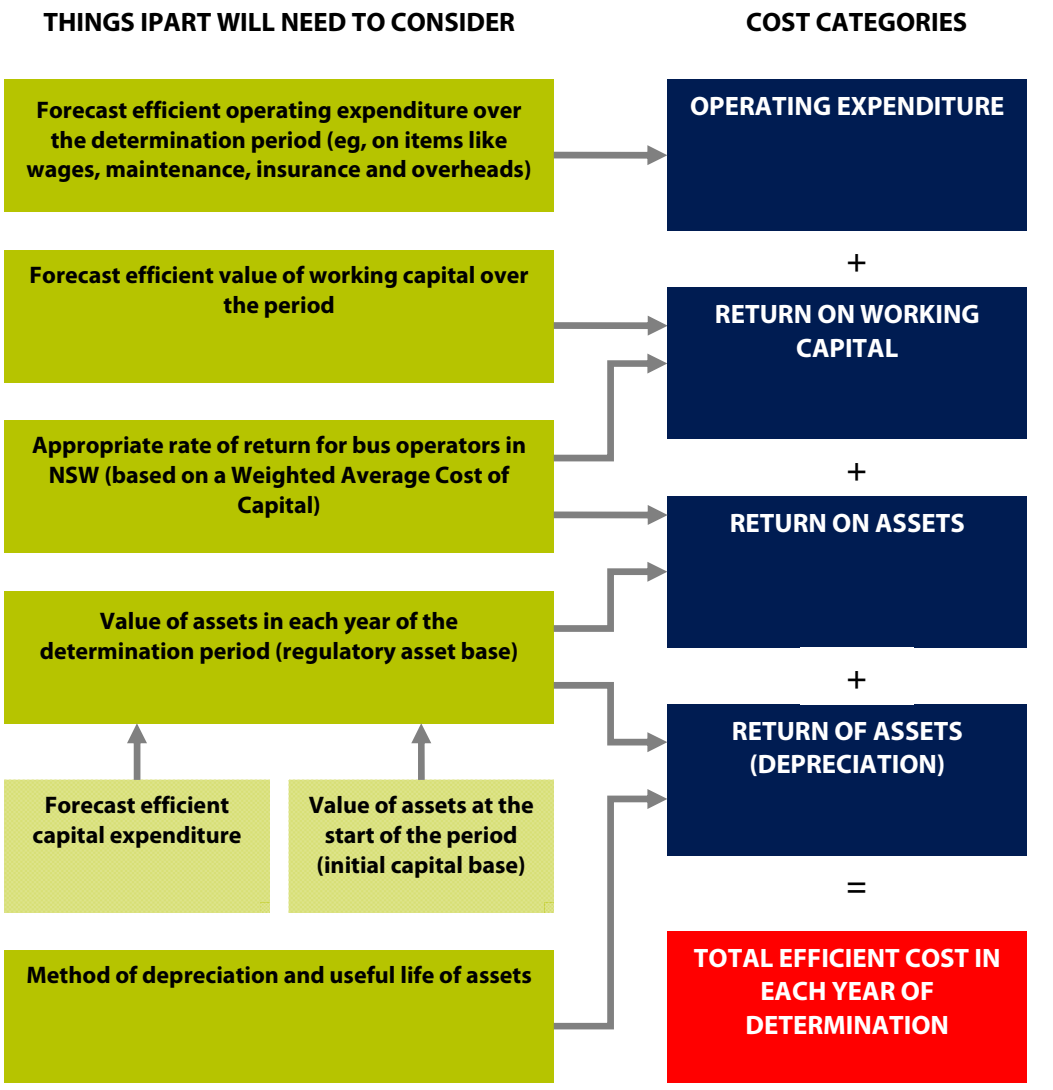
As Chapter 2 discussed, the Ministry of Transport makes monthly contract payments to operators and the revenue they collect from fares goes to the Government, to partly offset these contract payments.[3] As the bus contracts were negotiated between operators and the Government, it is reasonable to assume that the contract payments at least cover the efficient costs of providing bus services in each region. However, because the contracts were not market-tested it is not clear how good a proxy these payments are for the efficient costs. Therefore, as part of this fare review, IPART proposes to undertake its own analysis of efficient costs for a selected group of contract regions. At this stage, IPART proposes to focus on the four largest contract regions. If additional contract regions are included in the selected group, IPART would apply the same process to determining the efficient costs in these regions.

IPART proposes to specifically determine the efficient value for each of the cost categories listed in the section above. As Figure 4.1 below shows, these values would then be added together to establish the total efficient cost over the determination period.

[3] Operators are able to earn other revenue from related activities, including advertising and bus charters, but this revenue is not payment for providing the contracted services.

It is important to note that in establishing the total efficient cost of providing bus services, IPART proposes to assume that the service and performance obligations in the contracts are fixed, as they are real contractual obligations imposed on the operator for the life of the contract. In addition, although IPART does not determine payments made to bus operators under the School Student Transport Scheme (SSTS), it expects the costs of providing school services (which are sometimes special school-only services and sometimes part of regular passenger services) will be difficult to separately identify. Therefore, it proposes to review the efficient costs of providing all contracted services, including special services provided under the SSTS, and take into account the payments made to operators under the SSTS when it determines fares.

Figure 4.1 Efficient cost of providing bus services over the determination period



As the figure above indicates, IPART would need to consider a range of items in determining the efficient value for each cost category. The sections below discuss IPART's preliminary view on the approaches it could use to consider these items.

4.2.1 Forecast efficient operating and capital expenditure

To determine the efficient value of the operating expenditure cost category, IPART would need to consider the forecast efficient operating costs of providing the contracted bus services in the four largest contract regions over the determination period. To determine the efficient value of the return on assets cost category, it would need to consider several items, one of which is the forecast efficient capital expenditure over the period.

To assist it in this task, IPART proposes to engage an expert consultant to review the forecast efficient operating and capital costs in the four largest contract regions. The consultant's findings and advice will enable IPART to make its own judgement on these efficient costs and provide greater surety that passengers are not funding inefficient costs.

If IPART decides on a multi-year determination period, it will need to consider the forecast efficient operating and capital costs over the next few years (depending on its decision on the length of the determination period). This is likely to involve consideration of the number of new buses to be purchased, and changes in external conditions (such as traffic congestion) and changes in costs, such as fuel costs and wages.

IPART is considering two methods for determining the efficient operating and capital costs in the four largest contract regions. These methods are:

- benchmarking current costs in the four largest contract regions with those of other operators
- undertaking a detailed review of operations in the four largest contract regions.

IPART may decide to use a combination of these two methods.

Benchmarking costs with other bus operators

IPART could determine the forecast efficient operating and capital costs by benchmarking current costs in the four largest contract regions with those of other comparable bus operators. Benchmarking studies have recently been conducted on the unit costs for urban bus services across Australia.

In addition, Sydney Buses – the operator of the four largest contract regions - belongs to the International Bus Benchmarking Group. This group was formed in 2004 to undertaking performance benchmarking of urban bus systems. It is co-ordinated by Railway and Transport Strategy Centre, a transportation research group within the Centre for Transport Studies at Imperial College London. Other members of the

benchmarking group include TMB (Barcelona), Dublin Bus, LBSL (London), EMT (Madrid), STM (Montreal), RATP (Paris).

Detailed reports for these studies are not publicly available but there is clear support for the applicability of benchmarking in determining efficient costs for urban bus services. As with all benchmarking approaches, care would need to be taken to ensure that costs are comparable. A paper prepared for the Transportation Research Board (the group responsible for the International Bus Benchmarking Group) explicitly considered this issue and concluded that benchmarking urban bus operations is worthwhile and delivers useful results. The paper notes that different external conditions can be adjusted for so that meaningful comparisons can be made.

Undertaking a detailed review of operations in the four largest contract regions

IPART could also undertake a detailed review of operations in the four largest contract regions to identify areas of improvement and quantify efficiency savings. IPART has undertaken this type of review of bus operator costs in the past. For example, together with the STA and NSW Department of Transport, it jointly commissioned a major review of STA's bus costs in 1997/98. (See Box 4.1 for more information.)

Box 4.1 1998 Review of the State Transit Authority's bus costs

In September 1997, IPART engaged consultants Sinclair Knight Merz (SKM), in association with Coopers & Lybrand, to undertake a study on STA's bus costs. The objectives were to:

- review the appropriateness and costs of all functional areas of STA's bus operations
- estimate efficient costs for STA's bus operations
- estimate the net realisable efficiency gains available over a three-year period given government ownership, different awards, STA's fleet and operating environment
- develop a three-year implementation plan to achieve the net realisable efficiency gains.

The study identified large cost differences between STA and those that would be incurred by an efficient private bus operator. A major portion of these were discounted on the basis that they were impractical to realise in the short term (eg, superior award conditions for existing STA employees). The study detailed the scale and location of realisable efficiency gains.

Among other things, the study identified:

- realisable efficiency savings for Sydney Buses of $24.3m per annum was achievable progressively after a three-year implementation period (a 7 percent cost reduction at 1997/98 expenditure levels)
- an estimated cost difference of over $56m per annum compared with an efficient private operator
- significant realisable savings to be achieved through reforming maintenance services, improving work practices, reducing absenteeism, ceasing 'exclusive shifts', adopting best practice cleaning processes, rationalising depot and corporate administration support.

The final report prepared by SKM was not made publicly available. However, the work was used to inform IPART's 1998 fare determination and the outcomes are discussed in IPART's 1998 report (available from the archive section of IPART's website: www.ipart.nsw.gov.au).

Source: Public Transport Fares from 5 July 1998 – CityRail and STA Buses and Ferries, June 1998.

4.2.2 Value of assets at the start of the determination period

One of the items IPART may need to consider to determine the efficient value of the return on assets and depreciation cost categories is the value of the assets used to provide the contracted services at the start of the determination. This is known as the initial capital base (ICB), and represents a valuation of the existing assets required to provide services at a certain point in time. To set the value of the ICB, regulators typically 'draw a line in the sand' to differentiate the capital expenditures incurred in the past (which should be considered in setting the ICB) and future capital expenditures (which should be considered when rolling the regulatory asset base forward).

A range of approaches can be used to set the ICB for an existing business, including estimating:

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

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

One of IPART's key considerations in deciding which approach is most appropriate for this review is the extent to which past capital expenditure in the four largest contract regions represents sunk assets, and how the inclusion of these assets in the ICB would affect economic efficiency, fare levels and patronage. Sunk assets are costs that have been incurred in the past and which cannot be recovered to any significant degree by selling the assets. Typically this is because they are highly specialised, or because the cost of installing them represents substantial portion of the costs of acquiring them. However, the majority of assets in the four largest contract regions are either buses or depots. There is a ready market for second hand buses and, subject to zoning laws, there is also a ready market for the land on which the depots are built.

The deprival value takes account of revenue and cashflows, as well as the cost of replacing assets at current prices and using current technology. Estimating an ODRC value for the four largest contract regions should be reasonably straight forward as there is a ready competitive market for both new and second hand buses.

The book value of the STA's property (including land), plant and equipment as at 30 June 2008 was $465 million (including Sydney Buses (which operates in the four largest contract regions), Newcastle Buses and Ferries and Western Sydney Buses). The book value of the major asset classes is based on a combination of market-based valuation and the depreciated replacement cost. Given this, IPART considers it likely that the book value of STA's assets may approximate the ODRC.

IPART seeks comments on the following

6 What is the most appropriate approach for setting the value of initial capital base in the four largest contract regions?

4.2.3 Other items

The other items that IPART may need to consider in determining the efficient value of the return on assets, return on working capital and depreciation categories include:

- the appropriate rate of return on the assets used to provide the contracted bus services in the four largest contract regions
- the forecast efficient value of the working capital required over the determination period
- the method of depreciation and the useful life of each type of asset used to provide the services.

The appropriate rate of return is one of the key items IPART would need to consider to determine the return on assets. Current regulatory practice is to calculate this by applying a rate of return that reflects the cost of capital to the regulatory asset base. The value of the regulatory asset base is determined by taking the initial capital base and, for each year of the determination period, adding the value of the forecast efficient capital expenditure and subtracting the value of the forecast depreciation. There are a number of approaches for calculating an appropriate rate of return on the regulatory asset base. IPART's preferred approach is to use the Weighted Average Cost of Capital (WACC) approach to determine an appropriate range for the rate of return.

Working capital reflects an amount of unpaid bills that are part of normal business experience. The justification for considering the forecast efficient working capital in determining the efficient costs is that the operator generally cannot expect all customers to always pay their bills, so the lost revenue must be recovered elsewhere if the operator is to remain financially viable. IPART considers that the level of working capital required for the four largest contract regions will be minimal.

To determine the efficient value of depreciation, IPART would need to consider what method of depreciation it should use, and the useful life of each type of regulatory asset (ie, the assets used to provide the contracted bus services). There are a number of depreciation methods IPART could use. However, its preferred method is straight line depreciation. This method takes an equal amount from the asset value in each year of the assets' economic life, so that the real written down value describes a straight line over time, from the initial value of the investment to zero at the expiry of the asset life.

IPART seeks comments on the following

7 What is the appropriate rate of return to allow on regulatory assets in the four largest contract regions?

8 What is the appropriate average remaining life for regulatory assets in the four largest contract regions?

5 Sharing the efficient costs between passengers and taxpayers

In the second step of the proposed approach, IPART would decide how to share the total efficient costs of providing contracted bus services between passengers and the general community. IPART would then set fares to recover passengers' share of these costs. The remainder would be provided by taxpayers through government subsidies.

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

IPART has identified two approaches that it could use in making its decision on how much of the efficient costs of bus services passengers should be required to pay (through fares):

- The first approach involves quantifying the total value of the external benefits bus services generate (including the environmental benefits) and considering how this compares to the total efficient cost of providing bus services.
- The second approach involves identifying the average 'optimal' level for bus fares – where this level is defined as the point at which the increase in benefits that passengers, motorists and the environment receive from lower fares and the increase in benefits that the service provider (ie, the Ministry of Transport) and the community receive from higher fares are balanced.

IPART has sought expert advice from LECG on both these approaches, and LECG has provided its preliminary advice in a draft report.[4] IPART intends to give further consideration to both approaches, taking account of LECG's final advice and stakeholder comments, before deciding how much weight should be placed on each approach.

In addition, whatever weight it gives to these approaches, IPART would also consider the likely implications of their outcomes on the level of bus fares, and how this would affect the affordability and patronage of bus services, before making its decision on passengers' share of costs.

4 See LECG, *Value of Sydney bus externalities and optimal government subsidy*, May 2009.

The section below summarises how the costs of bus services are shared between passengers and taxpayers under the current determination. The subsequent sections discuss the two approaches IPART could use to help it decide on these cost shares for the 2010 determination, and its preliminary view on how it might use them.

5.1 Cost shares under the current determination

Currently, the bus fares paid by passengers offset some of the cost of the contract payments made by the Government. For example, in 2007/08:

- the Ministry of Transport made payments of $883 million to bus operators,[5] around 83 per cent of which were for services in the Sydney metropolitan area
- passengers took a total 271 million bus trips, including 63 million trips made by non-fare paying school students travelling for free under the NSW Government's school student transport scheme (SSTS) and 57 million made under concession and pensioner excursion fares
- the total value of fares paid by passengers was $326 million.

The extent to which bus fare revenue offsets the contract payment costs is referred to as the level of farebox cost recovery. Farebox cost recovery can be measured in a number of different ways, depending whether or not the costs of providing free and concession fares are explicitly identified.

In its 2008 review, IPART estimated the cost of free and concession travel so it could compare the level of farebox cost recovery for bus services with that for other modes of public transport, and more clearly identify what the Government is paying for. It found that in 2007/08, depending on whether it considered farebox revenue only, or farebox plus free travel and concession fare funding, fare-paying bus passengers contributed between 37 per cent and 50 per cent of the Government's total costs of $883 million. Farebox cost recovery was highest in the four largest contract regions with fare-paying passengers contributing between 49 per cent and 60 per cent of total costs. In the outer metropolitan regions, farebox cost recovery was lower with fare-paying passengers contributing between 15 per cent and 24 per cent of costs in these regions.

Overall, the difference between the cost of the contract payments and the amount collected in farebox[6] revenue for metropolitan and outer metropolitan bus services totalled $549 million in 2007/08. This translates into a taxpayer subsidy of around $80 per year for every person in NSW.[7]

5 Ministry of Transport supporting information submitted to IPART's 2008 bus fare review – adjusted contract payments for 2007/08.
6 Plus other revenue collected by operators – for advertising and charter services.
7 The ABS reported population of NSW at September 2008 was 7,017,091.

5.2 The external benefits approach

The first approach IPART could use to help it decide on appropriate cost shares for the 2010 determination is to quantify the total value of the benefits the contracted bus services generate for the wider community (known as the external benefits). This approach assumes that taxpayers should pay a share of the efficient costs that is roughly equal to the value of the external benefits. Therefore, fares should be set to recover the remaining share of the efficient costs.

The benefits that passengers receive from an accessible bus service are immediate and obvious. They include access to a place of work, business, essential services and leisure facilities and the personal benefits that flow from this level of mobility. However, the benefits that accrue to the wider community can be harder to define and difficult to quantify.

IPART considers that some of the most important community-wide benefits generated by accessible bus services are those that arise from a reduction in the number of people using cars in the metropolitan and outer metropolitan regions. Further social benefits also arise from the provision of bus transport to those in the community who may not have access to an alternative form of transport. For example, these include the benefit to the wider community of keeping these people in employment, and ensuring they have access to services, leisure facilities and the many other benefits that flow from access to transport.

When people make decisions on how to travel, they factor the costs and benefits to themselves into their decision – they will travel by bus when the costs and benefits of bus travel are such that it is the best option for them. However, they are unlikely to take into account the costs and benefits to other people from 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. IPART considers that fares should be set at a level that takes into account these external costs and benefits. See Box 5.1 for more information.

Box 5.1 Difference between internal and external benefits of bus services

Internal benefits are:

- those that will apply directly to the individual making a choice about their mode of transport
- taken into account in the decision-making process when an individual weighs up the costs and benefits of their transport choice.

External benefits are:

- those that flow on to people other than the individual making the choice about their transport mode
- are not taken into account in the decision making process when the individual making the choice is weighing up the costs and benefits.

Traffic congestion is a useful example of an external benefit or cost. A motorist's decision to catch a bus rather than driving to work will affect their own travel time as well as a the travel time of other motorists as he or she no longer contributes to road congestion. The reduced travel time experienced by the motorist who switched to the bus is an internal benefit, while the reduced travel time of other motorists is an external benefit.

Conversely, a motorist who chooses to drive rather than catch the bus will have weighed up the internal benefits and costs, such as travel time, when making his or her decision. However, it is not likely that this motorist will have considered the external cost of the decision in the form of increased travel time for other road users by increasing road congestion.

IPART's recent review of CityRail fares (*Review of CityRail fares, 2009-2012)* identified a number of benefits to the wider community as a result of individuals choosing to use public transport services rather than drive their cars. Although there are likely to be significant differences in the value of these benefits for different modes of transport, the types of benefits that can be identified fall into the same categories. Primarily, rail services were considered to benefit the wider community by reducing road congestion and reducing general air pollution and greenhouse gas emissions. Other factors, such as reducing road accidents and increased social mobility were also considered but not directly quantified. The same types of benefits apply to bus services.

As noted above, IPART has engaged a consultant, LECG, to provide advice on the value of the net external benefits generated by the contracted bus services in the four largest contract regions per annum. LECG's preliminary advice is that in 2006/07, this value was $216.5 million. The sources of this value are summarised on Table 5.1, and discussed in the sections below. IPART intends to update this estimate for 2008/09 during the course of the review.

Table 5.1 LECG's preliminary estimate of the value and sources of net external benefits of bus services in the four largest regions (2006/07, $ million)

Source of benefit	Total benefit in four largest contract regions
Avoided road congestion	$176.0
Net avoided air pollution	$37.3
Net avoided greenhouse gas	$3.2
Avoided noise pollution	-
Avoided road accidents	-
Avoided road damage	-
Total net external benefits	$216.5

If it were to decide on cost shares that reflect its view of the value of the external benefits of bus services in metropolitan and outer metropolitan regions, IPART would be guided by LECG's advice, and its own considerations of the implications of this advice on bus fare affordability and patronage, plus by other information available to it. IPART has asked LECG to carry out further work to refine this estimate.

5.2.1 Avoided road congestion

Road congestion occurs when the volume of traffic on the road is too great for the general flow of traffic to travel at the speed limit. It is caused by the interference of vehicles with each other and is significant on any major roadway in Sydney during peak travel times.

Logic suggests that providing an accessible bus service encourages people out of their cars and reduces the number of individual cars on the road. Fewer cars mean less road congestion, which benefits bus passengers and other road users by reducing their travel time and fuel costs.

LECG estimated the value of the external benefit of bus services due to avoided road congestion based on traffic patterns for a typical work day provided by the Transport Data Centre (the data collection arm of the Ministry for Transport).

LECG found that the value of the external benefit of bus services from avoided road congestion in the four largest contract regions is about one-eighth that of CityRail services.[8] This suggests that trains, in total, allow Sydney to avoid much more road congestion than buses. For work trips on a typical work day, trains account for 11.5 million passenger kilometres, while buses in the Sydney metropolitan and outer metropolitan regions account for 1.8 million passenger kilometres (ie, trains account

8 In its 2008 report, *An empirical estimate of CityRail's marginal costs and externalities*, LECG estimated the external benefit of avoided road congestion associated with CityRail services at $1,390.8 million.

for 6.4 times the passenger kilometres as buses). For non-work trips, trains and buses account for nearly the same number of passenger kilometres. However, these trips do not ameliorate road congestion to nearly the same extent, because roads are generally not congested at the times of day often used for non-work trips.

A further factor is that trains get commuters off the road entirely, whereas with buses they still use the road and so still contribute something to congestion.

5.2.2 Net avoided air pollution and greenhouse gases

Every litre of fuel consumed by motorised transport (including buses) causes air pollution. The Bureau of Transport and Regional Economics estimated that in 2000, pollution from motor vehicles in Sydney was responsible for over 500 premature deaths and over 1000 hospital admissions per annum.[9] These health impacts of motor vehicle pollution were estimated to cost the community between $600 million to $1.5 billion per annum.[10]

In addition, the use of motorised transport contributes to greenhouse gas emissions. Motor vehicles contribute significant amounts of carbon dioxide, nitrous oxide and methane to the atmosphere.

LECG's initial analysis found the external benefit of services in the four largest contract regions associated with net avoided conventional (non-greenhouse) air pollution is $37.3 million.

The health impacts of air pollution from motorised transport depend on the level and type of pollutants that are produced when fuel is burnt. Fuels such as unleaded petrol and diesel produce harmful pollutants such as particulate matter, nitrogen oxides, sulphur oxides and volatile organic compounds. The quantity of pollutants that are emitted depends largely on the type of fuel, such as unleaded petrol, diesel, or compressed natural gas, as well other factors such as engine type and engine efficiency. In addition, some pollutants have a greater impact on health costs than others.

Most buses in the Sydney Buses' fleet run on diesel[11] whereas most cars use unleaded petrol. LECG found that the cost of conventional air pollution from the consumption of one litre of diesel is $1.36, whereas the pollution cost associated with the consumption of one litre of unleaded petrol used in cars is only $1.24. However, while the health cost per litre of fuel is slightly higher for buses than cars, buses tend to carry more people. This means that on average, less fuel is used per passenger when people catch buses instead of driving their cars. Despite the fact that diesel is more polluting than unleaded petrol on a per litre basis, buses prevent more harmful

9 Bureau of Transport and regional Economics, 2005, *Health Impacts of Transport Emissions in Australia: Economic Costs - Working Paper 63.*

10 Bureau of Transport and regional Economics, 2005, *Health Impacts of Transport Emissions in Australia: Economic Costs - Working Paper 63.*

11 Some buses run on compressed natural gas.

pollution than they cause because a typical bus carries more people than a typical car.

In terms of net avoided greenhouse gases, LECG found that the external benefit of bus services is $3.2 million.

5.2.3 Avoided road accidents

Accessible bus services are likely to reduce road traffic or congestion, and this is likely to reduce accidents. However, it is difficult to value the external benefit of avoided road accidents for two reasons:

- First, much of the cost of a road accident is borne by the accident victim. Where the victim is the individual who chose to drive rather than take the bus, much of the cost is considered to be internal rather than an external cost.
- Second, while an increase in the number of cars on the road increases congestion, it is not necessarily the case that the risk or cost of accidents increase at a faster rate than automobile passenger kilometres. For example, slower travel speeds as a result of congestion are likely to reduce the seriousness of accidents.

In its work so far, LECG has assumed that, in the absence of any other detailed information, any increase in accident risk is in proportion to the passenger kilometres travelled by an individual. This means that motorists already on the road do not experience any increased risk of accidents and that the increased risk experienced by the motorist who decides to increase their travel by car is internal to the decision maker. Therefore, there is no external benefit from avoided road accidents associated with bus services.

LECG acknowledges that this finding is counter to the general understanding of accident externalities. However, it has not identified any data that would allow it to quantify the relationship between changes in accident costs with changes in the amount of car travel. Quantifying that relationship is essential to quantifying accident externalities.

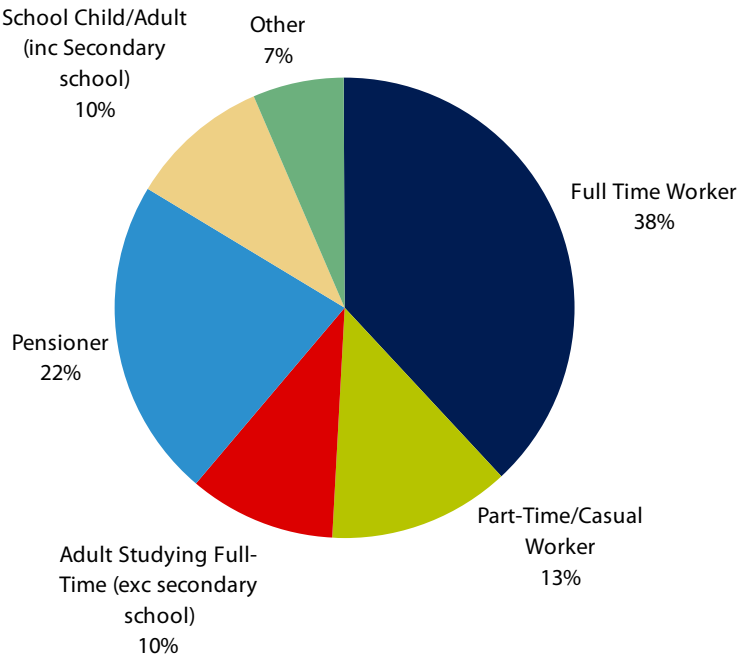
5.2.4 Improved social mobility

LECG has not attempted to value the external benefit of improved social mobility. However, IPART considered this value in its recent review of CityRail fares. Stakeholders for that review strongly argued that the external benefits that flow from improved mobility and social inclusion, particularly for disadvantaged groups of CityRail passengers, are significant.

In the case of metropolitan and outer metropolitan bus services, IPART is aware that the external benefits that would accrue by providing a mode of transport to those who would otherwise be unable to access places of business, education, leisure or services is likely to be significant.

The 2005 Household Travel Survey conducted by the TDC found that less than 40 per cent of bus passengers are full-time workers. Thirteen per cent of passengers are part-time or casual workers (shown in Figure 5.1 below). Significant proportions of other passengers are likely to be eligible for concession fares or free travel, notably pensioners (22 per cent) and school children (10 per cent).

Figure 5.1 Purpose of bus travel



Data source: TDC, *Household Travel Survey 2005*.

5.3 The optimisation approach

The second approach IPART could use to help it decide how much of the efficient costs of bus services passengers should be required to pay through fares is known as the optimisation approach. This approach, which was developed by LECG, involves using a theoretical framework to identify the optimum level for average fares. The optimal average level is defined as the point at which the following benefits are maximised:

- the benefits passengers receive from lower fares (or the consumer surplus)
- the benefits that third parties such as motorists and the environment receive from lower fares (or the external benefits)
- the benefits the service provider (in this case, the Ministry of Transport) receives from higher fares limiting the extent of potential financial losses (or the producer surplus)

- the benefits that the community receives through higher fares from avoiding the adverse effects of taxation.

Applying the optimisation approach involves two steps. The first is to decide how each of the above benefits can be identified and measured. The second is to examine the impact that different fare levels have on the value of each benefit, and determine the level at which the sum of all the benefits is maximised. The following sections discuss each category of benefits and how they might be valued, and the preliminary results of LECG's application of the optimisation approach.

5.3.1 Benefits passengers receive from lower fares

Passengers benefit when fares are set at a level below what they are willing to pay for the services. The value of these benefits can be estimated from the relationship between the quantities of bus services demanded at different fare levels, which depend on passengers' willingness to pay. As price increases, the demand for bus services will decrease.

In its work to date, LECG has estimated this relationship using historical data from the Sydney Strategic Travel Model (SSTM)[12]. Based on this relationship, it has also estimated the value of the benefit that passengers gain at various fare levels.

5.3.2 Benefits that third parties such as motorists and the environment receive from lower fares

These benefits are the same as the external benefits discussed in section 5.2 above. As that section indicated, they include reductions in road congestion, general air pollution and greenhouse gas emissions and road accidents, and increased social mobility. However, as shown in Table 5.1, LECG has found that the largest, quantifiable external benefit generated by bus services is a reduction in road congestion. Lower fares encourage some people to uses buses rather than cars. This in turn reduces road congestion and provides a benefit to remaining motorists through lower average journey times.

The size of this benefit depends on the value of time to those who save it. To estimate how the size of this benefits change with fares, it is necessary to understand:

- the relationship between the level of bus fares and the number of people who use cars
- the relationship between the number of vehicles travelling in a particular period and the average travel times by car
- the value of time saved as a result of reduced travel times by car.

12 The SSTM is a model operated by the Transport Data Centre of the Ministry of Transport. The model is the best available tool to monitor price-induced shifts towards or away from bus patronage on one hand and changed patterns of automobile and rail usage on the other.

The first two of these relationships can be estimated using the SSTM which models road congestion based on traffic patterns for a typical work day. The third relationship can be calculated on the basis of reasonable assumptions about the earnings of those who travel by car and the value of their time while travelling.

5.3.3 Benefits the Ministry of Transport receives from higher fares

These benefits relate to the relationship between the level of fares and the size of the financial losses of the service provider, in this case the Ministry of Transport. The value of these benefits is based on the marginal cost of providing bus services (that is, the additional cost of providing additional bus journeys). The marginal cost varies with the number of bus services, the distances they travel, and the number of passengers who use them.

In practice, the marginal cost of providing additional bus journeys can be difficult to quantify. LECG has made a rough estimate of this cost based on data obtained from the Ministry of Transport's bus contracts with the STA. These data show how the contract costs vary with the number of bus journeys over time. It should be possible to make a better estimate of the marginal cost using underlying data on STA's costs. IPART proposes to ask its cost consultant to undertake work on the marginal costs of bus services to further inform LECG's optimisation approach.

As discussed in section 5.1, the bus passengers contributed between 37 per cent and 50 per cent of the Government's total costs in 2007/08. This shortfall between the total costs of providing bus services and revenue collected from passengers must be subsidised by Government. This subsidy means that less funding is available for Government to direct to other services such as public health, education and law and order.

5.3.4 Benefits from lower taxation

The benefits the community receives from higher fares relate to avoiding the adverse consequences of taxation – including the administration and compliance costs of taxation, as well as any disincentive effects of taxation. Estimating the value of these benefits clearly involves some judgement, but IPART considers that it is probably greater than zero. LECG has approached this issue by estimating the additional cost of raising more tax revenue to fund these services and used alternative assumptions of zero and 10 cents of every dollar of tax revenue raised.

5.3.5 Preliminary results of LECG's optimisation approach

Using the approaches for estimated the benefits outlined above, LECG has conducted some preliminary analysis of the optimal fare level. This analysis suggests that the optimal average level for fares in the four largest contract regions is in the range of $0.90 to $2.18. Currently, the average fare in these regions is $1.47[13].

LECG's preliminary results also indicate that the average optimal fare is highly sensitive to the marginal costs of bus services as well as whether the journey relates to work or non-work travel. IPART and LECG will be undertaking further work on the value of these inputs to the optimisation approach prior to the release of its draft report.

5.4 How IPART might consider the two approaches in deciding on cost shares for the 2010 determination period

IPART considers that potentially, the external benefits approach and the optimisation approach can be complementary inputs to its decision on the appropriate share of efficient costs that passengers should be required to pay (through fares). IPART will further consider the advantages and disadvantages of both approaches, and decide how much weight should be placed on them once LECG has completed its final analysis, and IPART can judge how successful and reliable each approach is in practice.

IPART notes that quantifying the total value of the external benefits is a relatively straightforward approach, and has recently been used to decide on the appropriate cost shares for the CityRail determination. However, the value of the external benefits generated by these services depends on how many people choose to use the services (rather than a private vehicle). In turn, the levels of patronage can depend on the price of fares and particularly changes in these fares. IPART will need to examine this interdependency carefully in determining an appropriate sharing of efficient costs between passengers and taxpayers.

The optimisation approach more directly takes account of this interdependency. However, it is more complex and highly sensitive to both the marginal costs of bus services (which as noted above can be difficult to quantify accurately) and whether the journey relates to work or non-work travel.

As noted above, whatever weight it places on these approaches, IPART would also consider the likely implications of their findings on the level of bus fares, and how this would affect the affordability and patronage of bus services, before making its decision on passengers' share of costs.

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13 Fares are calculated as an average across fare paying passengers and therefore exclude SSTS passengers.

IPART seeks comments on the following

9 Is it appropriate to determine the share of costs to be borne by taxpayers based on the external benefits approach? What are the advantages and disadvantages of this approach?

10 Are there other external benefits of bus services that IPART should take into account?

11 How should IPART take into account the external benefits of bus services that cannot be quantified?

12 Is it appropriate to determine the share of costs to be borne by taxpayers based on an optimisation approach? What are the advantage and disadvantages of this approach?

13 How should IPART take account of the likely implications for affordability and patronage in its fare decisions?

6 Developing options for the structure and level of bus fares

Once IPART has determined the total efficient cost of bus services in the four largest contract regions, and the appropriate share of those costs to be funded by passengers, it needs to consider how to translate these decisions into fares.

As the third step in its proposed process, IPART would develop options for fares to approximately generate passengers' share of costs, taking into account:

- current fare levels and structures
- projected demand for bus services (including travel by non-fare paying passengers)
- government policy on fare harmonisation and electronic ticketing
- the proportions of fixed and variable costs in providing bus services.

The sections below discuss each of these factors. Chapter 7 discusses the final step in IPART's proposed approach – determining the most appropriate fares by considering the options' social and environment impact, and their impact on bus usage.

6.1 Current structure and level of bus fares

Currently, bus fares are harmonised in all metropolitan and outer metropolitan contract regions except Newcastle. The structure and level of these fares are summarised below.

6.1.1 Current fares in metro and outer metro regions except Newcastle

Most bus tickets in metropolitan and outer metropolitan NSW are distance-based. They are based on 'sections' that are equivalent to around 1.6 kilometres. The more sections travelled, the higher the fare. Table 6.1 below sets out the current fares for single tickets of different distances.

Table 6.1 Single trip adult bus fares from January 2009 in all regions except Newcastle

Sections	Single adult ticket
1 to 2	$1.90
3 to 5	$3.20
6 to 9	$4.20
10 to 15	$5.00
16+	$6.10

Multi-trip tickets are available at a discount price compared to single rate tickets, but their availability varies across the different contract regions. These tickets include:

- TravelTens and T-WayTens. These pre-purchased tickets allow passengers to make 10 bus trips of a specified distance. They are priced at a discount of 15-20 per cent compared with 10 single tickets. They are available in Sydney Buses areas and T-Ways only. Table G.1 in Appendix G shows the fares for these ticket types.
- Private bus operator weeklies. These tickets allow passengers to make unlimited trips on a route between a nominated origin and destination over seven days. They are available in metropolitan regions serviced by private operators. They are priced at a discount of 20 per cent compared with 10 single tickets.
- Single and multi-mode TravelPasses. These zone-based tickets allow unlimited travel on certain services within a given zone and period of time. They are available in Sydney Buses areas only (except for Pensioner Excursion Ticket, which is available on all services).

6.1.2 Current fares in Newcastle

The Newcastle bus contract region is the only region for which the harmonised fares discussed above do not apply. This is because, historically, the structure of Newcastle fares has been time-based not distance-based. These fares allow passengers to make an unlimited number of bus trips within the time period of the ticket. Stakeholders have previously commented that having different fares in Newcastle to those in the surrounding regions confuses passengers, as many operators service Newcastle, yet Newcastle Buses is the only operator which offers time-based fares.[14]

14 Rick Banyard submission to 2008 review of bus and ferry fares, October 2008, p 2.

Table 6.2 Newcastle time-based fares from January 2009

Ticket	Price
1 Hour	$3.20
4 Hours	$6.20
TimeTen 1 Hour	$26.10
All Day	$9.50

IPART considers that there is merit in considering whether fares charged by STA buses in Newcastle should be harmonised with those of the other contract regions in the 2010 determination.

In addition to simplifying fares for passengers, fare harmonisation will more easily facilitate the inclusion of Newcastle in the proposed integrated electronic ticketing system that the Government is working towards. It will also mean that passengers in Newcastle pay the same fares as all other passengers in metropolitan and outer metropolitan regions for the same distance travelled.

IPART seeks comments on the following

14 Should Newcastle fares be harmonised with fares in the other bus contract regions? If not, what justification is there for a separate fare structure?

6.2 Projected demand for bus services

IPART determines individual fares by dividing the passenger share of costs by the expected number of bus trips. In order to do this, IPART needs to project the demand for bus services over the full length of the determination period.

It is important that demand forecasts are accurate as they are a key determinant of fares – higher patronage implies lower fares and vice versa. Forecast patronage also affects the value of the external benefits of bus services. Generally speaking, a higher forecast number of passengers will lead to a higher value for the external benefits because more passengers journeys should mean that higher levels of external costs associated with private vehicle use are being avoided.

There are several factors that influence the future demand for bus services. These factors include:

- bus fares – their level, their structure and their relativity with alternative forms of transport (including private vehicle transport)
- recent trends in bus patronage
- social and economic factors – household incomes, population, employment and increases in fuel prices and road congestion
- bus service quality – suitability, frequency and speed of services, ease of use

- the alternative modes of transport available – suitability, price, frequency and ease of use of alternatives.

IPART will examine each of these factors in developing its projected demand for bus services. The following sections discuss recent trends in bus patronage, targets for patronage growth included in the State Plan, and the potential for growth during peak periods.

6.2.1 Expected changes in bus patronage over the next five years

IPART would take into account recent changes in the number of passengers using bus services as well as other information, such as forecast patronage targets indicated by the NSW State Plan to establish forecasts for the next five years.

Current levels of patronage

In 2007/08 passengers took approximately 167.5 million bus trips in the four largest contract regions. Trips made by non-fare-paying school students are a significant proportion of all trips taken, but a much lower proportion of trips taken in the four largest contract regions (7 per cent compared to 23 per cent of all metro and outer metro regions).

Table 6.3 summarises the number of passenger trips by region for the 2007/08 financial year.

Table 6.3 Passenger trips in 2007/08

	All trips (m)	SSTS trips (m)
Four largest regions		
Region 6 - South[a]	45.7	3.1
Region 7 – West	31.0	3.5
Region 8 – North	25.7	2.4
Region 9 - East	65.1	2.8
Total – regions 6-9	167.5	11.7
Total – all metro and outer metro regions	270.6	62.6

[a] STA estimate.

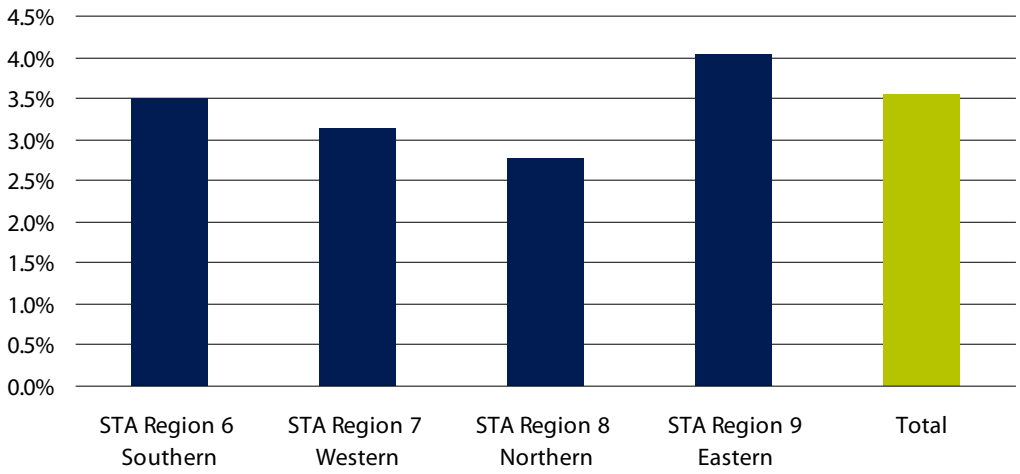
Note: Columns may not add due to rounding.

Source: Ministry of Transport.

Recent trends in patronage

In recent years, the demand for bus services in the four largest contract regions has increased. In 2007/08, patronage in these regions increased by 3.5 per cent compared to 2006/07 levels. Figure 6.1 shows rate of growth in passenger numbers in each of these regions.

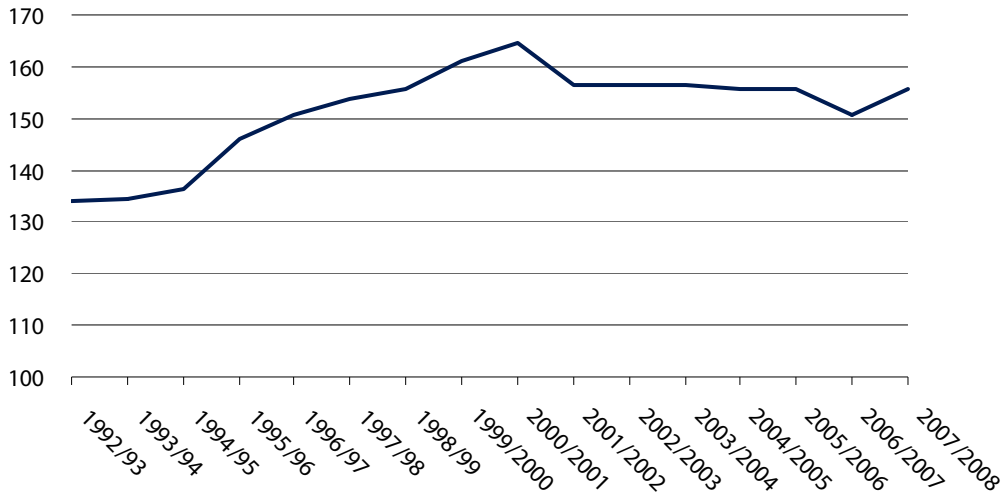
Figure 6.1 Patronage change in the four largest contract regions – 2006/07 to 2007/08



Note: Patronage for region 6 has been amended based on the estimate in the Ministry of Transport's fare proposal.
Data source: Ministry of Transport submission and supporting data.

Over a longer period – from 1992/93 – the change in patronage in the four largest contract regions has been largely positive (Figure 6.2). The total number of passenger trips (excluding SSTS) has increased by a total of 16.4 per cent over this time. Most of this growth occurred over the period to 2000/01, when the average annual growth rate was 2.6 per cent per annum. Patronage peaked in 2000/01, coinciding with the Sydney Olympics, and then there was little growth in patronage until 2007/08.

Figure 6.2 Patronage in four largest contract regions 92/93-07/08 (millions)



Data source: MoT, STA.

The Ministry of Transport largely attributes the patronage increase in 2007/08 to service improvements and gains from the introduction of integrated networks. The Ministry also notes that patronage is likely to continue to grow due to factors such as higher petrol prices and greater awareness of the environmental impacts of private car use.

6.2.2 State Plan patronage growth targets

The State Plan includes a target to increase the share of trips made to and from the Sydney CBD during peak hours by public transport from 72 per cent in 2006 to 75 per cent by 2016. The plan also includes a target to increase the share of trips to work in the Sydney metropolitan region made by public transport from 20-22 per cent in 2006 to 25 per cent by 2016.

6.2.3 Growth in patronage during peak periods

Stakeholders in previous reviews have argued that the number of buses in Sydney Buses regions that do not stop to pick up passengers at scheduled stops because they are full has increased in recent years. In the absence of capital expenditure on new buses, high numbers of full buses during the peak periods will limit the ability for patronage to grow in these periods.

In the 2007 review of bus fares, IPART noted it was concerned that measures of full buses were not available for the Sydney Buses regions in particular. IPART considers that the full buses measure is an important piece of data for estimating patronage growth for bus passengers who travel in peak periods, particularly those in the high patronage regions around the Sydney CBD. IPART again urges the Ministry of Transport to ensure that this data is reported by all operators in future years and made available to IPART in due course.

IPART seeks comments on the following

15 What will be the increase in demand for bus services over the next five years?

16 What factors are likely to have the largest impact on bus use?

17 Are recent increases in patronage likely to be a good indicator of patronage changes over the next five years? Why or why not?

6.3 Fare harmonisation and transition to electronic ticketing

The Government's policy of fare harmonisation has greatly reduced the number of ticketing products available and should assist the extension of electronic ticketing throughout the metropolitan and outer metropolitan regions.

As noted in Chapter 2, the NSW Government is in the process of establishing an integrated electronic ticketing regime for Sydney's public transport. It is government policy that electronic ticket fares will be distance-based – that is, their price will comprise a flagfall charge and per kilometre (or per section) charge.

IPART considers that its fare determination should facilitate the transition to such a system. Moving away from a distance-based fare structure that is harmonised across regions would complicate the introduction and viability of integrated electronic ticketing and most probably delay its introduction. Ultimately a simple, consistent fare regime that includes integrated electronic ticketing should lead to more efficient public transport which will benefit both the users and taxpayers of NSW.

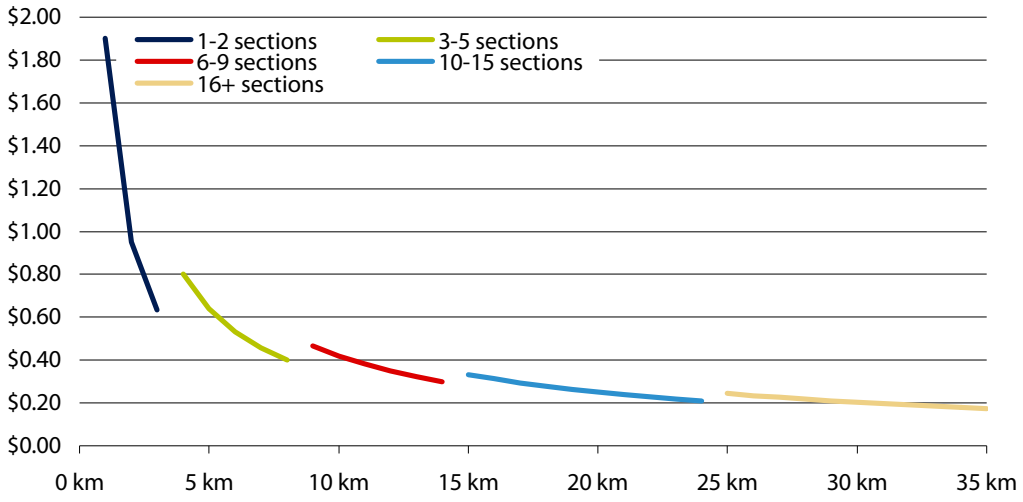
6.4 Reflecting fixed and variable costs in fare structure

The efficient cost of providing bus services is comprised of both fixed and variable components. Fixed costs are those that do not vary per kilometre travelled (such as bus depots, administration expenses, legal expense and other overheads). Variable costs are those that vary per kilometre of distance travelled (such as fuel and maintenance expenses). IPART considers that an appropriate fare structure is one that should provide economic signals that are consistent with the cost of providing bus services, and proportion of this cost that are fixed and variable.

The fare structure for single bus tickets is broadly based on an implicit flat flagfall charge and a variable distance-based charge. For single tickets, fares reflect a flagfall charge of approximately $1.50 and distance-based charge of approximately $0.20 per kilometre.

Under the current fare structure, adult full fare bus passengers travelling shorter distances pay more on a per kilometre basis than those travelling longer distances (see Figure 6.3). In part, the difference in per kilometre fares is likely to reflect the fixed costs associated with providing passenger bus services (for example, the cost of providing bus infrastructure such as bus depots). Such fixed costs need to be recovered regardless of the distance travelled.

Figure 6.3 Adult full fare per kilometre of distance travelled (single tickets)



Data source: IPART Determination No. 7, 2008.

Because the same fare applies to multiple sections of travel, the varying per kilometre charges that result from the current section-based ticket types lead to higher per kilometre charges for those travelling shorter distances than the maximum allowed by their ticket. For example, of passengers who purchase a ticket that allows them to travel 6–9 sections, those travelling 6 sections will pay more on a per kilometre basis than those travelling 9 sections.

IPART considers a flagfall charge that reflects the fixed costs and a per kilometre charge that reflects the variable costs of providing bus services provides an accurate economic pricing signal of the total costs of providing the services. IPART proposes to undertake further analysis to ascertain what flagfall and per kilometre charges accurately reflect the fixed and variable costs of service provision.

In previous consultations, stakeholders have noted that currently, users of public transport are typically charged multiple flagfalls if their journey requires them to use multiple transport modes (such as a train and a bus), or to use more than one bus. However, passengers who need to change trains to complete their trip can do so without being charged an additional flagfall. But typically, passengers travelling by bus using a single or TravelTen ticket who need to change buses to complete their trip are charged an additional flagfall.

Some stakeholders have argued that the flagfall component of the fares for second and subsequent journeys should be rebated. IPART will consider how the fixed costs of operating bus services should be recovered from passengers. However, IPART notes that current ticketing technology limits the ability to provide a flagfall rebate.

IPART also notes that all bus passengers travelling more than 16+ sections (or more than 24 kilometres) pay the same fare. IPART proposes to consider whether this is the appropriate point at which to cap the fare payable.

IPART seeks comments on the following

18 Is a flat flagfall and a per kilometre charge that reflects the fixed and variable costs of providing bus services the most appropriate fare structure?

19 Under what circumstance should passengers only pay a single flagfall charge when using more than one bus to complete a journey or multiple transport modes? Given the limitations of current ticketing technology, how could this be achieved on buses?

20 Is the current aggregation of ticket sections (1-2, 3-5, 6-9, 10-15 and 16+) appropriate? Should more or less ticket types be introduced to better reflect a consistent flat flagfall and per kilometre charge?

21 Should all bus passengers travelling more than 16+ sections (24 kilometres) be charged the same fare?

7 Impact of fares

Once IPART has developed options for fares to generate passengers' share of the efficient cost of bus services in NSW, it will need to determine which of these is most appropriate. IPART proposes to do this by examining several impacts of the proposed fares including:

- social impact
- impact on bus usage
- environmental impact.

The sections below discuss how IPART would assess these impacts.

7.1 Social impact of fare changes

IPART would need to consider the social impact of its proposed fare options, taking into account the income and employment profile of bus passengers and their purpose of travel, average weekly expenditure on fares, the availability of concession fares, and the price of bus fares relative to other goods and comparable interstate transport services.

The sections below provide an overview of the income and employment profile of bus passengers and their purpose of travel. For a more detailed discussion, see IPART's 2008 report and determination.[15]

7.1.1 Profile of bus passengers

The Transport Data Centre's (TDC's) 2005 Household Travel Survey found that less than 40 per cent of bus passengers are full-time workers, and 13 per cent are part-time or casual workers. A significant proportion of other passengers who use peak period bus services are likely to be eligible for concession fares or free travel, notably pensioners (22 per cent) and school children (10 per cent).

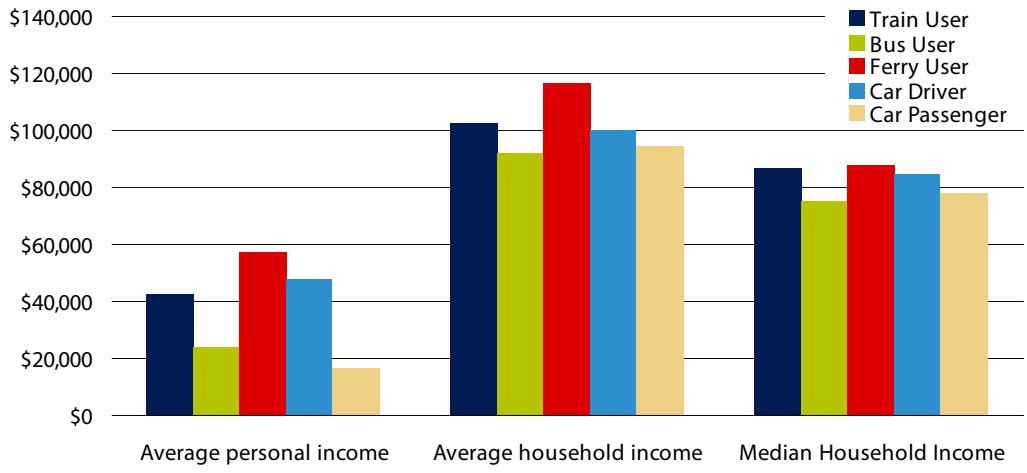
15 IPART. *Review of fares for metropolitan and outer metropolitan bus services for 2009 – Report and Determination*, December 2008.

The TDC found that the median household income of bus passengers was $75,205 per annum ($2008/09), and the median personal income of bus passengers was $9,975 per annum. The data suggests that bus users have higher household income but lower personal income than the general population, as measured by the Australian Bureau of Statistics' 2006 census.[16]

In relation to personal income, the results of the Household Travel Survey may be lower than expected because of the high proportion of bus passengers that are school students. The survey found that more than 40 per cent of bus passengers have a yearly income less than $1000.

As Figure 7.1 shows, the TDC's 2005 Household Travel Survey data suggest that bus passengers have lower annual household incomes than users of all other modes of transport in Sydney, and a lower personal income than all users of transport except car passengers (many car passengers are children, who have no personal income).

Figure 7.1 Average and median incomes by transport mode in the metropolitan region 2003-2005 ($2008/09)



Source: TDC, *Household Travel Survey 2005*.

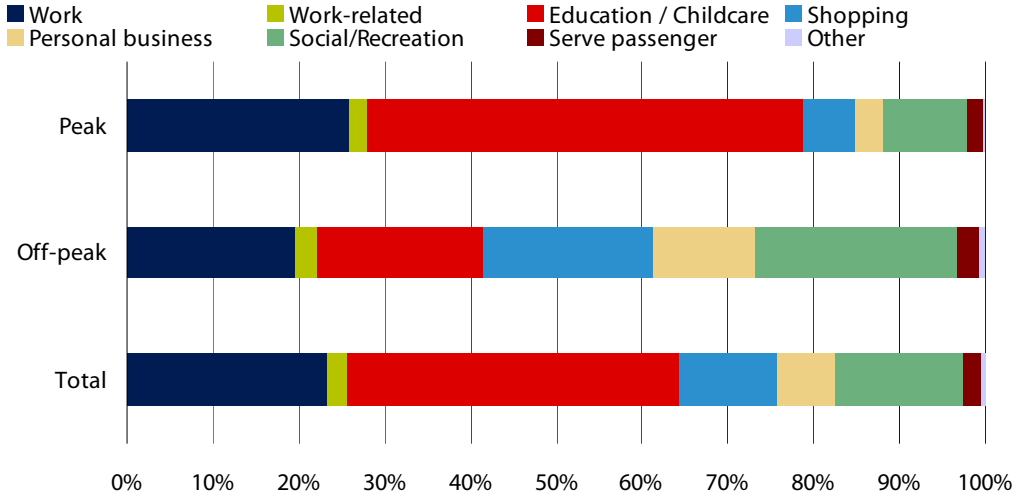
IPART understands that the TDC will shortly release the results of its 2007 Household Travel Survey. IPART will consider this data once it becomes available.

16 In $2008/09, based on the median weekly household income for the Sydney Statistical Division of $1,261 and the median weekly personal income for the Sydney Statistical Division of $566.

7.1.2 Purpose of travel

The reasons passengers use bus services are varied, particularly in the off-peak periods, when the purpose of bus travel is fairly equally distributed among work, education, shopping, personal business and social education (Figure 7.2). In peak periods, over 50 per cent of bus passengers travel for education purposes, while less than 30 per cent of travel for work or work-related purposes.

Figure 7.2 Purpose of travel by metropolitan bus passengers (2003-2005)



Note: Serve Passenger Trips are where the purpose is to drop-off, pick-up or accompany another person eg, man drops his children to school on the way to work, a young child "comes along for the ride" on a parent's trip to the bank, a man takes an elderly parent to a medical appointment.

Data source: TDC, *Household Travel Survey 2005*.

IPART seeks comments on the following

22 What factors should IPART take into account when considering the social impact of fare options on bus passengers?

7.2 Impact of fare changes on bus usage

IPART would also need to take into account changes in bus patronage resulting from its decision on fares. However, its analysis for previous reviews suggests that bus patronage is relatively insensitive to changes in fares.

The extent to which existing users of public transport would respond to changes in public transport fares by altering their travel patterns is also referred to as the price elasticity of demand. In 1996, IPART commissioned Professor David Hensher of the Institute of Transport Studies to estimate price elasticity of demand for all public transport fares in the Sydney region.[17] This analysis found that the price elasticity of

17 Hensher and Raimond, *Estimation of Public Transport Fare Elasticities in the Sydney Region*, 1996.

demand for bus travel was around -0.38.[18] This suggests that a one per cent increase in fares would reduce patronage by 0.38 per cent, other things being equal.[19] Table 7.1 and Table 7.2 show some of the results of the study.

Table 7.1 Price elasticity of commuters' demand for bus, rail and car travel

	Bus	Rail	Private cars
Bus	-0.383	0.009	0.005
Rail	0.004	-0.25	0.009
Private cars	0.007	0.015	-0.014

Source: Hensher and Raimond (1996).

Table 7.2 Impact of changes in price on commuters' demand for bus, rail and car travel

Change in price	Impact on bus travel	Impact on rail travel	Impact on car travel
10 per cent increase in bus fares	- 3.83%	+ 0.04%	+ 0.07%
10 per cent increase in car costs	+ 0.05%	+ 0.09%	- 0.14%

Although this study is now more than 10 years old, available evidence suggests that elasticities have not changed significantly over this time. A more recent elasticity study IPART commissioned from Booz and Co for the recent CityRail review suggested very similar outcomes to the Hensher study of 1996.

As bus patronage is relatively price inelastic, modest fare increases are unlikely to have a significant impact on the level of bus patronage. The available experience on providing free bus services supports the view that non-fare factors are important, and may even outweigh the effect of fares. For example, while the recent introduction of free buses in Wollongong have been well utilised[20] a fare free zone in the Newcastle CBD a couple of years ago, continues to be under utilised and many buses travel through the Newcastle CBD with few, if any, passengers.[21]

Bus fare elasticity is also affected by the relativity between fares for alternative forms of public transport. A significant difference in the relativity of rail and bus fares would be likely to alter the results discussed above. IPART has recently completed its review of CityRail fares for the next four years.

18 IPART, *Estimation of Public Transport Fare Elasticities in the Sydney Region*, October 1996.

19 The price elasticity of demand indicates how sensitive bus users are to a change in the fare. It measures the percentage change in patronage as a result of a one per cent change in the fare.

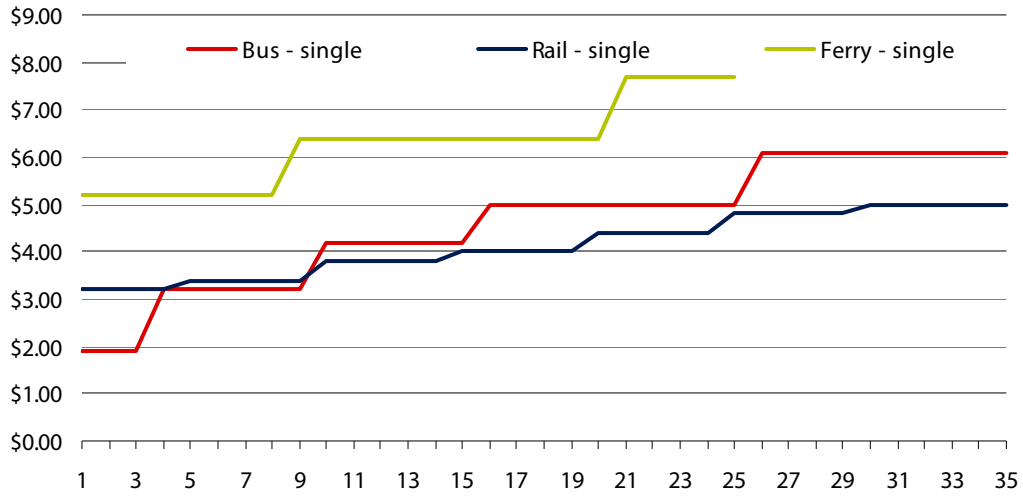
20 Media Release, David Campbell MP, *Gong Shuttle's Popularity Soars*, 2 April 2009.

21 R Banyard submission, October 2008, p 7.

The cost of a single bus and train journey are relatively similar but do vary somewhat depending on the distance travelled:

- buses are cheaper than trains for journeys up to 4 km
- bus and train journeys are comparable for journeys between 4 and 9 km
- buses are more expensive than trains for journeys greater than 9 km.

Figure 7.3 Fare relativities of single journeys on bus, train and ferry



Ferry journeys are currently more expensive than both bus and train journeys.

7.3 Environmental impact

In addition, IPART would need to consider the environmental impact in determining appropriate bus fares. IPART is required under the Passenger Transport Act to consider 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.

Section 6 of the Protection of the Environment Administration Act defines ecologically sustainable development (see Appendix A for the full definition). Essentially, the definition refers to the effective integration of economic and environmental considerations in decision-making processes.

The Act states that ecologically sustainable development can be achieved through:

- not using lack of scientific certainty as a reason for failing to address threats of serious or irreversible environmental damage (decision-makers should assess the risk-weighted consequences of various options)

- maintaining/enhancing the health, diversity and productivity of the environment for the benefit of future generations
- conserving biological diversity and ecological integrity
- including environmental factors in the valuation of assets and services, such as:
  - those who generate pollution and waste should bear the cost of containment, avoidance or abatement
  - 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
  - cost effectiveness: 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.

Several of these environmental considerations are relevant to both the level and structure of fares. Primarily they are relevant because:

- bus travel avoids pollution and environmental damage caused by alternative forms of transport (car travel and rail travel)
- bus services themselves cause pollution and environmental damage
- the level and structure of fares have an impact on the usage of bus services.

The number and frequency of bus services is not determined by IPART. This is a contractual matter between the NSW Government (represented by the Ministry of Transport) and the bus operators who provide the services.

However, IPART would take into account the environmental benefits of bus services when it determines how much users of bus services should pay. As discussed in Chapter 5, IPART has engaged LECG to provide a report on the external benefits of bus travel. LECG's draft report considers and quantifies the environmental benefits of buses compared with other travel options using the Transport Data Centre's Strategic Sydney Transport Model.

In relation to fare structure, IPART is constrained in terms of what fare options are feasible. These constraints include the need to be consistent with Government policy on fare harmonisation and distance-based fares for electronic ticketing (see Chapter 2) and the need to retain a reasonable relativity with fares for alternative transport options, such as rail fares (see section 7.2). However, when determining the appropriate bus fares, IPART would consider what impact changes in fares have on bus usage, and hence their likely impact on the environment.

IPART seeks comments on the following

23 Are there any other factors IPART should take into account when considering the environmental impacts of bus fares?

Appendices

A Passenger Transport Act requirements

Section 28J of the Passenger Transport Act 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 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.

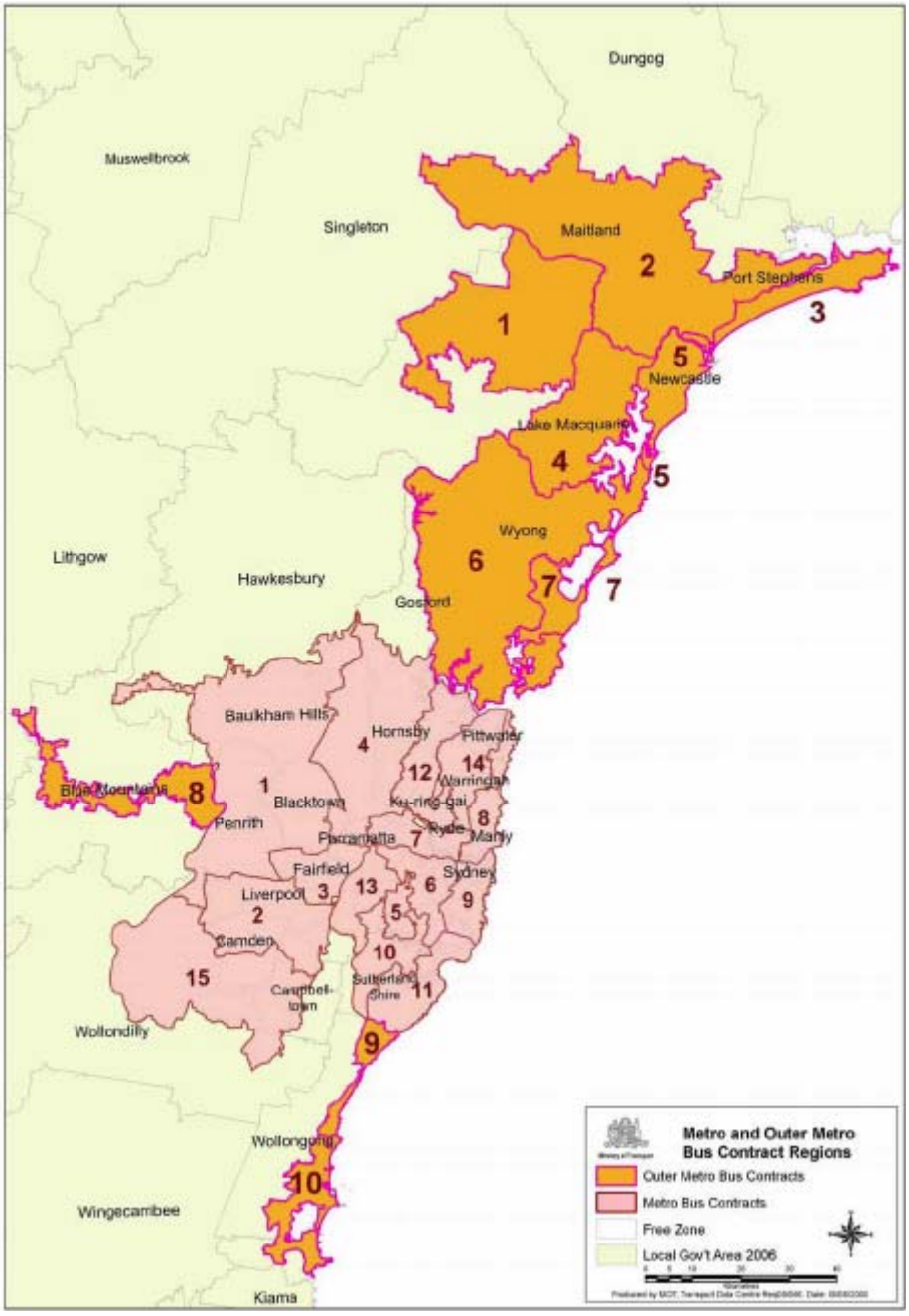
In the application of the precautionary principle, public and private decisions should be guided by:

   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 Map of bus contract regions

Figure B.1 Metropolitan and outer metropolitan contract regions



Data source: Ministry of Transport fare proposal, August 2008, p 47.

Table B.1 Metropolitan bus operators by region

Contract region	Operators
1	Busways Blacktown, Westbus, Hawkesbury Valley Buses
2	Interline Buses, Busabout
3	Hopkinsons Metrolink, Oliveri's Metrolink Buses, Westbus, Busabout
4	Hillsbus
5	Punchbowl Buses
6	Sydney Buses (STA) – Southern Region
7	Sydney Buses (STA) – Western Region
8	Sydney Buses (STA) – Northern Region
9	Sydney Buses (STA) – Eastern Region
10	Veolia Transport NSW
11	Veolia Transport NSW, Caringbah Buses, Maianbar and Bundeena Bus Service
12	TransdevTSL – Shorelink Buses
13	Veolia Transport NSW
14	Forest Coaches
15	Busways Campbelltown

Source: Ministry of Transport website <www.transport.nsw.gov.au>

Table B.2 Outer metropolitan bus operators by region

Contract region	Operators
1	Rover Motors
2	Hunter Valley Buses
3	Port Stephens Coaches
4	Toronto Bus Services, Sugar Valley Coaches, Morisset Bus Service
5	Newcastle Buses (STA)
6	Busways Gosford/Wyong
7	Red Bus Services
8	Pearce Omnibus
9	Dions Buses and Greens Coaches
10	Premier Illawarra

Source: Ministry of Transport website <www.transport.nsw.gov.au>

C Bus service contracts – payments, service and reporting obligations

C.1 Contract payments

In addition to their monthly payments operators may also receive, or be required to pay, a range of other payments. Typically, these other payments occur at the end of the financial year. They include incentive payments for increases in the number of passengers travelling and improvements in service quality and operational performance.

C.1.1 Monthly payment

The main source of revenue for operators is the monthly payment by Ministry of Transport. The monthly payment is determined according to a formula whose structure is specified in the contract, but whose base (bid) amounts are negotiated as part of the terms of the contract. A brief description of the payments is provided below:

- Fixed payment — is a payment based on the bid fixed payment and indexed to a fixed cost index multiplier.
- Depreciation charge payment — a fixed payment determined differently for each of the bus contracts.
- Fuel cost payment — is a fixed amount index monthly by monthly kilometres and the fuel index multiplier. The initial fuel payment is based on an agreed fuel consumption rate, the cost of fuel immediately prior to the contract start date and agreed contract service kilometres.
- Service payment — is paid based on the number of monthly revenue kilometres. The rate per kilometre is indexed to the variable cost index multiplier.
- Patronage benchmark payments — is a fixed amount based on an agreed bid amount, which is then adjusted based on the labour reconciliation rate; subsequently, the new amount is indexed to inflation.
- New fleet periodic payment — paid for each vehicle procured by the operator.
- Implementation cost payment — a fixed amount payable for the first fourteen months of the contract (final payment was September 2006).

- Union time compensation payment — a compensation payment for the total number of hour spent by employees attending presentations by the relevant union.

Many of the payments within the formula are indexed to various multipliers.

C.1.2 Other Payments

In addition to their monthly payments operators may also receive, or be required to pay, a range of other payments. Typically, these other payments occur at the end of the financial year. These include payments for:

- actual kilometre reconciliation
- patronage change
- profit sharing
- incentive payments for:
  - service quality
  - operational performance
- advertising revenue
- charter revenue
- labour reconciliation
- termination.

C.1.3 Payment indices

Many of the payments under the bus contracts are indexed. There are several indexes used to alter payments. These are the:

- fixed cost index multiplier (FCIM)
- variable cost index multiplier (VCIM)
- fuel index multiplier (FIM), and
- consumer price index multiplier (CPIM).

The labour index multiplier (LIM) influences both the FCIM and VCIM. There are also several other labour related indexes and a consumer price index component that influence FCIM and VCIM. However, FCIM and VCIM may weight each of these components differently. The different weightings are determined differently in each of the contracts between Ministry of Transport and the bus operators.

The FIM is derived using Mobil's weekly terminal gate price for Sydney diesel. The weekly average is then averaged over the month to obtain the monthly average fuel price, with the latter measure used to determine the fuel index and used to determine the FIM for the reporting period.

Table C.1 indicates the payments that are affected by these multipliers and the frequency with which the multiplier is applied. Note the multipliers affect payments in different ways and may only influence part of the payment equations.

Table C.1 Payments and applicable index measures

Payment type	Applicable index measure	Frequency
Fixed	FCIM	Yearly
Fuel costs	FIM	Monthly
Service	VCIM	Yearly
Patronage benchmark	CPIM	Yearly
New fleet periodic	na[a]	na
Union time compensation	VCIM	Yearly
Actual kilometre reconciliation	VCIM, FIM	Yearly
Patronage change	CPIM	Yearly
Profit sharing	CPIM	Yearly
New vehicle termination	CPIM	Yearly

[a] The new fleet periodic payment is not indexed by CPIM but is determined over the 180 month lease period based on the 10 year bond rate (at the time of the commencement of service) and the finance margin applicable to the contract operator.

Source: Ministry of Transport.

C.2 Service standards

The contracts also specify the level of service to be provided by bus operators. For example, the contracts require operators to provide a contract service plan, approved by the Director-General of the Ministry of Transport and reviewed annually. The plan specifies the service levels required from the operator. See Appendix D for more information.

The contracts also include a number of reporting requirements – some of which are transitional. Operators are required to report certain information to the Ministry of Transport regularly (monthly, quarterly or annually depending on the information). Operators must provide a business plan and report annually against business plan categories (this includes financial, patronage, industrial and operational data). Much of the data provided under the contracts is self-reported by operators. IPART has in the past expressed concerns about the quality of some of the data and/or the Ministry of Transport's failure to enforce reporting obligations (eg, reporting on full buses).

The contracts also include other specific conditions, some of which are necessary to provide an integrated Sydney bus network. For example, operators must offer and honour single and multi-ride tickets (and relevant concessions).

A fundamental part of the contract is the level of service to be provided by bus operators. A number of recommendations relating to service levels and service planning were made in the Review of Bus Services in New South Wales and supported by the NSW Government. In particular, the need for service planning that provides for flexibility to respond to local demand and incorporates community consultation was recognised.

The contracts require operators to provide a contract service plan, approved by the Director-General of the Ministry of Transport. The plan specifies the:

- service levels and route networks for general passenger services
- service levels and bus routes for dedicated school services.

The operator's contract service plan must at least include the following information on the contract service levels for each bus route covered by the plan:

- a map of the bus route for all bus services
- annual operating data providing service kilometres, service hours and service trips for all bus services
- for general passenger services only, identification of peak periods
- for general passenger services only, an annualised summary of the contract service levels for each bus route for each time period (including service kilometres, service hours, service trips, hours of operation, frequency of service, first and last trip for inbound and outbound services and maximum journey time)
- for dedicated school services only, an annualised summary of the contract service levels for each bus route (including service kilometres, service hours, service trips, schools served and estimated morning arrival times and afternoon departure times at schools)
- for any special event services foreseen in the following contract year, estimated service kilometres, service hours, service trips, hours of operation and frequency of service.

There is nothing to prevent the operator from scheduling and operating additional bus services or trips to those specified in the contract service plan. Any other changes to services levels or routes generally must be approved by the Director-General.

Operators must conduct an annual review of their service plans. The purpose of the review is to identify inefficiencies and ensure adequate access to passenger transport services for all persons in the contract region.

The transitional Metropolitan Bus System Contract provides for a Transitional Phase Performance Assessment. This assessment is to be carried out no later than 27 months after the commencement of the contract. The assessment relates primarily to the operators demonstrated ability to deliver an integrated bus service co-operatively with neighbouring service providers and to support the introduction of an integrated ticketing system.

C.2.1 Reporting

The transitional Metropolitan Bus System Contract includes a number of reporting requirements. Operators are required to provide a business plan and report annually against business plan categories. This includes financial, patronage, industrial and operational data.

Operators are required to provide monthly performance data to the Government detailing the level of disruption to services. Although the contract describes how and what data is to be provided, operators are only required to provide data *as is reasonably practicable having regard to planned costs and existing systems*. In practice, the Government is collecting little in the way of accurate service level data and this has previously been identified as an issue for concern.

C.2.2 Compliance

As part of their contract, operators agree to perform or abide by various compliance requirements including:

- accreditation
- industry standards
- bus loading standards.

Operators must also ensure that their staff have appropriate skills and experience, and that their drivers have the relevant qualifications.

The contracts include some highly specific conditions, some of which are necessary to provide an integrated Sydney bus network. For example, operators must offer and honour single and multi-ride tickets (and relevant concessions). Other conditions provide a more general foundation to the contract. For example, bus operators must have public liability insurance and insurance against third party property damage of at least $10 million.

D Service standards reported by operators

D.1 Available measures of service quality

The quality of service each bus operator is required to provide is specified in its service contract with the Ministry of Transport. This means the incentives for maintaining or improving service quality are not affected by IPART's fare determination.

The bus service contracts require bus operators to provide a substantial amount of information to the Ministry of Transport. However, operators have not provided all the required information for the 2007/08 financial year. The Ministry has stated that it does not publish this information because currently the information is self-reported and a robust method of collecting the information is not available.[22] However, at IPART's public hearing for the 2008 fare review, the Ministry did indicate that it was investigating how it could improve the quality of the information provided in the future.

The lack of reliable information has prevented IPART undertaking a comprehensive analysis of the quality of bus services provided over the past year. It also means transparent information on the quality of these services is not available to passengers and other stakeholders.

IPART considers transparent information is central to accountability and a foundation of good regulation. An effective service contract should provide for full transparency in relation to the quantity and quality of service bus operators provide, and any service targets they are required to meet. This will ensure that bus passengers and taxpayers know the level of performance they should expect under the bus contracts, and allow them to form a view of the adequacy of operators' performance and any trends in this performance. IPART acknowledges the Ministry of Transport's willingness to address this issue. However, it stresses the importance of resolving the identified problems quickly and satisfactorily, so reliable information can be made available to all stakeholders in future years.

22 IPART, *Public hearing into fares for buses across NSW, private ferries and Newcastle ferry services,* Transcript, pp 10-11, November 2008.

In the 2007 review of bus fares, IPART noted it was concerned that measures of full buses in particular were not available for Sydney Buses. Inaccessibility of services due to full buses is of concern to bus passengers.[23] IPART considers that the full buses measure is an important piece of service quality data for bus passengers who travel in peak periods, particularly those in the high patronage regions around the Sydney CBD. IPART again urges the Ministry of Transport to ensure that this data is reported by all operators in future years.

IPART notes that from 2008/09, the Independent Transport Safety and Reliability Regulator (ITSRR) will be conducting an annual bus customer satisfaction survey. IPART considers this a positive development as it will provide independent information on bus user experiences, which is useful in analysing changes in service performance.

Submissions have been critical of the level of information on service quality provided by the Ministry of Transport. In particular, last year a number of stakeholders agreed with the concern IPART expressed in its 2007 report, that the Ministry has not provided information on the number of full buses.[24] Action for Public Transport and The Council of Social Services in NSW also noted that this information is readily available for Brisbane bus operations.

Action for Public Transport also raised concern that the performance requirements of operators with regard to on-time running are too lax. It notes that if 95 per cent of buses leave their origin on time this allows for 375,000 services which do not commence on time and if 20 per cent of buses are late halfway through the journey, this results in 1.5 million bus services running late.[25]

D.2 Changes in service quality over 2007/08

In its 2008 fare review IPART analysed available information on increases in patronage and bus operators' performance against the key performance indicators (KPIs) specified in the bus service contracts for 2007/08. It also examined customer feedback data from the 131 500 infoline for 2007/08. In addition, where possible, IPART has compared this information to comparable data for previous years. However, information on a number of KPIs was not available for all regions. This information is summarised below – for a full discussion see IPART's 2008 report and determination.

23 Action for Public Transport submission, September 2008.

24 Action for Public Transport submission, 20 September 2008; NCOSS submission, 29 September 2008; R Thomson submission, 3 October 2008.

25 Action for Public Transport submission, September 2008, p 3.

D.2.1 Increases in patronage

IPART estimated that bus patronage in the metropolitan bus regions grew by around 3.4 per cent in 2007/08 compared to the previous 12 months. The Ministry of Transport largely attributes patronage growth to service improvements and gains from the introduction of integrated networks.

The Ministry noted that patronage is likely to continue to grow due to factors such as higher petrol prices and greater awareness of the environmental impacts of private car use.

D.2.2 Key performance indicators

In general, bus operators provided information for more of the KPIs in their service contracts in 2007/08 than they did for the preceding year. However, as the information provided in each year is slightly different, direct comparison of their performance against some of these KPIs is difficult.

Table D.1 below summarises the information available in 2006/07 and 2007/08.

Table D.1 KPIs for which information was provided in 2006/07 and 2007/08

2006/07	2007/08
	Accessible bus timetabled but not operated
Bus full	Bus full
Cancelled/missed	Cancelled
Early/late	Early
	Late
	Incomplete
	Late due to rail connection
Trips	Scheduled services
	Timetabled accessible

Note: The KPIs for which information was provided for all 15 bus contract regions are, early/late and trips (for 2006/07), and late and scheduled services (for 2007/08).

When considered on a region-by-region basis, the available KPI information suggests that service quality varies significantly between regions, particularly with regard to accessibility for less mobile passengers. Table D.2 below summarises the range of service outcomes across regions for selected KPIs.

Table D.2 Service outcomes across regions for selected KPIs

	Minimum	Maximum	Median
Number of trips (000's)	45.1	1,654.9	374.5
Service kilometres (million km)	0.5	19.1	4.5
Timetabled accessible/number of trips (%)	2.3	29.8	12.9
Cancelled trips/ number of trips (%)	0.00	0.47	0.02
Incomplete routes/ number of trips (%)	0.001	1.137	0.009
Late buses/ number of trips (%)	0.1	1.5	0.3

Source: Ministry of Transport.

On-time running

Measures of on-time running are largely limited to recording whether the bus leaves the depot on time. IPART has previously noted that this is not a good indicator of the bus network's actual on-time running performance or the level of service actually experienced by passengers.[26] IPART considers that the inadequacy of this measure makes it difficult to form a meaningful judgement of the change in on-time running performance. The Ministry of Transport has advised that it is commencing a survey process in order to obtain more robust data on on-time running. The results of this survey are expected in late 2009.

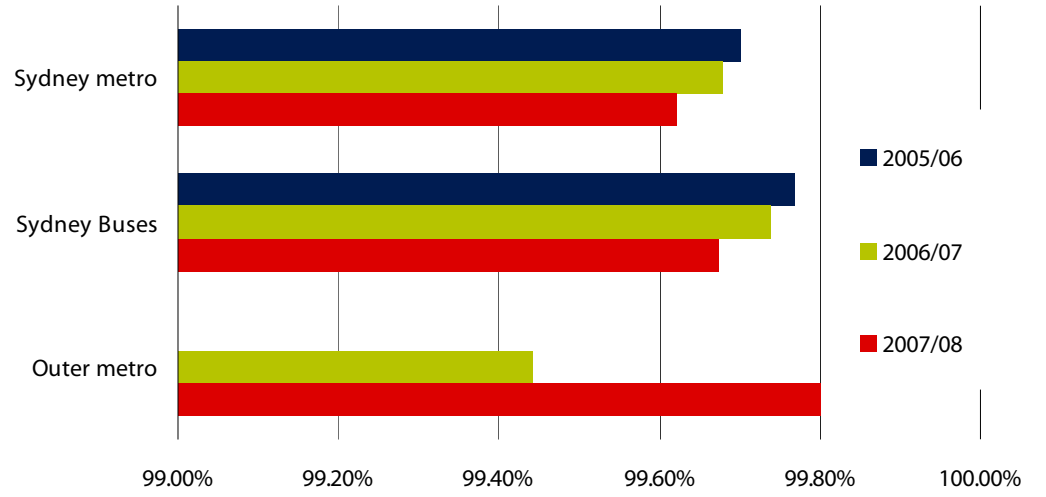
In 2007/08, the number of services running on time decreased slightly as a proportion of total services across all regions as a whole, and across the regions served by Sydney Buses in particular (which account for most of bus patronage).[27] This is the second consecutive year in which on-time running performance has experienced a slight deterioration. However, the proportion of late services was still very small relative to the total number of services – over 99 per cent of services were reported to have left the depot on time, comfortably above the Ministry of Transport's target of 95 per cent across the network.

Figure D.1 summarises operators' reported 'on-time running' performance.

26 IPART, *Review of Fares for metropolitan and outer metropolitan bus services from 2 January 2008*, December 2007.

27 The on-time running figures include early as well as late buses, however the number of early buses are very small when compared with late buses.

Figure D.1 Operators' reported on-time running over the past three years



Note: 2005/06 data is incomplete for metropolitan regions 1,3 and 4, and is unavailable for outer metropolitan regions. Outer metropolitan figures for 2006/07 are only for the time periods Jan-Jun as contracts were signed during that year.
Data source: Ministry of Transport.

The variation in on-time running performance across the Sydney metropolitan area ranges from 0.1 per cent of buses late in region 10, to 1.5 per cent of buses late in region 4.

Wheelchair accessibility

In its submission, the Ministry of Transport stated that 25 per cent of the total metropolitan and outer metropolitan services are timetabled as wheelchair accessible, in line with the Commonwealth's *Disability Discrimination Act 1992* and associated transport standards.[28]

Supporting data on wheelchair accessible services is only available for the Sydney metropolitan area. During 2007/08, only four of the 15 metropolitan contract regions reported timetabled wheelchair accessible services for at least 25 per cent of services, with one region's data indicating that only 2.3 per cent of its services were timetabled as wheelchair accessible. No data was available for two of the 15 metropolitan contract regions. The Ministry of Transport has advised that this operator reported data is unreliable and under-represents the actual proportion of services that are wheelchair accessible. The Ministry has introduced new reporting arrangements in order to address the gaps and inconsistencies in this data, which should make reliable data available in future years.

28 Ministry of Transport fare proposal, August 2008.

D.1.1 Customer feedback

The Ministry of Transport noted in its fare proposal that recorded items of customer feedback increased by 5 per cent in 2007/08 compared to the previous year. This was due to an increase in passenger trips as well as improvements to the 131 500 number which has made recording feedback easier. The rate of calls, measured as calls per 100,000 passengers, increased by 2 per cent over the year.

The increase in feedback includes both complaints and compliments. In the 2007 review, complaints and compliments data were received together as a single feedback item. However, for 2007/08 these data are separated. For 2007/08, 93 per cent of all feedback was complaints.

Passengers of both Sydney Buses and private buses raised the following main areas of concern through the customer feedback process:

- bus was late
- bus failed to stop
- staff were rude
- bus was early.

These results suggest that poor performance in terms of bus reliability and on-time running remains an issue for at least some passengers. Given that all regions currently meet the Ministry of Transport's targets for on-time running, this suggests that the current targets may not be set or measured in line with passenger expectations.

Submissions received by IPART indicated dissatisfaction with the following:

- buses are regularly late, or fail to arrive at all[29]
- buses are often full, particularly during the morning commute[30]
- the Government has not responded to increased patronage by increasing the number of services[31]
- there is a lack of consultation on the design of bus routes[32]
- lack of toilet facilities at large bus terminals[33]
- frequency and integration of services in Newcastle[34]
- age of bus fleet[35].

However, some submissions also cited service improvements.[36]

D.1.2 Other service quality measures

The Ministry of Transport discussed improvements in service quality as part of its fare proposal. The key points raised by the Ministry of Transport include:

- the introduction of prepay-only services
- fare-based service improvements.

The Ministry of Transport has continued implementing prepay-only services on selected Sydney Buses' routes and has also commenced prepay-only bus stops at specific times on weekdays. It argued that this has reduced dwell times and has assisted reliability by maintaining running times in an environment of increased traffic congestion.

The Ministry of Transport also noted that fare harmonisation in outer metropolitan bus regions and the discounted weekly product for private bus users in metropolitan Sydney represent improvements in service quality.

29 C Chessor submission, September 2008; S Tetu submission, September 2008; R Thomson submission, October 2008; A Formby submission, October 2008.
30 S Tetu submission, September 2008.
31 Confidential submission.
32 Western Sydney Community Forum submission, October 2008.
33 Western Sydney Community Forum submission, October 2008, p 1.
34 Lower Hunter Councils Transport Group submission October 2008; R Banyard submission, October 2008.
35 A Portnoy submission, September 2008.
36 Blue Mountains Commuter and Transport Users Association submission, October 2008.

E Importance of the four largest contract regions

The majority of travel in Sydney is by private motor vehicle (around 70 per cent of all trips and 80 per cent of kilometres travelled).[37] Bus trips make up approximately 6 per cent of all trips and around 5 per cent of kilometres travelled. This is slightly more trips than taken by rail (5 per cent of total trips are by rail) but for fewer kilometres (rail makes up around 10 per cent of total kilometres travelled).

In 2007/08 passengers took 271 million bus trips – most of these trips were in the metropolitan region – 236 million – and the vast majority were made in the four largest contract regions (Sydney's inner west, lower north shore, northern beaches and eastern suburbs).

Around 63 million trips were made by non-fare paying school students travelling for free under the NSW Government's school student transport scheme (SSTS). These trips make up a significant proportion of all trips taken in outer metropolitan areas, but a much lower proportion of trips taken in the Sydney metropolitan area.

Table E.1 Passenger bus trips in 2007/08

	Four largest contract regions [a]	Other Sydney metro regions	Outer metro	Total
Total number of passengers	167 million trips	69 million trips	34 million trips	271 million trips
Total number of school student trips [b]	12 million trips	31 million trips	20 million trips	63 million trips

a Sydney Buses area of service (Metropolitan regions 6 to 9 – Sydney's inner west, lower north, eastern suburbs and northern beaches).

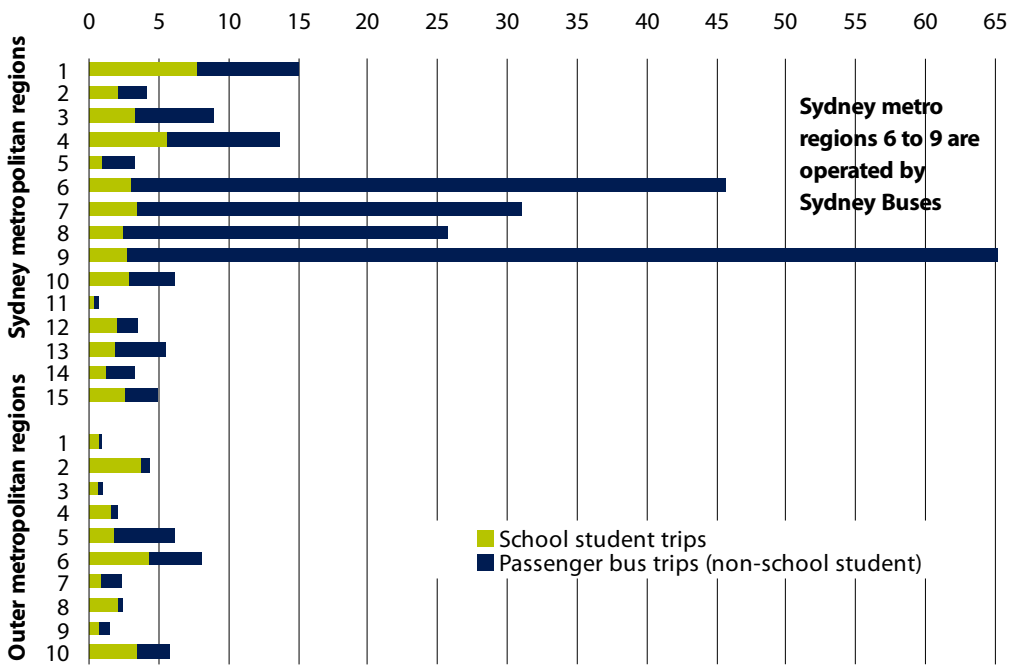
b Ministry of Transport estimate of students accessing the School Student Transport Scheme.

Source: Ministry of Transport.

The majority of bus trips made were made in the four largest contract regions (Sydney's inner west, lower north, eastern suburbs and northern beaches).

37 Transport Data Centre (TDC), *Household Travel Survey 2005*.

Figure E.1 Bus trips made in each contract region – 2007/08 (millions)



Data source: Ministry of Transport.

Of the bus trips made, the four largest contract regions have the highest proportion of fare paying passengers. By contrast, in many of the smaller metropolitan and outer metropolitan regions (in terms of passenger trips) the majority of passengers are school students travelling under the SSTS.

F How IPART proposes to address the factors in the Passenger Transport Act

IPART is required to consider each of the factors listed in section 28J of the Passenger Transport Act in making its determinations on bus fares. But the Act does not provide direction as to how IPART should do this, nor how much weight to give to any of these factors.

The sections below discuss how each factor will be considered under IPART's proposed approach for its 2010 determination. Please note that the legislative requirements have been summarised – see Appendix A for the requirements in full.

F.1.1 Section 28J (10) (a) - The cost of providing the services

There are two ways of looking at the cost of bus services:

- the cost to bus operators – the costs the operators actually incur to provide bus services (eg, wages, buses, maintenance costs)
- the cost to the Government – cost of paying a bus operator to provide the services (eg, the costs of contracting out bus services).

These costs may or may not be equal. Historically IPART reviewed the cost to bus operators. However, since the introduction of the new contracts IPART has not been provided with sufficient information to do this and has instead focused on the cost to Government by considering contract payments.

IPART's proposed approach is to review in detail the efficiency of providing services for Sydney Buses contract regions. IPART will also have regard to the cost to Government associated with contracting out bus services in each contract region. IPART's proposed approach is discussed in detail in Chapter 3 and its considerations in relation to efficiency are discussed in Chapter 4.

F.1.2 Section 28J (10) (b) - The protection of consumers

IPART will determine maximum bus fares based on its view of the share of efficient costs that should be paid for by passengers. This approach will effectively protect customers from abuses of monopoly power in terms of prices and pricing policies. IPART's approach is detailed in Chapters 3 to 7.

Minimum standards of service are specified by the Ministry of Transport in the bus contracts. IPART has no role in enforcing the contract. However, IPART considers that it can play a key role in ensuring the transparency of operators' performance and the accountability of the Ministry of Transport in enforcing the standards imposed by the service contracts. In addition, where IPART considers it necessary, it will continue to make observations on the service outcomes that are being achieved based on the data available to it.

F.1.3 Section 28J (10) (c) – Greater efficiency in the supply of services

As noted above, IPART will determine maximum bus fares based on its view of the share of efficient costs that should be paid for by passengers, thereby ensuring that bus consumers are not obliged to pay for inefficient costs. IPART's approach is detailed in Chapters 3 to 7.

However, the nature of the bus contracting regime limits what IPART can realistically achieve directly through fare regulation, as the cost to taxpayers are established through the bus service contracts and are not affected by the level of fares (see Chapter 2).

Nevertheless, IPART considers that there are significant benefits to it considering and implementing an alternative form of regulation for bus services. In coming years the Government will seek to renegotiate service contracts in metropolitan and outer metropolitan areas – a more detailed review of the costs of supply will provide the Government with a better understanding of achievable efficiency gains.

F.1.4 Section 28J (10) (d) – Maintaining ecologically sustainable development

Section 6 of the Protection of the Environment Administration Act defines ecologically sustainable development (see Appendix A for the full definition). Essentially, the definition refers to the effective integration of economic and environmental considerations in decision-making processes.

The Act states that ecologically sustainable development can be achieved through:

- not using lack of scientific certainty as a reason for failing to address threats of serious or irreversible environmental damage (decision maker should assess the risk-weighted consequences of various options)
- maintaining/enhancing the health, diversity and productivity of the environment for the benefit of future generations
- conserving biological diversity and ecological integrity
- including environmental factors in the valuation of assets and services, such as:
  - those who generate pollution and waste should bear the cost of containment, avoidance or abatement

- 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
- cost effectiveness: 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.

A number of these environmental considerations are relevant to both the level and structure of fares. Primarily they are relevant because:

- bus travel avoids pollution and environmental damage caused by alternative forms of transport (car travel and rail travel)
- bus services themselves cause pollution and environmental damage
- the level and structure of fares have an impact on the usage of bus services.

The number and frequency of bus services is not determined by IPART. This is a contractual matter between the NSW Government (represented by the Ministry of Transport) and the bus operators who provide the services.

However, IPART will take into account the environmental benefits of bus services when it determines how much users of bus services should pay. IPART has engaged LECG to provide a report on the external benefits of bus travel. LECG will consider and quantify the environmental benefits of buses compared with other travel options using the Transport Data Centre's Strategic Sydney Transport Model. LECG will also make recommendations regarding the optimal contribution of passengers to the cost of running bus services taking into account the relative environmental merits of buses. IPART intends to use the results of this study to inform its decision on what fares passengers should pay. IPART's proposed approach is described in more detail in Chapters 5 and 7.

In relation to fare structure, IPART is constrained in terms of what fare options are feasible. These constraints include the need to be consistent with Government policy on fare harmonisation and distance based fares for electronic ticketing (see Chapter 2) and the need to retain a reasonable relativity with fares for alternative transport options, such as rail fares (see Chapter 7). However, when determining fares to apply, IPART will consider what impact changes in fares have on bus usage, and hence their likely impact on the environment. IPART's consideration of these issues and its analysis of the impact of fares on demand for bus services in set out in Chapter 7.

F.1.5 Section 28J (10) (e) – The social impact of the determination

IPART will consider the impact of its decisions on bus passengers. IPART has obtained information on who uses bus services (for example, their income and purpose of travel). IPART will also consider relative fares paid by passengers in NSW and costs of alternative transport. A summary of this information is set out in Chapter 7.

IPART's approach to decision making (Chapter 3) and its approach to determining fares discusses how IPART will take the social impact of the determination into account.

F.1.6 Section 28J (10) (f) – Standards of quality, reliability and safety

Minimum standards of service are specified by the Ministry of Transport in the bus contracts. IPART has no role in enforcing the contract. However, IPART considers that it can play a key role in ensuring the transparency of operators' performance and the accountability of the Ministry of Transport in enforcing the standards imposed by the service contracts. In addition, where IPART considers it necessary, it will continue to make observations on the service outcomes that are being achieved based on the data available to it.

F.1.7 Section 28J (10) (g) – Contractual arrangements in the industry

As noted at above and in Chapter 2, the contractual arrangements in place govern the services to be provided and the price that the Government will pay for those services. IPART cannot directly influence these factors. IPART will take into account these limitations in determining fares (see in particular Chapters 4 and 5).

F.1.8 Section 28J (10) (h) – Other relevant matters

IPART will take into account other matters raised by stakeholders during the course of the review that it considers are relevant.

G How NSW bus fares compare with other modes of transport and other states

Most bus tickets in metropolitan and outer metropolitan NSW are distance based. They are based on 'sections' that are equivalent to around 1.6 kilometres. The more sections travelled, the higher the fare.

Multi-trip tickets are available although their availability varies across the different contract regions:

- TravelTens and T-WayTens – pre-purchased ticket allowing ten bus trips of a certain distance to be made at a discount of 15-20 per cent compared with ten single tickets – available in Sydney Buses areas and T-Ways only.
- Private bus operator weekly – weekly ticket for a certain distance priced at a discount of 20 per cent compared with ten single tickets.
- Single and multi-mode TravelPasses – zonal tickets allowing unlimited travel on certain services within a give zone and period of time – available in Sydney Buses areas only (except for Pensioner Excursion Ticket, which is available on all services).

The current distance and time based fares are set out in the tables below – Table G.1 and Table G.3 apply to all regions (except Newcastle).

Table G.1 Single and ten trip adult bus fares from January 2009

Sections	Single ticket	TravelTen	T-WayTen
1 to 2	$1.90	$15.20	$15.30
3 to 5	$3.20	$25.60	$25.60
6 to 9	$4.20	$33.60	$34.00
10 to 15	$5.00	$40.00	$40.80
16+	$6.10	$48.80	$49.30

Table G.22 Private bus operator weeklies

Sections	Adult rounded	Concession
1 to 2	$15.20	$7.60
3 to 5	$25.60	$12.80
6 to 9	$33.60	$16.80
10 to 15	$40.00	$20.00
16+	$48.80	$24.40

Table G.3 Bus and Ferry multi-mode TravelPasses

Zone	Adult rounded	Concession
Blue	$34.00	$17.00
Orange	$43.00	$21.50
Pittwater	$58.00	$29.00
2 Zone	$34.00	$17.00

Current fares in Newcastle

OMBSC region five (Newcastle STA buses) is the only service contract region for which the harmonised fares discussed above do not apply. Newcastle fares are time based, with free transfers between services possible within the time period of the ticket. Stakeholders have previously commented that this confuses passengers, as many operators service Newcastle, yet STA buses is the only operator which offers time based fares.[38]

Table G.14 Newcastle time-based fares from January 2009

Ticket	Price
1 Hour	$3.20
4 Hours	$6.20
TimeTen 1 Hour	$26.10
All Day	$9.50

G.1.1 Bus fares compared with fares in other states

Fares in other Australian cities are a mixture of zonal and time based fares. Each city has a different fare structure, which means that the relativities between fares depends on the distance travelled.

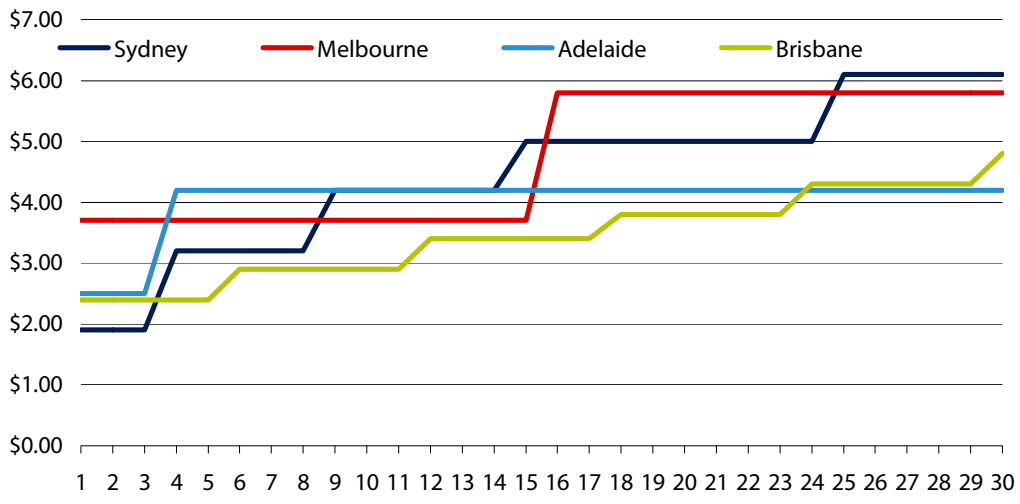
- Brisbane's system consists of time based tickets priced according to the number of zones travelled. Zones are approximately 6km in width stretching from the CBD. Short fares (less than 3.2km) are higher than those of Sydney, but its fares carry a lower per kilometre charge.

38 Rick Banyard submission to 2008 review of bus and ferry fares, Oct 2008, p 2.

- Melbourne also has a time based zonal system consisting of three levels of fares depending on the zones travelled. Zone 2 has the lowest fare, at $2.80, which allows for unlimited travel in Melbourne's outer suburbs for up to 3 hours. Zone 1, the inner zone, has a fare of $3.70, for unlimited travel in the inner suburbs for up to 3 hours. The maximum fare is $5.80 which allows for up to 3 hours of travel throughout Melbourne's inner and outer suburbs. These fares are not distance based, but instead relate to the zones in which travel occurs.
- Adelaide has a flat time based fare and an alternative two-section fare for shorter trips (up to 3km). The two section fare is $2.50 and the flat fare is $4.20.
- Canberra has a flat time based fare which allows for 90 minutes of travel for $3.00. It also has discounted off peak daily tickets.
- Perth has timed tickets based on zones consisting of concentric circles from the CBD. Each ticket allows for three hours of travel on Transperth bus, trains and ferries. A 2 section ticket is also available for short trips (up to 3.2km).
- Darwin has a flat time based fare of $2.00 for three hours of travel.

Flat fares and zone based fares tend to work well in smaller cities where the disadvantage with regard to cost reflectivity of these fare structures is less of an issue. The characteristics of Sydney's bus network would suggest that the optimal fare structure for Sydney would not necessarily be the same as that in other Australian cities.

Figure G.1 Interstate comparison of single fares



Note: The fares shown are for distance from the city.

The distance shown for Melbourne's zone 1 fare level is approximately equal to the average straight line distance from the City Centre to the zone 1 boundary (15 km). After the Zone 1 boundary, the fare represents the 1+2 zone fare.

Data source: Metlink, Translink, Adelaide Metro, IPART decisions.

A comparison of fares is shown in Figure G.1. Sydney metropolitan and outer metropolitan fares are lower than the other cities for distances up to 3.2 km; however, the rate of increase per kilometre is the fastest of all the states, so that passengers travelling long distances (over 25 km) pay higher bus fares than in the other cities. Metropolitan and outer metropolitan fares are capped at $6.10 after 16 sections (approximately 25.6 km), which is higher than the highest Melbourne and Adelaide bus fare ($5.80 and $4.20 respectively). As Brisbane bus fares are not subject to a distance-based cap, bus fares in Brisbane are more expensive than the Sydney metropolitan and outer metropolitan fares for distances greater than 48 kilometres.

It should be noted that the fares shown in Figure G.1 for Brisbane, Melbourne and Adelaide include travel on other modes of transport. In Brisbane, the fare is calculated with reference to the number of zones crossed for the total journey without any additional interchange charge. In Melbourne and Adelaide, the fare is flat regardless of how many modes are used.

The availability of multi modal tickets in Sydney is limited to:

- TravelPasses (Sydney Buses only) - which allow one week of unlimited bus, ferry and train travel.
- DayTripper (Sydney Buses buses only) - which provide unlimited bus, ferry and train travel for one day.
- SydneyPass (Sydney Buses buses only) - a multi day ticket which provides bus, ferry and train travel, including the Sydney and Bondi explorers.
- Family Funday Sunday (All buses) - which provide unlimited bus, ferry and train travel for families on Sundays.
- Pensioner Excursion Ticket (All buses) - which provide one day of unlimited bus, ferry and train travel for pensioners.
- BusPlus (Busways and Liverpool – Parramatta T-Way) - which combines CityRail services with selected bus services.