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Final Report

Impact of Fare Reform on the Sydney Airport Rail Link

Sydney Airport Corporation Limited

February, 2010

Table Of Contents

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Executive Summary

Sydney Airport Corporation Limited (SACL) has stated a strong commitment to provide convenient, cost effective and sustainable ground transport to Sydney Airport for passengers, staff and visitors. With the publication of the Airport Ground Travel Plan (AGTP) in 2006, Sydney Airport demonstrated its commitment to exploring innovative ways to improve ground transport options. Specifically, the objective of the AGTP was to:

- Identify and target specific opportunities to promote non-car modes of access to and from Sydney Airport; and
- To encourage a shift to more sustainable transport modes.

In consultation with key stakeholders, SACL has stated it is committed to increasing the public transport mode share from 15% to 20% by 2024. Given that around 7 in every 10 public transport trips (i.e. 73%) are made by rail, it is reasonable to expect that rail will need to be successfully positioned to capture the majority of this targeted uplift.

Policy levers available to Government and the respective public transport operators that can impact on mode share include fares, service levels, service quality and the effective promotion of services.

Fare reform represents a 'quick win' in terms of increasing the attractiveness of rail as a means of travelling to and from Sydney Airport. In particular, customers travelling to any of the four Airport Link stations (i.e. International Airport, Domestic Airport, Mascot and Green Square) currently pay substantially more than customers travelling a comparable distance elsewhere on the CityRail network.

The Airport Link market is not a single homogenous market, rather, it comprises four key market segments:

- Airline passengers (i.e. international, domestic and regional airline passengers);
- Airport employees (i.e. people employed by SACL, airlines, freight companies, retail outlets and other Government agencies such as the Australian Customs Service, Australian Federal Police, Department of Immigration and Citizenship);
- 'Meeters and greeters' (i.e. non-flyers that accompany a passenger to or from the airport); and
- Non-airport journeys using Mascot or Green Square stations.

The price premium imposed on users of the four Airport Link stations (i.e. Station Access Fee or 'SAF') is added to the standard CityRail fare. While the purpose of the SAF is to underpin the recovery of Airport Link station capital and operating costs in accordance with a long-term concession agreement between the New South Wales Government and the private sector, the premium fares also act as a strong disincentive to use the Airport Link stations.

This report addresses the market impact of aligning Airport Link fares with standard CityRail fares and the net economic benefit of such fare reform.

The immediate annual uplift in rail patronage in 2010/11 is estimated at:

- 1.1 million additional journeys for the two airport stations equivalent to an increase of approximately 26%; and
- 0.4 million additional journeys for non-airport stations equivalent to an estimated increase of about 17%.

This represents an expected uplift in rail modal share across the four key market segments in 2010/11 of:

- 4% for airline passengers;
- 3% for airport employees;
- 1% for non-airport station travel; and
- 2% for 'meeters and greeters'.

This single initiative would enable immediate tangible progress to be made towards the targeted increase in the rail mode share of 5% by 2024.

The proposed fare reform would also permit the capture of significant economic benefits. It is estimated that every $1 of foregone Airport Link farebox revenue would generate an economic return of $1.24. The economic return reflects benefits to Airport Link customers – airport passengers, airport employees, meeters and greeters and non-airport station users - and a reduction in road externalities (i.e. traffic congestion, air pollution etc). The benefit of reduced road use is also reflected in an estimated reduction in carbon emissions of 8,502 tonnes in 2010/11.

To address the anticipated increase in capacity requirements on the Airport rail line evolving from the fares reform, Sydney Airport states it supports the continued implementation of the NSW Government's 'Clearways' program. This program aims to facilitate growth in rail patronage on the Airport & East Hills line (and other lines) by allowing for an increase in the number of train services. However this report makes no direct allowance for the additional investment requirements in rolling stock that is may be required as demand for services increase. During the preparation of the 2009 Master Plan, consultations between Sydney Airport and the NSW Government indicated that the number of rail services to the airport could, over time, increase from 12 to at least 20 trains per hour in each direction. Sydney Airport has also stated support of continued implementation of the NSW Government's Rail Growth Plan, which aims to reduce congestion and overcrowding and maximise capacity on the rail network.

1 Introduction

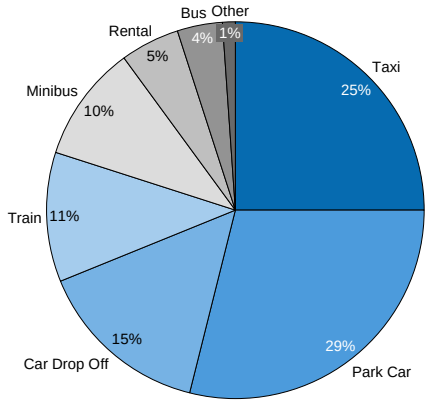
Sydney Airport Corporation Limited (SACL) has stated a strong commitment to supporting the provision of convenient, cost effective and sustainable ground transport to Sydney Airport for airline passengers, staff and visitors. This commitment is demonstrated in the Airport Ground Travel Plan (AGTP) (2006), which describes SACL's objective to:

- Identify and target specific opportunities to promote non-car modes of access to Sydney Airport; and
- Promote a shift to more sustainable transport modes to access Sydney Airport.

In consultation with key stakeholders, SACL has stated a commitment to increasing the public transport mode share from 15% to 20% by 2024[1]. As outlined in the AGTP, SACL aims to improve public transport mode share by supporting and actively promoting a range of initiatives aimed at increasing the attractiveness and use of public transport.

Ground access to Sydney Airport is dominated by road based trips for all market segments (i.e. air passengers, airport employees, and meeters and greeters). As illustrated in Figure 1, the Sydney Airport public transport mode share (i.e. bus and train) to Sydney Airport was estimated at 15% in 2006, whereas private road based trips were estimated at around 84%. To achieve a 5% increase in the public transport mode share by 2024 (i.e. to 20%), ground access by public transport will need to increase by over 30%.

Figure 1 - Sydney Airport Ground Access Mode Share, 2006



Source: Sydney Airport Ground Travel Plan 2006

The attainment of this target can be achieved via the provision and promotion of attractive and competitively priced public transport services. The policy levers available to Government and the respective public transport operators that can impact on mode share include:

- Fare
  - Products
  - Levels
- Service levels
  - Hours of operation
  - Frequency
- Service quality
  - Ease of ticket purchase
  - On time running
  - Vehicle cleanliness etc.
- Marketing and communications
  - Customer awareness and informed decision making

Of the public transport modes available for passengers to access Sydney Airport, rail has been, and would be expected to continue to be, the dominant public transport mode used to access Sydney Airport by all market segments. Accordingly, rail needs to represent a highly attractive ground access option.

Responsibility for the competitive positioning of airport rail services rests

[1] *Sydney Airport Corporation Limited, 2009, Sydney Airport Master Plan, p 89.*

with both a private company (i.e. Airport Link) and RailCorp. SACL has no role in the setting of airport rail fares and service levels and does not benefit financially from any increase in rail patronage that may result from initiatives that improve the attractiveness and use of public transport.

Box 1 summarises the key features of the Sydney airport rail operating model.

Box 1 - Sydney Airport Link Operating Model

- Sydney Airport Link was developed as a 30-year concession between the New South Wales Government and the private sector under the Public – Private Partnerships (PPP) model
- The four Airport Link stations (i.e. International Airport, Domestic Airport, Mascot and Green Square stations) are owned and operated by the Airport Link Company;
- All train services are provided by CityRail as part of the suburban network;
- Airport Link generates a revenue stream through a 'fare premium' or 'Station Access Fee' (SAF) that is charged for all trips to and from the four Airport Link stations;
- The SAF is added to the 'standard' CityRail fare and varies by both customer type (i.e. Adult, Child etc.) and ticket type (Single, Return, Weekly etc).

Source: Booz & Company

SACL has identified four key initiatives that would improve the competitive positioning of airport rail services:

- The continued implementation of the NSW Government's 'Clearways' program, which aims to facilitate growth in rail patronage on the Airport & East Hills line (and other lines) by allowing for an increase in the number of train services;
- Continued implementation of the NSW Government's Rail Growth Plan, which aims to reduce congestion and overcrowding and maximise capacity on the rail network;
- The provision of rolling stock on the airport line that provides for customers travelling with luggage (e.g. as per London Underground train services travelling to and from Heathrow Airport); and
- Reforming the fare structure for customers of the Airport Link stations[2].

The fare reform proposed by SACL (i.e. aligning fares to and from Airport Link stations to CityRail system-wide standard fares) represents a 'quick win' in terms of increasing the attractiveness of rail as a means of travelling to and from Sydney Airport. Importantly, it would also remove a perceived anomaly where customers using the four Airport Link stations pay a premium fare when they are effectively offered the same service as other CityRail customers across the entire network. Specifically, the proposed fares reform would:

- Quickly increase the number of people travelling to and from Sydney Airport by train;
- Result in the more efficient use of existing rail infrastructure (i.e. existing rail infrastructure should be efficiently maximised ahead of committing substantial extra sums of capital to new infrastructure projects with long lead times); and
- Help to alleviate existing (and future) traffic congestion on roads such as the M5 East Motorway, reduce greenhouse emissions and improve local air quality[3].

The purpose of this report was to assess the impact that removing the fare premium (i.e. SAF) would have on the demand for Airport Link services (see Section 3.2). Given the potential of pricing reform to

[2] Sydney Airport Coporation Limited, 2009, SACL's submission to the Independent Reference Panel concerning Transport Blueprint for NSW, p 2.

[3] Sydney Airport Corporation Limited, 2009, SACL's submission to the Independent Reference Panel concerning Transport Blueprint for NSW, p 2.

drive significant increases in the demand for rail services to and from the four Airport Link stations, the economic benefits associated with the potential uplift in rail demand and reduced car use were also identified (Section 3.2.4). To provide some context around the rail market and market segments relevant to this analysis, mode split and fares were initially examined (Section 2).

2 Rail Market

The Airport Link market is not a single homogenous market. The rail market share varies across market segments and there are variations in the relative importance of rail service attributes across market segments.

In essence, the rail market comprises four key market segments:

- Airline passengers (i.e. international, domestic and regional airline passengers);
- Airport employees (i.e. people employed by SACL, airlines, freight companies, retail outlets and other Government agencies such as the Australian Customs Service, Australian Federal Police, Department of Immigration and Citizenship);
- 'Meeters and greeters' (i.e. non-flyers that accompany a passenger to or from the airport); and
- Persons using non-airport stations (Mascot and Green Square trips) for a range of conventional trip purposes.

Each of the four Airport Link stations serves distinct customer market segments (see Table 1 below).

Table 1 - Market Segments Using Airport Link Stations

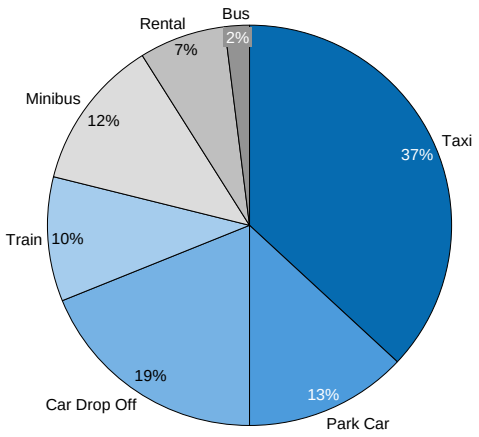
Rail Station	International Airport	Domestic Airport	Mascot	Green Square
International Passengers	✓			
Domestic Passengers		✓		
Meeters and Greeters	✓	✓		
Air-Crew Employees	✓	✓		
Non-Crew Employees	✓	✓		
Non-Air Travel			✓	✓

Source: Booz & Company

2.1 Airline Passengers

In 2009, 33 million airline passengers used Sydney Airport, representing an average of more than 90,000 per day. As outlined in the approved Master Plan, the number of passengers is forecast to increase to 78.9 million in 2029, or an average of 216,000 per day. For airline passengers travelling to both International and Domestic terminals in Sydney, road based transport is the preferred ground access mode. The proportion of airline passengers using public transport to access the airport is estimated at 12% as illustrated in Figure 2. The public transport modal split comprises 10% train use and 2% bus use.

Figure 2 – Sydney Airport Ground Access Mode Share, Airline Passengers, 2006



Source: Sydney Airport Ground Travel Plan 2006

For the 1 in 10 (i.e. 10%) airline passengers using rail, the primary tickets used would be a single, return or 'City Transfer[4]. The extent of the price premium levied on airline passengers is best illustrated by way of examples:

- To travel to/from Wolli Creek to Central, one station further than the International Airport to Central, an adult single fare falls by 328%, from $15.40 to $3.60;

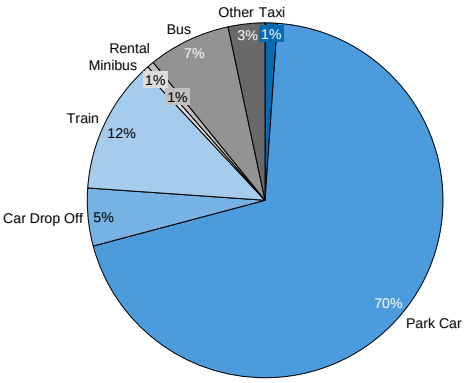
[4] *CityRail, 2010, CityRail fare calculator, viewed January 2010, <www.cityrail.com.au>*

- An adult single fare from the Domestic Airport to Central (6.7 km) costs $15.00 compared with an adult single fare from Marrickville to Central (6.6 km) which costs $3.60. This equates to a price differential of 317%;
- Adult single fares to a range of outer-suburban/regional centres to Central are all lower than the $15.00 charged for the 6.7 kilometre Domestic Airport journey including:
  - Wollongong ($9.60, 83 kilometres)
  - Wyong ($10.60, 94 kilometres)
  - Katoomba ($12.20, 110 kilometres)
  - Kiama ($13.60, 119 kilometres)
- An adult can travel on a one way single ticket from Sydney International Airport to Central (8.2 km) or from Central to Berry (140.1 km). This represents a distance differential of 1609%[5].

2.2 Airport Employees

More than 16,000 people are estimated to be employed within the Sydney airport site, with the maximum daily employee population estimated at 12,000 employees. It is expected that these figures will grow in line with expected growth in airport activity. The employee market segment accounts for approximately 13% of typical weekday ground access movements at Sydney airport[6]. The majority of airport employees use private vehicles to access the airport site.

Figure 3 – Sydney Airport Ground Access Mode Share, Airport Employees, 2006



Source: Sydney Airport Ground Travel Plan 2006

Less than 15% of Sydney airport workers are airline flight crew[7]. This indicates that the majority of employees are essentially regular commuters (i.e. travelling to and from the airport each day). As such, the favoured ticket types for this segment include standard commuter products such as weekly, quarterly or yearly rail tickets. Again, the extent of the premium paid by airport employees compared to 'standard' Sydney commuters is best illustrated by examples:

- For an almost equivalent fare, an adult can travel on a yearly ticket from Central to Mascot (5.2 km) or Central to Riverstone Stations (46 km). This implies that a commuter can travel up to 785% further per trip if travelling to a non-Airport Link station; and
- For a comparable fare, an adult can purchase a '7 Day RailPass' between Green Square and Circular Quay (5.9 km) or a '14 Day RailPass' between Milsons Point and Circular Quay (5.6 km)[8].

[5] *CityRail, 2010, CityRail fare calculator, viewed January 2010, <www.cityrail.com.au>*

[6] *Sydney Airport Corporation Limited,2006, Sydney Airport Ground Travel Plan, p. 11.*

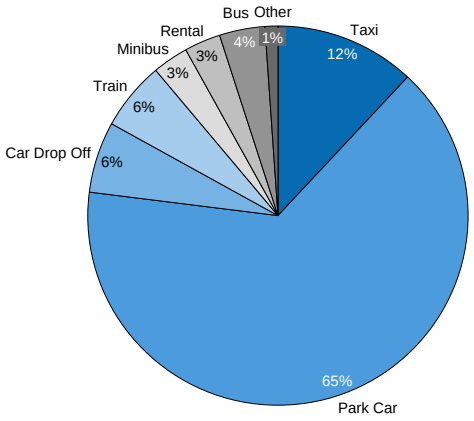
[7] *Sydney Airport Corporation Limited,2006, Sydney Airport Ground Travel Plan, p. 11.*

[8] *CityRail, 2010, CityRail fare calculator, viewed January 2010, <www.cityrail.com.au>*

2.3 Meeters and Greeters

There are tens of thousands of people who meet and greet airline passengers at Sydney Airport every day. Meeters and greeters account for approximately 15% of total ground access movements at Sydney airport[9]. The majority of meeters and greeters drive airline passengers to the airport. As demonstrated in Figure 4, public transport only captures around 10% of total trips made by meeters and greeters, of which the rail share is only 6% (i.e. only about 1 in 17 persons meeting or seeing off a passenger at the airport uses the train). The most relevant product type for meeters and greeters are the standard and off-peak return tickets.

Figure 4 – Sydney Airport Ground Access Mode Share, Meeters and Greeters, 2006



Source: Sydney Airport Ground Travel Plan 2006

The extent of the premium paid by meeters and greeters can again be illustrated by examples:

- An adult travelling on an off-peak fare from the Domestic Airport to North Sydney Station (13.0 km), pays up to 4.5 times more to travel from an airport station than for a comparable distance elsewhere on the CityRail network, such as Central to Chatswood (12.9 km); and
- An adult return fare travelling from International Airport station to Town Hall costs $26.60, whereas to travel an equivalent distance on the CityRail network (from Town Hall to Croydon) costs $8.00. This equates to a price differential of 233%.

2.4 Non-airport Stations

Passengers arriving or departing from Mascot or Green Square stations are not part of the airport market; however, all travel to and from these stations is premium priced. Under the NSW Government's 'Metropolitan Strategy: City of Cities – A Plan for Sydney's Future' (2005), the number of people living and working in both Green Square and Mascot is expected to increase significantly in the future. For example, the total number of residents and workers at Green Square is expected to increase from 30,000 to 50,000 between 2006 and 2031[10]. Around 1,750 additional jobs and 3,000 new dwellings are also expected to be generated in the Mascot catchment area by 2031[11]. Fare reform would therefore substantially benefit residents and workers in the Green Square and Mascot Airport Link station catchments.

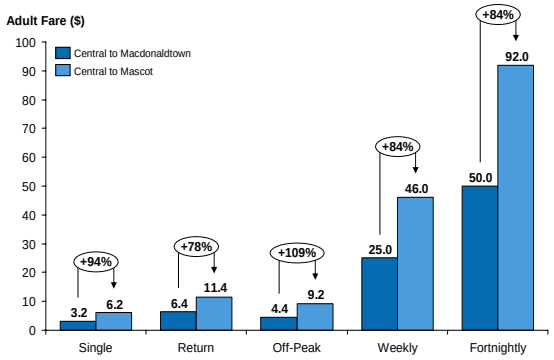
As illustrated in Figure 5, an adult travelling to Central station from either premium priced stations (i.e. Mascot and Green Square) compared to a comparable non-premium priced station (i.e. Macdonaldtown) incur vastly different fares. The price differential can be up to 110% for customers using an off-peak ticket. While the price differential is slightly lower for the commuter-style product types (i.e. weekly and fortnightly), the premium priced fares still cost up to 1.8 times more than the non-premium priced fares.

[9] *Sydney Airport Corporation Limited,2006, Sydney Airport Ground Travel Plan, p. 11.*

[10] *NSW Ministry of Transport and Landcom , 2008, Green Square Urban Renewal Area Transport Management and Accessibility Plan (Volume 1) Background Technical Report, City of Sydney Council.*

[11] *NSW Government, 2007, East Subregion: Draft Subregional Strategy.*

Figure 5 - Adult Fare Premiums, Mascot



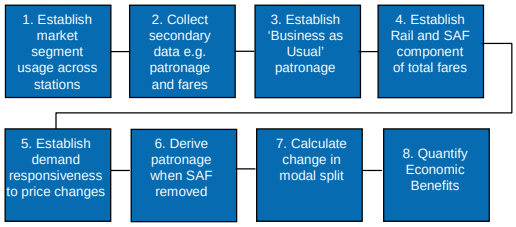
Source: CityRail Fares Calculator, 2009

3 Analysis of Fare Reform

3.1 Approach

The impact that removing premium pricing (i.e. the proposed fare reform) would have on the demand for rail services at stations operated by Airport Link was examined over a 20-year period. Our approach is depicted in Figure 6 below:

Figure 6 - Methodology



Source: Booz & Company

The impact of fare reform on patronage was examined by comparing a 'business as usual' scenario and the case for removing premium pricing (i.e. 'fare reform' scenario). The impact of the fares reform was modelled in 2010/11, based on 2009/10 patronage and fare data.

Importantly, actual Airport Link station patronage and average fares are not publicly available. It was therefore necessary to make a number of estimates based on publicly available data.

3.1.1 Business as Usual

The underlying features of the 'business as usual' scenario were:

- No real fare changes; and
- Patronage was forecast over a 20-year period (i.e. 2010/11 to 2029/30) based on constant growth rates.

Base year (i.e. 2009/10) patronage was estimated by drawing together data regarding airport throughput made available by SACL and ground access mode shares accessible in the Sydney Airport Ground Travel Plan.

Base year patronage (i.e. 2009/10) was estimated at:

- 4 million for the two airport stations; and
- 2 million for the two non-airport stations.

Details of current fares for travel to and from Airport Link stations were obtained from the CityRail fare calculator. For example, single adult fares travelling from each of the Airport Link stations to Sydney Central Station are as follows:

- $15.40 for the International Airport Station;
- $15.00 for Domestic Airport Station;
- $6.20 for Mascot Station; and
- $5.80 for Green Square[12].

As set out in Table 2, estimated patronage growth reflects both the growth at Sydney Airport (airport market), and population and employment growth (non-airport market).

Table 2 – Estimated Growth Rates by Market Segment, 2010/11 to 2029/30

Market Segment	Growth Rate
International Passengers	4.8%
Domestic / Regional Passengers	3.9%
Meeters & Greeters	2.9%
Employees	4.2%
Residents	1.7%

Source: (a) Passengers – Sydney Airport Corporation Limited Transport Blueprint (2009), (b) Residents – ABS (2010).

International and domestic airline passenger growth rates were sourced from SACL's 2009 Transport Blueprint for NSW (as per the Sydney Airport Master Plan[13]). The growth rate for meeters and

[12] *CityRail, 2010, CityRail fare calculator, viewed January 2010, <www.cityrail.com.au>*

[13] *Sydney Airport Corporation Limited, 2009, Sydney Airport Master Plan.*

greeters was estimated at 50% of the weighted average passenger growth rates reflecting the declining propensity of people to meet or see off passengers at airports. Growth rates for the non-airport markets were established with reference to population growth and employment growth rates from the Australian Bureau of Statistics for the relevant catchment areas around Mascot and Green Square.

3.1.2 Fare Reform

The underlying features of the 'fare reform' scenario include:

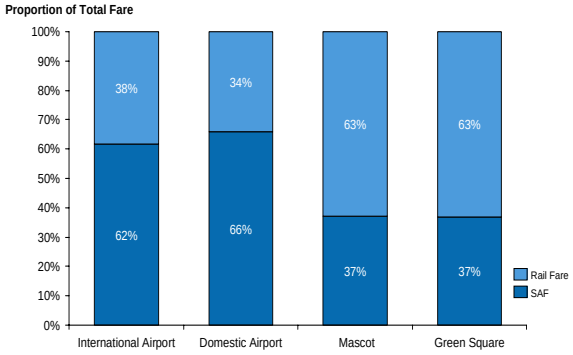
- Base case patronage (i.e. 2009/10) as per the 'business as usual' scenario;
- Estimation of real fare changes associated with the magnitude of the fare reform (i.e. removal of SAF);
- Application of fare elasticities to the estimated fare change to assess the impact on the demand for Airport Link services in 2010/11; and
- Application of long-term passenger growth rates from 2011/12.

Fares were analysed to identify the rail and Station Access Fee (SAF) components of total fare. Firstly, single adult fares between each of the Airport Link rail stations to Central were identified. Secondly, the relevant fares for comparable distances elsewhere on the CityRail network (i.e. non-Airport Link rail stations) were also established. A comparison of these fares enabled the SAF premium to be identified.

For example, it costs $15.40 to travel one-way from the International Airport station to Central station and $4.00 for an adult to travel one-way for a comparable distance elsewhere on the CityRail network. Accordingly, the SAF makes up approximately 75% of the total adult single fare to the International Airport (i.e. $11.40).

Figure 7 shows estimates of the breakdown between the rail and SAF components of an average fare for travel to and from Airport Link stations.

Figure 7 – Estimated Rail and SAF Components of Average Fares, 2009/10

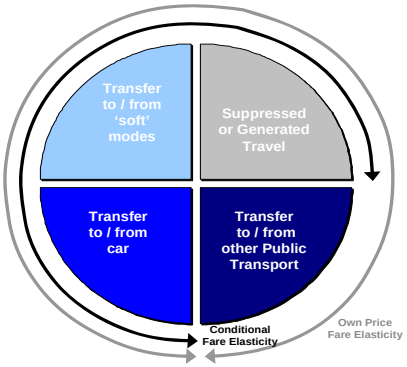


Source: (a) All fares are current as at January 2010

The application of fare elasticities enabled passenger responsiveness to the removal of the SAF premium to be determined. Fare elasticities were established using the Booz & Company 'CityRail Fare Elasticity' report commissioned by the Independent Pricing and Regulatory Tribunal (IPART) in 2008. This report provided a system-wide own-price elasticity estimate for CityRail of -0.29. This implies (for example) that a 10% fare increase will reduce the demand for CityRail services by 2.9%. For application to the Airport Link market under the 'fare reform' scenario, two key modifications were appropriate.

Firstly, the IPART estimate makes allowance for induced or suppressed demand associated with fare changes – one of the components of estimated own-price elasticity as shown in Figure 8.

Figure 8 - Composition of CityRail's Elasticities



Source: Booz & Company

The airport market differs to other destinations that can be accessed by CityRail in the sense that there is essentially no discretionary travel element. That is, airline passengers have to, or are about to, make a flight and the work trip is non-discretionary for airport employees. The only airport station market segment where travel is discretionary is the meeter – greeter market (i.e. they can choose whether or not to travel to the airport). Accordingly, the CityRail own-price elasticity estimate (i.e. -0.29) was scaled down for application at the two airport stations to remove the impact of suppressed/generated travel.

A second adjustment was made to elasticity estimates for all four Airport Link stations. The Booz & Company report suggests that the estimated own-price elasticity should only be applied to fare changes of up to 10%[14]. In this case, we needed to estimate the change in demand associated with substantially larger fare changes. It was therefore assumed that fare elasticities are directly proportional to the change in real fares and the elasticities for the four stations were scaled up accordingly.

The resultant fare elasticity estimates used in the analysis are detailed in Table 3. For example, it suggests that a 10% increase in fares at International Airport will reduce the demand for Airport Link services by 3.5% (i.e. own-price elasticity of -0.35).

Table 3 – Estimated Fare Elasticities, Airport Link Market

Rail Station	Fare Elasticity
International Airport	-0.35
Domestic Airport	-0.35
Mascot	-0.40
Green Square	-0.48

Source: Booz & Company

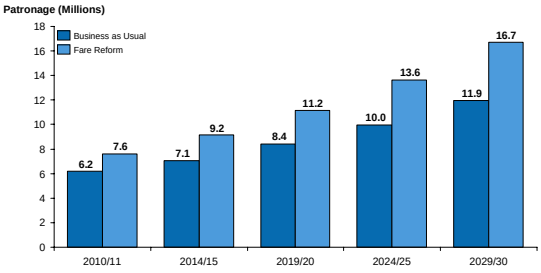
These fare elasticities were applied to estimated average fare changes at each of the four Airport Link stations to estimate the uplift in patronage associated with the withdrawal of the SAF.

Finally, ground access mode shares for each of the four market segments were recalibrated to reflect the uplift in rail demand associated with the fare change. Long-term patronage was then assumed to grow at a constant rate as per the 'business as usual' growth rates.

3.2 Results

The proposed 2010/11 fare reform has a major impact on estimated Airport Link patronage. Figure 9 compares total patronage under the 'business as usual' and 'fare reform' scenarios over a 20-year period.

Figure 9 – Estimated Airport Link Rail Patronage, 2010/11 to 2029/30



Source: Booz & Company

[14] *Booz & Company as commissioned by the Independent Pricing and Regulatory Tribunal, 2008, CityRail Fare Elasticities, p. ii.*

The initial impact of fare reform in 2010/11 highlights that:

- Rail patronage is forecast to be 23% higher in 2010/11 under the 'fare reform' scenario. This equates to 1.4 million additional journeys being made by rail rather than road (i.e. car or taxi).

Over the long-term (2010/11 to 2029/30) the fare reform is estimated to have the following effect:

- Rail patronage would be 34% higher by 2029/30, which represents an additional 59 million journeys diverted from road based options over 20 years (i.e. taxi and car); and
- Fare reform increases average annual rail patronage growth by 0.7% to 4.2% per annum over the 20 years to 2029/30.

Disaggregating the results by Airport (i.e. International and Domestic) and non-airport Stations (i.e. Mascot and Green Square) further highlights the potential of fares reform to increase the use of rail.

3.2.1 Airport Stations

In the near term we estimate:

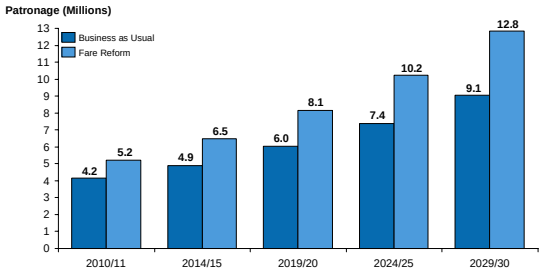
- An additional 1.1 million journeys rail journeys would be undertaken in 2010/11, which equates to a 26% increase in rail patronage.

The estimated long-term impact of the fare reform from 2010/11 to 2029/30 is as follows:

- Rail patronage would be 36% higher by 2029/30, which represents an additional 46 million journeys diverted from road based options over 20 years (i.e. taxi and car);
- Total rail patronage is estimated to reach more than 12.8 million journeys in 2029/30 compared to 9.1 million journeys under the 'business as usual' scenario; and
- Rail patronage is expected to grow at 4.8% per annum, compared to 4.2% per annum under the 'business as usual' scenario.

A comparison of patronage under the 'business as usual' and 'fare reform' scenarios at five-yearly intervals is shown in Figure 10.

Figure 10 – Estimated Airport Link Patronage, 2010/11 to 2029/30



Source: Booz & Company

3.2.2 Non-airport Stations

Fare reform for non-airport stations (i.e. Mascot and Green Square) is estimated to have a positive, yet less significant, impact on patronage compared with the two airport stations (i.e. as a result of the fact that the SAF represents a significantly smaller proportion of current fares). The initial impact of fares reform in 2010/11 reveals:

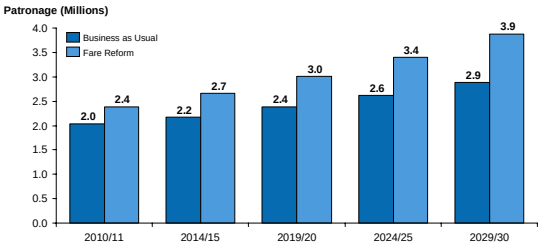
- An increase in patronage of almost 0.4 million in rail passenger journeys in 2010/11, which equates to 17% uplift.

The following indicators, in conjunction with Figure 11, reveal the influence of fare reform on non-airport station patronage over the 20-year project timeframe (i.e. 2010/11 to 2029/30):

- An additional 13.1 million journeys will be made by rail rather than road over 20 years;
- Total rail patronage is expected to reach almost 3.9 million trips in 2029/30, compared with 2.9 million trips under the 'business as usual' scenario; and
- Rail patronage is forecasted to grow at 2.6% per annum over 20 years, - 0.7%

above the ‘business as usual’ scenario.

Figure 11 – Estimated Airport Link Non-Airport Station Patronage, 2010/11 to 2029/30



Source: Booz & Company

3.2.3 *Modal Split Impacts*

Under the fare reform scenario, there is an immediate uplift in the rail mode share in 2010/11 and beyond. As presented in the Sydney Airport Ground Access Report (2006), the rail mode share was estimated at 10% for international and domestic airline passengers, 12% for employees and 6% for meeters/ greeters. Table 4 sets out the estimated post fare reform rail mode shares. The uplift in rail mode share resulting from fare reform goes a long way towards supporting SACL's target of increasing public transport usage by 5% by 2024.

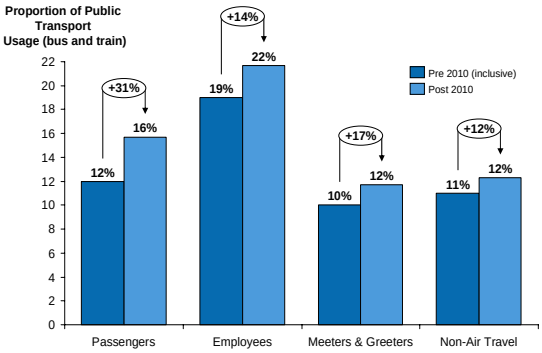
Table 4 – Estimated Rail Modal Share

Market Segment	Train Modal Share (pre 2010 inclusive)	Recalibrated Train Modal Share (post 2010)	Change
Passengers	10%	14%	+4%
Employees	12%	15%	+3%
Meeters & Greeters	6%	8%	+2%
Non-Air Travel	7%	8%	+1%

Source: Booz & Company

As depicted in Figure 12, fare reform results in public transport usage (i.e. train and bus) increasing by 31% for airline passengers, 14% for airport employees, 17% for meeters & greeters and 12% for non-airport stations compared to a 'business as usual' scenario.

Figure 12 – Estimated Growth in Public Transport



Source: Booz & Company

3.2.4 *Economic Benefits*

There are economic benefits and costs associated with the fare reform package. The economic benefit and cost streams considered quantified include:

- Benefits
  - Passenger or 'consumer surplus' benefits (i.e. to new and existing passengers); and
  - Externality Benefits (i.e. reduced road congestion, air pollution etc).
- Costs
  - Foregone farebox revenue or reduction in 'producer surplus'; and
  - Capital raising costs (i.e. on the basis that additional Government revenue is required to compensate Airport Link for foregone farebox revenue).

Passenger benefits (i.e. consumer surplus) refer to the benefits to existing and new Airport Link customers from the effective reduction in fares. Externality benefits are benefits that flow directly from reduced car use associated with the increased demand for rail public transport use (i.e. diverted car and taxi trips). These external benefits primarily reflect the reduced cost of road congestion and also capture reduction in air pollution and greenhouse gas emissions. Based on estimates as per the LECG report

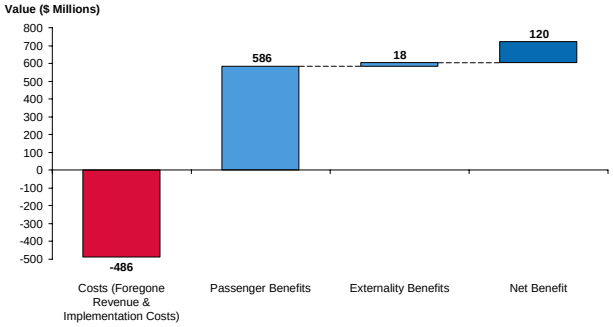
(2008)[15], the externality saving was estimated at $5.70 per rail journey.

Foregone farebox revenue is defined as the revenue lost as a result of removing premium pricing from travel to and from Airport Link stations. Capital raising costs were estimated at 24% of total forgone revenue. As described by Campbell (1997)[16], there is a marginal cost (i.e. deadweight loss) of funding a public project which is imposed by raising tax revenue. This deadweight loss implies that the overall cost of the tax increase (i.e. overall cost of the proposed project to the community), is higher than the revenue raised to fund the project. To represent the deadweight loss, a capital raising cost estimated at 24% of foregone revenue was included in our analysis.

The results of the cost benefit analysis highlight that over a 20-year period (2010/11 to 2029/30), the total net benefits accrued as a result of fare reform is estimated at $118 million (at 2009/10 prices). As illustrated in Figure 13, the economic benefits of fare reform are estimated at $604 million, which comprises $586 million in passenger benefits and $18 million in externality savings. The total economic costs are estimated at $486 million, which represents $365 million of foregone farebox revenue and $121 million of capital raising costs. This analysis reveals that the fare reform generates an economic return of $1.24 for every $1 invested.

Notably, to realise the benefits of this fare reform project, negotiations between the NSW Government and Sydney Airport Link would need to take place to agree on how Airport Link will be compensated for lost farebox revenue. The fare reform is suggested to cost $34 million in foregone revenue in the first year of implementation (2010/11), assuming no change in demand. However, this will be offset by the additional revenue received as a result of the incremental increase in patronage. This will reduce the overall cost to government by $7 million in the first year of implementation.

Figure 13 - Net Benefits of Fares Reform



Source: Booz & Company

The net reduction in pollution and carbon emissions resulting from the fares reform and associated mode shift was also estimated. Based on a vehicle occupancy rate of 1.2 persons per trip (i.e. car and taxi) and an average distance travelled of 27 kilometres, the fares reform is estimated to reduce carbon emissions by around 8,502 tonnes in 2010/11[17].

[15] LECG as commissioned by the Independent Pricing and Regulatory Tribunal, 2008, An Empirical Estimate of CityRail's Marginal Costs and Externalities.

[16] Campbell, 1998, Deadweight Loss and the Cost of Public Funds in Australia, p. 235.

[17] BP, 2010, Emission Reduction Calculated, viewed January 2010, <http://www.bp.com.au/ghg_veh_calculator/calculator.asp >

4 Discussion and Conclusions

The purpose of this report was to estimate the impact on rail patronage if fare reform was implemented across airport and non-airport stations operated by Airport Link (i.e. removal of premium pricing). The analysis illustrates that the removal of the SAF would dramatically improve the price competitiveness of rail relative to competing modes. This can be demonstrated through the following examples:

- Airport Link is not currently a highly attractive option for groups of two or more using single fares travelling to the Sydney CBD (i.e. a taxi fare of around $40 compared to a total rail fare of just over $30). However, with the removal of the SAF, the cost of two single rail fares would fall to around $8.00 – considerably changing the competitive position of rail compared with both taxi and the private car
- For the single traveller with a CBD destination, the cost of using rail on a single ticket would fall from just under 40% of the equivalent taxi fare to about 10% of the comparable taxi fare
- For regular commuters travelling from non-airport stations, for a similar price as an adult weekly ticket to the Sydney CBD, the fare reform will enable commuters to purchase a fortnightly ticket to the Sydney CBD.

The impact of the fare reform is reflected in the 2010/11 initial estimated uplift in patronage of:

- 26%, or an estimated 1.1 million passenger journeys for airport stations; and
- 17%, or an estimated 0.4 million passenger journeys for non-airport stations.

In the longer term, the benefits of the fare reform become more pronounced. For example, in 2029/30 it is estimated that an additional 4.8 million rail journeys will be made compared to the 'business as usual' scenario.

Appendix A - Data Summary: Patronage under 'Business as Usual' and 'Fare Reform'

Year	Airport Stations		Non-airport Stations	
	Business as Usual Patronage (millions)	Fare Reform Patronage (millions)	Business as Usual Patronage (millions)	Fare Reform Patronage (millions)
2009/10	4.00	4.00	2.00	2.00
2010/11	4.17	5.23	2.03	2.38
2011/12	4.34	5.67	2.07	2.48
2012/13	4.52	5.93	2.11	2.54
2013/14	4.71	6.20	2.14	2.60
2014/15	4.90	6.49	2.18	2.66
2015/16	5.11	6.79	2.22	2.73
2016/17	5.32	7.11	2.26	2.80
2017/18	5.54	7.44	2.30	2.86
2018/19	5.77	7.78	2.34	2.93
2019/20	6.01	8.15	2.38	3.01
2020/21	6.26	8.52	2.43	3.08
2021/22	6.53	8.92	2.47	3.16
2022/23	6.80	9.33	2.52	3.24
2023/24	7.08	9.77	2.57	3.32
2024/25	7.38	10.22	2.62	3.40
2025/26	7.69	10.70	2.67	3.49
2026/27	8.01	11.19	2.72	3.58
2027/28	8.34	11.72	2.77	3.67
2028/29	8.69	12.26	2.82	3.77
2029/30	9.06	12.83	2.88	3.87

Source: Booz & Company

Appendix B - Result of Sensitivity Analysis

A sensitivity analysis was performed on the case for fare reform. In particular, the sensitivity analyses performed included:

- A 50% reduction in premium pricing across all Airport Link stations; and
- A conservative estimate of fare elasticities of -0.29 across all Airport Link stations.

B1 Results of Sensitivity Analysis 1 – 50% Reduction in Fare Premiums

The results of the sensitivity analysis show that when reduced premiums are initially implemented in 2010/11:

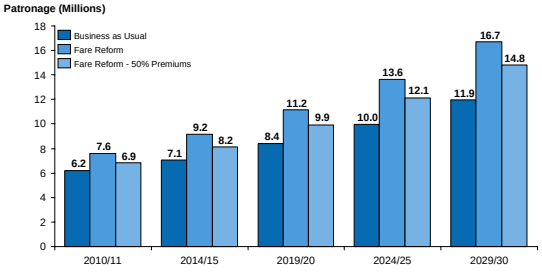
- Total patronage is expected to increase by 0.7 million journeys or grow by 11% compared to 'business as usual'.

In the long term (i.e. between 2010/11 and 2029/30), the impact of reduced fare premiums results in:

- Growth of 19% in passenger journeys, which equates to an additional 33 million trips being diverted from road based transport to rail;
- Total annual rail patronage reaching 14.8 million journeys; and
- Patronage growing at a rate of 4.1%.

Figure 14 compares 'business as usual' with the two fare reform scenarios.

Figure 14 - Patronage Comparisons under 50% and 100% Reduction in Fare Premiums, 2010/11 to 2029/30



B2 Results of Sensitivity Analysis 2 – Conservative Elasticity Estimates

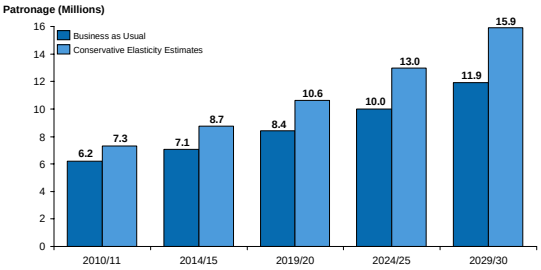
This sensitivity analysis used conservative fare elasticity estimates across market segments that were unadjusted for discretionary travel or real fares changes. The results of the analysis depicted in Figure 15 reveal that in 2010/11:

- Patronage is estimated to increase by 1.1 million trips, which represents an 18% increase in rail journeys.

From 2010/11 to 2029/30, the sensitivity analysis highlights:

- Patronage will grow by 28%, which equates to a diversion of an additional 48 million trips from road based transport to rail public transport;
- Annual rail patronage will reach 15.9 million journeys in 2029/30; and
- Patronage will increase on average at an annual rate of 4.2%.

Figure 15 – Uplift in Rail Patronage Using Conservative Price Elasticities, 2010/11 to 2029/30



Source: Booz & Company

Appendix C – Data Summary: *Patronage under Sensitivity Analysis 1* -

'Business as Usual' and 'Fares Reform – 50% premiums'

Year	Airport Stations		Non-airport Stations	
	Business as Usual Patronage (millions)	Fare Reform Patronage (millions)	Business as Usual Patronage (millions)	Fare Reform Patronage (millions)
2009/10	4.00	4.00	2.00	2.00
2010/11	4.17	4.67	2.03	2.20
2011/12	4.34	4.99	2.07	2.27
2012/13	4.52	5.22	2.11	2.33
2013/14	4.71	5.46	2.14	2.39
2014/15	4.90	5.71	2.18	2.44
2015/16	5.11	5.98	2.22	2.50
2016/17	5.32	6.26	2.26	2.56
2017/18	5.54	6.55	2.30	2.63
2018/19	5.77	6.85	2.34	2.69
2019/20	6.01	7.17	2.38	2.76
2020/21	6.26	7.50	2.43	2.83
2021/22	6.53	7.85	2.47	2.90
2022/23	6.80	8.21	2.52	2.97
2023/24	7.08	8.60	2.57	3.04
2024/25	7.38	8.99	2.62	3.12
2025/26	7.69	9.41	2.67	3.20
2026/27	8.01	9.85	2.72	3.28
2027/28	8.34	10.31	2.77	3.37
2028/29	8.69	10.79	2.82	3.46
2029/30	9.06	11.29	2.88	3.55

Source: Booz & Company

Appendix D– Data Summary: *Patronage under Sensitivity Analysis 2 -*

Conservative Elasticity Estimates

Year	Airport Stations		Non-airport Stations	
	Business as Usual Patronage (millions)	Fare Reform Patronage (millions)	Business as Usual Patronage (millions)	Fare Reform Patronage (millions)
2009/10	4.00	4.00	2.00	2.00
2010/11	4.17	5.02	2.03	2.26
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2022/23	6.80	8.92	2.52	3.07
2023/24	7.08	9.33	2.57	3.14
2024/25	7.38	9.76	2.62	3.22
2025/26	7.69	10.22	2.67	3.31
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2028/29	8.69	11.71	2.82	3.57
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Source: Booz & Company