FINAL REPORT

Review of Patronage Trends and Projections for Sydney Ferries

Independent Pricing and Regulatory Tribunal

Sydney

October 2006

Booz | Allen | Hamilton

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Executive Summary

In handing down its most recent fare determination for Sydney Ferries in December 2005, the Independent Pricing and Regulatory Tribunal (IPART) expressed its intent to investigate the case for a multi-year price path, taking into account both the Sydney Ferries proposal and its own detailed investigations of Sydney Ferries patronage and costs.

In October 2005, as an input to further deliberations regarding the merit of supporting a medium-term pricing path for Sydney Ferries, IPART commissioned Booz Allen Hamilton to undertake a review of Sydney Ferries patronage growth in aggregate, by route and ticket type.

To develop forecasts of Sydney Ferries patronage to 2007/08, the following tasks were completed:

- We specified and calibrated a model of Sydney Ferries patronage having regard to past trends and any possible/reasonable opening up of new market segments (either by type or location)
- We developed a 'best estimate' (i.e. base case), low and high cases of likely Sydney Ferries patronage to 2007/08
- We then disaggregated our forecasts by route and ticket type

The key drivers of growth in demand for Sydney Ferries services in the short-term include changes in fares and service levels, the performance of the New South Wales economy (including the tourism sector), population growth and the growth in CBD employment. The level and pace of Sydney Harbour foreshore development is also an important factor.

Our base case forecast is consistent with growth of 2.6% per annum, which will see Sydney Ferries patronage increase from 14.03 million in 2005/06 to 14.78 million in 2007/08 (i.e. an increase of 750,000 trips over two years).

The low and high forecasts are consistent with average annual growth rates of 0.9% and 3.6% per annum respectively. This is consistent with patronage reaching between 14.28 million (low) and 15.05 million (high) in 2007/08.

No significant changes in the distribution of patronage by route are forecast. From a ticket type perspective, the Daily Single and FerryTen market shares are forecast to decline in favour of the TravelPass and DayTripper products.

It is important to note that all forecasts are unconstrained. As such, we have not accounted for future capacity limitations or enhancements of the ferry network and associated amenities. The adequacy of vessel size, parking facilities, existing wharf capacity and proposed future wharf developments (e.g. the Darling Harbour Hub) have been assumed to be sufficient to meet demand.

1 Introduction

The Independent Pricing and Regulatory Tribunal (IPART) completed its most recent review of prices for Sydney Ferries in December 2005. The determination for Sydney Ferries resulted in an increase of between zero and 20 cents for adult Daily Single tickets, between zero and $2.20 for FerryTens and between zero and $2.00 for TravelPasses. Rail-bus-ferry TravelPass and DayTripper ticket prices remained unchanged pending the completion of the 2006 price determination for CityRail services.

In handing down its determination, the Tribunal also expressed its intent to investigate the case for a multi-year price path, taking into account both the Sydney Ferries proposal and its own detailed investigations of Sydney Ferries patronage and costs. The Sydney Ferries submission to IPART in support of a medium-term pricing path was based on assumed patronage growth of 1% per annum, although no justification was provided in the submission to support this assumption.

In October 2005, as an input to further deliberations regarding the merit of supporting a medium-term pricing path for Sydney Ferries, IPART commissioned Booz Allen Hamilton to undertake a review of Sydney Ferries patronage growth in aggregate, by route and by ticket type.

To develop forecasts of Sydney Ferries patronage to 2007/08, the following tasks were completed:

- We reviewed patronage projections made by Sydney Ferries
- We specified and calibrated a model of Sydney Ferries patronage having regard to past trends and any possible/reasonable opening up of new market segments (either by type or by location)
- We developed a 'best estimate' (i.e. base case), low and high cases of likely Sydney Ferries patronage to 2007/08
- We then disaggregated our forecasts by route and ticket type.

It is important to note that all forecasts are unconstrained. As such, we have not accounted for future capacity limitations or enhancements of the ferry network and associated amenities. The adequacy of vessel size, parking facilities, existing wharf capacity and proposed future wharf developments (e.g. the Darling Harbour Hub) have been assumed to be sufficient to meet demand.

2 Background

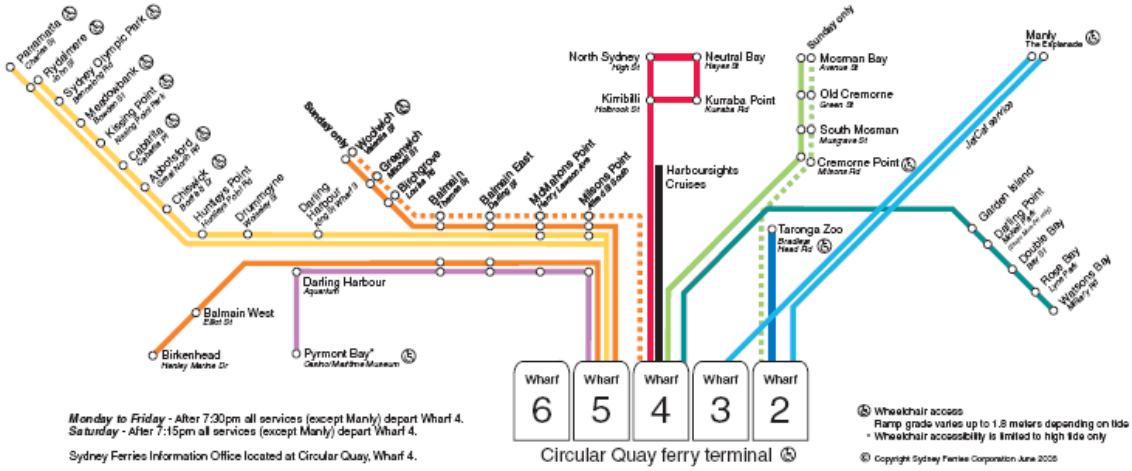
Sydney Ferries services are delivered by a fleet of 31 ferries that carry over 14 million passengers annually.

The services offered by Sydney Ferries can be broadly categorised as follows:

- Inner Harbour services including Mosman, Watsons Bay, Balmain and Hunters Hill
- Outer Harbour services (i.e. Manly ferry and JetCat services)
- Parramatta River services, including Rydalmere and Meadowbank.

These services travel from Circular Quay to 41 wharves, including Parramatta, Woolwich, Birkenhead Point, Darling Harbour, Pyrmont Bay, Neutral Bay, Mosman, Watsons Bay, Taronga Zoo and Manly. Figure 2.1 illustrates the extent of the network. Moreover, Sydney Ferries also operates premium JetCat services between the CBD and Manly during peak periods.

Figure 2.1 Sydney Ferries Network



Source: Sydney Ferries Corporation.

2.1 Patronage

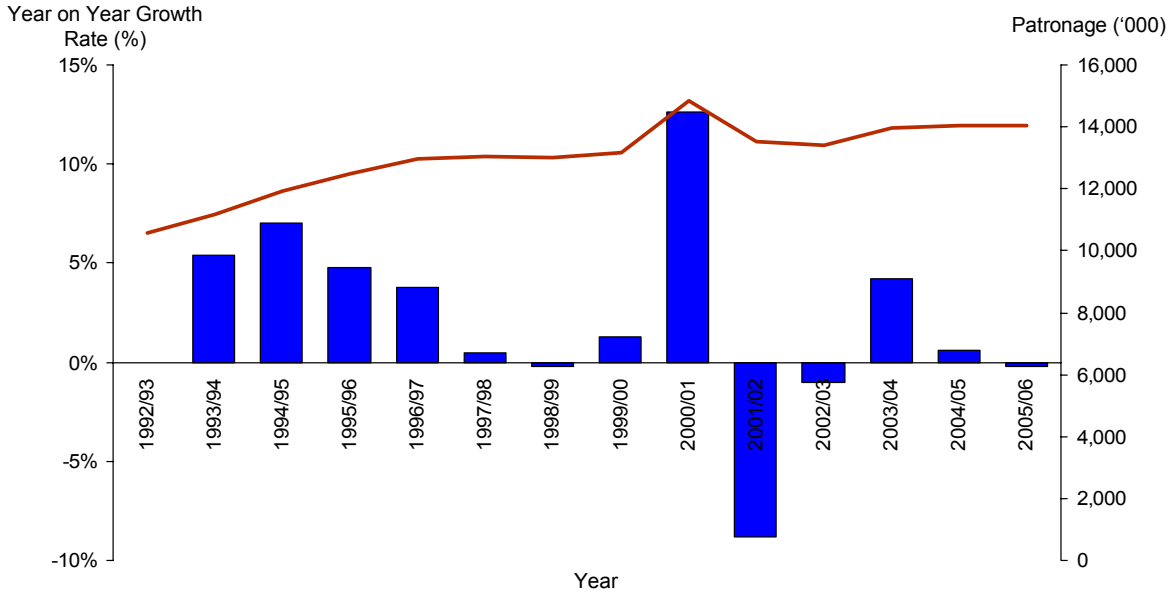
2.1.1 Long-Term Trends

Figure 2.2 illustrates the trend in Sydney Ferries patronage between 1993/94 and 2005/06. It shows that patronage growth in individual years has varied significantly and we offer the following observations:

- Average annual growth of 2.2% per annum was achieved over the full period
- Outside of those years impacted by the Sydney Olympics (i.e. 2000/01 and 2001/02), annual growth was very erratic ranging from a low of -0.2% in 1998/99 to a high of 7.0% in 1994/95

- Post-Olympic growth (i.e. from 2002/03 to 2005/06) averaged 1.5% per annum.

Figure 2.2 Sydney Ferries Patronage 1993/94 to 2005/06 and Year-on-Year Growth (%)



Source: State Transit Authority and Sydney Ferries Corporation.

The patronage data was drawn from the State Transit Authority Executive Information System (EIS). The EIS patronage estimates reflect dippings captured by the Sydney Ferries Automatic Fare Collection (AFC) system. However, the patronage estimates are unlikely to be 100% reliable for the following reasons:

- The EIS allowance for travel between ungated wharves on TravelPasses valid for Inner Harbour travel is an estimate only that has not been validated (i.e. TravelPass dippings for tickets valid on the Inner Harbour are increased by a notional 10% to account for travel made on TravelPasses between ungated Inner Harbour wharves)
- The reconciliation between farebox revenue and AFC dippings data has not always produced realistic estimates of manual ticket sales made by deckhands (i.e. reconciliation between farebox revenue and AFC dippings is undertaken to assess the level of manual (paper) ticket sales made by deckhands)
- Boardings made on FerryTens are reconciled to ticket sales and hence will under-estimate actual boardings made on a FerryTen (e.g. persons traveling between two ungated Inner Harbour wharves)
- Gates at both Circular Quay and Manly have been subject to periodic failures and been opened for crowd control at times and hence data is not captured by the AFC system.

Patronage is also likely to be understated due to fare evasion because Sydney Ferries is not a fully closed system (i.e. only the Manly and Circular Quay wharves are gated). However, given that 95% of passengers travel to/from Circular Quay or Manly, fare evasion opportunities are essentially limited to the 5% of journeys where a trip end does not pass through Circular Quay or Manly.

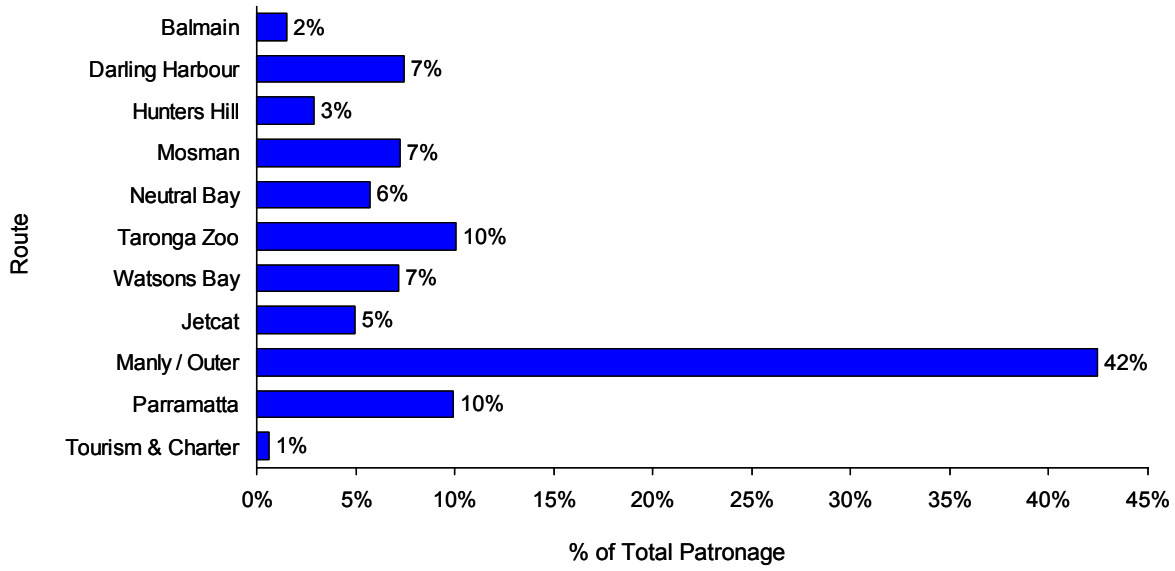
Slower patronage growth since 1997/98 is a function of a number of internal and external factors. During the mid to late-1990s there were reported reliability problems and limited route expansion and service quality improvements. Since 2000/01, there has been considerable effort to improve service quality and reliability with the introduction of new vessels, refurbishments and safety and security improvements. However, only modest patronage gains have been realised.

2.1.2 Patronage by Route

Figure 2.3 shows Sydney Ferries patronage by route in 2003. It shows that the Manly / Outer Harbour route dominates the market which, combined with the Manly JetCat, accounts for almost 50% of the total ferry market.

More recent research conducted for Sydney Ferries Corporation by Taverner Research (2005) estimated average weekday and weekend passengers for major routes based on an on-board survey of Sydney Ferries passengers. It produces a very similar breakdown of the Sydney Ferries market by route to that reflected in Figure 2.3. However, given that the State Transit Authority analysis of 2003 data provided estimates for all routes, it was used to disaggregate our forecasts by route (see Section 5).

Figure 2.3 Sydney Ferries Patronage by Route, 2003

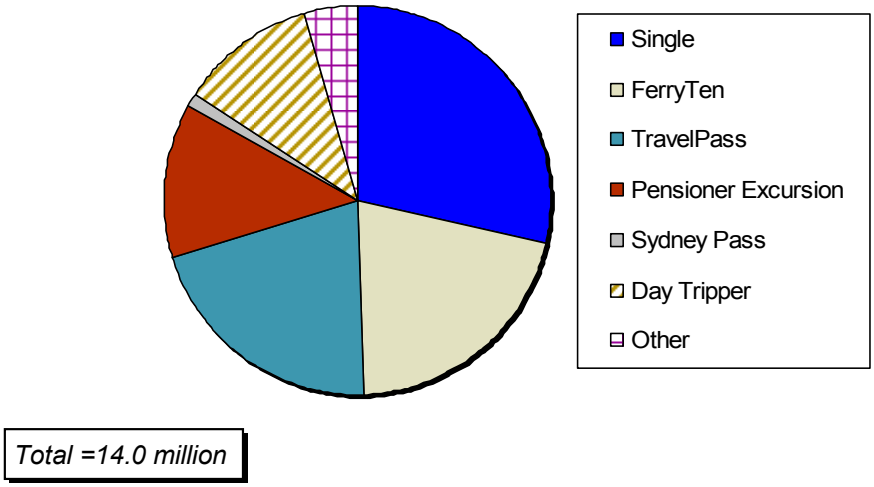


Source: State Transit Authority 2003.

2.2 Ticket Usage

The current ticket product mix is illustrated in Figure 2.4. It highlights that there is no one product that dominates the market, but rather a 'core' ticket range of four key products (i.e. Daily Single, FerryTen, TravelPass and DayTripper) that account for over 80% of the total market.

Figure 2.4 Sydney Ferries Patronage by Ticket Type, 2005/06

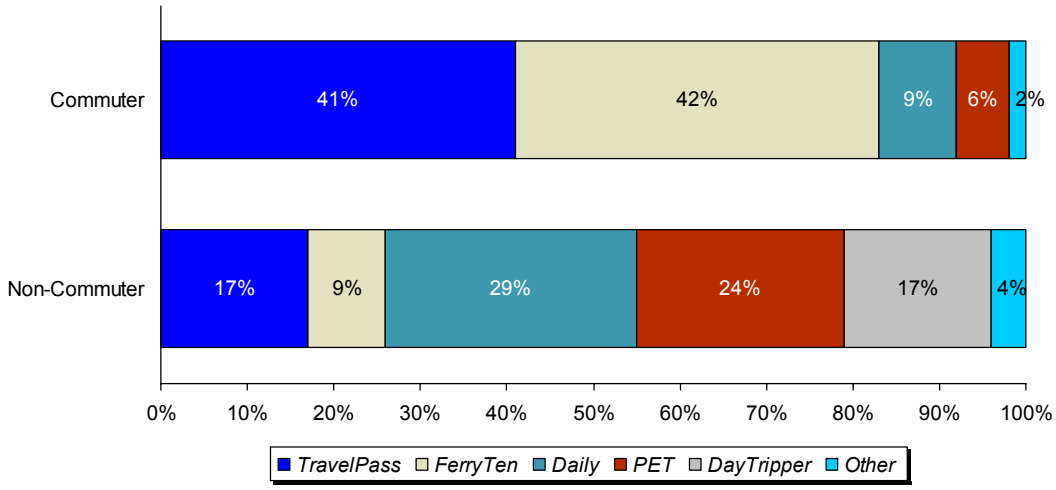


Source: Sydney Ferries Corporation.

There is a very strong relationship between ticket type and trip purpose. Commuters dominate the peak period use of Sydney Ferries services and favour the FerryTen and TravelPass ticket products. Conversely, persons travelling for leisure purposes (i.e. both Sydney residents and tourists) tend to use ferry services more evenly through the day and favour the Daily Single and DayTripper products.

Figure 2.5 shows that 83% of commuters purchase FerryTen and TravelPass tickets compared to 26% of non-commuters. By comparison, Daily Single and Pensioner Excursion Tickets (PETs) are the most important products for the non-commuter market, although the DayTripper is steadily increasing in importance.

Figure 2.5 Patronage by Ticket Type and Trip Purpose

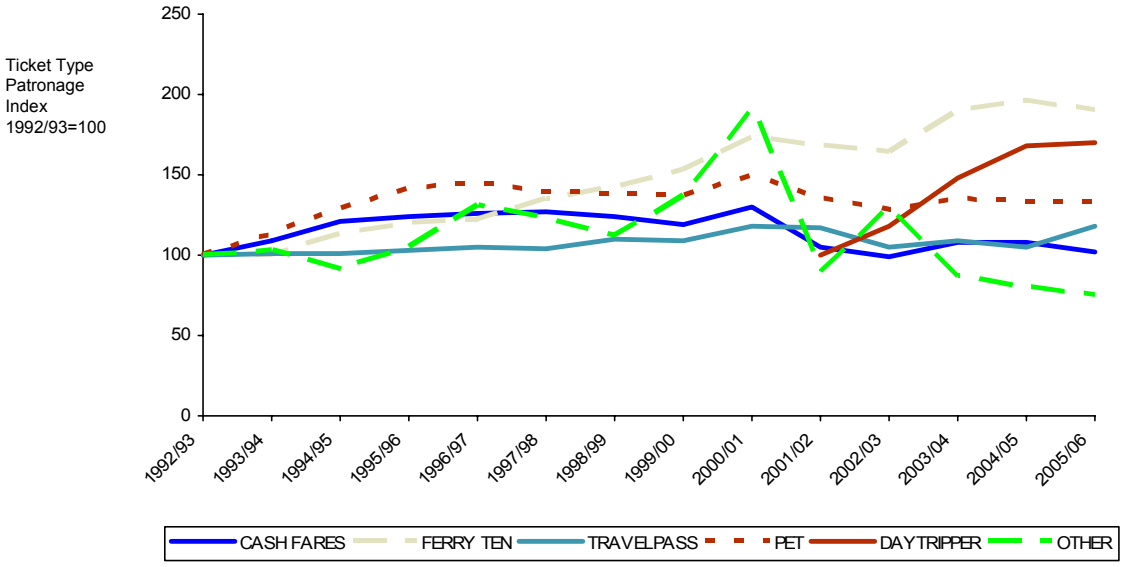


Source: Taverner Research (2005).

The introduction of the DayTripper ticket in 2001/02 reduced the requirement for multiple tickets and provided a discount incentive for all-day travel. The growth of the DayTripper ticket (i.e. an increase in patronage of almost 14% per annum between 2001/02 to 2005/06) highlights the popularity of the product (see Figure 2.6).

Figure 2.6 also shows that the FerryTen has also experienced strong growth over the same period of 3.1% per annum despite declining in use in 2005/06. Growth in the TravelPass market had been relatively flat but grew strongly over the last year increasing by 12.4%. The number of passengers travelling on Daily Single and other ticket types has declined, in favour of the TravelPass and DayTripper which offer discounted travel and convenience benefits. This reflects the fact that FerryTen and single tickets have experienced continual upward growth in price whereas TravelPass products have either had no increase or relatively smaller increases since the December 2004 Determination of Fares.

Figure 2.6 Patronage by Ticket Type 1993/94 to 2005/06 (Index 1993/94-100)



Source: Booz Allen analysis of data provided by State Transit Authority and Sydney Ferries Corporation.

2.2.1 Patronage Forecasts

The Sydney Ferries submission to IPART in support of a medium-term pricing path was based on assumed patronage growth of 1% per annum, although no justification was provided in the submission to support this assumption.

Discussions with Sydney Ferries confirmed that forecast patronage growth was asserted with reference to historical trends and an understanding of current market conditions rather than via a formal modelling process.

3 Primary Demand Drivers

3.1 Introduction

There are a number of factors that potentially influence the demand for Sydney Ferries services (see Table 3.1 below).

Table 3.1 Potential Demand Drivers

Potential Ferry Demand Drivers
▸ Fare levels
▸ Service levels
▸ Car Ownership
▸ Private travel costs (e.g. Fuel Prices)
▸ CBD employment
▸ Income
▸ Tourism
▸ Population and Major Land Use Developments
▸ Special Events (e.g. Olympics)
▸ Service Improvements and Changes in Service Quality

Source: Prepared by Booz Allen Hamilton.

These drivers can be segmented into the following:

- **Primary demand drivers** are those factors that impact on 'underlying' patronage growth. These factors impact on the entire market and influence demand over time. They include both internal factors such as fare levels and service levels and external factors such as fuel prices, population, CBD employment, tourism and income
- **Secondary demand drivers** are specific 'one off' major changes to the environment. They are often localised and impact on a particular market segment and/or route. They can include changes such as major land use changes (e.g. residential housing developments), service improvements (such as the introduction of services to new wharves, peak services and service extensions) and significant changes to the fares and ticketing environment
- **Tertiary demand drivers** reflect major policy initiatives such as the introduction of new and refurbished vessels which impact on service quality aspects of ferry travel and marketing initiatives and programs.

This section considers the primary demand drivers for Sydney Ferries and develops associated forecasts. Secondary and tertiary demand drivers are considered in Section 4.

3.2 Primary Demand Drivers

3.2.1 Parameter Estimates

Elasticity estimates are a key input to estimating changes in demand associated with the primary demand drivers outlined in Section 3.1. Elasticity is essentially a measure of the *'responsiveness'* of ferry demand to changes in factors that influence demand. In more technical terms it can be defined as the ratio of the proportionate change in demand to the proportionate change in any factor which causes that change in demand. For example, a fare elasticity of –0.30 indicates that for a 1% fare increase there is a 0.3% decrease in the demand for that good or service. The negative sign signifies an inverse relationship between price and demand (i.e. the effect operates in the opposite direction from the cause).

In terms of our preferred methodology, it was originally intended that time-series demand models would be developed using ordinary least squares (OLS) regression techniques to establish the primary determinants of the demand for Sydney Ferries services and associated elasticity estimates for forecasting purposes. However, comprehensive time series data for many of the variables was either insufficient or not available. Consequently, for most variables, the results of the OLS regressions did not yield coefficients of the correct sign and/or statistically significant outcomes. As a consequence, the findings of the regression analysis were not used for forecasting purposes (see Attachment A).

To develop suitable parameter estimates for forecasting purposes, reference was therefore made to available elasticity estimates for Sydney Ferries services (e.g. those applied in the State Transit Fares Model) and the trip purpose composition of the Sydney Ferries market itself.

In terms of this latter point, reference to the trip purpose composition of the Sydney Ferries market allowed us to prepare a suite of internally consistent elasticity estimates for a number of key explanatory variables.

Specifically, we assumed that the demand for Sydney Ferries travel with purposes 'work', 'tourism', 'leisure' and 'other' (i.e. personal business, visiting friends and relatives and education trips) is dependent on the level of CBD employment, tourism, real income and population respectively. This effectively captures Sydney Ferries 'base' demand where work trips are driven by employment changes, tourism trips by non-Sydney residents and international visitors, leisure travel made by Sydney residents by income growth and remaining Sydney Ferries trips by general population growth.

It follows that:

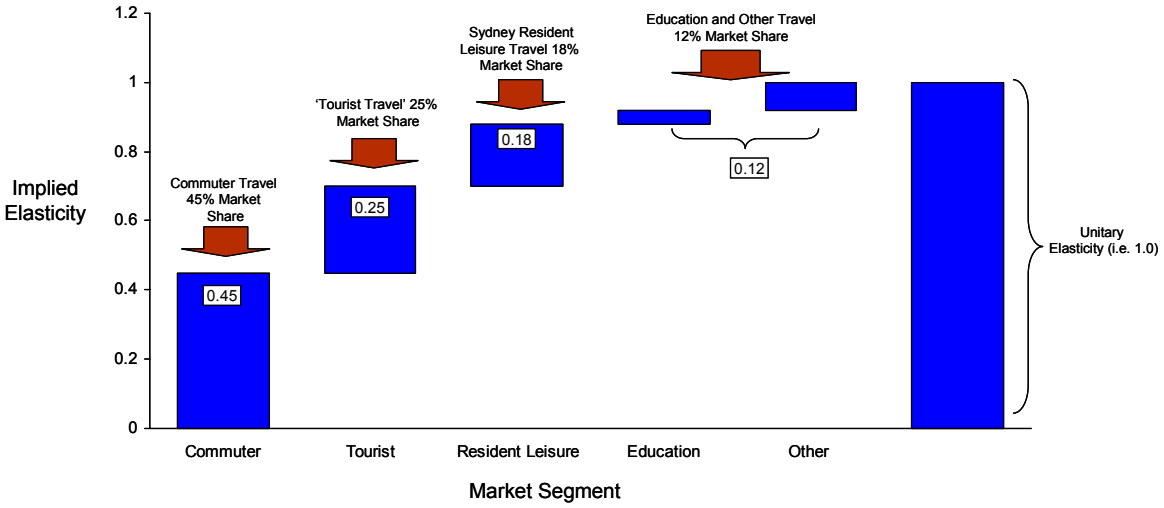
- This is consistent with the intuitively reasonable assumption that, other things being equal, a simultaneous 1% increase in these factors could be expected to increase the demand for Sydney Ferries services by 1%
- This implies an aggregate elasticity of unity (i.e. 1.0) for these four explanatory variables (i.e. CBD employment, tourism, real income and population). For

example, a 1% increase in the number of CBD employees results in a 1% increase in the number of Sydney Ferries trips made by CBD employees and so on

- The elasticity for each explanatory variable is given by its market share of total ferry trips (e.g. 10% market share equates to an elasticity of 0.1)[1]

Figure 3.1 illustrates the implied elasticity for each variable based on this approach.

Figure 3.1 Implied Sydney Ferries Elasticity Estimates and Market Shares by Market Segment



Source: Booz Allen Hamilton analysis.

The estimates for each primary demand are each considered further below.

3.2.2 CBD Employment

Ferry commuters are a core weekday market accounting for 58% of weekday trips, although this share varies by route. A significant majority of commuters travel to the CBD as their primary destination. The 2001 Census revealed that the CBD attracts 73%[2] of all Journey to Work ferry trips.

CBD employment has grown strongly since 1991 at a rate of 2.8% per annum. This stronger growth rate potentially reflects the recovery from the recession which, more than likely impacted on the 1991 estimate. This growth is forecast to slow to a rate of 1.0% per annum for period 2006 to 2011 (see Figure 3.2 below).

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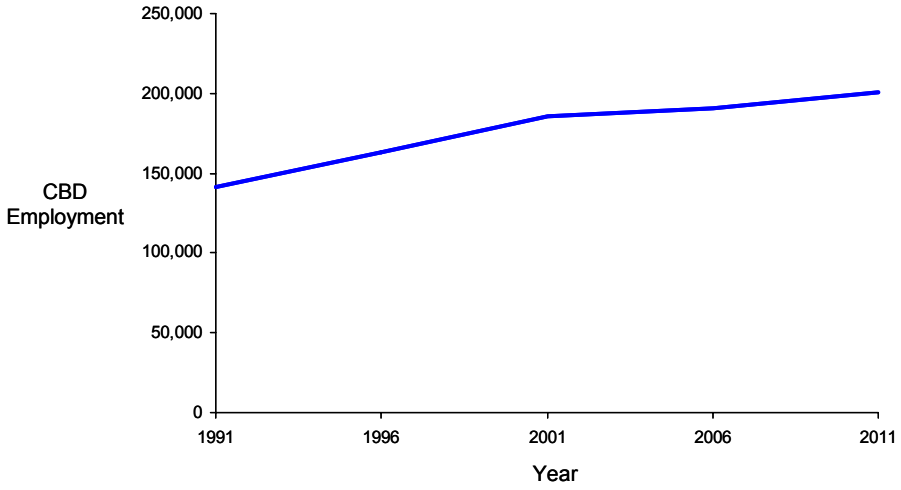
[1] *This approach mirrors that applied by London Underground to derive a full suite of demand elasticities for its services (The London Transport 'Elasticity Model (Updated), August 1999)*

[2] *The CBD is defined as Sydney Inner and Sydney Remainder Statistical Local Areas. Figures are based on estimates reported in the Transport Data Centre Issues Paper July 2003 'Ferry Users in Sydney'.*

Figure 3.2 CBD Employment 1991 to 2011



Source: Transport and Population Data Centre, NSW Department of Planning Small Area Employment Forecasts and Booz Allen Hamilton analysis.

Our estimated CBD employment elasticity was derived with reference to trip purpose market shares (i.e. 0.45). Applying this same methodology at a more disaggregate level, it is likely that the employment elasticity for weekday travel will be greater for weekday peak periods. Conversely, CBD employment is unlikely to be an important demand driver for off-peak weekday travel and weekend trips.

Moreover, CBD employment is likely to have a more significant impact on those routes characterised by a larger commuter segment such as the Manly JetCat, Woolwich, Mosman and Neutral Bay routes. By comparison CBD employment elasticities are likely to be lower on routes extending to tourist attractions such as Taronga Zoo, Darling Harbour and Manly.

We adopted an *aggregate* CBD employment elasticity of 0.45 for forecasting purposes.

3.2.3 Tourism

Sydney Harbour offers a range of recreational, environmental and cultural experiences. The harbour is often promoted as a place for tourists to visit when in Sydney.

NSW Tourism Promotion

"One of the popular ways to see the harbour in all its wide-reaching splendour is to take a ferry trip. Whatever route you choose, you'll take in some amazing scenes of Sydney on the way and you'll end up somewhere you'll be happy to spend the rest of the day, such as Taronga Zoo, Balmain, Rose Bay or Manly."

Source: Tourism New South Wales

Sydney Ferries actively promotes many of these harbour attractions and also offers specific products to many of these attractions as illustrated in Figure 3.3.

Figure 3.3 Sydney Ferries Corporation Tourism Promotions

Taronga Zoo Pass: This all-in-one pass includes the return ferry trip from Circular Quay to Taronga, Zoo entry, sky safari ride and bus connection to main entry gate.

Aquarium Pass: Sydney Aquarium is located next to the Darling Harbour wharf. This pass combines entry and return ferry. Sydney Aquarium is open 7 days.

Manly is one of the most popular beaches in Australia and a short walk from Manly Wharf. We operate 2 services to Manly - our flagship ferry and our high speed JetCat that run regularly seven days a week.

If you're looking for somewhere to go for the day, Darling Harbour has plenty to offer, and we can get you there with services running regularly from Circular Quay. Sydney Aquarium, Maritime Museum, IMAX Theatre, Star City Casino, Cockle Bay, the King Street Wharf precinct and the Chinese Gardens are all within walking distance

Our popular Parramatta River Services are something out of the ordinary. Parramatta is full of culture, historic Sydney architecture and plenty of great places to eat. A single trip takes around 50 minutes. Services run 7 days.

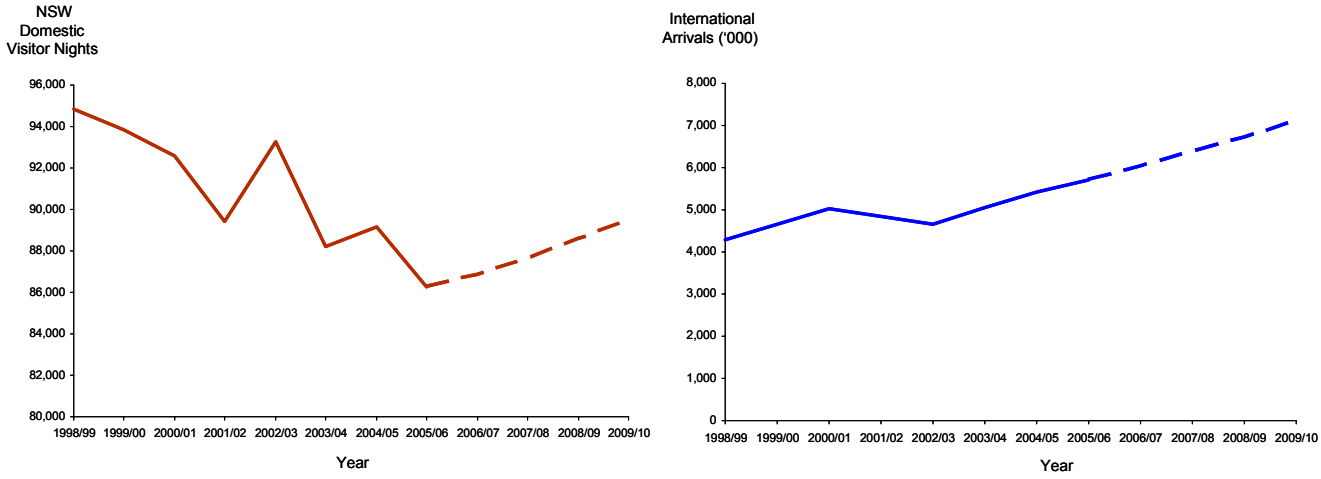
Watsons Bay is home to the world-famous Doyles Seafood Restaurant and some of the best fish and chips in Sydney at the Watsons Bay Hotel. Our service will drop you at their front door. It's a short walk from there to the spectacular views from Sydney Harbour's South Head. This service also stops at Double Bay, with some of the most exclusive shopping in Sydney. Services run 7 days.

Source: http://www.sydneyferries.info/attractions/

A significant share of ferry travel is made by non-Sydney residents, in particular overseas residents. The international visitor market has exhibited strong growth over the last few years and this growth is expected to remain solid (refer to Figure 3.4 below). The Tourism Forecasting Committee (TFC) forecasts international visitor arrivals to slow moderately to annual average growth rate of 5.5% over the next three years.

By comparison, domestic visitor nights have been progressively declining in recent years, although the TFC anticipates that this market will improve with growth of 0.9% per annum expected over the next three years.

Figure 3.4 Historic and Forecast Tourism Estimates – NSW Domestic Visitor Nights and International Arrivals (Australia), 1998/99 to 2009/10



Source: Tourism Forecasting Committee, October 2005.

The significance of 'tourism' on ferry demand was assessed as part of the time series OLS regression analysis. Although the regression model yielded a tourism elasticity of 0.2, this parameter was not statistically significant at the 95% confidence level.

We adopted a tourist elasticity on 0.25 based on our analysis of trip purpose market shares. This value was further disaggregated based on the relative share of 'overseas' and 'domestic' customers (i.e. 50% for each respective market). This is consistent with elasticities of 0.125 in each case. Importantly, the definition of 'tourist' excludes Sydney residents travelling for leisure purposes (refer to income discussion in Section 3.2.5).

Moreover, the mix of domestic and international tourists on ferries (i.e. 50:50) is different to that of the broader tourist market. This difference in market share reflects the high usage of ferries by international tourists. We estimate that per capita ferry trip rates for international visitors are very high averaging 2.6 trips per visitor and assert that this rate would be significantly lower for domestic visitors.

The most responsive tourism markets are likely to be on those routes which extend to Sydney's principal tourist attractions such as Darling Harbour, Taronga Zoo, Parramatta and Manly. On the other hand, tourism elasticities are likely to be relatively low during peak periods and on those routes serving a commuter market. For example, 'tourist' shares are as high as 33% for Taronga Zoo compared to only 7% for Woolwich.

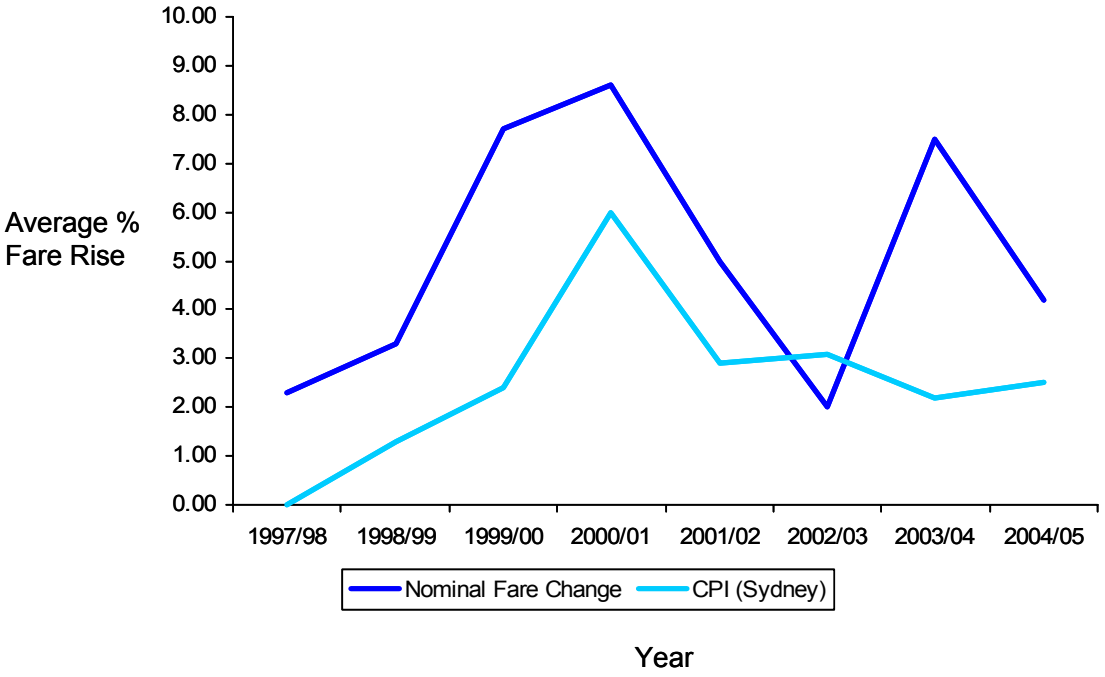
On a basis of the above explanation, we adopted an *aggregate* tourism elasticity of 0.25 for forecasting purposes.

An aggregate international tourist elasticity of 0.125 and an domestic tourist elasticity of 0.125 was adopted

3.2.4 Fare Levels

Ferry fares have generally increased by more than the Consumer Price Index (CPI) since 1997/98, with the exception of 2002/03 (see Figure 3.5).

Figure 3.5 Average Percentage Fare Rise Ferry Fares



Source: IPART Fares Determinations.

Two key market characteristics act to reduce the responsive of the Sydney Ferries market to fare changes relative to 'conventional' public transport:

- Firstly, unlike other transport modes, ferry trips are undertaken for their own sake (i.e. for sightseeing and leisure purposes) and hence the ferry trip is often the actual product rather than a derived demand facing competition from alternative transport modes
- Secondly, a significant proportion of the market are commuters characterised by above average incomes and hence this segment tends to be relatively unresponsive to fare changes.

The State Transit Authority derived a suite of ferry ticket type fare elasticities to model the impact of both proposed and actual fare changes associated with annual fare revisions. This model has been recalibrated each year to ensure a reasonable fit between observed and forecast outcomes. A weighted average fare elasticity of -0.22 was drawn from this model.

Elasticities at an individual ticket level (including cross-ticket effects) ranged from -0.14 for Daily Single and FerryTen tickets to -1.3 for the JetCatTen. The JetCat market is very price sensitive largely because the JetCat competes with the (albeit slower) Manly ferry.

Drawing on the available estimates, we adopted an *aggregate* fare elasticity of -0.22 for forecasting purposes

3.2.5 Real Incomes

Real income growth in New South Wales has been strong over the last decade with Gross State Product (GSP) growing at an average annual rate of 3.1% since 1995. NSW Treasury[3] report that this growth will continue at a rate of 2% for 2005/06 increasing to 3.7% in the medium term.

The demand for discretionary travel is assumed to be tied strongly to income growth. For example, in developing its demand models, London Underground has asserted that the spatial and temporal distribution of income elasticities mirrors the share of shopping and social trips in each market segment.

Taverner Research (2005) estimated that 43% of passengers travel on ferries for leisure purposes[4]. Accounting for the proportion of the leisure market that are tourists, this suggests that 18% of leisure travel is made by Sydney residents. Utilising the same approach as that used to derive CBD employment and tourism elasticities, an income elasticity of 0.18 was derived. Demand is likely to be most responsive to real income growth on weekends and on those routes that service 'leisure' attractions. Conversely, demand is likely to be relatively unresponsive to income changes in the morning peak. Some 88% of weekend travel is made by non-commuters, and as much as 42% of weekday travel is made by non-commuters with shares varying widely between routes.

We adopted an *aggregate* income elasticity of 0.18 for leisure travel by Sydney residents for forecasting purposes

3.2.6 Service Levels

Vessel kilometres were used to estimate service levels at a 'macro' level, specifically as an indicator of the number of services run[5]. Given that there has been limited change to the Sydney Ferries network over time, vessel kilometres could also be expected to provide a reasonable proxy of changes in service frequency.

Over the last decade vessel kilometres have been relatively flat and aggregate kilometres have in fact declined at an average rate of 2.2% per annum since 2000/01. This largely reflects a number of changes made to service patterns

[3] *NSW Treasury 2005/06 Budget Review.*

[4] *Assumed that leisure trips include shopping trips.*

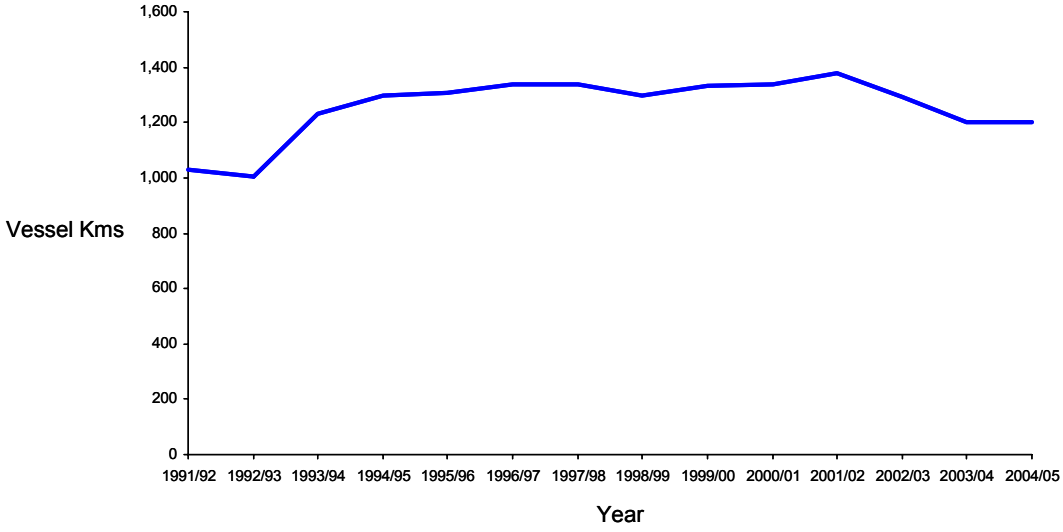
[5] We note that changes in service levels at a 'micro' (i.e. route or wharf level) were not explicitly captured (e.g. changes to stopping patterns, first and last services)

compared to the early to mid-1990s when a series of new Inner Harbour routes were established.

We believe that a reasonable estimate for a service level elasticity is around 0.2. This value is at the lower end of the typical range used for public transport services (i.e. typical range is 0.2 to 0.5[6]) and reflects the fact that a significant shift in service levels would probably be required to impact materially on the demand for Sydney Ferries services. For example, at a 30 minute frequency, a 10% increase in service levels would only reduce average frequency to 27 minutes. Such a modest change would still leave customers highly dependent on a timetable and would not be expected to translate into a significant demand response.

Importantly, given service levels have remained relatively flat over the last decade, we are not allowing for any changes in service levels over the forecast horizon.

Figure 3.6 Sydney Ferries Vessel Kms (000s) 1991/92 to 2004/05



Note: 2004/05 is an estimate only based on the weighted average growth 1994/95 to 2003/04.
Source: State Transit Authority and Sydney Ferries Corporation Annual Reports.

3.2.7 Population

Population growth is assumed to be the driver of 'other' travel. That is travel made by trip purposes such as personal business (i.e. going to the doctor etc) visiting friends and relatives and education trips. Having calculated the employment, tourism and income elasticities, the population elasticity was estimated as the 'residual' item (i.e. such that CBD employment, tourism, income and population elasticities sum to 1.0) implying a population elasticity of 0.12.

An aggregate population elasticity of 0.12 was used for forecasting purposes

[6] *Booz Allen Hamilton (2003) 'Passenger Transport Elasticities', Transfund, New Zealand.*

4 Secondary and Tertiary Demand Drivers

A range of secondary and tertiary factors can contribute to patronage growth such as:

- Major land use changes
- Proposed services extensions and changes
  - Proposed plans for service changes (i.e. new routes, changes in stopping patterns etc)
- Service quality enhancements such as:
  - Improved reliability and running time
  - Wharf upgrades
  - New and refurbished vessels
  - Cleanliness
- Marketing and Promotions
- Changes in Fare Structures.

These factors are extremely important in driving growth within a mature market.

4.1 Service Levels and Quality

Sydney Ferries Corporation (SFC) offered some general comments regarding service and service quality initiatives including:

- A tender for the re-engining the nine First Fleet and three Rivercats is in process. Once completed, the fleet improvements will more than likely translate into reliability improvements for customers
- No major infrastructure changes are planned (i.e. new wharfs).

Given the lack of details regarding service initiatives, no provision was made for these effects in our analysis. That is, our primary forecasts were not augmented by secondary and tertiary forecasts pertaining to enhancements to Sydney Ferries vessels, wharves or other initiatives directed at improving service quality. Moreover, with the exception of the Garden Island service, no allowance was made for the establishment of new services and/or major timetable changes.

Analysis of the recent service changes incorporated into the Watson's Bay service, which involves re-routing via Garden Island to visit the Royal Australian Navy (RAN) Heritage Centre, was made possible through data supplied by the RAN on boardings and disembarkments at Garden Island.

4.1.1 Garden Island Service

In October 2005, the Watson's Bay service was adjusted to service the re-opened Garden Island wharf to deliver passengers to the RAN Heritage Centre. Ten off-peak Watson's Bay Loop services operate between 9.26am and 4.06pm weekdays. As this change affects off-peak services, it is assumed to have no impact on the patronage levels on the route as a whole (i.e. via capacity or travel time issues).

Since re-opening, the wharf has attracted approximately 22,000 trips in 2005/06. Allowing for ramp-up of patronage to the average January 2006 to June 2006 level, a reasonable annualised approximation of patronage is around 35,000 passengers (June 6-month moving average x 12) trips per year.

Table 2 Garden Island Patronage Since October 2005

Month	Patronage	6-monthly moving average
Oct 2005	1,390	
Nov 2005	1,740	
Dec 2005	1,270	
Jan 2006	2,610	
Feb 2006	2,910	
Mar 2006	3,270	
Apr 2006	3,490	2,550
May 2006	3,000	2,760
Jun 2006	2,250	2,920

Source Booz Allen Hamilton Analysis on RAN counts

As suggested above, these additional tourism trips are made as part of the Watson's Bay ferry service. In the analysis, they are added to the Watson's Bay run after primary and secondary calculations are performed and subject to the same overall growth experienced within each scenario.

4.2 Major Land Use Developments

Forecast growth in the ferry catchment population plays an important role in shaping future ferry demand, particularly those major residential developments around ferry wharfs.

Sydney Harbour is a highly valued asset and the development of land around the harbour is under constant scrutiny by both State and Local Government Authorities. In 1998 the State Government recognised that the planning and management of Sydney Harbour needed to be re-organised and strengthened to protect the natural and cultural heritage of the Harbour.

A number of principles have been developed to guide future land use of Harbour foreshore land. In addition, the Government is set to declare prime sites along the

Harbour and Parramatta River, including land in Federal, State or private ownership, as sites of State significance. These sites are identified in a State Environmental Planning Policy, which will ensure that the Minister will be the consent authority for some sites, and on other sites require the consent authority, usually local councils, to prepare strategic plans in accordance with guidelines published by the State Government.

The prospect for significant growth around the harbour foreshore is therefore unlikely, although, as discussed below, there are still a number of specific developments generating a large number of dwellings in many former industrial sites.

4.2.1 Review of Current and Future Residential Developments

To ensure that recent and planned residential development activities at locations around ferry wharfs were captured in the forecasts, a detailed assessment of major residential developments was undertaken by UrbisJHD for Booz Allen Hamilton. Major developments were defined as those developments that are greater than 10 dwellings.

This included an analysis of the following:

- Residential developments completed in the last 4 years
- Developments that are currently under construction
- Developments that are proposed for development within the next three years.

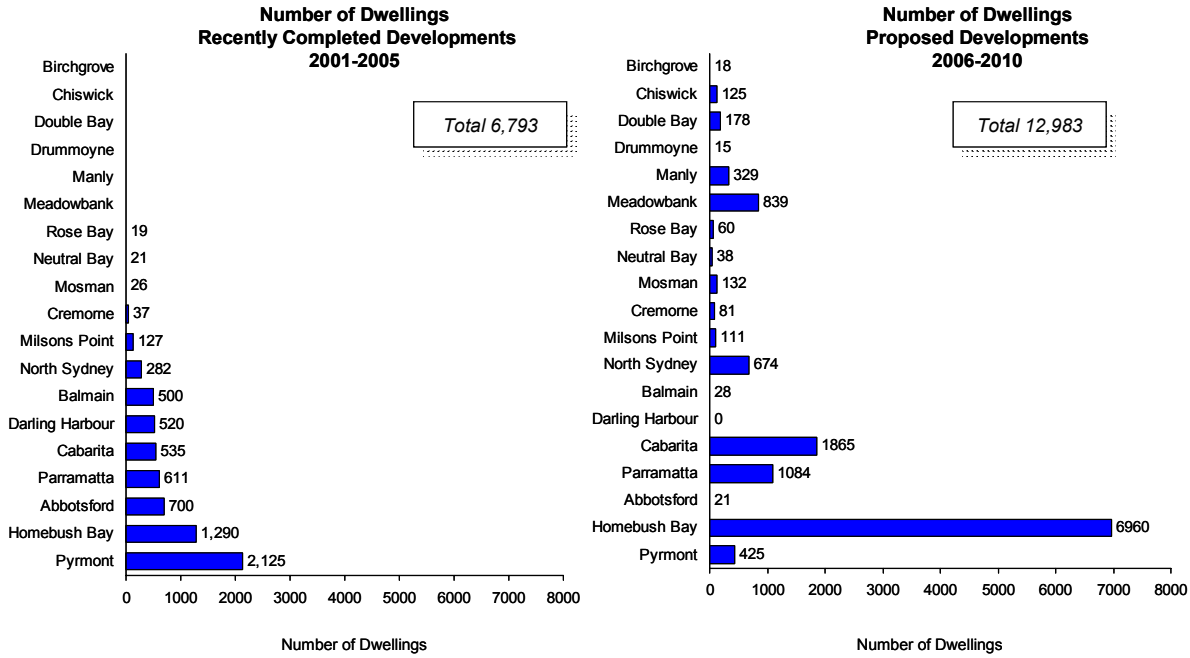
Over 10 different local government areas were examined. The findings revealed a total of 12,982 new dwellings are under construction or are planned over the next five years. This compares to 6,793 that were constructed between 2000 and 2005.

Importantly, the residential development activity is concentrated throughout particular areas of the harbour. The most activity is in locations along the Parramatta River such as Meadowbank, Homebush Bay, Cabarita and Abbotsford and Balmain to a lesser extent.

Darling Harbour and Pyrmont Bay also represent prime development locations, although Darling Harbour does not have any major developments planned over the next 5 years.

Figure 4.1 highlights the number of major developments recently completed or being proposed that are located within close proximity of each ferry wharf. It is worth noting that those ferry wharfs not mentioned in the list (e.g. Watson's Bay, Taronga Zoo, Greenwich, Kirribilli etc.) did not feature in the data search. It is highly likely that this reflects the fact that dwellings growth in these areas is characterised by developments that are less than 10 dwellings.

Figure 4.1 Number of Dwellings by Ferry Wharf



Note: Developments that are currently proposed include those under construction, developments where a Development Application has been approved or lodged and those developments that are in their early planning stages.
Source: Booz Allen Hamilton analysis of data supplied by UrbisJHD.

As illustrated above, the primary source of dwellings growth around the harbour is Homebush Bay. Over the last five years, Homebush Bay experienced significant growth of almost 1,300 dwellings and significantly more developments are planned over the next five years, with almost 7,000 dwellings either under construction or in their planning stages. Major developments proposed for Homebush including the Sydney Olympic Park Authority Site and Millennium Waters by Billbergia (i.e. 1,400 dwellings).

Areas along the Parramatta River and North Sydney and Milsons Point have also been characterised by solid dwellings growth in recent years which is forecast to continue over the next five years.

Within Parramatta, mooted developments, which are still in the early planning phase, include the Civic Centre re-development (i.e. approximately 600 residential units) and the proposed development along the Parramatta foreshore which will equate to 400 residential units and townhouses.

In more established suburbs, such as Abbotsford, Birchgrove and the Eastern Suburbs of Rose Bay, Double Bay and Watsons Bay, new residential development is limited. There is generally a lack of medium to large development sites and redevelopment opportunities in these areas. Moreover, many of the residential developments generally comprise 10 dwellings or less.

4.2.2 Population Forecasts

To estimate the impact of changes in the ferry catchment population, two primary sources of information were investigated:

- Small area forecasts were obtained from the Transport and Population Data Centre, NSW Department of Planning (TPDC)
- The detailed assessment of existing and major planned residential developments around wharves over the next five years undertaken by UrbisJHD for Booz Allen Hamilton

The TPDC forecasts are based on forecasting models and provisional small area estimates, which are normally used as inputs in other modelling processes such as strategic level forecasting. We note that these forecasts are different from the official Population Projections produced at a much broader geographical level which are sanctioned by the NSW Government.

Nevertheless, the TPDC figures provided an indication of underlying changes in the ferry catchment population. The ferry catchment was defined by a zone system based on a series of smaller zones that are within an approximate 500 meter walking buffer from each ferry stop and larger buffer zones.[7]

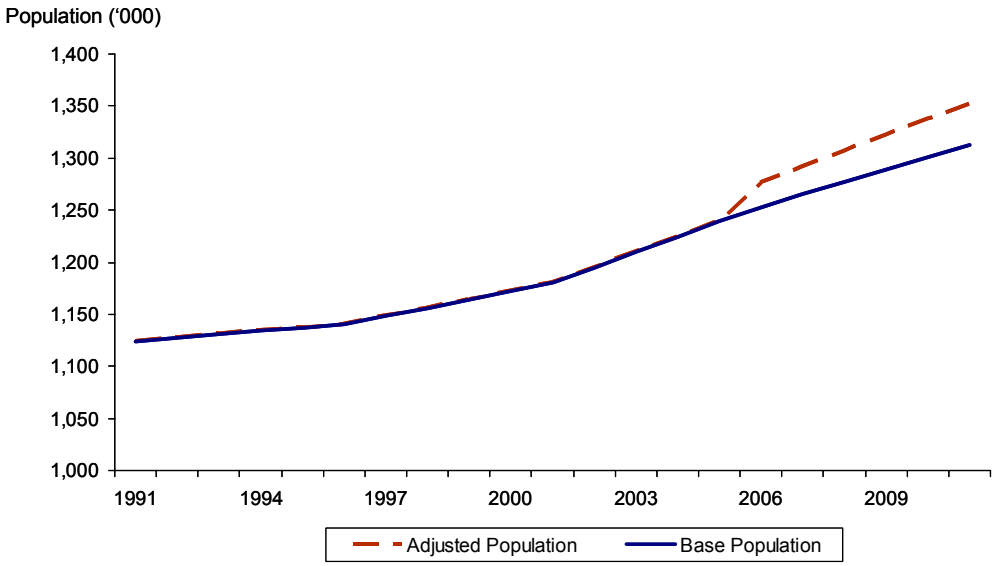
The TPDC population forecasts were combined with the dwellings analysis completed by UrbisJHD.

We assumed an average persons per household of 2.5 for our high case, 2.2 for our base case and 2.0 for our low case. These assumptions of persons per household are based on the fact that two bedroom apartments are the most common form of dwelling type and that the Australian Bureau of Statistics (ABS) reports that average household size is forecast to fall to 2.5 persons per household by 2011 and to 2.2 by 2026.

Figure 4.2 illustrates the difference in the projected catchment population. The base population estimate is a function of the TPDC forecasts for the ferry catchment. This equates to an average annual growth rate of 0.9% per annum (2005 to 2011). However, this figure increases to 1.5% per annum once major land use changes identified by UrbisJHD are captured in the forecasts.

[7] *In general the zone system was based on TPDC small area data (i.e. travel zones), or an amalgamation thereof*

Figure 4.2 Ferry Catchment Population Forecast, 2005 to 2011



Source: Booz Allen Hamilton analysis of data supplied by UrbisJHD and TPDC.

This growth in population is somewhat varied throughout the catchment area. Extremely strong growth of almost 30% per annum will be experienced at Homebush Bay, although this is from a very low base. Very strong growth will also be experienced at Cabarita, Parramatta and Pyrmont. It implies that the Parramatta route has the most significant prospect of growth in the future. Table 4.3 summarises the forecast growth rates (per annum) for each ferry wharf location.

Table 4.3 Ferry Catchment Growth Rates by Location, 2005 to 2011

Growth Rate Per Annum (%)	Location
Greater than 3%	▸ Homebush Bay, Parramatta, Cabarita, Pyrmont Bay, Manly
2% to 3%	▸ Milsons Point, Meadowbank, Darling Harbour, Cremorne
1% to 2%	▸ Double Bay, Rydalmere, Rose Bay, Mosman and South Mosman, Circular Quay, Neutral Bay, Kurraba Point, Hunters Hill
0% to 1%	▸ All other ferry wharf locations

Source: Booz Allen Hamilton analysis of data supplied by UrbisJHD and TPDC.

5 Ferry Forecast Scenarios

5.1 Forecast Definition

The composition of the three forecasts in terms of primary, secondary and tertiary components is summarised in Table 5.1. We note that:

- The base case includes the primary forecast and captures *some* (i.e. 50%) of the upside associated with land use developments
- The high case includes the primary forecasts and all of the upside associated with the land use developments
- The low case assumes lower than expected employment growth, tourism, income growth and population. It was assumed that growth will be 50% lower than that forecast under the base case.

Table 5.1 Ferry Forecast Scenarios

Scenario	Primary	Secondary	Tertiary
Base Case	Yes	Yes (50% of High)	No
High	Yes	Yes	No
Low	Yes (50% of Base)	No	No

Source: Booz Allen Hamilton.

5.2 Scenario

Future growth scenarios for each model parameter were developed over the forecast horizon (refer to Table 5.2).

Table 5.2 Summary of Forecast Scenarios – Base Case

Variable	Forecast Assumption	Source
Real Fares	1% per annum over the forecast horizon	IPART
Service Levels	No change over the forecast horizon	Booz Allen assumption based on past trends
Real Income (GDP)	2.0% (2005/06) increasing (linearly) to 3.75% by 2008/09	Based on NSW Treasury 2005-06 and Medium Term Budget Review Forecasts
Tourism	Overseas Visitors 5.5% per annum over the forecast horizon Domestic Visitors 0.9% per annum over the forecast horizon	Tourism Forecasting Council

Variable	Forecast Assumption	Source
Catchment Population	1.2% over the forecast horizon	Booz Allen analysis of TPDC Small Area Forecasts for Zones within the Sydney Ferry Catchment
CBD Employment	1% per annum over the forecast horizon	Booz Allen analysis of Sydney CBD forecasts provided by NSW Transport and Population Data Centre

Source: Booz Allen Hamilton.

Trip rates per capita were estimated to determine those changes in demand attributable to major land use developments. It is acknowledged that many of these changes are confined to particular areas of the catchment and specific ferry routes. However, it was not possible to isolate the impact on each individual route since route specific data is not available.

There are a number of factors that will impact on the forecasts:

- Approval of development applications
- The timing of the developments (i.e. on-time or delayed)
- The propensity of the new residents to travel on the ferry (i.e. are these developments within a viable distance from each ferry wharf?)

To account for the range of risks associated with these developments, forecast ferry trip rates associated with new land use developments were adjusted downward by 75% under our base case.

5.3 Forecasts

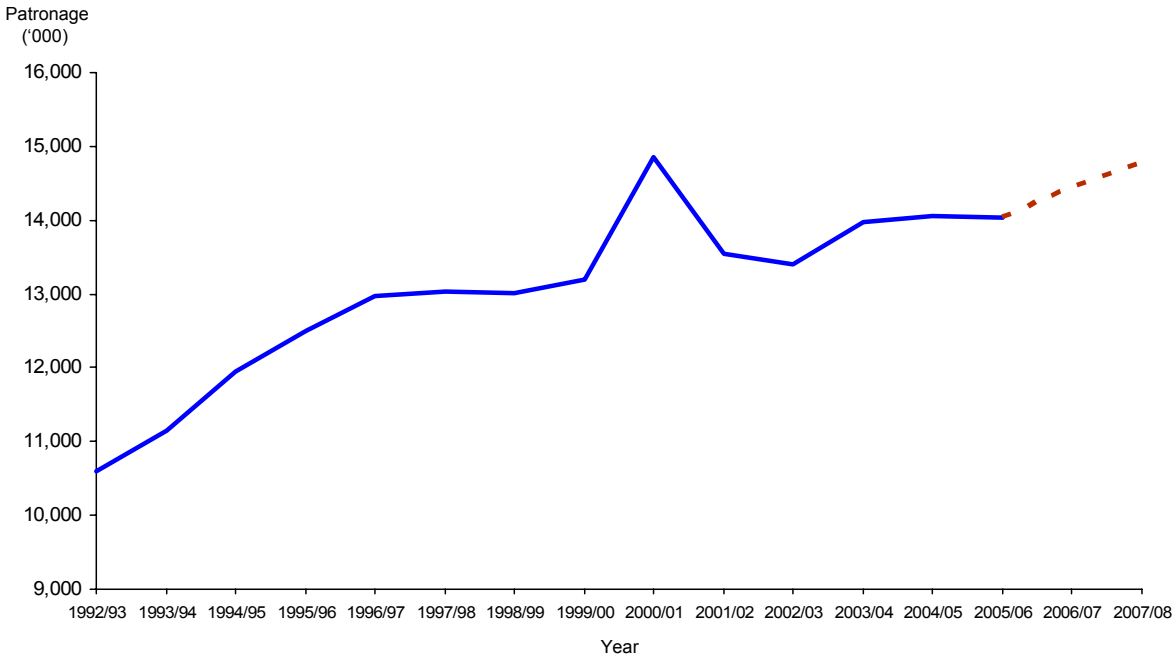
Table 5.3 sets out the patronage forecasts under each scenario and Figure 5.1 illustrates the base case forecast.

Table 5.3 Ferry Forecasts 2004/05 to 2007/08 by Forecast Scenario (000s)

Year	Base	High	Low
2004/05(1)	14,052	14,052	14,052
2005/06(1)	14,028	14,028	14,028
2006/07	14,446	14,615	14,170
2007/08	14,778	15,052	14,284

Source: Sydney Ferries data and Booz Allen Hamilton estimates.
Note: (1) Historical Data

Figure 5.1 Base Case Historical and Forecast Patronage, 1993/94 to 2007/08



Source: Booz Allen Hamilton analysis.

The base case forecast is consistent with Sydney Ferries patronage increasing from 14.03 million passengers in 2005/06 to 14.78 million passengers in 2007/08, representing an increase of 750,000 passengers. This represents an increase of 5.4% over two years or 2.6% per annum.

The low and high forecasts are consistent with average annual growth rates of 0.9% and 3.6% per annum respectively. This is consistent with patronage reaching 14.28 million (low) and 15.05 million (high) in 2007/08.

5.4 Forecasts by Route and Ticket Type

5.4.1 Forecasts by Route

The forecasts in Table 5.3 were disaggregated by route with reference to existing market shares, which were then adjusted to reflect the impact of land use developments scheduled to be completed within the next five years. Each development was assessed for its proximity to the nearest Sydney Ferries wharf and in turn each wharf was examined to determine the routes that service each wharf. In some instances, developments are close to a wharf serviced by two or more routes. In such cases, estimated new passengers were disaggregated across the respective routes in accordance with service levels (i.e. number of weekday services to the wharf by route). The results of the analysis show that Parramatta and Rydalmere routes derive the greatest benefits from future land use developments due to the large number of expected developments progressing or planned at Homebush Bay and Parramatta.

Our forecasts by route are detailed in Attachment B.

5.4.2 Forecasts by Ticket Type

To produce forecasts by ticket type, consideration was given to likely movements in ticket type market shares between 2005/06 and 2007/08.

Figure 2.6 revealed that both the TravelPass and DayTripper share of total Sydney Ferries boardings has increased significantly in recent years. Table 5.4 below summarises our assumptions regarding future changes in Sydney Ferries boarding by ticket type. Our projections provide for increases in the TravelPass and DayTripper market shares, which will by offset by decreases in the Daily Single and FerryTen market share.

The rationale behind the assumptions detailed in Table 5.4 can be summarised as follows:

- Decreases in market share of Single and FerryTen products could be expected due to increases in price across the board (excluding Jet Cat)
- DayTripper market share increase could be expected to further increase given that the price was not increased as part of the December 2005 determination
- Further growth in the TravelPass market share could be expected as some variants of the product were held constant in the December 2005 Sydney Ferries fare determination

Table 5.4 Market Shares by Ticket Type, 2005/06 and 2007/08

Ticket Type	2005/06	2007/08	% Change
Daily Single	28.7%	26.7%	-2.0%
FerryTen	20.8%	19.8%	-1.0%
TravelPass	20.7%	21.5%	0.8%
PET	12.8%	12.8%	No Change
DayTripper	11.6%	14.2%	2.6%
Other	5.3%	5.0%	-0.3%
Total	100.0%	100.0%	

Note: Figures may not add to totals due to rounding.
Source: Sydney Ferries data and Booz Allen Hamilton estimates.

Attachment B provides details of our forecasts by ticket type.

Attachment A
Regression Results

Year	Ferry Catchment Population	Ferry Patronage	Real Fares	Service Kms	Real GSP	CBD Employment	International Tourism
1992/93	1,127,271	10,587	$ 2.32	1,003	139,360	145,502	2,996
1993/94	1,130,586	11,156	$ 2.35	1,230	141,547	149,887	3,179
1994/95	1,133,900	11,938	$ 2.05	1,299	143,199	154,271	3,544
1995/96	1,137,215	12,508	$ 2.06	1,308	144,114	158,656	3,966
1996/97	1,140,529	12,977	$ 2.04	1,337	152,086	163,040	4,253
1997/98	1,148,514	13,036	$ 2.11	1,338	162,404	167,546	4,220
1998/99	1,156,499	13,014	$ 2.14	1,298	169,023	172,052	4,288
1999/00	1,164,485	13,187	$ 2.31	1,333	173,589	176,558	4,652
2000/01	1,172,470	14,844	$ 2.08	1,338	173,797	181,064	5,031
2001/02	1,180,455	13,541	$ 2.06	1,378	180,181	185,570	4,844
2002/03	1,195,028	13,405	$ 2.01	1,294	184,484	186,630	4,656
2003/04	1,209,601	13,969	$ 2.11	1,201	191,088	187,689	5,057
2004/05	1,224,174	14,052	$ 2.15	1,200	196,849	188,749	5,408

Time series demand models were developed using ordinary least squares (OLS) regression techniques to establish the primary determinants of the demand for Sydney Ferries services and associated elasticity estimates for forecasting purposes. A log-linear functional form was applied in all cases and hence the resultant coefficients can be interpreted directly as elasticities.

The regression analysis did not yield statistically significant outcomes for the variables and a number of the variables were the wrong sign (see results below). The primary reasons for this unsatisfactory include:

- The limited number of observations and low degrees of freedom (i.e. the historical data was often insufficient and required linear interpolation or was not available for years pre-dating 1992/93)
- The presence of multicollinearity typified by the High R-square and low t-stats and high standard errors

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.96
R Square	0.92
Adjusted R Square	0.82
Standard Error	0.04
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	0.09	0.01	9.28	0.01
Residual	5	0.01	0.00		
Total	11	0.10			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	28.24	31.76	0.89	0.41	(53.41)	109.89	(53.41)	109.89
Real Fares	(0.15)	0.35	(0.43)	0.69	(1.04)	0.74	(1.04)	0.74
CBD Employment	1.92	1.48	1.30	0.25	(1.88)	5.73	(1.88)	5.73
Tourism	0.28	0.26	1.07	0.33	(0.39)	0.94	(0.39)	0.94
Service Kms	(0.16)	0.35	(0.46)	0.67	(1.07)	0.75	(1.07)	0.75
Real GSP	(0.61)	0.98	(0.63)	0.56	(3.14)	1.91	(3.14)	1.91
Population	(2.55)	2.68	(0.95)	0.38	(9.44)	4.33	(9.44)	4.33

Attachment B
Patronage Forecasts by Ticket Type and Route

Patronage Forecasts by Ticket Type – Base

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Cash Fares	3,935	4,275	4,750	4,861	4,944	4,984	4,869	4,685	5,108	4,134	3,882	4,244	4,255	4,032	4,004	3,946
Ferry Ten	1,534	1,531	1,727	1,838	1,879	2,064	2,181	2,345	2,659	2,583	2,522	2,916	3,008	2,920	2,934	2,926
Travel Pass	2,438	2,467	2,468	2,507	2,562	2,547	2,660	2,617	2,847	2,817	2,517	2,700	2,589	2,910	3,051	3,177
Pet	1,350	1,519	1,744	1,910	1,964	1,883	1,857	1,845	2,017	1,823	1,734	1,820	1,798	1,796	1,850	1,892
Day Tripper	0	0	0	0	0	0	0	0	0	957	1,129	1,418	1,609	1,625	1,862	2,099
Other	1,330	1,365	1,250	1,392	1,628	1,558	1,446	1,694	2,214	1,228	1,622	870	793	744	744	739
Total	10,587	11,156	11,938	12,508	12,977	13,036	13,014	13,187	14,844	13,541	13,405	13,969	14,052	14,028	14,446	14,778

Source: Booz Allen Hamilton Analysis

Patronage Forecasts by Ticket Type – High

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Cash Fares	3,935	4,275	4,750	4,861	4,944	4,984	4,869	4,685	5,108	4,134	3,882	4,244	4,255	4,032	4,051	4,019
Ferry Ten	1,534	1,531	1,727	1,838	1,879	2,064	2,181	2,345	2,659	2,583	2,522	2,916	3,008	2,920	2,968	2,980
Travel Pass	2,438	2,467	2,468	2,507	2,562	2,547	2,660	2,617	2,847	2,817	2,517	2,700	2,589	2,910	3,087	3,236
Pet	1,350	1,519	1,744	1,910	1,964	1,883	1,857	1,845	2,017	1,823	1,734	1,820	1,798	1,796	1,871	1,927
Day Tripper	0	0	0	0	0	0	0	0	0	957	1,129	1,418	1,609	1,625	1,884	2,137
Other	1,330	1,365	1,250	1,392	1,628	1,558	1,446	1,694	2,214	1,228	1,622	870	793	744	753	753
Total	10,587	11,156	11,938	12,508	12,977	13,036	13,014	13,187	14,844	13,541	13,405	13,969	14,052	14,028	14,615	15,052

Source: Booz Allen Hamilton Analysis

Patronage Forecasts by Ticket Type – Low

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Cash Fares	3,935	4,275	4,750	4,861	4,944	4,984	4,869	4,685	5,108	4,134	3,882	4,244	4,255	4,032	3,928	3,814
Ferry Ten	1,534	1,531	1,727	1,838	1,879	2,064	2,181	2,345	2,659	2,583	2,522	2,916	3,008	2,920	2,878	2,828
Travel Pass	2,438	2,467	2,468	2,507	2,562	2,547	2,660	2,617	2,847	2,817	2,517	2,700	2,589	2,910	2,993	3,071
Pet	1,350	1,519	1,744	1,910	1,964	1,883	1,857	1,845	2,017	1,823	1,734	1,820	1,798	1,796	1,814	1,828
Day Tripper	0	0	0	0	0	0	0	0	0	957	1,129	1,418	1,609	1,625	1,827	2,028
Other	1,330	1,365	1,250	1,392	1,628	1,558	1,446	1,694	2,214	1,228	1,622	870	793	744	730	714
Total	10,587	11,156	11,938	12,508	12,977	13,036	13,014	13,187	14,844	13,541	13,405	13,969	14,052	14,028	14,170	14,284

Source: Booz Allen Hamilton Analysis

Patronage Forecasts by Route – Base

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Balmain	158	167	178	187	194	195	195	197	223	203	203	206	209	209	274	282
Darling Harbour	777	819	876	918	952	956	955	967	1,095	997	997	1,012	1,024	1,026	1,066	1,090
Hunters Hill	305	322	344	361	374	376	375	380	430	392	392	397	402	403	418	427
Mosman	756	796	852	893	926	931	929	941	1,065	970	970	984	996	999	1,038	1,059
Neutral Bay	597	629	673	705	731	735	733	743	841	766	766	777	787	789	823	850
Taronga Zoo	1,056	1,113	1,191	1,247	1,294	1,300	1,298	1,315	1,488	1,355	1,355	1,375	1,392	1,395	1,442	1,472
Watsons Bay	752	793	848	889	922	926	925	937	1,060	965	965	980	992	994	1,066	1,092
JetCat	592	624	667	699	726	729	728	737	737	671	671	857	880	874	722	737
Manly	4,451	4,691	5,019	5,259	5,456	5,481	5,472	5,544	6,273	5,712	5,713	5,798	5,869	5,882	6,078	6,206
Parramatta	1,081	1,139	1,219	1,277	1,325	1,331	1,329	1,347	1,545	1,431	1,294	1,501	1,420	1,374	1,436	1,478
Tourism & Charter	62	65	70	73	76	76	76	77	87	80	80	81	82	82	85	87
Total	**10,587**	**11,156**	**11,938**	**12,508**	**12,977**	**13,036**	**13,014**	**13,187**	**14,844**	**13,541**	**13,405**	**13,969**	**14,052**	**14,028**	**14,446**	**14,778**

Source: Booz Allen Hamilton Analysis

Patronage Forecasts by Route – High

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Balmain	158	167	178	187	194	195	195	197	223	203	203	206	209	209	379	395
Darling Harbour	777	819	876	918	952	956	955	967	1,095	997	997	1,012	1,024	1,026	1,074	1,104
Hunters Hill	305	322	344	361	374	376	375	380	430	392	392	397	402	403	419	430
Mosman	756	796	852	893	926	931	929	941	1,065	970	970	984	996	999	1,047	1,072
Neutral Bay	597	629	673	705	731	735	733	743	841	766	766	777	787	789	838	885
Taronga Zoo	1,056	1,113	1,191	1,247	1,294	1,300	1,298	1,315	1,488	1,355	1,355	1,375	1,392	1,395	1,440	1,475
Watsons Bay	752	793	848	889	922	926	925	937	1,060	965	965	980	992	994	1,070	1,106
JetCat	592	624	667	699	726	729	728	737	737	671	671	857	880	874	737	754
Manly	4,451	4,691	5,019	5,259	5,456	5,481	5,472	5,544	6,273	5,712	5,713	5,798	5,869	5,882	6,071	6,219
Parramatta	1,081	1,139	1,219	1,277	1,325	1,331	1,329	1,347	1,545	1,431	1,294	1,501	1,420	1,374	1,456	1,525
Tourism & Charter	62	65	70	73	76	76	76	77	87	80	80	81	82	82	85	87
Total	**10,587**	**11,156**	**11,938**	**12,508**	**12,977**	**13,036**	**13,014**	**13,187**	**14,844**	**13,541**	**13,405**	**13,969**	**14,052**	**14,028**	**14,615**	**15,052**

Source: Booz Allen Hamilton Analysis

Patronage Forecasts by Route – Low

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Balmain	158	167	178	187	194	195	195	197	223	203	203	206	209	209	238	241
Darling Harbour	777	819	876	918	952	956	955	967	1,095	997	997	1,012	1,024	1,026	1,047	1,055
Hunters Hill	305	322	344	361	374	376	375	380	430	392	392	397	402	403	411	414
Mosman	756	796	852	893	926	931	929	941	1,065	970	970	984	996	999	1,019	1,026
Neutral Bay	597	629	673	705	731	735	733	743	841	766	766	777	787	789	806	816
Taronga Zoo	1,056	1,113	1,191	1,247	1,294	1,300	1,298	1,315	1,488	1,355	1,355	1,375	1,392	1,395	1,420	1,430
Watsons Bay	752	793	848	889	922	926	925	937	1,060	965	965	980	992	994	1,048	1,057
JetCat	592	624	667	699	726	729	728	737	737	671	671	857	880	874	707	712
Manly	4,451	4,691	5,019	5,259	5,456	5,481	5,472	5,544	6,273	5,712	5,713	5,798	5,869	5,882	5,985	6,028
Parramatta	1,081	1,139	1,219	1,277	1,325	1,331	1,329	1,347	1,545	1,431	1,294	1,501	1,420	1,374	1,407	1,422
Tourism & Charter	62	65	70	73	76	76	76	77	87	80	80	81	82	82	83	84
Total	**10,587**	**11,156**	**11,938**	**12,508**	**12,977**	**13,036**	**13,014**	**13,187**	**14,844**	**13,541**	**13,405**	**13,969**	**14,052**	**14,028**	**14,170**	**14,284**

Source: Booz Allen Hamilton Analysis