



Blue Highways

June 2018

In memory of Vanessa Juresic
Your policy insights have forever shaped our city

About the NRMA

Better transport infrastructure has been a core focus of the NRMA since 1920 when our founders lobbied for improvements to the condition of Parramatta Road in Sydney. Independent advocacy was the foundation activity of the organisation and remains critical to who we are as we approach our first centenary.

The NRMA has grown to one of the largest tourism and transport companies in Australia, representing over 2.6 million Australians principally from NSW and the ACT. The NRMA provides motoring, transport and tourism services to our Members and the community.

Today, the NRMA works with policy makers and industry leaders to advocate for transport solutions that help solve key pain points such as congestion, access and affordability and connect people and communities. The NRMA is passionate about facilitating travel across Australia, recognising the vital role tourism plays in supporting regional communities.

By working together with all levels of government to deliver integrated transport and tourism options we can provide for the future growth of our communities and continue to keep people moving for generations to come.

The NRMA would like to thank McConnell Dowell and Royal HaskoningDHV for engineering and materialising the concept of 'Western Quay'.

Comments and queries

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Foreword

In the ten years since the Report of the Special Commission of Inquiry into Sydney Ferries Corporation much has changed on the harbour.

We now see Sydney Harbour Ferries operated under performance-based contract by a global public transport leader and new fast services run to Manly. Costs to government are down and customer satisfaction is up.

The positive influence of private operators partnered with — not in place of — strong government planning and oversight has been confirmed.

Despite this progress, largely in the three years following the release of the review, reform has stalled. The best services on the harbour are limited to a handful of enclaves to the north.

With thousands of new Sydneysiders pouring into the growing urban heartland in the Central River City and the Greater West, it is clear that a new wave of reform is needed.

The historic dual city centres of Parramatta and the harbour CBD were established because of their proximity to the water. However the connection between waterways and transport has been allowed to erode, like many others globally, with the rise of the automobile.

Improved ferry services can link the two ends of the drowned river valley that once dominated the Sydney Basin landscape. The extension of faster, more comfortable and less heavily subsidised ferry services of the type seen elsewhere on the harbour to the River City is the logical extension of the reforms proposed by the Special Commission.

I am pleased to see a service-orientated organisation like the NRMA directly contributing to the reform of services on the waterways, most particularly because of the role the automobile played in the decline of earlier services.

Bret Walker SC

Executive summary

Urban congestion in and around densifying residential and business precincts has resulted in the need for new public transport services, for which ferries on uncongested waterways offer significant advantages.

Prior to the opening of the Sydney Harbour Bridge, ferries were an intrinsic part of Sydney's transport network, carrying up to 47 million passengers a year – far more than today. While ferries continue to traverse Port Jackson, commuter services remain largely underutilised.

Current ferry operations exist across most major routes and waterways, however opportunities exist to expand the network and provide new customer-focused services as an alternative form of modern commuting.

Following the recommendations of the Special Commission of Inquiry into Sydney Ferries Corporation, the Sydney Ferries Network was franchised in 2012. Since franchising, customer satisfaction has increased along with an approximate 12 per cent cost saving to government. These benefits coincide with the deregulation of the Circular Quay–Manly route, where the heavily-subsidised Jetcat service was replaced by an unsubsidised fast ferry service.

While these benefits are significant, there are additional opportunities to provide benefits to customers and improve cost recovery across the ferry network, potentially further reducing or negating the need for government subsidy. With transport funding from government competing with healthcare, education and other services, private involvement is expected to increase.

Reforming the market for the provision of new and improved services, particularly in fast-growing waterside areas, offers the opportunity to improve the network for commuters, visitors and tourists.

If the use of our waterways can be optimised and new services added to support growth areas, road and rail capacity pressures will be reduced, leading to increased productivity. In congested urban areas, ferries can provide a faster and more enjoyable travel option than competing modes of transport.

Ferries are also desirable for the fact that they demand little capital compared with most transport infrastructure, including road and rail. Highly agile, ferry services can be delivered quickly, providing a low-cost, desirable entry point with significant potential to rapidly meet capacity or service shortfalls.

In the Greater Sydney Region, an expanded ferry network providing faster and more direct services, particularly along Parramatta River, will complement the Greater Sydney Commission's 'Three Cities' plan and associated infrastructure plans by delivering 30-minute cities.

Parramatta River is central to some of the fastest growing suburbs and precincts in Australia and is positioned at the heart of a number of large-scale urban renewal projects that will underpin continued population and workforce growth for decades to come.

Given current and anticipated growth along the corridor, the establishment of a central multi-modal interchange, complemented by day-to-day services, desirable amenities and surrounding places of interest, would present those wishing to

access work, education and major events with a quality transport experience. Sydney Olympic Park, Rydalmere, Meadowbank and Rhodes offer the greatest opportunity for this type of mobility and recreation precinct.

Patronage on services along the Parramatta River is currently low, resulting in a high operating cost per passenger. While Parramatta River presents several challenges for ferry operations, including narrow points, speed restrictions and tide fluctuations, technologies now available are capable of providing solutions. Opportunities, therefore, exist for major service improvements to better cater for the growing suburbs and precincts between the Sydney and Parramatta CBDs, thus supporting the viability of these services.

In Sydney Cove, the proposed redevelopment of Circular Quay offers the opportunity to better align planning, operations, wharves and services. Outer Harbour (Manly), Inner Harbour (including the Eastern Suburbs) and Parramatta River services should make better use of wharves to reduce vessel crossover. This type of arrangement would improve access and optimise the use of new wharf infrastructure.

While new fleet and wharf infrastructure has been funded in recent times to support reliability, accessibility and customer service, investment in the ferry network has been low compared with other transport modes.

As upgrades and improvements are made to the network in the future, customer experience and technology should underpin decision making. Commuters and tourists require reliable, integrated

services to meet their needs and support time-effective travel. With on-demand services gaining greater acknowledgement, access to ferries is expected to improve in the future, with the desirability of ferries enticing demand.

Outside of Sydney Harbour, there are several areas that have been identified by the NRMA for further investigation that would benefit from ferry services to support commuters and visitors.

The recent announcement to re-establish the La Perouse—Kurnell ferry wharves to support visitation to Captain James Cook's first landing site lends consideration for servicing Brighton-Le-Sands or Kyeemagh, and increases the feasibility of commencing a fast commuter and visitor service between Botany Bay and the Sydney CBD.

In addition, the Central Coast and the Illawarra would benefit from a fast ferry service to the Sydney CBD. While demanding longer journey times, these potential routes would support commuters during peak times and provide tourists the opportunity to visit the regions from Sydney during the day on a return journey.

Newcastle, Port Stephens, the Gold Coast, Brisbane and North Stradbroke Island would also benefit from the provision of improved ferry services to support commuter and visitor demand.

With natural assets and the capabilities to support the world's best water journeys, focus should be given to optimising the use of our waterways for the benefit and enjoyment of all.

Recommendations

Central River City fast ferry services

The establishment of a frequent ferry service connecting the Central River City with the Sydney CBD in less than 30 minutes should be prioritised to enable commuter and tourism journeys along the Parramatta River.

Western Quay transport interchange

The creation of a multi-modal transport interchange along the Parramatta River will act as a central point of confluence to support fast and frequent water journeys and enable easy access to the rest of the transport network.

Harbour islands and tourist services

Opportunities to integrate new harbour island tourist services with existing attractions in Sydney should be investigated and considered alongside potential investment to enhance places of interest and events on Sydney's picturesque harbour islands.

Trialling on-demand services

On-demand trials should be extended to ferries, particularly those operating on the Parramatta River, to widen the commuter catchment and enable access for those who presently can't make use of ferries as a transport option.

Upgraded wharf infrastructure

The NSW Government's Transport Access Program should be expanded to focus on improvements to comfort for users, and connections to 'first-mile last-mile' transport.

New wharf infrastructure

In Sydney, the establishment of new wharf infrastructure to support regular commuter services should be considered for Western Sydney University (Parramatta Campus), Camellia, Melrose Park/Ermington, Banjo Paterson Park, Woolloomooloo, Vaucluse Bay, Clontarf and Balmoral.

Additional vessel storage locations

To support the safe and efficient operation of an expanded ferry fleet, additional vessel storage locations will be necessary. White Bay (northwest section), White Bay 6, Berrys Bay, Balls Head Bay/Gore Cove, The Bays Precinct, Neutral Harbour, King Street Wharf and Wentworth Point should be considered to support this prospective need.

Feasibility study for the Central Coast and the Illawarra

Detailed analysis should be undertaken to determine the likely viability of establishing fast ferry services to the Central Coast and the Illawarra. The analysis should include investigation into travel time, capacity, reliability, infrastructure provision, service quality, efficiency and economic impact.

Introduction

The NRMA supports mobility solutions aimed at improving the community's ability to move around freely and easily. Mobility is an integral part of life that drives productivity, economic development and social inclusion.

While important and significant inroads have been made in addressing current and future transport and mobility needs, our waterways remain underutilised for commuting and tourism purposes, despite ferries being a highly enjoyable way to travel.

Sydney Harbour and its tributaries in particular present an opportunity to assist in alleviating urban road and rail congestion on some of our busiest corridors, especially prior to the completion of major infrastructure projects such as Sydney Metro West, Parramatta Light Rail, WestConnex, F6 Extension and Beaches Link—Western Harbour Tunnel.

There are significant variances throughout the waterway network in terms of access, frequency, stopping patterns and 'first-mile last-mile' connections. While some routes and wharves are well serviced and enjoy good patronage, there are others that are underutilised due to a lack of amenity, access and connections.

There is scope for ferries to play a greater role in supporting the overall transport task, however customers must be central to network and service planning, and incentives must be put in place to encourage increased patronage.

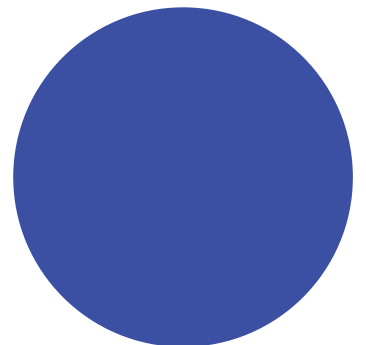
A highly desirable and iconic way to travel — as consistently shown through unrivalled customer transport satisfaction data — ferries operating in an optimised transport system can offer major benefits to users, as well as government.

Journeys to work, educational opportunities, leisure activities, sightseeing and events can all be better supported through the optimised operation and expansion of the ferry network.

With transport and communication technologies continuing to progress, and autonomy and on-demand services becoming more realistic, waterways will become more accessible to more people and offer opportunities for improved transport connectivity.

Greater residential densities and upward population and workforce projections for waterside suburbs, particularly in and around urban areas, point to increasing demand for a transport system that offers commuters, visitors and tourists improved choice and flexibility. An accessible and connected ferry network will entice more people out of their cars, improving road capacity and productivity.

Sydney has some of the best-known and most desirable waterways, coastlines and waterside landmarks in the world. The provision of quality ferry services will support tourism and ensure that Sydney remains a must-see destination.





View from the foreshore

A brief history

Even before the arrival of the First Fleet, Sydney Harbour (Port Jackson) and its tributaries were revered. The Eora people, many of whom lived around the coves and bays of the harbour and alongside the Parramatta River, were saltwater people, as much at home on the waterways as on dry land. With water central to their culture, Aboriginal men and women regularly navigated the harbour and waterways.¹

The early colonial settlers were also enamoured with Sydney Harbour. When Governor Arthur Phillip arrived on 26 January 1788, he described the harbour as “without exception, the finest in the world.” Like Sydney’s Indigenous inhabitants, the colonial settlers were also waterborne – everyone relied on boats in those years to get around. Most of the early explorations were by water too, via Parramatta River, Hawkesbury River, Pittwater and Broken Bay.²

The first official mass passenger ferry – built by convicts and commissioned on 5 October 1789 – was named the *Rose Hill Packet*, but quickly became better known as *The Lump*³ due to its size and weight. In addition to transporting passengers to the furthest navigable point inland along the Parramatta River, the 12 ton vessel was used for moving mail and cargo.

In 1861, ferries became Sydney’s first privately-owned transport service when the North Shore Ferry Company was formed. The service traversed the harbour and provided access to the many farms that were situated around Parramatta. Ferries in Sydney were almost exclusively run by private companies up until 1951, when they were consolidated and taken over by the Sydney Harbour Transport Board due to significantly decreasing revenues – patronage dropped nearly 70 per cent following the opening of the Sydney Harbour Bridge in 1932.⁴

During this period, Sydney progressively grew around the water. Industries situated on the foreshores sprouted whole suburbs, such as the inner west districts of Balmain and Pyrmont, and Mortlake further west. According to Professor Grace Karskens of The University of New South Wales, approximately 80 per cent of Sydneysiders lived within walking distance of Sydney Harbour until the 1880s.

To support the working harbour and the ever increasing movement of goods, services and people, jetties and wharves were rapidly constructed to support shipbuilding, importing and exporting activity. As time progressed, however, the working harbour of the nineteenth and early twentieth century eventually waned as the city surrounding the water became dominated by finance, retail, services, high-end residential developments and cultural pursuits.⁵

Due to people often having a need to cross from shore to shore, ferries remained an intrinsic part of Sydney right through to the mighty fleet of double-ended ferries that carried up to 47 million passengers a year before the Sydney Harbour Bridge opened.

More recently, the Sydney Ferries Corporation was responsible for the majority of commuter services on Sydney Harbour, however in 2007, a Special Commission of Inquiry into the state-owned corporation was commissioned due to several service issues and a number of apparent inefficiencies across the network. The subsequent Walker Report contained 17 recommendations, the central being that government enter a service contract with a private enterprise to provide ferry services on the Sydney Ferries Network, subject to this being no more expensive than delivery by Sydney Ferries Corporation under a similar arrangement.

In 2011, the NSW Government announced that Sydney Ferries Network services would be franchised – Sydney Ferries’ service contract was consequently terminated in July 2012.

Harbour City Ferries then commenced operating the ferry services under a seven year Ferry System Contract following a comprehensive tender process.⁶

In 2019, the Ferry System Contract is due to expire. This will provide the NSW Government with the opportunity to assess service provision against current and future infrastructure plans, precinct population projections and anticipated customer demands.

Despite our suburbs having sprawled to the north, south and west over time, Sydney Harbour remains the focal point of our city, admired by residents and visitors alike.

¹ Smith, K 2017, *The Tank Stream*. ² Karskens, Grace 2014 (Associate Professor of history UNSW), *Harbour life: tracing early Sydney’s watery history*.

³ Cadell, T & Davies, W 1802, *An account of the English Colony in New South Wales: From Its First Settlement in January 1788, to August 1801*

⁴ Andrews, G 1975, *The Ferries of Sydney* ⁵ Hoskins, I 2013, *Sydney Harbour: A Cultural Landscape*

⁶ <https://www.audit.nsw.gov.au/publications/latest-reports/performance/franchising-sydney-ferries-network-services/key-findings/3-key-findings>

Current use of waterways

Ferry services operate on most major waterways, including Sydney Harbour and its tributaries, Pittwater, Brisbane Water, Port Hacking, Clarence River, Broken Bay, Hawkesbury River and Hunter River.

Approximately 16 million trips are undertaken on the Sydney Ferries network each year, with an additional estimated 5.5 million trips delivered by private ferry operators with services in the Sydney, Central Coast and North Coast areas.

Harbour City Ferries (Transdev Australasia) operates the Sydney Ferries network for the NSW Government under a Ferry System Contract, providing services from Circular Quay to Manly, Darling Harbour, Taronga Zoo, Parramatta, Mosman Bay, Watsons Bay and Neutral Bay.

Under the franchise arrangement (2012–13 to 2018–19), Transport for NSW retains:

- Fare revenue
- Control over fare structure, routes and timetables
- Ownership of the Sydney Ferries fleet and the Balmain Shipyard facility

Similarly, Newcastle Transport (Keolis Downer) operates the Newcastle–Stockton Ferry, providing a direct service from Stockton Wharf to Queens Wharf in Newcastle. Unlike Harbour City Ferries, however, Newcastle Transport has responsibility for network planning and a certain level of exposure to patronage risk.

As part of its Opal fares review, the NSW Independent Pricing and Regulatory Tribunal (IPART) determines fares for these services. Currently, Sydney Ferry fares are set at two price points – \$5.88 and \$7.35 (\$7.10 and \$8.90 for a single trip ticket) – based on distance travelled. The lower fare point covers distances up to nine kilometres, and the higher fare point is triggered for trips greater than nine kilometres (Manly and stops on the Parramatta River between Kissing Point and Parramatta). The Newcastle–Stockton Ferry fare is \$2.15 (\$2.60 for a single trip ticket).

IPART, primarily through actual and hypothetical competition assessments, also determines maximum allowable fares for passenger services in the Sydney, Central Coast and North Coast areas provided by private operators with exclusive rights under the *Passenger Transport Act 2014*.

Private operators with exclusive rights (Passenger Transport Act 2014)

Operator	Service	Fare
Cronulla & National Park Ferry Cruises	Cronulla to Bundeena	\$6.60
Brooklyn Ferry Service	Brooklyn to Dangar Island	\$7.70
Central Coast Ferries	Woy Woy to Empire Bay	\$8.00
Church Point Ferry Service	Scotland Island & Pittwater	\$8.30
Clarence River Ferries	Iluka to Yamba	\$8.60
Matilda Cruises (Captain Cook Cruises)	Circular Quay to Darling Harbour	\$7.00
	Circular Quay to Lane Cove	\$7.40
Palm Beach Ferries (Fantasea Cruising)	Palm Beach to Mackerel Beach & The Basin	\$8.10
	Palm Beach to Ettalong & Wagstaffe	\$11.60

Fares current at time of printing

These operators provide services in separate markets, serving both commuters and tourists. IPART generally reviews applicable fares annually as part of its private ferries fares review.

In addition to these services, private operators provide commuters and tourists with fast ferry options and access to some of the key areas in and around Sydney Harbour:

Private operators with contracts (TfNSW)

Operator	Service	Fare
Manly Fast Ferry (NRMA)	Manly to Circular Quay	\$6.86 to \$9.10
	Manly Darling Harbour Loop	\$8.50 to \$12.00
Captain Cook Cruises (SeaLink)	Watsons Bay to Circular Quay	\$7.50
	Darling Harbour to Watsons Bay	\$7.50
	Circular Quay & Watsons Bay to Taronga Zoo	\$7.50
	Darling Harbour to Manly	\$8.90
	Circular Quay to Garden Island	\$15.00 (includes entry)
	Circular Quay to Shark Island	\$20.00 (includes entry)
	Circular Quay to Fort Denison	\$20.00 (includes entry)

Fares current at time of printing

Customer perception of services

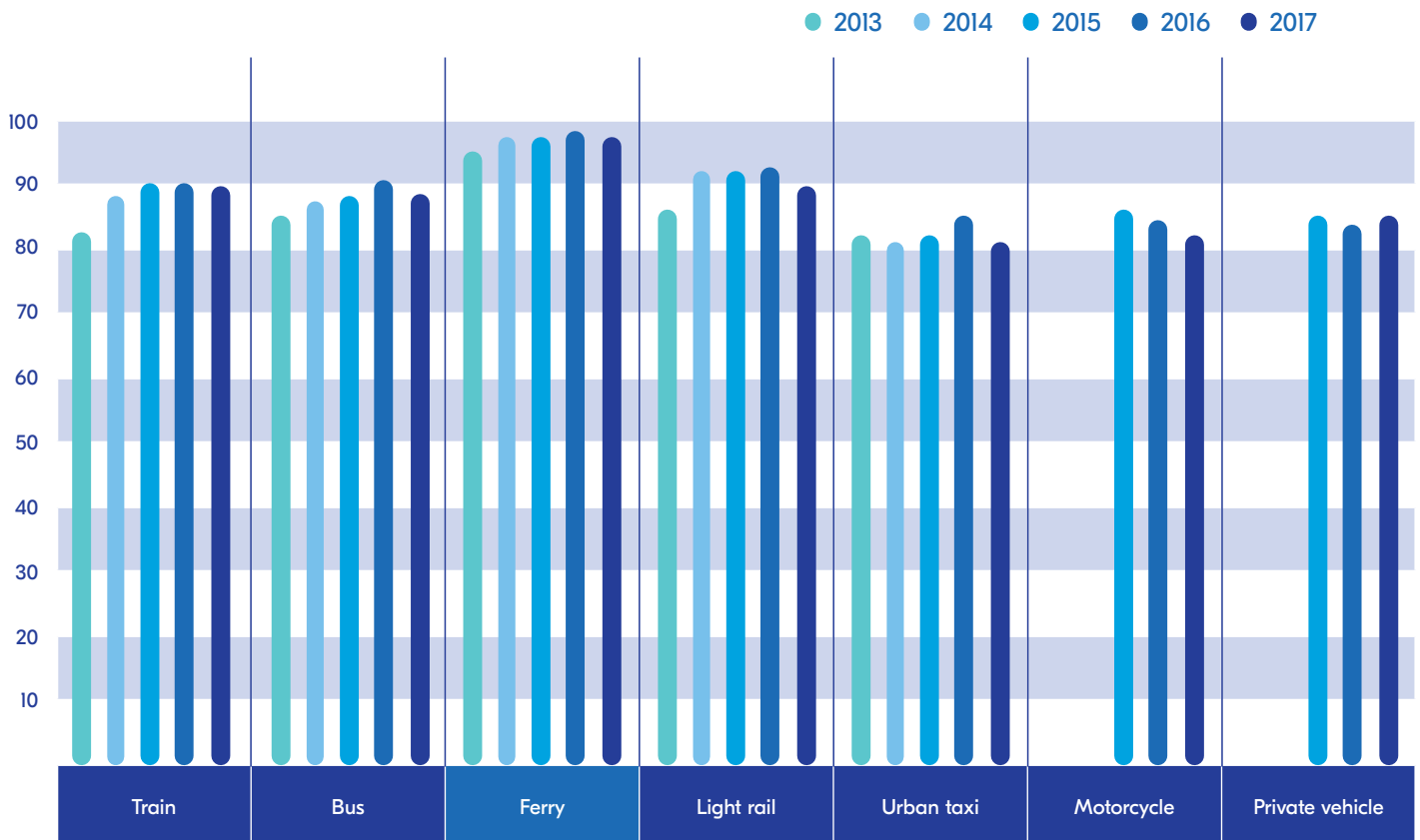
There are numerous elements in measuring overall satisfaction, however the primary drivers are on-time performance, frequency and time taken to travel.⁷

Transport for NSW releases customer satisfaction data periodically to track the performance of all public transport modes. Ferries, compared to trains, buses and light rail, consistently return the highest customer satisfaction ratings, with a recorded average of 97 per cent of customers

satisfied with their ferry service during the five-year period ending in 2017.

Ferries generally score well across a broad range of criteria, however customers highlight the frequency and speed of ferry services as areas they are least satisfied with. While lack of wharf shelter, seating and access to information also contribute to lower average satisfaction ratings, the NSW Government's Transport Access Program is progressively addressing these issues.

Overall customer satisfaction (%)



SOURCE: Transport for NSW Customer Satisfaction Index May 2017

⁷ Infrastructure Australia, *Improving Public Transport: Customer Focused Franchising*, May 2017

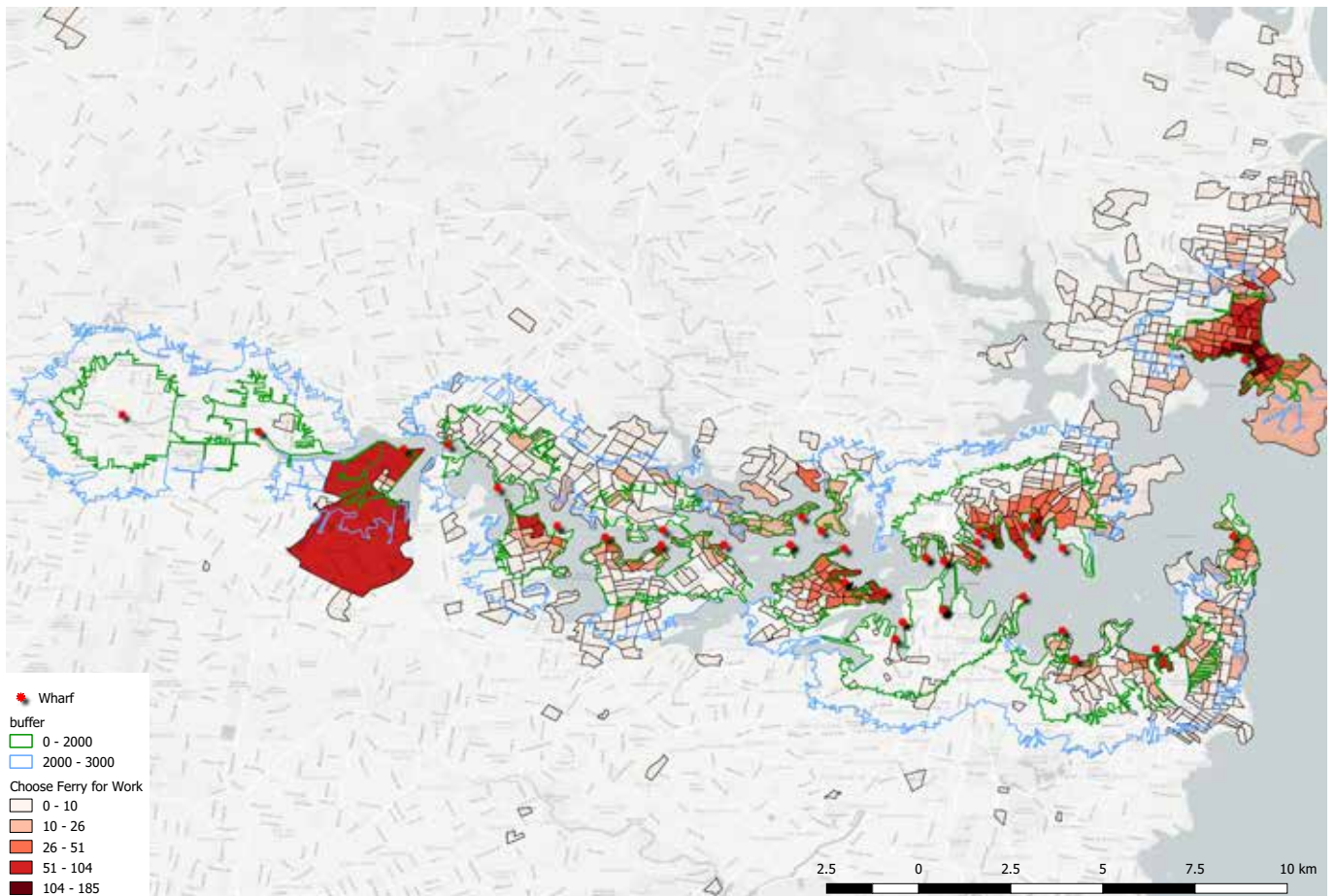
Demand and capacity

Employment growth over the next 20 years will be strongest in the Sydney CBD, and high rates of population growth are forecast along Parramatta River, including Sydney Olympic Park, Meadowbank and Cabarita.⁸

While journey to work data shows that some areas have a high propensity for ferry use, others are underutilised, primarily due to accessibility and substandard service levels.

Across the Greater Sydney Region, the large majority of passenger journeys involving a ferry start within 800 metres of a wharf.⁹ This presents a significant opportunity in terms of widening the catchment to increase patronage, thus alleviating pressures on other parts of the transport network. Currently, ferries only account for around two per cent of the overall public transport task.¹⁰

Distribution of journey to work by ferry



⁸ NSW Government, *Sydney's Ferry Future, Modernising Sydney's Ferries*, May 2013

⁹ NSW Government, *Sydney's Ferry Future, Modernising Sydney's Ferries*, May 2013

¹⁰ <https://www.transport.nsw.gov.au/data-and-research/passenger-travel/ferry-patronage>

There are a number of factors that can influence demand for transport services:

- Cost of service
- Service quality
- Car ownership
- Private travel costs
- Employment
- Densities
- Income
- Tourism
- Population
- Land use
- Special events
- Trip generators (e.g. education)

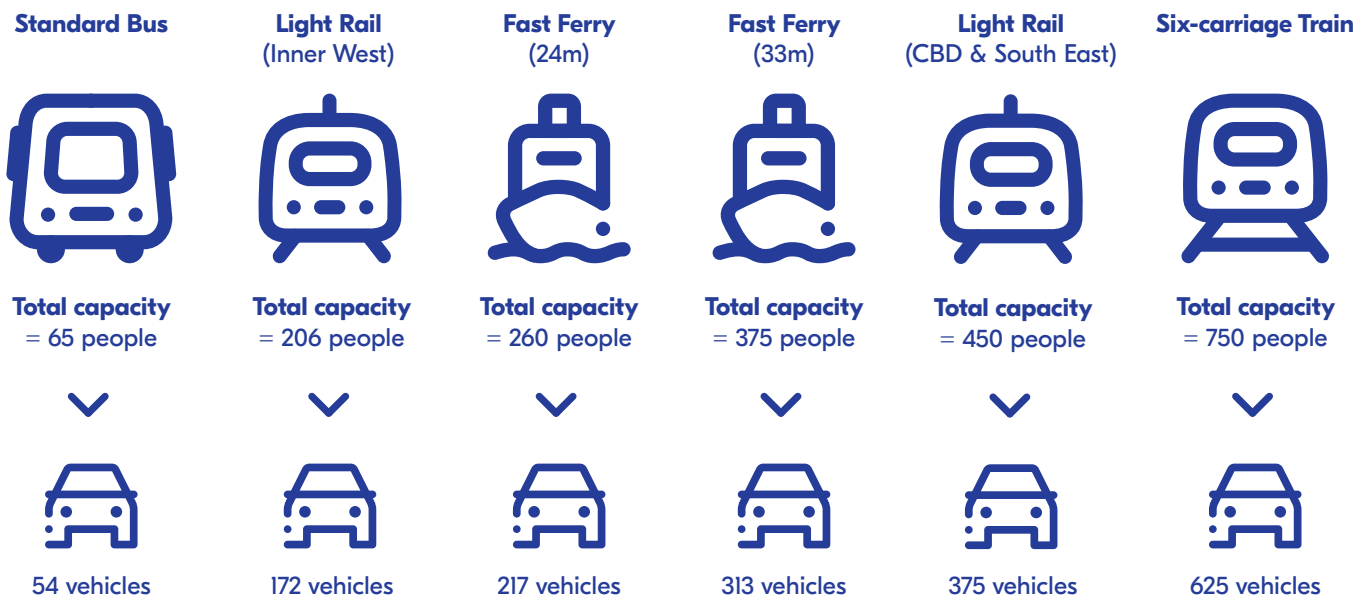
Based on survey data, most customers commuting for employment purposes want cheap, fast and reliable services. Less frequent travellers such as tourists are prepared to pay higher fares for comfort and space.

Capacity

Ferries are capable of moving significant numbers. With regular services transporting people to places of employment during peak periods, road and rail capacity can be improved.

While ferries currently play a relatively small role in the transport task, each can carry hundreds of people. If services were provided as regularly as trains during the peak commuting periods, tens of thousands of people would be transported by ferry every hour.

Mass transport capacity comparison



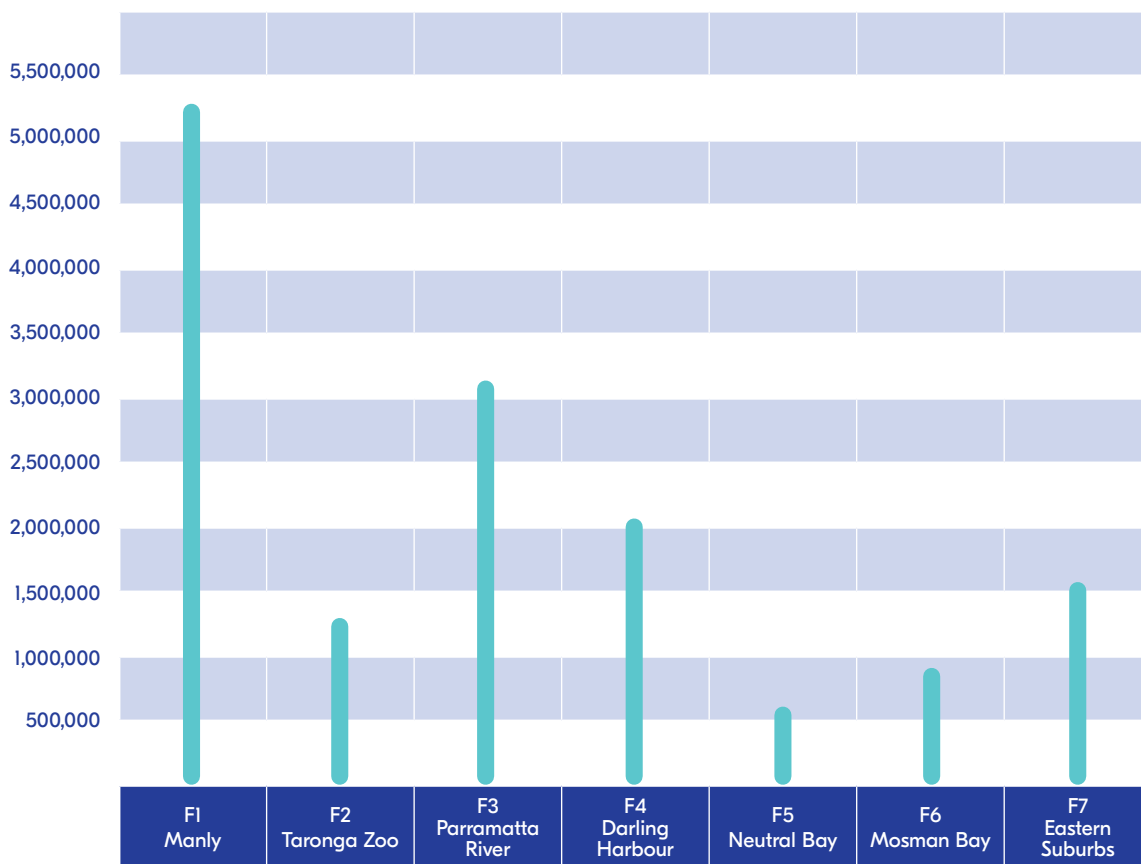
Note: Based on an average vehicle occupancy of 1.2 persons

Trips

Approximately 16 million trips are undertaken on the government-subsidised Sydney Ferries network each year.

In addition, private operators carry out an estimated 5.5 million trips each year, with just over one million of those reported by private operators in the Sydney, Central Coast and North Coast areas with exclusive rights to specific services under the *Passenger Transport Act 2014*.

Opal Trips by Line 2016–2017



SOURCE: Transport for NSW Ferry Patronage – Opal Trips by Line

Most private operators are entitled to receive government subsidies for concession and school student travel, and some also receive financial viability payments from the NSW Government.¹¹

Manly Fast Ferry services receive no government subsidy or fare top-up, which is distinctly different to the majority of private ferry services.

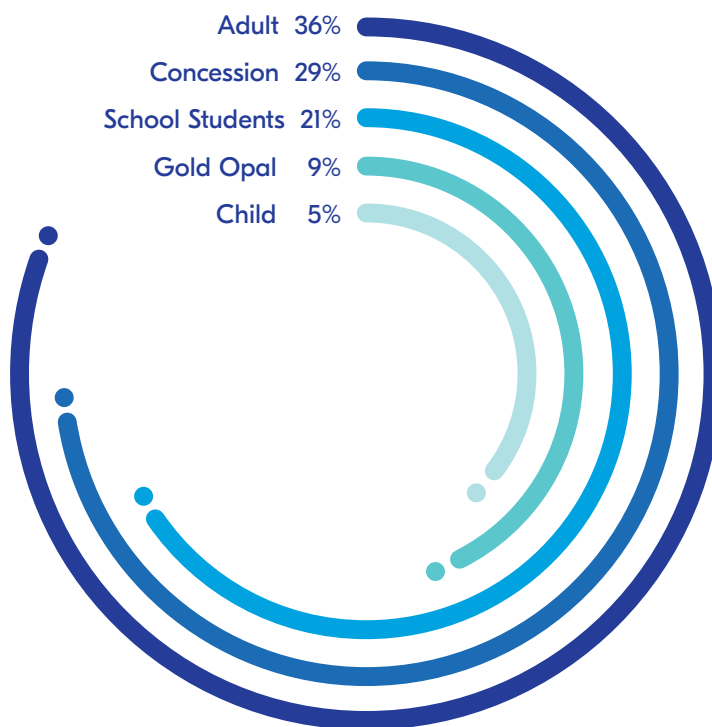
Consequently, Manly Fast Ferry doesn't presently offer concession or school student travel discounts

as the NSW Government doesn't augment the limited passenger revenue.

This scenario reduces choice for some users by creating an unattractive fare scheme.

The NRMA offers Member discounts on Ecohopper and other ferry services, with commuters realising discounts through the purchase of bulk tickets.

Patronage on Private Ferries 2016–2017 (%)



SOURCE: IPART Review of Fares for Private Ferry Services December 2017

¹¹ IPART 2017, *Review of fares for private ferry services – Maximum fares for private ferry services from January 2018 to December 2021*

Tourism

Unlike peak hour trains and suburban buses where patronage is predominantly driven by commuter demand, ferries on particular routes are well used by tourists and viewed as a major attraction. While numbers are not definitive, research and time-of-day passenger movement data suggests strong leisure demand, particularly during the summer months.

With commuter travel numbers remaining fairly consistent throughout the year, visible peaks and troughs in patronage are generally caused by tourists and leisure travellers.

On the Manly—Circular Quay route, data analysis by the Sapere Research Group contends that implied commuter demand corresponds to recognised AM and PM peak periods, and implied tourist demand corresponds to the inter-peak period. This contention is supported by the fact that the highest seasonal variability corresponds with the inter-peak period.

On the weekend — especially on Sundays during summer holiday periods — Parramatta River, Manly and other Sydney Harbour routes can require extra unscheduled services to meet leisure demand.¹²

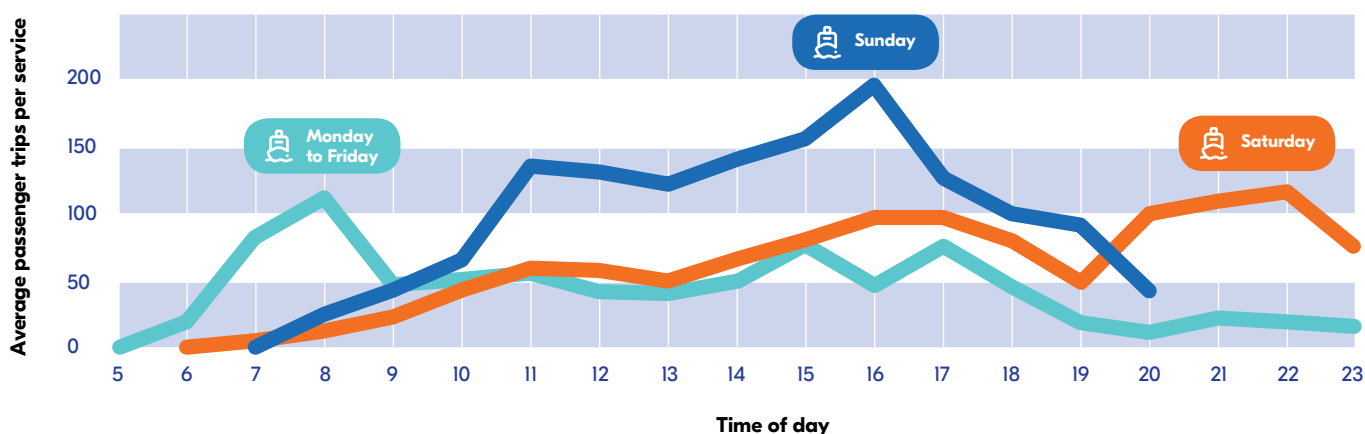
Along the Parramatta River, trips during the weekend currently exceed average commuter use. This highlights the unattractiveness of weekday services when time is of greater importance.

The Sapere Research Group has found that, in broad terms, tourism and commuter-based demand for ferry services is approximately equal in magnitude, although this varies by route.

With such a significant contribution to ferry patronage, it is vital that services exist to support tourism and leisure needs. Tourists and leisure travellers require reliable ferry services in the off-peak periods and on weekends to key leisure destinations and places of interest throughout the Greater Sydney Region.

To support tourists, visitors and infrequent users, the expansion of contactless payments (debit cards, credit cards and smart cards) is critically important for those who do not see the need to purchase an Opal card or other travel pass. In addition, the provision of quality service information and clear wayfinding supports users less familiar with the transport system to get around safely and efficiently.

Parramatta River trips across the week



SOURCE: NSW Government, Sydney's Ferry Future — Modernising Sydney's Ferries

¹² NSW Government, Sydney's Ferry Future, Modernising Sydney's Ferries, May 2013

Sydney's harbour islands

Sydney Harbour is a major drawcard for international and domestic visitors. Approximately 14 million domestic and international overnight visitors travel to Sydney each year, spending approximately \$16.7 billion. A large majority of these travellers visit the harbour foreshore for tourism or leisure purposes.

Like New York or San Francisco, a ferry ride on Sydney Harbour is an iconic visitor experience in its own right. While many of Sydney Harbour's well-known attractions are best accessed via the waterways, including Manly, Watsons Bay, Taronga Zoo, Luna Park and Sydney Aquarium, some of Sydney Harbour's best environmental and cultural attractions remain untapped due to poor access and transportation connections.

Sydney's harbour islands, including Cockatoo, Shark and Clark Island along with Fort Denison, offer a rare glimpse of Sydney's early naval and convict heritage, while at the same time provide prime vantage points to enjoy views of the harbour, particularly during major festivals and events.

Visitor precincts including the Sydney Fish Markets and the Walsh Bay cultural precinct also remain restricted due to limited parking and land-based transportation options.

Some significant work has already been undertaken to make Sydney's harbour attractions more accessible to visitors. Glamping on Cockatoo Island and its use for major events such as the Biennale of Sydney are prime examples of adaptive re-use that provide richer visitor experiences on the harbour.

However, there is a need to further investigate opportunities for dedicated and more frequent tourist services on Sydney harbour, linking existing attractions with Sydney's harbour islands.

These types of services would need to be met with further investment in cultural attractions, events and visitor amenities to provide meaningful interpretation of the harbour's history and a compelling reason to visit.

The Central River City to Sydney CBD

Parramatta is one of the fastest growing regions in Australia and is expected to continue to develop at a rapid pace with major infrastructure and service projects in the pipeline. The City of Parramatta's population is forecast to increase by more than 50 per cent within the next two decades,¹³ and while relatively well serviced by road and rail transport infrastructure, this type of growth will increasingly place pressure on the network.

Parramatta currently serves as a funnel, attracting people further west for the purpose of express commuting to the Sydney CBD. As Parramatta and surrounding communities grow, better services will be needed to accommodate demand.

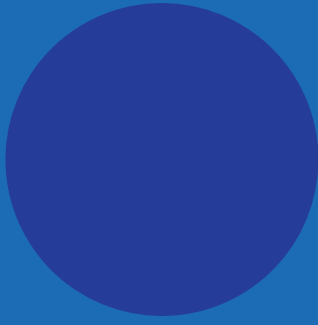
The current ferry service to and from Parramatta is poor and consequently suffers from very low

patronage, resulting in a higher operational cost per passenger. Unlike most ferry services, travelling between Parramatta and the Sydney CBD is both slower and more expensive than alternative modes of transport.

L.E.K.'s Sydney Ferries Cost Review of 2012 suggests that cost efficiencies could be realised through off-peak service reductions, particularly between Parramatta and Cabarita. While this would undoubtedly reduce operational costs, it would be an unwelcome outcome for the City of Parramatta and the community more broadly.

Increasing patronage by alleviating the major issues faced by commuters and tourists will have the same operational effect and also alleviate pressure on the road and rail network. With strong population projections, government and industry should be looking at ways to boost ferry services and hence patronage to deliver an overall superior outcome.

¹³ <https://forecast.id.com.au/parramatta>



Blue horizons

Delivering value

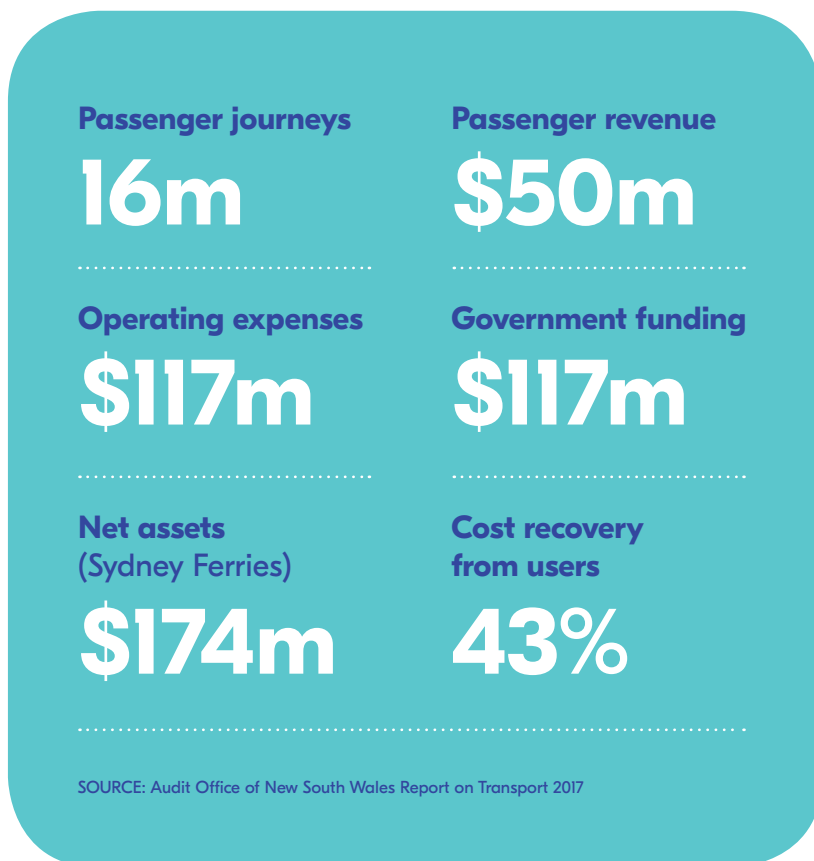
Harbour City Ferries receives a monthly payment from the NSW Government to provide services under the Ferry System Contract. The monthly payment consists of a service payment (based on bid schedule), fuel cost payment (net of applicable fuel tax credits) and margin payment; Harbour City Ferries' deductions include vessel lease payments and fare revenue.¹⁴

While the total cost for delivery of services on the Sydney Ferries Network under the Ferry System

Contract amounts to \$871 million over the seven year franchise period (2012–13 to 2018–19), the contract price is approximately 12 per cent per annum below that of the preceding Sydney Ferries contract price,¹⁵ representing total savings of at least \$100 million.

The Audit Office of New South Wales' Report on Transport 2017 provides an operational snapshot of Sydney Ferries Network services.

Operational Snapshot

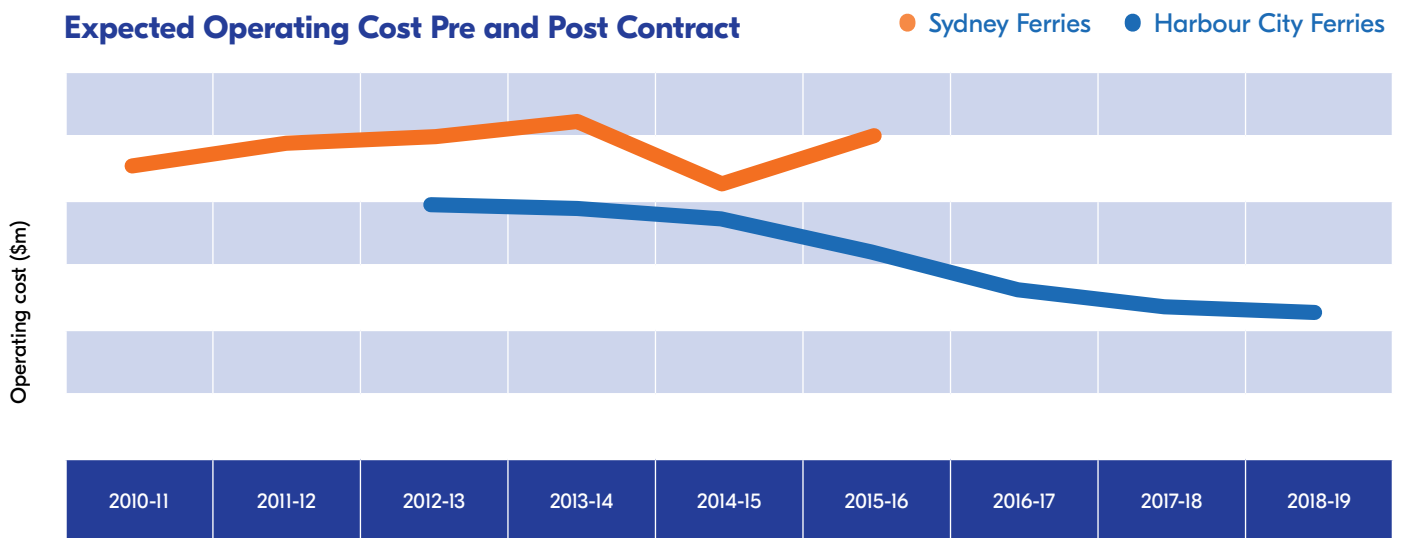


Operating expenses are ferry contract payments by TfNSW to a private ferry operator and Sydney Ferries' operating expenditure

¹⁴ The Centre for International Economics, *Efficiency of NSW Public Transport Services*, December 2015

¹⁵ <https://www.audit.nsw.gov.au/publications/latest-reports/performance/franchising-sydney-ferries-network-services/key-findings/3-key-findings>

Expected Operating Cost Pre and Post Contract



SOURCE: The CIE Efficiency of NSW Public Transport Services December 2015

The Audit Office of New South Wales' *Franchising of Sydney Ferries Network Services* report of 2016 found that:

- Delivery of ferry services on the Sydney Ferries Network under the franchise agreement has been cheaper than it would have been under the terminated contract
- The franchise model has transferred some service risk to the private sector operator through contract KPIs and performance incentives
- The decision to franchise ferry services on the Sydney Ferries Network was justified and soundly based
- Transport for NSW's management of the franchise has been effective

While governments have more recently provided and operated public transport services, the private sector has traditionally provided the bulk of ferry services. In many cases, private operators can assist government to deliver or bring forward investment or service innovation.

There is a considerable weight of evidence to demonstrate that, relative to government-run public transport services, the private sector has stronger incentives to use infrastructure more efficiently,

deliver better operational performance, and improve the customer experience.¹⁶

Innovative procurement models should be pursued to support quality service provision and value for customers.

A recent example of a new procurement approach is the awarding of a contract to a private entity to operate bus, ferry and new light rail services, as well as manage interchanges in the Newcastle area.

Competitive tendering introduced improved customer end-to-end journey integration in the Newcastle transport service market that had not previously existed. The new network is expected to increase the quantity and quality of services in Newcastle within a more efficient cost structure for government.¹⁷

Market-driven solutions can deliver innovative operating models that provide a better quality of service for passengers in a cost-effective manner. For instance, ferry operators could propose to remove or reduce some services that have low utilisation, and replace these with a number of on-demand services.¹⁸

There are many different ways the private sector can be involved in the provision of public transport services, including outsourcing, franchising, privatisation and public private partnerships (PPPs).

¹⁶ Tourism & Transport Forum, *Public Transport, Private Operators: Delivering Better Services Through Franchising*, July 2012

¹⁷ <https://future.transport.nsw.gov.au/react-feedback/future-transport-strategy-2056/future-of-services/>

¹⁸ IPART 2017, *Review of fares for private ferry services – Maximum fares for private ferry services from January 2018 to December 2021*

Types of private sector involvement in public transport



	Outsourcing	Franchising	Public Private Partnership	Privatisation
Description	Suppliers contracted to provide an activity previously undertaken internally, e.g. cleaning	Public sector contracts out delivery of a service for a set period	A risk sharing partnership between public and private organisations, e.g. design, build, operate, maintain	Sale of a service or asset to the private sector
Asset Ownership	Public sector retains ownership and control of assets	Public sector retains ownership of public assets	Typically transfers to government after initial term	Private operator owns assets
Government Oversight	High level of government oversight and management of performance through contract terms	High level of government oversight and management of performance through contract terms	High level of government oversight and management of performance through contract terms	High level of government oversight and management of performance through regulation
Risk Allocation	Private sector bears cost risk on narrow activity only	Many different models. Cost risk typically borne by operator; revenue risk could be shared	Many different models, although private sector typically takes on higher levels of revenue and cost risk for greater returns	Cost and revenue risk typically borne by private operator
Examples	Railcorp IT systems Transperth rail maintenance	Melbourne trams and trains Perth buses Sydney ferries	Gold Coast Light Rail Toll roads, e.g. M2, M5, LCT, CityLink	Generators in National Electricity Market

SOURCE: Adapted from TTF, Public Transport, Private Operations: Delivering better services through franchising

While the Sydney Ferries Network is franchised, there are several ferry operators running private services on parallel and complementary routes.

Case study – Manly Fast Ferry

Manly Fast Ferry commenced operations in February 2009 following the decommissioning of the JetCat fleet due to continued reliability issues. Following a successful tender outcome, Manly Fast Ferries progressively introduced new and innovative services such as improved vessels, smartcard ticketing, discounted prices for frequent users, an SMS notification system and, more recently, OpalPay for better transport network

	Manly Fast Ferry	Harbour City Ferries
Cost to Government (all services)	\$0	\$117 million p.a.
Customer Satisfaction (2017)	98%	97%
Safety Incidents (2016–17)	0	6
Trip Time (Circular Quay to Manly)	18 minutes	30 minutes

The fact that the private sector was able to turn an inefficient part of the Sydney Ferries operation into an innovative, reliable service in just a few short months highlights the advantages of the introduction of private involvement in ferry operations.



There is merit in government supporting greater private involvement across all transport modes, provided that value for money for users and taxpayers can be achieved alongside high quality service levels. Commercial approaches to asset ownership, operations and maintenance should involve scrutiny of funding arrangements, as well as customer service and efficiency targets aimed at delivering users the best possible transport services at the lowest possible cost.

The involvement of the private sector can, in some instances, significantly reduce the reliance on government subsidies for operational revenue.

There are numerous international and domestic examples of public planning authorities utilising private transport operators to provide passenger ferry services to the public.

Private Operations on Urban Linear Ferry Systems

	New York (East River Ferry)	London	Copenhagen	Brisbane
Planning authority	NYCEDC (public)	Thames Clippers (private) TFL (public)	Movia (public)	Translink (public)
Operator	NY Waterways (private)	Thames Clippers (private)	Arriva (private)	Transdev (private)
Year began	2010	1999	2000	1996 (Transdev 2015)
Passengers	1.2 million	3.1 million	500,000	6.25 million
Terminals	8	19	10	24
Routes	1	6	2	5
Total length	11km	28km	7km	21km
Number of vessels	6 (catamaran)	13 (catamaran)	4 (monohull)	21 catamaran 9 monohull
Capacity	149	120-220	64-80 20 bicycle spaces	Catamarans 149-162 Monohull 53-78
Speed	12 knots	25-28 knots	6 knots (speed limited)	Catamarans 25 knots Monohull 8-12 knots
Operating Hours	6am-8pm	6am-12am	7am-11pm	5am-12midnight (1am Friday/Saturday)
Fare (USD)	\$4 one-way weekday \$6 weekend \$1 bicycle surcharge	\$6.50-\$12.65 zone based	\$3.65	\$3.50-\$4.10 zone based Free "City Hopper" service

SOURCE: Adapted from Tanko, M & Burke, M 2017, Transport innovations and their effect on cities: the emergence of urban linear ferries worldwide



In addition, the following listed companies provide passenger ferry services:

- Reederei Herbert (Germany)
- Viking Line (Finland)
- Hainan Strait Shipping Co (China)
- Superdong Fast Ferry (Vietnam)
- Raja Ferry (Thailand)
- Attica Holdings (Greece)
- ANEK Lines (Greece)
- Minoan Lines (Greece)
- Tokai Kisen (Japan)
- Sado Steam Ship (Japan)
- Irish Continental (Ireland)
- Penguin International (Singapore)
- Shun Tak Holdings (Hong Kong)

Transport services delivered to the same or exceeding standard by the private sector while reducing or eliminating government subsidy ultimately benefit the taxpayer. Where savings can be realised, government can invest surplus funds into necessary public services such as health or education.

Undoubtedly, the private operation of public transport can be met with community resistance, which generally arises from fear of increased costs, reduced frequency or lower service levels. However, the private operation of ferry services is widespread, and customer surveys have shown that these delivery models are supported by communities, both in Australia and overseas.¹⁹

With new forms of mobility looming, governments will need to allow markets to embrace new options. A strong focus on establishing agile regulatory frameworks to support new services and operators should be a priority.

¹⁹ Infrastructure Australia, *Improving Public Transport: Customer Focused Franchising*, May 2017

Fleet and wharf infrastructure

Ferry fleet

Sydney Ferries currently operates Freshwater, First Fleet, SuperCat, RiverCat, HarbourCat and Emerald class vessels on the Sydney Ferries network. In total, 32 vessels with an average age of 26.5 years²⁰ support operations on the F1 to F8 routes (Manly, Taronga Zoo, Parramatta River, Cross Harbour, Neutral Bay, Mosman Bay, Double Bay and Cockatoo Island). The majority of vessel maintenance and repair works is carried out at the Balmain Shipyard.

In 2017, two Lady Class ferries – the 1974 Lady Northcott and the 1979 Lady Herron – were decommissioned from commuter services and exchanged with six new Emerald Class ferries designed for the inner harbour.

The new ferries feature:

- Capacity for up to 400 passengers
- Two wide walk-around decks
- Accessibility for the less mobile and young families
- Bicycle and luggage storage
- Wi-fi access
- Real-time journey information
- 12 wheelchair spaces
- Rapid and safe boarding
- Faster travel times

L.E.K.'s Sydney Ferries Cost Review of 2012 found that the Lady Class and Freshwater Class ferries are particularly expensive to repair and maintain. All vessel classes currently operating (with the exception of the new Emerald Class ferries) have had engine replacements since commencing service except for the Freshwater Class. As part of its review, L.E.K. proposed replacing the Freshwater Class vessels with 35-metre vessels to reduce operational costs.

The NRMA, however, believes the Freshwater Class vessels are iconic and should be retained on Sydney Harbour for as long as possible due to their heritage value and grandeur. With the Freshwater Class having a limited service life based on current use, consideration should be given to opportunities that enable the vessels to continue to service tourist demand during the inter-peak periods while extending total service life.

In place of imminently decommissioning or replacing these vessels, targeting their use outside of the commuter peak periods through optimised timetabling would improve commuter reliability, alleviate congestion in Sydney Cove, and increase capacity through the provision of more efficient ferry services. Additionally, the total cost of operating ferry services could be reduced.

²⁰ www.audit.nsw.gov.au/publications/latest-reports/transport-2017

Sydney Ferries fleet

Class	Vessel	Total Capacity (night)	Year Acquired	Primary Services
Freshwater	Freshwater	1100	1982	Manly
	Queenscliff	1100	1983	Manly
	Narrabeen	1100	1984	Manly
	Collaroy	1100	1988	Manly
First Fleet	Supply	396	1984	Inner Harbour
	Sirius	396	1984	Inner Harbour
	Alexander	396	1985	Inner Harbour
	Borrowdale	396	1985	Inner Harbour
	Charlotte	396	1985	Inner Harbour
	Fishburn	403	1985	Inner Harbour
	Friendship	403	1986	Inner Harbour
	Golden Grove	403	1986	Inner Harbour
	Scarborough	403	1986	Inner Harbour
RiverCat	Betty Cuthbert	230	1992	Parramatta River
	Dawn Fraser	230	1992	Parramatta River
	Shane Gould	230	1993	Parramatta River
	Marlene Mathews	230	1993	Parramatta River
	Marjorie Jackson	230	1993	Parramatta River
	Evonne Goolagong	230	1993	Parramatta River
	Nicole Livingstone	230	1995	Parramatta River
HarbourCat	Anne Sargeant	150	1998	Parramatta River & Inner Harbour
	Pam Burridge	150	1998	Parramatta River & Inner Harbour
SuperCat	Saint Mary MacKillop	326 (275)	2000	Eastern Suburbs
	Susie O'Neill	326 (275)	2000	Eastern Suburbs
	Louise Sauvage	326 (275)	2001	Eastern Suburbs
	SuperCat 4	326 (275)	2001	Eastern Suburbs
Emerald	Catherine Hamlin	400	2017	Inner Harbour
	Fred Hollows	400	2017	Inner Harbour
	Victor Chang	400	2017	Inner Harbour
	Pemulwuy	400	2017	Inner Harbour
	Bungaree	400	2017	Inner Harbour
	May Gibbs	400	2017	Inner Harbour



As ferry patronage is seasonal, increasing the use of the Freshwater Class vessels during the summer months and major holiday periods would provide capacity for increased tourist interest and visitation at times of heightened demand.

Maximising the service life of these iconic vessels through strategic use will negate the need for funding replacements or decommissioning the fleet in the short to medium term. Additionally, reduced use would allow the reconsideration of dual deck loading infrastructure at Circular Quay and Manly, allowing the repurposing of facilities for passengers or hospitality uses.

As the ferry fleet is added to or altered over time, passenger ferries should ideally be purpose-built for safe, fast and optimal operation in a specific area. A service between Manly and the Sydney CBD, for example, requires a larger, more seaworthy ferry to handle large swells and seas

around the Sydney Heads. In contrast, a shallow draft and low wash ferry is required to service the Lane Cove and Parramatta Rivers.²¹

As new vessels are added, their design should optimise customer experience and operational efficiency. Vessels should be designed with designated routes in mind, with capabilities and passenger loading requirements tailored to each route. The ability for vessels to optimise embarkation and disembarkation times is also of paramount importance.

As technology continues to accelerate, new innovations and technologies should be given serious consideration. The advent of on-demand services, electric propulsion and autonomy should all be considered during the procurement of future replacement vessels.

²¹ Office of Transport Safety Investigations, *Ferry Safety Investigation Report*, 2016

Wharf infrastructure

Roads and Maritime Services maintains a total of 49 commuter wharves across 12,847 km² of navigable waterways.²² To manage access for Sydney Ferries vessels and commercial operators within Sydney Harbour and its tributaries, a Wharf Access Policy was developed by Transport for NSW to provide consistent arrangements for vessels and integrate as best as possible with the overall transport network. The Policy's associated Wharf Booking System is administered by Roads and Maritime Services.²³

In addition to commuter wharves, Roads and Maritime Services maintains 15 charter wharves which can be booked through the Wharf Booking System.

Under the Wharf Access Policy, Harbour City Ferries is provided with priority access to commuter wharves for the purposes of providing timetabled services, and is also provided with exclusive access to several wharves at Circular Quay.²⁴ Wharf access, therefore, acts as the limiting factor for non-government passenger ferry services.

With new and amended ferry services operating through multiple providers, there is potential for the Wharf Access Policy and Wharf Booking System to be amended and upgraded to better accommodate current access needs to improve the customer experience.

Transport Access Program wharf upgrades

As part of the NSW Government's Transport Access Program, a number of commuter wharves have been upgraded from 2010

- Balmain Wharf – Thames Street (reopened 27 February 2013)
- Balmain East Wharf (reopened 18 June 2015)
- Chiswick Wharf (reopened 31 July 2017)
- Cockatoo Island Wharf Upgrade (reopened 18 August 2017)
- Cremorne Point Wharf (reopened 5 February 2015)
- Drummoyn Wharf – Wolsely Street (reopened 17 September 2014)
- Huntley's Point Wharf (reopened 23 April 2013)
- McMahons Point Wharf (reopened 20 October 2016)
- Meadowbank Wharf (reopened 26 May 2016)
- Milsons Point Wharf (reopened 15 December 2010)
- Mosman Bay Wharf (reopened 8 October 2014)
- Neutral Bay Wharf (reopened 20 August 2012)
- Pyrmont Bay Wharf (reopened 8 September 2015)
- Rose Bay Wharf (reopened 26 September 2012)
- Sydney Olympic Park Wharf (reopened 20 May 2015)

²²Roads and Maritime Services in Sydney, August 2017

²³Office of Transport Safety Investigations, *Ferry Safety Investigation Report*, 2016

²⁴The Centre for International Economics, *Efficiency of NSW Public Transport Services*, December 2015

The modernisation of these wharves was undertaken to improve their accessibility, decrease the time it takes for passengers to embark and disembark, and improve amenity for customers with modern shelters and seating.²⁵

In addition to wharf upgrades, Milsons Point Wharf was expanded to increase capacity, and the stairs connecting Milson Road and Cremorne Reserve at Cremorne Point Wharf were upgraded to improve access.

Current projects under the Transport Access Program include the Abbotsford Wharf upgrade, the Birchgrove Wharf upgrade, the Parramatta Wharf upgrade, the Rydalmere Wharf upgrade, and the Cabarita Wharf and interchange upgrade.

The Cabarita Wharf and interchange upgrade is a particularly important project that will increase capacity and comfort, improve commuter access, and support faster embarkation and disembarkation. Cabarita Wharf is better utilised than many surrounding wharves in the lower section of

Parramatta River and could act as a hub location to support a fast ferry service and on-demand feeder services in the future.

Following the completion of Transport Access Program upgrades, an opportunity exists to rethink ferry services accessing these wharves and consider the provision of new services.

Potential new locations for wharf infrastructure earmarked in Sydney's Ferry Future include Rhodes, Glebe Point, Johnstons Bay, Woolloomooloo and Elizabeth Bay. Since being named as a potential location, Rhodes has been opposed by recreational water user groups.

In addition to these locations, the NRMA has identified Western Sydney University (Parramatta Campus), Camellia, Melrose Park/Ermington, Banjo Paterson Park, Vaucluse Bay, Clontarf and Balmoral as priority locations in Sydney that would benefit from wharf and/or associated infrastructure, providing the community with an additional travel option or connection.



²⁵NSW Government, *Sydney's Ferry Future, Modernising Sydney's Ferries*, May 2013

Barangaroo

The Barangaroo precinct is currently being transformed into a world-class waterfront location. Once fully occupied, Barangaroo will accommodate more than 20,000 office workers and around 3,500 residents. Cultural and recreational facilities at the site are estimated to attract at least 30,000 visitors per day.²⁶

The Barangaroo development will act as a large generator of extra commuter trips to the western part of the Sydney CBD and encourage leisure visitation outside the peak commuter periods, especially on weekends and during the summer months.

With access to Barangaroo wharves currently limited, however, the construction of a third wharf is considered necessary to support increasing passenger and berthing demand.

The new ferry hub along the western side of Barangaroo aims to:

- Serve the new development and accommodate a significant proportion of commuters and visitors accessing the precinct by ferry
- Connect ferry customers to the western and central parts of the Sydney CBD and the rail network via Wynyard Walk
- Connect passengers with Sydney Metro
- Relieve capacity constraints at Circular Quay
- Provide for future expansion to accommodate increasing passenger movements

Following the completion of Barangaroo Wharf, additional capacity will exist, including at King Street Wharf. The additional capacity should be allocated to Harbour City Ferries and private operators to support new passenger routes, increased frequencies and service innovations.



²⁶ <http://www.planning.nsw.gov.au/Assess-and-Regulate/Projects/Barangaroo>



Circular Quay

Circular Quay is the central hub for ferries in Sydney and is one of Australia's busiest transport interchanges. The provision of ferries, buses, trains and light rail (proposed commencement 2019) offers residents and visitors intermodal access to a vast network of places.

With wharf infrastructure largely built in the 1940s, the NSW Government recently announced its intention to upgrade the wharves, as well as the adjacent waterfront land. With strong anticipated passenger demand (around 80 million trips by 2040), this urban renewal project, once complete, will better support integrated and active transport, encourage visitation to many of the surrounding places of interest, and offer consumers improved amenity and hospitality options.

As the most used ferry hub in the Greater Sydney Region, Circular Quay suffers from congestion by accommodating services from the Outer Harbour, the Inner Harbour, and also Parramatta River. Situated within Sydney Cove, ferries accessing the wharf compete with cruise ships, ocean liners, naval vessels, water taxis, recreational vessels and commercial vessels.

While Transport for NSW's Wharf Access Policy applies to Circular Quay, the proposed precinct upgrade presents a significant opportunity to improve ferry movements. The NRMA has identified the following priorities to assist in managing and optimising ferry services through Sydney Cove as demand continues to increase:

- Services should be split into Outer Harbour, Inner Harbour and Parramatta River, with consideration given to better utilising wharves at Barangaroo for some services
- Wharf and future ferry design should incorporate at least two embarkation/disembarkation points to encourage faster turnaround times
- Timetabling should be integrated across all services to minimise parallel arrivals and departures at adjacent wharves
- Wharf access should be controlled by an independent operator with the responsibility to optimise wharf use for both tourism and commuter operators
- Where no feasible wharf access option exists, a slot-style system based on time-of-use charging should take effect

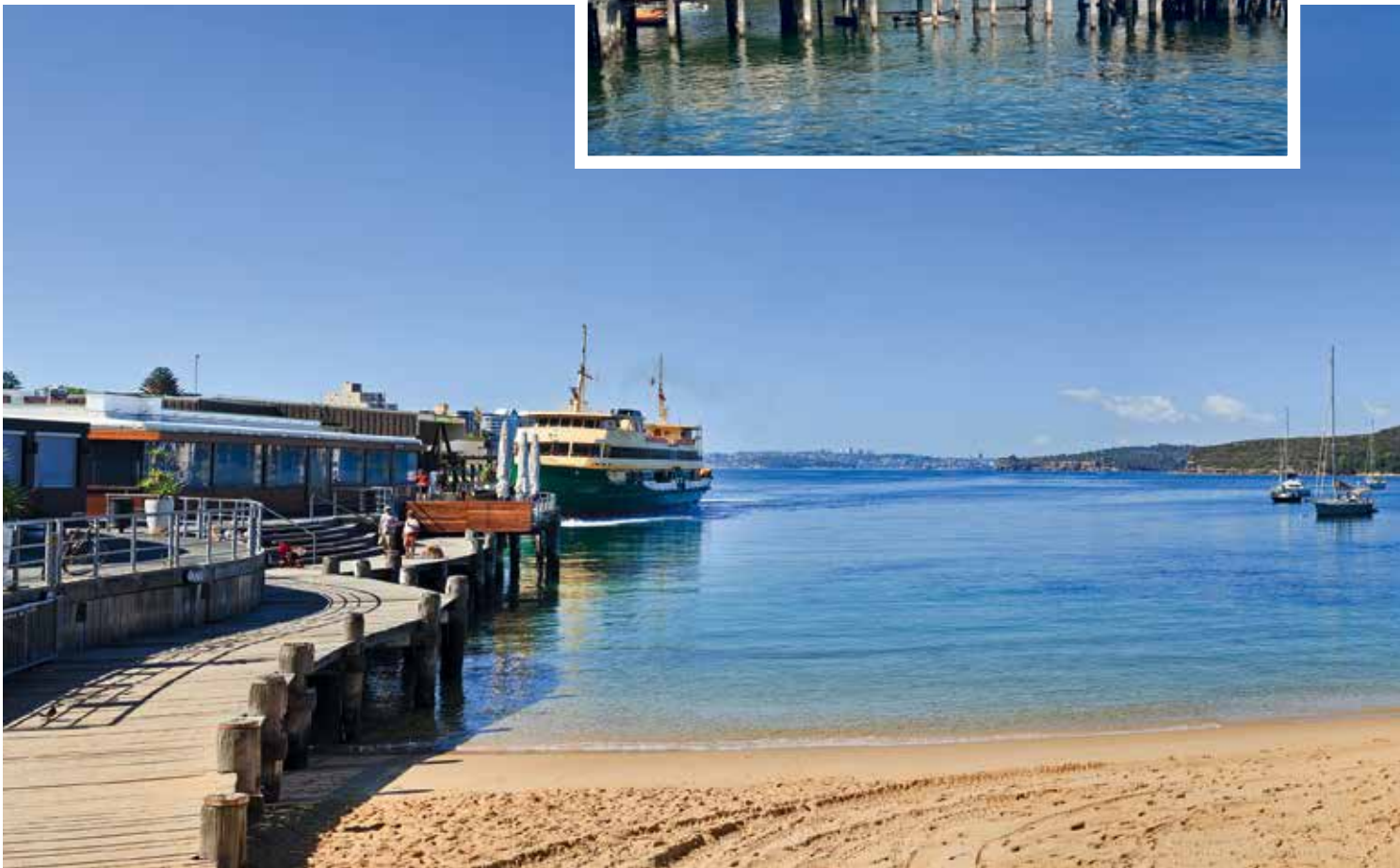
Manly

As the water gateway to the Northern Beaches, historic Manly Wharf is second only to Circular Quay in terms of passenger numbers. The Manly Wharf precinct is home to several high quality restaurants and bars, with new dining and retail infrastructure currently under development.

The main wharf is a large two-sided pier; Freshwater Class vessels utilise the western side's double storey loading infrastructure, and Manly Fast Ferry vessels primarily utilise the eastern side. An additional uncovered timber wharf (Wharf 3 or East Pier), which was not originally designed to accommodate regular passenger vessels, is located away from the main wharf structure adjacent to Cabbage Tree Bay.

While the main wharf structure remains somewhat dated, recent internal and external aesthetic works have presented a precinct that is enjoyed by both local residents and tourists.

Wharf 3 or East Pier, however, is in need of replacement or significant upgrade. The existing structure is located in close proximity to delicate sea grasses and is challenging to access for some vessels given its angled positioning. There is also a lack of seating on the pier itself and no storage facilities for ferry ramps or ticketing machines. By replacing or upgrading the pier, there is an opportunity to expand capacity, enable access for those who are less mobile, and improve operational safety while better integrating services with the main wharf structure.



Customer experience

Ferries offer commuters, visitors and tourists a number of advantages when compared with other modes – the high desirability of ferry travel is regularly conveyed through customer satisfaction data. The experience of being out on the water for commuting or leisure simply can't be matched by buses, trains or light rail services.

While highly desirable and a natural attraction, opportunities exist to further improve the overall journey experience for users.

As with all modes, it is critical that customers are central to future transport planning, decision-making and service provision. By approaching transport delivery with the aim of enhancing the journey experience, superior customer satisfaction and increased use of public transport can be achieved.

The transport and mobility delivery goal for service providers is no longer solely about moving people from point A to point B – passengers are increasingly expecting fast, efficient, comfortable and productive journeys supported by real-time information and new technologies.

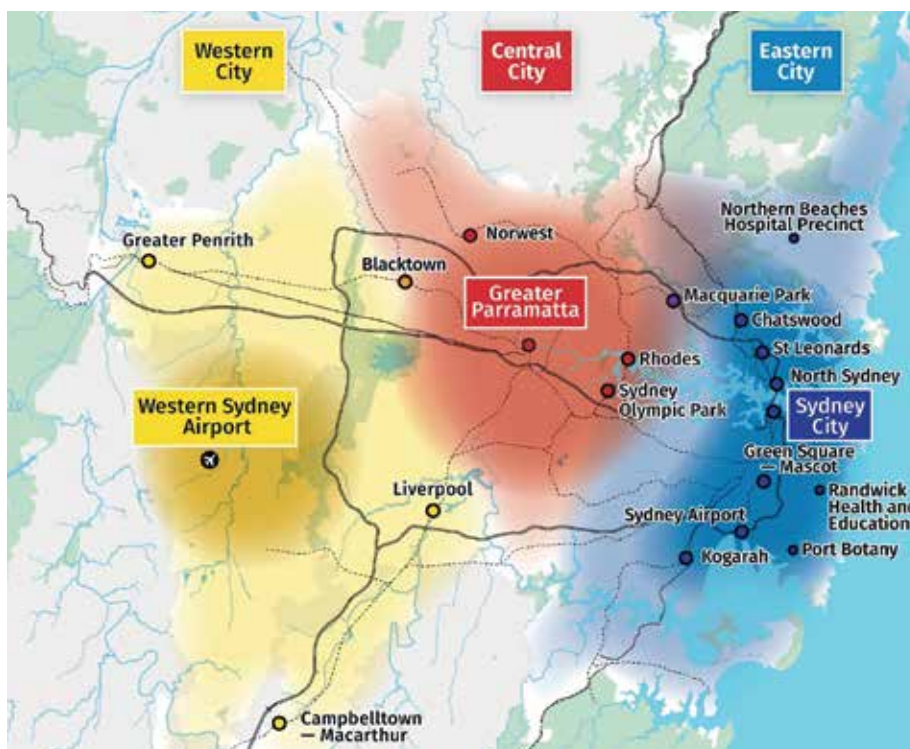
Travel time

Customers value services that run frequently, reliably and consistently. While commuters also place great emphasis on speed of travel, leisure users see this as less of a consideration.

With Sydney expanding, however, commuters and leisure travellers are exploring employment and attractions further afield. The Greater Sydney Commission's 'Three Cities' plan and associated infrastructure plans envisage the Eastern City (Sydney City), Central City (Greater Parramatta) and Western City (Western Sydney Airport) connected by road and transport, with adjoining cities accessible in no more than 30 minutes.

The 'Three Cities' plan is built on a vision where most residents live within 30 minutes of their jobs, education and health facilities, services and places of interest. Having three cities, each with supporting metropolitan and strategic centres, aims to put workers closer to knowledge-intensive jobs, city-scale infrastructure and services, entertainment and cultural facilities.²⁷

Three cities concept



SOURCE: Greater Sydney Commission

²⁷ Greater Sydney Commission, A Metropolis of Three Cities, March 2018

Fast ferry services operating in Sydney Harbour, Botany Bay and Parramatta River could support this vision and encourage greater visitation and employment opportunities.

Currently, in Sydney Harbour, the Manly Fast Ferry provides commuters with a fast service between Manly and Circular Quay, reducing travel time by approximately 40 per cent compared with the traditional ferry service while alleviating road congestion along the Military Road/Spit Road corridor. This travel option significantly reduces commute time between Manly and the Sydney CBD, offering much faster travel than car, bus or taxi.

With such immense benefits, this type of service should be replicated across other waterways to support future planning and achieve the same societal outcome.

The introduction of a frequent fast ferry service hubbing at Sydney Olympic Park could connect the precinct to both the Eastern Harbour City (Sydney CBD) and the Central River City (Parramatta CBD) in less than 30 minutes.

Ticketing

The roll-out of the Opal smart electronic ticketing system commenced with a trial on the Neutral Bay ferry service in December 2012. During 2013, the trial was extended to all ferry routes.²⁸

Opal permits cash top-ups at wharves, single journey ticketing, online application and concession checking.

With a number of private operators running passenger ferry services in NSW, the addition of OpalPay has supported ticketing integration by allowing passengers to use their Opal card on these services. While this is a positive step, there are opportunities to better support the proper and intended use of concession, senior/pensioner and child/youth Opal cards on privately-operated ferries.

Opal readers on the Sydney Ferries network are now also accepting contactless payments (debit cards, credit cards and smart cards) for adult single fares. This payment method negates the need for an Opal

card and is particularly appealing to tourists who only intend to access transport services on a limited number of occasions.

OpalPay and contactless payments are welcome technology additions that support increased use and improved customer satisfaction, and are especially important for users wishing to access connecting transport modes, particularly 'first-mile last-mile' services.

Continued ticketing expansion and progression should ultimately aim to support integrated, door-to-door transport across all modes and operators when mobility-as-a-service (or MAAS) becomes the preferred and accepted mobility model.

Information

The provision of quality information in real-time is becoming increasingly important. The demand for real-time service updates and announcements is partly being driven by millennials who have grown up with information at their fingertips.

Having the ability to plan and view journeys in real-time has been well demonstrated by Uber, who offer users the ability to view real-time trip information. This allows better integration of journeys with other daily demands such as appointments and meetings.

While digital access is increasing, demand remains for physical trip information. Paper timetables and information boards are a critical part of the transport network, supporting those to get around who may not have access to smartphones and apps.

Signage and guidance within and around transport precincts is also critical for disseminating information and assisting wayfinding. There are opportunities at a number of wharves, particularly Circular Quay and Manly to improve signage and information for users to assist in streamlining the journey experience.

Attracting a significant tourist component, information on ferries and at ferry wharves in particular should be multi-lingual to assist visitors in moving around safely and efficiently.

²⁸ NSW Government, *Sydney's Ferry Future, Modernising Sydney's Ferries*, May 2013

Stops, wharves and interchanges

Surveys have shown that customers value clean and comfortable ferries, easy access to seating, and personal space in which to work or relax. Amenities such as well-equipped washrooms, charging stations, Wi-Fi, TVs and bar and café services enhance the travel experience – which ultimately encourages repeated use. Additionally, quality wharf infrastructure, the availability of day-to-day consumables and easy access to complementary modes of transport within the wharf precinct act as further incentives.

Currently, transferring between services or modes is viewed by many as an inconvenience. Interchange precincts, however, have shown that they can become inviting and desirable destinations in themselves.

Interchanges can be places for people to meet, socialise, dine and shop. The potential to create these destinations has been realised throughout the world by many governments, operators and providers who have placed great significance on offering customers a tantalising transport experience.

In Australia, several new Sydney Metro stations are currently being proposed as integrated world-class destinations offering commercial, residential, community and retail opportunities.

While not driven by the provision of transport, the Bays Precinct redevelopment is another example of a proposed destination that plans to host several transport options. Significant in size, the redevelopment plan includes a mix of cultural, maritime, recreational, retail and commercial uses.

Some recent progress in this area incorporating wharf infrastructure has been made, with Barangaroo the best example of a destination interchange. The proposed Circular Quay renewal project will also deliver a desirable interchange offering several modes of transport and an array of services for commuters and tourists.

Cosmetic works and new infrastructure at Manly Wharf has created a desirable place with access to buses and bikes, however there is more that could be done to deliver an even better experience for users. Rose Bay Wharf and the surrounding spaces also offer the opportunity to create a more integrated transport experience that complements the nearby hospitality and tourist experiences.

Along Parramatta River, the establishment of an integrated destination interchange close to the waterway's upper section presents an exciting opportunity for the Greater Parramatta area. Similarly, a hub (and later two) further east (closer to the Sydney CBD) could act to service the waterway's lower section, including areas such as Cabarita, Abbotsford, Chiswick, Huntleys Point, Drummoyne, Woolwich, Greenwich, Birchgrove and Balmain.

Safety

The principal organisations responsible for managing ferry passenger transport in Sydney Harbour are:

- Transport for NSW
- Roads and Maritime Services
- Australian Maritime Safety Authority
- Port Authority of NSW

Vessels operating in Sydney Harbour are subject to a number of Acts, regulations and rules. The Office of Transport Safety Investigations indicates that the following enforcements make up the regulatory environment for passenger ferries:

- *Marine Safety (Domestic Commercial Vessel) National Law Act 2012 (C'th)*
- *Passenger Transport Act 2014*
- *Ports and Maritime Administration Act 1995*
- *Marine Safety Act 1998*
- Harbour Masters Directions

The NRMA believes the following recommendations presented by the Office of Transport Safety Investigations as part of its Ferry Safety Investigation Report 2010–2016 should be made a priority for ensuring the continued safety of passenger ferries operating in Sydney Harbour:

- Designate wharf usage according to geographic destination where practicable in order to minimise ferries crossing paths in congested areas

- Ensure ferry timetables avoid same time departures
- Explore the benefits of installing AIS on all passenger transport ferries operating in Sydney Harbour
- Ensure that effective communication by ship operators occurs when thrusters are in use by ships in Sydney Cove

Despite occasional incidents, ferries reported fewer injuries per 100,000 passengers in 2016–17 compared with trains and buses.²⁹ Ferries have, in fact, continued to report fewer injuries per 100,000 passengers than trains and buses for at least the past five years, arguably positioning them as the safest form of mass transport for daily commuters and tourists.³⁰

While safety across the transport network should always be a key focus, Sydney Cove, Manly and

Darling Harbour are locations where capacity needs to be monitored and managed to optimise the safe movement of vessels.

Sydney Cove

Sydney Cove has the highest concentration of harbour traffic. Within its confines are the Overseas Passenger Terminal, Campbells Cove, Commissioners Steps, Harbour Masters Steps, East Pontoon and the Circular Quay commuter wharves. Approximately 80 ferry movements occur in Sydney Cove between the weekday peak time of 8am and 9am.³¹

While new or improved ferry services need to be considered alongside the capacity of Sydney Cove, the opening of Barangaroo Ferry Wharf and Wynyard Walk has presented a desirable and alternative Sydney CBD location for ferry services that integrates with the wider transport network.



²⁹ www.audit.nsw.gov.au/publications/latest-reports/transport-2017

³⁰ IPART Review of Fares for Private Ferry Services, December 2017

³¹ Office of Transport Safety Investigations, *Ferry Safety Investigation Report*, 2016

Manly

Freshwater Class vessels to and from Circular Quay operate exclusively from the western side of the main pier, with a number of private ferries utilising adjacent infrastructure.

While current services operate with reasonable efficiency, increased patronage will place pressure on the existing infrastructure, particularly Wharf 3 or East Pier. With ferries a major form of transport to and from Manly, infrastructure upgrades or service rescheduling will be required to improve capacity as the population of the Northern Beaches increases.

Darling Harbour

Darling Harbour is on the western side of the Sydney CBD. With the attractions in and around Cockle Bay providing a regular source of passengers,³² King Street Wharf, Aquarium Wharf and Pyrmont Wharf afford access.

While navigation in and around Darling Harbour is complicated by narrow waters at the entrance of Cockle Bay, the recent establishment of the Barangaroo Ferry Wharf will essentially negate some access issues for certain vessels.

Access

Easy wharf and ferry access and support for less mobile users and families travelling with young children and prams are important considerations within any transport network. Fast dual-point boarding on ferries and wide entry/exit ramps streamline embarkation and disembarkation while supporting those with mobility constraints.

In close proximity to wharves, car parking spaces, car share zones, bike storage facilities, clear pedestrian paths, set down areas and integrated transport services offer incentives to travel by ferry.

To assist 'first-mile last-mile' access and support safe travel, car parks, bike storage facilities and pedestrian paths should be well lit, monitored by CCTV and covered where possible to encourage transport use during inclement weather.

The future of 'first-mile last-mile'

With technological advancements increasing exponentially, transport will see great change over the coming years and decades.

On-demand transport, underpinned primarily by connected and automated vehicles and mass transport modes, will become the preferred mobility model. On-demand vehicles and transport services will overcome the troublesome 'first-mile last-mile' access dilemma (access to and from a station, wharf, port or interchange) that severely deters public transport use today.

This future model of mobility is particularly important for encouraging increased use of ferries in the Greater Sydney Region as topography dictates that wharves are located in low-lying areas. Wharves at the base of steep inclines create access issues for users, especially those who are less mobile.

On-demand transport in Sydney is currently being trialled through the NSW Government's On Demand program, which aims to bring transport to the commuter. Eight pilots in the North West, South West, West, Eastern Suburbs, Northern Beaches, Sutherland Shire and Central Coast commenced in late 2017. The pilots allow customers to book a dedicated bus from or near their home to a local transport hub or centre, including local hospitals.³³

Newcastle Transport has also implemented on-demand services within the Lake Macquarie region. Similar services also operate interstate, particularly in regional South Australia.

In addition to on-demand buses, ferries present a good option to further expand trialling, particularly in smaller areas close to the waterline that are poorly serviced.

Connected and automated vehicle technology, which has been a major focus for original equipment manufacturers, technology companies, software start-ups and automobile organisations for some time, will accelerate the on-demand transport concept by integrating all transport modes and allowing people to travel from point A to point B in the most efficient manner.

³² Office of Transport Safety Investigations, *Ferry Safety Investigation Report*, 2016

³³ <https://www.transport.nsw.gov.au/newsroom-and-events/media-releases/a-bus-stop-outside-your-door-on-demand-transport-here>

If properly integrated with traditional mass transport services, this advancement will usher in enormous benefits and significantly improve liveability, especially for those who cannot presently access public transport services.

With real-time information and big data set to play a greater role in the future, transport services will be offered dynamically and based on customer needs.

An integrated mass transport system with high quality connections supported by connected and automated vehicle technology will dramatically improve the performance and utilisation of transport networks, reducing road congestion and increasing productivity.

Under this mobility model, the transportation of people to and from stations, wharves, ports and

interchanges will require dedicated pick-up and drop-off areas. This component of the system will be critical in supporting connected and automated vehicles and should be considered in the planning stages of new transport developments.

While transport accessibility and utilisation can be significantly improved with connected and automated vehicle technology, existing options and personal mobility devices for short trips, including traditional bikes, e-bikes and scooters, will play an increasing role supporting an integrated mobility future and should also be properly considered in planning and infrastructure upgrades. Transport interchanges that support these types of personal mobility devices will further improve accessibility and create additional incentives for individuals to use mass transport services.



Case study – NAVLY

In September 2016, Keolis and Navya, supported by the Métropole of Lyon, launched the NAVLY project. NAVLY is the first integrated and regular transport service in the world operated by an automated shuttle.

Approved by the French Ministry of Ecology, Sustainable Development and Energy in July 2016 as a national experiment, NAVLY operates in Lyon along the river Saône, connecting the stops of Charlemagne, Passerelle, Les Salins, La Sucrière and Magellan with the Confluence tram, providing access to nearby train and metro stations.

NAVLY facts

- Launched September 2016
- 7.30am to 7pm Monday to Friday (Saturdays recently commenced)
- Every 15 minutes during peak hours (every 30 minutes in off-peak)
- 1350 metre path with five stops along the river Saône
- Transported more than 22,000 people
- The success of NAVLY in the Confluence has led to the recent establishment of a broader trial in the crowded business district of Paris La Défense.

Future services and opportunities

As a community, we have become somewhat reliant on the private car to get around. Despite government spending on roads, our urban centres in particular have become more congested, acting as a handbrake on economic growth. While an expanded ferry network and increased usage won't solve congestion, taking cars off the road and increasing train and bus capacity can only deliver a positive impact.

Reforming the ferry market could provide commuters, tourists and visitors with a significantly improved and highly desirable ferry network, offering journey times superior to that of the private car and other transport modes that is safe and convenient.

With improved service provision and upgraded fleet and wharf infrastructure, the ferry network in and around Port Jackson has the potential to become iconic, rivalling the enduring association that trams hold with Melbourne.

When designed appropriately and implemented at scale, ferries have become an icon to several cities around the world. City branding strategies have become more common in recent times and transport is increasingly playing an important role – being highly visible, ferries lend themselves to supporting such branding strategies.

As autonomous technology progresses and on-demand, door-to-door transport becomes the way of the future, access to ferry wharves will undoubtedly improve, widening the commuter catchment area and offering a real option for tourists and visitors to navigate the Greater Sydney Region and beyond.

Integrated transport and multimodal interchanges at arrival and departure points will enable customer journeys by improving access to the waterways, offering greater connections, and increasing flexibility.

An expanded ferry network, especially through Parramatta River, will complement the current infrastructure spending program in Western Sydney and provide residents with improved access to a harbour and beach lifestyle. Sydney Harbour, with a total surface area of 55 square kilometres is bounded by the Royal National Park, world heritage listed

mountains and the Pacific Ocean. It is one of the world's most spectacular urban settings and should be easily accessible for the enjoyment of people across the Greater Sydney Region.

Current ferry services are tired and in need of renewal. The system in its current form lacks strong transport network integration, with passenger convenience and access significant barriers to increased use.

With the proposed redevelopment of Circular Quay, the opportunity to better align planning, operations, wharves and services is presented. Outer Harbour (Manly), Inner Harbour (including the Eastern Suburbs) and Parramatta River services should make use of wharves that correspond with the direction of travel to reduce vessel crossover in Sydney Cove. This type of arrangement would improve access and optimise the use of new wharf infrastructure.

The Outer Harbour, Inner Harbour and Parramatta River areas should each be serviced by a fast ferry to enable desirable journey times for commuters, visitors and tourists. With inconsistencies currently existing across the ferry network, journeys on waterways are not optimised to assist with the overall transport task in Sydney..

While the Outer Harbour and Inner Harbour areas are currently serviced by fast ferries, there are opportunities to improve and expand these services to better cater for the needs of commuters.

The Eastern Suburbs, Manly, Balmain and the Lower North Shore are areas where patronage is significant, however improved services would act to entice a greater number of commuters out of their cars. These particular areas possess some of the slowest road journeys in the Greater Sydney Region and would benefit from a reduction in private vehicle numbers on the road during peak periods.

The provision of additional or improved fast ferry services at key wharves in these locations would allow existing traditional services to be rescheduled to improve frequency at some of the smaller wharves that are currently underutilised.

There is also an opportunity to introduce new services in locations that currently don't have access to ferries. Woolloomooloo as an example could act as the gateway to The Domain, the Art Gallery of New South Wales and Mrs Macquarie's Chair, as well as offering visitors and tourists access to some of Sydney's finest dining establishments and places of interest.

Parramatta River sits within one of Australia's fastest growing areas and is a magnificent waterway in its own right. With a large number of commuters living within one to two kilometres of existing wharves, Parramatta River should be a high speed corridor servicing the Sydney CBD in the east and the City of Parramatta in the west.

While there are a number of obstacles in the way of realising this future, strong population and workforce projections through to at least 2056 mean it is vital that transport through the Parramatta River is optimised to service the growing needs of the Central River City and Western Sydney.

Poor travel times, infrequent services and isolated wharves with substandard connections and car parking facilities act as major barriers to use.

The establishment of an interchange along Parramatta River, frequented by a fast ferry service and complementary transport modes, would connect commuters with the Eastern Harbour or Central River City CBDs in a desirable timeframe while integrating with smaller feeder services to improve access and journey times for people residing within the Parramatta River catchment area.

With significant infrastructure developments and multiple areas of interest at either end of Parramatta River, the establishment of such an interchange would allow bi-directional commuting and tourist visitation, and act to support major events held west of the Sydney CBD in Sydney Olympic Park and Parramatta.

As areas such as Parramatta, Wentworth Point, Rhodes, Sydney Olympic Park, Melrose Park, Camelia and Western Sydney University continue to grow, there will be additional pressures placed on the transport system. The improvement of ferry services will assist in alleviating these pressures, particularly prior to the completion of major infrastructure projects such as Sydney Metro West and Parramatta Light Rail, which will not provide end-to-end journeys for more than a decade.

Commuter precinct priorities

Northern Beaches

- Wharf 2 outdoor access cover to enclose waiting areas
- Wharf 3/East Pier upgrade to improve capacity and access for those who are less mobile
- Improved public transport links, bicycle parking and vehicle access to entice commuters
- Improved wayfinding, signage, passenger information and ticketing infrastructure to enhance efficiency
- Retain Freshwater Class vessels primarily for tourism purposes



Eastern Suburbs

- Watsons Bay Wharf upgrade to improve capacity and efficiency
- Improve wharf access to Sydney's outer harbour islands
- Improve public transport links at Rose Bay Wharf
- New wharf infrastructure at Vaucluse Bay
- Investigate expanding wharf infrastructure to cater for three vessels simultaneously in key locations



Lower North Shore

- Improve connections between North Sydney and Milsons Point Wharf and Jeffrey Street Wharf
- Upgrade Taronga Zoo Wharf to support concurrent use by multiple vessels
- Upgrade Jeffrey Street Wharf to improve capacity and efficiency
- Investigate the feasibility of commencing a ferry service from Balmoral
- Investigate Berrys Bay, Balls Head Bay/Gore Cove and Neutral Harbour as locations for vessel storage



Inner West

- Investigate areas for additional wharf infrastructure to support increasing demand for services
- Improve the frequency of services to entice Sydney CBD commuters out of their cars
- Trial on-demand services to support increasing densities along the foreshores
- Wharf upgrades delivered through the Transport Access Program should continue to provide common facilities to maximise efficiencies
- Investigate White Bay (northwest section) and White Bay 6 as locations for vessel storage



Greater Parramatta

- New wharf infrastructure at Western Sydney University (Parramatta Campus), Camellia and Melrose Park/Ermington to support residents and commuters
- Establish a base for vessel storage and overnight berthing to support upper Parramatta River services
- Commence a fast and frequent commuter service between the Sydney CBD and Sydney Olympic Park and/or Meadowbank
- Establish a multi-modal transport interchange to support fast ferry services and seamless connections
- Prioritise the use of more appropriate vessels on the upper section of Parramatta River



Sydney CBD

- Upgrade Circular Quay precinct
- Planning, operations, wharves and services at Circular Quay should be aligned
- Construct a third wharf at Barangaroo and expand King Street Wharf availability for passenger transport access
- Investigate the feasibility of commencing a new service from Woolloomooloo
- Investigate The Bays Precinct and King Street Wharf as locations for vessel storage



Vessel storage

A reduced industrial focus on Sydney Harbour presents an opportunity to repurpose land and existing infrastructure to accommodate an enlarged ferry fleet.

While legislation currently allows some vessels to berth overnight at a limited number of wharves, a dedicated berthing facility will be required to service the Greater Sydney Region's growing population and increased passenger demand.

The NRMA has identified the following locations as possible sites for the establishment of an overnight berthing facility which could potentially also facilitate the carrying out of maintenance, servicing and refuelling:

White Bay (northwest section)

- This underutilised section of White Bay would support 'stern to berthing' with the construction of a floating walkway along the currently unusable rock seawall. The addition of a light framed structure on the adjacent shore would support minor maintenance and act as a storage facility for stock and spare parts.

White Bay 6

- Next to White Bay Cruise Terminal, White Bay 6 is easily accessible by water and road and currently supports a range of boating operations, including storage, maintenance and refuelling. If reconfigured, the site could provide additional storage capacity for larger vessels and facilitate maintenance and servicing requirements.

Berrys Bay

- Located to the east of the Waverton Peninsula and easily accessible by water and road, Berrys Bay has a history of supporting ship building, shipping, fuelling and vessel berthing. While on the northern side of Sydney Harbour, Berrys Bay is well positioned and capable of supporting a large number of mixed vessels due to its size and open access.

Balls Head Bay/Gore Cove

- Also on the northern side of Sydney Harbour, Balls Head Bay/Gore Cove is located to the west of the Waverton Peninsula. Balls Head Bay/Gore Cove offers plenty of deep water and is well positioned to support vessels servicing Parramatta River, as well as Sydney Harbour.

The Bays Precinct

- The redevelopment of The Bays Precinct, which incorporates 94 hectares of waterways, provides the opportunity to establish significant facilities for vessel storage and associated requirements. Just two kilometres west of the Sydney CBD, The Bays Precinct would allow easy access to Balmain Shipyard and support for vessels servicing all of Sydney Harbour.

Neutral Harbour

- While smaller in size than alternate locations, Neutral Harbour, located on the northern side of Sydney Harbour to the west of Kurraba Point, is well positioned and, if configured correctly, could accommodate vessels for some services operating in Sydney Harbour.

King Street Wharf

- Next to Barangaroo on the western side of the Sydney CDB, King Street Wharf could accommodate the overnight berthing of Barangaroo, Circular Quay, Darling Harbour and Balmain commuter vessels, as well as provide easy access to the Balmain Shipyard.

Sydney Olympic Park

- Vessel storage west of Sydney Harbour will be required to support improved service frequency along the Parramatta River as major precincts drive demand. The expansion of Sydney Olympic Park Wharf could support efficient service delivery by providing overnight berthing for up to six vessels in close proximity to the upper section of Parramatta River.



Riverside to harbourside

A new approach

The Central River City and Western Sydney are among the fastest growing areas in Australia. With new trains, buses and roads committed, attention should now turn to ferries.

While investments in major transport projects are welcome and necessary, the provision of faster and more reliable ferry services prior to their completion will assist in alleviating road and rail congestion in the short term, providing socio-economic benefits and improved choice for customers.

During the past five years, the Transport Access Program has helped to improve wharf amenity along Parramatta River, providing the catalyst for higher frequency services and new routes.

To achieve the vision of the 30 minute city and connect the Central River City with the Sydney CBD, the establishment of a transport interchange along the Parramatta River is necessary to accommodate a fast linear ferry service with limited or no stops.

A significant progression in commuter transport has been the application of linear services, where ferries connect waterfront locations along a river or coastline. Cross waterway services may still be present, however in many cases they are now used in a supplementary fashion to support one or more longer linear routes and provide transfer options. Linear ferry systems provide scale and frequent scheduled services on high-speed vessels.

Urban linear ferry systems are now operating in almost every continent with new systems being considered in cities such as Melbourne, Washington D.C. and Abu Dhabi. The systems are designed to maximise transport, tourism and economic development opportunities through vessel design, route design and terminal location.³⁴

In New York, implementing the concept and then improving on it through system expansion has underpinned the transport growth strategy.

Ferry systems are highly flexible and can easily add or amend services with minimal impact or capital to optimise customer and service delivery. Infrastructure lead times of well under one year are often achievable. To reduce risk, the tendency has been for systems to start small and evolve over time to meet changing customer demands.

Urban linear ferries, with only relatively modest terminal outlays, just don't bear the major infrastructure costs associated with other transport initiatives or projects such as WestConnex or Sydney Metro.

Parramatta River presents an opportunity to improve the commuting experience and visitation. In addition to existing places of interest, jobs, services and major events are drivers that necessitate commuting. With imminent growth along Parramatta River, including the areas of Parramatta CBD, Western Sydney University (Parramatta Campus), Camellia, Rydalmere, Melrose Park/Ermington and Sydney Olympic Park, faster travel times and increased frequency of service will support residents and tourists, underpinning increased economic activity.

Linking major cities and centres with fast mass transit supports important service principles, including connectivity, flexibility, efficiency, access and equity. The provision of transport services that provide users with high quality mobility options and offer good value for money should be a key priority for governments and cities.

³⁴ Tanko, M & Burke, M 2017, Transport innovations and their effect on cities: the emergence of urban linear ferries worldwide

Travel time

The current F3 Parramatta River ferry does not provide the journey time or frequency of service to entice customers, particularly those commuting to either the Eastern Harbour or Central River City CBDs for employment purposes.

The F3 Parramatta River ferry also falls short of delivering the 30 minute city vision.

Though the creation of a new style of ferry service combining express trunk lines with frequent local feeder services, it is possible to transform the useability of Parramatta River for commuting, tourism and visitation, thus providing a world-class transport option for the Central River City, as well as Western Sydney.

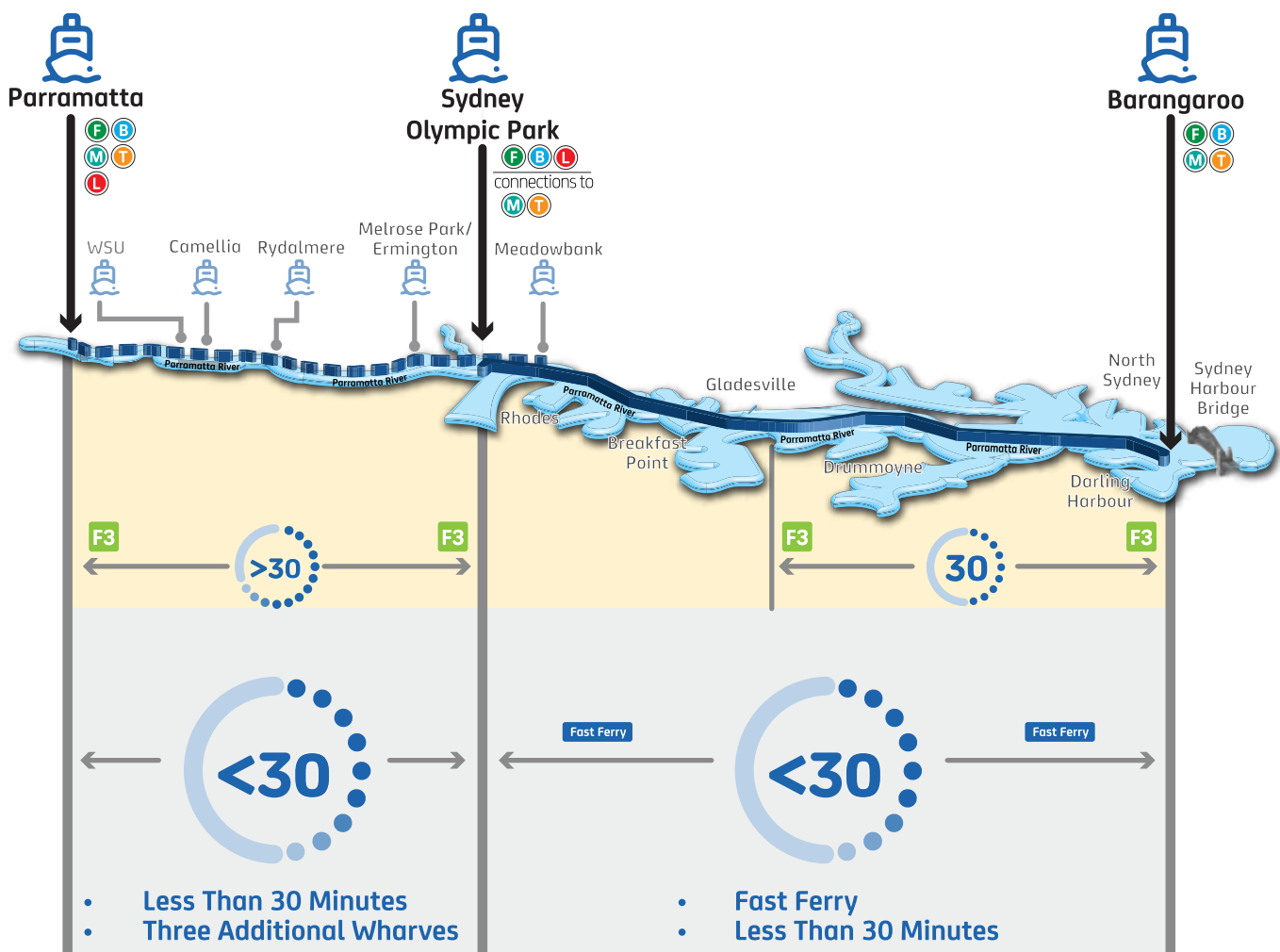
Sydney Olympic Park–Parramatta

- Smaller, more efficient vessels
- New wharf infrastructure
- Increased service frequency
- Integrated timetabling
- Year-round reliability

Sydney Olympic Park–Barangaroo

- Faster journey times
- More appropriate river vessels
- New, small-sized netting vessels
- Increased service frequency
- Multi-modal integration

Delivering the 30 minute city



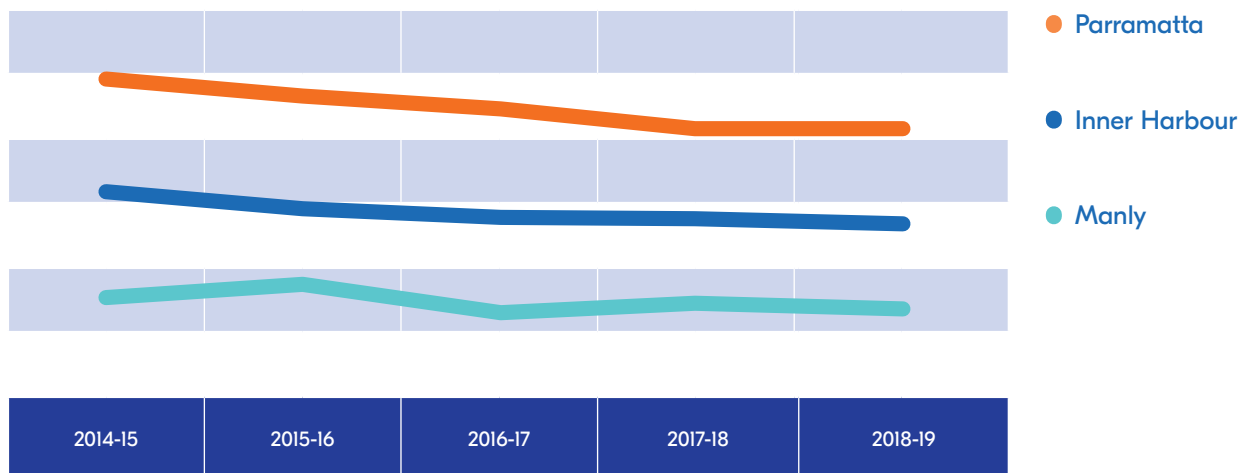
The Need for Change

Due to journey time, frequency and accessibility, ferry services along Parramatta River in their current form are poorly utilised and present a significant cost to government.

L.E.K.'s Sydney Ferries Cost Review of 2012 found that low patronage along Parramatta River drives a high per passenger service cost relative to the remainder of the Sydney Ferries network. Parramatta River services account for 16 per cent of total patronage but 27 per cent of total operating costs.³⁵

In 2016–17, just 3.2 million trips were undertaken by passengers on the Parramatta River, despite the Sydney to Parramatta corridor being one of the most highly utilised in the country. Compare this with more than 9 million (Sydney Ferries and private operators) on the Circular Quay–Manly route during the same period, and it is apparent there are significant improvements to be had.

Operating Cost Per Passenger During HCF's Contract Period



SOURCE: The CIE Efficiency of NSW Public Transport Services December 2015



³⁵ The Centre for International Economics, *Efficiency of NSW Public Transport Services*, December 2015

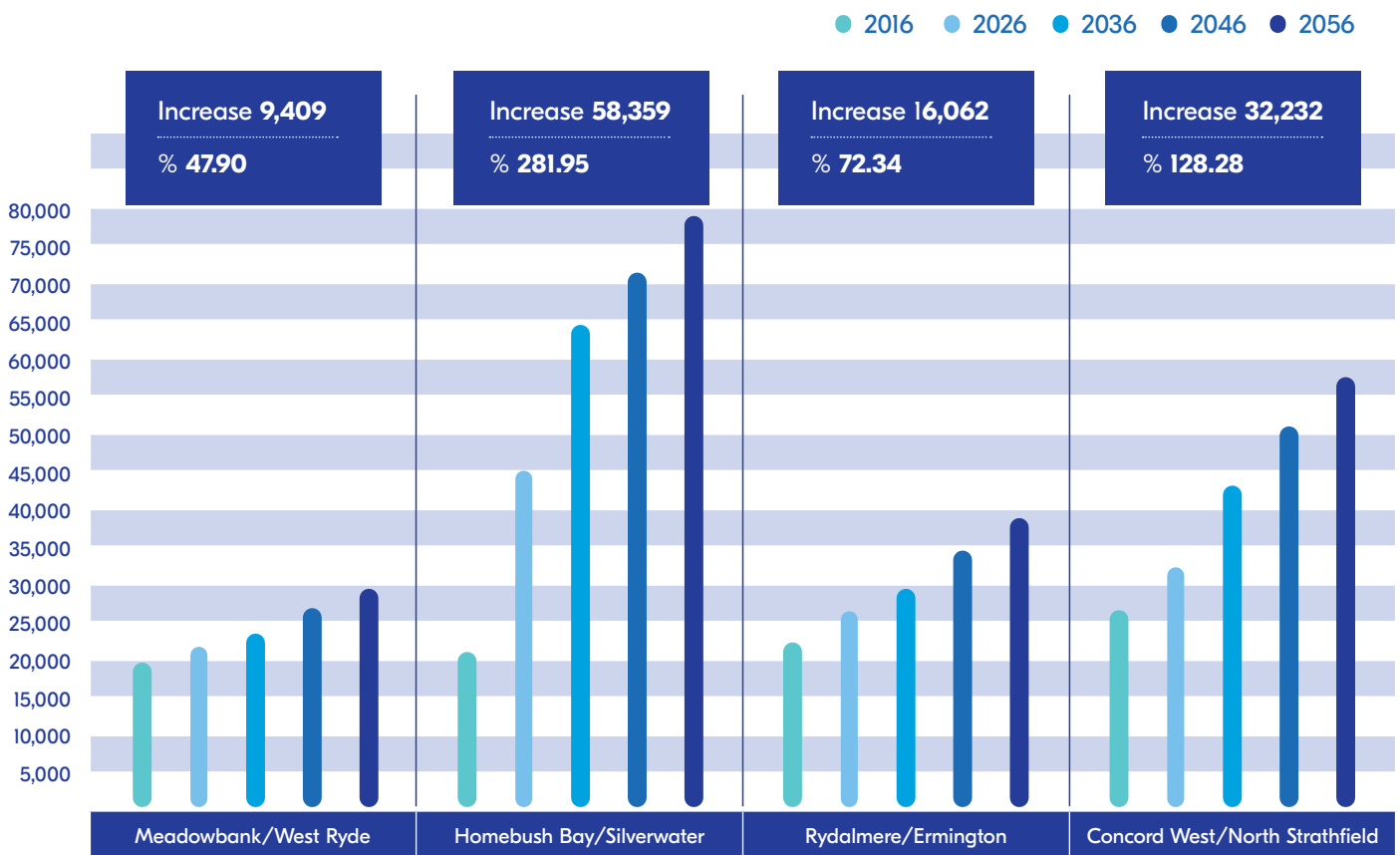
Population

Population and workforce projections alone, particularly through the upper precincts surrounding Parramatta River, make a strong case for the need of improving and expanding ferry services.

New waterside developments and a strong government focus on growth mean that new transport options are vital to support new residents, as well as visitors.

Precinct Population Projections (2016–2056)

TfNSW Precinct	2016	2026	2036	2046	2056	Increase	%
Meadowbank/West Ryde	19,643	21,853	23,577	26,532	29,052	9,409	47.90
Homebush Bay/Silverwater	20,698	44,900	64,706	71,567	79,057	58,359	281.95
Rydalmere/Ermington	22,205	25,534	29,702	34,266	38,268	16,062	72.34
Concord West/North Strathfield	25,127	32,217	43,917	50,468	57,359	32,232	128.28



SOURCE: Transport for NSW Open Data

Population figures are derived from TfNSW Estimated Resident Population data as at 26 October 2017
 Homebush Bay/Silverwater includes Sydney Olympic Park and Wentworth Point

Precinct Workforce Projections (2016–2056)

TfNSW Precinct	2016	2026	2036	2046	2056	Increase	%
Meadowbank/West Ryde	10,091	10,995	11,927	13,658	15,078	4,987	49.42
Homebush Bay/Silverwater	9,911	21,486	30,652	33,404	35,616	25,706	259.37
Rydalmere/Ermington	10,287	11,619	13,481	15,316	16,458	6,171	59.98
Concord West/North Strathfield	15,153	19,275	26,241	29,949	33,747	18,594	122.71



SOURCE: Transport for NSW Open Data

Workforce participation figures are derived from TfNSW Workforce Projection data as at 26 October 2017

Homebush Bay/Silverwater includes Sydney Olympic Park and Wentworth Point

Parramatta River shoreline

The Parramatta River shoreline presents several challenges for vessels. The natural meandering of the River, varying widths, and the presence of mangroves, moorings and residential blocks creates numerous challenges to passenger vessel operations.

Shoreline erosion, seawall damage and mangrove degradation have become evident in certain areas due to a mix of excessive vessel wash, dredging, tidal cycles and coastal processes. While natural conditions will continue to contribute to some of these issues, the impact of vessel wash can be controlled through appropriate vessel design, use and speeds.

Vessel wash is dictated by a number of factors, including hull design, weight, draft, speed and distance from the shoreline. It is well-known that some sections of the community have questioned the appropriateness of operating RiverCat vessels along the length of Parramatta River due to their alleged contribution to erosion and bank undercutting.

Of particular importance is the section of waterway west of Silverwater Bridge where significant erosion has occurred. Approximately 70 per cent of the natural shoreline along Parramatta River exhibiting erosion is located in this section.³⁶ Being particularly narrow and possessing a large number of mangroves and unprotected banks, running relatively large passenger vessels along this section of Parramatta River creates long period waves that impact the shoreline and vegetation.

Commercial vessels navigating the waters upstream of Silverwater Bridge are currently restricted to seven knots, primarily due to wash and associated erosion issues.³⁷ However, even at low speeds the RiverCat vessels cause significant water movement along the shoreline.

RiverCat wash is identified as potentially the primary source of erosion in this area, causing bank slumping and loss of vegetation. This issue is apparent to the community, and while they generally support the provision of alternative forms of public transport, they have expressed a high level of concern about the impact of the RiverCat service on erosion through community consultation.³⁸

To better accommodate the RiverCat fleet, dredging has occurred with the aim of improving depth and dispersing energy from the vessels to limit erosion, however issues persist – dredging in itself also creates environmental impacts. Passenger services during low tides remain susceptible to water conditions and are occasionally halted at Rydalmere, creating uncertainty for users.

The combination of unreliable and slow ferry services from Parramatta and substandard environmental handling has not created an enticing service for commuters or visitors from one of Australia's fastest growing areas.

With the Western Sydney University and Camelia growth areas situated along this section of Parramatta River, it is of paramount importance that access is improved in a manner that supports environmental and community concerns.

The Parramatta River Estuary Coastal Zone Management Plan 2013 supports the replacement of current RiverCat vessels with alternative options that create less of an environmental impact, particularly in relation to bank erosion and vegetation degradation.



³⁶ Parramatta River Estuary Coastal Zone Management Plan, June 2012

³⁷ Speed Limits: NSW Waters, January 2018

³⁸ Parramatta River Estuary Coastal Zone Management Plan, June 2012

Parramatta to Rydalmere watercraft

When ferries are unable to gain access to Parramatta during low tide conditions, buses are provided to transfer commuters east. This scenario is an inconvenience for users and acts as a major disincentive to travel on the waterway.

In addition to environmental impacts, a significant issue restricting access to Parramatta is reduced draft (the distance between the waterline and a vessel's hull) during low tides. If a minimum buffer cannot be guaranteed, vessels are unable to operate due to safety parameters.

The presence of recreational water users and industrial barges throughout this section of the waterway also act as barriers to the use of large RiverCat vessels.

Running smaller vessels along the entire length of Parramatta River is one possible solution to overcoming these issues, however this could create capacity constraints and affect commuters at wharves east of Parramatta. To keep pace with even current demand, a greater number of vessels and services would be required to satisfy existing passenger numbers.

The most viable and cost-effective option to service the precincts east of Silverwater Bridge is to address this narrow section of waterway independently. In place of buses, small and frequent passenger watercraft that are able to operate safely with a shallow draft during low tide periods could act as feeder services to an interchange further east. This would negate the need for buses, improve reliability, and dramatically reduce journey times for commuters if connected with a fast ferry service.

The advantages of using small and efficient watercraft in the upper section of Parramatta River include:

- Shallow draft to ensure safe operation, even during low tide periods
- Minimised environmental impacts along the shoreline

- Significantly improved reliability due to consistency of service
- Minimal crew and maximum passenger capacity
- Reduced emissions and noise outputs
- Safe and efficient access to existing wharf infrastructure
- Lower cost per vessel, improving service efficiency
- Potential to increase speed while lessening environmental impacts

Given the width of the upper section of Parramatta River, operating smaller vessels with fewer passenger numbers may also provide the opportunity to use electric or hybrid propulsion as opposed to dedicated diesel power. The use of electric or hybrid vessels on the upper section of Parramatta River would provide further advantages and act as a model to build upon. Electric and hybrid propulsion is rapidly becoming more viable in a range of transport applications and is an important consideration for commercial vessels moving into the future, particularly small vessels or vessels acting as on-demand services.

Hydrofoil vessels with electric propulsion systems offer another viable option. The primary benefit of hydrofoil vessels is significantly reduced wash, which creates the opportunity to increase speed (provided speed restrictions are amended to accommodate this type of vessel). An electric hydrofoil to and from the Parramatta CBD could potentially have little to no impact on the shoreline and mangroves while significantly reducing travel times for users.

However, in order to be effective, a hydrofoil needs to travel a sufficient distance at speed to lift its hull out of the water.

Probable effects of varying vessel types on upper Parramatta River

Vessel	Passengers	Power source	Propulsion	Shoreline impacts	Sediment impacts	Recreation impacts
Hydrofoil (12m)	40	Diesel	Propeller	low	moderate	low
		Electric	Propeller	low	moderate	low
Shuttle (12m)	50	Diesel / Electric	Propeller	low	low	low
		Diesel	Jet	low	moderate	low
Hybrid hull (18m)	70	Diesel / Electric	Propeller	low	low	low
		Diesel	Jet	moderate	moderate	low
MidRiver (24m)	130	Diesel	Propeller	moderate	low	moderate
		Diesel	Jet	moderate	moderate	moderate
RiverCat (33m) (current vessel)	230	Diesel	Propeller	high	moderate	high







Western Quay



Through extensive consultation and research, the NRMA has identified four possible locations along Parramatta River for the construction of a ferry terminal to rival that of Manly.

To service the growing needs of the western section of Parramatta River, Sydney Olympic Park, Rydalmere,

Meadowbank and Rhodes offer accessible locations that could act as a major terminal for commuters and tourists. Each location possesses a number of desirable attributes and could be turned into a world-class, mixed-use destination terminal offering transport integration, retail and dining.

Sydney Olympic Park (preferred)

Sydney Olympic Park Wharf sits on the southern side of Parramatta River between Newington and Rhodes.

- 2036 precinct population projection: 64,706
- 2036 precinct workforce projection: 30,652

The NRMA has identified Sydney Olympic Park Wharf (Wentworth Point) as the preferred option for a major ferry terminal along Parramatta River as it presents the following benefits:

- High density housing and strong projected commuter growth
- Potential integration with Parramatta Light Rail Stage 2
- New Bennelong Bridge connects buses with Rhodes and Rhodes Station
- Expandable wharf infrastructure can accommodate multiple services
- Capacity to support major events at Sydney Olympic Park

- Strong local commuter propensity to utilise ferry services
- Walking and cycling access to the centre of Sydney Olympic Park and Rhodes
- Designated NSW Government Urban Activation Precinct

Wentworth Point as an Urban Activation Precinct is somewhat unique for the fact that it is serviced by just one road (Hill Road). Travelling in and out of the growing precinct will become more challenging as new residents continue to move in, so it is essential that public transport plays a major role. With high density housing and strong projected population and workforce growth, connecting Wentworth Point with fast ferry access and light rail is critical.

With many commuters relying on good interchanges to make better use of the overall transport network, optimising change points and establishing new connections should be a priority for encouraging greater public transport use.

Sydney Olympic Park (Wentworth Point) multi-modal interchange concept



Alternative Options



Rydalmere

Rydalmere sits on the northern side of Parramatta River between North Parramatta and Ermington.

Projections

- 2036 precinct population projection: 29,702
- 2036 precinct workforce projection: 13,481

Assessment

- ✓ Currently serviced by T6 Carlingford Line
- ✓ Potential integration with Parramatta Light Rail
- Existing waterway speed restriction (travel time and frequency not optimised)
- Cannot support major events at Sydney Olympic Park
- Lower population and workforce projections than Sydney Olympic Park

Meadowbank

Meadowbank sits on the northern side of Parramatta River between Melrose Park and Ryde.

Projections

- 2036 precinct population projection: 23,577
- 2036 precinct workforce projection: 11,927

Assessment

- ✓ Serviced by the T1 Epping Line
- ✓ Potential access for Melrose Park residents
- No integration with Parramatta Light Rail
- Cannot support major events at Sydney Olympic Park
- Lower population and workforce projections than Sydney Olympic Park



Rhodes

Rhodes sits on the southern side of Parramatta River between Wentworth Point and Rocky Point (Concord Hospital).


Projections

- 2036 precinct population projection: 43,917
- 2036 precinct workforce projection: 26,241

Assessment

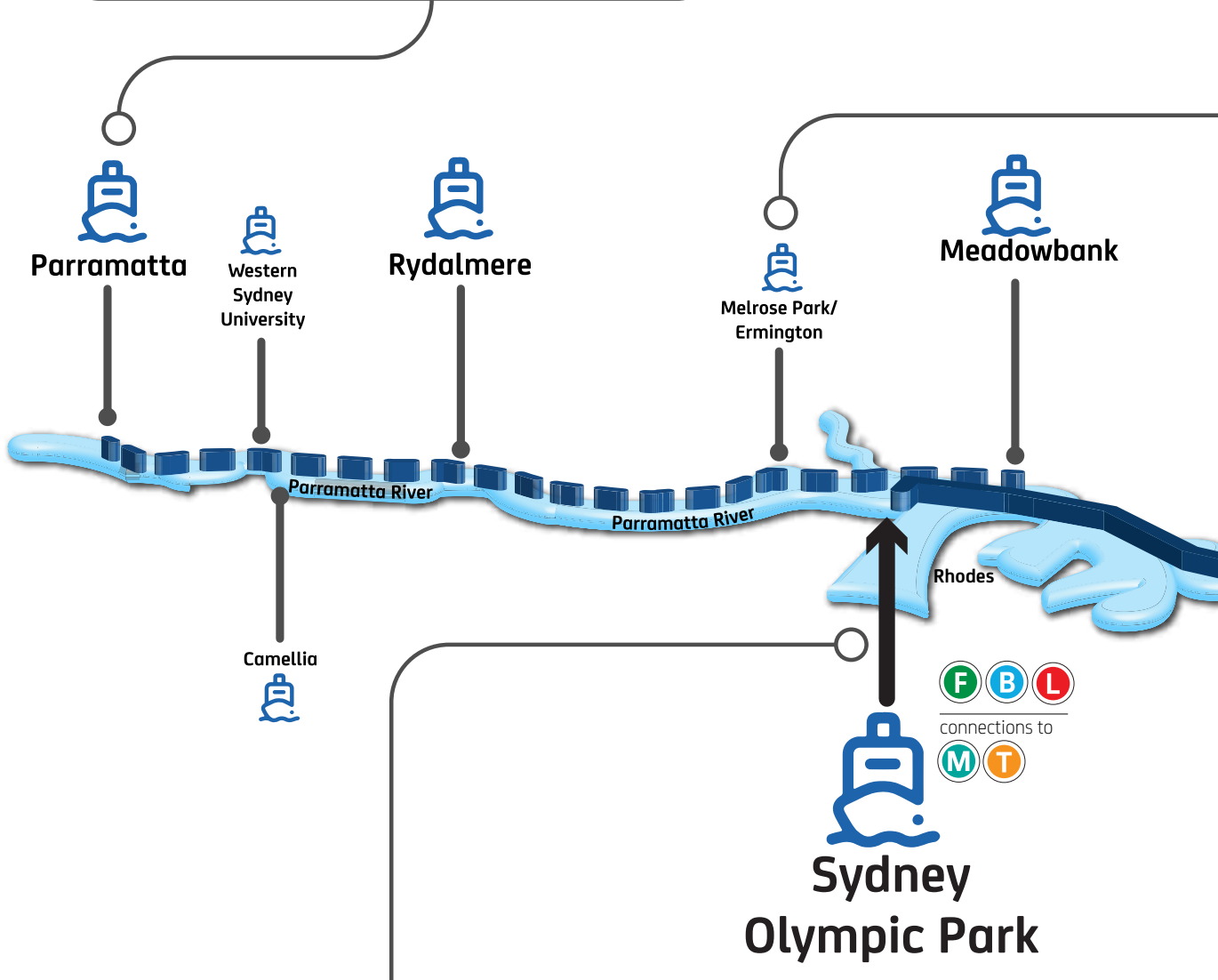
- ✓ Serviced by the T1 Epping Line
- ✓ Access for Wentworth Point residents via
 - No integration with Parramatta Light Rail
 - No existing wharf infrastructure (current proposal pending)
 - Lower population and workforce projections than Sydney Olympic Park

Rethinking Parramatta River



Parramatta

- Parramatta CBD Super Precinct plan
- Westmead Super Precinct plan
- Parramatta North Transformation plan
- Connection to Parramatta Light Rail
- Major arts and cultural precinct
- Connection to Sydney Metro West




Sydney Olympic Park


- Sydney Olympic Park Master Plan 2030
- More than 10 million visitors per year
- Connection to Parramatta Light Rail
- Wentworth Point Priority Precinct
- Carter Street Priority Precinct
- Connection to Sydney Metro West




Transport interchange to accommodate a fast ferry service



Existing commuter wharves west of Ryde Bridge

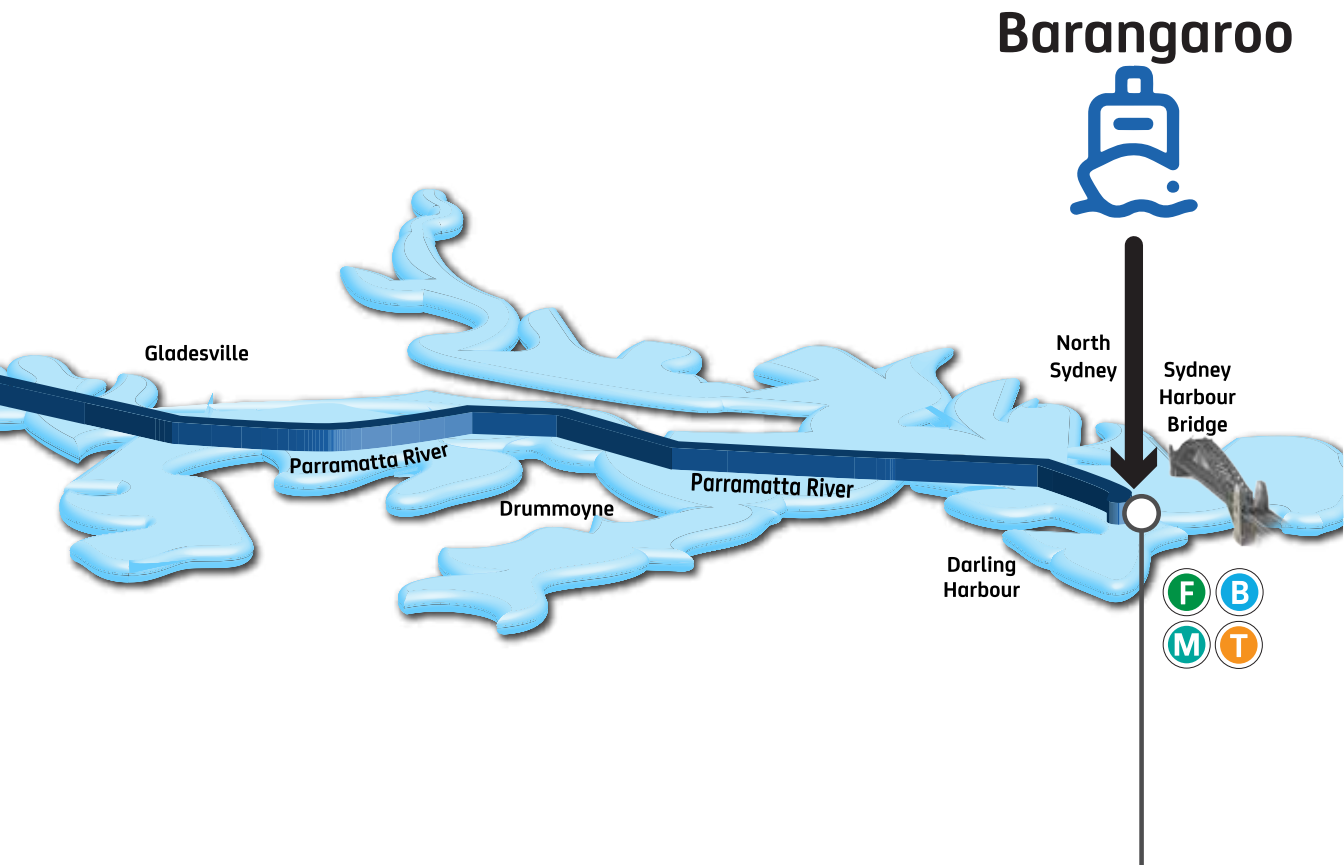


Potential new stops west of Sydney Olympic Park



Melrose Park/Ermington


- Major urban renewal projects
- Connections to Parramatta Light Rail
- Mixed-use, sustainable developments
- New shops, offices, cafes and dining
- More than 5000 new apartments
- New bridge crossing Parramatta River




Barangaroo

- New 22 hectare waterfront precinct
- Connection to Wynyard transport
- 20,000 office jobs and 3,500 residents
- World-class shops, cafes and dining
- Connection to Sydney Metro
- More than 30,000 visitors per day

 Fast ferry

 Upper Parramatta River services connected to Meadowbank and Sydney Olympic Park

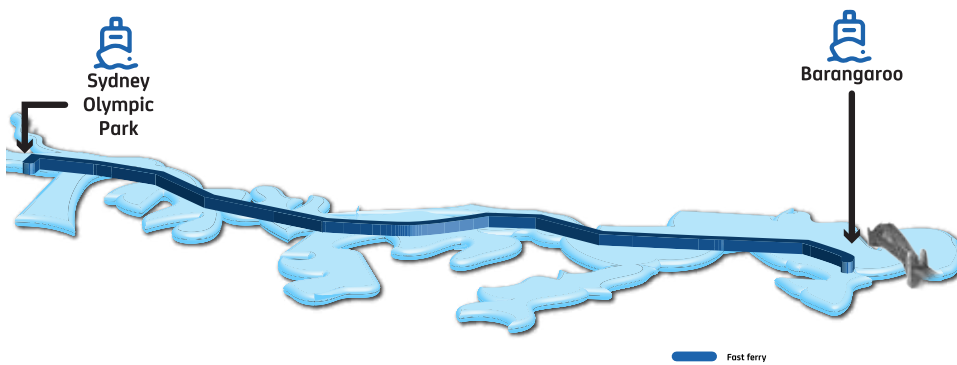
A multilayer approach

Mass transport services operate at optimal efficiency when access and patronage is maximised. In the past, we have had to make our own way to public transport and rely on timetabled services, however this is changing with technology and increasing demand for more convenient public transport.

Through a multilayer approach to transport planning, the availability and provision of ferry services on Parramatta River could be markedly improved.

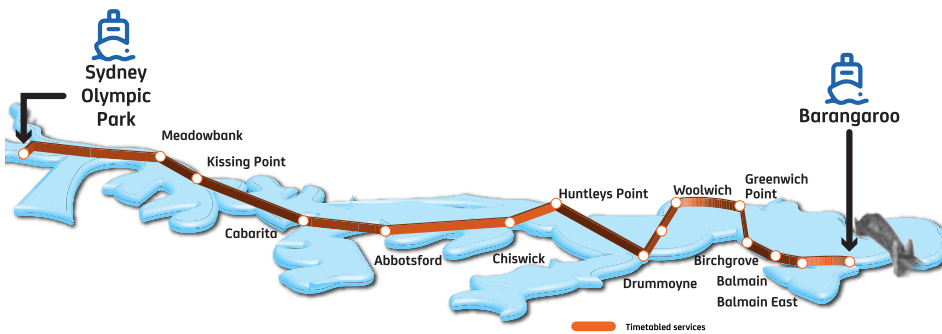
1. Turn up and go services

Frequency of services between major interchanges negates the need for timetables – just turn up and go



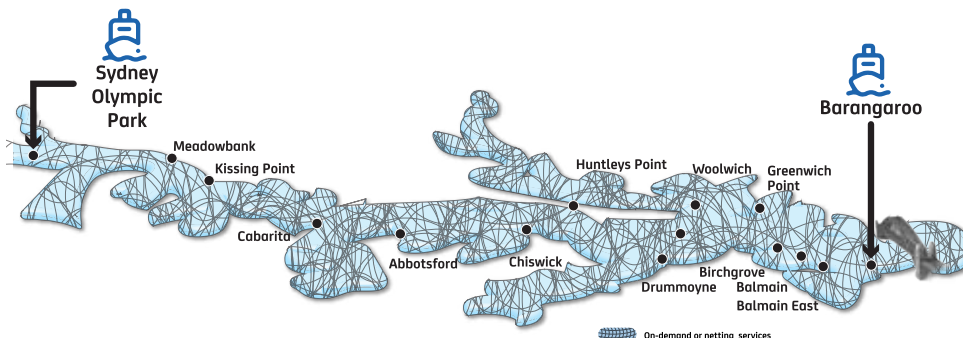
2. Timetabled services

Services from existing wharves operate to a consistent timetable and may connect with major transport interchanges – frequency is determined by anticipated demand



3. On-demand or netting services

Less frequented areas and bays are connected to timetabled services and/or turn up and go services by smaller vessels that operate regularly or as an on-demand option



Beyond Sydney Harbour

Sutherland Shire

The Sutherland Shire possesses a proud ferry history and was the place of choice for many of the earliest ferry services:

- 1899 A small passenger rowboat ferry service crossing the Woronora River was started by Thomas Jack Price – a one-way crossing cost threepence.
- 1903 A regular weekend passenger service from Sans Souci to Kurnell via Brighton-Le-Sands and Botany commenced.
- 1909 Ferry access to Audley in the Royal National Park was made possible post the construction of an accessible wharf at Cronulla.
- 1912 The first La Perouse–Kurnell passenger service commenced operation on Labour Day.
- 1916 A passenger service from Gunnamatta Bay to the desirable and popular holiday locality of Bundeena commenced operation.

While these services were well patronised and some even expanded over time, mainstream acceptance and adoption of the motor car significantly impacted viability.

La Perouse to Kurnell and Brighton-Le-Sands

During the infamous eastern coastline storms in 1974, the wharves at La Perouse and Kurnell were completely destroyed, forcing the termination of the La Perouse–Kurnell service indefinitely.

In May 2018, a plan to redevelop the landing site of Captain James Cook on the eastern edge of Kurnell Peninsula were announced to support the Kamay Botany Bay Master Plan.

This important initiative is supported by the NRMA, as Captain Cook's landing site of 29 April 1770 is perhaps currently the least visited site of national significance in Australia.

The provision of new wharf infrastructure at La Perouse and Kurnell will underpin the re-commencement of the historic ferry service and support tourism and educational opportunities.

A recent study by ARUP for Transport for NSW has identified the preferred wharf locations at these iconic sites:

- The southern end of Frenchman's Bay within the site of the old ferry wharf (La Perouse)
- The site of the old wharf and existing viewing platform near Captain Cook's obelisk (Kurnell)

An alternative wharf location at Kurnell is at the eastern end of Silver Beach near the corner of Prince Charles Parade and Captain Cook Drive. This location is only a short distance southwest of the obelisk and would offer superior access for commuters and better weather protection for vessels.

In addition to tourism purposes, the commuter catchment around the potential wharf locations is growing due to a number of factors, including population densities, road congestion and housing characteristics.

While the La Perouse–Kurnell service has been confirmed, adding in Brighton-Le-Sands or Kyeemagh would attract a greater number of tourists by creating a point of embarkation near Sydney Airport and the surrounding hotels.

Botany Bay to Sydney CBD

New wharf infrastructure and the re-commencement of the La Perouse–Kurnell service increases the feasibility of establishing a ferry service between Botany Bay and the Sydney CBD. This service would connect commuter catchments north and south of Botany Bay and encourage visitation to Captain Cook's landing site from the Sydney CBD. With connecting bus services or the provision of car parking facilities, commuters from Little Bay, Chifley, Malabar, Matraville, Cronulla, Woolooware and Caringbah would have access to an alternative form of transport.

A Botany Bay–Sydney CBD service would only require a short sea run, allowing reliability of more than 90 per cent. The service could be completed from Kurnell in approximately 45 minutes. The journey from north of Botany Bay could be completed in slightly less time.

These times are comparable with a car and at least five minutes faster than an express train from Cronulla to Town Hall. A Botany Bay–Sydney CBD ferry would halve the time to travel by public transport from Kurnell to Circular Quay.

A 45-minute ferry journey to the Sydney CBD from Botany Bay would provide commuters with an alternative and attractive transport option, particularly during the morning and evening peak travel periods.

The establishment of such a service would also help to improve road and transport capacity, particularly on the Princes Highway and General Holmes Drive.

The Central Coast

Within Brisbane Water, the Central Coast Ferry Service operates regularly between Woy Woy, Saratoga, Davistown and Empire Bay. Ferries also travel up and down Cockle and Lintern Channels and across Paddys Channel to Woy Woy.³⁹

During the past two decades, several proposals to establish a ferry service outside Brisbane Water between the Central Coast and the Sydney CBD have been pursued, however none have progressed to the point of securing funding or regulatory approvals.

Despite this, the previously proposed benefits of connecting the Central Coast and Sydney by ferry still exist. With 20 per cent of the local workforce travelling to Sydney, the provision of an additional transport mode is vital and would offer some residents the option of leaving the car at home.

The establishment of a fast ferry service would complement existing transport by providing a third corridor to support the growing Central Coast population, which is forecast to increase from 340,000 to 450,000 by 2036. Additionally, a permanent third corridor would provide an alternative travel option in the event of accessibility issues. During the devastating 1994 NSW bushfires, road and rail from the Central Coast to Sydney became inaccessible, and two local ferries were consequently requisitioned to transport several hundred stranded residents to alternative accommodation.

Gosford to Ettalong and Sydney CBD

The NSW Government's Regional NSW Services and Infrastructure Plan identifies Gosford as the capital of the Central Coast region and a Satellite city of Greater Sydney. The provision of a fast ferry service between Gosford and Sydney via Ettalong would support commuters, infrequent visitors and tourists, and help to attract business, investment and jobs.

Providing visitors to Sydney with fast access to the Central Coast by ferry would increase visitation and provide economic benefit. With Gosford's Waterfront Redevelopment initiative progressing, the arrival point into the Central Coast would act as a destination itself, enticing visitors to the precinct.

A Gosford–Sydney CBD service by fast ferry could be completed in approximately 90 minutes, which is comparable to rail or road during the peak commute periods. The advantage of a ferry service is convenience, desirability and reliability, which is estimated to exceed 90 per cent for this journey.

Gosford's Waterfront Redevelopment initiative under the Central Coast Regional Development Corporation offers the short-term opportunity of establishing a modern wharf to accommodate vessels that could service this particular route.

³⁹ Gosford City Council, Brisbane Water: Public Wharves and Boat Ramps Usage Study, May 2013

The Illawarra

Despite their absence today, regular passenger ferry services commenced in the 1840s and operated for around a century, connecting Sydney, Wollongong, Shellharbour and Kiama.

The route between Kiama and Sydney is notable thanks to the emergence of the community-owned Kiama Steam Navigation Company, which was formed by around 1200 local residents who each invested five pounds as initial equity.

While endearing and steadfast for some time, the eventual arrival of the motor vehicle ultimately led to a dramatic drop in patronage.

Water transport, however, has experienced a resurgence in the Illawarra recently with the expansion of Port Kembla for vehicle imports and the welcoming of cruise ships. Since 2017, six large passenger ships have visited the Illawarra, with various complementary ferry services enabling visitors to experience local tourism attractions, including the well-known Cockatoo Run.

The return of a permanent passenger ferry service between Sydney and the Illawarra would once again provide a picturesque travel option for commuters and visitors, as well as add capacity across public transport services.

More than 30,000 workers from the Illawarra (approximately one in six) commute to Sydney each day, with many more thousands travelling to access health, education and social services. Despite the high level of movement, the Illawarra lacks adequate connections to Sydney and the broader national transport network. Wollongong — the heart of the Illawarra — is serviced by a single rail line, which is constrained by track inefficiencies and long standing speed restrictions. There is also no motorway-grade connection or water-based transport to Sydney.

Only seven train services (approximately 6,000 seats) from the Illawarra arrive in Sydney prior to 9am on weekdays. The addition of just three fast ferry services would add 20 per cent additional capacity to the corridor during peak demand.

Despite the need for additional capacity to support commuter movements, low population densities adjacent to potential berthing sites, limited car parking and poor transport connections would be potential constraints on the attractiveness of a fast ferry service. Consideration to appropriate bus network and timetable changes would be essential to support such a service, and could be bolstered by on-demand vehicles to improve access.

Another potential constraint is passage along the coast in the open sea with inconsistent swell conditions. Unlike a ferry journey between Sydney and the Central Coast, the steep rocky cliffs and southerly aspect along the Royal National Park and Sydney's Eastern Suburbs reflect waves out to sea, creating turbulent waters that could impact on the quality of the journey. As a result, the journey experience is only likely to be satisfactory approximately 75 per cent of the time.

Belmore Basin, Port Kembla Outer Harbour and Kiama have berthing capacity that could allow passenger ferry services access to existing wharves. Shellharbour and Bellambi Point Boat Harbour could potentially support ferry services if improvements were undertaken to support the safe mooring of larger, ocean-going vessels.

The development of Shell Cove Marina and the associated plans by Fraser's Property Group could also provide additional berthing capacity in the region. The addition of refuelling and maintenance facilities in particular could support vessels commencing morning runs from the Illawarra.

Indicative travel times between Sydney CBD and the Illawarra

Sydney CBD to:	Car	Existing Public Transport	Ferry
Wollongong	1 hr 30 mins	1 hr 40 mins	2 hr 10 mins
Shellharbour/Shell Cove	2 hr 00 mins	2 hr 10 mins	2 hr 35 mins
Kiama	2 hr 10 mins	2 hr 25 mins	2 hr 45 mins

Despite these indicative travel times, road congestion regularly impacts the major connections between the Illawarra and Sydney. Congestion on the corridor is a regular feature of both weekday and weekend travel. Modelling for the NRMA and Illawarra Business Chamber's Upgrading Road Connectivity Between the Illawarra and Greater Sydney report found

congestion and delays can add up to 30 minutes (one-third of total travel time) to a journey.

Despite this, comparatively long journey times and low anticipated reliability mean that further work is required to thoroughly understand the circumstances in which ferries could operate successfully.



Newcastle

Greater Newcastle has experienced significant growth during the 2010s. The Hunter Infrastructure and Investment Fund and Revitalising Newcastle have delivered major investment in transport and education aimed at creating economic activity.

The tourism and education sectors in particular have enticed additional visitors to the region and supported the creation of jobs. Through Revitalising Newcastle, more than \$650 million is being used to modernise the city by improving connections to and from the waterfront.

With pristine coastline and a number of navigable waterways, Greater Newcastle is a natural fit with ferries. Additional services throughout the region would support the growing tourism sector and provide local residents with improved access to the waterways.

By complementing existing and future transport options, ferry services in and out of the Newcastle CBD would also support the growing population, which is forecast to increase from 540,000 to 700,000 by 2036⁴⁰



Newcastle Interchange

The Newcastle Interchange at Wickham has been designed to act as the major transport hub for Newcastle and the Hunter, accommodating bus and train services (Newcastle Light Rail from 2019).

While a direct ferry service from Stockton Wharf to Queens Wharf currently exists, expanding the service to the Newcastle Interchange and Fern Bay would provide commuters and tourists with improved access to the transport network, as well as Stockton and Williamstown.

New wharf infrastructure with pedestrian access to Newcastle Interchange to support such a service would be required to enable this key expansion and provide easy access to the Hunter River.

The commencement of a ferry service from Fern Bay, supported by commuter parking facilities, would help to alleviate road congestion in and out of the Newcastle CBD.

Newcastle to Port Stephens

Vibrant Port Stephens is well-known for its crystal blue waters and white sandy beaches. While frequented by tourists, high quality ferry services are currently lacking.

Increasing numbers of visitors and cruise ships into Newcastle is increasing demand for attractions and services. Easily accessible by ferry, a service between the Newcastle CBD and Port Stephens would act to increase visitation to the north of Greater Newcastle.

While the Port Stephens Planning Strategy of 2011 highlights that the area is heavily dependent on motor vehicles for transport, tourism is stressed as a major area of focus for ongoing economic development.⁴¹

The establishment of a Newcastle CBD–Port Stephens ferry service would connect two of the most picturesque locations on the NSW North Coast and further cement Newcastle as a tourism gateway.

⁴⁰ NSW Government, Draft Greater Newcastle Metropolitan Plan, November 2017

⁴¹ Port Stephens Council, Port Stephens PLANNING STRATEGY 2011–2036, December 2011

South East Queensland

South East Queensland, with a mix of urban and regional locations and disparate islands, is a logical attraction point for ferries. While a number of passenger services currently exist, there are opportunities to expand ferry operations and establish new routes, especially as communities and industries close to the water develop and transform.

Gold Coast

The Gold Coast's waterways present an opportunity to supplement public transport in the region. Ongoing development and increasing residential densities are creating a need for expanded mobility options. With trends pointing to increasing numbers of retirees moving to the region, transport services other than the private vehicle will be required to meet the needs of the ageing population component. The Gold Coast's many canals and waterways lend themselves to supporting this need, with ferries offering potential shortcuts and a means of avoiding road congestion.

Brisbane to Mooloolaba

The establishment of a fast ferry service between Brisbane and Mooloolaba would connect the Sunshine Coast with Brisbane Airport and the CBD, creating a desirable travel option for tourists, as

well as commuters requiring access to the city for employment or education purposes. Such a service across Moreton Bay would encourage greater visitation to the Sunshine Coast and support the many surrounding regional economies.

North Stradbroke Island

The Queensland Government has legislated to substantially cease sand mining on North Stradbroke Island by 2019, and has allocated a minimum of \$20 million to expand tourism, education and training industries to promote a strong and sustainable local economy through the North Stradbroke Island Economic Transition Strategy.

The cessation of sand mining will have implications for the local community and may create increased demand for travel across Moreton Bay and the island channels. Current transport options such as heavy barges may become uneconomical and require replacing with smaller, more efficient vessels that cater to passengers and light commercial demands.

Should passenger demand for access between the mainland and North Stradbroke Island increase significantly, the introduction of small, fast and regular ferries may be necessary.



Traversing prominent rivers and waterways

The oldest ferry service that remained operational for more than a decade was a vehicular service that ran from Lugarno in the Sutherland Shire across Georges River, providing direct access to Bangor (Menai). It began on 6 February 1843 and ceased operating on 12 December 1974.

Vehicular ferries throughout this period often provided a desirable option for crossing rivers and waterways, and were widely used at tidal crossings that were too turbulent or wide to accommodate the construction of bridges, or where tracks were poor and roads in their infancy. While slow compared to today's standards, many vehicular ferries significantly reduced travel time.⁴²

While less prominent nowadays, NSW Roads and Maritime Services operates several vehicular ferries on rivers and waterways at no charge.

Sydney Region

- Berowra Waters ferry
- Mortlake ferry
- Sackville ferry
- Webb's Creek ferry
- Wisemans ferry

Northern Region

- Lawrence ferry
- Ulmarra ferry

South Western Region

- Speewa ferry
- Wymah ferry

These vehicular ferries, which take between three and seven minutes to complete a crossing, traverse waterways such as Berowra Creek, Parramatta River, Hawkesbury River, Clarence River and Murray River.

The Mortlake cable ferry (Putney Punt) on the Parramatta River has historic significance and is listed on the NSW State Heritage Register. The service is a rare surviving example of one of the earliest and most prevalent forms of river crossings instituted in NSW after European settlement.⁴³

Vehicular ferries are key to enabling road trips across these and other waterways, negating the need to travel long distances on land by road. Vehicular ferries are also particularly important for accessing islands close to the Australian mainland with no permanent road connection.

In addition to vehicular ferries operated by NSW Roads and Maritime Services, there are a number of private and council vehicular ferries that exist for access and tourism purposes. The Comerong Island Ferry, for example, crosses Berrys Canal and links Comerong Island with the mainland. Residents use the ferry on a regular basis and tourists can also access the service for a fee to explore the Island.

Road trips are an important part of Australian life and underpin visitation to many rural and regional locations. With vast distances to travel, the opportunity to make use of a vehicular ferry can be a welcome addition, and indeed form part of the journey experience.

Opportunities exist throughout Australia to make better use of vehicular ferries to support road trips and visitation. While existing services support the movement of people and vehicles across some key waterways, expanding these services and adding new locations would further enhance connections.

⁴² Midgley, A & F, *History of Road Transport in the Sutherland Shire*: Sutherland Shire Studies – No. 7

⁴³ <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2340083>



The most recent proposal for the establishment of a new vehicular ferry service comes from Bass Coast and Mornington Peninsula Shire Councils and the Victorian Government, who have prepared a business case to determine the cost, requirements and viability of a vehicular and passenger ferry service between Cowes and Stony Point.⁴⁴

The business case primarily supports the creation of an iconic touring route that would connect

Mornington Peninsula and Phillip Island with the Great Ocean Road and Gippsland, bringing together some of Victoria's most significant tourism regions. The touring route concept would build on the successful Great Ocean Road touring model, which currently receives 13 per cent of the Victorian overnight touring market compared to around one per cent for touring visits which take in both Phillip Island and Mornington Peninsula combined.⁴⁵

⁴⁴ http://www.basscoast.vic.gov.au/Business/Cowes_to_Stony_Point_Car_Ferry

⁴⁵ Cowes to Stony Point Car Ferry: Full Business Case, April 2018

Conclusion

Urban congestion demands greater transport supply to improve accessibility and mobility options for commuters.

While efficiencies across the transport network in the Greater Sydney Region have been realised in recent times, more needs to be done to support future growth and increasing customer needs.

Ferry services, which primarily act to serve waterfront communities through harbours and rivers, should play an expanded role in the transport system to alleviate congestion on other transport modes and provide additional options for commuters and tourists.

While fleet and wharf infrastructure modernisation throughout the Greater Sydney Region has improved amenity, faster and more direct services aimed at meaningfully reducing travel times for commuters during peak travel periods should be a priority.

The development of innovative transport concepts, including the establishment of fast, modern ferry services, are brought about by an interplay between leaders in government, policy entrepreneurs, experienced operators, infrastructure designers and planners.⁴⁶

Ferry services that improve frequency and customer satisfaction, integrate with the broader transport network and optimise delivery to serve the changing needs of commuters and tourists should be prioritised.

Current services within Parramatta River are particularly poor and will not serve the needs of many of the growing precincts into the future.

There is a considerable cost to government and the community that comes from providing services that are underutilised.

With the Sydney to Parramatta CBD journey taking approximately 90 minutes on the waterway, patronage will remain low, regardless of population growth and the attractiveness of visiting these two great cities.

Parramatta River presents the greatest immediate opportunity for improvement. A fast linear ferry service supported by several smaller feeder services will unlock Parramatta River for water travel and visitation, providing an array of social and economic benefits.

It is clear that the role of government is changing from default transport provider, to ensuring the right policy and regulatory frameworks are in place to support new service operators.⁴⁷ Through encouraging greater private involvement in the market, it is possible to achieve service optimisation that is consistent with future government and transport priorities and visions while benefiting the taxpayer.

While Parramatta River should be prioritised for new services, many other opportunities exist within Sydney Harbour and along the eastern coastline to improve productivity through better supporting the movement of commuters and visitors.

With natural assets and the capabilities to support the world's best water journeys, we should be maximising this significant advantage for both economic and societal benefit.

⁴⁶ Tanko, M & Burke, M 2017, Transport innovations and their effect on cities: the emergence of urban linear ferries worldwide

⁴⁷ IPART 2017, Review of fares for private ferry services – Maximum fares for private ferry services from January 2018 to December 2021

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