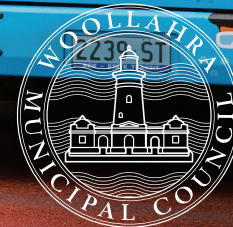


WOOLLAHRA INTEGRATED TRANSPORT STRATEGY



Woollahra
Municipal
Council

Woollahra Integrated Transport Strategy



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1. Introduction

Woollahra Council's Integrated Transport Strategy (ITS) sets out a vision for a more accessible municipality where active, sustainable and efficient modes of transport are the most convenient choice for most trips.

Transport has an important role in creating vibrant and liveable cities and places. Many people live, work, learn, play and visit Woollahra. Our community recognises the importance of making it even better for future generations. This includes addressing:

- the heavy dependence on cars for primary transportation
- an incomplete active transport network that doesn't support trips to shops, schools and destinations
- access for children and people with disabilities and mobility issues
- pedestrian and cyclist safety
- traffic congestion
- excessive speed resulting in car crashes
- increased construction and delivery vehicles
- distance to jobs, services and amenities.



One of the key objectives of this ITS is to modify travel behaviour to reduce congestion and enhance liveability in Woollahra.

With the population of Woollahra forecast to grow by approximately 40 per cent by 2056, a key challenge will be keeping an ever-increasing number of people moving safely and efficiently on the existing road and transport networks.

Council recognises the importance of having a transport strategy that reduces dependence on private vehicles by developing a system of viable, public and active transport alternatives.

This document sets out the key objectives, background analysis, challenges, opportunities, policies and actions with regard to four themes:

- **Access, Mobility and Liveable Places:** Supporting people in Woollahra to get around, regardless of age or ability.
- **Public Transport:** Working with the State Government to make public transport a more competitive alternative to car use.
- **Active Transport:** Making walking and cycling the most convenient option for most trips.
- **Roads and Parking:** Managing the road network to support all users and reducing traffic congestion, noise and speeding.

This Strategy also includes key projects that are already underway that will help promote active transport and support integrating transport with land use and movement and place throughout our local area.

2. A Vision for Transport

*Woollahra is
an accessible
municipality where
active, sustainable
and efficient
modes of transport
are the most
convenient choice for
most trips.*

Council developed this vision in consultation with the community.

In 2018, we held workshops with Councillors and community groups, consulted with local schools, had an online survey and pop-up displays at public transport hubs and shopping areas.



3. Context

3.1 Roles of the NSW Government and Council

Transport is a shared responsibility between state and local governments.

Transport for NSW (including Roads and Maritime Services) manages state roads and public transport, including buses, light rail, trains and contracts for most ferry services through Sydney Ferries.

Local government is responsible for local roads, parking, walking, cycling and providing and maintaining roads, footpaths and cycleways.

On behalf the local community, Council also advocates the NSW Government for improvements to public transport and state road network planning and operations.

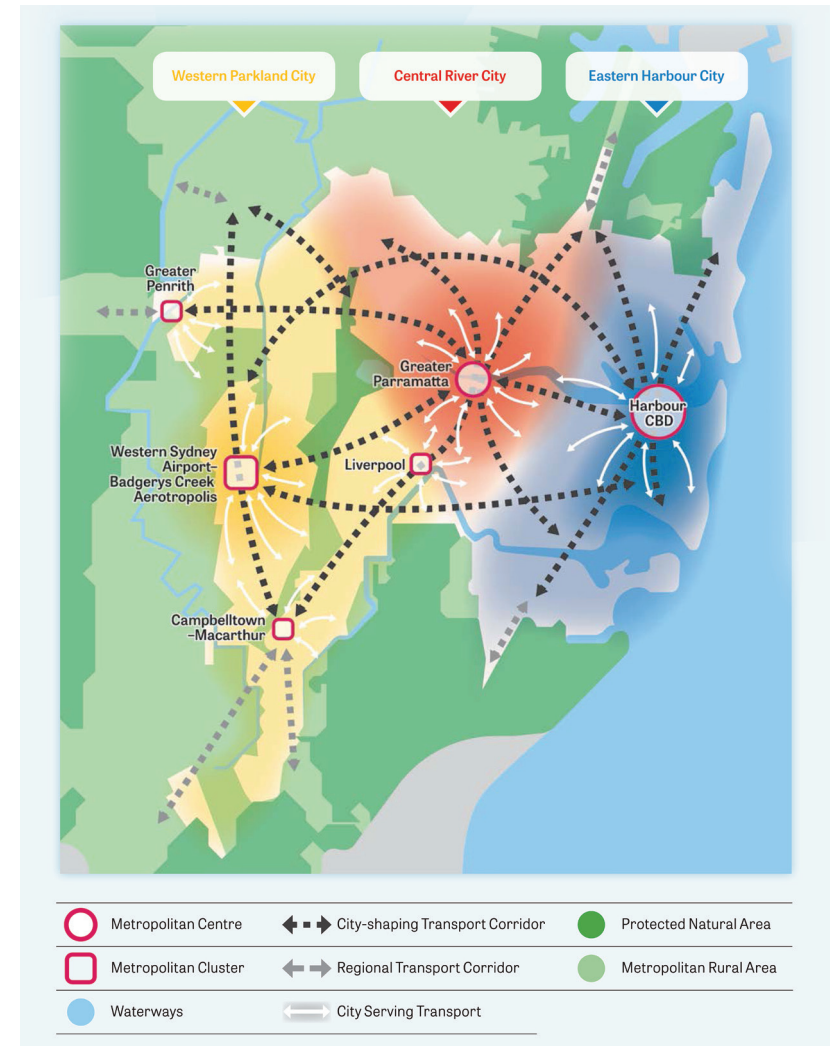
In 2018, Transport for NSW released *Future Transport 2056*, a long-term transport strategy for the state. *Future Transport 2056* is informed by Greater Sydney Commission's long-term land use strategy *Metropolis of Three Cities – The Greater Sydney Regional Plan*. Woollahra is located in the Eastern City District and is closest to the Harbour City (Sydney CBD).

The Eastern City District Plan applies to Woollahra, Waverley, Randwick and the City of Sydney.

A common goal within the regional and district plans is for people to be able to travel to a major strategic centre – in our case, Sydney CBD – within 30 minutes by public or active transport.

Council's Integrated Transport Strategy aligns with the Transport for NSW and Greater Sydney Commission strategies.

Figure 3.1 Metropolis of three cities

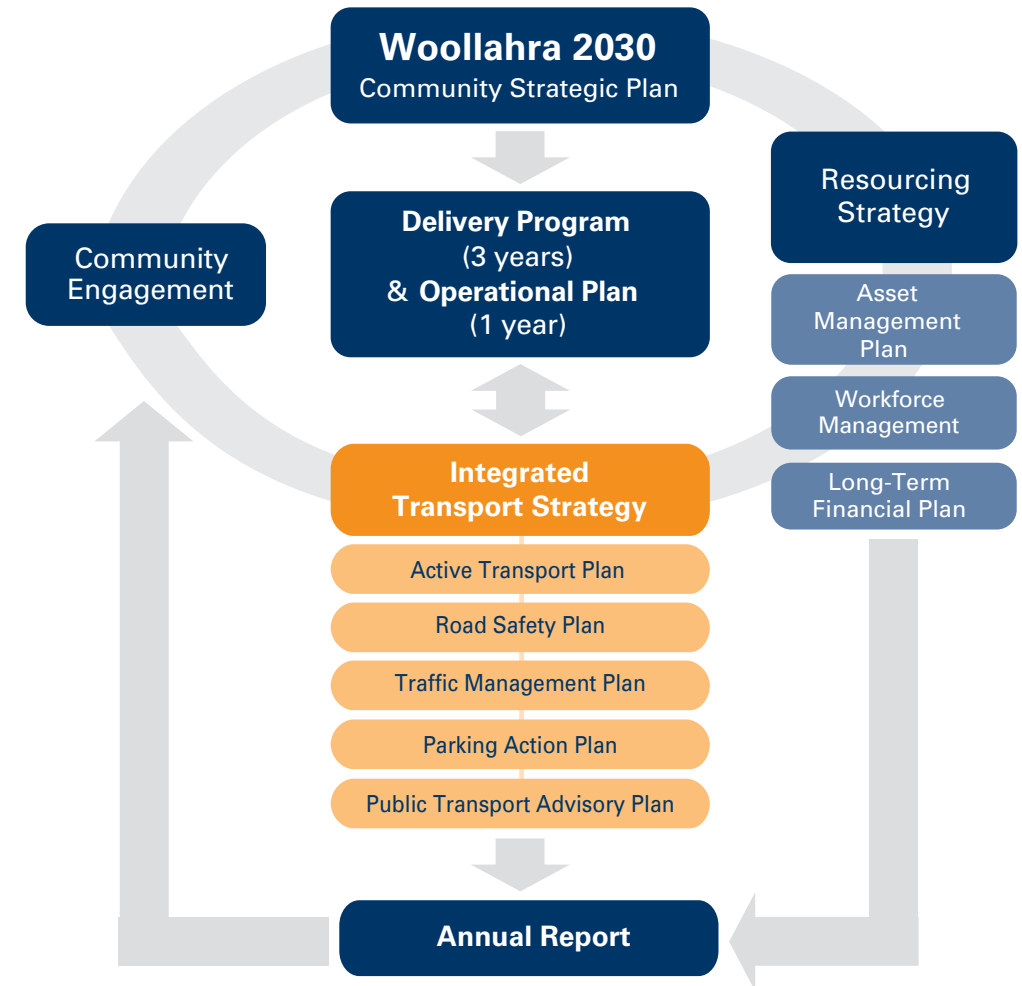


Source: <https://future.transport.nsw.gov.au/plans/future-transport-strategy>

3.2 Policy and Planning Context

Woollahra Council operates an Integrated Planning and Reporting framework and has developed a Community Strategic Plan, *Woollahra 2030*. The long-term strategies set in *Woollahra 2030* inform Council's plans, strategies and policies, which are communicated in the annual report. The *Integrated Transport Strategy* supports the goals and objectives of *Woollahra 2030*.

Woollahra Municipal Council's Integrated Planning and Reporting Framework



3.3 What is an Integrated Transport Strategy?

An ITS is a strategic document that identifies and prioritises transport infrastructure and service improvements, meets community needs and sets Council's long-term transport objectives.

Council's ITS outlines a vision, guiding principles, objectives and actions and is broken down into four key transport themes:

- **Access and Mobility**
- **Active Transport**
- **Public Transport**
- **Roads, Parking and Delivery.**



Structure of Vision, Principles, Objectives and Themes



3.4 Guiding principles and objectives

Council's ITS is underpinned by four guiding principles, which are informed by community feedback, best practice and Council's commitment to sustainability:

*Connected vibrant
communities for all*

Quality public transport

*Useable walking and
bicycle riding networks*

*Efficient roads and
parking*

3.5 Transport Trends and Targets

The term 'mode shift' refers to the phenomenon of people changing from one form of transport to another. For example, a regular car driver switching to take the bus represents a mode shift. The shift usually occurs when the comparative advantages – cost, time, level of service, reliability – are significant enough to change travel behaviour. For example, mode shift may occur if the car driver loses their free parking space at work (a cost disincentive) or a bus lane is opened (a level of service, time and reliability incentive).

This ITS sets ambitious mode shift targets over a 10 year period to increase active, sustainable and space efficient modes of travel and reduce the dependency of private vehicle use and ownership. These targets can be found in sections 5 to 8 of the report.



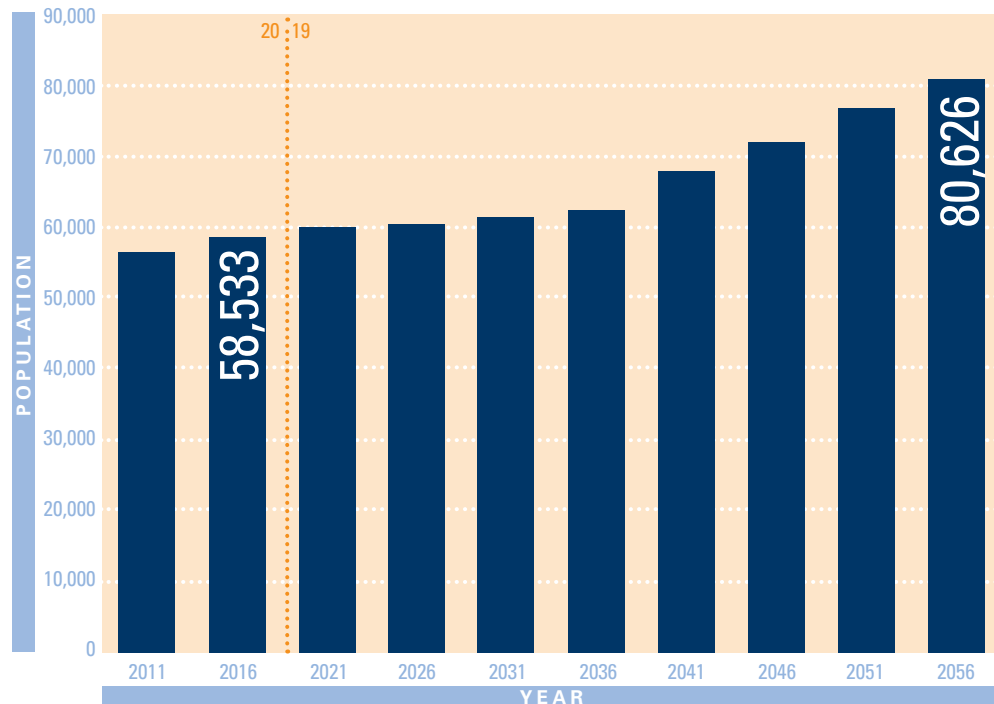
4. How we Travel Today

4.1 Background

In 2016, Woollahra recorded a population of 58,533. This figure is estimated to increase by 38 per cent to 80,626 by 2056. Edgecliff and Double Bay are expected to experience the largest population growth.

Population growth presents challenges to the management of transport and access across Woollahra. This includes ensuring residents and visitors can travel to work, school, local centres and recreation areas in a timely, convenient and safe manner.

Population growth



Source: ABS 2016 Census Data <http://www.censusdata.abs.gov.au/>



4.2 Why People Travel

The 2016 census suggests that around 27,940 Woollahra residents are employed. Woollahra has a higher proportion of professionals and managers than the surrounding areas and, conversely, a smaller proportion of technicians and trades workers.

The percentage of trips of Woollahra residents by purpose is presented in Figure 4.2 along with data for Greater Sydney. Notably, 47 per cent of the overall trips made by Woollahra residents have a comparatively higher rate of social, recreational and shopping related trips. Conversely, commuting and work-related trips are lower for Woollahra residents (just 10 per cent).

4.3 How People Travel

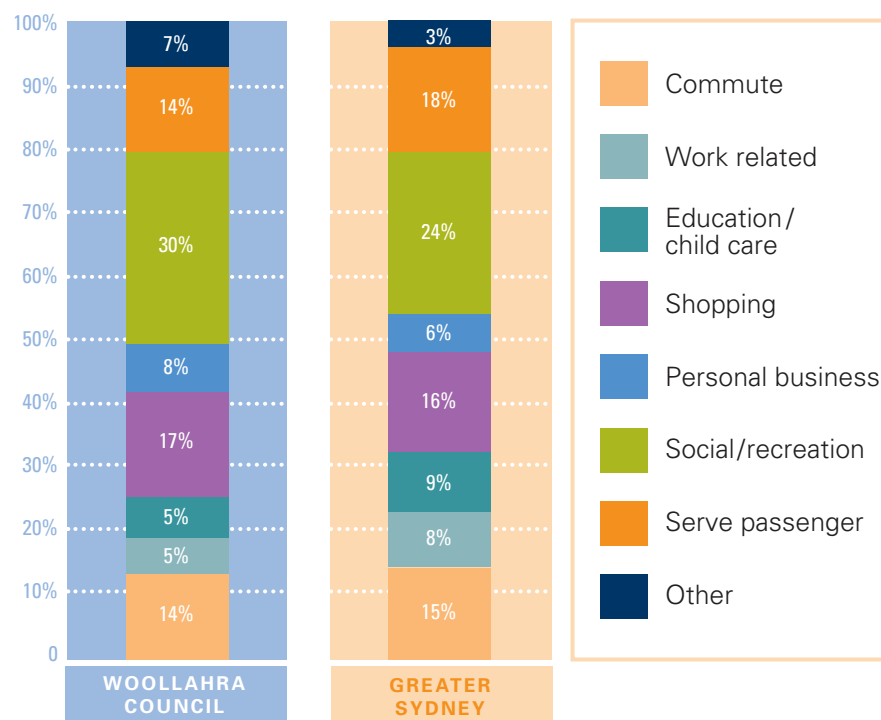
Household Travel Survey (HTS) and the 2016 census Journey to Work (JTW) data provide an overview of travel patterns for people living and/or working in Woollahra.

4.3.1 General trips

As seen in Figure 4.3, current modes of travel by Woollahra residents, compared with surrounding LGAs and Greater Sydney show that:

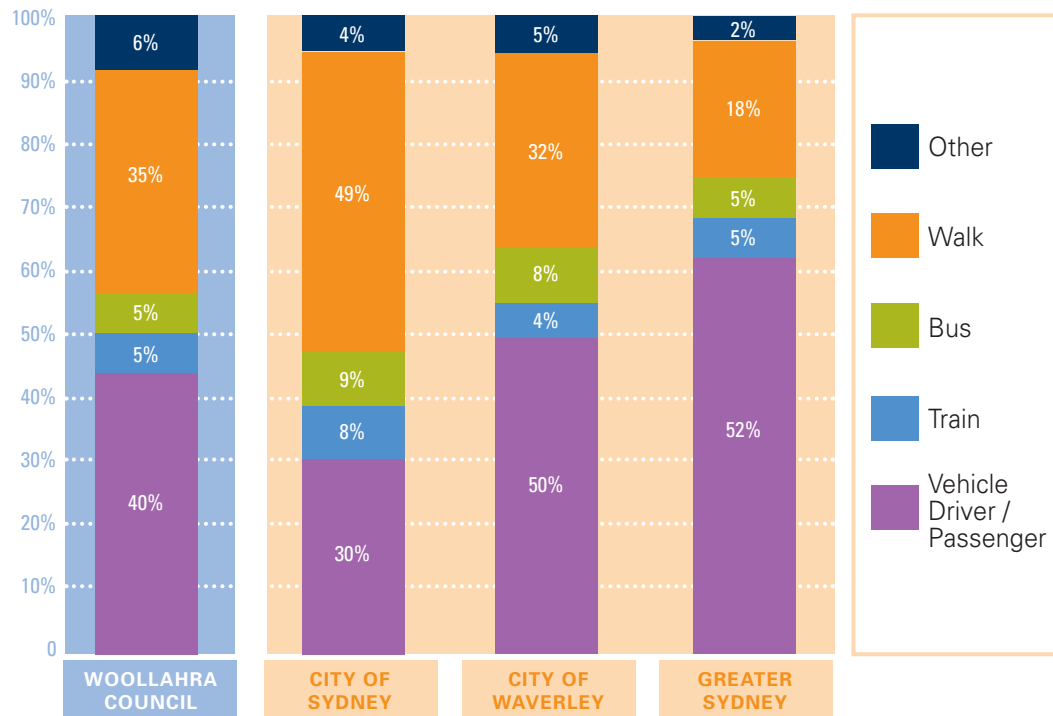
- **Active transport:** Active transport, including walking and cycling, is higher in Woollahra (41 per cent) compared to Waverley (37 per cent) and Greater Sydney (20 per cent).
- **Public Transport:** The use of public transport by Woollahra residents is low at 10 per cent, compared to 17 per cent in the City of Sydney and just under 12 per cent in Waverley.
- **Car Trips:** Car trips account for almost half of all journeys made by Woollahra residents, with similar figures reflected in Waverley and Greater Sydney. However, in the City of Sydney only 30 per cent of trips were made by car.

Figure 4.2 Trips by Purpose



Source: TfSNW Open Data <https://opendata.transport.nsw.gov.au/>

Figure 4.3 Mode of Travel



Source: TfSNW Open Data <https://opendata.transport.nsw.gov.au/>

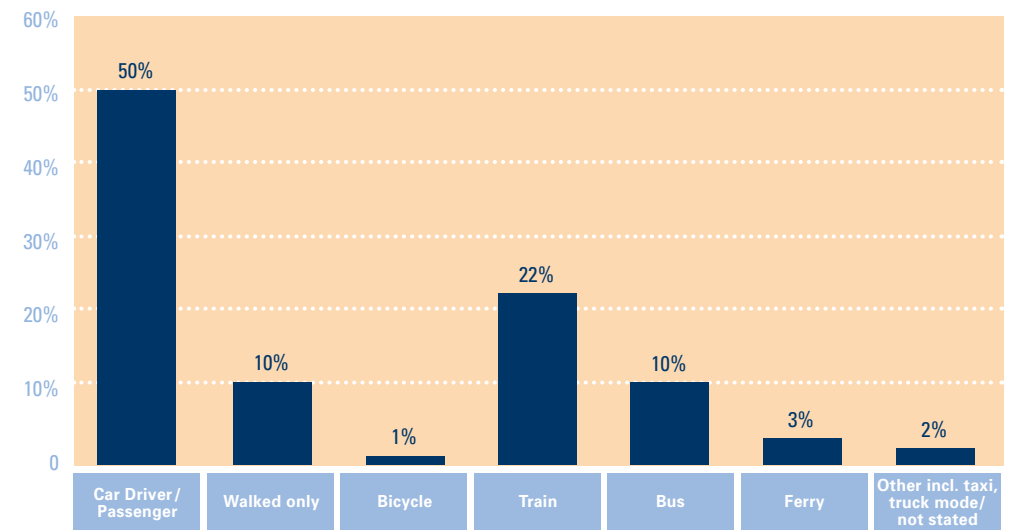
4.3.2 Trips to work

Around 76 per cent of Woollahra residents work outside Woollahra:

- Sydney Inner City – 53 per cent of employed residents
- Eastern Suburbs – 37 per cent of employed residents.

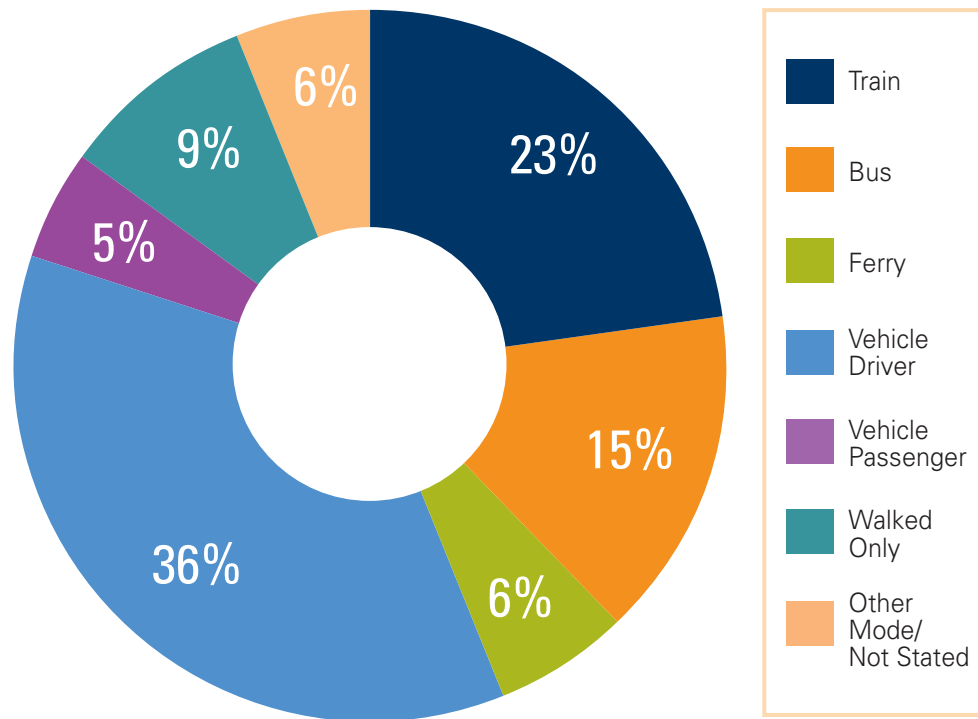
The vast majority of Woollahra residents travel to destinations that are relatively close and are typically well served by public transport. Indeed, 44 per cent of residents who travel to Sydney's inner city for work are using public transport including bus, train and ferry (Figure 4.5).

Figure 4.4 Woollahra Residents Journey to work data



ABS 2016 Census Data <http://www.censusdata.abs.gov.au/>

Figure 4.5 Journey to work trips to the Sydney Inner City (Woollahra Residents)



ABS 2016 Census Data <http://www.censusdata.abs.gov.au/>

People also travel to Woollahra for work from relatively nearby locations. 80 per cent of the workforce in Woollahra comes from the Eastern Suburbs and Sydney Inner City:

- 64 per cent of employees reside within the Eastern Suburbs
- 16 per cent of employees reside in Sydney Inner City.



4.4 Crashes

Crash data from Transport for NSW's Centre for Road Safety identifies the types of crashes occurring on the road network within Woollahra.

4.4.1 Crash Types

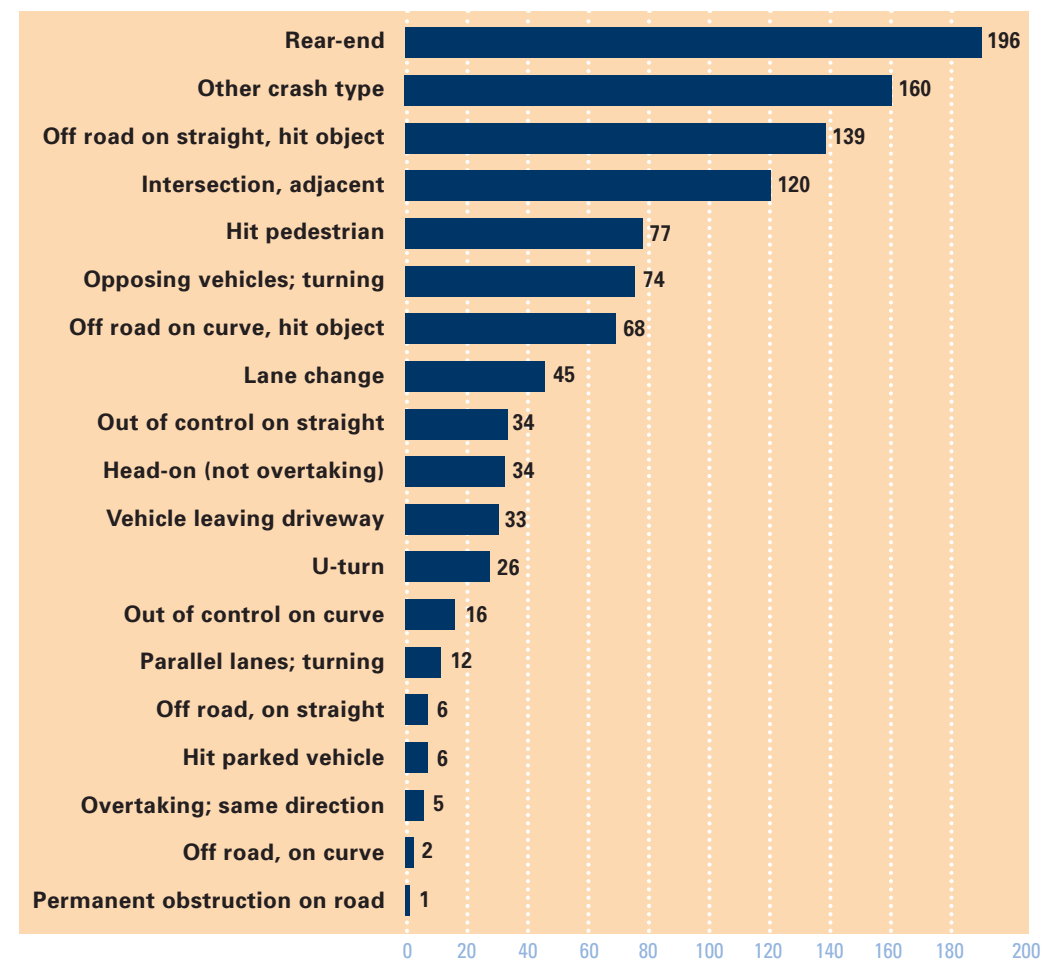
A total of 1,054 vehicle crashes was recorded in Woollahra over five years, from 2012-2016. Notably:

- **Rear end crashes:** Rear end collisions were the most common type of crash (19 per cent), particularly along New South Head Road, Ocean Street and Oxford Street. These crashes were largely attributed to traffic congestion and poor driver awareness.
- **Crashes involving pedestrians:** Seven per cent of the total crashes involved pedestrians.
- **Straight road, hitting object:** 139 crashes involved vehicles travelling along a straight section of road and colliding with objects off the road. This is mostly associated with high vehicle speeds along straight and wide sections of Woollahra's road network at night, particularly along New South Head Road.

4.4.2 Crash Severity

There have been 192 fatal and serious injury (FSI) crashes in Woollahra over a five-year period, from 2012-2016. This is an average of 38 FSI crashes per year.

Crash types in Woollahra LGA (2012-2016)



Source: Transport for NSW Centre for Road Safety, 2018

4.5 Movement and Place

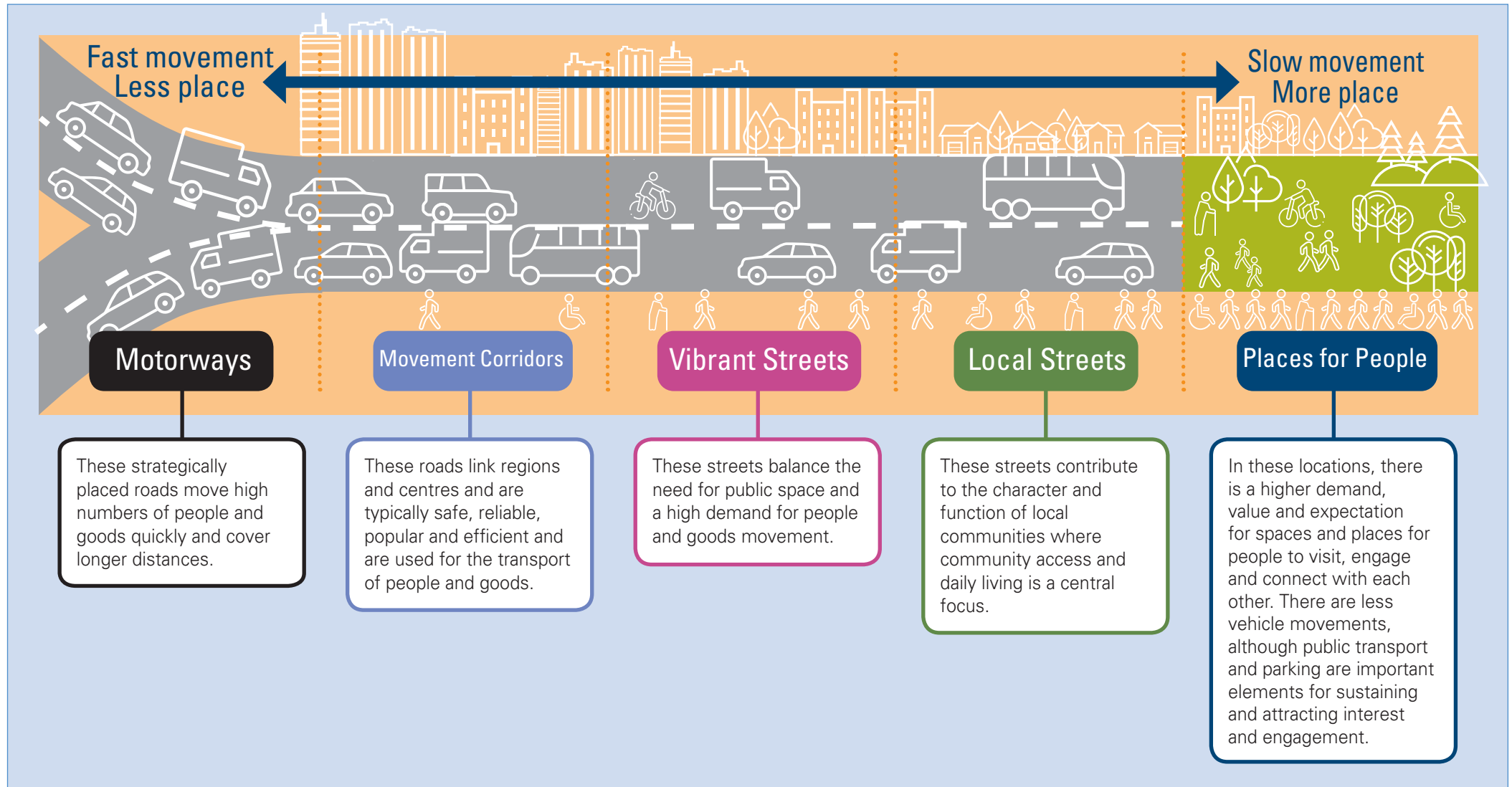
4.5.3 The Movement and Place Framework

Future Transport 2056 identifies **Movement and Place** as an approach to planning and designing road networks that support places. The approach recognises that streets are an integral component to the liveability of urban centres, rather than just a way to facilitate the movement of vehicles:

- As a movement corridor, a street enables the through movement of a variety of transport modes. The key requirement for a movement corridor is to provide road and transport networks that enable connections between destinations.
- As a place, a street is a destination where activities occur and people choose to spend time. A place is characterised by high volumes of pedestrian activity associated with shopping, socialising and working. Places can be adversely impacted by noise and air pollution associated with vehicle activity.



The Movement and Place Framework



4.5.4 Existing Movement and Place Analysis

The existing movement and place function of some of Woollahra's key roads have been considered and are shown in Figure 4.9.

It shows the pattern of movement and place classification (developed by Roads and Maritime Services) in each of the major road corridors.

In summary:

- New South Head Road is largely a movement corridor, transitioning to a vibrant street at the Double Bay shopping area.
- Old South Head Road has sections of the corridor which are considered to be local streets, with more movement function at its western end.
- Oxford Street in Paddington is a local street with both high movement and high place function, but it quickly transitions to a movement corridor and then a motorway at Sydney Enfield Drive.
- Ocean Street is a movement corridor and Queen Street is a vibrant street.

Understanding the function of the streets in Woollahra is a basis for understanding the opportunities associated with active and public transport in the future.

Chapters 6 to 9 set out the objectives, background analysis, key challenges and opportunities, policy and actions associated with transport in Woollahra.

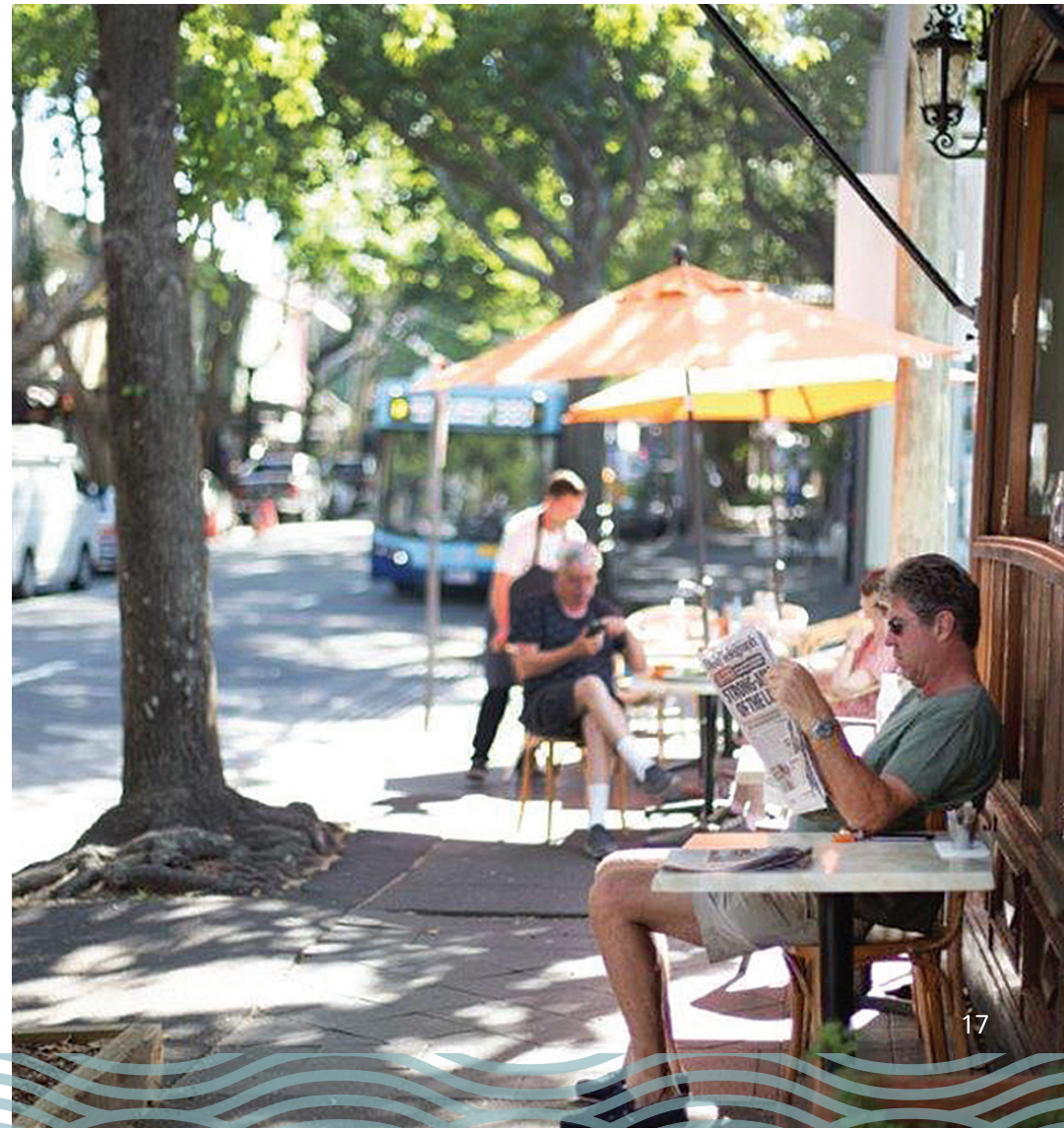


Figure 4.9 Existing Movement and Place Function (Key Roads) – Typical Weekday AM and PM Peak



5. Key Signature Projects

Woollahra Council has a bold vision for improving transport choices for residents, businesses and visitors by promoting and supporting active, sustainable and efficient transport modes. To support this vision, a number of key signature projects will be developed which supports active, sustainable and efficient transport modes, integrating transport and land use and considering the importance of movement and place.

Future projects will be identified as part of the *Active Transport Plan*, the *Woollahra Local Area Traffic Management Plan*, the *Parking Action Plan*, the *Road Safety Plan*, the *Public Transport Advocacy Plan*, and any other transport related projects or studies. Some key transport projects currently underway will support our commitment to improving transport, access and mobility in Woollahra.

They include:

5.1 The Paddington Greenway

The Paddington Greenway is a proposed walking and cycling route linking Centennial Park to Rushcutters Bay Park, via Trumper Park and Rushcutters Bay Creek.

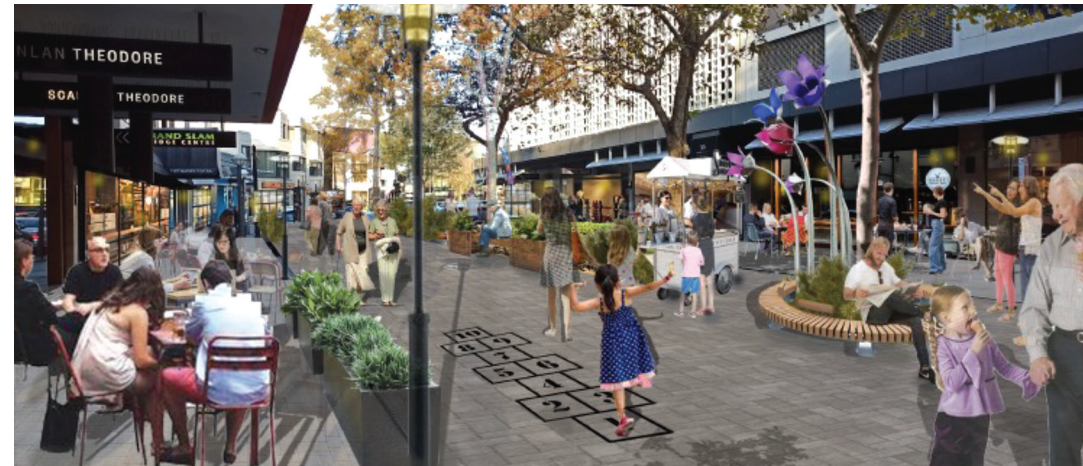
Centennial Park is a major regional park and cycling hub for the eastern city; Rushcutters Bay Park is an important district park within the Woollahra LGA, where the Bondi to Manly coastal walk passes along the foreshore. Linking these two significant recreation destinations, the Paddington Greenway is envisaged as a recreational route that would offer both regional recreational opportunities as well as local benefits, as a destination in its own right and in better connecting the local community to existing open space. The Paddington Greenway would also connect with major active transport routes to the Sydney CBD, at both the northern and southern ends of the route.



5.2 The Knox Street Plaza

The Knox Street Plaza incorporates the creation of a pedestrianised public plaza between Bay Street and Goldman Lane as envisaged in the *Double Bay Pedestrianisation Study*.

The public plaza will create beautiful, cosmopolitan places and spaces for people to enjoy the Double Bay Commercial Centre, encouraging al fresco dining and social events. This will be achieved by closing Knox Street, between Bay Street and Goldman Lane, to vehicles and constructing a paved public plaza with seating areas, landscaping, lighting and public art.



5.3 The Transvaal Avenue Pedestrianisation Project

The Transvaal Avenue Pedestrianisation as envisaged in the *Double Bay Pedestrianisation Study* incorporates closing the eastern side of the road to create a pedestrianised area which will allow increased outdoor dining opportunities, paving upgrades with new street furniture.

The western side of Transvaal Avenue is proposed to be a high quality “Shared Zone” to facilitate vehicular access to private properties but prioritise the needs of pedestrians over vehicles in this space.



5.4 Reduced Speed Limits in the Double Bay Centre

To improve road safety, amenity and improve walking and cycling in Double Bay, Council supports reducing the speed limit in commercial centre.

The *Double Bay Pedestrianisation Study* outlines Council's vision to implement either a 30km/h zone or 40km/h zone in Double Bay.

Reducing the speed limit in the Double Bay Centre will improve safety outcomes for pedestrians, cyclists and motorists alike.



6. Theme 1: Access, Mobility and Liveable Spaces

6.1 Objective

A transport network that accommodates all users, regardless of age or mobility.

6.2 Targets

- Perceptions of Safety: Improve the safety rating of equal to or greater than 96 per cent (2017 baseline) of residents committing to the top 'very safe' code.
- Infrastructure Renewal: 100 per cent of roads, footpaths, cycleways and public transport infrastructure rated at condition rating 4 or below (IPR Manual) are included in Council's 5 year Infrastructure Renewal Program.

6.3 Policy Commitment

Council will ensure that its roads, footpaths, cycleways and transport systems accommodate, as far as practicably, people of all ages, life stages and mobility.



6.4 Background

Accessibility and mobility are important aspects for creating liveable places. Given that Woollahra has a higher ageing population than surrounding areas, a number of local public and private schools and childcare and long day care centres, it is important that people of all ages and abilities are able to move safely, efficiently and equitably.

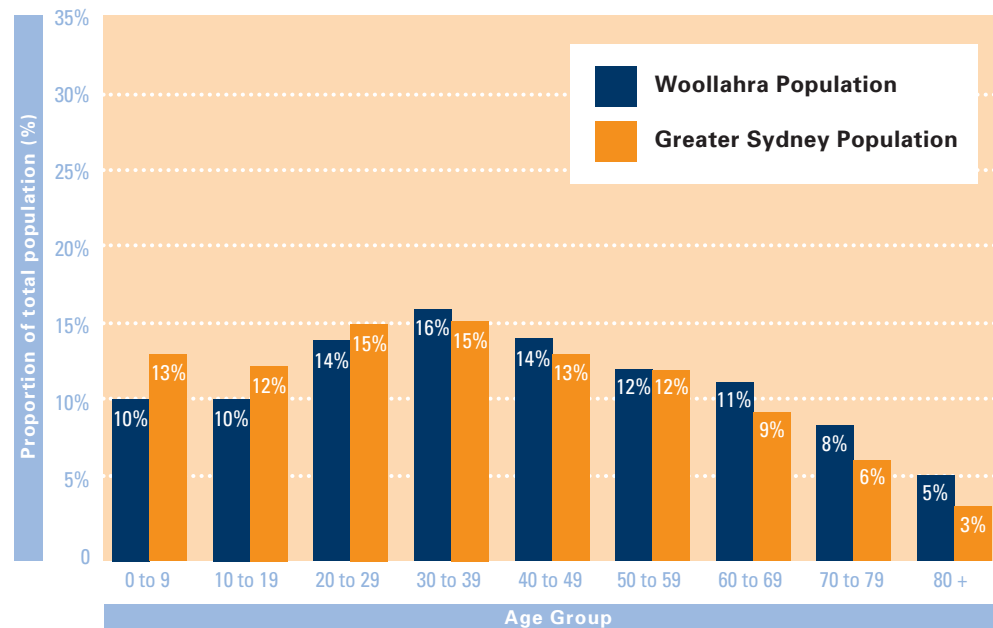
To improve access and mobility, Council recognises the importance of taking into consideration the needs of:

- people with mobility impairments
- parents and carers with prams and young children
- people who live in areas with poor access to jobs, retail and services
- people who live in areas where there are few active and public transport options available and are compelled to drive, often experiencing and adding to congestion and delays
- people who are elderly.

Ageing communities have more complex mobility needs, which is significant in Woollahra where, according to 2016 census data, the proportion of people aged 70 and over is significantly higher than neighbouring local government areas.

The proportion of residents in Woollahra aged 65 or older is expected to increase by two per cent by 2031. This may result in an increased demand for non-standard transport services such as community transport and on-demand public transport services.

Age Groupings



Source: ABS 2016 Census Data <http://www.censusdata.abs.gov.au/>

6.5 Key Challenges

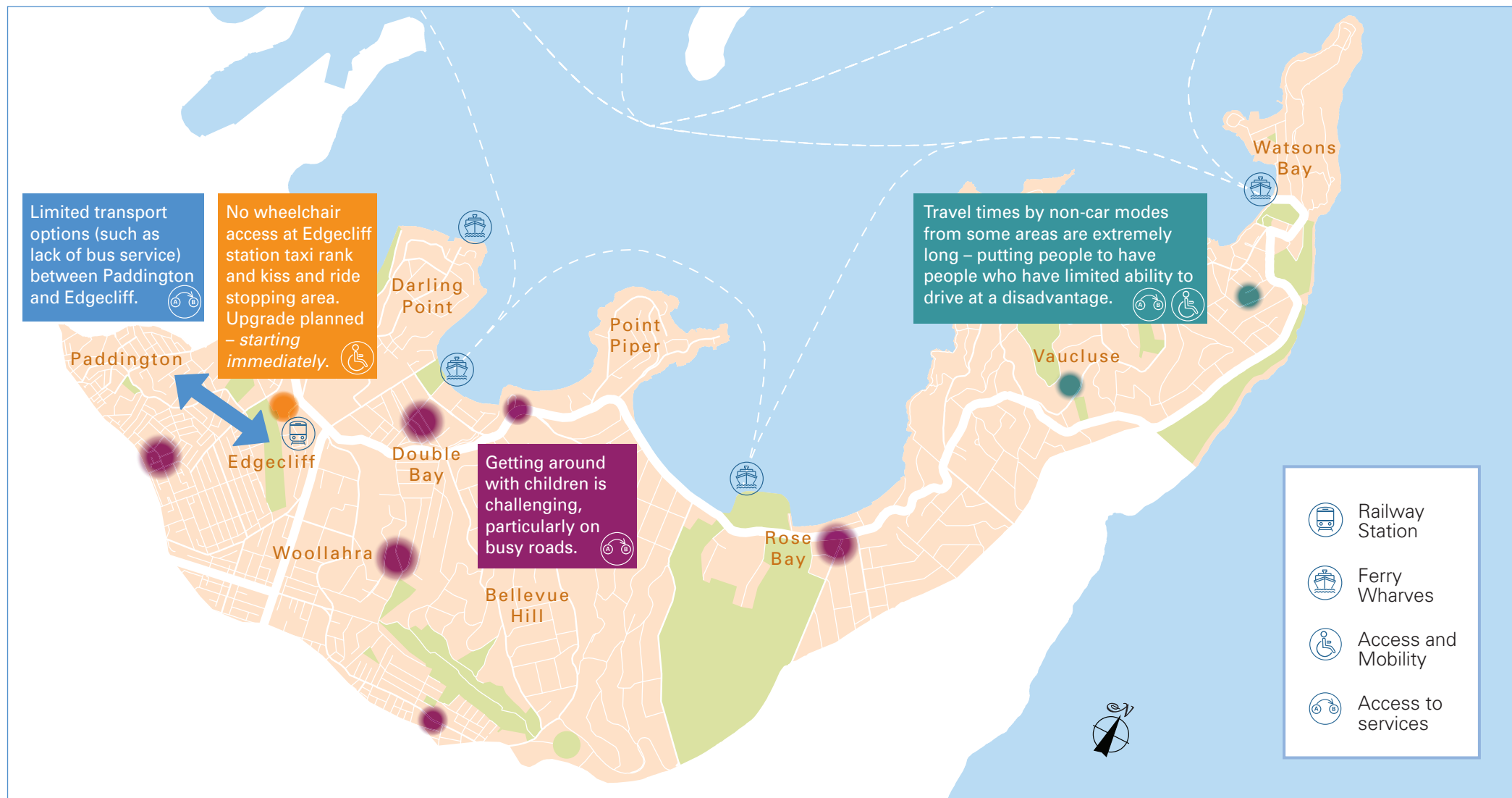
There are four key challenges to achieving the stated objective of having a transport network that accommodates all users, regardless of age or mobility. These are set out in section 6.5.1 below and mapped (where there is a geographic site) in Figure 6.3.

6.5.1 Key Challenges

- A high portion of older residents with increasing age-related accessibility needs
- Limited wheelchair and pram access in some areas
- Poor accessibility in areas such as Watsons Bay and Vacluse
- Navigating narrow roads and footpaths is challenging for parents and caregivers with children, especially with prams.



Figure 6.3 Challenges: Access and Mobility



6.6 Opportunities

There are four key opportunities relating to access and mobility in Woollahra.

6.6.1 Access to Services

Lobby State Government to increase transport services that support local shopping areas and recreational and educational facilities. In areas where people rely on cars due to the limited availability of public transport (such as Vacluse and Watsons Bay) it is important that Council advocates for better access to public transport.

Lobby State Government for disabled access for all ferry wharves within Woollahra transport services. Access to these services should accommodate users of all abilities.

Increased public transport options, particularly in targeted areas where car use is high, will encourage travel mode shift and deliver public transport that is inclusive and accessible to a greater population of Woollahra residents.

6.6.2 Community Transport Network

Promote existing services that are already providing community transport for people who do not have access to private transport or find it difficult to access public transport. For example, Holdsworth Community Ltd provides individual transport for people with disabilities and elderly people, including shopping trips, social appointments and links to public transport hubs. Council can promote these services through its communication channels including website, social media, newsletters and media advertising.

6.6.3 Accessibility auditing

Undertake an audit of public transport operating in Woollahra to help ensure a seamless end-to-end trip for people with a mobility impairment or other disability.

6.6.4 Inclusive design for all abilities

Ensure that accessible transport options for people with restricted mobility, including parents and caregivers moving around with small children and prams, is considered as part of the inclusive infrastructure design process.



6.7 Actions

The actions in Table 6.2 are consistent with the key challenges and opportunities identified for Theme 1: Access, Mobility and Liveable Places.

Table 6.2 Theme 1 Actions: Access, Mobility and Liveable Places

Actions	Responsible	Cost	Action Component Summary*		
			Short Term (0-2 years)	Medium Term (3-5 years)	Long Term (5-10 years)
Review access along identified routes	WMC, TfNSW, RMS	Low <\$100,000	<p>Develop an accessibility audit program as part of the Woollahra Active Travel Plan and begin accessibility audits.</p> <p>Review and carry out infrastructure access actions in the Council's Disability Action Plan.</p> <p>Develop and implement behavioural change programs to improve actions, mobility and livable places.</p> <p>Program of works for upgrades.</p>	<p>Carry out accessibility audits as per the audit program.</p> <p>Enter required upgrades in Council's future capital works program.</p>	<p>Carry out accessibility audits as per the audit program.</p> <p>Enter required upgrades in Council's future capital works program.</p>
Work with the NSW Government to improve access for people of all abilities on bus, train and ferry network	WMV, TfNSW	Medium \$100,000 - \$300,000	<p>Advocate for audits and upgrades to be undertaken on bus stops, train stations and ferry terminals.</p>	–	–

7. Theme 2: Public Transport

7.1 Objective

A public transport network that is a competitive alternative to private car use.

7.2 Targets

Increase the use of public transport for commuter trips to 44 per cent by 2026.

Currently, 36 per cent of daily work trips are made by bus, train and ferry. Ferry use presents a significant opportunity for growth given its current low use for work trips and the high percentage of Woollahra residents employed in the Sydney CBD (57 per cent). Bus and train transport will experience steady growth.

7.3 Policy Commitment

Council will support and implement changes to the road network that support and prioritise public transport over private vehicles.

Council will prioritise the installation of appropriately located bus stops over parking spaces.

Council will facilitate increasing the number of people using public transport by providing high quality supporting infrastructure such as shelters and seating at bus stops and accessible paths and cycleways to bus stops.



7.4 Background

Public transport by bus and train accounts for around 10 per cent of all trips in Woollahra. Where public transport services are not seen as a viable option (whether due to the route, frequency, journey time or reliability), people will choose private vehicle trips. Private vehicle trips, particularly cars, further exacerbate the efficiency of bus travel, as more buses get caught in congestion.

While Council is not the responsible authority for public transport, it can work with Transport for NSW and ferry operators to influence service provision including timetabling and routing. Council aims to encourage the use of public transport by advocating/lobbying for increased provisions and improving the accessibility of public transport to include all abilities.

7.4.1 Train

Train services operate between Sydney CBD and Bondi Junction on the T4 Eastern Suburbs Line, with train stations located at Edgecliff Station and Bondi Junction Station. Although Bondi Junction Station is within Waverley, it is within walking distance to some areas of Woollahra.

Bus and train interchanges are available at both Edgecliff and Bondi Junction stations. A summary of the use of Edgecliff and Bondi Junction Stations is provided in Table 6.1 and Table 6.2.

Table 7.1 Edgecliff Station Patronage (2014)

Time Period	In	Out	Total
Weekday AM Peak (6.00 am-9.30am)	3,100	1,800	4,900
Weekday PM Peak (6.00 pm-9.30pm)	1,900	2,400	4,300
24 hours	7,190	7,190	14,380

Source: <http://visual.bts.nsw.gov.au/barrier/>



7.4.2 Bus

Table 7.2 Bondi Junction Station Patronage (2014)

Time Period	In	Out	Total
Weekday AM Peak (6.00am-9.30am)	10,200	4,400	14,600
Weekday PM Peak (6.00pm-9.30pm)	5,200	8,300	13,500
24 hours	21,880	21,880	43,760

Source: <http://visual.bts.nsw.gov.au/barrier/>

There are several key bus routes along the following corridors that provide services towards Sydney city:

- New South Head Road (including bus routes 200, 323, 324, 325, 326, 327 and L24)
- Old South Head Road (including bus routes 326, 327, 386, 387 and 389)
- Oxford Street (including bus routes 333, 352, 380, 440 and M40)
- Bellevue Road, Dover Road, Ocean Street, Hargrave Street and Darling Point Road.

Bus Travel Speeds

Bus travel speeds provided by Transport for NSW (PTIPS data) have been analysed to identify locations with low speeds associated with traffic congestion along the New South Head Road corridor. There are a number of locations which have slow bus travel speeds in the AM and PM peak.

- In the inbound direction, near:
 - Newcastle Street, Rose Bay
 - Preston Avenue, Double Bay
 - New Beach Road, Edgecliff.
- In the outbound direction at Edgecliff Station.

7.4.3 Ferry

Transport for NSW operates ferry services between Watsons Bay and Circular Quay, with ferry wharves within Woollahra located at Double Bay, Rose Bay, Watsons Bay and Darling Point. Two ferry services, operated by Sydney Ferries, serve these wharves:

- **F4** ferry service operates between Watsons Bay and Circular Quay
- **F7** ferry service operates between Double Bay and Circular Quay.

A summary of the ferry service frequency is provided in Table 7.3.

Table 7.3 Ferry Frequencies

Ferry	Route	AM Peak	Off Peak	PM Peak	Night	Week-end
F4	Watsons Bay to Pyrmont Bay via Circular Quay and Barangaroo	20 mins	30 mins	20 mins	30 mins	30 mins
F7	Double Bay to Circular Quay	30 mins	30 mins	30 mins	60 mins	60 mins

Source: Transport for NSW

7.4.4 On-demand public transport

Transport for NSW is currently piloting an on-demand public transport program in Woollahra.

On-demand public transport services allow users to book a public transport vehicle to pick them up from either home or a convenient nearby location and take them to a local transport hub or point of interest. On-demand public transport is most useful in locations where conventional public transport routes are not viable due to low population density, road network and the remoteness of some locations.

BRIDJ On-Demand Public Transport

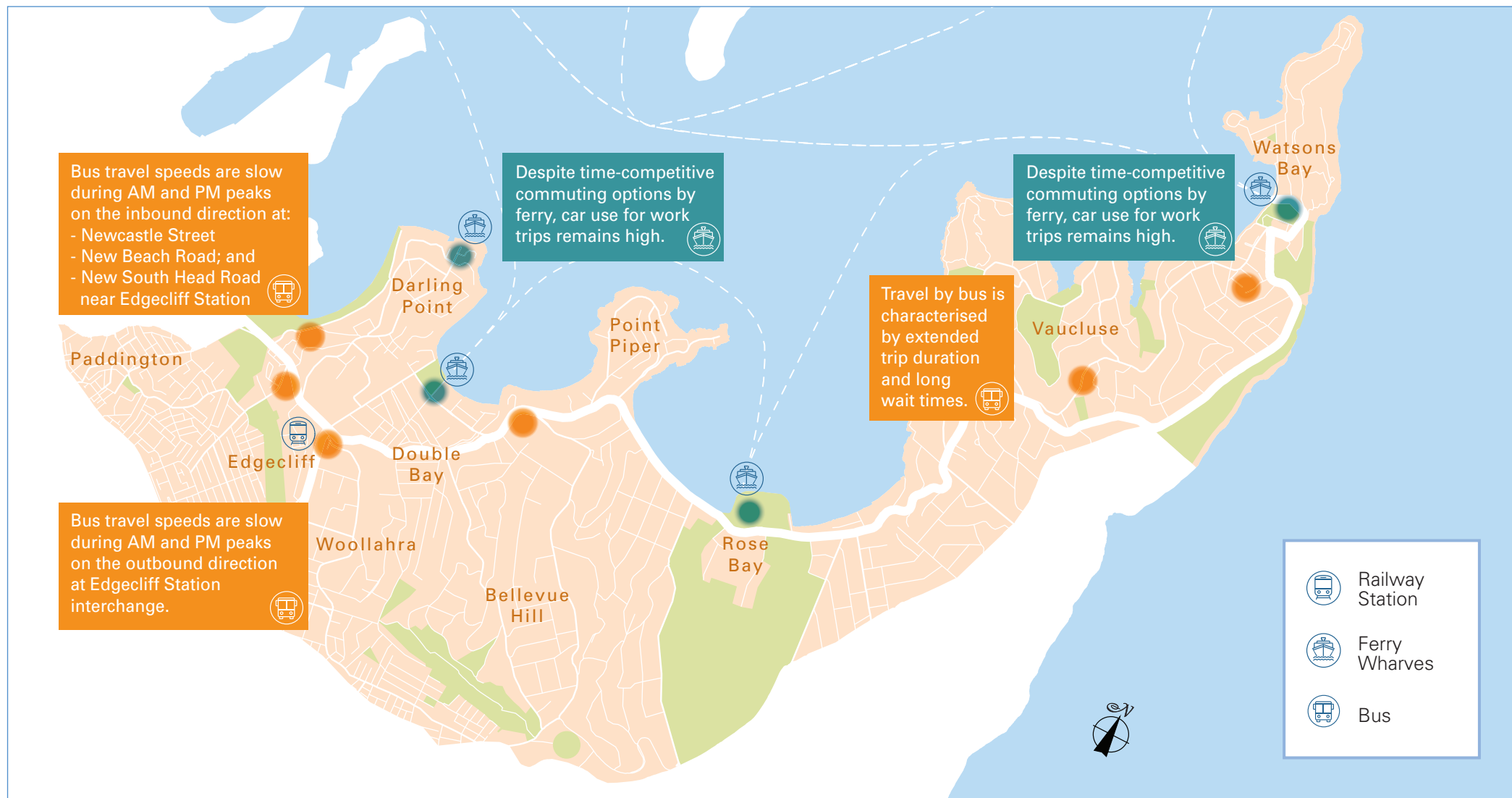


6.5 Key Challenges

There are four key challenges to achieving the objective of having **a public transport network that is a competitive alternative to private car use**. These are set out below and mapped (where there is a geographic site) in Figure 7.2.

- Heavy dependence on private vehicles and limited use of public transport
- Travel by bus is often characterised by an extended trip duration and long wait times at bus stops
- Commuters are choosing private car use over catching a ferry, despite ferry services offering a time-competitive journey
- Influencing and advocating the NSW Government for improvements to public transport systems in Woollahra.

Figure 7.2 Challenges: Public Transport



7.6 Opportunities

There are five key opportunities relating to public transport in Woollahra.

7.6.1 On-demand public transport

Advocate for on-demand public transport services in areas with limited or no public transport services and enable on-demand public transport services to act as a feeder service for other public transport modes.

7.6.2 Prioritising on-road public transport

Modify the on-road environment to ensure public transport remains a competitive option compared to car travel by:

- Supporting and advocating for bus-only lanes, bus lanes, peak bus lanes and queue jump lanes that give buses a head start at congested intersections
- Re-allocating bus stops to the departure side of intersections and incorporating kerb bulbs at stops to improve accessibility
- Signalling priority for buses.

7.6.3 Advocating for better ferry services

Liaise with the State Government and ferry service providers to increase recreational trips between Circular Quay and Watsons Bay, especially on the weekends and between Circular Quay, Double Bay, Darling Point and Watsons Bay throughout the week and weekends. Also ensure bus services are connected as feeder routes to all ferry services, to provide a seamless public transport service that will encourage usage.

7.6.4 Better bus services through network design

Advocate for better bus services through improved cohesive and connected public transport (including buses) network – improved frequency, hours of service and ‘the network effect’.

7.6.5 Public transport for recreational trips

Lobby State Government to focus on improving public transport for recreational trips, including tourism, local shopping, sports and other recreational trips.

7.7 Actions

The actions in Table 6.5 are consistent with the key challenges and opportunities identified for Theme 2: Public Transport.

Table 7.5 Theme 2 Actions: Public Transport

Actions	Responsible	Cost	Action Component Summary*		
			Short Term (0-2 years)	Medium Term (3-5 years)	Long Term (5-10 years)
Work with Transport for NSW to increase bus usage	WMC, TfNSW	Low <\$100,000	<p>Develop a public transport advocacy plan that incorporates a bus improvement strategy.</p> <p>Conduct community surveys.</p> <p>Advocate for bus route improvements on key routes with low travel speed.</p> <p>Develop and implement behavioural change programs in relation to public transport.</p> <p>Continue to encourage new developments to prioritise public transport through Travel Plans.</p>	<p>Advocate for the continued trial of improved bus services and monitor changes.</p> <p>Advocate making the trialled on-demand bus services permanent.</p> <p>Promote public transport via Council's media and communication channels.</p>	<p>Continue to monitor the operation of bus services and advocate for route upgrades.</p>
Work with Transport for NSW to increase ferry usage	WMV, TfNSW	Medium \$100,000 - \$300,000	<p>Develop a public transport advocacy plan which incorporates a ferry improvement strategy.</p> <p>Work with ferry operators to develop a plan to improve the uptake of ferry services.</p> <p>Conduct community surveys.</p> <p>Advocate for additional ferry services and the upgrade of the Double Bay Ferry Wharf.</p>	<p>If funding is available, trial improved bus services to ferry wharves in the Woollahra LGA and monitor patronage.</p> <p>Advocate for further ferry trials.</p> <p>Promote ferry usage via the Council's media and communication channels.</p>	<p>Advocate making the improved ferry services and bus services to ferry wharves permanent.</p> <p>Continue to monitor the operation of ferry services and advocate for additional ferry services.</p>

Table 7.5 Theme 2 Actions: Public Transport (Continued)

Actions	Responsible	Cost	Action Component Summary*		
			Short Term (0-2 years)	Medium Term (3-5 years)	Long Term (5-10 years)
Work with Transport for NSW to improve public transport accessibility to recreational locations	WMC, TfNSW	Low <\$100,000	<p>Prepare a bus improvement strategy and funding submission including for recreational services.</p> <p>Conduct community surveys about recreational public transport trips.</p>	<p>If funding is available, trial improved recreational bus services in the Woollahra LGA.</p> <p>Engage with media and share news/promote public transport improvements and services that benefit local residents and visitors.</p>	<p>Advocate making the trialled bus services permanent.</p> <p>Continue to monitor the operation of bus services and advocate for route upgrades (if required).</p>
Support further on-demand public transport services	WMV, TfNSW	Low <\$100,000	<p>Develop a position paper on potential new sites for on-demand transport services.</p> <p>Review use of existing services.</p>	<p>Continue advocating for the trial of on-demand public transport services.</p>	<p>Continued review of use and coverage of community transport services.</p> <p>Advocate for State Government funding of additional community transport services, if required.</p>

8. Theme 3: Active Transport

8.1 Objective

A walking and cycling network that is safe, connected, inclusive and convenient.

8.2 Targets

Increase the uptake of active transport (walking and cycling) to 14 per cent by 2026.

Currently, 12 per cent of daily work trips are made via walking and cycling. Cycling trips have scope for significant growth as the two major destinations for work trips (Eastern Suburbs and Sydney CBD) are within cycling distance for many people and will become more appealing with improved infrastructure and bike paths.

8.3 Policy Commitment

Council will increase the number of people walking and cycling by investing in and building safe, accessible and attractive pedestrian paths, crossings, cycleways, bicycle parking and supporting infrastructure.



8.4 Background

Walking and cycling are the most space efficient and sustainable of all transport modes, according to Transport for NSW's *Future Transport 2056* and have a range of benefits including:

- **Health:** Walking and cycling improves physical fitness
- **Safety:** People on the street leads to better passive surveillance
- **Social connectivity:** Increasing the chances of meetings and getting to know people in the local community
- **Economic:** Benefits to local retail as people shop locally and are able to get to local centres more efficiently (and without parking).

Walking and cycling comprise approximately 41 per cent of all trips in Woollahra (Figure 4.3). This figure is a little lower for Woollahra than the City of Sydney (53 per cent) and higher than Waverley (38 per cent). Looking solely at trips to work, just 12 per cent of journeys to work are on foot, most likely due to longer commuting distances and steeper topography.

8.4.1 Walking

Woollahra's walking network is typical of an inner urban area, with most streets having footpaths along both sides of the road and signal-controlled crossings provided at signalised intersections. Places are more walkable when walking routes have shade and shelter from weather, places to sit, safe and adequate places to cross, wide attractive footpaths and are protected from fast moving cars.

In some locations around Woollahra walking is difficult or challenging. A high number of crashes involve pedestrians. Currently, seven per cent (77 crashes) of the total crashes in Woollahra between 2013 and 2017 involved pedestrians.

In Woollahra:

- A large proportion of residential areas are within a short walking distance from a school or an educational facility
- Relatively few walking trips are made to some schools, causing congestion and parking issues
- The majority of residential areas are within walkable distance to shopping areas
- Some areas are very steep and may not be suitable for walking. These areas do not cater for people with mobility impairments and people with prams.



8.4.2 Cycling

Most neighbourhoods in Woollahra are within a short bicycle riding catchment (up to 1.6 km) from local centres and schools. Notably within Woollahra:

- Oxford Street was observed to be the street with the highest number of cyclists (2013 data)
- The existing bicycle network includes a large number of on-street routes along local roads, which don't necessarily provide the most direct link and are not of an infrastructure standard that would attract a broad array of cyclists (including children and inexperienced cyclists)
- There are a number of incomplete sections within the bicycle network.

8.5 Key Challenges

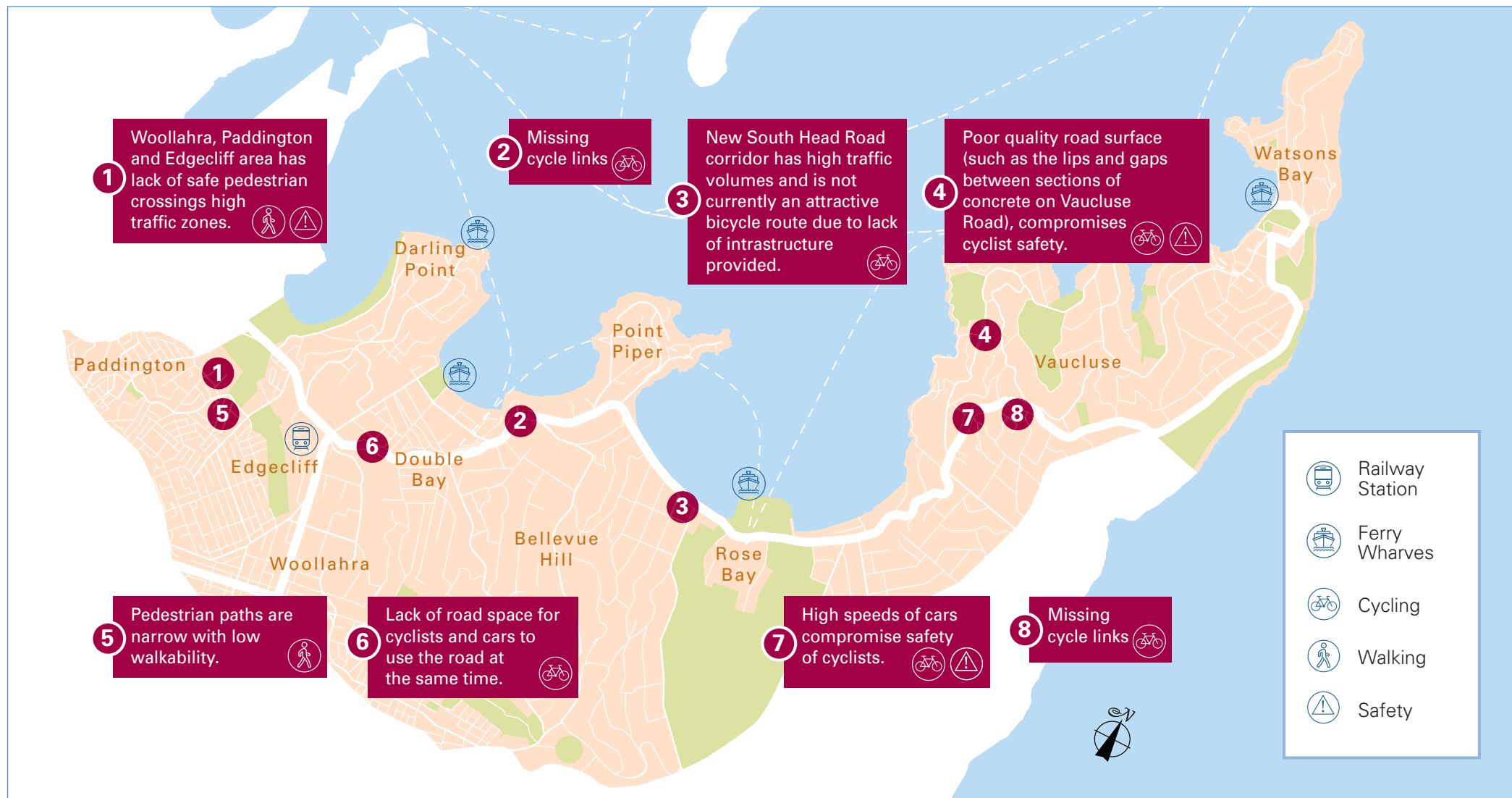
There are four key challenges to overcome to achieve the stated objective of having **a useable walking and cycling network that is safe, attractive, connected, inclusive and convenient**. These are mapped (where there is a geographic site) in Figure 8.1.

8.5.1 Key Challenges

- Demonstrating the viability and benefits of active transport for parents and carers of children commuting to school
- Encouraging people to choose active transport options for short trips and for taking children to school, childcare and pre-school
- Improving cycling infrastructure and connectivity between neighbourhoods, local centres and schools, particularly in more remote areas of Woollahra
- Improving pedestrian safety and reducing instances of pedestrian-vehicle crashes.



Figure 8.1 Challenges: Active Transport



8.6 Opportunities

There are seven key opportunities relating to public transport in Woollahra.

8.6.1 Develop an Active Transport Plan

Develop an Active Transport Plan to realise the benefits of walking and cycling to the community.

The Active Transport Plan will include a review of existing strategies and plans, such as the *Woollahra Bike Plan 2009*, to identify how council can develop a safer, efficient and more connected street network.

8.6.2 Safe off-road cycling and separated cycleways

1. Identify opportunities for separated cycleways along key cycling corridors
2. Implement these routes to increase accessibility to all schools and local centres and provide access to Edgecliff Station and Bondi Junction Station.

8.6.3 Consider and implement Safer Street Neighbourhood Link in the active transport network

An emerging trend which can act as a complement to a separated cycle network is Safer Street Neighbourhood Cycle Links (sometimes known as Greenways). These links do not separate cyclists with a barrier but do go to significant lengths to provide a safe link through:

- Reducing design speeds to 30 km/h hour through speed humps, kerb extension, planting and carriageway widths
- Locating infrastructure on streets with very low traffic volumes (of around 60 vehicles per hour each way).

8.6.4 Use of non-traditional bikes and scooters (including e-bikes, e-cargo bikes, e-family bikes and e-scooters)

The adoption of electric bikes (e-bikes) could potentially provide benefits to Woollahra, including increased:

- Catchment size through higher cycling speeds and longer trip distances
- Number of cyclists by making it easier from them to cycle in hilly environments
- Diversity of users by making cycling generally easier
- Providing an alternative transport mode for short trips.

8.6.5 Connectivity with public transport

Increase connectivity between cycling and other forms of public transport by providing bike parking at major bus stops, train stations and ferry wharves.

8.6.6 Encouraging and mandating cycling facilities provision

1. Update the local development control plan to increase provision for cycling infrastructure, particularly in relation to end of trip facilities.
2. Encourage the provision of the following biking facilities to promote active transport:
 - Safe and secure bicycle parking
 - Showering facilities at schools and workplaces.

8.6.7 Identify opportunities for bike sharing schemes within Woollahra LGA

Work alongside councils within the Inner Sydney area to identify more coordinated and sustainable bike sharing options.



8.7 Actions

The actions in Table 8.2 are consistent with the key challenges and opportunities identified for Theme 3: Active Transport.

Table 8.2 Theme 3 Actions: Active Transport

Actions	Responsible	Cost	Action Component Summary*		
			Short Term (0-2 years)	Medium Term (3-5 years)	Long Term (5-10 years)
Develop a new Woollahra Active Transport Plan.	WMC	Low-Medium <\$100,000 - \$300,000	Develop a new Woollahra Active Transport Plan with increased emphasis on off-road and separated cycleways (for main routes) connecting with feeder routes and improved pedestrian facilities. Implement the short-term actions of the Woollahra Active Transport Plan. Develop and implement behavioural change programs to support walking and cycling.	Update plan every 5 years. Implement the medium-term actions of the Woollahra Active Transport Plan. Monitor progress annually.	Update plan every 5 years. Implement the long-term actions of the Woollahra Active Transport Plan. Monitor progress annually. Develop active travel promotional plans/materials in line with infrastructure improvements.
Support the development of a well-managed dockless or docked bike share scheme in Sydney.	TfNSW, WMV	Low <\$100,000	Liaise with other inner city councils and the State Government to support the development of a well-managed dockless or docked bike share scheme, which includes Woollahra LGA.	Support the tendering and delivery of a well-managed dockless or docked bike share scheme.	Deliver a well-managed dockless or docked bike share scheme. Monitor progress.

9. Theme 4: Roads and Parking

9.1 Objective

A balanced road and parking network that supports all users.

9.2 Targets

Decrease the use of people driving cars to 40 per cent by 2026.

Private car use currently accounts for 50 per cent of daily work trips. Improving active and public transport and increasing the take up of people walking, cycling and catching public transport, will ultimately reduce the number of people choosing to drive.

9.3 Policy Commitment

Council will prioritise public and active transport modes over private motor vehicles.

Council will manage traffic congestion, noise and speeding, by supporting more space efficient ways of getting around and designing roads for lower speeds.

Council will integrate transport with land-use planning.



9.4 Background

Travelling by car (as either as a driver or as a passenger) accounts for half of all trips in Woollahra. Yet car travel is the least space efficient of all transport modes, even when the car is full. Car use also causes:

- traffic delays at key points on the road network
- amenity and safety issues for people walking and cycling
- delays for on-road public transport.

Parking also has an important role to play in creating a balanced road network. Parking and traffic congestion are inter-related as parking issues can lead to increased traffic congestion and impacts on traffic performance. Kerbside parking also has an impact on the capacity of the road network.

The way people travel by car has been the topic of much debate over the last few years, as the technology for new types of cars becomes a reality. Autonomous (self-driving) cars, mobility as a service (MaaS) and electric vehicles have an ever-increasing presence in any discussion about future driving trends. These are each discussed in more detail in Chapter 9.4 Opportunities.

9.4.1 Overview of the Road Hierarchy

Roads within NSW are categorised by classification (ownership) and by the function that they perform.

Road Classification

Roads are classified (as defined by the *Roads Act 1993*) based on their importance to the movement of people and goods within NSW. For management purposes, Roads and Maritime Services has three administrative classes of roads. These are:

- State Roads: Major arterial links through NSW and within major urban areas
- Regional Roads: Roads of secondary importance between State Roads and Local Roads which, with State Roads provide the main connections to and between smaller towns and perform a sub-arterial function in major urban areas
- Local Roads: The remainder of Council managed roads.

Functional Road Network Classification

The functional classification of roads relates to its role within the overall road network.

Roads and Maritime Services has developed guidelines for functional classifications of roads. These guidelines are published in the document titled *The Functional Classification of Roads*.

Council recognises the importance of defining the roles of roads within the overall road network. We propose to adopt the RMS ***Functional Classification of Roads***, which classifies roads according to the traffic roles they fulfil and the appropriate traffic volumes of traffic that they should convey.

The four functional road classes are typically:

- **Arterial Road:** A main road carrying in excess of 15,000 vehicles per day and over 1,500 vehicles per hour in the peak period. They predominately carry traffic from one regional to another, forming principal avenues for metropolitan traffic movements.
- **Sub Arterial Road:** A secondary road carrying between 5,000 – 20,000 vehicles per day and over 500 and 2,000 vehicles per hour in the peak period. They predominately carry traffic from one sub-region to another forming secondary inter-regional transport links.
- **Collector Road:** A minor road carrying between 2,000 and 10,000 vehicles per day and over 250 and 1,000 per hour in the peak period. They provide a link between local areas and regional areas carrying low traffic volumes. At volumes greater than 5,000 vehicles per day, residential amenity begins to decline. Trunk collector and spine roads with limited property access can carry traffic flows greater than 5,000 vehicles per day.
- **Local Road:** A local street carrying less than 2,000 vehicles per day and 250 vehicles per hour in the peak period. It provides direct access to individual houses and carries low traffic volumes.

Woollahra's existing road network consists of three major arterial road corridors: New South Head Road, Oxford Street and Old South Head Road. The intersecting roads of Ocean Street and O'Sullivan Road also have significant importance for north-south connectivity.

The arterial road corridors carry the majority of the traffic travelling through Woollahra, although traffic levels vary significantly depending on the time of day and direction of travel.

The main sub-arterial roads include Ocean Street, O'Sullivan Road, Ocean Avenue, William Street, Old South Head Road north of the New South Head Road intersection and Barcom Avenue/Boundary Street/Neild Avenue.

Woollahra's road network hierarchy is shown in Figure 9.1.

9.4.2 Traffic Volumes and Midblock Assessment

The following locations currently experience an unacceptable level of traffic congestion during weekday peak periods:

- Edgecliff Road at Bathurst Street (AM/PM)
- New South Head Road at Darling Point Road/New McLean Street/New South Head Road Intersection (AM)
- New South Head Road at Ocean Street/Ocean Avenue/New South Head Road/Edgecliff Road Intersection (AM).

The following locations experience congestion during weekend peak periods:

- Queen Street
- Old South Head Road
- New South Head Road
- Ocean Street.

Fig 9.3 summarises crash information on Council's local road network.

Figure 9.1 Road Hierarchy



9.4.3 Parking

Council manages the on-street parking controls in Woollahra and strategically manages off-street parking provision and supply through its development control plans. It is important Council ensures that its parking systems are balanced to meet the needs of residents, workers, businesses and visitors, whilst considering the flow-on impacts on the traffic network.

On Street Parking

On-street parking supply is particularly high in areas such as Double Bay, Rose Bay, Woollahra, Paddington and Edgecliff centres. There is also high demand for parking on weekends and public holidays and during school holidays at tourist visitor destinations such as at Watsons Bay and Neilson Park (Shark Bay).

Council is unable to increase the supply of on-street parking. The only equitable way to manage the parking in some areas is to give residents and visitors fair access to the resource and to place time restrictions on the available parking spaces.

On-street paid parking, with parking meters, is in operation in Double Bay and Paddington.

Council has introduced Resident Parking Schemes in many residential areas with high parking demand to assist residents with time-limited parking opportunities and give them better opportunities to park near their homes.

Off-Street Parking

There are a number of off-street car parks available in Woollahra. These car parks are operated by either Council, local commercial operators and/or NSW Parks and Wildlife Services.

Council has also adopted a development control plan which outlines certain parking requirements for new developments. All new developments are assessed against Council's development control plan and should provide sufficient parking spaces in accordance with the plan.



9.4.4 Freight

There are no approved b-double truck routes in Woollahra given the geographic location and the fact that there are no industrial areas within the municipality.

However, due to increased development activity there has been an increase in construction traffic-related activities on the road network resulting in:

- Noise and vibration issues of heavy vehicles adversely affecting the amenity of areas of residential areas and where there is high pedestrian activity
- Potential conflicts with vulnerable road users such as bicycle riders and pedestrians (when crossing roads).

9.4.5 Future Transport

Electric vehicles

By 2040, 55 per cent of all new car sales and 33 per cent of the global fleet will be electric. Electric vehicles (EVs) have significant benefits in reducing the emissions produced to run the vehicle where the electricity source is renewable. For common rapid charging (as opposed to overnight charging at home), there is beginning to be a universal standard for socket charging, which would enable Council to better regulate EV charging stations through its development control plan and infrastructure specification.

Autonomous vehicles

Fully autonomous vehicles promise many advantages, but the most consistently agreed upon is the benefit to road safety. Autonomous vehicles will lead to a decrease in the number of people being killed and hospitalised by cars as they do not rely on humans, who can be unpredictable and prone to distraction and poor decisions. However, there is a growing level of concern regarding the impact on communities and the likelihood of increased congestion resulting from:

- Shared autonomous vehicles circulating between rides, keeping in mind there is little disincentive for this with zero driver costs, low fuel costs and road costs and major incentives for this given the high cost and low availability of parking in many areas
- Privately owned autonomous vehicles returning to their home between trips (effectively doubling the distance travelled).

Figure 9.2 Uptake of fully autonomous vehicles



Source: *TfNSW, Future Transport 2056, 2018*

Mobility as a Service (MaaS)

MaaS describes a shift away from personally-owned modes of transportation towards mobility solutions that are consumed as a service using a technology platform, such as a smartphone app.

MaaS offerings can include anything from car sharing, bike sharing, journey planning apps, ride sharing, smart parking and autonomous vehicles. MaaS offerings in which local government has an active role include car share, bike share and smart parking.

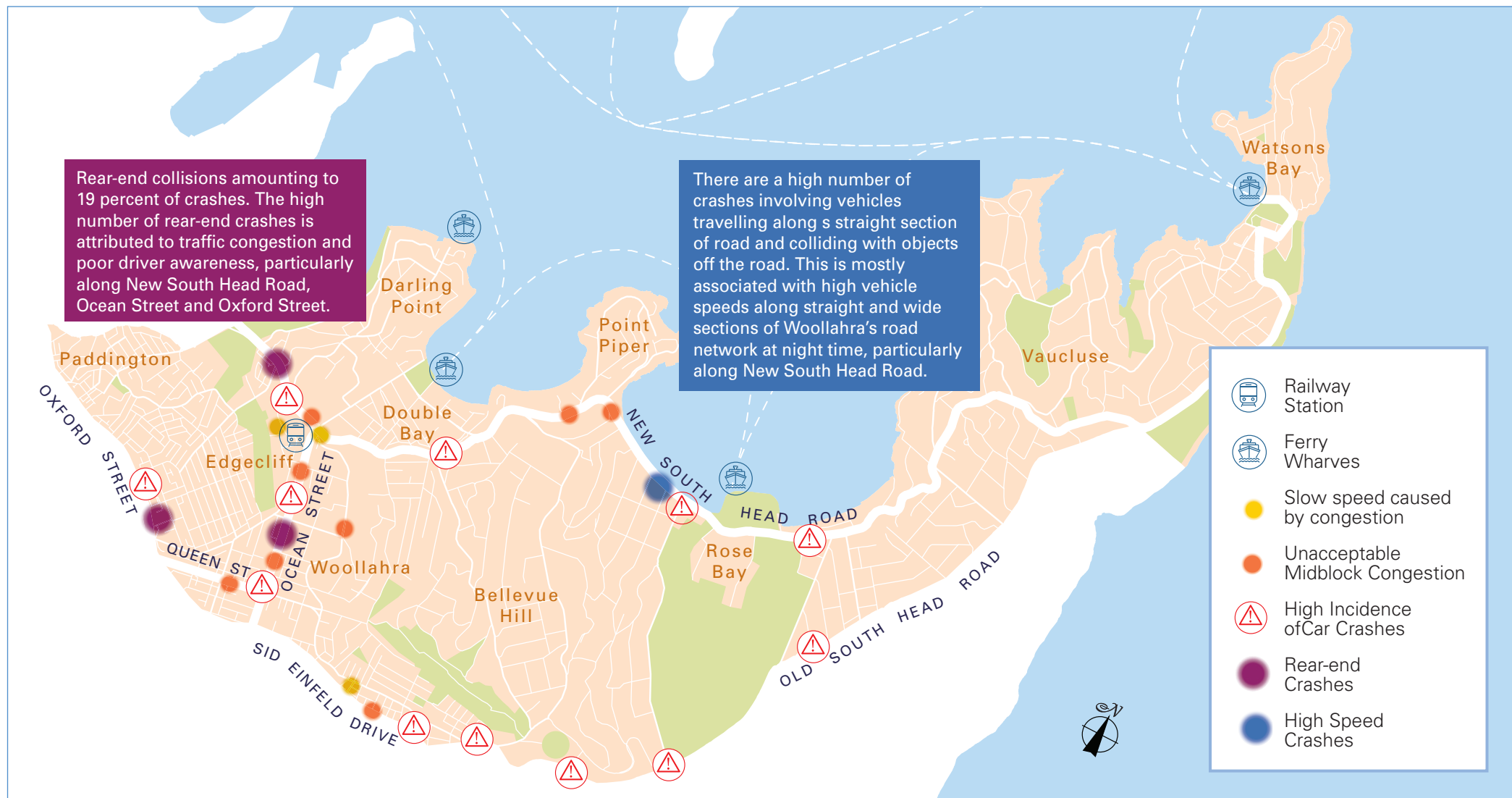
9.5 Key Challenges

There are five key challenges to achieving the objective of having **a road network that supports all users**. The reliance on cars for personal mobility in Woollahra has led to other transport options – walking, cycling, public transport – being compromised by increasing traffic congestion and safety concerns. These are set out in section 9.4.1.

- Easing traffic congestion at key intersections across the municipality by improving intersection capacity
- Easing congestion across Woollahra caused by slow speeds
- Reducing the rate of crashes, particularly where vehicles veer off the road and those involving excessive vehicle speeds
- Balancing the parking requirements of residents, workers and visitors
- Planning for emerging future transport trends.



Figure 9.3 Crash Map



9.6 Opportunities

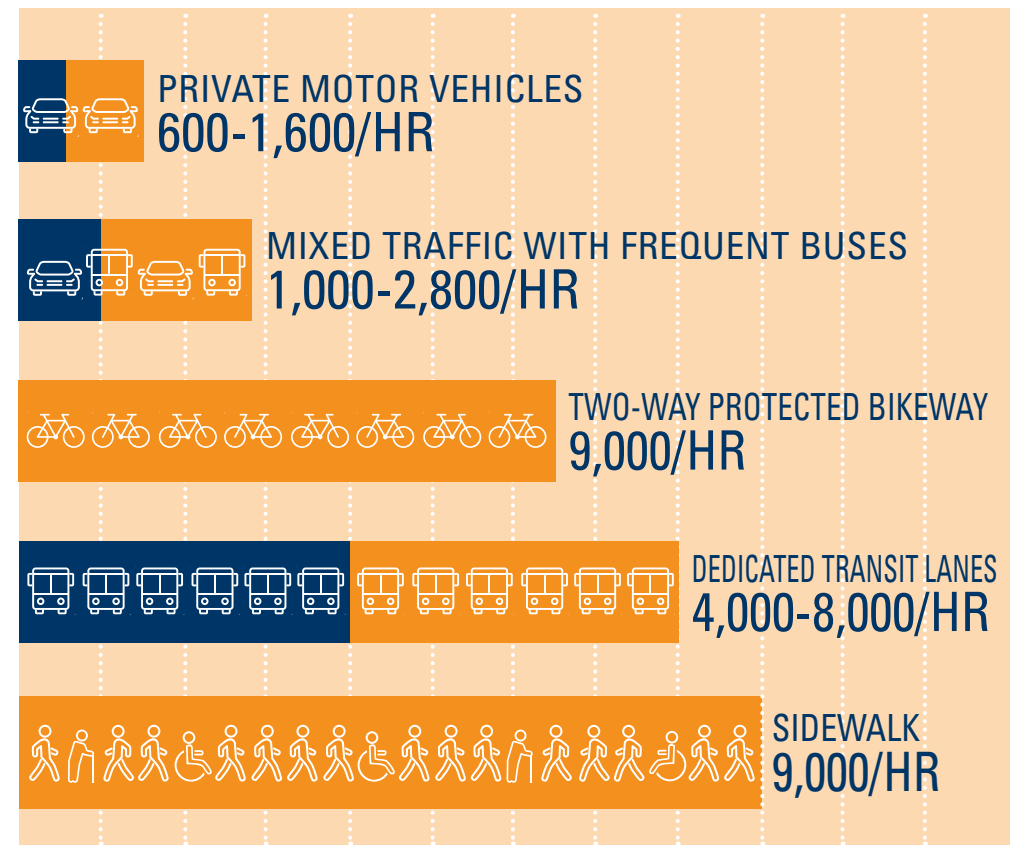
There are six opportunities identified to improve roads and parking in Woollahra.

9.4.1 Prioritising space-efficient transport modes

- Increase the opportunity for people to use more space-efficient transport modes and reduce reliance on vehicles.
- Prioritise walking, cycling and public transport to improve the efficiency of road space management.



Figure 9.4 Relative space efficiency of modes



Source: NACTO, 2018, *Designing to Move People*

Note: The capacity of a single lane by mode at peak conditions with normal operations.

9.5.2 Managing parking appropriately to support necessary travel

- Create a parking hierarchy for management of Council's road kerb space to improve safety and encourage public and active transport modes
- Investigate the use of smart parking technology such as in-ground sensors and parking apps to monitor and manage parking in high demand areas.

9.5.3 Promoting the use of share vehicles

Promote the use of car-sharing to reduce the demand of on-street parking. Car share spaces can be promoted and implemented in new/ existing developments and on the street.

9.5.4 Reviewing the road system

Apply the principles of the Movement and Place, Safer Systems and Complete Streets approaches to road network space allocation to improve safety, increase uptake of active transport and support public and private transport.

9.5.5 Collaborate with the State Government to achieve their 'Toward Zero' goals.

Support the 'Toward Zero' goal of zero road fatalities or serious injuries on NSW roads by 2056 by installing traffic calming, pedestrian refuges and crossings in busy urban places to improve pedestrian and bicycle rider safety and reduce casualty crashes.

9.5.6 Understanding the role of emerging technology

- Promote the use of electric vehicles (EV) by investigating Council-supply of charging stations in retail areas, Council-owned car parks and other areas
- Investigate opportunities in implementing Mobility as a Service (MaaS).

9.7 Actions

The actions in Table 8.2 are consistent with the key challenges and opportunities identified for Theme 4: Roads and Parking.

Table 9.2 Theme 4 Actions: Roads and Parking

Actions	Responsible	Cost	Action Component Summary*		
			Short Term (0-2 years)	Medium Term (3-5 years)	Long Term (5-10 years)
Prioritise space-efficient transport modes.	WMC	Medium <\$100,000	Present plan to Transport for NSW for prioritising space efficient transport modes prioritising locations identified as having buses effected by congestion. Prepare a position paper for TfNSW on the scope for providing infrastructure for space-efficient transport modes within Woollahra.	Deliver bus priority improvements. Measure impact on transport mode split in each case study.	Deliver bus priority improvements. Measure impact on transport mode split in each case study.
Develop a Road Safety Plan.	WMV	Medium \$100,000	Crash data analysis and crash cluster identification. Strategy preparation. Road safety audits in identified areas. Prepare a funding submission (Blackspot and Safe Roads Programs) for improving road safety. Two-yearly road safety campaign preparation and delivery.	Implement measures to improve road safety in Woollahra. Update the funding submission.	Monitor the effectiveness of measures implemented to improve road safety and update the funding and engagement strategies.

Table 9.2 Theme 4 Actions: Roads and Parking (Continued)

Actions	Responsible	Cost	Action Component Summary*		
			Short Term (0-2 years)	Medium Term (3-5 years)	Long Term (5-10 years)
Update traffic management strategy and implement road safety initiatives aimed at reducing driving speeds.	WMC	High >\$300,000	<p>Undertake audits within local centres to identify 'shared zone' opportunities.</p> <p>Prepare a funding submission for Roads and Maritime Services (for 30 km/h high pedestrian activity areas and 10 km/h shared zones with supporting traffic calming measures).</p> <p>Design traffic calming measures within neighbourhood and local centres (if required).</p> <p>Investigate and implement a 40 km/h high pedestrian activity area or 10 km/h shared zone within neighbourhood and local centres every year, as required.</p>	<p>Update the Woollahra LATM strategy.</p> <p>Investigate and implement a 30 km/h high pedestrian activity area or 10 km/h shared zone within a town centre every year, as required.</p>	<p>Update the funding strategy.</p> <p>Investigate and implement a 30 km/h high pedestrian activity area or 10 km/h shared zone within a town centre every year, as required.</p>
Reduce the negative impacts of traffic in locations of high 'place' significance	WMC	High >\$300,000	<p>Include proposed Movement and Place recommendations in planning documents such as the proposed Active Transport Plan and Traffic Management Strategy.</p> <p>Prepare a program of works for the proposed high priority upgrades.</p> <p>Implement the upgrades and monitor their operation.</p>	<p>Implement the medium priority upgrades and monitor their operation.</p>	<p>Implement the low priority upgrades and monitor their operation.</p>

Table 9.2 Theme 4 Actions: Roads and Parking (Continued)

Actions	Responsible	Cost	Action Component Summary*		
			Short Term (0-2 years)	Medium Term (3-5 years)	Long Term (5-10 years)
Support electric vehicle usage	WMC, TfNSW, RMS	Medium \$100,000 - \$300,000	<p>Advocate and work with Transport for NSW and Roads and Maritime Services for changes to legislation to enable a trial of on-road EV charging stations.</p> <p>Support the trial of EVs for on-demand transport trials in Woollahra LGA.</p> <p>Review and update Council's development control plan to strengthen the controls relating to the provision of electric vehicles.</p>	Monitor and review Council's support for EV.	Monitor and review Council's support for EV.
Increase use of shared cars	WMC	<\$100,000	<p>Liaise with car share providers to understand and overcome barriers to expanding car share schemes in Woollahra.</p> <p>Review and update Council's development control plan to strengthen the controls relating to the provision of car share vehicles.</p>	Regularly monitor and review car share numbers and usage.	Regularly monitor and review car share numbers and usage.
Create a Parking Action Plan for Woollahra that focuses on parking management	WMC	Medium \$100,000 - \$300,000	<p>Develop a new Parking Action Plan for Woollahra and implement the priority actions.</p> <p>Put a cap on the number of car parking spaces per dwelling and for other land uses (rather than having a minimum number required).</p>	Implement the measures and high priority actions identified in the Parking Action Plan to encourage the efficient use of parking within Woollahra.	Implement the measures medium / low priority actions identified in the Parking Action Plan to encourage the efficient use of parking within Woollahra.

10. Summary

10.1 Summary of Challenges

This chapter summarises the key challenges as they have been identified through the development of the ITS, analysis of data and community engagement outcomes. There are two maps that summarise location specific challenges (Figure 10.1) and challenges which relate more generally to the municipality (Figure 10.2).

10.2 Summary Action Tables

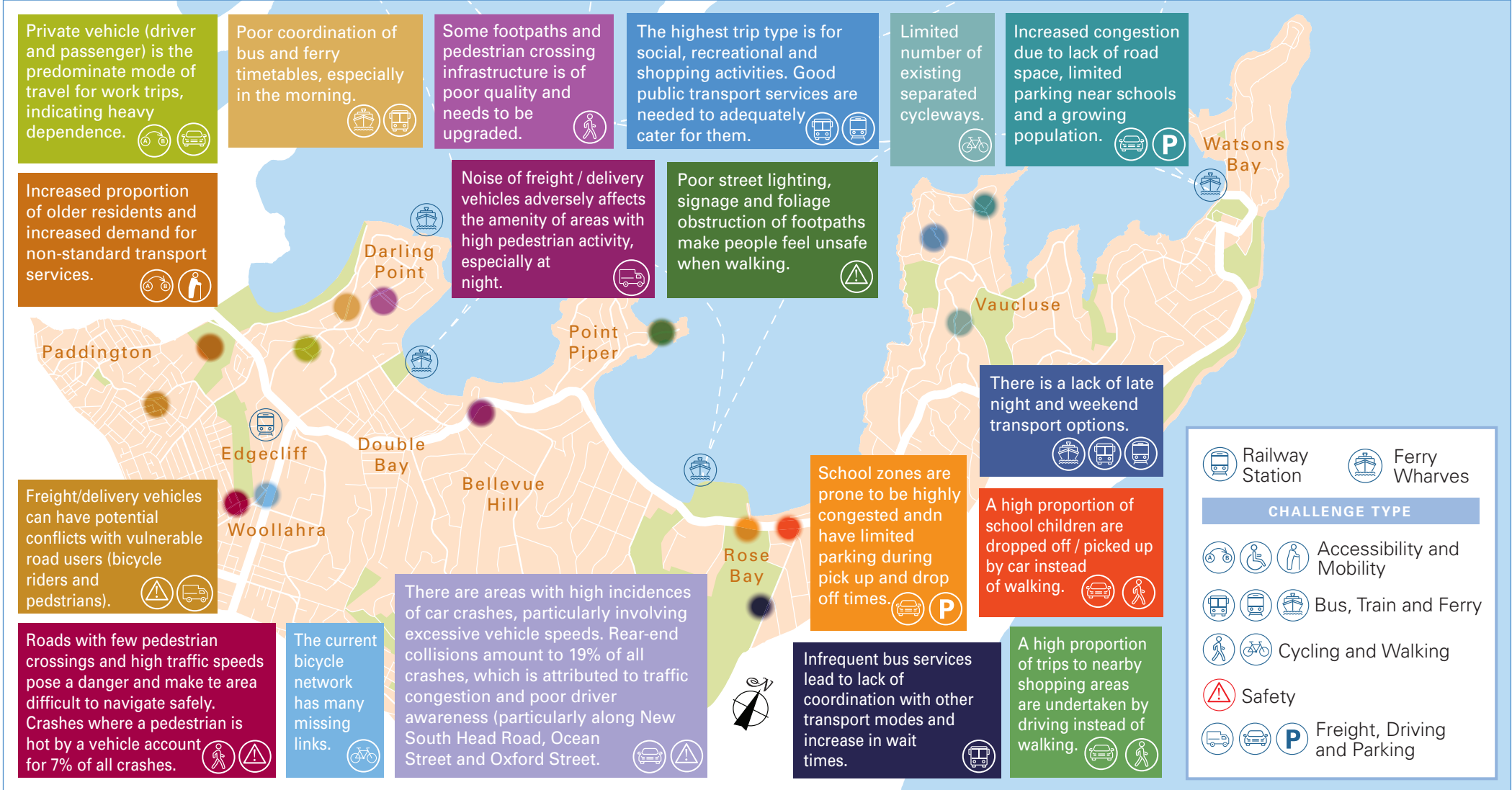
The following tables are a summary of the challenges, opportunities and actions associated with each key theme:

- Access and Mobility
- Public Transport
- Active Transport
- Roads and Parking.



Woollahra Integrated Transport Strategy

Figure 10.1 Map of Council-wide challenges



Woollahra Integrated Transport Strategy

Table 10.1 Summary Table, Accessibility and Mobility

	Challenge	Opportunities					Actions		
Reference	Evidence	On-Demand Public Transport	Access to Community Transport Network	Access to services	Accessibility Auditing (existing infrastructure)	Designing active transport for all abilities (new infrastructure)	Support further on-demand public transport services	Review access to key destinations	Work with the State Government to improve accessibility for all abilities on the bus and ferry network
Challenge 1.1: There is a high portion of older residents (65+), which brings challenges associated with age-related accessibility problems.									
Existing Conditions Report 2.2.2	The proportion of people aged 70 and over in Woollahra (13 per cent) is significantly higher than in the City of Sydney (5 per cent) and Waverley (9 per cent) and also higher than the Greater Sydney average (10 per cent). This suggests that there is a higher proportion of retirees living in Woollahra who generally have higher mobility needs and require good access to public transport services.	✓	✓	✓	✓	✓	✓	✓	
Existing Conditions Report 2.2.3	The portion of residents aged 65 or more is expected to increase by 2 per cent between 2016 and 2031. This increase in older people living in Woollahra could have an impact on demand for non-standard transport services, such as community transport (provided by Council and volunteer organisations), as older people are often less likely to be able to drive and may have lower mobility.	✓	✓	✓	✓	✓	✓	✓	
Challenge 1.2: There is limited disability access at discrete locations.									
Existing Conditions Report 3.3.1	Various locations require accessibility auditing (including bus stops, ferry terminals and key destinations such as shops) to ensure ease of access for all users.				✓		✓	✓	✓

Table 10.1 Summary Table, Accessibility and Mobility *(Continued)*

	Challenge	Opportunities					Actions		
Reference	Evidence	On-Demand Public Transport	Access to Community Transport Network	Access to services	Accessibility Auditing (existing infrastructure)	Designing active transport for all abilities (new infrastructure)	Support further on-demand public transport services	Review access to key destinations	Work with the State Government to improve accessibility for all abilities on the bus and ferry network
Challenge 1.3: Areas such as Watsons Bay and Vaucluse have poor accessibility due to their geographic and land use composition.									
Existing Conditions Report 3.3.1	Travel times by non-car modes from some areas are extremely long. People who have limited ability to drive are disadvantaged living in such locations.	✓		✓		✓	✓		
Challenge 1.4: Getting around with children, particularly on busy roads.									
	Moving around Woollahra with children can be difficult, particularly navigating busy roads and road crossing in general.				✓	✓		✓	

Table 10.2 Summary Table, Public Transport

	Challenge	Opportunities					Actions		
Reference	Evidence	On-Demand Public Transport	Prioritising On-Road Public Transport	Advocate for better ferry services	Connectivity through network design	Public transport for recreational trips	Work with Transport for NSW to increase bus usage	Work with Transport for NSW to increase ferry usage	Work with Transport for NSW to improve public transport accessibility to recreational locations
Challenge 2.1: Heavy dependence on private vehicle and limited use of public transport.									
Existing Conditions Report 2.4.1	A high proportion of trips made by Woollahra residents are related to social, recreational and shopping activities (46 per cent of the overall trips). This is similar to City of Sydney and Waverley, although higher than the Greater Sydney Average (41 per cent). To ensure that these trip types can be adequately catered for, good public transport services would need to be provided.	✓			✓	✓	✓	✓	✓
Existing Conditions Report 3.3.2	Private vehicle (driver and passenger) is the predominant mode of travel for work trips to/within Woollahra (64 per cent) and work trips for Woollahra residents (51 per cent).	✓	✓				✓	✓	✓
Challenge 2.2: Travel by bus is characterised by extended trip duration and long wait times.									
Existing Conditions Report 3.3.2	Bus travel speeds are slow on the inbound direction in the following locations:								
	Near Newcastle Street, Rose Bay, during the AM and PM peak periods.		✓				✓		
	Near Preston Avenue, Double Bay, during both the AM and PM peak periods.		✓				✓		

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Table 10.2 Summary Table, Public Transport (Continued)

	Challenge	Opportunities					Actions		
Reference	Evidence	On-Demand Public Transport	Prioritising On-Road Public Transport	Advocate for better ferry services	Connectivity through network design	Public transport for recreational trips	Work with Transport for NSW to increase bus usage	Work with Transport for NSW to increase ferry usage	Work with Transport for NSW to improve public transport accessibility to recreational locations
Challenge 2.2: Travel by bus is characterised by extended trip duration and long wait times. (Continued)									
Existing Conditions Report 3.3.2	Bus travel speeds are slow on the inbound direction in the following locations:								
	Near New Beach Road, Edgecliff, during both the AM and PM peak periods (although it is noted that buses travel into the Edgecliff Station interchange).		✓				✓		
	Near Preston Avenue, Double Bay, during both the AM and PM peak periods.		✓				✓		
	Bus travel speeds are slow on the outbound direction in the following locations:								
	At Edgecliff, during both the AM and PM peak periods (although it is noted that buses travel into the Edgecliff Station interchange).		✓				✓		
Engagement Outcomes Report	Infrequent bus services lead to lack of coordination with other transport modes and increase wait times.	✓			✓	✓	✓		✓
Ferry services offer a very time competitive commuting option to private cars, however suburbs with ferry services still have very high car use.									
Existing Conditions Report 3.3.3	Of the four ferry wharfs (Watsons Bay, Double Bay, Rose Bay and Darling Point) all ferry options offer regular peak hour services (approximately 30 minute) and time-competitive alternatives to private car use. Despite this, car use from these suburbs for commuting trips are high.			✓	✓			✓	✓

Table 10.3 Summary Table, Active Transport

	Challenge	Opportunities				Actions	
Reference	Evidence	Safer Street Neighbourhoods in the active transport network	Opportunities for safe off-road cycling and separated cycleways	Used of non-traditional bikes (including, e-bikes, cargo bikes etc).	A connected network	Develop a new Woollahra Active Transport Plan	Support the development of a 'docked' bike share scheme in Sydney.
Existing Conditions Report 3.1	Council has identified that a high proportion of children are dropped off/picked by car at some schools in Woollahra. Encouraging school children and parents to walk to schools can have significant health and environmental benefits and can also reduce traffic congestion.	✓	✓	✓	✓	✓	
Existing Conditions Report 3.1	The majority of residential areas in Woollahra are within walkable distance to the shopping areas. It is noted that a high proportion of trips by purpose are for social, recreational and shopping purposes. This suggests that many of these trips could be undertaken by walking only.	✓			✓		
Existing Conditions Report 3.1	Some footpaths and pedestrian crossing infrastructure, such as pram ramps and pedestrian refuges, in Woollahra are of poor quality and would require upgrading in order to improve mobility and encourage more short trips by walking.	✓			✓		
Existing Conditions Report 2.5.2	There is an overall low rate of cycling trips in Woollahra, with only one per cent of residents cycling to work.	✓	✓	✓	✓	✓	✓
Engagement Outcomes Report, Chapter 4	Poor street lighting, signage and foliage obstruction of footpaths makes people feel unsafe when walking.	✓			✓	✓	
Engagement Outcomes Report, Chapter 6	Roads with few pedestrian crossings and high traffic speeds pose a danger and make the area difficult to navigate safely.	✓			✓	✓	

Table 10.3 Summary Table, Active Transport *(Continued)*

	Challenge	Opportunities				Actions	
Reference	Evidence	Safer Street Neighbourhoods in the active transport network	Opportunities for safe off-road cycling and separated cycleways	Used of non-traditional bikes (including, e-bikes, cargo bikes etc).	A connected network	Develop a new Woollahra Active Transport Plan	Support the development of a 'docked' bike share scheme in Sydney.
Existing Conditions Report 3.2	The majority of Woollahra is within a short bicycle riding catchment (up to 1.6 km) from local centres and schools. However, there is currently a limited number of cycleways that would appeal to a broad market (including children, their parents and inexperienced/tentative cyclists).	✓	✓	✓	✓	✓	
Existing Conditions Report 3.2	There are a number of incomplete in the bicycle network, particularly along the New South Head Road corridor, which has high traffic volumes and is not currently an attractive bicycle route due to a lack of infrastructure.	✓	✓	✓	✓	✓	
Engagement Outcomes Report, Chapter 6	Poor quality road surface on Vaucluse Road (lips and gaps between sections of concrete) compromises cyclist safety.		✓	✓			
Existing Conditions Report 3.5	Crashes where a pedestrian is hit by a vehicle account for seven per cent of all crashes.	✓			✓		

Table 10.4 Summary Table, Roads and Parking

	Challenge	Opportunities					Actions						
Reference	Evidence	Promoting the use of electric vehicles	Promoting the use of share vehicles	Controlling parking appropriately to support necessary travel	Prioritising space-efficient transport modes	Develop a 'Vision Zero' approach to road safety	Develop a Road Safety Plan	Implement safety initiatives aimed at reducing driving speeds.	Reduce the negative impacts of traffic in locations of high 'Place' significance.	Support for electric vehicle usage	Increase use of shared cars	Develop a municipal Parking Strategy	Prioritise space-efficient transport modes
Challenge 4.1: There is traffic congestion in discrete locations across the municipality.													
Existing Conditions Report 3.4.3	Edgecliff Road at Bathurst Street in the weekday AM and PM peak.		✓	✓	✓						✓	✓	
	New South Head Road at Darling Point Road / New McLean Street / New South Head Road Intersection in the weekday AM peak; and New South Head Road at Ocean Street / Ocean Avenue / New South Head Road / Edgecliff Road Intersection in the weekday AM peak.		✓	✓	✓						✓	✓	
Challenge 4.2: There are slow travel speeds caused by congestion at discrete locations across the municipality.													
Existing Conditions Report 3.4.3	Slow travel speeds westbound along New South Head Road at Double Bay and Point Piper in the AM peak.		✓	✓	✓						✓	✓	

Table 10.4 Summary Table, Roads and Parking *(Continued)*

	Challenge	Opportunities					Actions						
Reference	Evidence	Promoting the use of electric vehicles	Promoting the use of share vehicles	Controlling parking appropriately to support necessary travel	Prioritising space-efficient transport modes	Develop a 'Vision Zero' approach to road safety	Develop a Road Safety Plan	Implement safety initiatives aimed at reducing driving speeds.	Reduce the negative impacts of traffic in locations of high 'Place' significance.	Support for electric vehicle usage	Increase use of shared cars	Develop a municipal Parking Strategy	Prioritise space-efficient transport modes
Challenge 4.2: There are slow travel speeds caused by congestion at discrete locations across the municipality. <i>(continued)</i>													
Existing Conditions Report 3.4.3	Slow travel speeds westbound along Old South Head Road near Bondi Junction in the AM peak.		✓	✓	✓						✓	✓	
	Slow travel speeds southbound along Ocean Street in Woollahra in the AM peak.		✓	✓	✓						✓	✓	
	Slow travel speeds at old South Head Road and Ocean Street, towards Bondi Junction in the PM peak.		✓	✓	✓						✓	✓	
	Slow travel speeds along Queen Street, Woollahra on the weekend peak.		✓	✓	✓				✓		✓	✓	
	Slow travel speeds along Old South Head Road near Bondi Junction in the weekend peak.		✓	✓	✓						✓	✓	

Table 10.4 Summary Table, Roads and Parking *(Continued)*

	Challenge	Opportunities					Actions						
Reference	Evidence	Promoting the use of electric vehicles	Promoting the use of share vehicles	Controlling parking appropriately to support necessary travel	Prioritising space-efficient transport modes	Develop a 'Vision Zero' approach to road safety	Develop a Road Safety Plan	Implement safety initiatives aimed at reducing driving speeds.	Reduce the negative impacts of traffic in locations of high 'Place' significance.	Support for electric vehicle usage	Increase use of shared cars	Develop a municipal Parking Strategy	Prioritise space-efficient transport modes
Challenge 4.2: There are slow travel speeds caused by congestion at discrete locations across the municipality. <i>(continued)</i>													
Existing Conditions Report 3.4.3	New South Head Road, generally between Darling Point Road and Victoria Road.		✓	✓	✓				✓		✓	✓	
	Ocean Street, for its entire length.		✓	✓	✓						✓	✓	
	Old South Head Road, at its southern end between Bondi Junction and Newcastle Street.		✓	✓	✓						✓	✓	
	Bellevue Road (westbound in the weekday AM and PM peak).		✓	✓	✓						✓	✓	
	Oxford Street, for its entire length.		✓	✓	✓				✓		✓	✓	
Challenge 4.3: There are areas with high incidences of car crashes, particularly involving collisions where vehicles were off the road and involving excessive vehicle speeds.													
Existing Conditions Report 3.5	Along New South Head Road near Edgecliff Station, through Double Bay, Point Piper and Rose Bay.					✓	✓	✓	✓				

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Table 10.4 Summary Table, Roads and Parking *(Continued)*

	Challenge	Opportunities					Actions						
Reference	Evidence	Promoting the use of electric vehicles	Promoting the use of share vehicles	Controlling parking appropriately to support necessary travel	Prioritising space-efficient transport modes	Develop a 'Vision Zero' approach to road safety	Develop a Road Safety Plan	Implement safety initiatives aimed at reducing driving speeds.	Reduce the negative impacts of traffic in locations of high 'Place' significance.	Support for electric vehicle usage	Increase use of shared cars	Develop a municipal Parking Strategy	Prioritise space-efficient transport modes
Challenge 4.3: There are areas with high incidences of car crashes, particularly involving collisions where vehicles were off the road and involving excessive vehicle speeds.													
Existing Conditions Report 3.5	Old South Head Road, north of Newcastle Street at Rose Bay and intersections between Syd Enfield Drive and O'Sullivan Street.					✓	✓	✓	✓				
	Intersections along Ocean Street in Woollahra, including at Queen Street, Jersey Road and Syd Enfield Drive.					✓	✓	✓					
	Intersections along Oxford Street.					✓	✓	✓					
	Intersections along Edgecliff Road.					✓	✓	✓					
	There is a high number of crashes involving vehicles travelling along a straight section of road and colliding with objects off the road. This is mostly associated with high vehicle speeds along straight and wide sections of Woollahra's road network at night time, particularly along New South Head Road.					✓	✓	✓					

Table 10.4 Summary Table, Roads and Parking *(Continued)*

	Challenge	Opportunities					Actions						
Reference	Evidence	Promoting the use of electric vehicles	Promoting the use of share vehicles	Controlling parking appropriately to support necessary travel	Prioritising space-efficient transport modes	Develop a 'Vision Zero' approach to road safety	Develop a Road Safety Plan	Implement safety initiatives aimed at reducing driving speeds.	Reduce the negative impacts of traffic in locations of high 'Place' significance.	Support for electric vehicle usage	Increase use of shared cars	Develop a municipal Parking Strategy	Prioritise space-efficient transport modes
Challenge 4.3: There are areas with high incidences of car crashes, particularly involving collisions where vehicles were off the road and involving excessive vehicle speeds.													
Existing Conditions Report 3.5	Rear-end collisions amount to 19 per cent of crashes. The high number of rear-end crashes is attributed to traffic congestion and poor driver awareness, particularly along New South Head Road, Ocean Street and Oxford Street. Crashes where a pedestrian is hit by a vehicle account for seven per cent of all crashes.					✓	✓	✓					
Challenge 4.4: Freight and delivery can adversely affect amenity.													
Existing Conditions Report 4.1.8	The noise of freight/delivery vehicles adversely affects the amenity of areas of high pedestrian activity, such as New South Head Road at Double Bay, particularly at night when background noises are lower.	✓							✓	✓			

Table 10.4 Summary Table, Roads and Parking *(Continued)*

	Challenge	Opportunities					Actions						
Reference	Evidence	Promoting the use of electric vehicles	Promoting the use of share vehicles	Controlling parking appropriately to support necessary travel	Prioritising space-efficient transport modes	Develop a 'Vision Zero' approach to road safety	Develop a Road Safety Plan	Implement safety initiatives aimed at reducing driving speeds.	Reduce the negative impacts of traffic in locations of high 'Place' significance.	Support for electric vehicle usage	Increase use of shared cars	Develop a municipal Parking Strategy	Prioritise space-efficient transport modes
Challenge 4.4: Freight and delivery can adversely affect amenity.													
Existing Conditions Report 4.1.8	Freight/delivery vehicles can have potential conflicts with vulnerable road uses such as bicycle riders and pedestrians (when crossing roads).					✓			✓				
Challenge 4.5: Parking provides an incentive for car use, particularly when paired with unappealing active transport environments.													
Engagement Outcomes Report Chapter 3	There is an increased traffic and parking congestion near schools, as well as a growing population.			✓	✓				✓		✓		

10.3 ITS Summary

Woollahra Council recognises that transport underpins the social and economic fabric of our community and plays an important role in making our vibrant and liveable place even better for future generations.

Our Integrated Transport Strategy sets out our vision, which is supported by four key transport themes and related objectives, challenges, opportunities, policy commitments and actions.

Council's goal is to have an integrated transport network in Woollahra that:

- Accommodates all users regardless of age or mobility
- Offers a competitive alternative to private car use
- Provides a safe, connected, inclusive and convenient walking and cycling network
- Prioritises a balanced road and parking system that supports all users.

Our targets are ambitious yet achievable; they take into consideration community feedback and reflect Woollahra's unique transport challenges, limitations and opportunities.

Importantly, Council and community each have important roles to play in the success of the Integrated Transport Strategy. Council shares responsibility for transport with the state government and we have two key roles. First, we provide and maintain our local roads, footpaths and cycleways. Second, we advocate on behalf of our community and lobby state government agencies for improved public transport (bus, train, ferry) provision and integration and state road networks.

Our community's role is a modified approach to the way people move around. By increasing active and public transport options and decreasing private vehicle trips, we can help reduce congestion, resulting in enhanced liveability for everyone in Woollahra.

Together, we can make our integrated transport vision a reality: A Woollahra where active, sustainable and efficient modes of transport are the most convenient choice for most trips.



Glossary

Abbreviation	Term	Description
DCP	Development Control Plan	A development control plan provides detailed planning and design guidelines to support the planning controls in the Local Environmental Plan.
DSAPT	Disability Standards for Accessible Public Transport	The Disability Standards for Accessible Public Transport 2002 set out the minimum accessibility requirements that providers and operators of public transport must comply with, as well as ensuring that access to transport is consistently improved.
FSI	Fatal and Serious Injury	A classification within crash statistic studies - the highest level of severity.
HTS	Household Travel Survey	The most comprehensive source of personal travel data for the Sydney Greater Metropolitan Area.
ITS	Integrated Transport Strategy	An integrated transport strategy is a tool for the comprehensive analysis of existing and future transport system requirements. It supports a vision for an accessible municipality where active, sustainable and efficient modes of transport are the most convenient choice for most trips.
JTW	Journey to Work	Journey to Work data is derived from the 5-yearly Census of Population and Housing conducted by the Australian Bureau of Statistics.
LATM	Local Area Traffic Management	The use of physical devices, street-scaping treatments and other measures (including regulations and other non-physical measures) to influence vehicle operation, in order to create safer and more liveable local streets.
LEP	Local Environmental Plan	Local Environmental Plans guide planning decisions for local government areas. They do this through zoning and development controls, which provide a framework for the way land can be used.
LGA	Local Government Area	A local government area (LGA) is an administrative division of a country that a local government is responsible for.
LOS	Level of Service	Level of service (LOS) is a qualitative measure used to relate the quality of motor vehicle traffic service. LOS is used to analyse roadways and intersections by categorizing traffic flow and assigning quality levels of traffic based on performance measure like vehicle speed, density, congestion, etc.

Abbreviation	Term	Description
MaaS	Mobility-as-a-Service	Mobility-as-a-Service (MaaS) describes a shift away from personally-owned modes of transportation and towards mobility solutions that are consumed as a service (such as Ridesharing, Carsharing and On-Demand transport services).
NPWS	National Parks and Wildlife Service	NSW National Parks and Wildlife Service is part of the NSW Office of Environment and Heritage.
PTIPS	Public Transport Information and Priority System	The Public Transport Information and Priority System consists of global positioning systems and radio data communications that deliver information about buses and their location. This information is used to facilitate bus priority and provide real-time information to passengers.
RMS	Roads and Maritime Services	Roads and Maritime Services is an operating agency within the NSW Transport cluster and is responsible for setting the strategic direction and guiding an extended network of public and private service delivery agencies to provide improved transport outcomes.
Transport for NSW	Transport for New South Wales	Transport for NSW is at the centre of the transport cluster with responsibility for setting the strategic direction and guiding an extended network of public and private service delivery agencies to provide improved transport outcomes across NSW. It is responsible for Transport planning, strategy, policy and procurement for all modes of transport – roads, rail, ferries, light rail and point-to-point transport.
Travel Plan	NA	A travel plan is a package of site-specific measures implemented to promote and maximise the use of more sustainable modes of travel.
WMC	Woollahra Municipal Council	Local government agency responsible for the suburbs of Paddington, Double Bay, Bellevue Hill, Darling Point, Point Piper, Rose Bay, Vaucluse, Watsons Bay and Woollahra.



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