Local Movement Strategy

City of Canada Bay
Draft Report

Prepared by: GTA Consultants (NSW) Pty Ltd for City of Canada Bay Council
on 15/05/19
Reference: N161710
Issue #: A-Dr

GTAconsultants

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Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
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1. INTRODUCTION

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1.1. Introduction and Background

GTA Consultants (GTA) has been commissioned by the City of Canada Bay Council (Council) to prepare a Local Movement Strategy and Action Plan (LMS).

Recent amendments to the Environmental Planning and Assessment Act 1979 (the Act) require Council to review and amend the Canada Bay Local Environmental Plan (LEP) as soon as practicable, to address the requirements in the Eastern City District Plan. Council is intending to amend the LEP within two years. The Act also requires Council to undertake the review in a strategic manner, by developing a Local Strategic Planning Statement that will set out the community's 20-year vision for land-use in the local area (as also expressed in Council's Community Strategic Plan) and how change will be managed into the future.

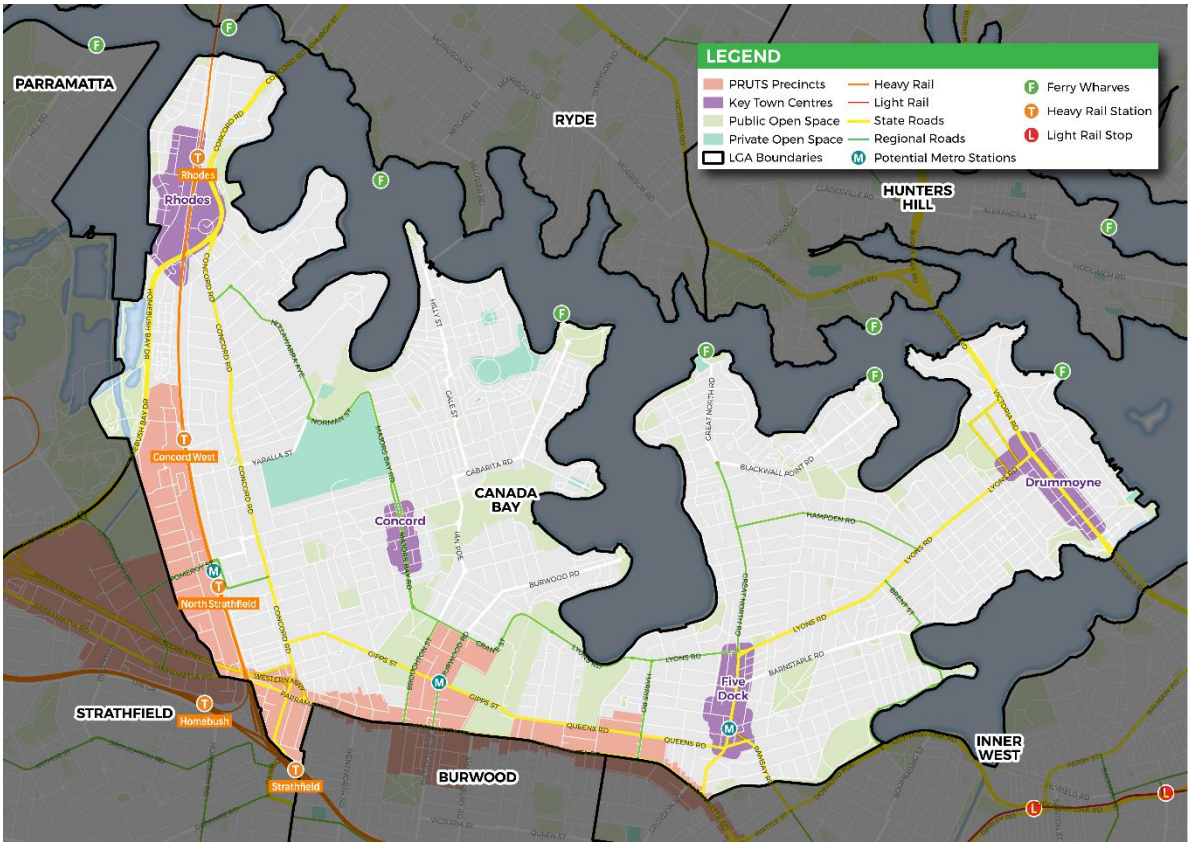
1.2. Scope

This report provides an overview of the existing transport situation, relevant transport opportunities and constraints, future transport and land use trends and changes. It also presents a series of actions per travel mode that support overarching strategic objectives across the Canada Bay Local Government Area (LGA).

1.3. Study Area

Figure 1.1 illustrates the study area for this report, which is the entire City of Canada Bay Council LGA. It includes major roads on the boundaries (such as Parramatta Road) and train stations such as Strathfield.

Figure 1.1: Canada Bay Transport Network Overview



2. POLICY CONTEXT

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2.1. Policies and Strategic Context

2.1.1. Introduction

This section of the report summarises the major planning policies and strategies that influence the development of an LMS for the City of Canada Bay.

2.1.2. A Metropolis of Three Cities -The Greater Sydney Region Plan

A Metropolis of Three Cities -The Greater Sydney Region Plan is a State Government report that establishes a 40-year strategic land use plan for Sydney. The plan was developed concurrently with *Future Transport Strategy 2056* prepared by Transport for NSW, which aims to deliver better connectivity and accessibility for the residents of Greater Sydney. The land use vision for Greater Sydney is a metropolis of three cities: the Eastern Harbour City (Sydney CBD), the Central River City (Greater Parramatta) and the Western Parkland City (around the new Western Sydney Airport).

Consistent with Future Transport, one of the key elements of the plan is the vision of a 30-minute city which aims to provide transport infrastructure and services that enable people to reach their nearest metropolitan or Strategic Centre within 30 minutes, seven days a week.

The plan identifies Rhodes as a strategic centre. Expectations for strategic centres include:

- high level of private sector investment
- flexibility, so that the private sector can choose where and when to invest
- co-location of a wide mix of land uses, including residential uses
- high levels of amenity and walkability and being cycle friendly
- areas identified for commercial uses, and where appropriate, commercial cores.

2.1.3. The Eastern City District Plan

The *Eastern City District Plan* was also produced by the State Government. It presents a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision identified in Greater Sydney. It contains the planning priorities and actions for implementing the *Metropolis of Three Cities*, at a district level and is a bridge between regional and local planning.

The Plan introduces several priorities of relevance including:

- Planning Priority E1 Planning for a city supported by infrastructure:
  - Prioritise infrastructure investments to support the vision of *A Metropolis of Three Cities.*
  - Sequence growth across the three cities to promote north-south and east-west connections.
  - Align forecast growth with infrastructure provision.
  - Sequence infrastructure provision using a place-based approach.
- Planning Priority E2 Working through collaboration:
  - Identify, prioritise and deliver Collaboration Areas which are a new way for stakeholders to work together to deliver coordinated planning in locations that have great potential to grow their vibrancy, diversity and productivity, with improved employment and education opportunities, enhanced liveability and sustainability.
- Planning Priority E10 Delivering integrated land use and transport planning and a 30-minute city:
  - Integrate land use and transport plans to deliver the 30-minute city.
  - Investigate, plan and protect future transport and infrastructure corridors.
  - Investigate and plan for the land use implications of potential long-term regional transport connections.

- Planning Priority E19 Reducing carbon emissions and managing energy, water and waste efficiently:
    - Support initiatives that contribute to the aspirational objective of achieving net-zero emissions by 2050, especially through the establishment of low-carbon precincts in Planned Precincts, Collaboration Areas, State Significant Precincts and Urban Transformation projects.

2.1.4. Future Transport 2056 Strategy

The *Future Transport Strategy 2056* (Future Transport) is a 40-year strategy for Sydney and Regional NSW prepared by Transport for NSW. The plan includes several initiatives related to the City of Canada Bay including:

- New infrastructure:
    - WestConnex
    - Sydney Metro City & Southwest and Metro West
    - Parramatta Light Rail
    - Long Term Future Mass Transit Link from Macquarie Park to Hurstville via Rhodes.
- Upgrades:
    - Victoria Road public transport improvements
    - Parramatta Road public transport improvements.
- Sydney-wide projects/ programs:
    - upgraded services on Parramatta River Ferries
    - priority Cycleway links in inner Sydney.

Additionally, the strategy introduces a long-term corridor plan (20+ years) for Sydney, including:

- A future road corridor linking NorthConnex near the M2 with Greater Parramatta and the F6 in southern Sydney. This would improve the safety, efficiency and reliability of north-south freight movements, particularly for trucks travelling between freight precincts. This benefit will be achieved by reducing the reliance of freight traffic on the congested A3 road corridor thereby improving the vibrancy and liveability of centres on the A3, including Beverley Hills, Roselands, Rhodes and West Ryde, by reducing congestion and providing a new dedicated link for major through movements.
- Train/ mass transit link Macquarie Park to Hurstville via Rhodes. A potential mass transit/train link from Hurstville (or Kogarah) to Burwood and Strathfield and then potentially on to Rhodes and Macquarie Park. This project would alleviate longer-term capacity pressures and improve the resiliency of the network by providing an additional north-south connection through Macquarie Park, Rhodes and Hurstville.

2.1.5. State Infrastructure Strategy 2018

The *State Infrastructure Strategy* prepared by Infrastructure NSW sets out the Government's priorities for the next 20 years. Combined with the *Future Transport* and the *Metropolis of Three Cities*, it brings together infrastructure investment and land-use planning for the cities and regions. The most relevant element of the strategy is to:

- Link integrated strategic land use and infrastructure planning:
    - Prepare a place-based strategic business case for the pilot growth infrastructure compact in the Greater Parramatta to the Olympic Peninsula area.
    - Subject to the outcomes of the pilot growth infrastructure compact, prepare place-based strategic business cases for future updates to District Plans and Regional Plans.
    - NSW Government agencies to integrate Growth Areas, Planned Precincts and growth infrastructure compacts (subject to the outcomes of the pilot growth infrastructure compact) into asset management plans and capital infrastructure plans from 2019-20.

2.1.6. Canada Bay Local Environmental Plan (LEP) 2013

The current LEP promotes sustainable transport by reducing car use and increasing the use of public transport, walking and cycling.

2.1.7. Canada Bay Development Control Plan 2013

The current DCP includes planning controls for vehicle and bicycle parking rates and bicycle storage facilities.

2.1.8. Parramatta Road Corridor Urban Transformation Strategy

The Parramatta Road Corridor (the Corridor) is identified as an urban renewal corridor that will be the focus for increased housing, economic activity and social infrastructure. The Corridor will be transformed over the next 30 years through implementation of the Parramatta Road Urban Transformation Strategy. In 2050, the Corridor will have an estimated resident population of 62,000, approximately 33,000 new homes and 33,000 new jobs.

The Parramatta Road Corridor extends along the entire length of Parramatta Road, and includes land with direct frontage to Parramatta Road, as well as the eight Precincts. Homebush, Burwood and Kings Bay are three of the precincts that are located within the Canada Bay LGA.

Under the Urban Amenity Improvement Plan, the early focus will be on delivering safe, high-quality cycle routes such as the regional cycleway between Concord and Iron Cove along Gipps Street, Patterson Street and Queens Road, and the Green Way from the Cooks River to the Parramatta River. Other, more local connections will be delivered as part of future renewal.

Figure 2.1: Map of Precincts within the Parramatta Road Corridor

Source: Parramatta-Road-Urban-Transformation-Sustainability-Implementation-Plan-November-2016

As shown in Table 2.1, Homebush, Burwood and Kings Bay precincts have targets to reduce car use and increase car sharing and safe bicycle connections for the precincts.

Table 2.1: Summary Results for Homebush, Burwood and Kings Bay Precincts

Homebush	Burwood	Kings Bay
27% reduction in car use	29% reduction in car use	26% reduction in car use
13% car share take-up rate	13% car share take-up rate	12% car share take-up rate
6 km of new, safe bicycle connections	2 km of new, safe bicycle connections	2 km of new, safe bicycle connections

Source: Parramatta-Road-Urban-Transformation-Sustainability-Implementation-Plan-November-2016

2.1.9. Community Strategic Plan – Your Future 2030

Developed by the City of Canada Bay, this plan identifies themes, goals and strategies that will provide direction for the delivery of outcomes to 2030 based on community engagement.

Some of the goals include:

- Adopting an integrated approach to the provision of Major Regional Infrastructure to meet community need.
- Providing a connected network of quality active and public transport routes and services that help to minimise traffic and make it easier to get around.
- Providing traffic, parking, roads and marine infrastructure to promote safe and efficient travel.

2.1.10. City of Canada Bay Local Planning Strategy 2010-2031

The Local Planning Strategy (LPS) outlines the overall strategic land use management and planning objectives for the City of Canada Bay. The LPS aims to provide a framework for future land use planning and to ensure that planning for land use and transport occurs in an integrated manner and, amongst other things, reduces private car use.

Specific objectives and actions include:

- Integrating land use and transport through focusing new development in areas within walking distance of centres and public transport.
- Promoting the use of public transport by improving pedestrian access.
- Managing the impact of traffic and parking by enhancing movement of vehicles other than private cars, including walking, cycling and public transport.
- Improving transport infrastructure and infrastructure by continuing to advocate for improved public transport access.
- Promoting walking and cycling for local trips by upgrading walking and cycling facilities to improve everyday access within neighbourhoods, including links to foreshore, bushland, parks and centres.
- Continuing to strengthen employment and retailing in local centres.
- Supporting strategically positioned new and developing centres by supporting the development of Rhodes as a specialised centre and continuing to coordinate the intensification of employment zones (including Rhodes).
- Responding to future recreation needs by facilitating public access to the foreshore.

2.1.11. City of Canada Bay Section 7.11 Contributions Plan 2017

The Contributions Plan provides the legal and administrative mechanisms to require contributions in cash or, in some cases, by in-kind works or the dedication of land, towards the provision or embellishment of public amenities and services within the City of Canada Bay.

Amenities and services for which contributions can be levied include community services and facilities. The Plan identifies the existing facilities and services provided in the LGA. It concludes that there is little capacity in existing facilities to accommodate any increased demand resulting from population growth and, therefore, it will be necessary to provide additional or augmented facilities to maintain the same level of service with the incoming population.

The Plan outlines the estimated population growth for key precincts. This data would be superseded if additional growth is generated by the Rhodes East Priority Precinct and, therefore, the Plan would need to be updated to reflect this outcome.

2.2. Vision and Objectives

2.2.1. Vision Statement

The following Local Strategic Planning Statement Vision has been developed by Council.

Create great streets, places and buildings for people	Plan for a diversity of housing types and affordability	Protect and enhance local character
Connect neighbourhoods and centres	Align growth with the delivery of infrastructure	Ensure Sydney West Metro delivers “density done well”
Improve access to the Parramatta River foreshore	Facilitate sustainable development and renewal	Increase biodiversity and the urban tree canopy

2.2.2. Objectives

Based on the Community Strategic Plan, the overarching objectives for the Local Movement Strategy in the City of Canada Bay are proposed as follows:

1. A sustainable Canada Bay
    - The area to be well serviced by public transport and transport services, and active transport is supported.
    - Selected suburbs are designated and designed as car-free areas.
    - Centres are designed for shared movement of vehicles, bicycles and pedestrians, as appropriate.
    - Active transport is supported and encouraged by a network of well designed, connected and maintained cycle ways and footpaths.
2. A liveable Canada Bay
    - All areas have good access to a range of public transport options, including train stations, buses along Parramatta Road and ferry services on the Parramatta River.
    - The local character of the area's suburbs and local centres, which is characterised by a friendly village atmosphere, Federation and art deco homes and buildings, local and natural heritage, natural environment, open spaces and walkability, is preserved and enhanced.

3. A Canada Bay that is safe and healthy
    - There are good transport options for children travelling to and from school, particularly public transport options.
    - Sports fields are well serviced by public transport, especially for Saturday sports.
    - Traffic impacts on local roads serving WestConnex are managed and mitigated.
4. A Canada Bay that is accessible and equitable for all
    - Movement within and into/ out of the LGA is unconstrained.
    - Transport and land-use planning are integrated.
    - Through-traffic is reduced, managed or eliminated, especially in areas such as Rhodes where the road network is constrained.
    - There are good transport options for the area's ageing population, particularly to local centres and key services and facilities.
5. A prosperous Canada Bay
    - Planning for population growth, new investment and infrastructure in Rhodes are coordinated and mutually agreed between State Government and Council.
    - Employment centres outside of the City of Canada Bay are accessible by public transport.
    - Service hubs within the LGA are well connected by public transport, including shopping centres, town centres, Concord Hospital and job centres such as Sydney CBD, Parramatta and Sydney Olympic Park.

3. LAND USE AND TRANSPORT CONTEXT

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3.1. Land Use

3.1.1. Overview

The City of Canada Bay is in the inner-western suburbs of Sydney and extends 6-12 kilometres from the Sydney CBD. It is bounded by the Parramatta River in the north and east, the Inner West Council to the east, the Burwood and Strathfield Council areas in the south and Cumberland Council in the west. The City of Canada Bay includes the suburbs of Abbotsford, Breakfast Point, Cabarita, Canada Bay, Chiswick, Concord, Concord West, Drummoyne, Five Dock, Liberty Grove, Mortlake, North Strathfield, Rhodes, Rodd Point, Russell Lea, Strathfield (part) and Wareemba.

The City of Canada Bay is a predominately residential area, but also has significant commercial and industrial areas. It encompasses a total area of 20 square kilometres, including many parks, reserves and river foreshore.

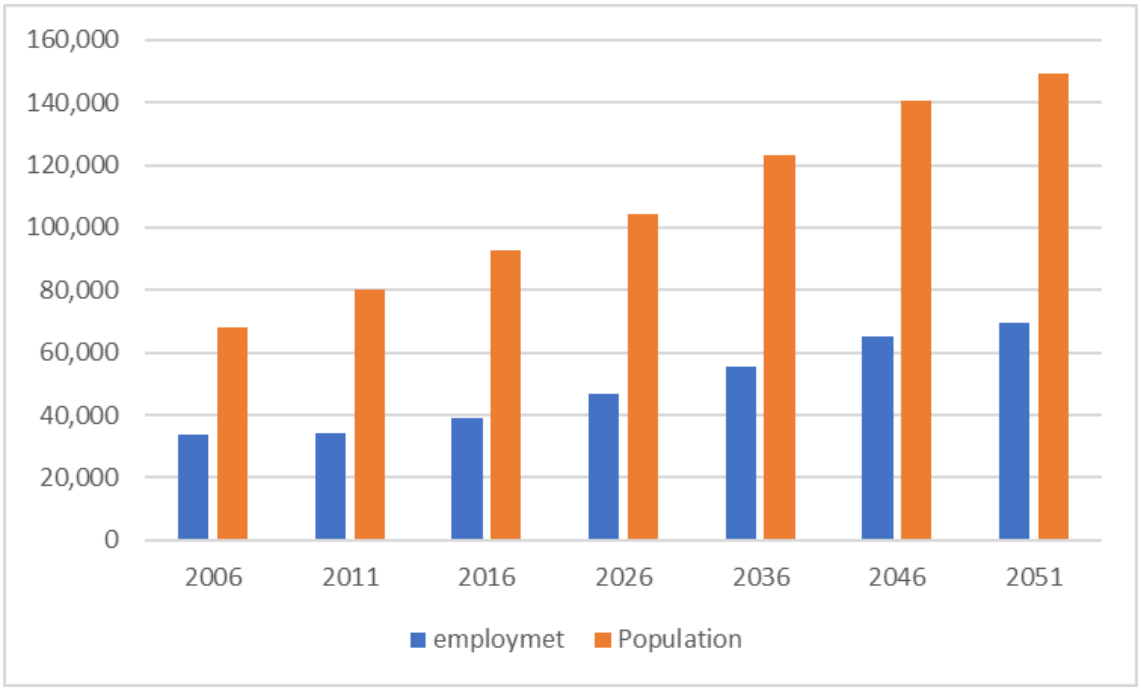
Major features include the Parramatta River, Birkenhead Point Shopping Centre, Rhodes Shopping Centre, Dame Edith Walker Hospital, Concord Repatriation General Hospital and Concord Golf Club. The City is served by the Western Motorway, Parramatta Road and the T1 Northern Rail Line.

3.2. Population, Employment and Demographics

3.2.1. Population and Employment Growth

Figure 3.1 provides a summary of growth in population and employment from 2006 to 2016 and projections from 2016 through to 2051 for the City of Canada Bay. The population of the area is forecast to more than double from approximately 68,000 in 2006 to 150,000 in 2051. The number of employees slowly increased from 2006 to 2016 but as it can be seen it is forecast to grow significantly from 2016 to 2051.

Figure 3.1: Population and employment growth



Source: https://www.transport.nsw.gov.au/data-and-research/forecasts-and-projections/employment/land-use-planner-employment

3.2.2. Distribution of Population and Employment Growth

Figure 3.2 shows population growth currently expected over the next 20 years by travel zones for the Canada Bay LGA. It can be seen that the forecast population for two travel zones including Rhodes-Eastern Side and North Strathfield Station- West is over 3,000 people from 2016 to 2036.The reason for this increase in population for Rhodes is that it is designated as a Strategic Metropolitan Centre, which attracts investment, business activity and jobs from across Greater Sydney. Most of the travel zones in the vicinity of Parramatta Road also are expected to have an increase in population that reflects the planning strategy adopted in the Parramatta Road Corridor Urban Transformation Strategy. Other travel zones are only expected to have a minimal or moderate population increase as they are mostly residential in nature and few significant changes in land use are expected.

Figure 3.2: Current Forecast Population Growth (2016 to 2036)

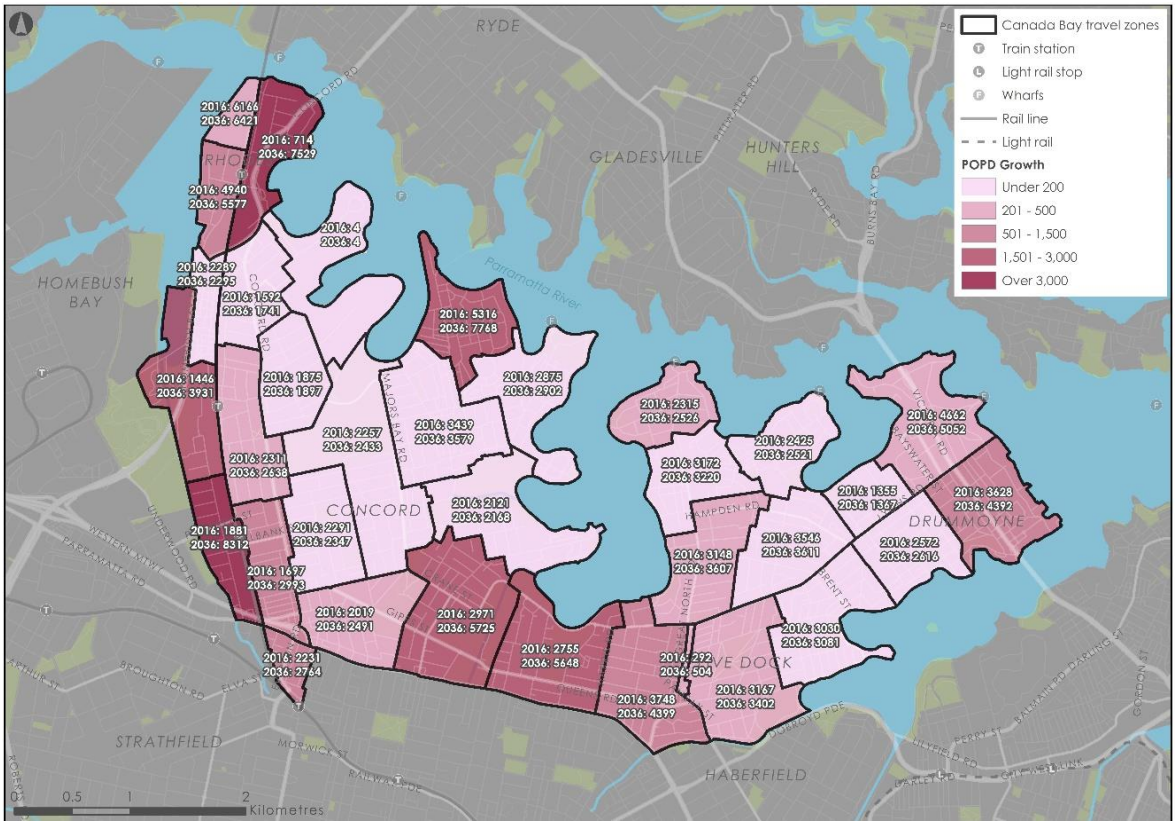
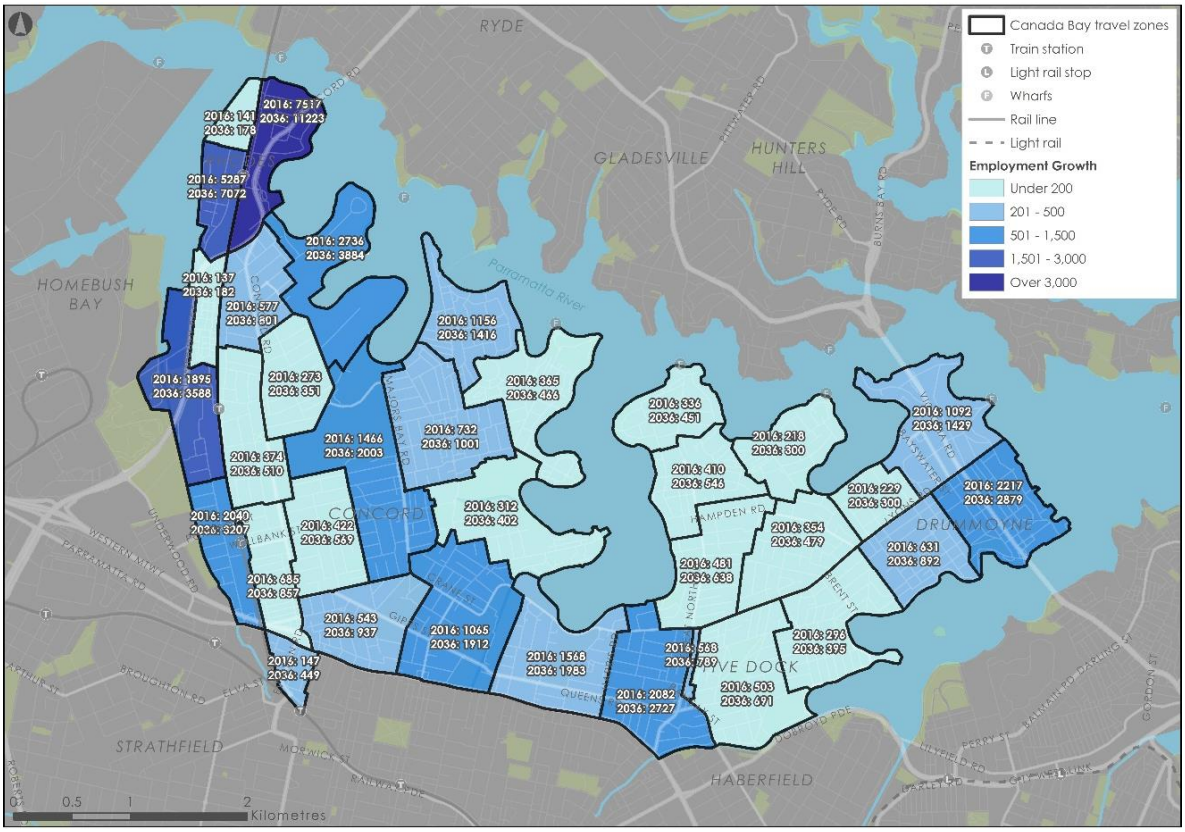


Figure 3.3 shows forecast employment changes which broadly reflects the expected population growth. Similarly, there are increases of approximately 3,700 employees in the Rhodes Strategic Centre by 2036. The second highest employment growth is forecast to happen in the vicinity of North Strathfield, which is part of the Homebush Precinct addressed in the Parramatta Road Corridor Urban Transformation Strategy, where significant redevelopments are planned in terms of land use and job opportunities near Parramatta Road. Other travel zones only have a small to moderate increase in employment over the next 20 years as the areas are mostly residential.

Figure 3.3: Current Forecast Employment Growth (2016 to 2036)

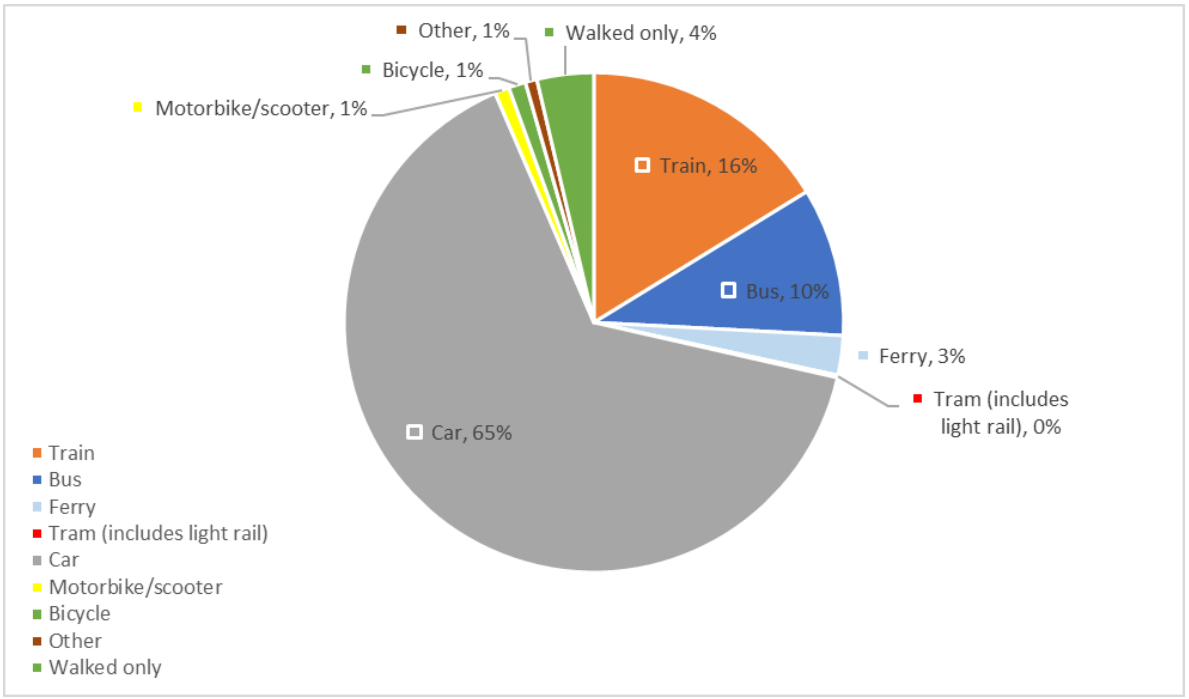


3.3. Travel Patterns and Demand

3.3.1. Travel Modes

Figure 3.4 shows the all-day mode share used by the community in the study area. It can be seen that 65% of trips are undertaken by private vehicle (car driver, car passengers and taxi). This is quite high considering the proximity to the Sydney CBD and the number of public transport services available along key corridors. A further 16% of trips are undertaken on the rail network, with 10% of trips by bus. Only 5% of trips are being undertaken by walking and cycling, which should be increased. As a note, these figures refer to all day trips; public transport mode share would be higher during peak times.

Figure 3.4: Mode Share for all trips in Canada Bay LGA



Source: http://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016

3.3.2. Trip Containment

The proportion of individuals living and working in the same labour market region is referred to as the level of self-containment and a high percentage is seen as a positive.

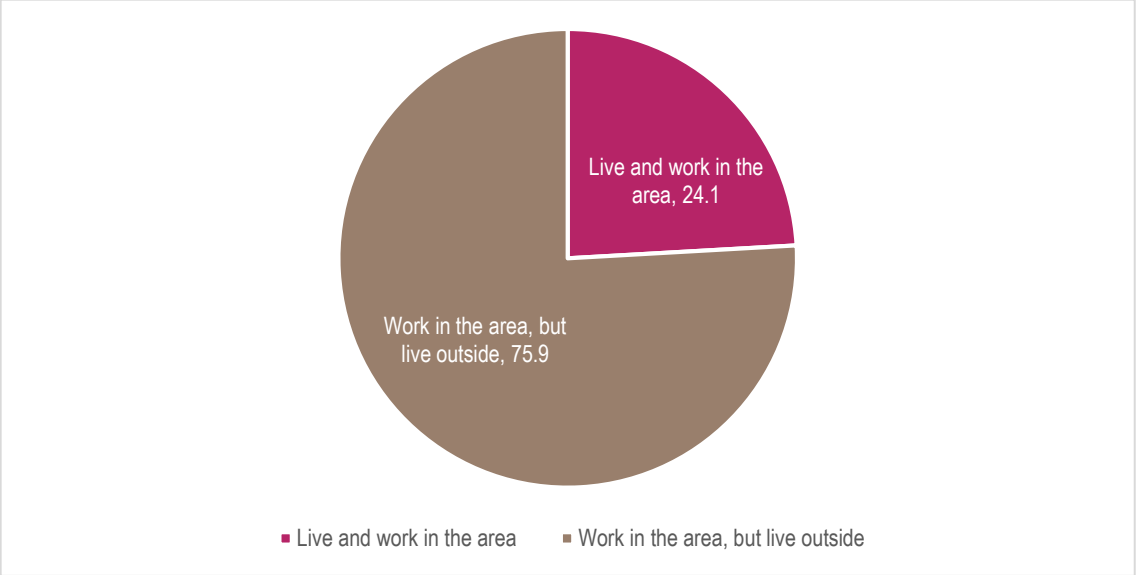
Trip containment has important environmental benefits in its capacity to increase the likelihood of transport to work via methods other than private cars, given distances between home and work are probably shorter. Despite the shorter distances, car use may be the only viable commuting option unless appropriate public transport and active mode infrastructure are available between nearby areas, rather than focussed solely on the city centre.

Figure 3.5 shows that 24% of workers live and work in the City of Canada Bay while approximately 76% of employees live outside the area.

Overall, Greater Sydney has 43% trip containment at a Statistical Area Level 4 (SA4) (SA4s are geographical sub-regions and have been designed for the output of a variety of regional data), while it is specifically noted by the Australian Bureau of Statistics that in Sydney the lowest rate of self-containment occurs in the Inner West SA4 (an area broader than only Canada Bay – including Canada Bay but extending to Strathfield, Dulwich Hill and Balmain), with just 26% living and working in the same SA4.[1] This reflects relatively few job opportunities and good transport accessibility to the Sydney CBD. Therefore, there is a low level of trip containment in Canada Bay when compared across Sydney.

[1] http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2071.0.55.001~2016~Main%20Features~Feature%20Article:%20Journey%20to%20Work%20in%20Australia~40

Figure 3.5: Percentage of Residential Location of local Workers, 2016

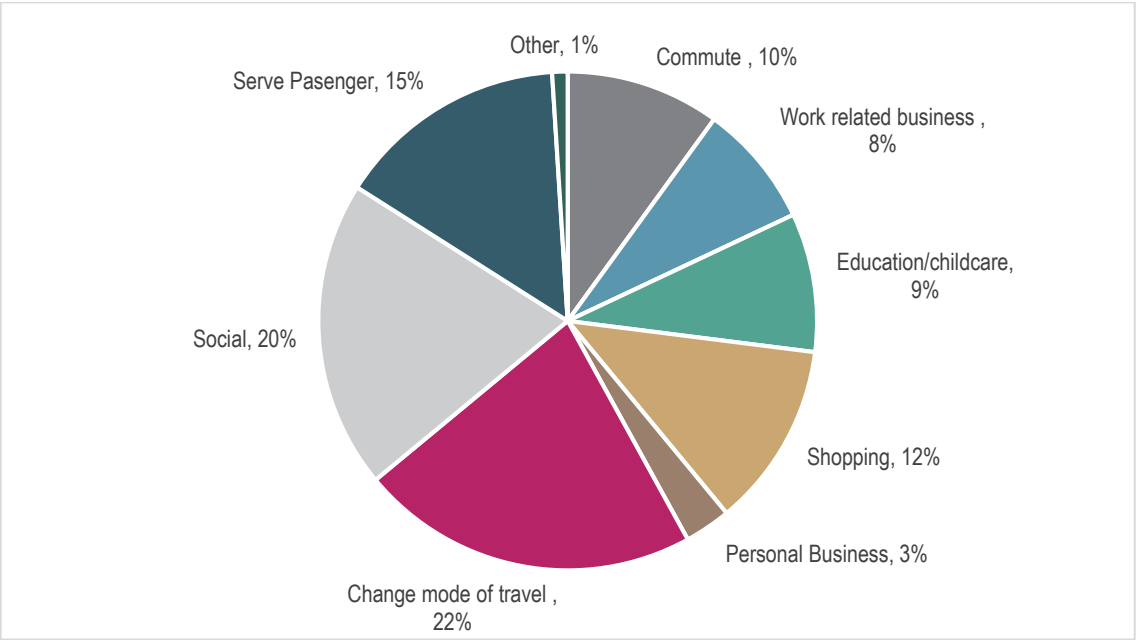


Source: Australian Bureau of Statistics, Census of Population and Housing 2016

3.3.3. Travel Purpose

Trip purposes for residents in Canada Bay are shown in Figure 3.6. The highest percentage was 22% for people travelling in order to change on to a different mode. Social/ recreational trips were also high (20%). There is also 15% demand to serve passengers (dropping someone off etc). Commuting only comprises 10% of trips in Canada Bay, however it is reasonable that many of the people travelling in order to change travel mode would include commuters.

Figure 3.6: Trip Purpose for Canada Bay



Source: https://profile.id.com.au/canada-bay

4. EXISTING TRAVEL NETWORKS

04

4.1. Active Transport Network

4.1.1. Walking

Nearly all streets within the City of Canada Bay have sealed footpaths on both sides. In general, pedestrian access to all key destinations is easy and logical. Key intersections have signalised pedestrian crossings, while other intersections have zebra crossings or refuge islands. Overall, accessibility within the LGA is good, however, some blocks have limited permeability and require detours. Examples of long detour blocks can be found in Concord where block lengths range from 375 metres to 450 metres without laneways and active transport links. Similar large block configurations that hamper active transport can also be seen along Hampden Road in Wareemba.

The City of Canada Bay has high quality walkways along the shoreline of the Parramatta River and its bays, which are used primarily for recreational walking. Most green spaces within the LGA provide pedestrian access and footpaths.

4.1.2. Cycling

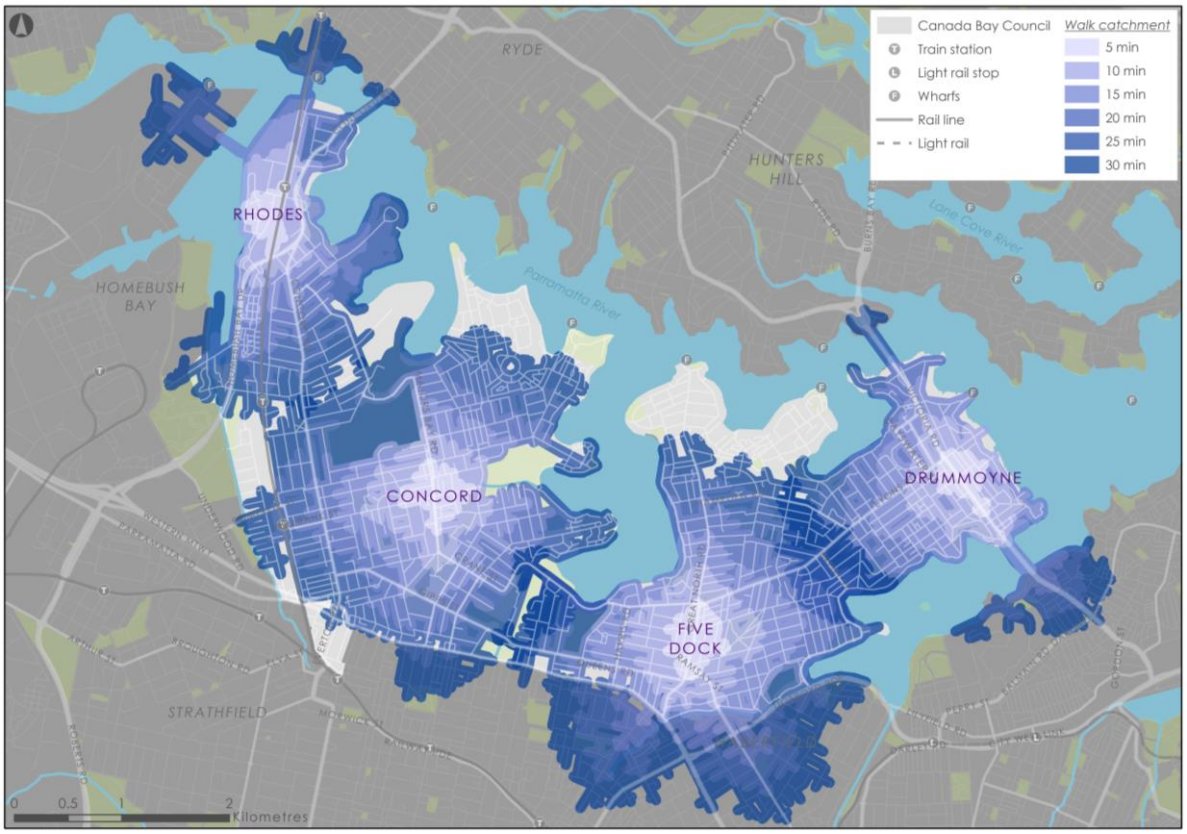
The City of Canada Bay Bike Plan (reviewed in 2014) shows a range of cycling routes across the LGA. The routes largely follow the shoreline along the Parramatta River and have more of a recreational function than a commuter function. Many routes are incomplete and do not (directly) connect major residential areas with key locations such as train stations, town centres and sports facilities. Cycling infrastructure is a mixture of cycle lanes and mixed traffic arrangements, on-street and shared paths off-street, with the exception of the Bay Run which is a separated path.

However, whilst the bike plan shows an incomplete cycle route network with limited infrastructure, the majority of roads in the LGA are easy to navigate for cyclists in mixed traffic conditions. Local streets have low traffic volumes and speeds and provide a safe cycling environment for cyclists with reasonable riding experience.

4.1.3. Accessibility and the 30 Minute City

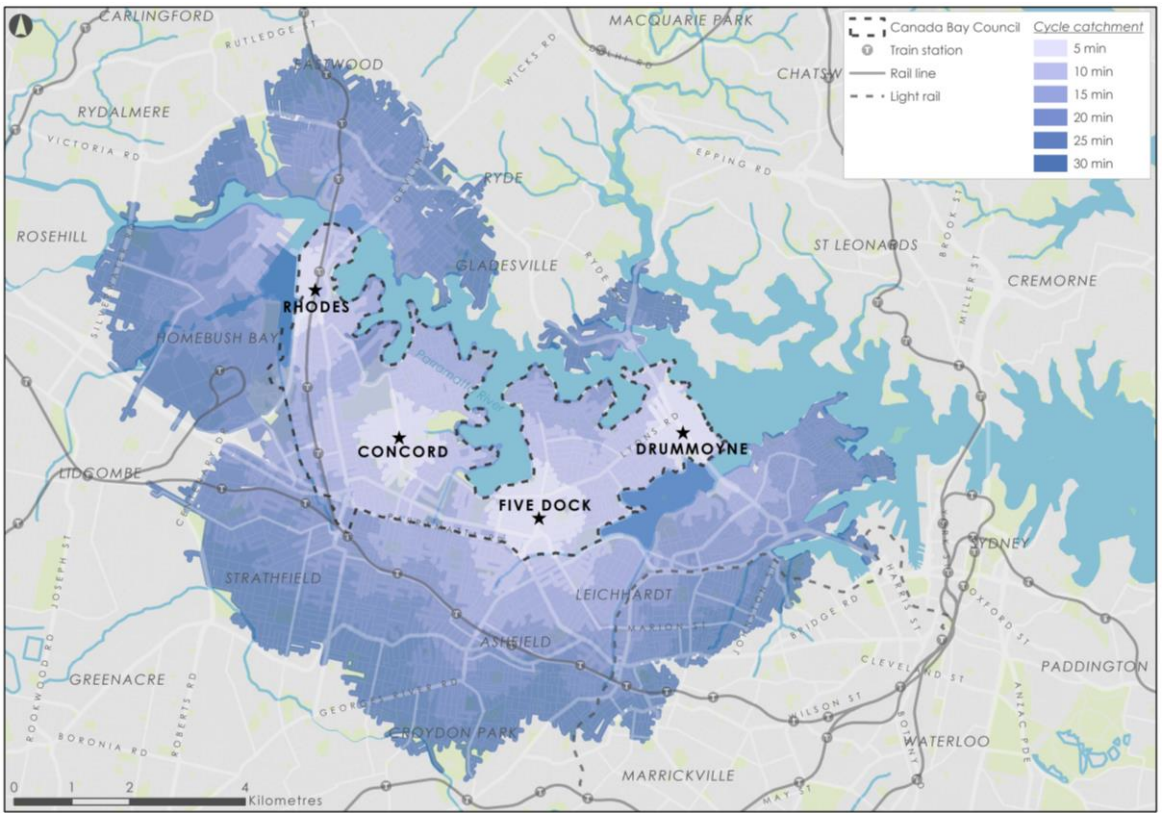
The LGA is generally well serviced for walking accessibility with 30-minute walking catchments overlapping between the four centres. This is especially prominent between Rhodes and Concord, and Five Dock and Drummoyne. It is however noted that the outer fringes of Canada Bay are not covered by the 30-minute walking catchments from the centres. This includes areas such as parts of North Strathfield, Mortlake, Breakfast Point, Abbotsford and Chiswick. The 30-minute walking catchment for the four centres within the LGA is shown in Figure 4.1.

Figure 4.1: Walking catchments for centres within the City of Canada Bay



The cycling catchment within the LGA is extensive, with all parts of the LGA accessible by bicycle within 30 minutes from all four centres. Additionally, the spread of the four centres across the City of Canada Bay means that several centres are accessible from the neighbouring LGAs of Strathfield, Burwood, Inner West and Parramatta which in turn provides further opportunities for travel, retail and employment. For example, a 30 minute cycle from Five Dock enables users to travel as far as Strathfield, Ashfield and Leichhardt. The 30-minute cycling catchments for four selected centres in the City of Canada Bay are shown in Figure 4.2. The strategy recognises that there are a number of centres, including local centres, within Canada Bay, which have not been mapped. Rhodes, Concord, Five Dock and Drummoyne were selected to illustrate access to the major centres in Canada Bay.

Figure 4.2: Cycling catchment within City of Canada Bay



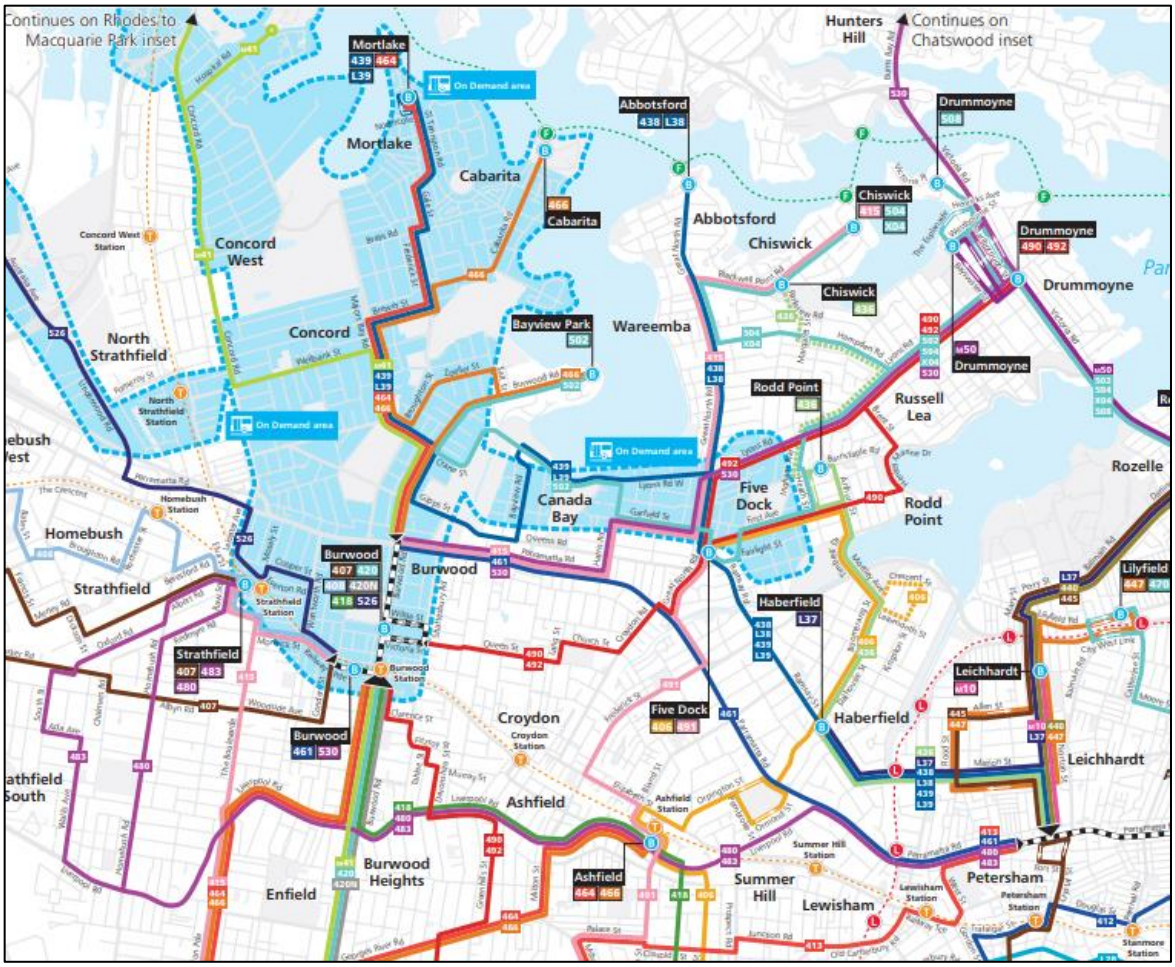
4.2. Public Transport Network

4.2.1. Bus Network

The City of Canada Bay is generally well served by a bus network with routes running in both north-south and east-west directions along major road corridors such as Victoria Road, Lyons Road, Great North Road, Parramatta Road and Concord Road. All the local centres within the LGA are served by bus which includes connections to major hubs such as Burwood, Sydney CBD and Macquarie Park. A number of express and limited stop buses service the City of Canada Bay, including Route X04 between Sydney CBD and Chiswick and Route L38 between Abbotsford and Sydney CBD.

Buses travelling along Lyons Road are subject to delays in the AM and PM peaks as a result of intersection congestion at the Lyons Road/ Victoria Road intersection. Bus routes, such as Route 415 incur delays along Parramatta Road which is subject to significant traffic congestion during peak periods and on weekends. The existing bus network in the City of Canada Bay is shown in Figure 4.3.

Figure 4.3: Bus network within City of Canada Bay LGA



Source: https://transportnsw.info/travel-info/ways-to-get-around/bus/bus-operator-maps

The existing bus network that operates to or through the City of Canada Bay comprises 39 routes with:

- 22 routes operated by Sydney Buses in contract region 7
- 16 routes operated by Transit System Australia in contract region 6
- One route operated by Transdev Australia which is the Route M41.

Six of these routes can be classified as high frequency (Rapid or Suburban) services and they are:

- Route M41 - Macquarie Park to Hurstville via Burwood and Concord
- Route M50 - PrePay Only - Coogee to Drummoyne via Victoria Road and Sydney CBD
- Route M52 - Parramatta to Sydney CBD (Limited Stops) via Victoria Road and Drummoyne
- Route 438 - Sydney CBD to Abbotsford via Five Dock and Parramatta Road
- Route 501 - Sydney CBD to Top Ryde via Victoria Road and Drummoyne
- Route 506 - Sydney CBD to Macquarie University via Victoria Road and Drummoyne.

A summary of number of buses per hour during the AM and PM peak periods at select locations along major corridors is provided in Table 4.1.

Table 4.1: Bus Frequencies at select locations

Location	Direction of travel (N/ S/ E/ W)	Peak Frequency (buses/ hour)	
		AM	PM
1) Victoria Road between Lyons Road and Darling Street	Northwest to Southeast	62	22
	Southeast to Northwest	21	58
2) Majors Bay Road north of Broughton Street	North	11	16
	South	15	15
3) Concord Road heading to Rhodes	North	5	9
	South	8	7
4) Parramatta Road west of Harris Road (east of Burwood)	East	10	10
	West	10	9
5) Great North Road north of Garfield Street	North	12	12
	South	15	14
6) Lyons Road east of Hampden Road	To Northeast	22	8
	To Southwest	27	22

Figure 4.4: AM Peak Hour Bus Services by Bus Stop

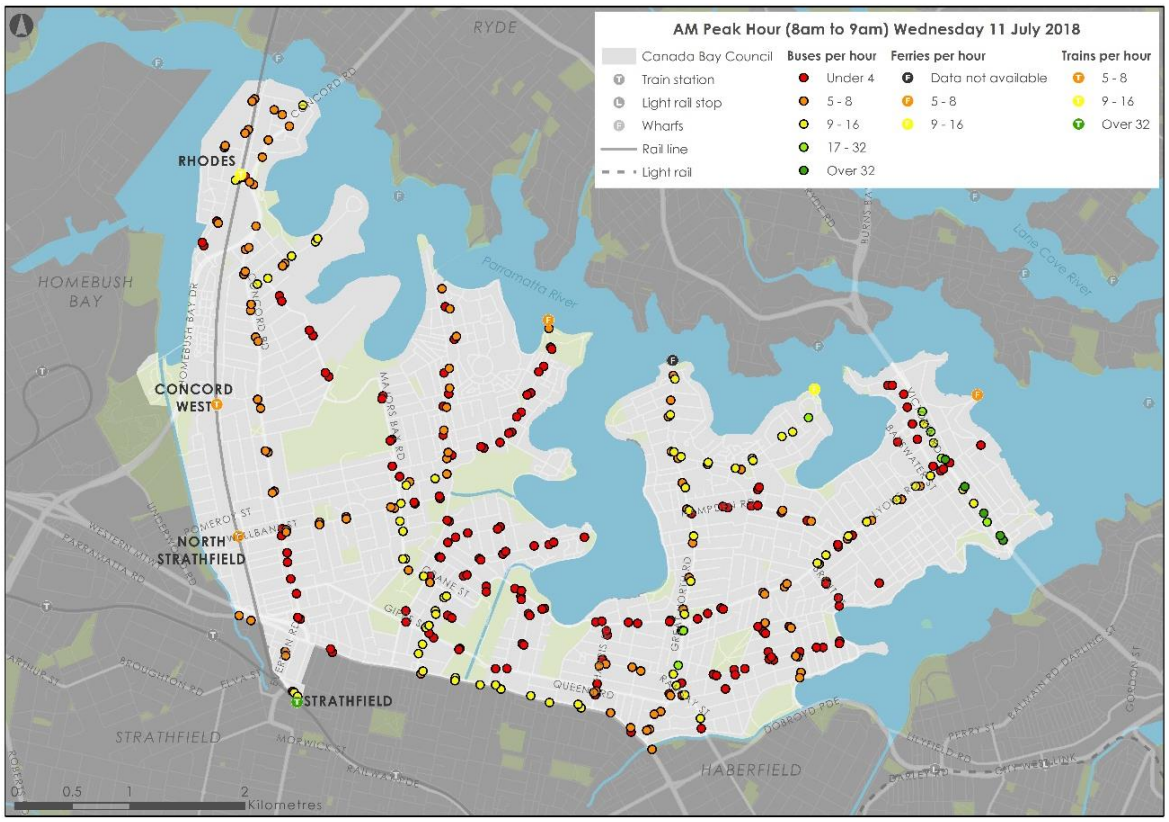


Figure 4.5: Interpeak Hour Bus Services by Bus Stop

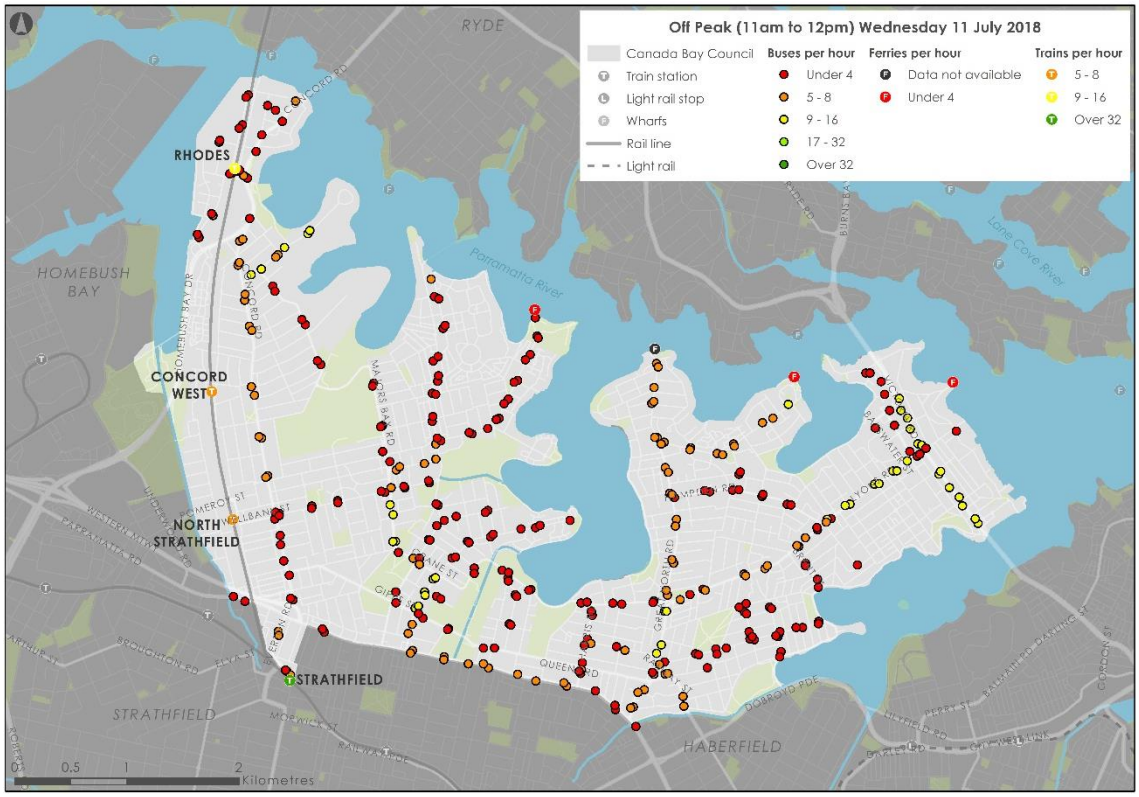
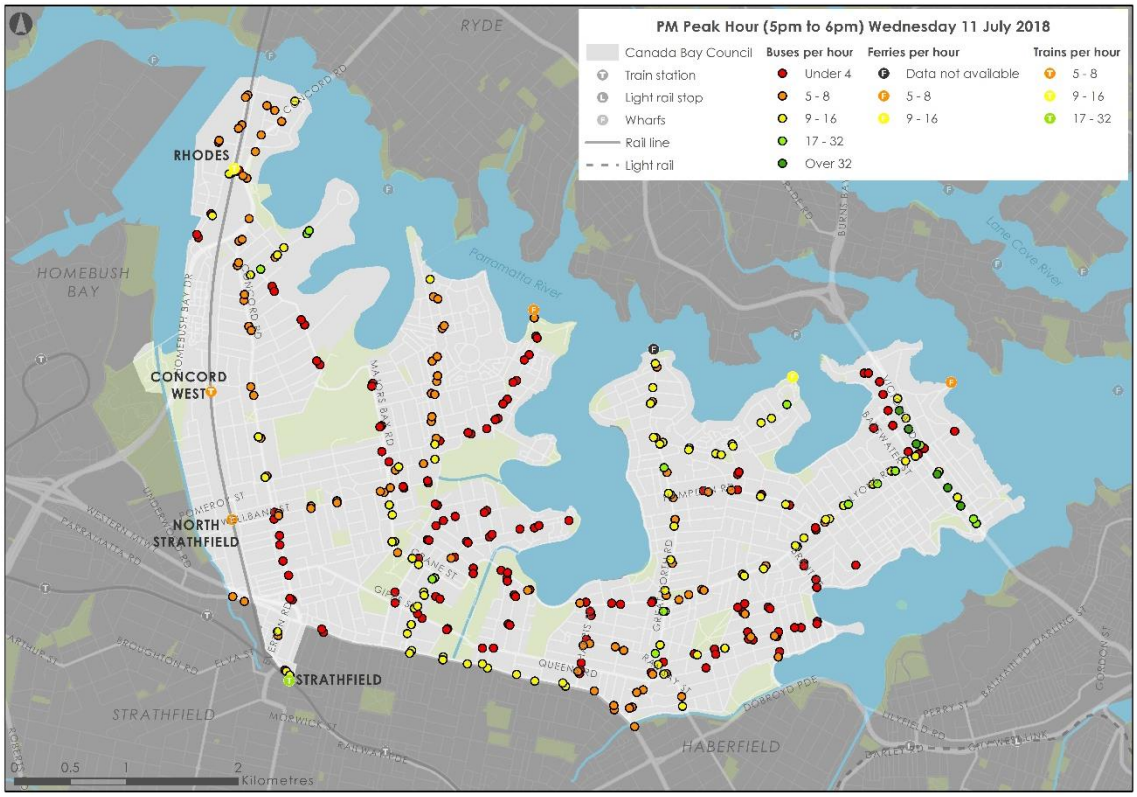


Figure 4.6: PM Peak Hour Bus Services by Bus Stop



4.2.2. On Demand Bus Service

As shown in Figure 4.3, the bus network within the LGA is supplemented by an on-demand bus which services the areas of Rhodes, Concord, Mortlake, Cabarita and Breakfast Point. The on-demand service allows users to book a trip from "ASAP" to 48 hours in advance via their smartphones using the BRIDJ application. Users request a trip, BRIDJ then directs them to a safe pick-up location and advises of when a BRIDJ vehicle is anticipated to arrive, based on live tracking. The on-demand service operates between 6am and 11:30pm on weekdays and 8am to 8:30pm on weekends.

4.2.3. Ferry

Ferry wharves within the City of Canada Bay are located on the Parramatta River at Cabarita, Abbotsford, Chiswick and Drummoyne and provide connections to locations along the Parramatta River including Parramatta, Balmain, Barangaroo, Circular Quay and Milsons Point. Services towards Sydney CBD run at a peak of six services per hour in the AM peak hour and four per hour towards Parramatta in the PM peak hour.

In addition, the Mortlake ferry is a vehicle ferry that is commonly known to locals as the 'Putney punt' began operating in 1925 and is the only remaining punt in the Sydney metropolitan area. It crosses Parramatta River from Hilly Street, Mortlake to Pellisier Road, Putney. This ferry is capable of carrying 18 cars with a safe load limit of 90 tonnes.

The 2012 Sydney's Ferry Future indicated the potential for a future wharf at Rhodes, which would be introduced as an additional stop on the Parramatta River route. The NSW Government is investigating building a new ferry wharf and interchange at Rhodes.

4.2.4. Rail

The City of Canada Bay is serviced by the T1 Northern rail line with stations within the LGA located at Rhodes, Concord West, North Strathfield and Strathfield. The T1 service provides connections from the LGA to Epping, Hornsby and Sydney CBD as well as interchanges at Strathfield for wider connections including the T2 line towards Parramatta. Services at Rhodes, Concord West and North Strathfield train stations generally run at 15-minute intervals in both directions.

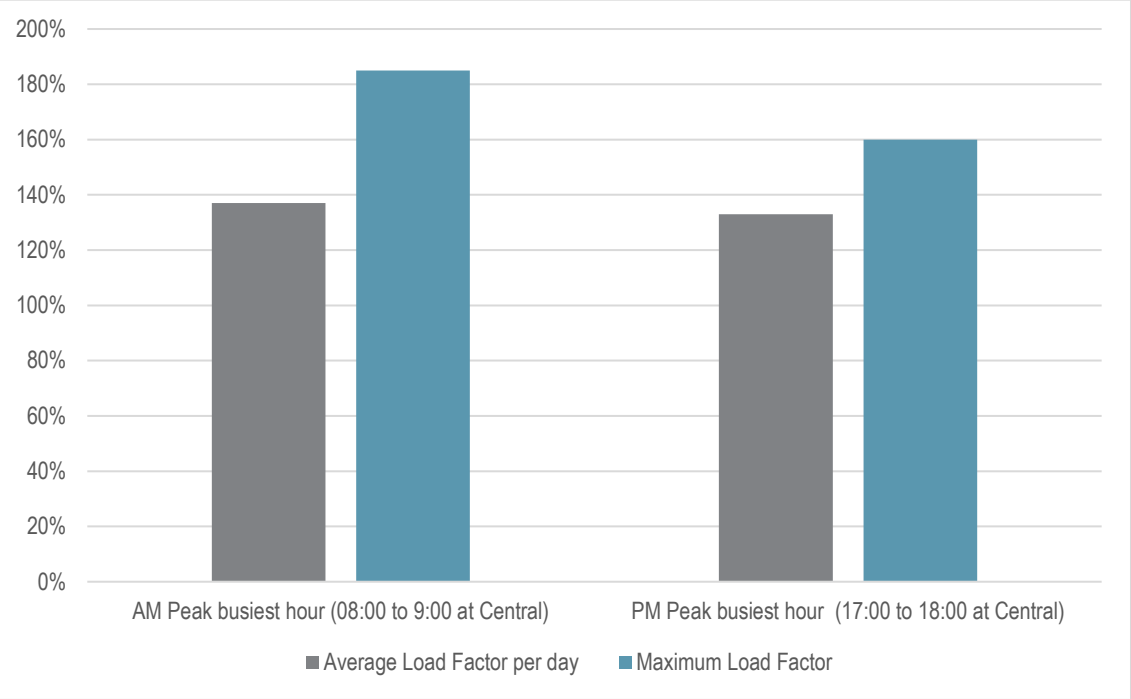
Figure 4.7 demonstrates peak train loads in T1 Northern via Macquarie Park line at Redfern Station based on the latest information released by Transport for NSW (TfNSW) for train loads during AM and PM peak business hours (08:00 to 9:00 and 17:00 to 18;00 at Central) for specific stations.

As Figure 4.7 shows, the estimated inbound load factor of Redfern is 137% during the AM peak time which is 2% beyond the load factor of 135% which is the benchmark at which customers experience crowding and service dwell times can impact on-time running.

In addition, both load factors related to AM and PM at Redfern are beyond a load factor of 100% which means there are no seats available.

It is noted that a load factor of 100% means there is a seat for each customer. At 135 per cent, an additional 5 people are standing on each level and 15 in each vestibule.

Figure 4.7: Peak Train Load for the T1 Line (estimate load factor at Redfern)



Source: Transport for NSW, Transport Performance and Analytics - September 2018.

4.2.5. Public Transport Boardings and Alightings

Bus and rail boarding and alighting statistics in the study area are shown in Figure 4.8 and Figure 4.9 respectively, based on Opal data for a week in March 2018. Key findings from this patronage analysis are:

- Rhodes Station has both the highest number of boarding rail passengers and the highest number of alighting rail passengers.
- Victoria Road also has a high number of bus stop boarding and alighting, as do the bus stops at Strathfield Station. Other bus stops with high turnover are found in Five Dock and Rhodes.
- Several stops towards Parramatta River in Abbotsford and Chiswick also have 1-2,000 boarding and alighting per week.

Figure 4.8: Bus and Rail Boarding

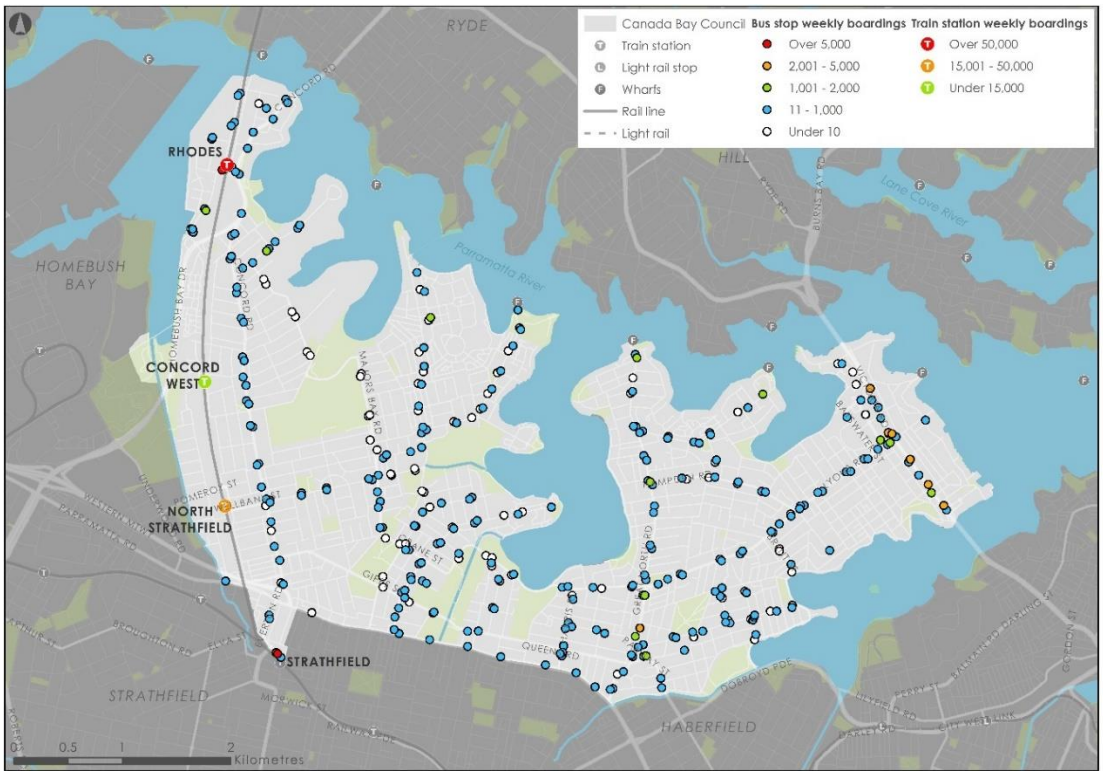
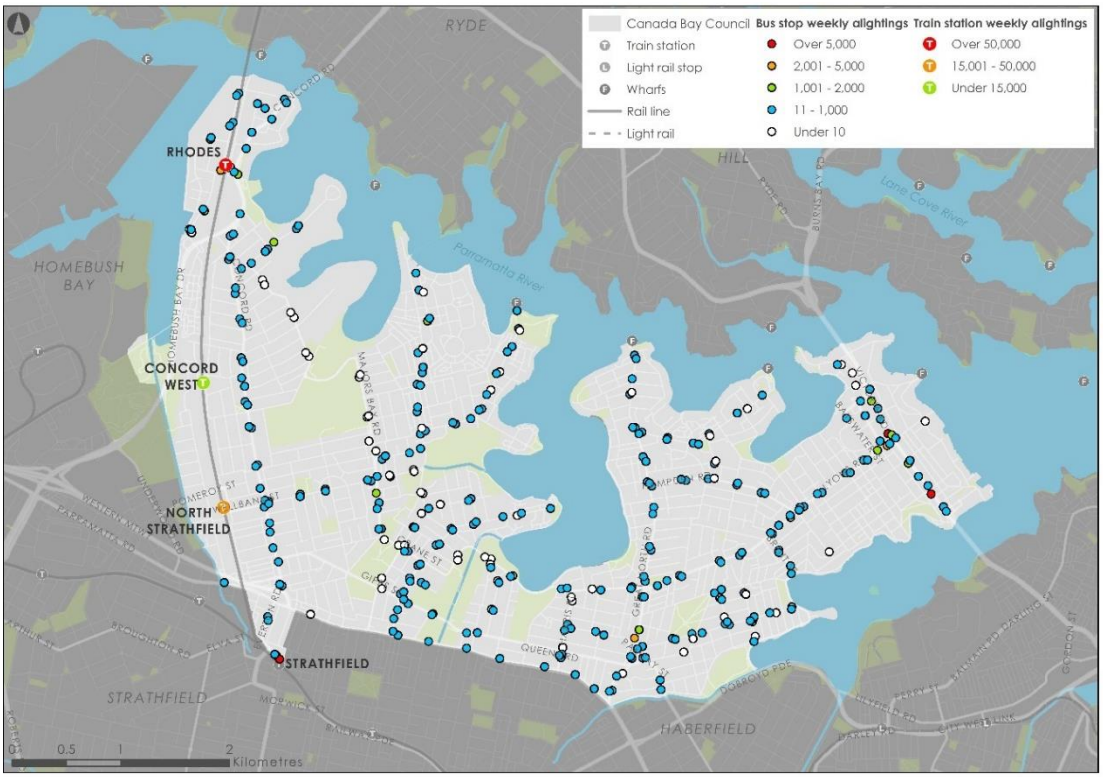


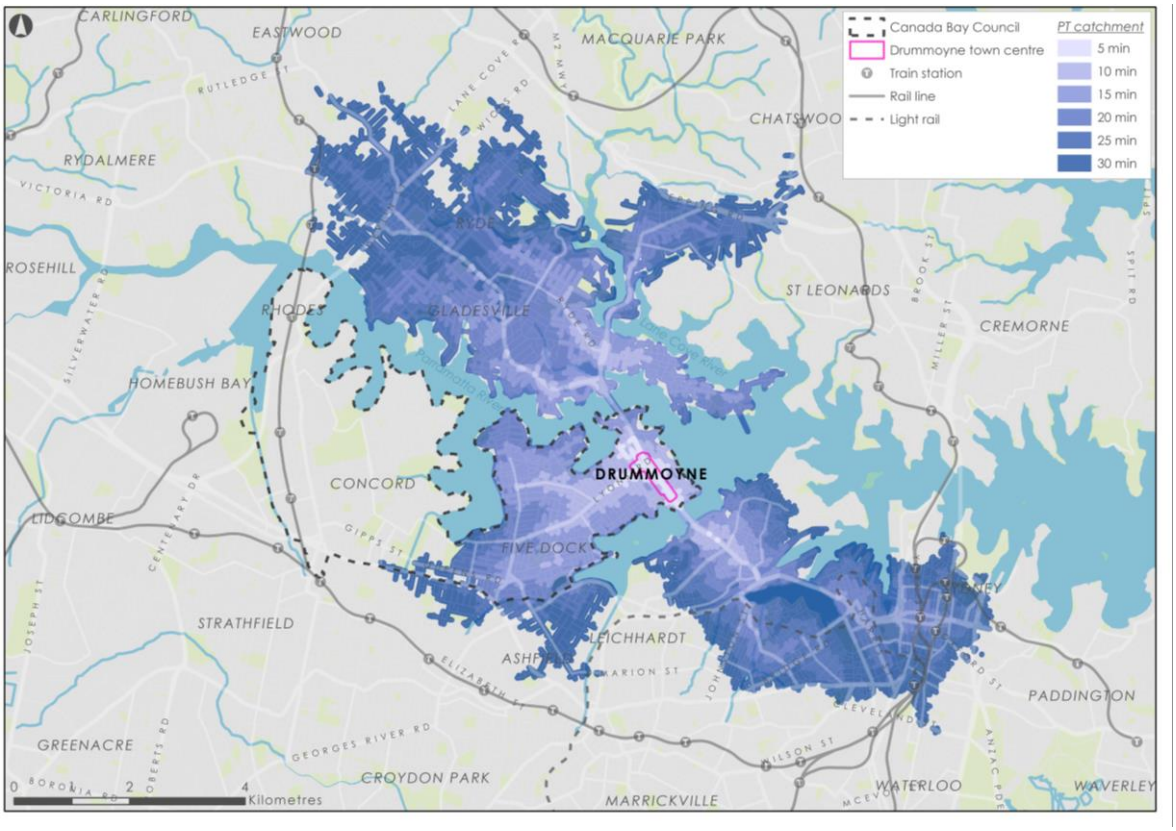
Figure 4.9: Bus and Rail Alighting



4.2.6. Accessibility

The public transport network within the City of Canada Bay allows access within 30 minutes from locations as far to the north as Epping, Ashbury to the south, Sydney Olympic Park to the west and Sydney CBD to the east. Catchment maps have been produced for each of the four centres within Canada Bay LGA for public transport to show accessibility. One example of this is travel to Drummoyne where areas close to Victoria Road are reached within 30 minutes from locations such as Top Ryde and the Sydney CBD. This is shown in Figure 4.10. Of note is that centres within the Canada Bay LGA can be quickly reached from parts of Sydney located along either the T1 rail line or major road corridors which facilitate frequent bus services.

Figure 4.10: 30 Minute Public Transport Accessibility to Drummoyne



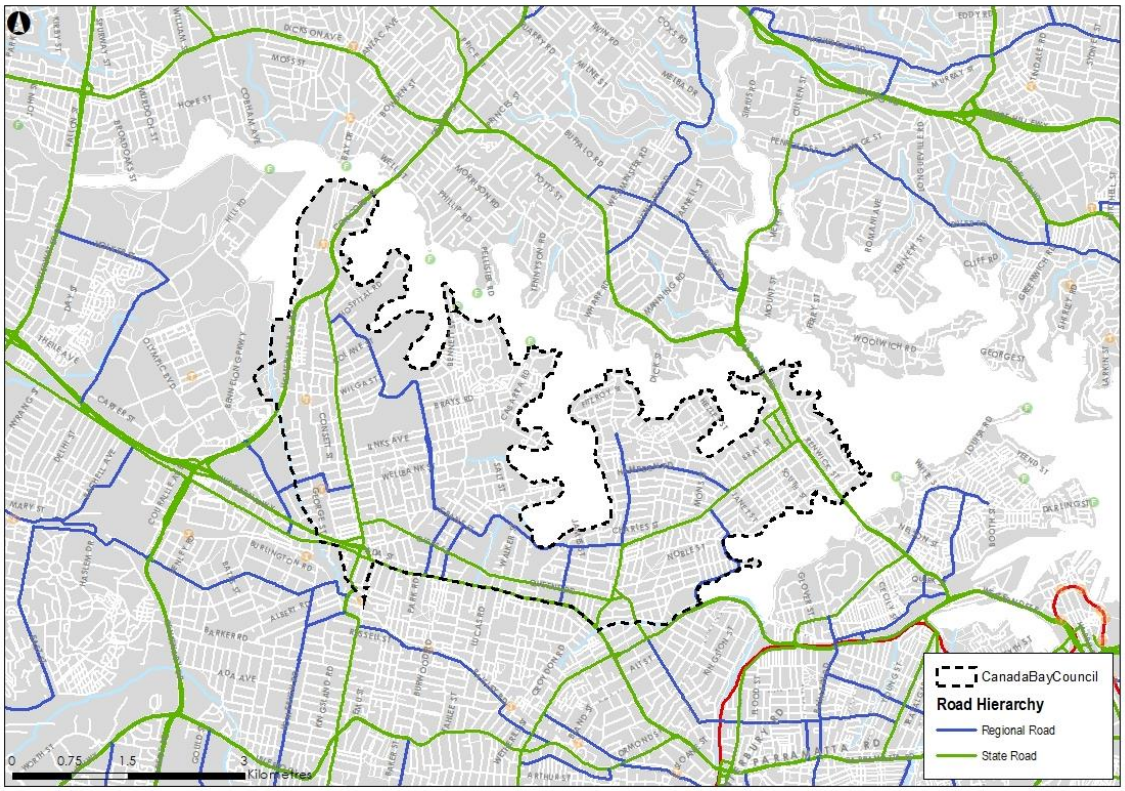
4.3. Road Network

4.3.1. Road Network Characteristics

The road network within the LGA consists of State Roads, Regional Roads and Local Roads. State Roads are managed and funded by RMS while Regional and Local Roads are generally managed and funded by councils. However, due to their network significance RMS provides financial assistance to councils for the management of their Regional Roads.

The State Network is the main arterial network which connects strategic centres and supports high volumes of traffic. Regional Roads are sub-arterial roads that perform an intermediate function between the main arterial network of State Roads and council controlled Local Roads. The existing State and regional road network surrounding and within the LGA are shown in Figure 4.11.

Figure 4.11: Road Hierarchy



In the east-west direction, the M4 Motorway and Parramatta Road are key regional corridors providing connections between Western and Inner Sydney/ Sydney CBD. The M4 Motorway is a toll road whereas Parramatta Road is an urban arterial road and un-tolled.

In the north-south direction Concord Road/ Homebush Bay Drive is a key corridor on the western edge of the LGA, while Victoria Road traverses the eastern edge. Key roads are described in Table 4.2.

Table 4.2: Key State and Regional Roads

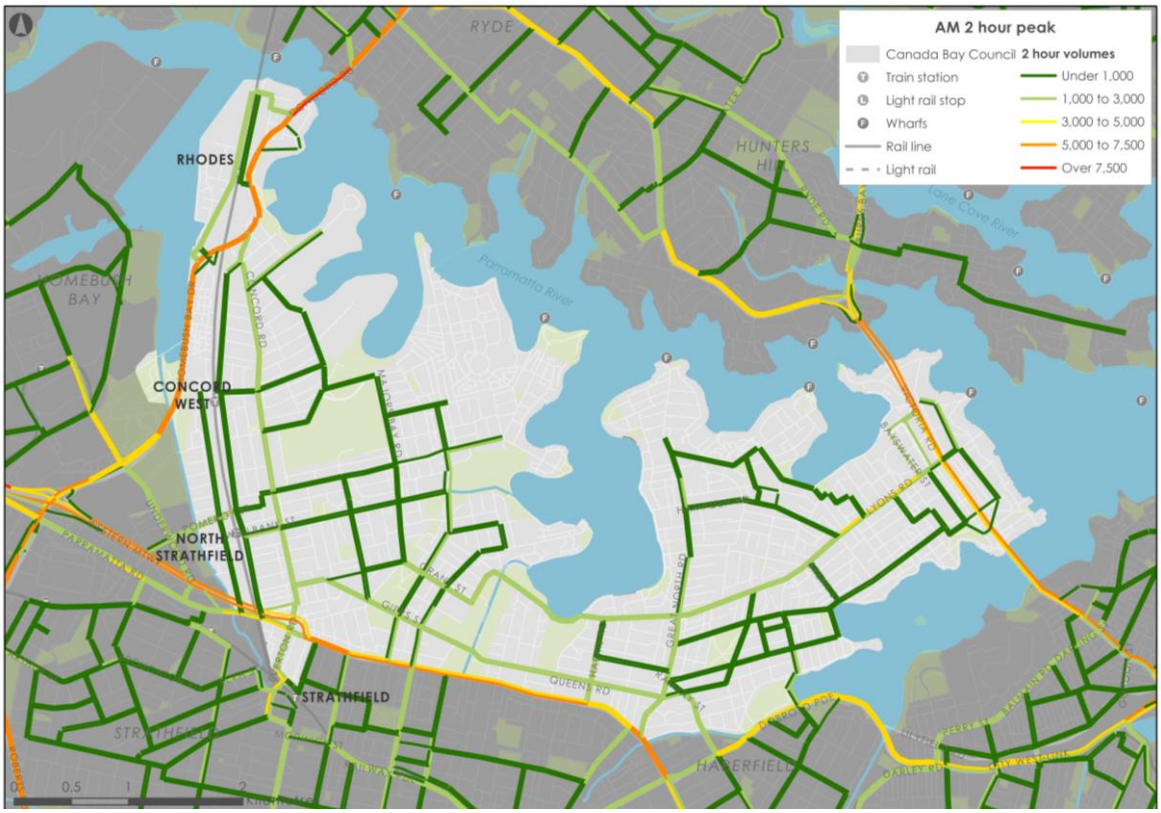
Road Name	Road Classification	Key Function
Concord Road/ Homebush Bay Drive	State	A Primary arterial road and freight route that forms part of the A3 corridor linking the Northern Beaches, Pymble, Macquarie Park, Ryde, Sydney Olympic Park and Hurstville, as well as the M2, M4 and M5 Motorways.
Parramatta Road	State	A Primary arterial road and freight route connecting the Sydney CBD with Parramatta. It is the easternmost section of the Great Western Highway. Much of its traffic has been diverted to modern expressways such as the M4 and the City West Link Road.
Victoria Road	State	Victoria Road connects Parramatta with the western end of Anzac Bridge. The road passes over two major bridges: the Iron Cove Bridge over Iron Cove, and the Gladesville Bridge over the Parramatta River.
Lyons Road	State	An Arterial road linking Victoria Road and Great N Road.
Great North Road	State	A regional road that links Abbotsford Wharf to Lyons Road. The North-South road connecting Abbotsford and Five Dock suburbs as well.
Queens Road	State	An East-West road that connects Great North Road to Burwood Road.
Underwood Road	Regional	Links Homebush Bay Drive to Parramatta Road.
Pomeroy Street	Regional	Pomeroy street is a regional road connecting Concord Road to Underwood Road.
Burwood Road	Regional	A North-South regional road that links Gipps street to M4.
Broughton Street	Regional	A North-South regional street that links Gipps street to M4.
Harris Road	Regional	A North-South regional road linking Lyons Road west to Parramatta Road with suburbs of Five Dock and Canada Bay.

4.3.2. Road Network Performance

The road network within the Canada Bay LGA is characterised by the State and Regional roads described above. These roads carry volumes in excess of 5,000 vehicles in the AM and PM peak 2-hour periods and are prone to congestion as a result of issues with both mid-block and intersection capacities. Delays and congestion along Parramatta Road, Victoria Road and Concord Road are not uncommon, noting that they are key regional routes and freight routes.

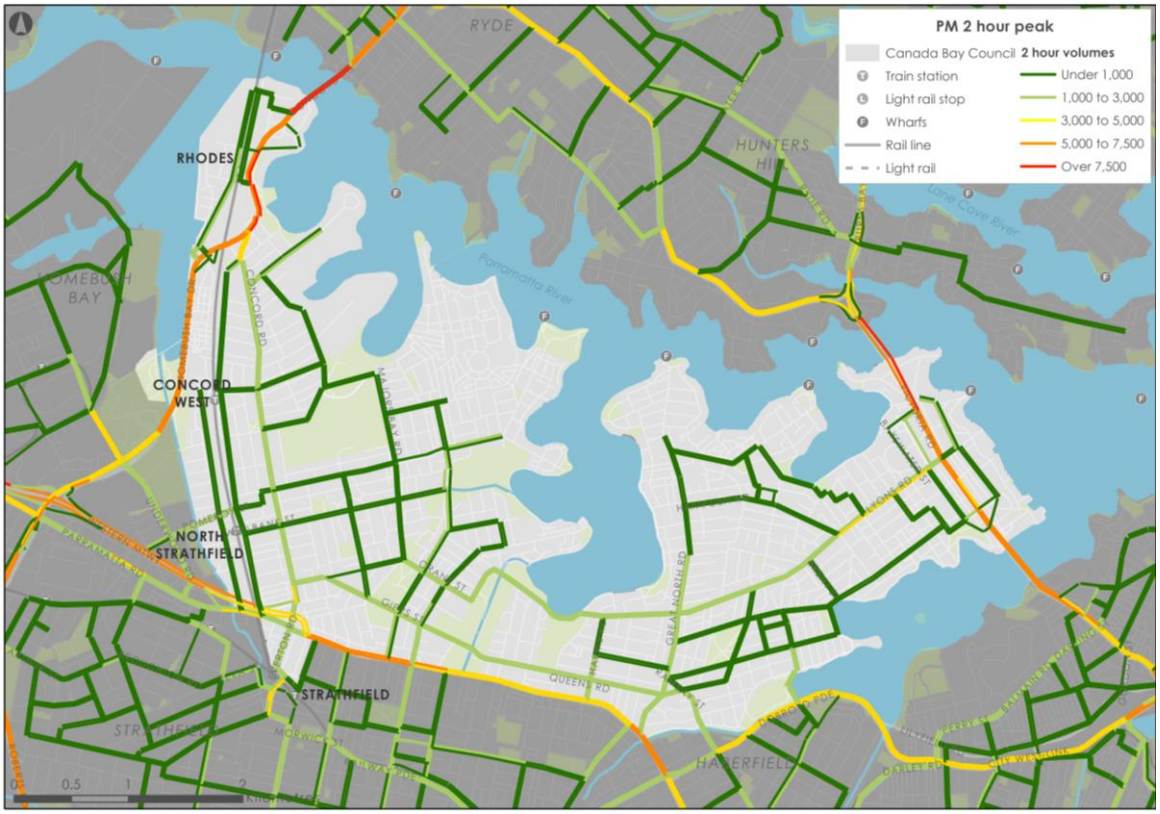
The volume of traffic along roads within the LGA are shown in Figure 4.12 for the AM two hour peak period and Figure 4.13 for the PM two hour peak period. Several key roads provide north-south and east-west connectivity and are often used as bypasses for already congested key regional roads. This includes Concord Road, Crane Street and Lyons Road, Gipps Street/ Queens Road and Burwood Road. These roads carry between 1,000 to 5,000 vehicles in the peak periods, depending on the section.

Figure 4.12: 2016 AM 2 hour peak period road volumes



Source: Sydney GMA Strategic Traffic Forecasting Model (***STFM***) forecast plots 2016.

Figure 4.13: 2016 PM 2 hour peak period road volumes



Source: Sydney GMA Strategic Traffic Forecasting Model (***STFM***) forecast plots 2016.

Of note is the section of Lyons Road between Bayswater Road and Hampden Road which carries 3,000 to 5,000 vehicles. This is a result of its use as a nexus for Hampden Road (which services Abbotsford), Byrne Avenue (which services Chiswick) and Victoria Road.

Similarly, sections of Concord Road experience varying levels of traffic, with Concord Road south of the y-split with Homebush Bay Drive carrying significantly less traffic volumes than north of Homebush Bay Drive. This indicates the importance of Homebush Bay Drive as a key regional route between Northern Sydney and Western Sydney.

Volumes along key roads within the LGA are presented in Figure 4.12 and Figure 4.13 with a summary of volume-capacity (V/C) ratios for a number of those roads in Table 4.3. The V/C ratio reflects the traffic throughput per lane of road. A V/C ratio of 1 indicates the road or lane is at capacity.

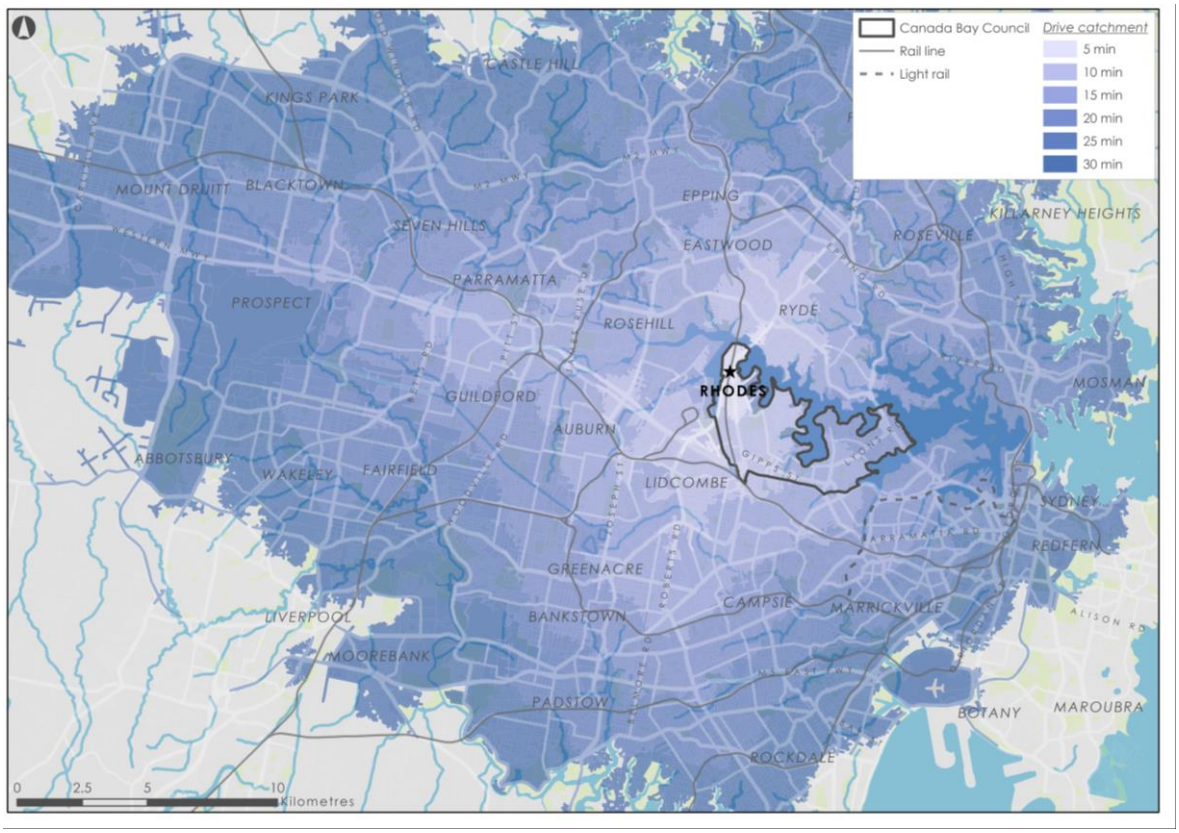
Table 4.3: 2016 Volume-capacity ratios throughout City of Canada Bay

Location	Direction of travel (N/ S/ E/ W)	V/C Ratio (2016)	
		AM	PM
Victoria Road between Lyons Road and Darling Street	Northbound	0.4-0.6	0.6-0.8
	Southbound	0.6-0.8	0.6-0.8
Concord Road north of Denham Street	Northbound	0.8-1.0	Over 1.0
	Southbound	over 1.0	0.8-1.0
Concord Road south of Homebush Bay Drive	Northbound	0.4-0.6	0.6-0.8
	Southbound	0.6-0.8	0.6-0.8
Queens Road east of Walker Street	Eastbound	0.6-0.8	0.6-0.8
	Westbound	0.6-0.8	0.6-0.8
Lyons Road to West of Hampden Road	Eastbound	0.6-0.8	0.6-0.8
	Westbound	0.4-0.6	0.6-0.8
Lyons Road east of Hampden Road	Eastbound	0.8-1.0	0.6-0.8
	Westbound	0.4-0.6	0.8-1.0

4.3.3. Accessibility

As a result of the key road corridors that bound the LGA, accessibility to Canada Bay from Greater Sydney is extensive with coverage extending to Blacktown, Maroubra, Rockdale and Pymble from each of the four centres within 30 minutes. The Sydney and Parramatta CBDs are noted to be accessible within 20 minutes by driving from each of the four centres. The 30 minute driving catchment for Rhodes is shown in Figure 4.14.

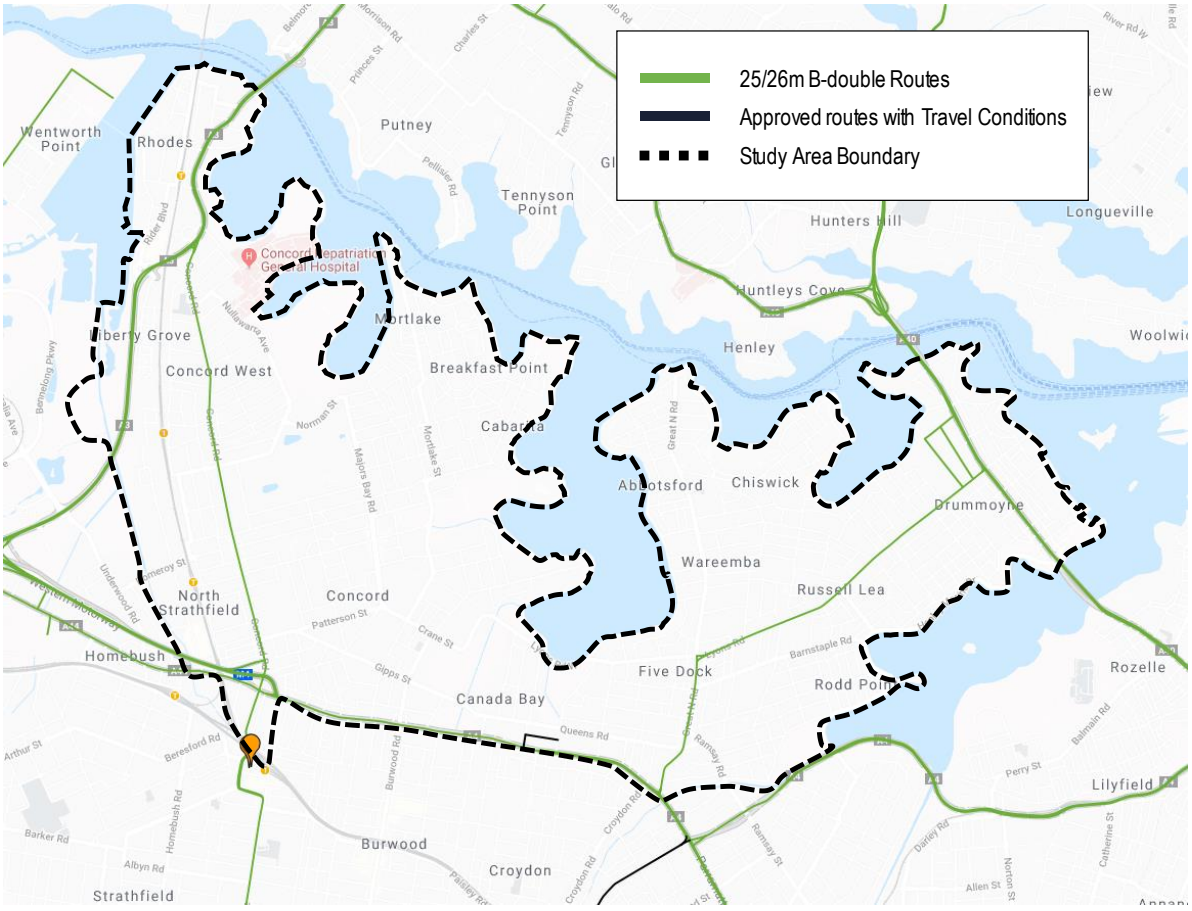
Figure 4.14: 30 Minute Driving Accessibility to Rhodes



4.4. Freight

The movement of freight throughout the Canada Bay LGA is focused along higher order roads such as Victoria Road, Parramatta Road and Homebush Bay Drive. Freight access to specific areas of the LGA is provided by Concord Road for centres such as a North Strathfield and Concord, and Lyons Road/ Great North Road for the Five Dock and Drummoyne areas. These freight routes form part of the 25/ 26 metre-long B-double truck route within the restricted vehicle access network which is shown in Figure 4.15.

Figure 4.15: B-double routes within Canada Bay LGA



Base map source: https://www.rms.nsw.gov.au/business-industry/heavy-vehicles/maps/restricted-access-vehicles-map/map/index.html

A number of freight-generating locations have been identified within the Canada Bay LGA and include:

- Five Dock Town Centre along Great North Road which includes supermarket retail with main street specialty shopping, dining and entertainment.
- Concord Town Centre on Majors Bay Road which consists of main street specialty shopping and dining.
- North Strathfield Town Centre which incorporates several dining and entertainment venues with supermarket retail.
- Drummoyne Town Centre which consists of supermarket and specialty retail, commercial, dining and entertainment centred along Victoria Road.
- Rhodes Waterside and Birkenhead Point which are significant shopping centres located near Homebush Bay Drive and Victoria Road, respectively.

Loading for the small retail, dining and entertainment centres in Five Dock, Concord, Drummoyne and North Strathfield generally occurs from the rear of the property (refer Figure 4.16) using vehicles such as vans, or small rigid vehicles (6.4 metre-long). Small deliveries such as couriers would likely service these areas from on-street loading zones or short-term parking spaces. This includes use of streets such as East Street and Jersey lane in Five Dock, rear access lanes off Majors Bay Road in Concord and Formosa Street and Marlborough Street in Drummoyne. For larger retail uses such as supermarkets in these town centres, medium to large rigid vehicles and articulated vehicles are used within dedicated loading docks (refer Figure 4.17).

The Rhodes Waterside and Birkenhead Point shopping centres are significant shopping centres within the Greater Sydney context with large numbers of visitors. Freight requirements for these shopping centres must accommodate articulated vehicles with multiple loading docks and zones to manage deliveries for different retail offerings ranging from clothing and specialty retail to supermarkets to furniture and large format. This results in increased heavy vehicle traffic within these areas however, this would likely occur outside of peak road network periods.

Figure 4.16: Rear loading and servicing for small businesses

Figure 4.17: Loading docks for larger shopping centres and supermarkets

Source: Google Maps

4.5. Road Safety

4.5.1. Overview

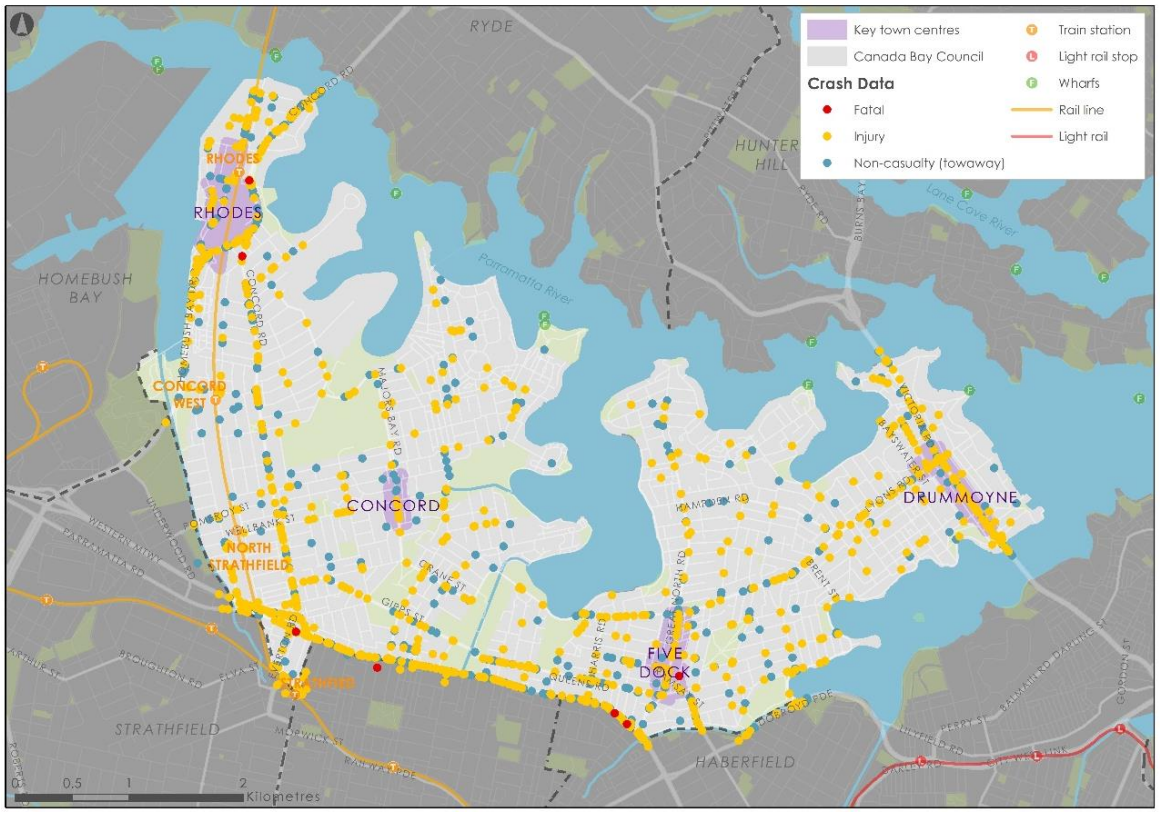
Road safety forms part of the Premier's Priorities relating to Safer Communities. The intent is to reduce road fatalities by at least 30 per cent between the years of 2011-2021. Whilst most road fatalities occur in rural areas, the *2021 Road Safety Plan* outlines a number of priority actions including creating liveable and safe urban communities; this includes the expansion of 40km/h high pedestrian activity areas, safety upgrades at intersections and safety integration in bicycle network programs.

A safe systems approach has been adopted which looks at safe roads (and intersections), safe speeds, safe vehicles and safe people. Whilst this moves away from the traditional crash cluster analysis to identify specific crash issues, an understanding of historical road crashes is still required to understand prevalent types of crashes within the study area.

A crash map of the study area for a five-year history from 2013 to 2017 is shown in **Figure 4.18**. It can be seen that 2,124 crashes were recorded in the study area during this period. These include crashes up to 100 metres outside of the LGA boundary.

Further analysis of the crash history of the study area indicates that the most frequent location for crashes is along the major roads including Parramatta Road with 4 fatal crashes, Concord Road and Homebush Bay Road with 2 fatal crashes, likely related to high traffic volumes. It can be seen there are no fatal crashes on Victoria Road from 2013 to 2017, although the number of injury crashes are substantial.

Figure 4.18: Five-year history crash map



Source: Data from RMS.

Table 4.4 shows a summary of crashes and casualties from 2013 to 2017. In terms of severity of crashes, 736 crashes resulted in no injuries while of the remaining 1,388 crashes, 320 resulted in serious injury and 7 incurred fatalities.

Approximately 10 per cent of crashes involved cyclists and pedestrians within the study area and more than 93 per cent of the crashes involved cars.

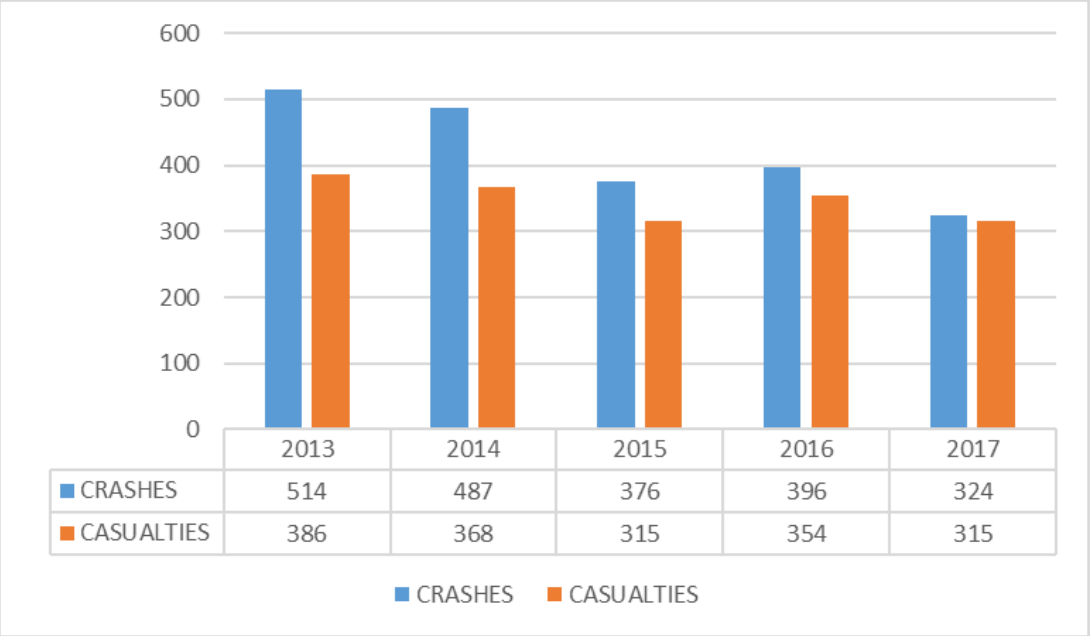
Table 4.4: Summary of Crashes and Casualties from 2013 to 2017

Casualties			Crashes		
Killed		8	Fatal		7
Injured	Serious Injured	340	Injury	Serious Injury	320
	Moderate Injured	596		Moderate Injury	473
	Unrestrained	794		Minor/ Other Injury	588
			Non-casualty		736
Total		**1,730**	**Total**		**2,124**

Source: Data from RMS.

Table 4.5 illustrates the trends of crashes and casualties from 2013 to 2017. Overall, it can be seen number of crashes and casualties decreased from 514 in 2013 to 324 in 2017.

Table 4.5: Trends of crashes and casualties from 2013 to 2017

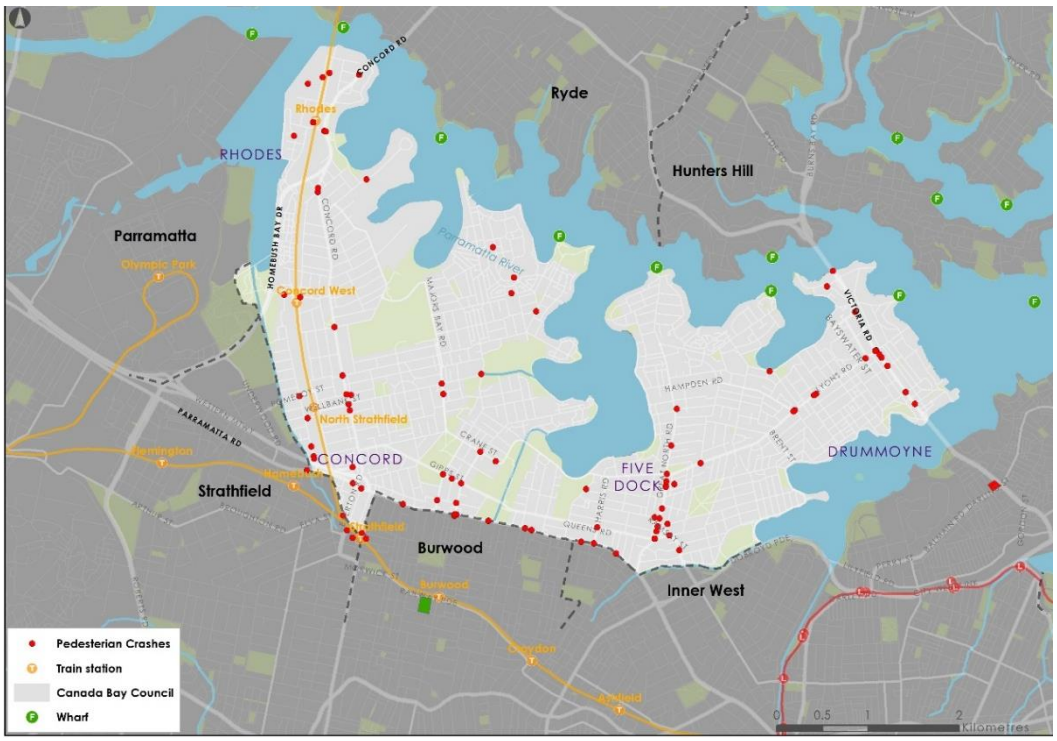


Source: Data from RMS.

4.5.2. Pedestrian Crashes

Figure 4.19 shows intersection pedestrian crashes within the Canada Bay LGA. As expected, the pedestrian crash density along State roads including Victoria Road, Parramatta Road and Concord road is high as traffic volumes and speeds are higher than on other types of roads. There are several other intersections like Pomeroy Street/ George Street, Ramsay Road/ Great North Road and Queens Road/ Regatta Road which are high risk intersections that need treatments to reduce the risks.

Figure 4.19: Intersection Pedestrian Crash Density



4.5.3. Intersection Risk Rating

As part of the safe systems approach adopted by the NSW Centre of Road Safety and the Road Safety Plan 2021, intersection risk ratings have been developed based on the following criteria:

- Annual average daily traffic (AADT) passing through the intersection.
- A five-year crash history of the site.
- The rated speed of the approaches to the intersection.
- Intersection complexity including layout, phasing patterns and approach arrangements.

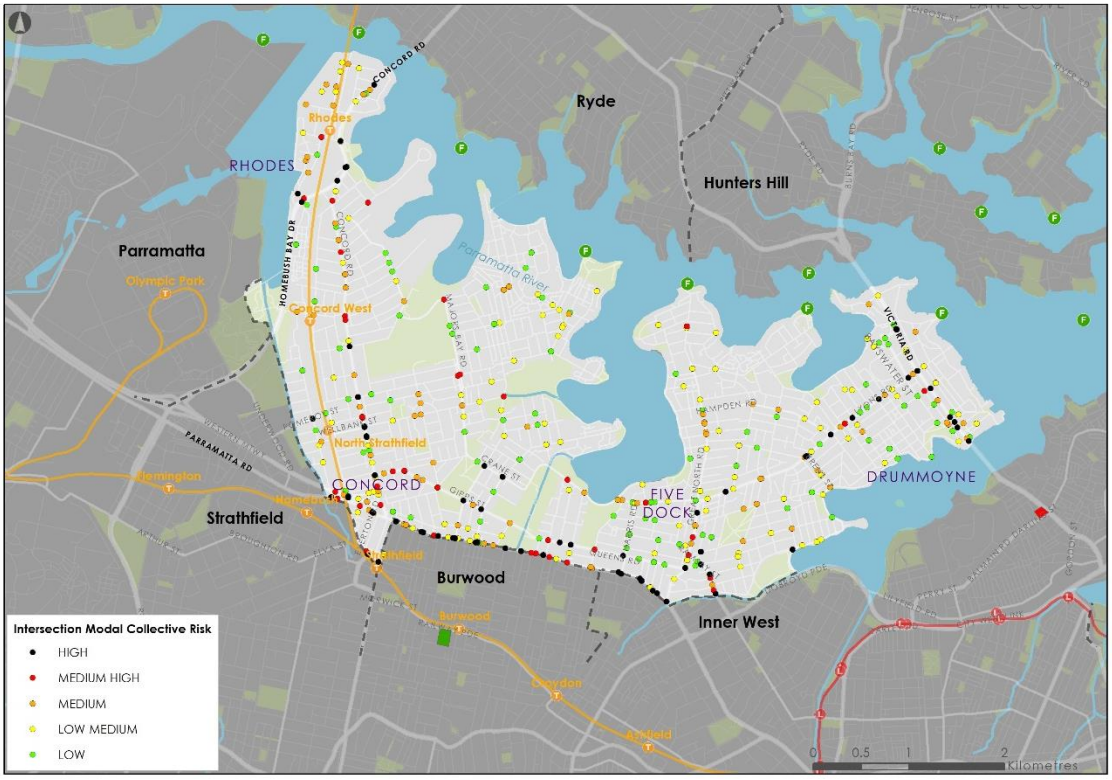
Figure 4.20 shows intersections with an established or estimated occurrence of fatal and serious injury crashes, as opposed to crashes that result in less severe outcomes. A number of inter-related factors associated with road design, speed, vehicles and road use contribute to the likelihood and severity of intersection crashes.

High-risk intersections are broadly defined as those intersections that have a history of reported Fatal or Serious crashes or an estimated number of Death and Serious injury (DSi) casualty equivalents, based on all injury crashes, that suggest a disproportionally higher than normal risk that someone will be killed or seriously injured in the future. Collective Risk is measured as the total number of fatal and serious crashes or deaths and serious injuries within 50 meters of an intersection in a crash period.

Intersections that are assessed as having a 'Medium High' or 'High' Collective Risk are deemed to be high-risk intersections.

As Figure 4.20 shows, most of the high-risk intersections are along major roads including Victoria Road, Parramatta Road, Concord Road and Lyons Road.

Figure 4.20: Intersection Risk Rating



4.6. Parking

On-street parking within the City of Canada Bay typically includes:

- Parking within town and local centres which is characterised by short to medium stay restricted parking (between half-hour and one-hour parking and up to three-hour parking).
- Unrestricted parking outside of town and local centres which is mostly used by residents.

Short and medium stay parking restrictions in and around town and local centres within the City of Canada Bay are located on higher order roads such as Majors Bay Road, Great North Road, Lyons Road, Victoria Road and Concord Road. These restrictions are also carried over onto minor roads, approximately 100 to 200 metres from their intersections with major roads. On-street parking restrictions are generally in effect between 8:30am to 6:00pm on weekdays and 8:30am to 12:00pm Saturdays, subject to clearway restrictions which occur along Lyons Road, Concord Road and Victoria Road.

A desktop review and observations of on-street parking indicate high demand, especially within and near centres throughout the LGA on weekends. Moderate demand is noted for on-street parking on weekdays during business hours.

Off-street parking within the LGA is provided around clusters of commercial and retail uses such as supermarkets, dining and specialty retail within town and local centres. These spaces are provided either at the rear of the developments in the form of at-grade car parks or basement parking as part of larger shopping centre developments. Similar to the on-street parking within the town and local centre area, at-grade off-street car parks are limited to medium stay durations of between two and three hours, are free to use (i.e. not paid parking) and are in high demand, especially on weekends.

Paid parking applies in large shopping centre carparks as well as some areas on-street in Everton Road, Hospital Road and Rider Boulevard. Paid Parking also applies in Cabarita Park and Bayview Park to assist in managing demand.

5. FUTURE TRANSPORT NETWORK CHANGES

05

5.1. Committed and Planned Transport Projects

The list of key future projects within and surrounding the study area is provided below.

Table 5.1: Future Key Transport Projects

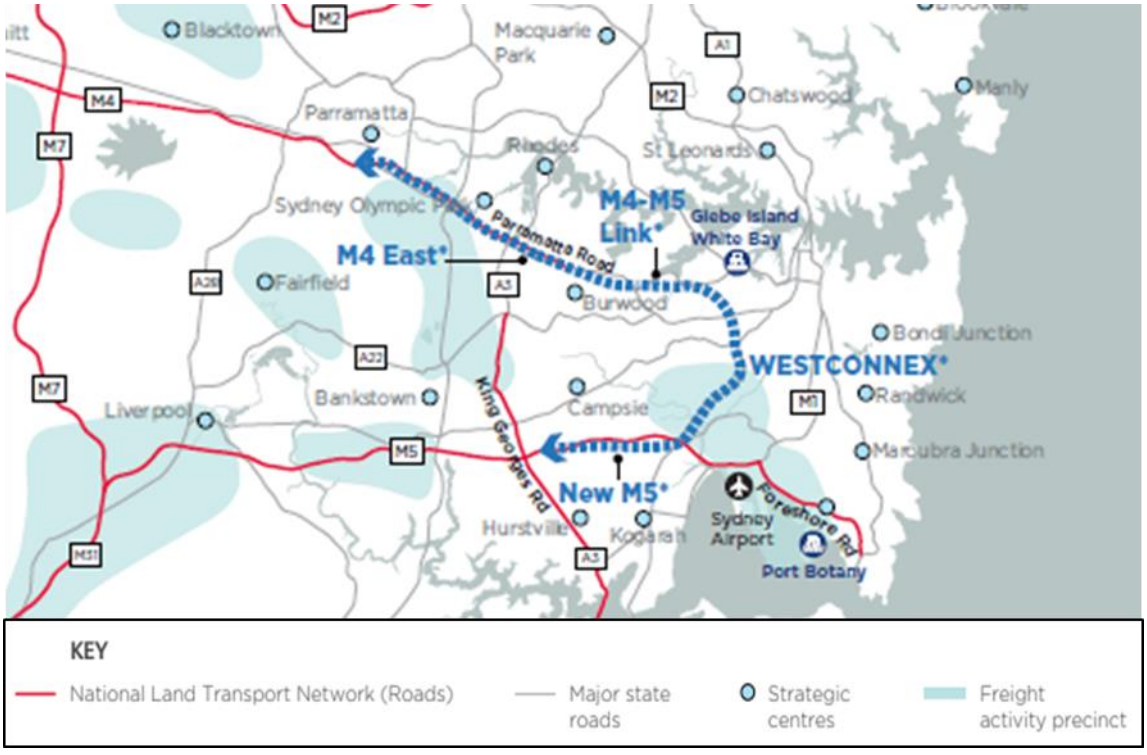
Project	Proponent	Description	Modes
WestConnex	WestConnex	New tunnel between Homebush and Haberfield.	Road
Sydney Metro West	Transport for NSW	New metro station linking Westmead with the paramatta CBD, Sydney Olympic Park and to Sydney CBD.	Metro
Northern Rail Line upgrade/ quadruplication/ Rail service improvements from Sydney Metro	Transport for NSW/ Sydney Metro/ Sydney Trains	Potential to upgrade the rail line to separate freight and passenger services. Some travel demand from north of Epping may shift on to the NW Metro once open, providing capacity on services through Rhodes, Concord West and North Strathfield.	Train
Parramatta Light Rail	Transport for NSW	Stage 2 will connect to Stage 1 via Parramatta CBD to Ermington, Melrose Park, Wentworth Point and Sydney Olympic Park.	Light rail
Upgraded services on Parramatta River Ferries/ Rhodes ferry wharf/ fleet increases	Transport for NSW/ Roads and Maritime	Potential ferry station at Rhodes. New Parramatta Wharf.	Ferry

5.1.1. WestConnex

As shown in Figure 5.1, WestConnex will extend the M4 Motorway in twin underground tunnels between Homebush and Haberfield. WestConnex has also included widening of the M4 Motorway between Parramatta and Homebush, bypassing traffic lights on Parramatta Road and creating new access points to the new M4 between Parramatta and Homebush.

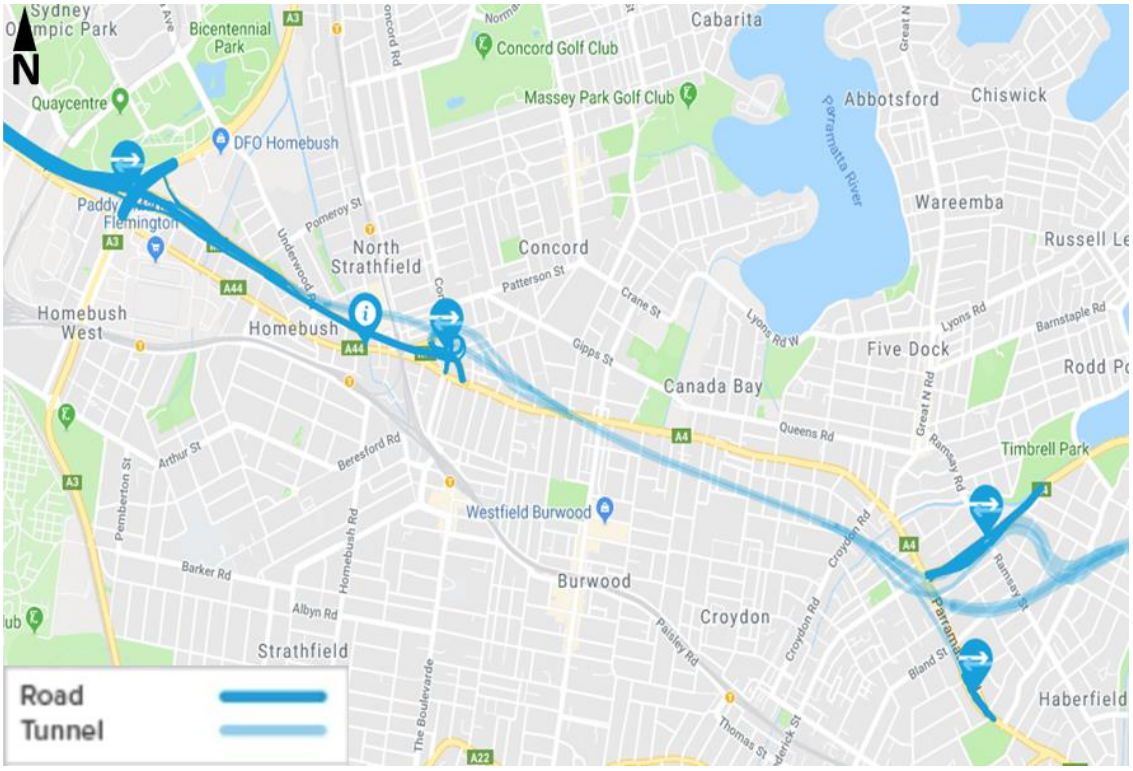
Figure 5.2 shows the location of the interchanges at Homebush and Haberfield.

Figure 5.1: WestConnex



Source: NSW Freight and Ports Plan 2018-2023.

Figure 5.2: M4 East



Source: WestConnex.

5.1.2. Sydney Metro West

Sydney Metro West will service the key precincts of Greater Parramatta, Sydney Olympic Park, The Bays Precinct and the Sydney CBD.

The Sydney Metro West scope of works has been expanded and refined. Related scope to the study area now includes:

- A new metro station under an existing suburban station on the T1 Northern Line east of Sydney Olympic Park – allowing faster connections for customers from the Central Coast and Sydney's north to Parramatta and Sydney through a quick and easy interchange between suburban and metro services.
- Further consultation on new intermediate metro stations between Parramatta and Sydney Olympic Park and between Olympic Park and the Sydney CBD.

It is also proposed that Sydney Metro West will have an underground interchange with an existing suburban station on the T1 Western Line either at Parramatta or Westmead, allowing a fast and easy interchange to metro rail services for customers heading to and from the outer west and Blue Mountains.

The final number and location of stations has yet to be formally announced, but the likely key precincts to be serviced relevant to this study have been identified as The Bays Precinct, North Strathfield, Burwood North, Kings Bay and Five Dock. Sydney Metro West stations are intended to facilitate the NSW Government's commitment to the area's renewal and creation of high value jobs. Planning will investigate the possible provision of a mix of commercial, residential and retail developments.

Burwood North

This area is within Concord around Burwood Road to the north of Parramatta Road and has hence been described as Burwood North during the Sydney Metro West investigations. Whilst there is an existing rail station in Burwood, this would provide a more convenient and higher speed service for planned urban renewal in the area.

Kings Bay

A metro station at Kings Bay would support planned renewal of this precinct and provide a mass transit service to an area currently reliant on road-based transport.

A station would open a new rail catchment to provide customer benefits with a more frequent, reliable and fast mass transit service, and some interchange opportunities with local buses.

Five Dock

This area is currently not served by rail and relies on road-based transport. A metro station would support planned urban renewal and could be a significant bus interchange point for Victoria Road and Parramatta Road services.

T1 Western Line

One of the key objectives for the Sydney Metro West project is to relieve pressure on the T1 Western Line and to provide greater transport options for customers in the Greater Parramatta area. T1 Western line is shown in Figure 5.3.

The T1 – which is more than a century old – is expected to be severely overcrowded by the early 2030s, despite ongoing upgrade works and more services.

To deliver the best outcomes for customers and take the pressure off the T1, TfNSW proposes connecting a new underground metro station to an existing suburban station – allowing customers a quick and easy interchange between metro and suburban rail services. This interchange could happen at Westmead or Parramatta.

Sydney Metro West would take pressure off the T1 Western Line by reducing platform crowding at existing stations and also deliver more public transport options for customers in the Greater Parramatta area. The final decision will take into account the best outcomes for customers, the wider transport system and overall community benefits.

Customers from the Blue Mountains or Blacktown will be able to interchange from suburban rail to Sydney Metro at Parramatta station for a faster journey to the Sydney CBD or a quick and direct trip to Sydney Olympic Park or The Bays Precinct on the metro. In turn, this frees up space on the existing T1 Western Line from the west into Sydney.

Conversely, customers will use the metro for the fastest journey between eastern Sydney and Greater Parramatta – freeing-up space on the existing suburban system for those travelling beyond to Blacktown, outer Western Sydney and the Blue Mountains.

Sydney Metro West will work together with the T1 to support the Parramatta CBD and service the growing needs of Western Sydney, effectively doubling the rail capacity of the Parramatta to Sydney corridor.

Connecting with the T1 Northern Line

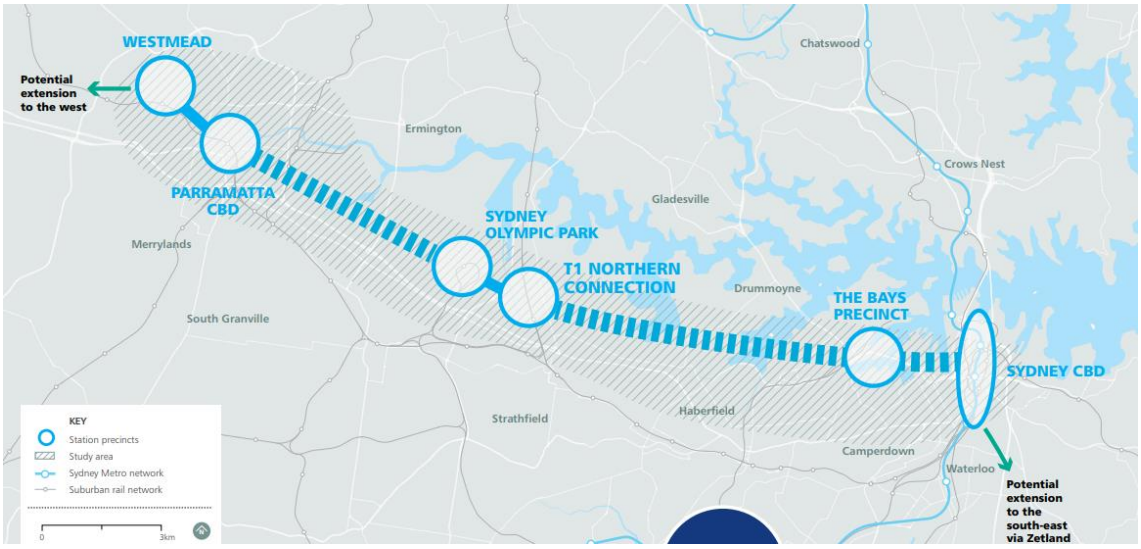
Following community and industry feedback, TfNSW is investigating a potential new metro station connecting to an existing suburban station on the T1 Northern Line east of Sydney Olympic Park.

This metro station would take even further pressure off the T1 Western Line, including Strathfield Station.

The most direct and convenient metro connection for customers north of Parramatta River would be at Concord West or North Strathfield. The final decision will take into account the best outcomes for customers, the wider transport system and overall community benefits.

Customers from the Central Coast and Sydney's north will have faster journey times to Parramatta, The Bays Precinct and the Sydney CBD through a quick and easy interchange between suburban and metro services at Concord West or North Strathfield.

Figure 5.3: Sydney Metro West Key Station Precincts

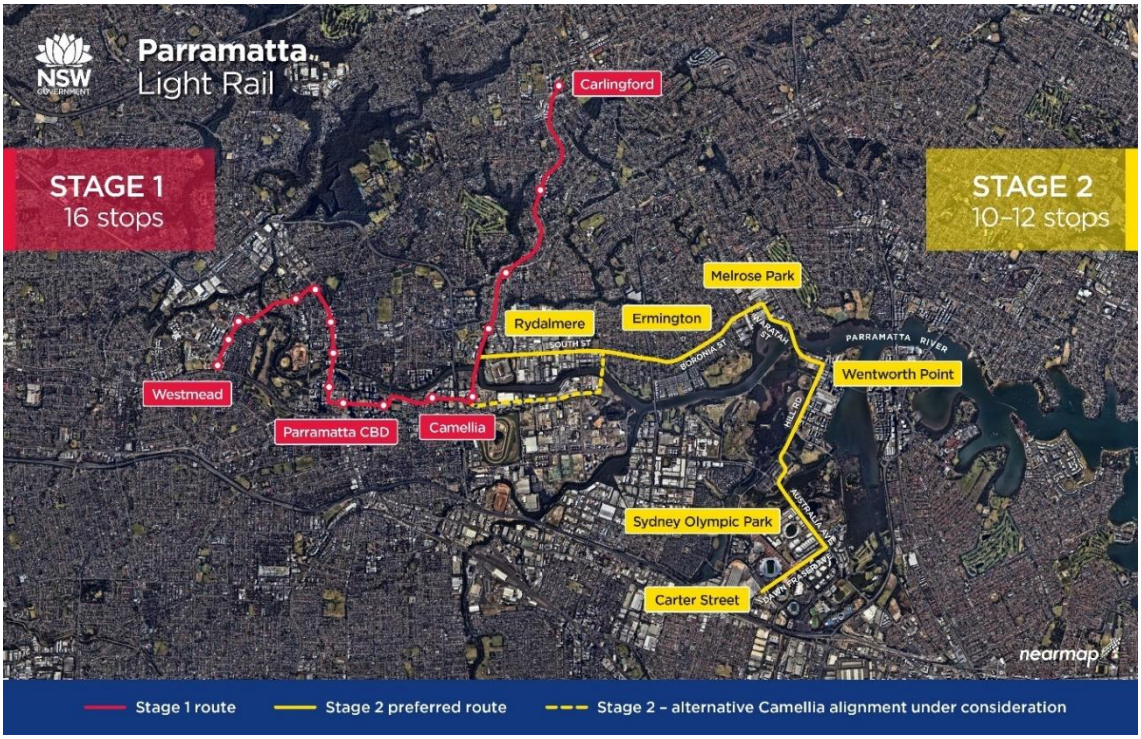


Source: Sydney Metro.

5.1.3. Parramatta Light Rail Stage 2

Parramatta Light Rail Stage 1 will connect Westmead to Carlingford via Parramatta CBD and Camellia with a two-way track extending 12 kilometres. The preferred route for the second stage will connect Stage 1 (and Parramatta CBD) to Ermington, Melrose Park, Wentworth Point and Sydney Olympic Park. It will have 10-12 stops over a nine-kilometre two-way track, with travel times of around 25 minutes from Sydney Olympic Park to Camellia, and a further eight minutes to Parramatta CBD. The second stage of the Parramatta Light Rail will connect to Sydney Metro West, heavy rail in Parramatta and Sydney Olympic Park, and ferry services at Rydalmere and Sydney Olympic Park. Figure 5.4 shows Parramatta Light Rail stage 1 and 2.

Figure 5.4: Parramatta Light Rail stage 1 and 2



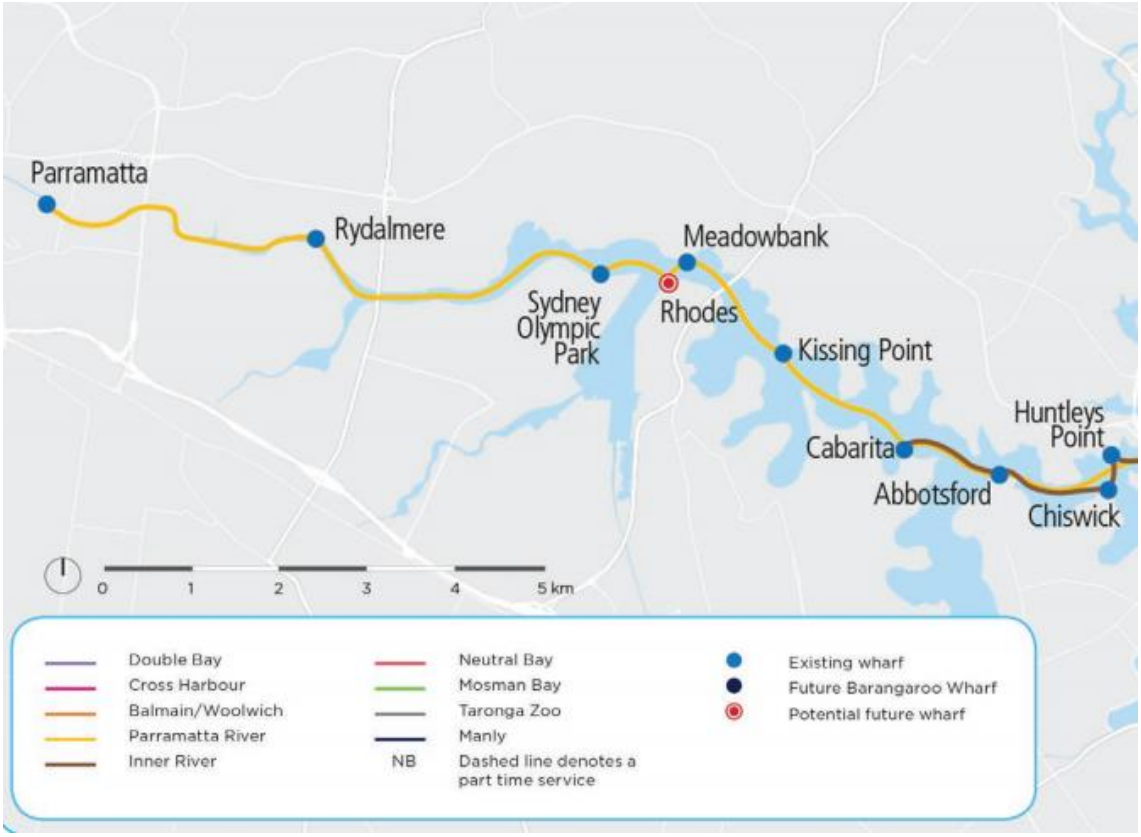
source: http://data.parramattalightrail.nsw.gov.au/s3fs-public/PLR_Stage_2_map.jpg

5.1.4. Upgraded services on Parramatta River Ferries

TfNSW has considered more than 30 new potential locations to be served by Sydney Ferries. Figure 5.5 shows the Rhodes wharf proposed on "Sydney's Ferry Future Modernising Sydney's Ferries May 2013" plan by TfNSW.

Transport for New South Wales has undertaken an overview of the proposed new ferry wharf at Rhodes but there has been not any official announcement yet.

Figure 5.5: Parramatta River Ferry Route: Proposed ferry wharf at Rhodes



Source: *Sydney's Ferry Future* Modernising Sydney's Ferries May 2013, TfNSW

5.2. Future Issues and Opportunities

This section documents issues and opportunities by different travel modes that have been identified across the LGA. For each mode, GTA has undertaken a review of existing conditions, reports and strategies to identify issues and any opportunities to improve them. This has included data reviews from a variety of public, Council and State Government sources, report reviews that have been provided and/or undertaken by Council or the State Government, meetings held with key stakeholders involved in the study, the application of our knowledge of the area and GTA's professional experience in identifying realistic potential improvements in the LGA.

The issues and opportunities are strategic in nature, but still at a level of resolution applicable for a strategic document to guide further studies, objectives, actions and solutions.

5.2.1. Walking

Table 5.2: Issues and opportunities related to walking across Canada Bay LGA

Issue	Opportunity
Long distances between pedestrian crossing facilities (>750m) along key roads including Concord Road (between Corey Avenue, Victoria Avenue and Hospital Road), Gipps Street (between Concord Road and Broughton Street), Lyons Road West (between Great Northern Road and Burwood Road) and Parramatta Road (between Harris Road and Cheltenham Road)	Provision of additional pedestrian crossing facilities to achieve better connectivity
Narrow footpath along south side of Queens Street east of Harris Road provides safety issue	Investigate options to widen footpath
Long waiting time for pedestrians to cross Great Northern Road in Five Dock town centre potentially encourages jaywalking	Review traffic signal timings and prioritise pedestrians
Shared path along Bennelong Bridge has high conflict potential for pedestrians and cyclists due to high pedestrian and cyclist volumes	Opportunity to provide separated facilities for pedestrians and cyclists consider exempting cyclists from t-way restrictions in the short term
Limited pedestrian storage at key intersections could result in pedestrians waiting in unsafe areas of the intersection	Investigate options to widen footpaths
Limited facilitated pedestrian crossings along Lyons Road potentially encourages jaywalking	Investigate opportunities for additional pedestrian crossings

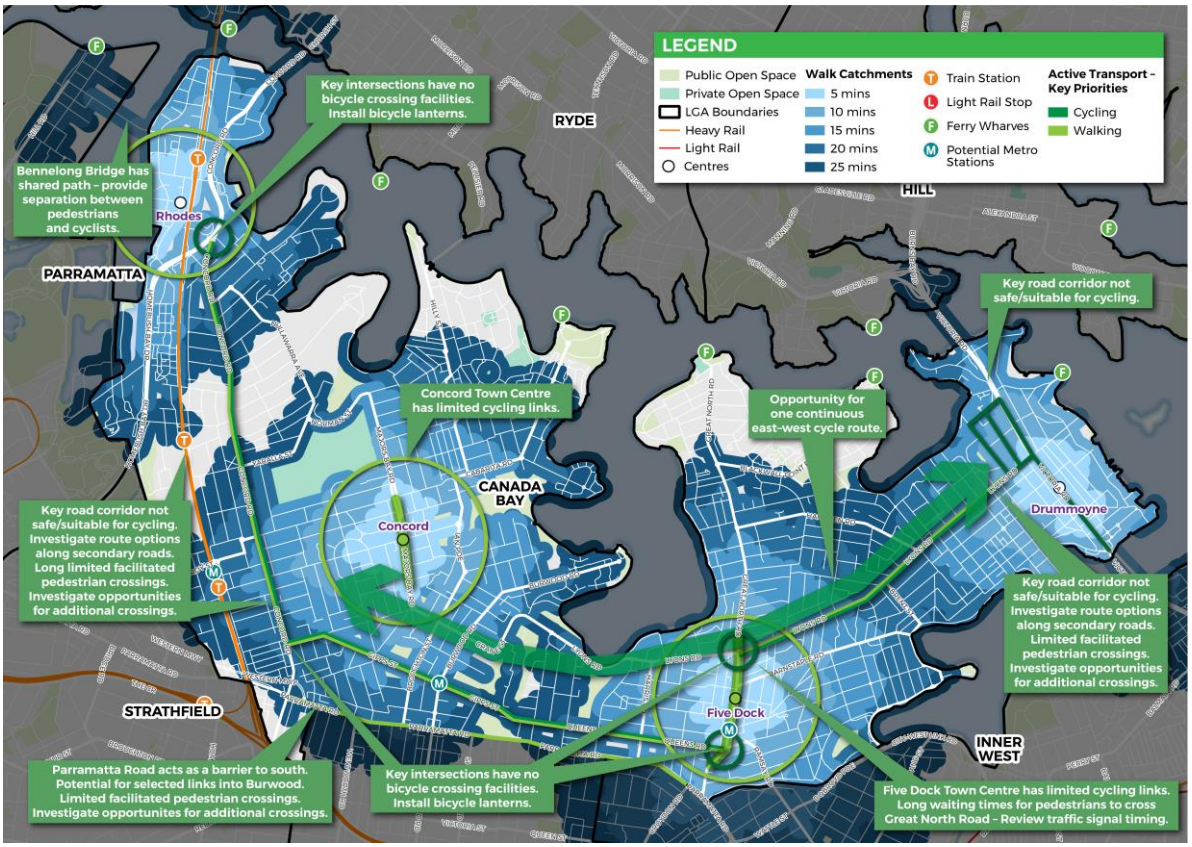
5.2.2. Cycling

Table 5.3: Issues and opportunities related to cycling across Canada Bay LGA

Issue	Opportunity
Lack of continuous and dedicated east-west connection	Identify one (priority) route between Concord Road and Victoria Road and provide cycling infrastructure as required
Parramatta Road acts as significant barrier to south	Provide selected links across Parramatta Road into Burwood Bike Network
Key intersections have no bike crossing facilities	Install bike lanterns at key intersections
Limited wayfinding and network publication	Create an overall network that links into neighbouring LGAs and is clearly displayed across LGA including wayfinding and signage
Five Dock town centre lacks cycling facilities and connections	Introduce links between Five Dock town centre and Abbotsford/ Drummoyne/ Concord/ Parramatta Road (City)
Concord town centre lacks cycling facilities and connections	Introduce links between Concord and Rhodes/ Five Dock/ Strathfield

Issue	Opportunity
Lyons Road, Queens Road, Gipps Street, Concord Road and Victoria Road are key road corridors not suitable for cycling due to a combination of limited road corridor width, high traffic volumes, existing bus corridors and high parking demand	Identify secondary road network for suitable cycle routes
Shared paths in green spaces/ parks have conflict potential due to narrowness	Widen shared paths or separate pedestrian and cycling spaces.
Bennelong Bridge in Rhodes has shared path and cyclists not allowed in bus lane.	Provide dedicated cycling space
Lack of walking and cycling facilities on William Street	There is an opportunity for a walking and cycling path along William Street as it is in the vicinity of the Barnwell Park Golf Club

Figure 5.6: Issues and opportunities for active transport (Walking and Cycling)



5.2.3. Bus

Table 5.4: Issues and opportunities related to the bus network & services across Canada Bay LGA

Issue	Opportunity
Victoria Road performs a significant role within the bus network, servicing areas away from train lines. The peak hour bus lanes provide a degree of bus priority, but speeds remain low. Buses at Victoria Road are close to capacity in some areas. In Drummoyne during the morning peak hour, over 20% of services are standing-room only with some of these exceeding total capacities and unable to pick up additional passengers. Westbound services along Victoria Road generally experience higher delay than eastbound services at all times of the day.	Potential reprioritisation of travel modes e.g. extend hours of the bus lane or clearway. Future transport identifies public transport improvement for Victoria Road to be carried out within the 0-10 year timeframe. This is expected to include measures such as bus lanes, bus priority at interceptions and bus stop placement.
Unreliable bus travel time from Five Dock to Lyons Road through First Ave, Henley Marine Dr and Brent Street	Potential stop relocation or extending no-stopping zones at intersections
Low bus speeds with the worse performance along Lyons Road	Work with TfNSW regarding bus lane improvements or clearways along Lyons Road
Low journey time reliability along Ramsay Road	Potential for increased kerbside restrictions along sections of Ramsay Road to improve traffic flow and reduce delay.
Unreliable / slow bus travel through Paramatta Road	Potential for dedicated bus lane along Parramatta Road corridor or alternate mode/s of rapid mass public transport
There is poor bus access from peninsular areas to the Concord West and North Strathfield train stations.	Potential for more extension of On Demand bus services might address the issue. Currently on demand services connects Rhodes to Mortlake/ Cabarita service via Concord Hospital seven days a week. On weekdays, during off peak times, this service will be extended to Five Dock.
Low bus speed ratio along the corridor with the worst performance on Great North Road (from Parramatta Road to Fairlight Street), Great North Road/ Ramsay Street (from Lyons Road to Fairlight Street), Lyons Road (from Janet Street to Victoria Road), and Baywater Street/ Marlborough Street/ West bound Street (from Lyons Road to Victoria Road). Low journey time reliability on Gipps Street/ Queens Road/ Fairlight Street (from Burwood Road to Ramsay Road) and Great North Road (from Parramatta Road to Fairlight Street)	Support access to potential future mass transit in segment Patterson Street/ Gipps Street (from Concord Road to Burwood Road), Gipps Street/ Queens Road/Fairlight Street (from Burwood Road to Ramsay Road), Great North Road (from Parramatta Road to Fairlight Street) and Great North Road (from Lyons Road to Fairlight Street) including active transport and bus access Consider opportunities to re-focus bus routes to feed into potential future mass transit at Five Dock and Kings Bay precincts in segment Lyons Road (from Great North Road to Janet Street) and Lyons Road (from Janet Street to Victoria Road) Work with TfNSW regarding options to improve bus movement on Lyons Road on approach to Victoria Road in Segment Lyons Road (from Janet Street to Victoria Road) Investigate potential for improvements to bus movement at the intersection of Ramsay Street and Wattle Street
Low level of public transport priority on Parramatta Road	Potential for dedicated bus lane along the Parramatta Road

5.2.4. Ferry

Table 5.5: Issues and opportunities related to the ferry network & services on Parramatta River

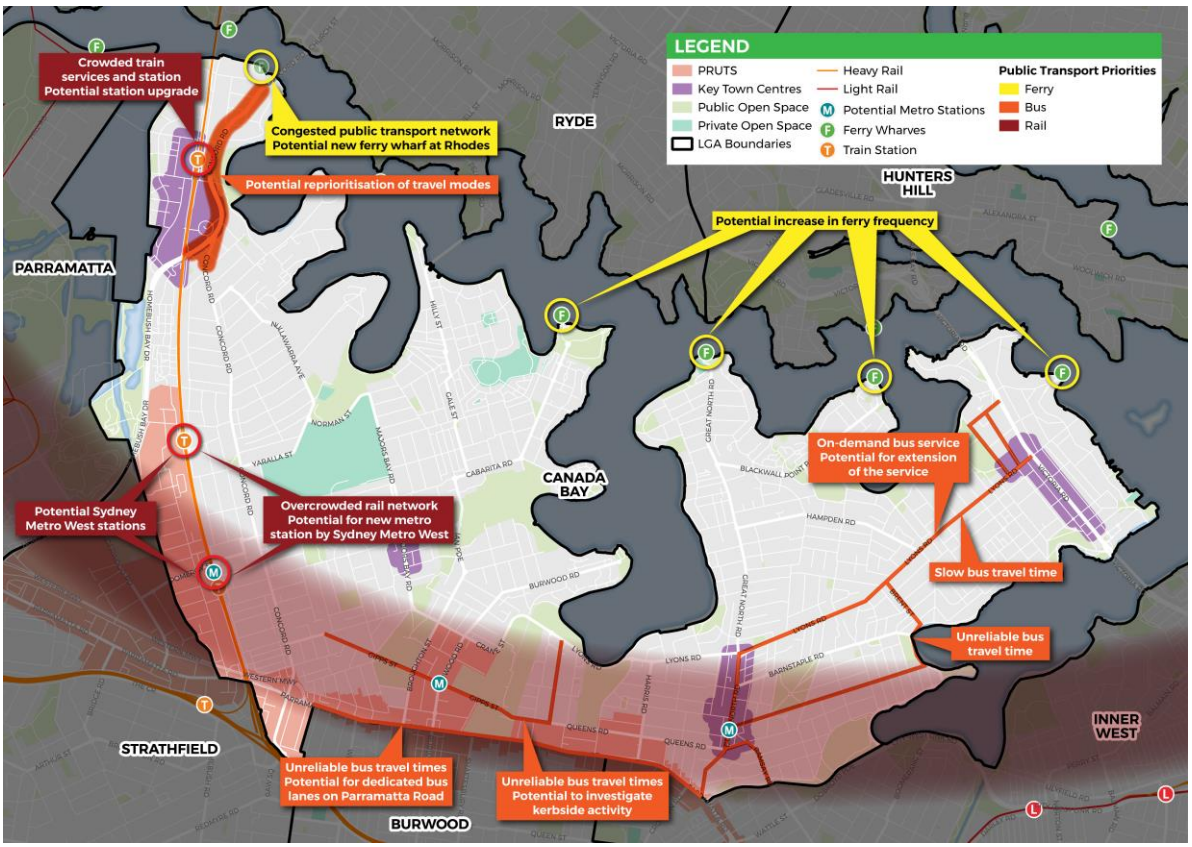
Issue	Opportunity
Poor north-south connection at Rhodes to the northern LGAs	Potential for new wharf at Rhodes based on draft Rhodes precinct plan
Ferry services on Parramatta River run at six services per hour in the AM peak hour and four per hour towards Parramatta in the PM peak hour.	Potential for increasing ferry frequency

5.2.5. Rail

Table 5.6: Issues and opportunities related to the rail network & services across Canada Bay LGA

Issue	Opportunity
Overcrowded rail network on Northern T1 generally especially at North Strathfield, Concord West and Rhodes	There is an opportunity for Rhodes train station upgrades based on draft Rhodes district plan. Station capacity improvements. Options include upgrade to the existing station concourse and/ or a new northern concourse and platform extension. Potential stations of Sydney Metro West that might will be located at the Concord West or North Strathfield

Figure 5.7: Issues and opportunities on public transport



5.2.6. Road

Table 5.7: Issues and opportunities related to the road network across Canada Bay LGA

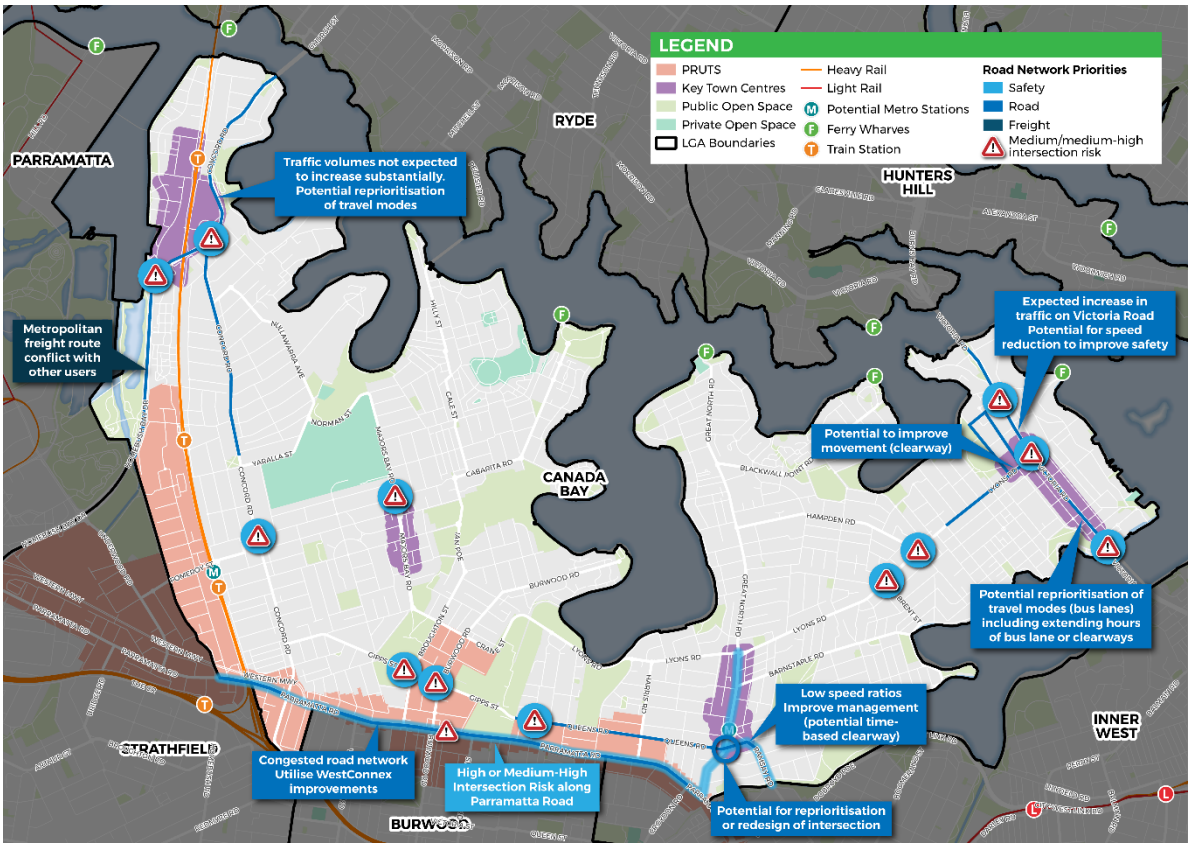
Issue	Opportunity
There are high crash rates (per km per year) along Victoria Road, including a high number of crashes at the intersection with Lyons Road.	Investigate high risk locations for safety improvements
Lyons Road and Westbourne St intersection operates at or near capacity during weekend and weekday peak periods Access issues to Birkenhead Point can result in operational issues on Victoria Road during weekend peaks	Investigate extending no-stopping distances from intersections
Above average fatal and serious injury crash rates, as well as casualty crashes, along Victoria Road. Speed was the primary contributing factor in all crashes except for those in on Great North Road (from Parramatta Road to Fairlight Street) There were significant pedestrian crashes at the Great North Road/ Ramsay Street intersection.	Review pedestrian crashes at Lyons Road Victoria Road to gauge effectiveness of recent pedestrian safety improvements in Lyons Road from Janet Street to Victoria Road Review road safety conditions at the Victoria Road and Lyons Road intersection Investigate the cause and develop strategies to address road crashes at the following locations: • Gipps Street between Broughton Street and Burwood Road Intersection of Fairlight Street and Ramsay Road
Traffic movement on major roads.	New weekday clearways and parking changes on Lyons Road were announced by RMS. These clearways are no stopping 10am to 3pm Monday to Friday and 9am to 6pm weekends and public holidays in Drummoyne, Five Dock and Victoria Road. There is an opportunity of expanding clearway times.

5.2.7. Freight

Table 5.8: Issues and opportunities related to freight across Canada Bay LGA

Issue	Opportunity
There are industrial and commercial land uses adjacent and in the vicinity of Parramatta Road	In the vicinity of Canada Bay, WestConnex will provide an opportunity to transfer the majority of heavy vehicle traffic underground and improve surface conditions for other vehicle types.

Figure 5.8: Issues and opportunities on road networks



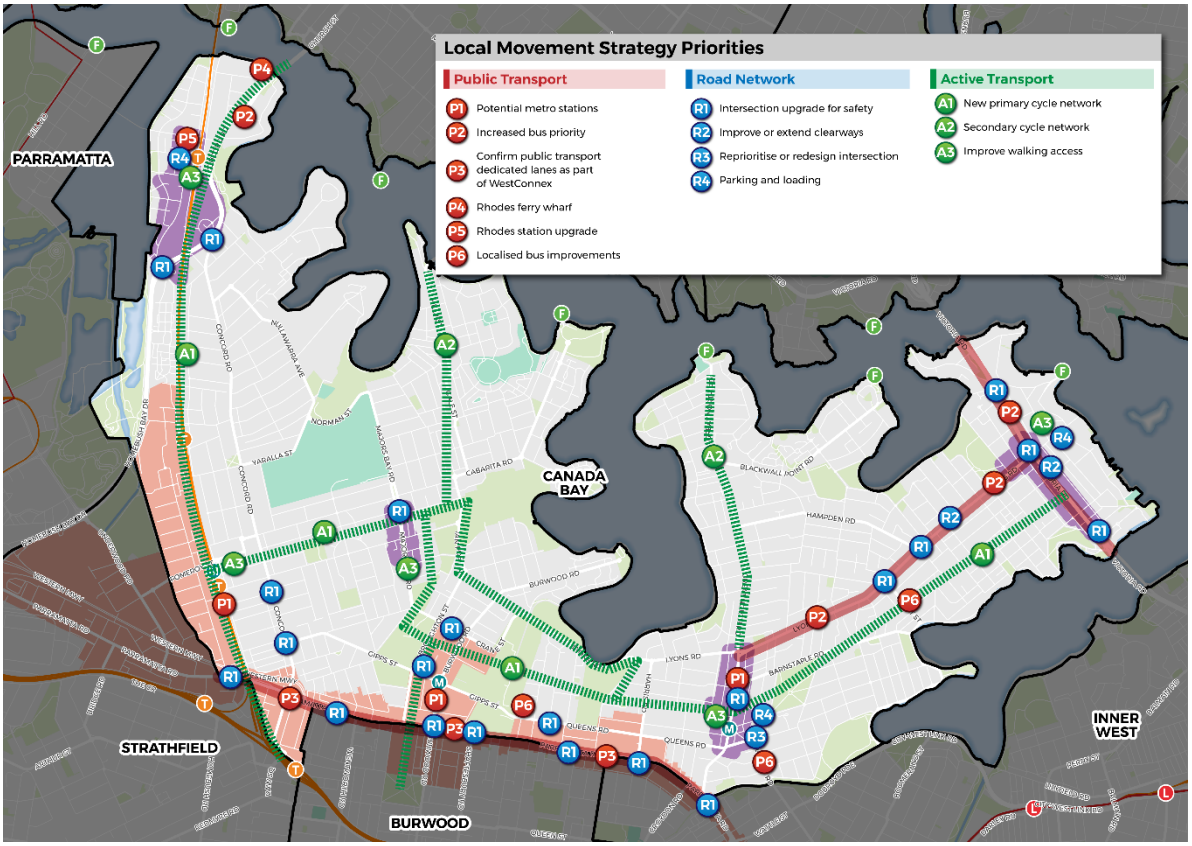
5.2.8. Parking

Table 5.9: Issues and opportunities related to parking across Canada Bay LGA

Issue	Opportunity
Off-street parking is generally not adequate during retail peak periods and spills out onto on-street parking, especially for larger shopping centres and developments. This occurs in particular within the Five Dock town centre, Concord town centre (along Majors Bay Road), Drummoyne town centre (west of Formosa Street) and Birkenhead Point.	Possible changes to DCP and LEP to provide more car parking within local centres and new commercial developments
A number of underground car parks are poorly designed and do not seem to be compliant with AS2890.1:2004 which can cause visitors/ users to park on-street within centres such as Five Dock and Drummoyne instead, which already experience high occupancy rates from customers for other businesses and residents.	Introduction of more stringent car park design compliance checks at the planning proposal level to ensure compliance later in subsequent DA stages.
On-street parking on larger movement corridors such as Concord Road, Victoria Road and Lyons Road out of peak periods and weekends causes congestion along adjacent lanes as a result of side friction.	Possible introduction of clearway conditions to limit on-street parking along higher order roads.

Issue	Opportunity
Birkenhead Point car park is inefficient and causes congestion along Henley Marine Drive and Renwick Street.	Introduction of better car park management systems to reduce car park recirculation as well as increased flow rates at exit gates.
Ensure an appropriate mixture of on-street parking restrictions are in place to balance competing parking demand. Investigate opportunities to encourage active and public transport options as opposed to private car usage.	Possible changes to parking restrictions near centres to encourage higher parking turnover and reduce long term parking.

Figure 5.9: Issues and opportunities summary



6. FUTURE DEMOGRAPHIC AND TRAVEL PATTERN CHANGES

06

6.1. Future Population and Employment

6.1.1. Population

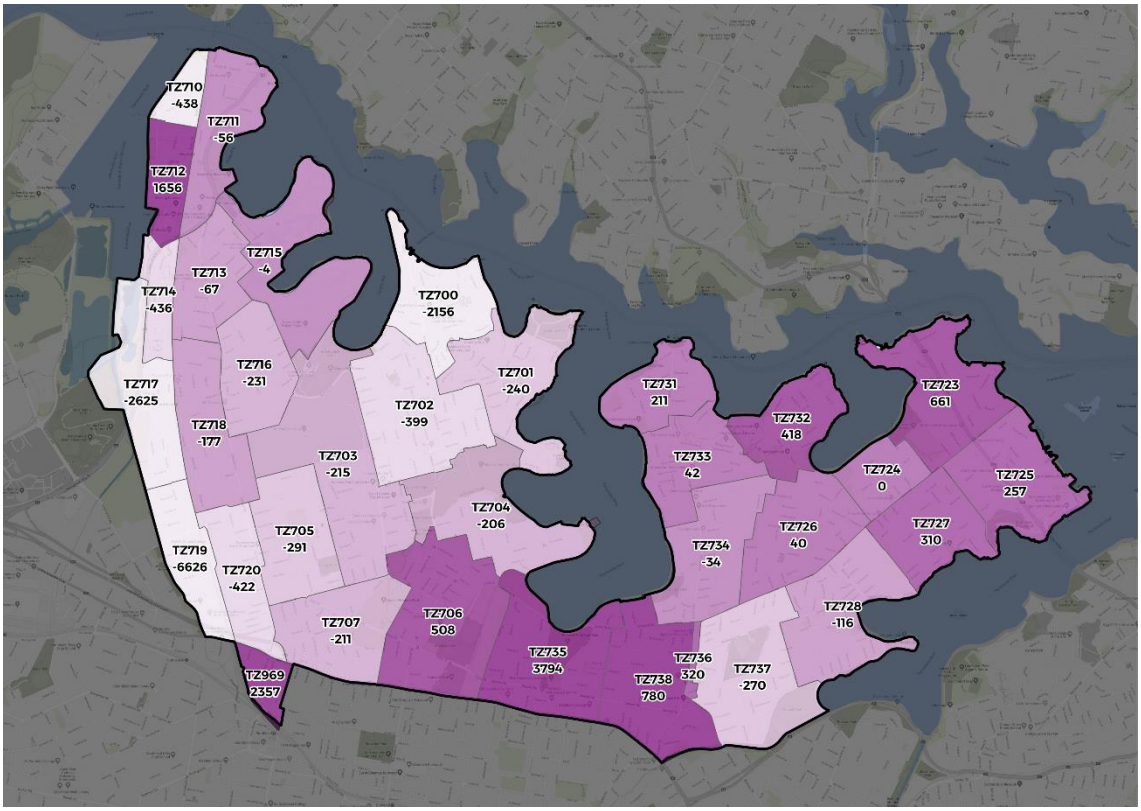
Figure 6.1 and Figure 6.2 demonstrate population based on SGS' figures for different dwelling types were provided which Mecone converted into the required modelling format known as 'population in occupied private dwellings', a separate input from total dwelling potential.

Mecone converted SGS' figures to population based on the following assumptions:

- A 98% occupation rate (2% of dwellings are unoccupied)
- 2.8 persons per detached dwelling, 2.5 persons per semi-detached dwelling, 2.2 persons per apartment.

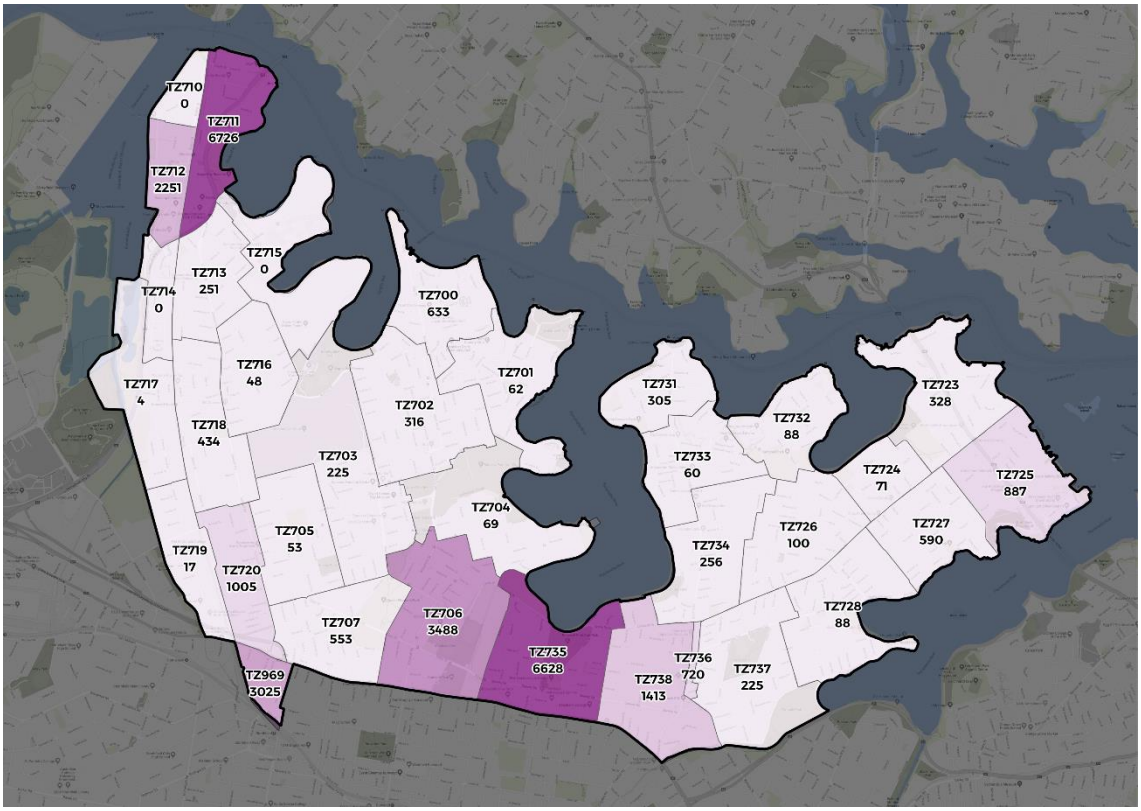
The State based projections are later referred to as the Standard Case and the modified projections are referred to as the Project Case.

Figure 6.1: Population departure from TZP16 (v1.3)



Source: Mecone.

Figure 6.2: Distribution of population to 2036



Source: Mecone.

6.1.2. Employment

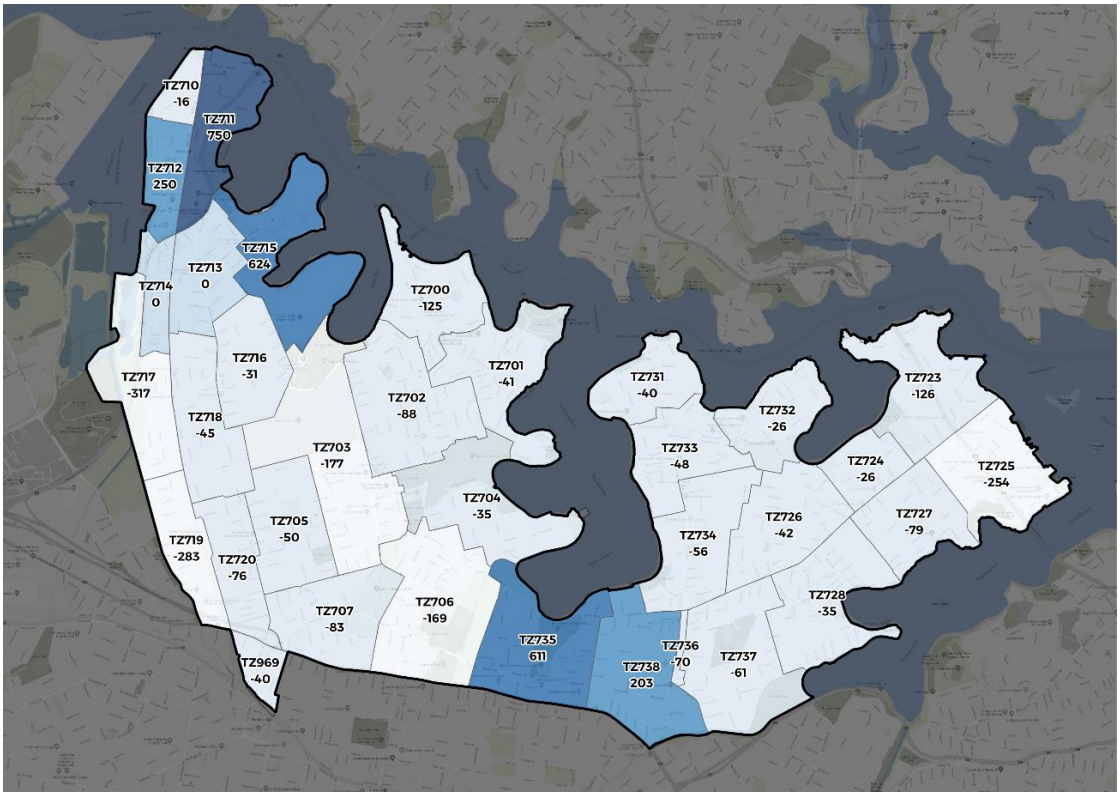
Figure 6.3 and Figure 6.4 show the preliminary numbers of likely distribution of employment growth within the LGA to enable modelling of traffic impacts.

Employment projections were needed for modelling prior to the finalisation of SGS' employment strategy work. Therefore, advice was provided by Mecone as to an assumed future distribution of employment growth under a 'business as usual' or base case scenario. The broad assumption in undertaking this was to provide employment forecasts that incorporated existing distribution patterns of employment, plus incorporating known major planning strategies. Mecone reviewed a range of data including ABS Census, existing State based forecasts, District Plans, DPE's Rhodes Precinct Plan, and the Parramatta Road Urban Transformation Strategy (PRUTS).

To undertake this work, Mecone used existing State based travel zone projections to 2036 ('TZP16') as a starting point to determine where any amendments might be required based on more recent information. Overall, Mecone determined that the need for amendments to the existing TZP16 projections were minor, and made only two broad changes. This ensured maintaining overall levels of jobs growth in the Canada Bay LGA to 2036 as projected under TZP16, whilst redistributing that growth by:

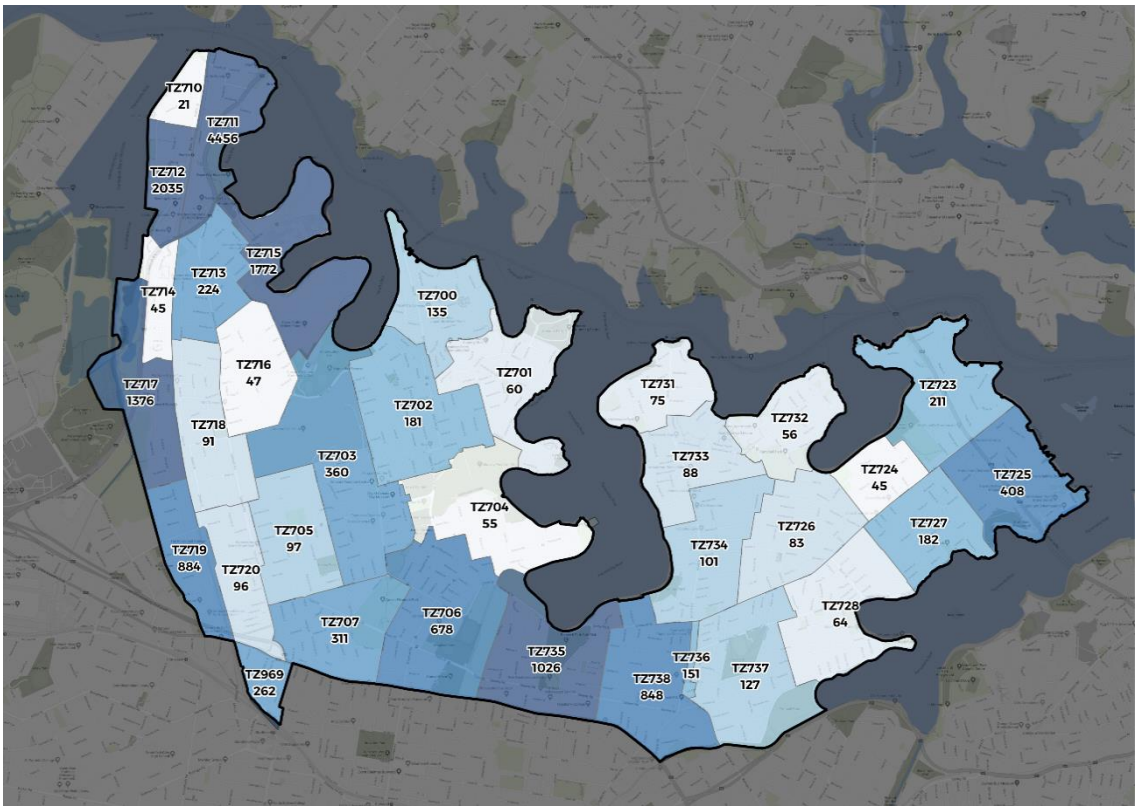
- Ensuring the District Plan targets of 8,300 new jobs at Rhodes were captured, by increasing the projections in the relevant Travel Zones by around 1,600 jobs in 2036.
- Increasing jobs by around 800 jobs in the vicinity of the Kings Bay PRUTS Precinct, to better align with the projections and densities proposed under that strategy.

Figure 6.3: Employment departure from TZP16



Source: Mecone.

Figure 6.4: Distribution of employment growth to 2036



Source: Mecone.

6.2. Assessment of Travel Pattern Changes

6.2.1. Existing Travel Characteristics (2016)

Figure 6.5 shows outcomes of analysis using the Sydney Strategic Transport Model (STM) based on different travel modes for 2016 which illustrate the current travel share mode within the LGA. It can be seen that car usage is particularly high at 76%. Walking accounts for a further 13%, with public transport only being used for 7% of all trips in the LGA.

Figure 6.5: Existing travel modes (2016)

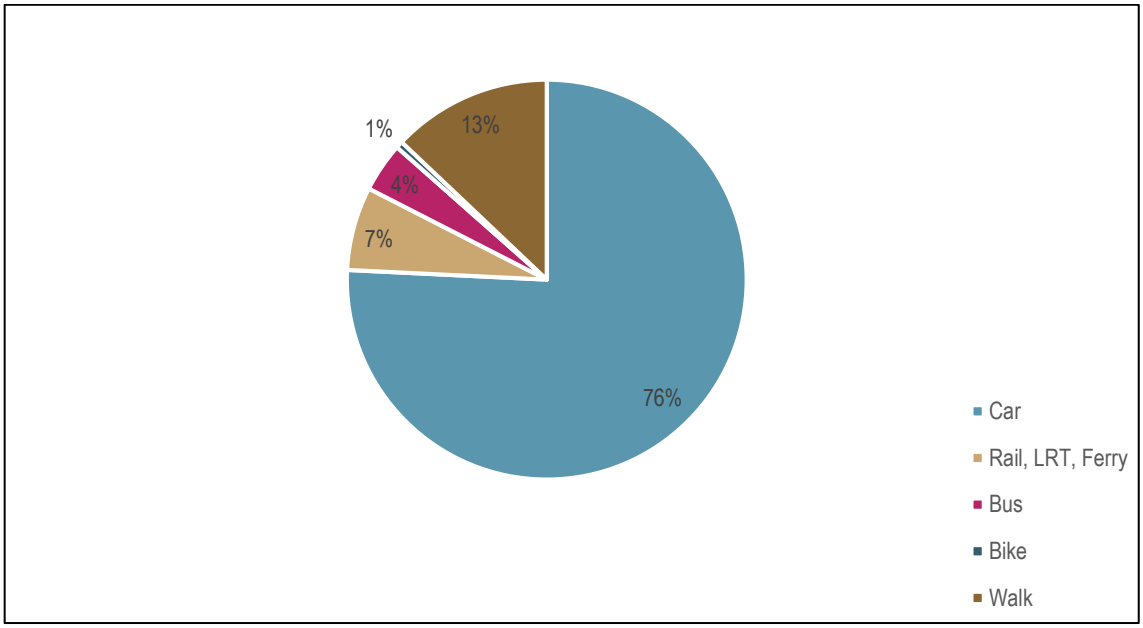


Figure 6.6 illustrates the distribution of travel modes by trip purpose. It can be seen that there are minor differences between car travel for non-discretionary and discretionary trips. Non-discretionary trips are defined as trips needing to be made at a certain time, such as trips to work and school, while discretionary trips include activities such as shopping. In contrast to the trips by car, there is a significant difference between trips made by walking with non-discretionary and discretionary purposes, which indicates more local trips for activities such as walking to the local shops.

Figure 6.6: Travel mode by trip purpose (2016)

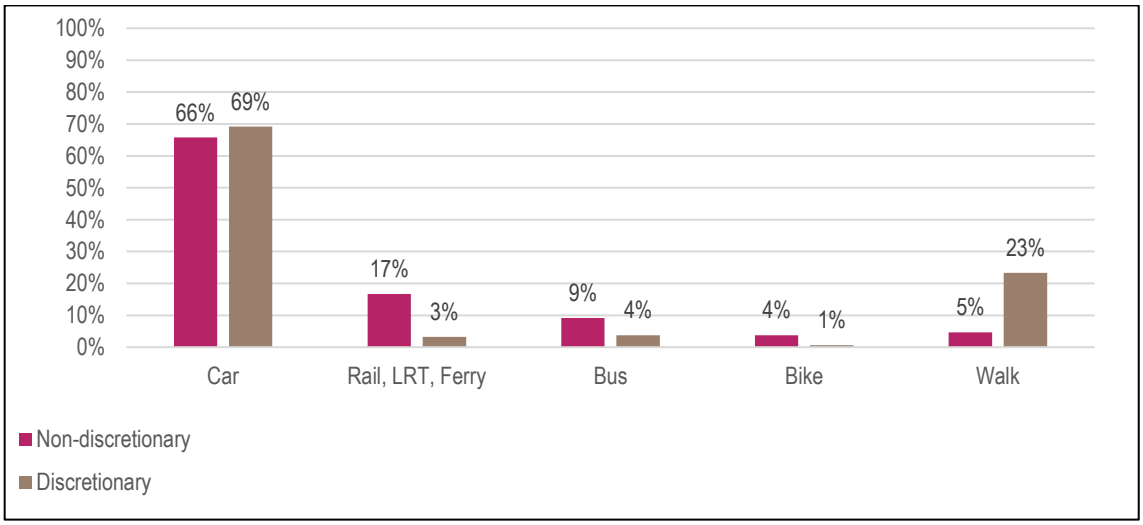
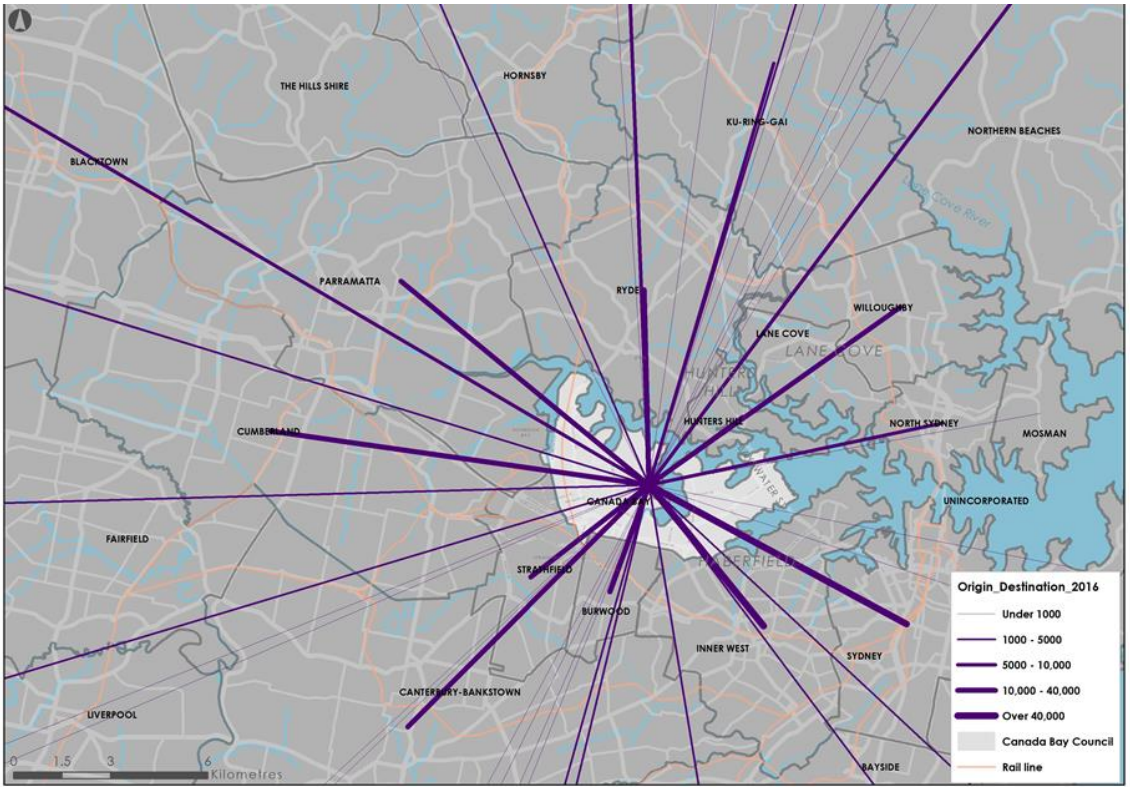


Figure 6.7 shows the origins and destinations of all journeys from/to the LGA. It can be seen that the Sydney CBD has the highest number with more than 40,000 trips. In general, adjoining LGAs have more trips than those further afield.

Figure 6.7: Origin-destination pairs to other LGAs (2016)



6.2.2. Future Travel Characteristics in 2026

Figure 6.8 and Figure 6.9 show travel by mode and purpose respectively based on the outcomes of STM for 2026 when considering forecast Project Case population and employment for 2026.

It can be seen that based on current trends the travel mode share in 2026 will not change considerably in comparison with 2016 as the STM assumes similar travel behaviour in future years.

Figure 6.8: Future travel modes (2026 Project Case)

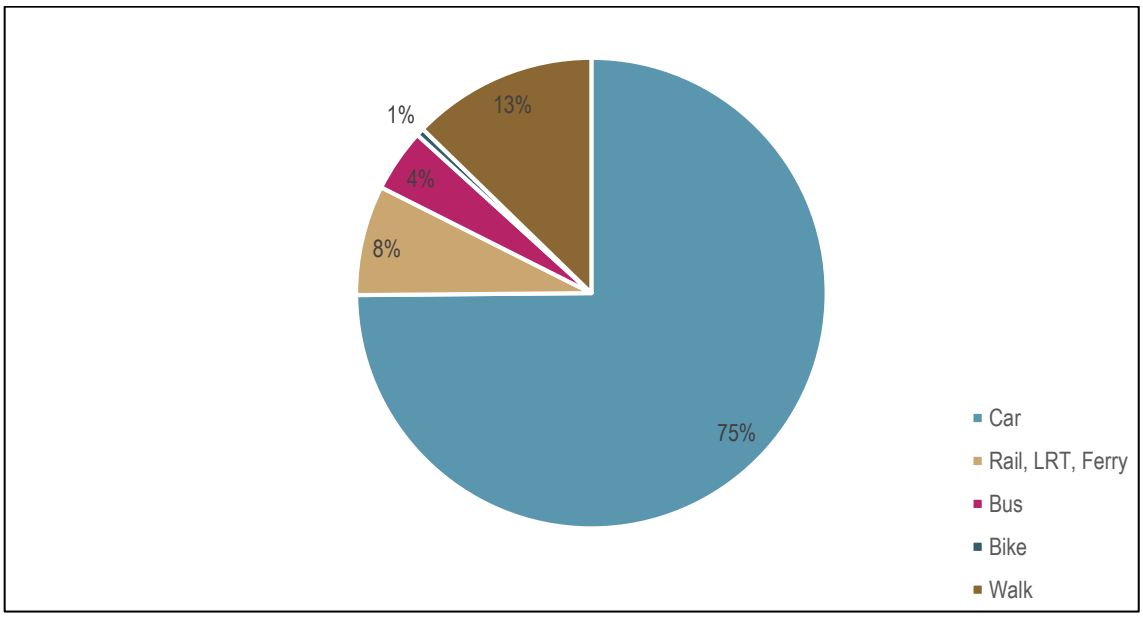
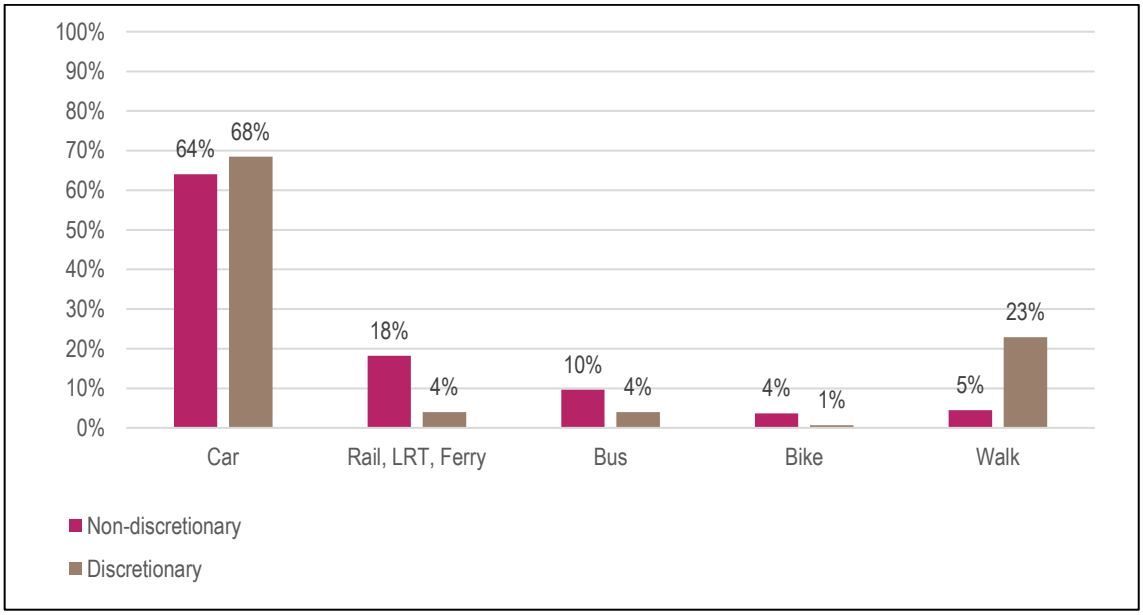


Figure 6.9: Travel mode by trip purpose (2026 Project Case)



6.2.3. Future Travel Characteristics in 2036

Figure 6.10 and Figure 6.11 show the expected travel mode shares based on travel purpose for the 2036 Project Case. The figures do not have considerable differences within the study area.

Figure 6.10: Future travel modes (2036 Project Case)

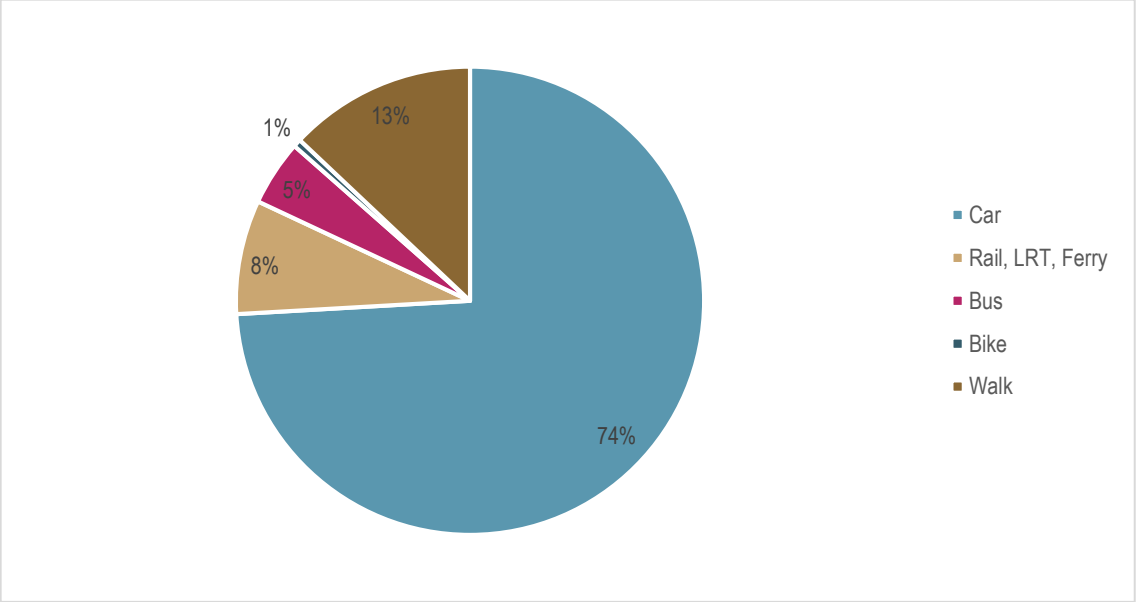


Figure 6.11: Travel mode by trip purpose (2036 Project Case)

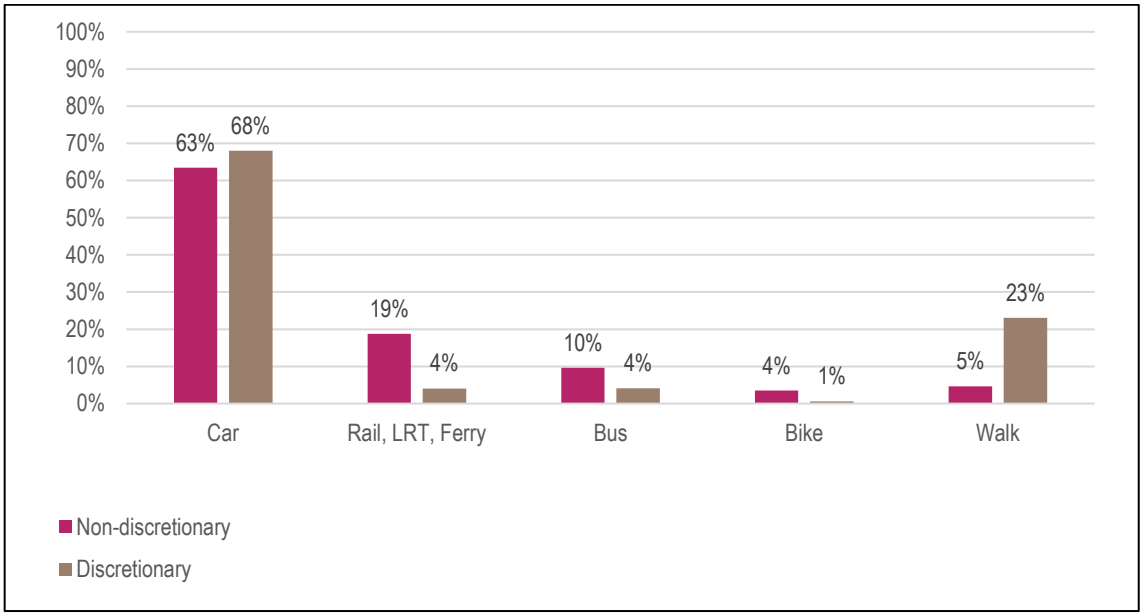
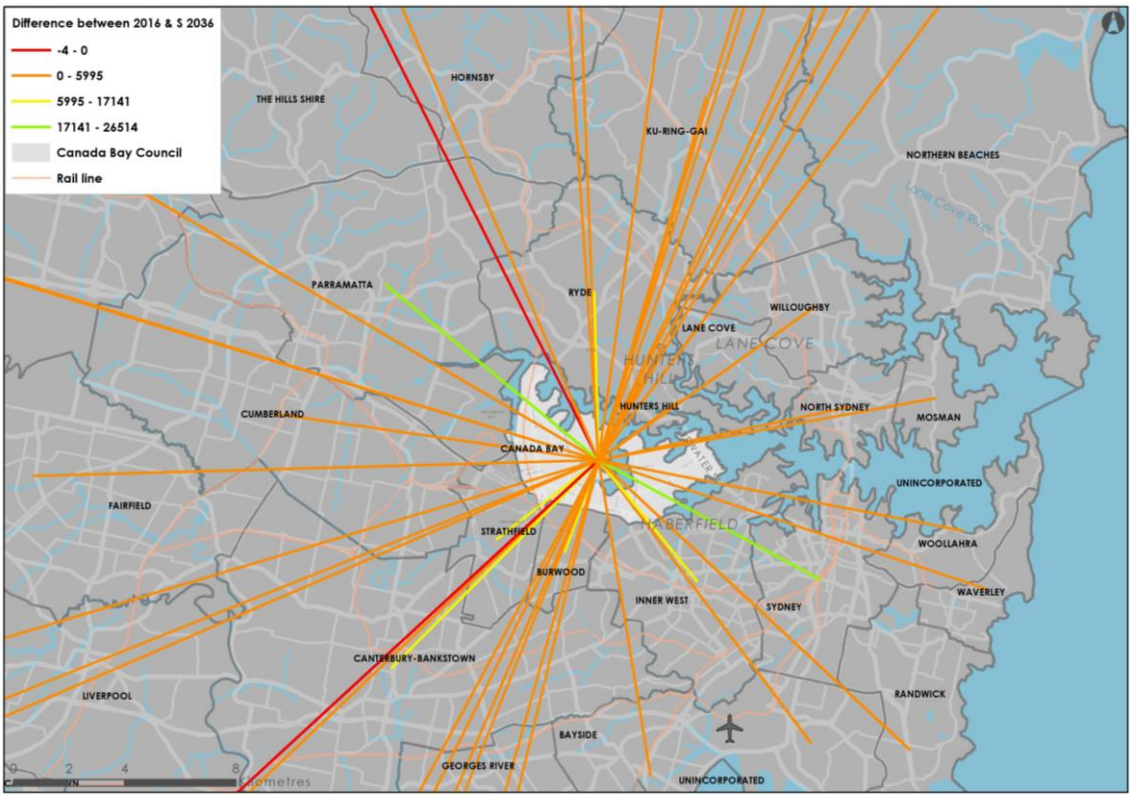


Figure 6.12 shows different travel numbers generated to/from Canada Bay between 2016 and 2036 for the Project Case. It can be seen the number of trips to and from Canada Bay to Sydney CBD and Parramatta CBD respectively will increase during the 20 years. It is expected to have more trips to /from Ryde, Inner West, Burwood, Strathfield and Canterbury-Bankstown in 2036.

Figure 6.12: Origin-destination pairs to other LGAs (2016-2036)



6.3. Emerging Transport Trends

6.3.1. Overview and Introduction

Initial research indicates that the evolution of transport technologies will likely generate a broad spectrum of human responses. and TfNSW has developed four different scenarios, which are not mutually exclusive. Rather, they represent 'use-cases' that are likely to co-exist. While these scenarios are the most likely to eventuate, others cannot be ruled out. It also remains unclear which, if any, scenario will become the dominant paradigm for future mobility. Consequently, strategies are needed that accommodate this end-state uncertainty and enable multiple potential outcomes.

Scenario 1: My (autonomous) car is (still) king: Individual point-to-point trips in personally owned vehicles.

- Customers have access to more personal point to point transport options using connected and automated vehicles that are increasingly customised to their needs (e.g. cars, pods).

Scenario 2: We're all in this together: Aggregated demand, shared-use and network optimisation.

- Customers access a broad range of automated (shared and personal) on-demand and mass transport modes with dynamic demand management and integrated payments.

Scenario 3: Super-commuting with public, active and shared transport: A lifestyle based on mass transit, flexible and active transport.

- Customers use an extended public transport, active and flexible shared-service network. Autonomous vehicles are for specific high-productivity uses only.

Scenario 4: Why travel so much: Technology reduces demand for mobility.

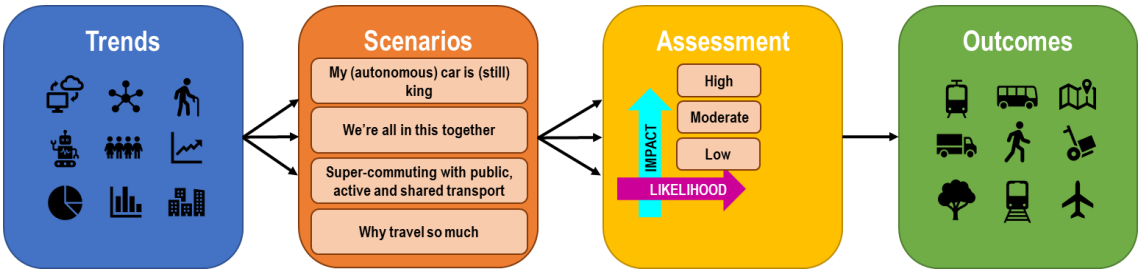
- Customers choose where they wish to work, shop, learn, socialise and be entertained. Technology enables travel to be minimised as services are 'delivered' in or near the home.

6.3.2. Assessment Approach

Technology has an ever-growing pace in developing tools which are shaping the future of transport and mobility. Local governments might prepare to address emerging demands and use this opportunity to increase life quality of the communities within the suburbs. In this respect, GTA has developed a decision-making support tool. This tool includes a list of future trends in transport and mobility. The trend list was prioritised according to the Canada Bay LGA context considering all stakeholder meetings.

In addition, GTA considered TfNSW's "Future Transport Technology Roadmap 2016" to categorise the assessment process based on the four identified scenarios. The assessment included considering the likelihood and impact of each characteristic depending on the scenario (scored and categorised as high, moderate or low). Then based on the scenarios, preliminary outcomes were identified for Canada Bay to inform the development of strategic objectives and action plans for future public and active transport, the road network and freight.

Figure 6.13: GTA Assessment tool for future trends



6.3.3. Preliminary Outcomes for Canada Bay

This section presents outcomes for Canada Bay which consider different TfNSW scenarios. Preliminary findings based on the assessment process which have the potential to impact the Local Movement Strategy for Canada Bay are summarised below.

Table 6.1: Preliminary Outcomes for Canada Bay (2036)

Key Characteristic	Preliminary Outcomes
Decentralised Development (across Sydney's three cities)	• Increased travel demand to Parramatta
Connected and Automated Vehicles (CAVs)	• Low mix of CAVs/ non-CAVs, some increase in discretionary trips, additional vehicle circulation • Less available road space for vehicles
Intelligent Transport Systems (Smart Motorways)	• Increased throughput of motorways
Shared Mobility (car sharing)	• More car sharing • Fewer privately owned cars than would otherwise be the case • Later and lower take up of driver's licences
On-demand transport (buses)	• Increases access to local services, potential decline in regular bus route patronage
Smart Parking Management	• Less need for off-street parking with more efficient utilisation of existing car parks • Better utilisation of car parks, reduction in vehicle circulation
Mass Transit (high priority bus lanes and new metro lines)	• Increased public transport capacity, and bus, cycle and walking networks support access to new stations

Key Characteristic	Preliminary Outcomes
	• Kerbside lanes used for higher priority use • Reallocation of road space and kerbside parking restrictions • Increase in bicycle use, reduction of car ownership
Reclaiming public spaces	• More local trips by walking and cycling • Increase in shorter, more local trips • Opportunity for more outdoor spaces, cafes etc
Road Pricing	• Depending on the type of pricing, it could: ○ Increase use of non-toll roads ○ Decrease overall car usage ○ Make additional funds available to support other travel modes.
Improvement of urban freight logistics	• Slight shift of freight to off-peak periods • Increase consolidation and reduce freight trips
Automated drones/ deliveries	• Parcel delivery by drone has the potential to reduce road-based delivery operations. • Will require regulation.
Electric vehicles	• More vehicle charging stations required (either private or public stations)
Ageing Population	• Investment on more accessible and walkable streets • Increased short trips • Increasing opportunity for On-demand trips
TOD (development around major public transport nodes)	• Development concentrated around nodes reduces car dependence and overall car trips • Network redundancy more prevalent • Less requirements for parking
Flexible Work Arrangements and Tele-working	• Increase in non-work and non-peak hour trips • Work from home, reduce commuting trips one day a week • Modified hours shift the peak over a longer period • Increased access to local shops • Possible decline in travel demand with benefits for all travel modes

6.4. Implications

6.4.1. Key Issues

Reduce car use

In Canada Bay, the road network is already congested along major corridors in peak periods and more car-based travel is not a desirable outcome. Whilst it is important to manage car ownership to ensure that Canada Bay is as sustainable, liveable and equitable as it can be, it is also important to not disconnect people by taking away their only means of access. The ability to reduce the mode share for car trips is both related to managing demand and modifying travel behaviour.

Increase active transport use

The proportion of walking and cycling trips in Canada Bay is quite low, partly as a consequence of a lack of dedicated cycling facilities and major roads creating barriers for easy walking and cycling. The terrain, topography and safety also play a role in why people do not walk and cycle more. To increase the modal share of walking and cycling in the LGA, dedicated facilities, such as pedestrian and cycling paths, end of trip facilities and well-planned and designed wayfinding elements are required. Leverage public transport improvements

Despite being close to the Sydney CBD, the overall percentage of trips by public transport is low in comparison to other similar LGAs. The majority of the public transport corridors (rail and high frequency buses) skirt the edges of the Canada Bay LGA with little penetration. Bus routes within the LGA suffer from indirect and often infrequent services. The potential introduction of Sydney Metro West will be a catalyst for changing the focus of the public transport network in the LGA.

Increase local trips

It was also found that Canada Bay has a very low level of 'trip containment'; i.e. the proportion of residents working in the area. This means that the transport network must accommodate a high proportion of people leaving Canada Bay every day for work, adding additional pressure on the transport network. The creation of more employment opportunities within the LGA would encourage people to work locally and improve the level of self-containment. To encourage more people to walk and cycle, the local conditions will need to be continually improved. When travelling locally to school, shops or public transport services, walking or cycling should be the first option that comes to mind.

6.4.2. Mode Share Targets

Based on these implications, the following mode share targets are proposed as targets for Canada Bay. It should be noted that these targets are ***without*** Sydney Metro West. Should Sydney Metro West proceed with stations in Canada Bay, it would be expected that the public transport mode share would increase substantially.

Table 6.2: Canada Bay Mode Share Targets (2026 and 2036)

Mode	2016	2026	2036
Private vehicle	76%	70%	60%
Rail, Light Rail, Ferry	7%	8%	10%
Bus	4%	5%	5%
Cycling	1%	2%	5%
Walking	12%	15%	20%

7. ACTIONS

07

7.1. Overview

Actions are prioritised for the short term (within three years), medium term (within the next five years) and for the long-term when the developments currently being planned have been completed. These Actions were developed based on previous document reviews, data analysis, ideas from stakeholder discussions, community engagement survey results and our local and interstate experience and research.

Figure 7.1: Process

The Strategic Objectives were identified as an outcome of the issues, challenges and opportunities identified early in the LMS and set out to achieve the overarching vision and objectives for Canada Bay. A summary at the start of each section will identify the key directions we propose to pursue going forward.

Each of the Actions is addressed by one or more Strategic Objectives. These Actions present direct, practical initiatives which Council can own and bring to life. For the most part, these actions establish decision-making principles for where and how changes will occur, rather than nominating specific locations.

7.2. Active Transport

7.2.1. Strategic Objectives

Provide safe walking and cycling facilities by investigating new facilities

To support walking and cycling as a day-to-day choice for short trips, it is important to provide new facilities that make active transport more accessible and safer. Where possible, walking and cycling should have their own spaces that are not shared with other transport modes. In areas of high pedestrian and bicycle volumes, street configurations should be amended to reflect this.

Investigate safe cycling routes within one kilometre of schools through new or improved facilities

Walking and cycling to school has great benefits for students as it encourages a healthy and active lifestyle. It is crucial to support walking and cycling to school by providing safe facilities at all schools as well as along the key access routes. This includes facilities such as signalised pedestrian/bicycle crossings and zebra crossings, separated cycleways, wider footpaths and bicycle parking on the school grounds.

Provide a legible, connected and accessible cycle network through completing missing links

The current bicycle network in the City of Canada Bay lacks continuous cycle routes across the LGA. Providing a network of priority links will help to make cycling safer, more accessible and a more attractive mode choice for journeys within the City of Canada Bay. The key routes would be supported by a secondary network of local routes and links to encourage cycling for local trips. A wayfinding system should be developed to make the bicycle route network legible and easy to navigate.

Improve walking and cycling connections to town centres, train stations and future Metro stations

Key town centres within the City of Canada Bay have the potential for High Pedestrian Activity Areas (HPAA) schemes where speed limits are reduced to 40km/h. In HPAA, pedestrian and cyclist spaces are prioritised over general traffic spaces to help reduce traffic and improve safety. The introduction of Metro stations in the City of Canada Bay will provide an opportunity to connect with the local centres and provide interchange facilities for active transport modes.

More efficiently integrate transport modes at public transport interchanges

Walking and cycling connections to public transport will encourage greater public transport use. Direct, flat (where possible), open, aesthetically pleasing and safe connections influence the attractiveness of using public transport.

Older public transport stations and stops often do not provide direct and well signed pedestrian and cyclist access routes. This means areas within a five to 10 minute walk to stations and major bus stops should progressively develop a good coverage of high quality footpath and cycleway facilities. This should apply to existing facilities and be embedded within the design of new facilities, such as major bus stops in new locations.

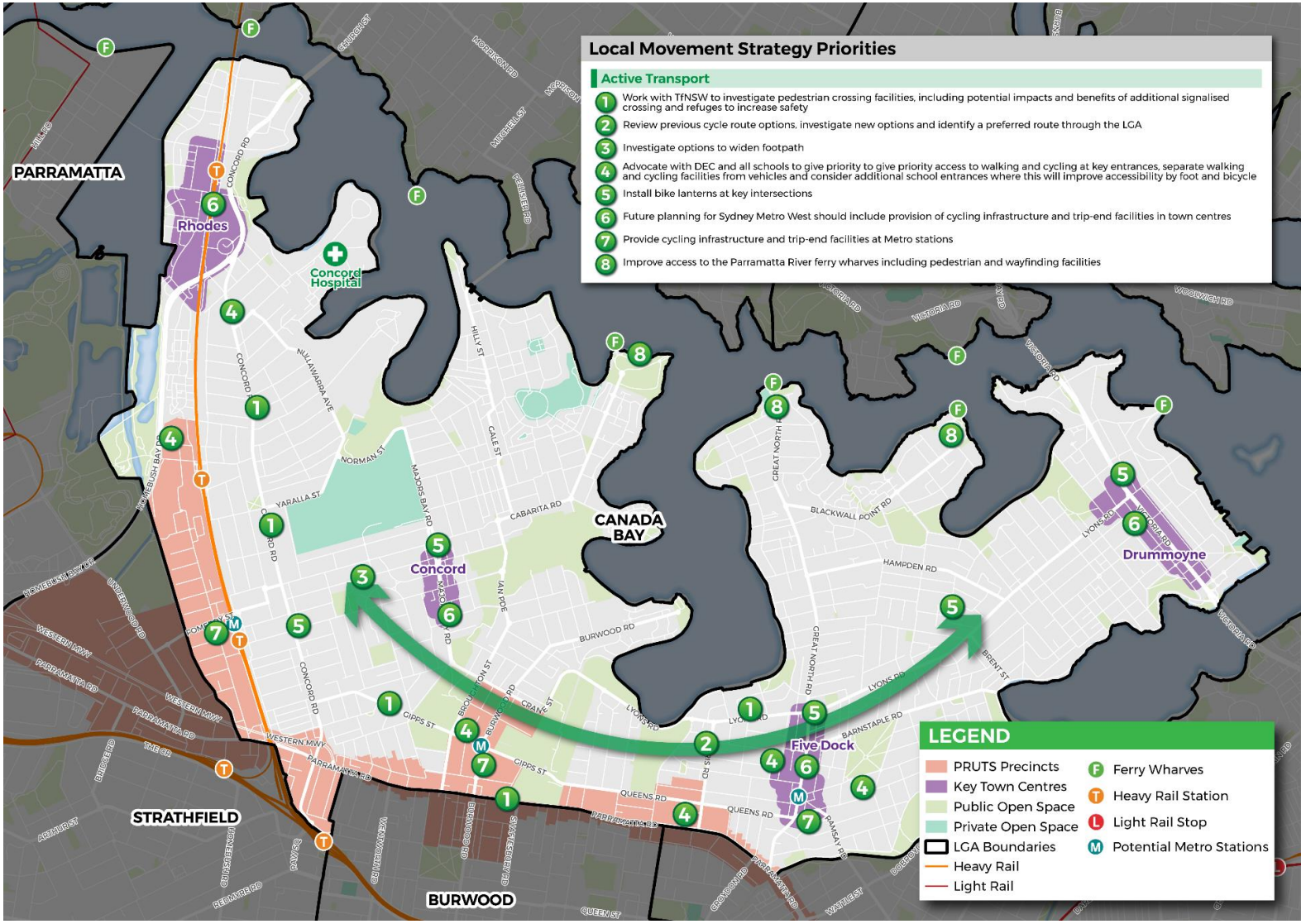
Further, major bus stops and train stations should include secure bicycle storage facilities.

Figure 7.2 shows a strategic bicycle map developed for Canada Bay indicating existing on-road and off-road routes and connections to regional bike routes. The figure illustrates future cycle routes which are opportunity for connections to existing cycling facilities and local centres, train and potential metro stations and other travel generators across the LGA.

Figure 7.2: Canada Bay strategic bicycle map

Source: Canada Bay Council based on GTA input (2019).

Figure 7.3: Active Transport Actions



Note: The location of priorities on the map are indicative only and the location of any interventions or mitigation measures will be determined following further detailed investigation.

7.2.2. Actions

The following actions are proposed to address the issues with active transport and to support the strategic objectives.

Ref	Recommended Action	Strategic Objectives	Priority	Timing	Responsibility
Active 1	Work with TfNSW to investigate pedestrian crossing facilities, including potential impacts and benefits of additional signalised crossing and refuges to increase safety	Provide safe walking and cycling facilities by investigating new facilities	Medium	Medium	Council/ RMS
Active 2	Review previous cycle route options, investigate new options and identify a preferred cycle route through the LGA	Provide a legible, connected and accessible cycle network through completing missing links	High	Short	Council
Active 3	Investigate options to widen footpath where required	Investigate safe cycling routes within one kilometre of schools through new or improved facilities	High	Short	Council/ RMS
Active 4	Advocate with the NSW Department of Education and all schools to give priority to give priority access to walking and cycling at key entrances, separate walking and cycling facilities from vehicles and consider additional school entrances where this will improve accessibility by foot and bicycle	Investigate safe cycling routes within one kilometre of schools through new or improved facilities	High	Short	Council/ TfNSW
Active 5	Install bike lanterns at key intersections	Provide safe walking and cycling facilities by investigating new facilities	Low	Short	Council/ RMS
Active 6	Future planning for Sydney Metro West should include provision of cycling infrastructure and trip-end facilities in town centres	Improve walking and cycling connections to town centres, train stations and future Metro stations	Medium	Medium	Sydney Metro/ Council
Active 7	Provide cycling infrastructure and trip-end facilities at Metro stations	Improve walking and cycling connections to town centres, train stations and future Metro stations	High	Medium	Sydney Metro/ Council
Active 8	Improve access to the Parramatta River ferry wharves including pedestrian and wayfinding facilities	More efficiently integrate transport modes at public transport interchanges	Medium	Short	Council

7.3. Public Transport

7.3.1. Strategic Objectives

Create a simple and direct bus network

While the bus network coverage is generally good within the City of Canada Bay, the routes are complicated for customers to understand with multiple origins and destinations and different stopping patterns (i.e., all stops, limited stop and express services). A simpler bus network for the City of Canada Bay is a challenge with the physical constraints of the Parramatta River and the railway lines. As shown in the existing conditions section, the frequent service routes operate along the major road corridors and connect to train stations and other regional centres. However, most of the other local bus routes have infrequent services, particularly during off-peak, evening and weekend periods.

Provide a comfortable bus travel experience for customers

Buses need to be airconditioned, accessible with low-floor boarding ramps for the mobility-impaired to provide a comfortable journey. Ultimately all buses in the fleet will be accessible, low-floor vehicles. Furthermore, customer comfort includes access to the bus stops and the amenity at them. Footpaths and walking routes to the bus stops need to be upgraded to meet disabled person (DDA) accessibility requirements. Bus shelters need to be installed to a consistent standard with high quality amenity and information for waiting customers.

Create a more accessible public transport network for residents who are not within walkable catchments of frequent bus routes through more on-demand services

The introduction of on-demand transport services in the City of Canada Bay has provided more travel options for residents to access the public transport network, especially during the evenings and weekends when most of the regular local bus routes operate infrequently or not at all. In 2018, the on-demand transport services trial zone was expanded east from Concord, Mortlake and Burwood North to include the Five Dock area. The on-demand service could be expanded further east to Drummoyne. Improve the competitiveness of public transport travel times compared to private vehicles in peak times on key corridors by investigating street/kerbside prioritisation.

A modal shift from the private vehicle to public transport changes when customers compare their door-to-door travel times for the entire journey. However, public transport customers often have longer journey times with slower in-vehicle travel and the time to walk to the stops or stations, to wait for the services to arrive and in some cases to transfer between vehicles to complete a journey. Unless public transport in-vehicle travel times can be at least as competitive as car travel times during peak periods, the modal shift is reliant on restrictive and expensive parking fees to offset the additional time for walking, waiting and interchanging, if required. The trips where bus travel would be more competitive than car travel is from the City of Canada Bay towards the Sydney and Parramatta CBDs with the direct frequent bus services or the short bus trips to a train service to these major employment centres.

More efficiently integrate transport modes at public transport interchanges

The bus network needs to be efficiently integrated at bus interchanges, train stations and ferry wharves for more convenient access between these transport modes. The interchanges need to be designed with direct and safe walk access between these different public transport modes. Where applicable, lifts and ramps need to be provided for disabled access requirements. Good lighting and security surveillance measures are also important for customers during the evenings and during periods of lower pedestrian activity.

Prioritise public transport access to major employment or mixed-use developments or in areas that would benefit from enhanced accessibility

Public transport access needs to be focused around upgraded transport hubs at the employment and the developing mixed-use residential and retail areas in the City of Canada Bay where the opportunities for interchanging will be enhanced. This will promote a higher profile and usage for public transport services where a cluster of public transport services with buses, trains and/or ferries converge.

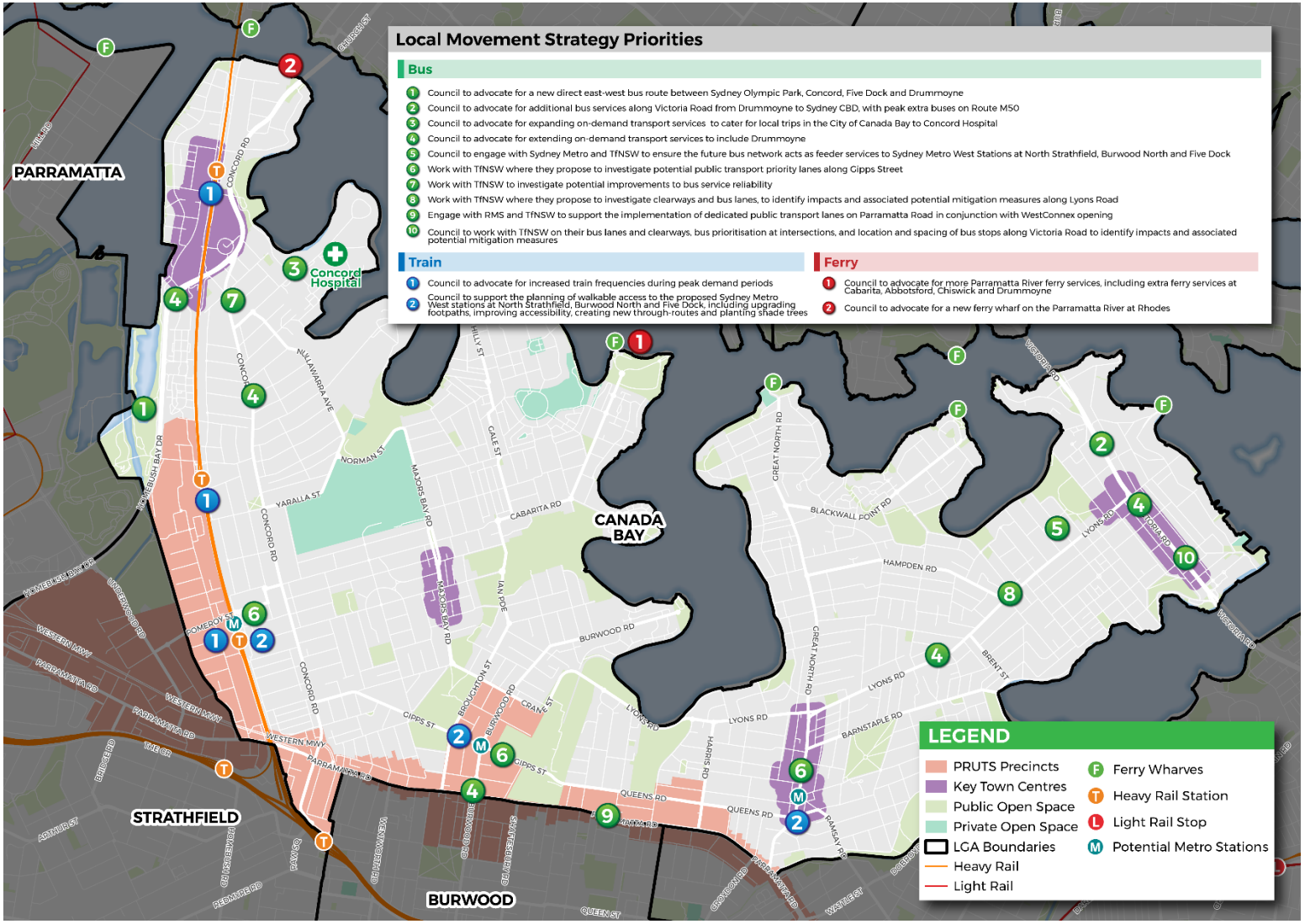
More efficiently integrate transport modes at public transport interchanges

Buses need to connect to other transport modes to maximise the opportunities to travel to destinations outside of the City of Canada Bay. The public transport interchanges need to provide convenient access to other bus, train and ferry services to take full advantage of the entire transport network.

Provide additional public transport capacity to relieve constrained corridors

Along the busy high frequency bus corridors and on the congested train services, additional bus and train services need to be provided. However, on the existing Sydney Trains network, the Sydney Metro West project, with the three proposed stations in the City of Canada, will provide additional train service capacity to Sydney CBD, Parramatta CBD and Sydney Olympic Park.

Figure 7.4: Public Transport Actions



Note: The location of priorities on the map are indicative only and the location of any interventions or mitigation measures will be determined following further detailed investigation.

7.3.2. Actions

The following actions are proposed to address the issues with public transport and to support the strategic objectives.

Ref	Recommended Action	Strategic Objectives	Priority	Timing	Responsibility
Bus 1	Council to advocate for a new direct east-west bus route between Sydney Olympic Park, Concord, Five Dock and Drummoyne	Create a simple and direct bus network	Medium	Medium	Council/ TfNSW
Bus 2	Council to advocate for additional bus services along Victoria Road from Drummoyne to Sydney CBD, with peak extra buses on Route M50	Provide a comfortable bus travel experience for customers	Medium	Medium	Council/ TfNSW
Bus 3	Council to advocate for expanding on-demand transport services to cater for local trips in the City of Canada Bay to Concord Hospital	Create a more accessible public transport network for residents who are not within walkable catchments of frequent bus routes through more on-demand services	High	Short	Council/ TfNSW
Bus 4	Council to advocate for extending on-demand transport services to include Drummoyne	Create a more accessible public transport network for residents who are not within walkable catchments of frequent bus routes through more on-demand services	High	Short	Council/ TfNSW
Bus 5	Council to engage with Sydney Metro and TfNSW to ensure the future bus network acts as feeder services to Sydney Metro West Stations at North Strathfield, Burwood North and Five Dock	More efficiently integrate transport modes at public transport interchanges	High	Long	Council/ Sydney Metro/ TfNSW
Bus 6	Work with TfNSW where they propose to investigate potential public transport priority lanes along Gipps Street	Prioritise public transport access to major employment or mixed use developments or in areas that would benefit from enhanced accessibility	Medium	Short	Council/ TfNSW
Bus 7	Work with TfNSW to investigate potential improvements to bus service reliability	Improve the competitiveness of public transport travel times compared to private vehicles in peak times on key corridors by investigating street/kerbside prioritisation	Medium	Short	Council/ TfNSW
Bus 8	Work with TfNSW where they propose to investigate clearways and bus lanes, to identify impacts and associated potential mitigation measures along Lyons Road	Improve the competitiveness of public transport travel times compared to private vehicles in peak times on key corridors by investigating street/kerbside prioritisation	Medium	Short	Council/ TfNSW

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Ref	Recommended Action	Strategic Objectives	Priority	Timing	Responsibility
Bus 9	Engage with RMS and TfNSW to support the implementation of dedicated public transport lanes on Parramatta Road in conjunction with WestConnex opening	Improve the competitiveness of public transport travel times compared to private vehicles in peak times on key corridors by investigating street/kerbside prioritisation	High	Short	Council/ TfNSW
Bus 10	Council to work with TfNSW on their bus lanes and clearways, bus prioritisation at intersections, and location and spacing of bus stops along Victoria Road to identify impacts and associated potential mitigation measures	Improve the competitiveness of public transport travel times compared to private vehicles in peak times on key corridors by investigating street/kerbside prioritisation	Medium	Short	Council/ TfNSW
Ferry 1	Council to advocate for more Parramatta River ferry services, including extra ferry services at Cabarita, Abbotsford, Chiswick and Drummoyne	More efficiently integrate transport modes at public transport interchanges	Medium	Medium	Council/ TfNSW
Ferry 2	Council to advocate for a new ferry wharf on the Parramatta River at Rhodes	More efficiently integrate transport modes at public transport interchanges	Medium	Long	Council/ TfNSW
Train 1	Council to advocate for increased train frequencies during peak demand periods	Provide additional public transport capacity to relieve constrained corridors	High	Short	Council/ TfNSW
Train 2	Council to support the planning of walkable access to the proposed Sydney Metro West stations at North Strathfield, Burwood North and Five Dock, including upgrading footpaths, improving accessibility, creating new through-routes and planting shade trees	More efficiently integrate transport modes at public transport interchanges	Medium	Long	Council/ Sydney Metro/ TfNSW

7.4. Road Network

7.4.1. Strategic Objectives

Improve safety by reviewing speed limits on major roads and in town centres

A number of fatal crashes have been recorded within town centres and on major roads such as Victoria Road where vehicle speeds and volumes are high. To provide an overall safer road environment, speed limits should be reviewed and reduced, where possible/logical, to lower crash severities and probability of fatalities. This is especially relevant for areas where there are high numbers of vulnerable road users include the elderly and disabled as vulnerable road users. They take a long time to cross wide (often busy) roads such as Victoria Road. Reductions in speed limits will also aid in reducing crash likelihoods by decreasing required stopping distances.

Investigate the movement of traffic in and around local centres to increase the efficiency of the road network

The current access patterns for local centres in the LGA, such as Five Dock, allow vehicle travel through centres which detracts from the amenity of the centre, as well as negatively impacting on the nearby road network as a result of side friction and conflicts. The movement and access into and around local centres should be reviewed to understand where efficiency gains can be made on the road network by reviewing road hierarchy and local centre access strategies including redirecting through vehicle flows.

Better manage parking requirements

Council will potentially have three Sydney Metro Stations within the LGA which provides a boon for public transport use. However, it could also attract higher short-distance private vehicle trips as commuters drive to/from the stations. To discourage this activity and reduce the impact of commuter parking on centres, parking management will be required, which includes placing drive-up commuters furthest away from stations using adequate controls.

Council currently have maximum parking rates for residential developments within mixed use (B4) zoning. However, these are still minimum rates for development within walking distances to commercial cores and railway stations. Furthermore, the DCP does not consider corridors with high public transport accessibility (other than rail), such as major roads with high bus frequencies. To reduce private vehicle use within the LGA, available car parking (especially for uses such as residential) should be reduced to disincentivise unnecessary private vehicle ownership and thereby private vehicle use.

Accommodating future transport in Canada Bay

Accommodation of future transport trends will be required to future proof the LGA from technological advancements. The first and most important aspect of this will be the uptake in electric vehicles (EVs), which will aid in reducing emissions within the LGA. To aid the uptake of EVs, charging bays should be stipulated for new developments to incentivise EV ownership, either as part of a fleet (for commercial developments) or privately. At a later stage, autonomous vehicles (AVs) should be considered as part of the overall transport within the LGA. It is expected that AVs will be used for pick-up/drop-off of passengers and will have different infrastructure requirements and movement characteristics compared to human drivers with the most likely location for conflicts to occur. As a result, interactions between existing pick-up/drop-off between AVs and human drivers should be minimised by repurposing and reallocating in line with AV uptake within the LGA and broader vehicle market.

Reduce demands for on-street loading by improving off-street facilities

Kerbside space conflicts between pedestrians, cyclists and motorists, and commercial loading can be reduced by incentivising and encouraging loading to occur off-street or outside of peak periods, especially for larger premises. A key consideration will include creating a synergy within larger developments by having adequate loading docks that are controlled to level peak demands throughout a day. Likewise, large and heavy vehicle deliveries and trips into and within the LGA should be reduced. This can include trips to/from freight consolidation hubs which can then be used to allocate deliveries to smaller, more agile and sustainable vehicles.

7.4.2. Movement and Place

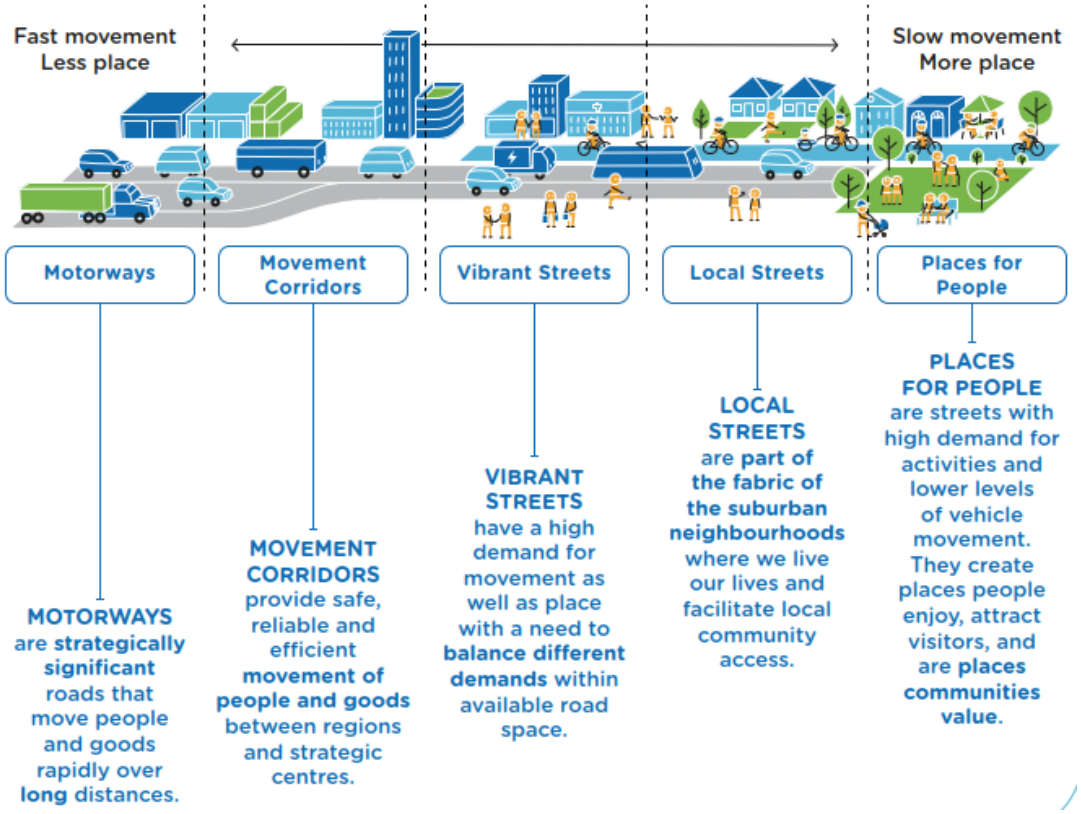
The Movement and Place Framework underpins Future Transport and aims to allocate road space in a way that improves the liveability of places. This framework is an integrated land use and transport planning tool that sets customer focused outcomes and delivers wider benefits for the health and wellbeing of the community.

The framework defines the future function of the road network on the basis of land use and transport objectives and desired outcomes for Canada Bay LGA:

- Roads and streets in their role in moving people and goods.
- Land use adjacent to roads and streets.

These guiding principles within the framework acknowledge that the needs and expectation of transport customers and communities change for different street environments. Similarly, there is the need to prioritise different customer groups, depending which street environment they are travelling in. Figure 7.5 describes definitions of motorways, movement corridors, vibrant streets, local streets and place for people.

Figure 7.5: Movement and Place street type definitions



Source: Future Transport Strategy 2056, Transport for NSW

The framework allows to identify which types of functions should be prioritised in each area. The Movement axis is relatively straight forward, but the Place axis is multifaceted and represents an amalgam of desirable locations where people gather and locations where people access public transport, work, community facilities or use active transport modes (cycling and walking). The potential for conflict between movement and place is most challenging where both movement and place are seen as important (i.e. in the "Vibrant street" category) where a lateral approach to planning and a holistic definition of success is most important.

Figure 7.6: Movement and place methodology

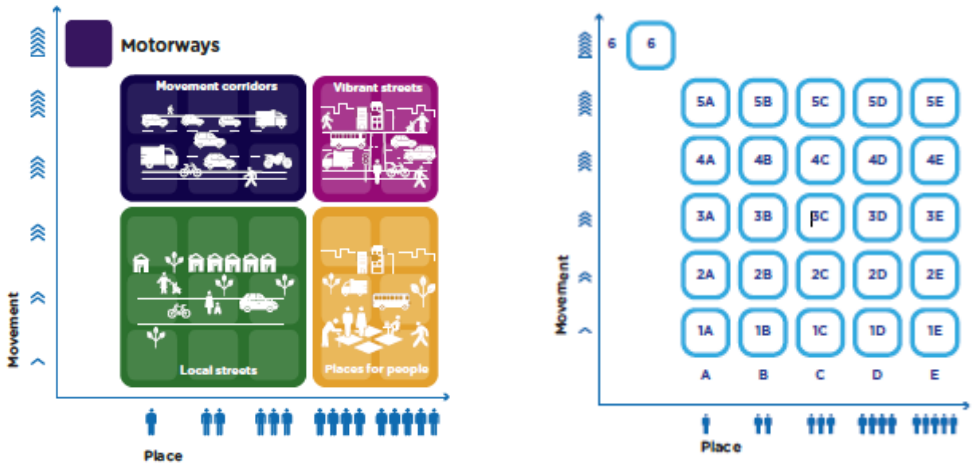


Figure 7.7 indicates the proposed movement and place classifications for Canada Bay in 2036. It can be seen that town centres such as Five Dock, Concord and parts of North Strathfield and Concord West have been classified as Places for People. Other sections of Drummoyne, North Strathfield and Concord West have been classified as Vibrant Streets. Other streets will be local streets.

Figure 7.7: Proposed Future Movement and Place for Canada Bay

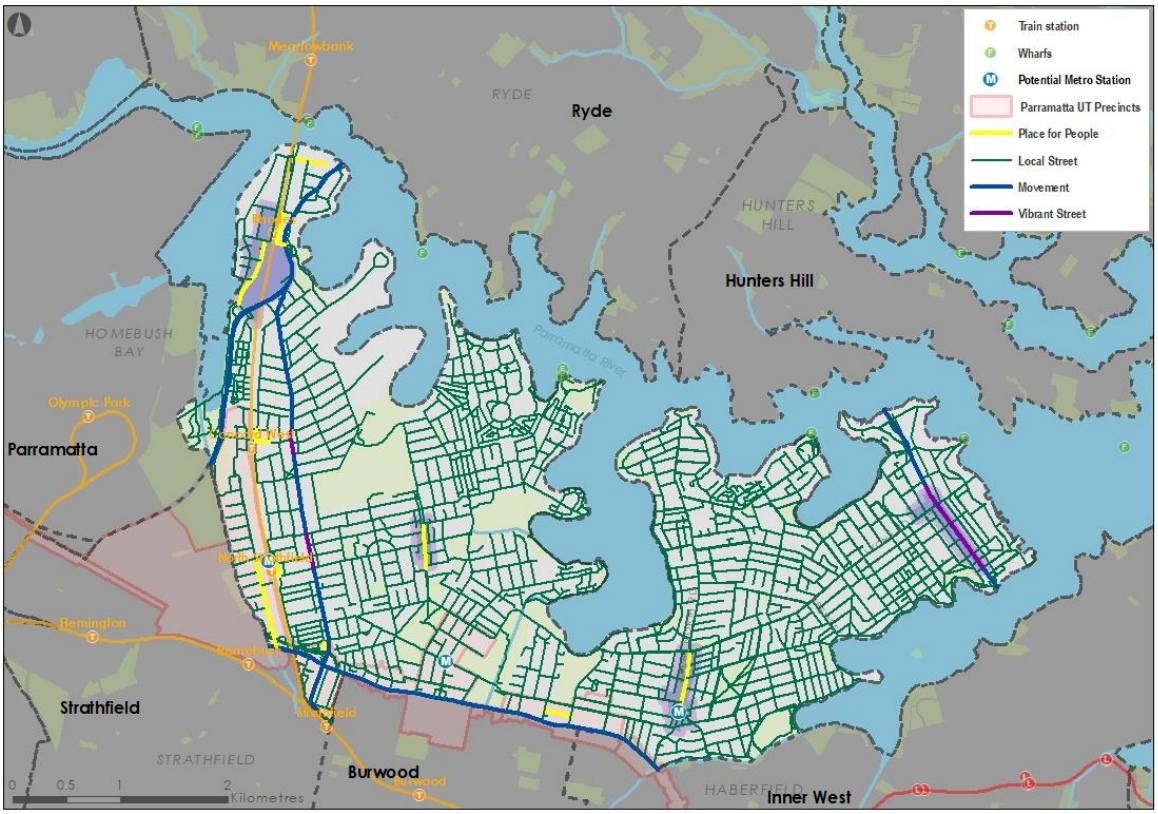
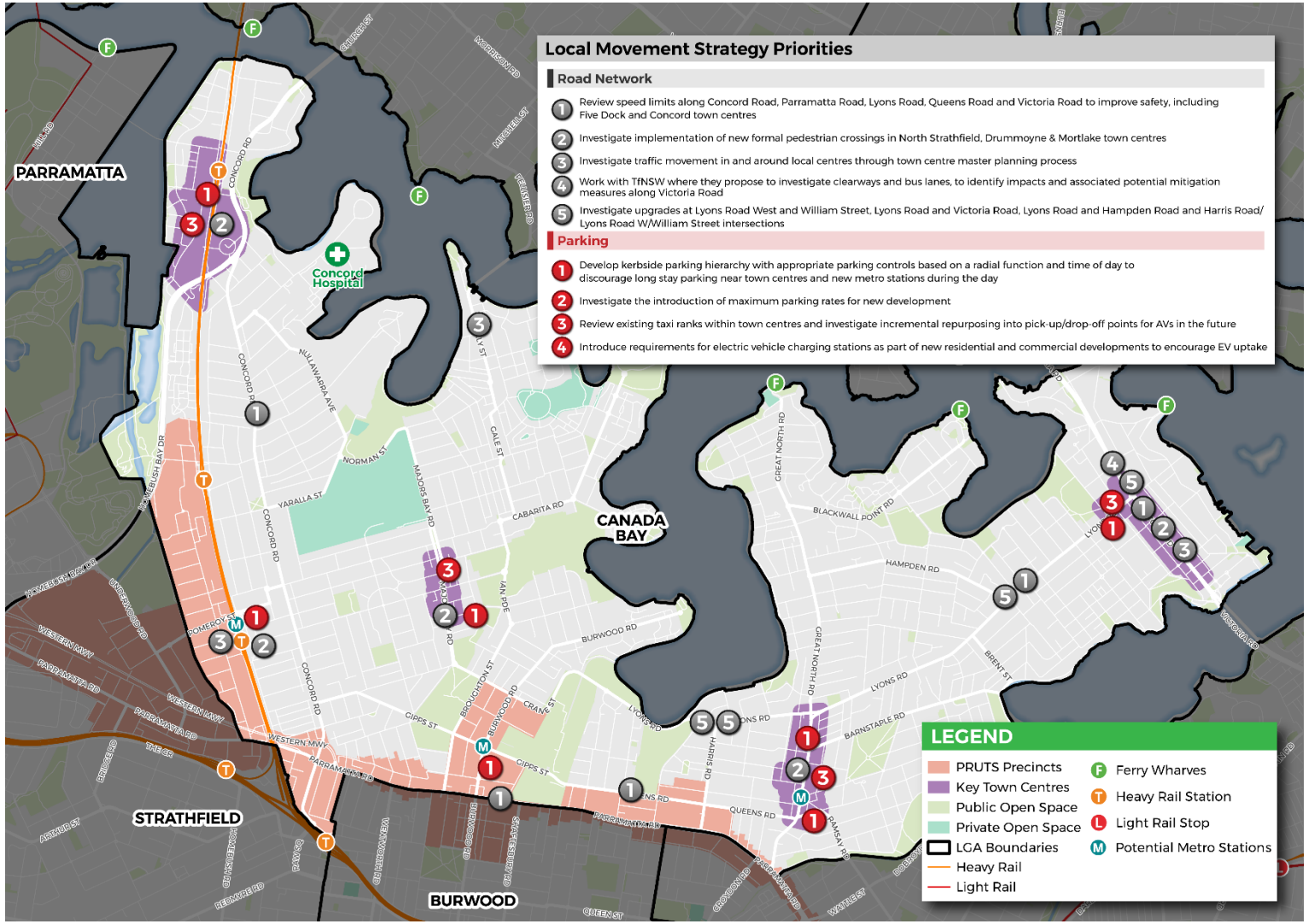


Figure 7.8: Road Network Actions



Note: The location of priorities on the map are indicative only and the location of any interventions or mitigation measures will be determined following further detailed investigation.

7.4.3. Actions

The following actions are proposed to address the issues with the road network and to support the strategic objectives.

Ref	Recommended Action	Strategic Objectives	Priority	Timing	Responsibility
Road 1	Review speed limits along Concord Road, Parramatta Road, Lyons Road, Queens Road and Victoria Road to improve safety, including Five Dock and Concord town centres	Improve safety by reviewing speed limits on major roads and in town centres	High	Short	RMS
Road 2	Investigate implementation of new formal pedestrian crossings in North Strathfield, Drummoyne and Mortlake town centres	Improve safety by reviewing speed limits on major roads and in town centres	High	Short	Council/ RMS
Road 3	Investigate traffic movement in and around local centres through town centre master planning processes	Investigate the movement of traffic in and around local centres to increase the efficiency of the road network	High	Short	Council/ RMS
Road 4	Work with TfNSW where they propose to investigate clearways and bus lanes, to identify impacts and associated potential mitigation measures along Victoria Road	Investigate the movement of traffic in and around local centres to increase the efficiency of the road network	High	Medium	Council/ RMS
Road 5	Investigate upgrades at Lyons Road West and William Street, Lyons Road and Victoria Road, Lyons Road and Hampden Road and Harris Road/ Lyons Road W/William Street intersections	Investigate the movement of traffic in and around local centres to increase the efficiency of the road network	Medium	Short	Council/ RMS
Park 1	Develop kerbside parking hierarchy with appropriate parking controls based on a radial function and time of day to discourage long stay parking near town centres and new metro stations during the day	Better manage parking requirements	High	Short	Council
Park 2	Investigate the introduction of maximum parking rates for new development.	Better manage parking requirements	Medium	Short	Council

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Ref	Recommended Action	Strategic Objectives	Priority	Timing	Responsibility
Park 3	Review existing taxi ranks within town centres and investigate incremental repurposing into pick-up/drop-off points for AVs in the future	Accommodating future transport in CBC	Medium	Long	Council
Park 4	Introduce requirements for electric vehicle charging stations as part of new residential and commercial developments to encourage EV uptake	Accommodating future transport in CBC	Low	Short	Council
Freight 1	Maximise the number of shared loading docks provided as part of new developments by stipulating requirements within DCP and LEP.	Reduce demands for on-street loading by improving off-street facilities.	High	Short	Council
Freight 2	Investigate the opportunity to repurpose kerbside space and the hours of operation for loading.	Reduce demands for on-street loading by improving off-street facilities.	Medium	Short	Council

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7.5. Travel Demand Management

7.5.1. Strategic Objectives

Invest in active and public transport by leveraging off new development to shape sustainable land use

Council has direct control over the maintenance and management of local roads, footpaths and shared paths for pedestrians and cyclists and are charged with reviewing and approving development applications. When reviewing applications, Council's role is to ensure development is consistent with local and state planning policy. Council can also propose changes to influence car parking, the provision of footpaths, bicycle parking and land use planning controls to shape and influence the way our cities are created.

Council should also pursue opportunities for large sites to provide new pedestrian and cyclist connections as part of new development applications and to ensure new developments create attractive environments for walking and cycling and demonstrate a genuine commitment to sustainable travel.

Behaviour change to achieve mode shift, travel reduction or peak spreading

Travel demand management balances the transport network by first understanding where there are current and forecast pressures, and then working out where there is spare capacity for these to move to. These movements are then redistributed to different modes, times, and routes with spare capacity. Behaviour change is the key, and an effective campaign can:

- Manage expectations – so that reasonable expectations are set.
- Manage demand at hotspots – retime, re-mode, re-route, spread the peak.
- Help optimise the transport network – by providing users with guidance on the most appropriate routes.
- Provide foundations for long-term positive behavioural change.

7.5.2. Actions

The following actions are proposed to address the issues with travel demand and to support the strategic objectives.

Ref	Recommended Action	Strategic Objectives	Priority	Timing	Responsibility
TDM 1	Council to review DCP controls to plan for and promote pedestrian, bicycle and access for public transport	Invest in active and public transport by leveraging off new development to shape sustainable land use	Medium	Medium	Council
TDM 2	Council to support measures which localise activities and reduce the distance or need to travel, such as working from home.	Behaviour change to achieve mode shift, travel reduction or peak spreading	High	Medium	Council
TDM 3	Encourage provision of secure bicycle parking for all bicycle types and charging facilities at key destinations	Behaviour change to achieve mode shift, travel reduction or peak spreading	High	Short	Council
TDM 4	Support car share and encourage the provision of car share spaces.	Behaviour change to achieve mode shift, travel reduction or peak spreading	High	Short	Council
TDM 5	Actively investigate opportunities to facilitate street festivals and other events which temporarily close road links and allow the community to experience other ways streets can be used.	Behaviour change to achieve mode shift, travel reduction or peak spreading	Low	Short	Council
TDM 6	Work with schools and produce maps for the community showing how they can use active travel to get to school, including initiatives such as 'walking school buses', participation in cycling events	Behaviour change to achieve mode shift, travel reduction or peak spreading	High	Short	Council and Department of Education

7.6. Land Use

7.6.1. Strategic Objectives

Integrate land use and transport planning

Land use planning has a crucial role in providing transport choice and managing travel demand. Planning can create opportunities to use viable alternatives to the private car and improve transport choice. Conversely, planning can reduce transport choice and, as a consequence, encourage greater car reliance. If urban development and associated changes encourage car reliance, other measures to reduce car use and the environmental impact of transport will be less effective or be more expensive. Planning and development must consider all relevant transport modes. Improving access by walking, cycling and public transport must receive equal consideration to, or greater consideration than, private car access.

7.6.2. Actions

The following actions are proposed to address the issues with transport and land use integration to support the strategic objectives.

Ref	Recommended Action	Strategic Objectives	Priority	Timing	Responsibility
Land Use 1	Encourage economic activity (retail/ commercial land uses) and community facilities (schools/ places of public worship/ community spaces/ libraries) within strategic and local centres and transport hubs	Integrate land use and transport planning	High	Medium	Council
Land Use 2	Work with neighbouring Councils to continue implementing the Parramatta Road Urban Transformation Strategy (PRUTS), creating a diversity of housing and new employment generating uses	Integrate land use and transport planning	High	Medium	Council/ other LGAs
Land Use 3	Identify opportunities to facilitate urban density around the proposed metro stations (North Strathfield, Burwood North and Five Dock).	Integrate land use and transport planning	Medium	Medium	Sydney Metro/ DPE/ Council

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