Transport for NSW

Sydney CBD to Parramatta

Strategic Transport Plan

September 2015

Contents

Executive summary

The Sydney CBD to Parramatta Corridor is one of the most important growth corridors in Sydney. This 22-kilometre stretch links the city's two CBDs and includes major employment and research hubs; smaller, localised centres; a range of housing; and many assets for people to enjoy.

However, the Corridor is not operating to its potential, with various parts unattractive for commercial, industrial or residential investment. Travel times can be slow on Parramatta Road, especially for movements east in the morning and west in the evening. Equally, trains are overcrowded during these times. The Corridor also suffers from some disparities in its west compared to its east, with more jobs and more public transport services situated in the east, closer to the Sydney CBD, and higher expected population growth in the west.

A number of transport and land use initiatives, led by the NSW Government in consultation with local government and communities, will address these issues and help to alleviate congestion, improve travel times, make it easier to ride a bike or walk, and transform key precincts and other areas where people live, work, visit or socialise.

These measures are absolutely essential in a growing Sydney, with A Plan for Growing Sydney (Department of Planning & Environment) predicting a population increase of 1.6 million people over the next 20 years, and 689,000 new jobs throughout the metropolitan area.

This Sydney CBD to Parramatta Strategic Transport Plan brings these initiatives together into one document, setting out the clear strategic context for integrated transport and land use planning in the Corridor.

Initiatives

This Strategic Transport Plan has been prompted by major land use and transport initiatives:

- **WestConnex** is currently Australia's largest transport and integrated urban revitalisation project. WestConnex brings together a number of important road projects which together form a vital link in Sydney's orbital network. They include a widening of the M4 east of Parramatta, a duplication of the M5 East and new sections of motorway to provide a connection between the two key corridors. It will substantially change the traffic environment along different parts of Parramatta Road, particularly in peak periods, and facilitate the Parramatta Road Urban Transformation Program.
- The **draft Parramatta Road Urban Transformation Strategy** (UrbanGrowth NSW) is a 30-year strategy that focuses on eight Precincts – Granville, Auburn, Homebush, Burwood, Kings Bay, Taverners Hill, Leichhardt and Camperdown – and integrates land use and built form with public domain initiatives to meet the Road's future population, housing and employment needs.
- *A Plan for Growing Sydney* identifies the **Greater Parramatta to Olympic Peninsula priority growth area**, which includes Greater Parramatta along with precincts at Silverwater, Carter Street, Sydney Olympic Park, Wentworth Point and Rhodes. The area will be targeted for mixed use development and new supporting transport infrastructure.

In addition to these initiatives, the Strategic Transport Plan is also focused on the role of Parramatta as Sydney's second CBD, and the possibility of up to 100,000 jobs (from around 78,000 jobs now) in Greater Parramatta over the next 20 years, as outlined in A Plan for Growing Sydney.

Other major transport investments are being considered. These proposals will all be subject to standard government funding considerations including business cases and assurance reviews:

- Four **light rail** routes linking to Parramatta CBD are under investigation – one could link Parramatta CBD with Strathfield and Burwood via Sydney Olympic Park.
- Public transport scenarios for the section of Parramatta Road **between Burwood and the Sydney CBD** are also being investigated.
- A range of **Parramatta River ferry initiatives**, including 80 extra weekly services, a new wharf at Rhodes, new river ferries and a wharf upgrade program are being progressed.
- The **Western Sydney Rail Upgrade Program** will increase capacity on the T1 North Shore, Northern & Western Line to allow faster and more frequent services. The Sydney Metro City & Southwest network (see below) will provide capacity and travel time improvements on the edges of the Corridor, attracting customers away from existing heavy rail services.
- **Sydney Metro** is a project that has two core components: the 36-kilometre Sydney Metro Northwest link will open in 2019, and a 30-kilometre Sydney Metro City & Southwest will connect to Sydney Metro Northwest in Chatswood and then move beneath Sydney Harbour, through Sydney CBD and south west to Bankstown. Phase 2, expected to open 2024, will include six new stations (four in Sydney CBD), with a potential station at the University of Sydney or Waterloo, and conversion of the existing T3 Bankstown Line.
- The **Homebush Bay Bridge** will open in 2016 and provide access across Homebush Bay between Rhodes and Wentworth Point for buses, pedestrians and cyclists, reducing the distance between Olympic Park and Rhodes Station from eight kilometres to less than one kilometre.

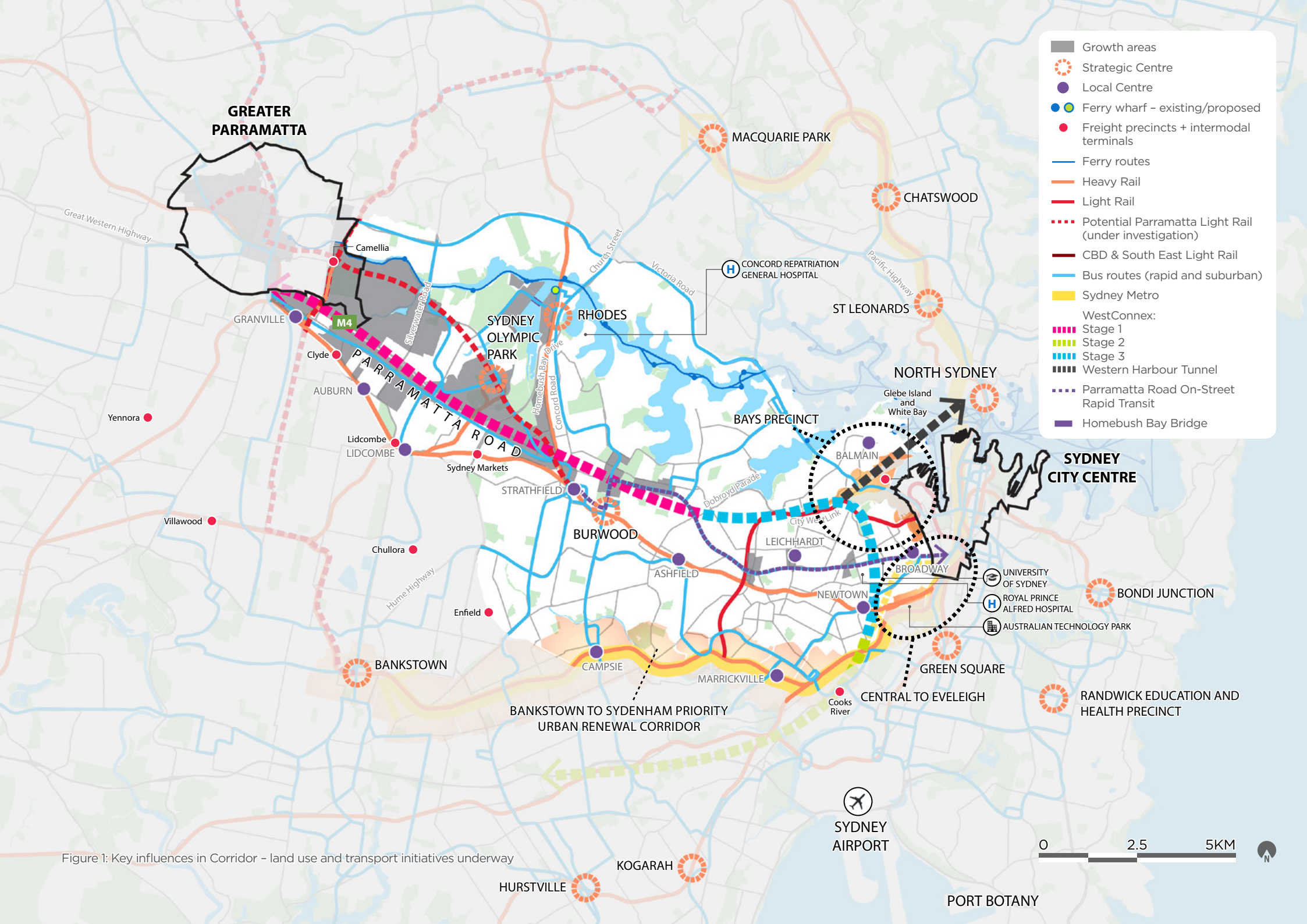


Figure 1: Key influences in Corridor – land use and transport initiatives underway

Challenges and opportunities

By taking an overall view of the entire Corridor, this Strategic Transport Plan can bring together responses that meet regional challenges – and through this approach, could spur on benefits beyond the Corridor and into the wider transport network.

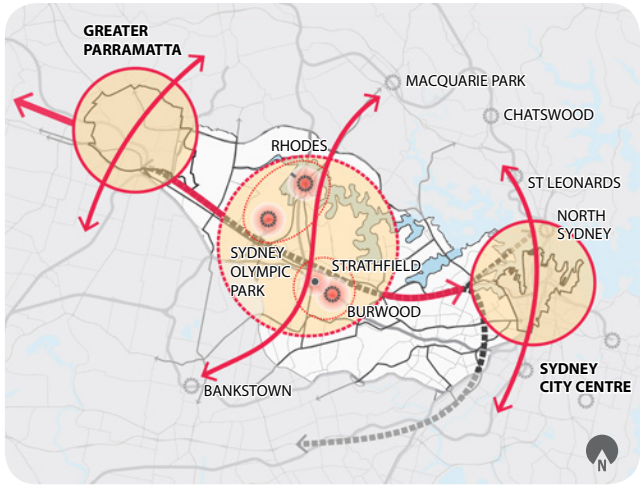


Figure 2: Key activity nodes and connectivity in the Corridor

Challenges	Opportunities
• Capacity constraints on the M4 Motorway, Parramatta Road and the T1 North Shore, Northern & Western Line. • Congestion impacts such as noise, amenity, safety, which also impact on the attractiveness of walking and cycling. • Redevelopment opportunities limited by impediments such as poor quality urban form, fragmented land ownership or heritage issues. • Bus service limitations, especially west of Leichhardt. • Limited north-south connectivity both across Parramatta Road and the Parramatta River. • A jobs imbalance that means more trips are taken from west to east in the morning, and back again in the evening, impacting on the transport network. • An increase in freight movements with growth and the amount of construction in and around the Sydney CBD.	• The catalyst of WestConnex to ease congestion in parts of Parramatta Road, having an overall impact on mobility throughout the Corridor. • The introduction of growth Precincts throughout the Corridor, combined with amenity improvements and improved public transport as a result of WestConnex, to attract investment, help address an imbalance in the number of the jobs and shift the way people move around the Corridor, especially in the peaks. • A focus on local, intermediate and regional trips to better match initiatives and planning with accessibility and connectivity. • A focus on non-infrastructure initiatives to reduce the number of trips made and to increase the efficiency of the existing transport system.

Vision and objectives

The vision serves as an overarching focus for this Plan.

Future growth and development will enhance the Sydney CBD to Parramatta Corridor as an important social, economic and functional spine, supporting and shaping metropolitan Sydney. Linking the Sydney CBD and Parramatta, the Corridor will be a great place to live, work, play and visit.

This vision is considered in terms of overall NSW Government objectives for the Corridor and the role it can play in a growing Sydney, as well as clear principles that will guide an integrated approach to land use and transport planning in the Corridor.

Whole-of-government objectives	Principles to meet these objectives
• Make it easier to move to, through and within the Corridor. • Support walking and/or cycling for local trips, buses and/or light rail for intermediate trips, rail and/or car for regional trips. • Realise and support urban transformation and transit-oriented development. • Facilitate additional east-west and north-south movements. • Enhance existing or create new desirable and affordable mixed use environments. • Optimise the Corridor's inherent social, economic and environmental resources, including freight-generating precincts. • Utilise excess road and rail capacity and non-infrastructure initiatives and optimise public investments in transport. • Contribute to regional resilience and sustainable communities.	• Improve transport and land use integration. • Provide access to multiple modes of transport and a greater degree of flexibility. • Support multi-modal trips with a connected network and seamless interchange. • Adjust land use decisions to locate growth, particularly in employment, towards the Corridor's west. • Ensure that infrastructure investments address multiple transport needs instead of individual functions. • Promote mixed use development. • Optimise the way land is used to reduce the need to travel. • Encourage behavioural solutions to optimise the capacity of transport resources. • Match transport type with travel demand. • Protect industrial, freight precincts and intermodal terminals.

The response

This Strategic Transport Plan brings together a response to the Corridor's challenges, opportunities and vision, as well as wider NSW Government objectives for Sydney's growth. It is not intended as a strategy that details or announces new infrastructure; rather, it brings together all activity within this area, and shows how the many initiatives, when working to agreed, Corridor-wide principles, can work together to meet wider metropolitan goals.

It is also designed to act as a guide to assist decision making by State agencies and local government, while also giving the community and industry an understanding of future activity in the Corridor.

The response considers the kind of trips people take, rather than the type of transport they choose. This approach is based on analysis of current demands within the Corridor, which has found that overall mobility can be enhanced through actions that address trips and travel modes. These trips are classified in three ways:

This Strategic Transport Plan brings together a response to the Corridor's challenges, opportunities and vision.

Local trips are less than five kilometres and make up 85 per cent of all trips that start and finish in the Corridor (59 per cent under two kilometres).	**Local trips** can be made, in general, on foot or by bicycle.
Intermediate trips are those trips that are between five and 10 kilometres and make up the majority of all trips into, out of and within the Corridor.	**Intermediate trips**, with appropriate land use, represent a key opportunity to enhance the capacity and efficiency of the transport network without necessarily requiring significant new infrastructure investments.
Regional trips are longer than 10 kilometres. Around 30 per cent of all trips into, out of and within the Corridor could be classed as regional trips. Trips that travel through the Corridor are also classified as regional trips.	**Regional trips** through the Corridor can be made by rail and, in the future, via WestConnex.

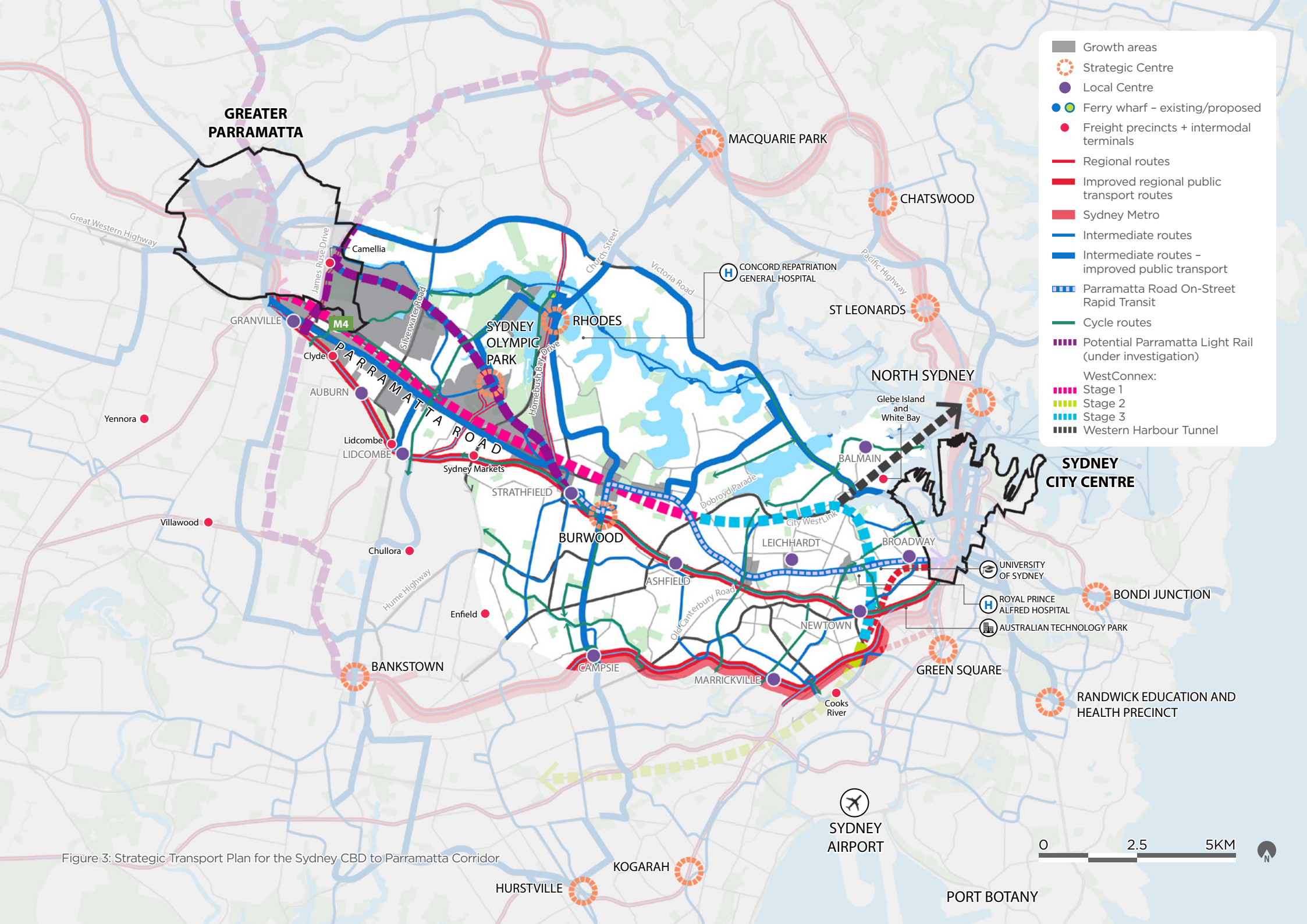


Figure 3: Strategic Transport Plan for the Sydney CBD to Parramatta Corridor

Next steps

Key challenges

1. Manage growth in centres, precincts and generally across the Corridor.
2. Manage long distance trips that occur through the Corridor.
3. Support land use planning with appropriate transport initiatives.
4. Support economic activity in centres and precincts.
5. Cater for the future transport task within available resources and funding.
6. Maintain and enhance liveability as development intensifies and travel demand increases.
7. Improve safety, security and equity.

Outcomes

A. Improve regional mobility to and through the Corridor.

B. Enhance the movement of people and goods to, through and within the Corridor.

C. Increase walking and cycling access to public transport for trips that start or finish within the Corridor.

D. Improve access to centres and public transport nodes.

E. Optimise existing infrastructure.

F. Improve connections between key centres within and outside the Corridor.

Key challenges	Initiatives			Outcomes
	Short Term (2015-2019)	Medium Term (2020-2024)	Long Term (2025+)	
2, 5, 6	Complete WestConnex Stages 1 and 2	Complete WestConnex Stage 3	Investigate Western Harbour Tunnel motorway link	A, B, F
2, 4, 5	Commence implementation of the Western Sydney Rail Upgrade Program Introduce wider metropolitan rail timetable changes	Continue and complete implementation of the Western Sydney Rail Upgrade Program	Further investigate rail improvements	A, B, E, F
2, 3, 4, 5	Commence implementation of Sydney Metro City & Southwest	Complete Sydney Metro City & Southwest		A, B, C, D, F
5, 6, 7	Implement intersection improvements as identified by Road and Maritime Service's Pinch Point Program	Continue to implement Road and Maritime Service's Pinch Point Program		B, D, E, F
1, 3, 4, 5, 6	Identify potential preferred light rail route serving Parramatta from four shortlisted routes	Complete potential preferred light rail route serving Parramatta		B, C, D, F
1, 3, 4, 5, 6	Provide bus priority measures where possible along Parramatta Road from Burwood to the Sydney CBD	Deliver sections of new kerbside bus lanes along Parramatta Road from Burwood to the Sydney CBD	Deliver preferred public transport option with faster and more frequent services along Parramatta Road from Burwood to the Sydney CBD	B, C, D, F
1, 3, 4, 5, 6	Commence implementation of 'rapid' and 'suburban' bus routes as identified in *Sydney's Bus Future*	Continue implementation of bus improvements identified in *Sydney's Bus Future*	Complete implementation of bus improvements identified in *Sydney's Bus Future*	B, C, D, F
3, 5, 6, 7	Commence program to reduce wait times for pedestrians at intersections	Continue program to reduce wait times for pedestrians at intersections	Continue to deliver connected, accessible and safe walking networks	C, D
3, 5, 6, 7	Commence implementation of improved cycling facilities as outlined in *Sydney's Cycling Future*	Continue to deliver connected, accessible and safe cycling networks	Continue to deliver connected, accessible and safe cycling networks	B, C, D
3, 5, 6, 7	Work with councils to improve local walking and cycling networks and improve access to public transport nodes	Continue to work with councils to improve local walking and cycling networks and access to public transport nodes		B, C, D
2, 5	Investigate leveraging spare counter-peak transport capacity via customer campaigns involving travel information and potential policy incentives			A, B, E, F
1, 3, 4, 5, 6	Complete implementation of Parramatta River ferry initiatives, including extra services, new wharf at Rhodes and new River ferries	Continue implementation of initiatives identified in *Sydney's Ferry Future*	Complete implementation of initiatives identified in *Sydney's Ferry Future*	B, C, D, F
2,3,4,5	Complete Enfield Intermodal Logistics Centre and commence Enfield Staging Sidings	Complete Enfield Staging Sidings, and commence Chullora Junctions Upgrade and Western Sydney Freight Line	Complete Chullora Junctions upgrade and Western Sydney Freight Line Commence Southern Sydney Freight Line Enhancement	A, B, E

Figure 4: Summary of next steps

Introduction

The strategic context for one of Sydney's major areas of growth and change

The Sydney CBD to Parramatta Strategic Transport Plan sets out the strategic context for the 22-kilometre corridor that runs between the Sydney CBD and Parramatta CBD, as well as land between these two centres up to Victoria Road in the north and the T3 Bankstown Line in the south. As both CBDs are subject to separate transport and land use investigations, this Plan is primarily focused on transport and land use outcomes between the two CBDs and how people move within and around the Corridor.

The Plan brings together current strategies, proposals and interventions, integrating how the land will be used in the future, what connections are required, and how growth and transformation within the Corridor can be balanced against local, regional and metropolitan requirements for transport, housing and employment.

It focuses on the Corridor as a whole, rather than specific transport modes, individual projects or certain neighbourhoods or suburbs. This broader scope allows a holistic understanding of current and future conditions, limitations and proposed initiatives to meet the overall aim of achieving accessible and liveable centres and communities.

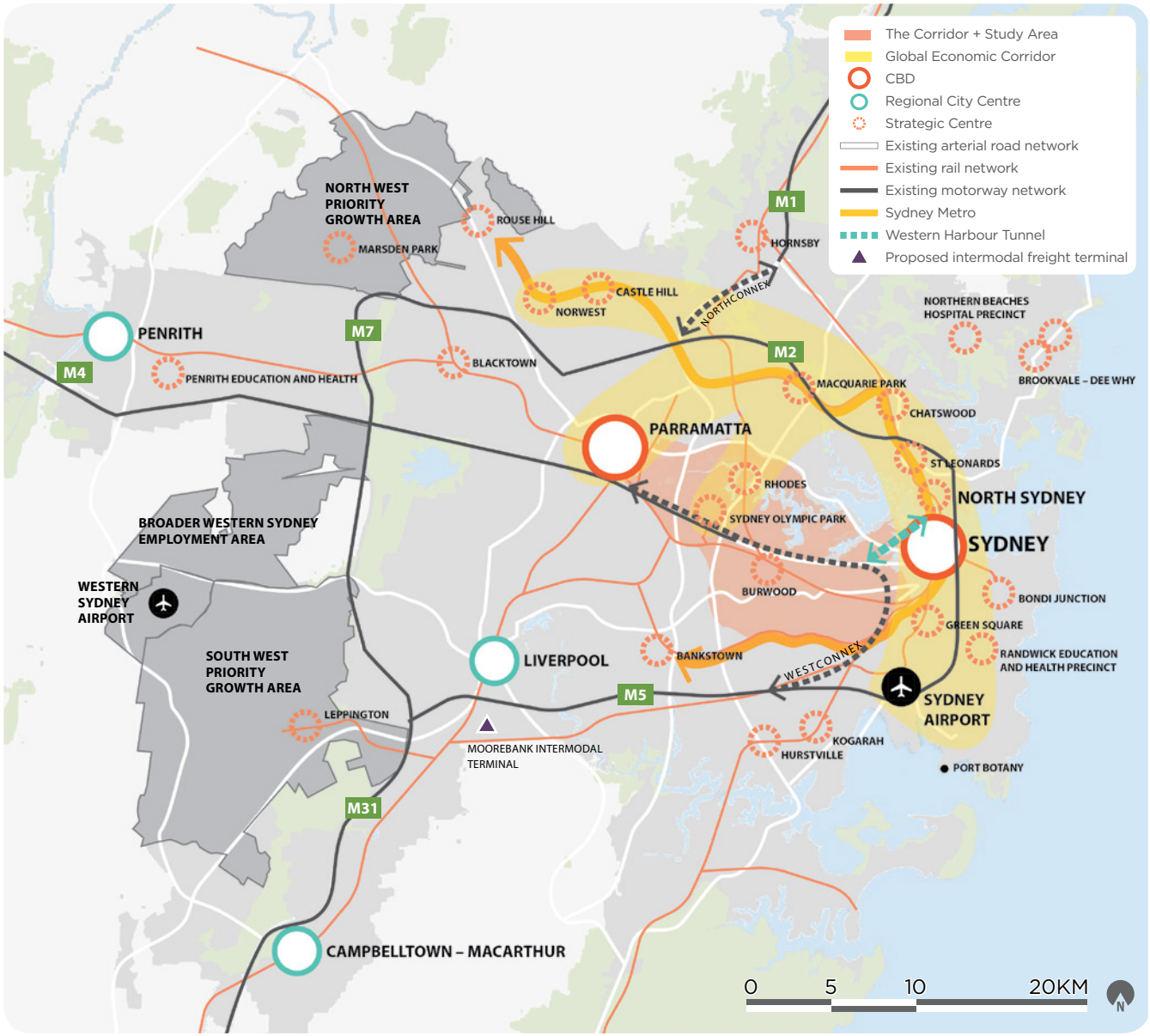


Figure 5: Key influences – metropolitan Sydney

A number of initiatives present opportunities to improve the Corridor while also managing the demands of a growing city. Metropolitan-wide planning is continuing its focus on Parramatta as Sydney's second CBD, with A Plan for Growing Sydney identifying **Greater Parramatta** (Parramatta CBD, North Parramatta, Westmead, Camellia and Rydalmere) as having potential to be home to up to 100,000 jobs within the next 20 years. Significant land use change is also planned to occur throughout the Corridor:

- The **draft Parramatta Road Urban Transformation Strategy** (UrbanGrowth NSW) is a 30-year strategy that focuses on eight Precincts – Granville, Auburn, Homebush, Burwood, Kings Bay, Taverners Hill, Leichhardt and Camperdown – and integrates land use and built form with public domain initiatives to meet the Road's future population, housing and employment needs.
- A Plan for Growing Sydney identifies the **Greater Parramatta to Olympic Peninsula priority growth area**, which includes Greater Parramatta along with precincts at Silverwater, Carter Street, Sydney Olympic Park, Wentworth Point and Rhodes. The area will be targeted for mixed use development and new supporting transport infrastructure.

Alongside these initiatives – and a great catalyst for these initiatives – is **WestConnex**, currently Australia's largest transport and integrated urban revitalisation project. WestConnex brings together a number of important road projects which together form a vital link in Sydney's Orbital Motorway Network. They include a widening of the M4 east of Parramatta, a duplication of the M5 East and new sections of motorway to provide a connection between the two key corridors. It will substantially change the traffic environment along different parts of Parramatta Road, particularly in peak periods, and facilitate the Parramatta Road Urban Transformation Program.

This Plan considers the outcomes of these major transport and land use priorities and investments within the context of a growing and changing Sydney, and a number of planned or proposed transport initiatives.

Policy context

The Sydney CBD to Parramatta Strategic Transport Plan fits within a larger context of other NSW Government plans and policies. It takes its strategic direction from NSW Premier's Priorities & State Priorities, the State Infrastructure Strategy Update 2014, the NSW Long Term Transport Master Plan, A Plan for Growing Sydney and the *NSW Freight and Ports Strategy*.

The suite of transport 'Futures' documents also inform this Plan. Correspondingly, this Plan will help guide the implementation of several of the proposed transport 'Futures,' and the district and precinct plans being prepared across the Corridor.

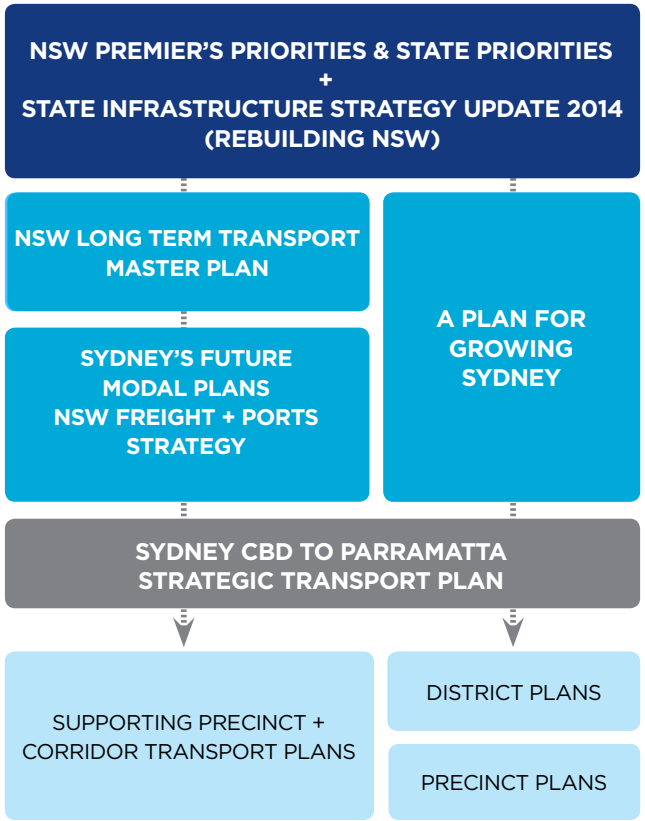


Figure 6: Policy and planning framework

About the Corridor

This area of Sydney is home to major infrastructure, communities, places to visit, and places to work. Key internal destinations include the strategic centres of Sydney Olympic Park, Burwood and Rhodes. It includes the eastern end of the M4 Motorway, Parramatta Road and the heavily utilised T1 North Shore, Northern & Western Line and Blue Mountains Line, which are shared by freight and passenger services and mainly service east-west connections. These assets help people and freight on east-west movements; however, this density of movements hinders north-south travel.

The primary north-south corridor includes road and rail lines. The T1 North Shore, Northern & Western Line connects Burwood north to Epping and Hornsby through Rhodes, running parallel to Homebush Bay Drive on the west and Concord Road on the east. Both corridors cross the Parramatta River just north of Rhodes.

Major facilities within the Corridor include the University of Sydney, University of Technology Sydney, Royal Prince Alfred Hospital, Sydney TAFE, Australian Technology Park, Sydney Olympic Park and various industrial areas. The Westmead Health Precinct and Rydalmere Education Precinct are located just outside the Corridor, in Greater Parramatta.

The Corridor includes a variety of centres and residential neighbourhoods which all rely on or serve as hubs within the transport network. Smaller centres are particularly prevalent in the Corridor's east, representing historic development patterns around the early tram network. These smaller centres are home to shops, stores, restaurants, civic facilities – all of which need deliveries – and public spaces.

Significant regional influences outside the Corridor include Sydney Airport and Port Botany to the south; Macquarie Park to the north; and Enfield and Chullora intermodal freight terminals, which are connected to the dedicated metropolitan freight network that forms the Corridor's southern boundary. The proposed Western Sydney Airport at Badgerys Creek and the Moorebank freight intermodal terminal are further west and south west of the Corridor.

How the Corridor is used

A typical day in the Corridor[1]

Each day:

- 2.2 million trips are made in the Corridor.
- 230,000 of these are made between 8am and 9am.
- An additional 50,000 trips pass right through the Corridor in cars or on trains or buses each morning, impacting the wider network.
- Trips into and out of the Corridor account for the majority of travel activity throughout an average weekday – a little over half of all trips.
- In the morning peak, around 80 per cent of trips entering the Corridor on trains continue to finish beyond the Corridor.

People travel on a range of transport modes throughout the day in the Corridor. Private vehicles account for between half and three-quarters of all trips, depending on distance, on an average weekday. Public transport is a little higher in peak times – for example, it is the primary mode for a quarter of all trips in the morning peak.

1. Trips made 'in the Corridor' include trips into, out of and within, but not through, the Corridor.

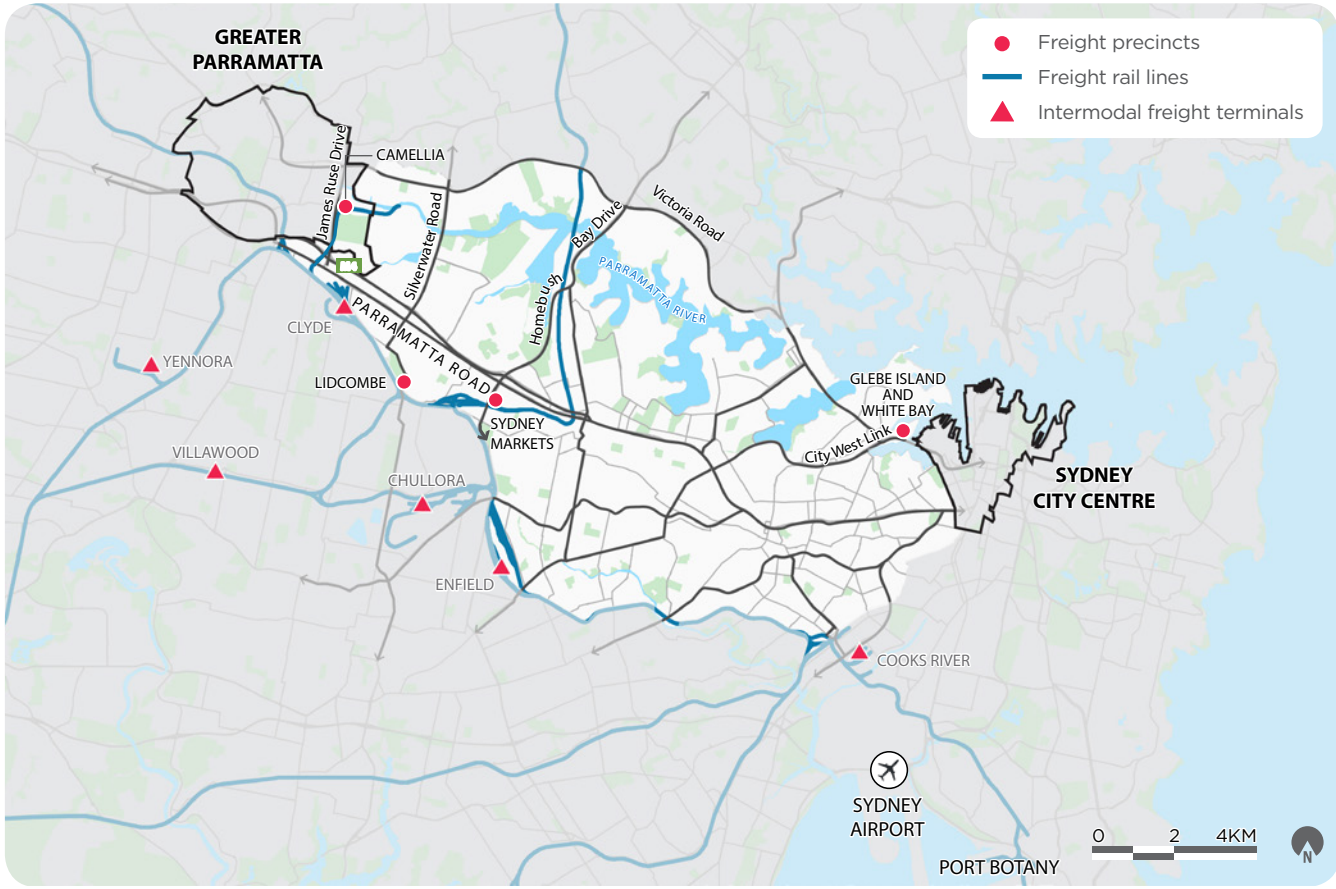


Figure 7: Freight network

66% PRIVATE VEHICLES

22% WALKING + CYCLING

12% PUBLIC TRANSPORT

Figure 8: Mode share for trips in the Corridor, average weekday (Source: Household Travel Survey 2013-14)

Public transport use is also higher in the east of the Corridor, where it is used for a third of trips in the morning peak. Around this eastern end and Burwood, more trips are 'contained' – that is, where people travel to, from and within the same area – due to the higher number of jobs, retail and civic functions in these areas. Trips into and out of the Corridor is most concentrated in the morning peak (around 135,000 trips), and a higher proportion of these travel east.

Walking forms part of many other trips, such as walking to and from public transport or parking.

Many freight trips between the Airport, Port and major warehousing and distribution facilities in Western Sydney travel through, or immediately south of, the Corridor. Parramatta Road also supports high movements of service and light commercial vehicles travelling to inner city areas from Western Sydney.

The M4 Motorway and the section of Parramatta Road from Concord to Tebbutt Street, Leichhardt forms a major east-west freight route that connects warehousing in Western Sydney, Sydney Airport and Port Botany with the remainder of the Sydney metropolitan area. A major north-south freight route also passes along Roberts Road and Homebush Bay Drive. Silverwater Road is also a north-south freight connection through the Corridor, as well as a connection through Petersham and Marrickville to connect to Port Botany.

Type of trips

Future trips will increasingly rely on combinations of modes to provide effective connectivity to, through and within the Corridor.

By focusing on the types of trips taken – local, intermediate or regional – this Plan prioritises accessibility and connectivity, working across modes and across individual elements of the overall transport system. This approach will ensure that current and short-term plans and projects support urban transformation within the Corridor. These trips are classed as follows:

- **Local trips** are less than five kilometres and make up 85 per cent of all trips that start and finish in the Corridor (59 per cent under two kilometres)
- **Intermediate trips** are those trips are between five and 10 kilometres and make up the majority of all trips into, out of and within the Corridor.
- **Regional trips** are longer than 10 kilometres. Around 30 per cent of all trips into, out of and within the Corridor could be classed as regional trips. Trips that travel through the Corridor are also classified as regional trips.

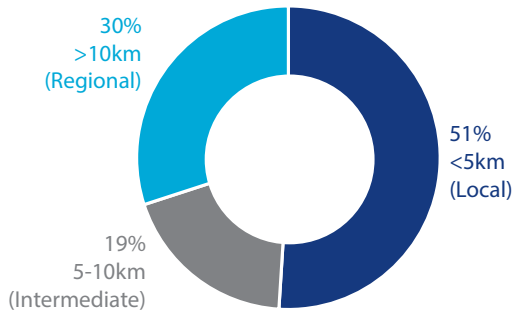


Figure 9: Length of trips in the Corridor (all day)


caffé marco
RISTORANTE ITALIANO
caffé marco
OPTUS
CHISWICK
Via BURWOOD
415
CLUB BURWOOD
BING LEE
KEEP
CLEAR

Trips in the Sydney CBD to Parramatta Corridor

Local	Intermediate	Regional
Driving accounts for around 56 per cent of trips – a lower share than for longer trips, and with a higher occupancy (1.4 people per vehicle) than longer trips. Walking accounts for around 38 per cent of local trips. Only four per cent use public transport as the primary mode.	Driving accounts for more than 75 per cent of these five to 10 kilometre trips. Public transport accounts for approximately 18 per cent of trips – split between buses and rail. Only one per cent of trips are made solely on foot.	Again, driving accounts for 75 per cent of trips over 10 kilometres, with occupancy rates of 1.2 people a vehicle. Public transport accounts for nearly a quarter of regional trips, mainly on rail. Walking is rarely the sole source of travel for regional trips.

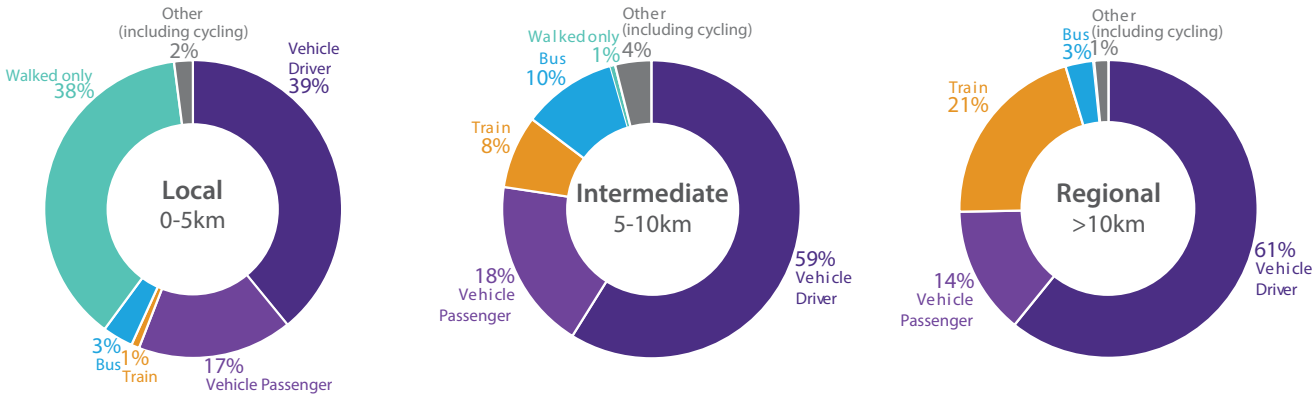


Figure 10: Local, intermediate and Regional travel – mode share by distance for trips in the Corridor, average weekday (Source: Household Travel Survey 2013-14)

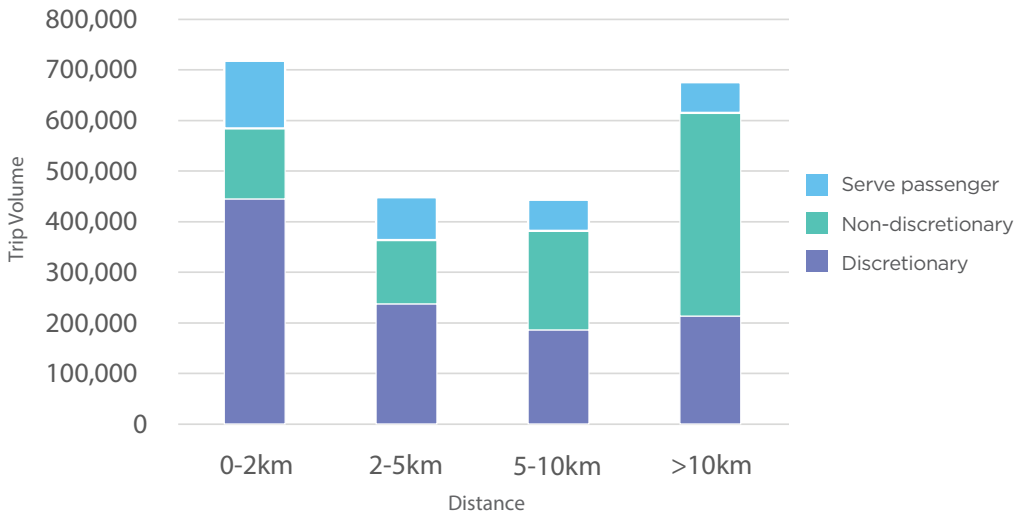
Why people travel

People prefer to move quickly, smoothly, safely, comfortably and on demand, from one destination to another. This Plan looks at the way people travel in two main ways:

- **Non-discretionary trips** are those to specific locations at specific times – for example, for the commute to work, school or university. Generally speaking, these trips are usually more than five kilometres. In the Corridor, nearly two-thirds of trips in the morning peak are non-discretionary – this shifts to around half of trips across the whole day.
- **Discretionary trips** occur when people can choose the timing and/or destination for their travel, such as trips to the shops or for catching up with friends. Around 60 per cent of trips under five kilometres in the Corridor are discretionary trips – though in the morning peak, non-discretionary trips comprise the greater share of short trips. A greater number of discretionary trips are made on weekends, when people travel more evenly throughout the day, rather than in morning or evening peaks.

For non-discretionary travel, people may choose a mode that provides reliability and regularity, perhaps at the expense of trip length or travel time. For discretionary trips, people are more able to adjust timing, to combine a range of trips, or to travel during off-peak periods.

Figure 11:
Discretionary vs non-discretionary trips by distance (all day)
(Household Travel Survey 2013-14)



47%
NON-DISCRETIONARY

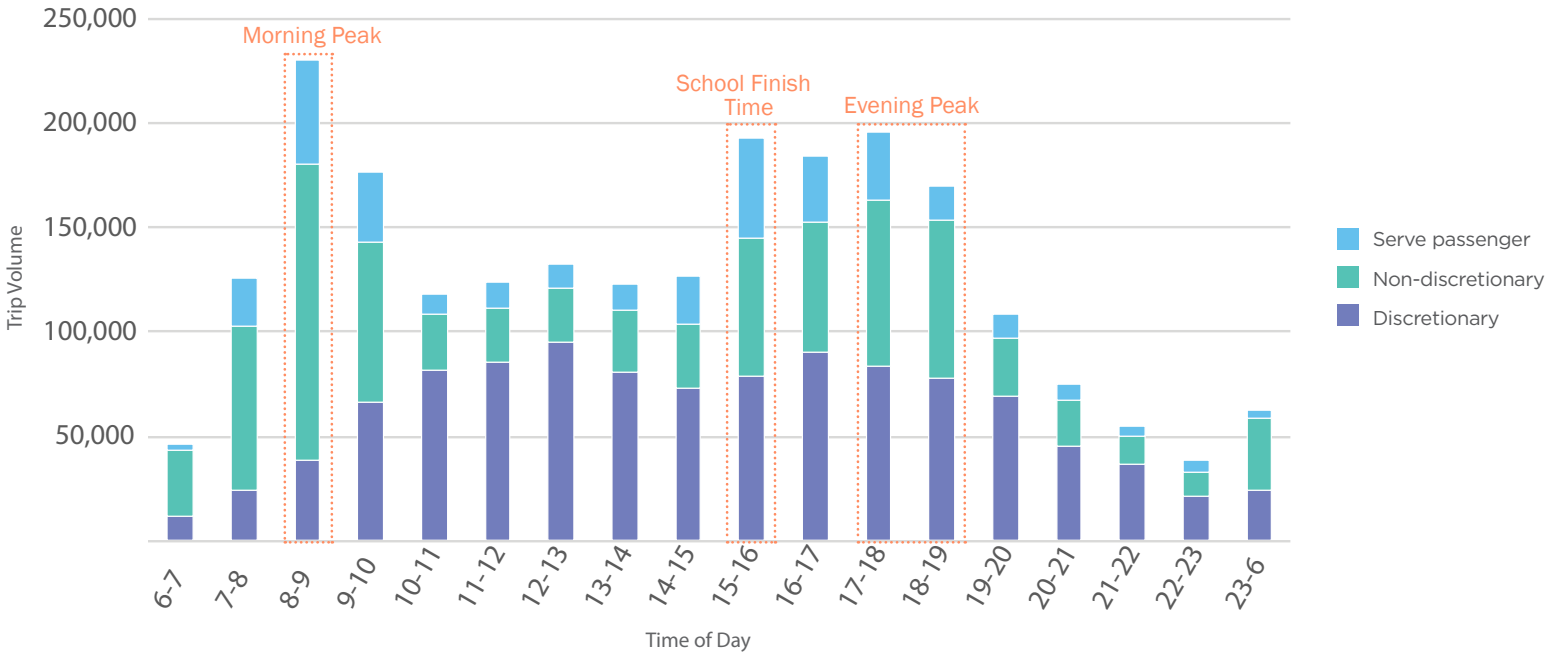
38%
DISCRETIONARY

15%
SERVE PASSENGER*

*For the purposes of serving the trip needs of other passengers; can be discretionary or non-discretionary.

Figure 13: Typical trip purposes on an average weekday
(Household Travel Survey 2013-14)

Figure 12:
Trip volumes and purposes throughout an average weekday
(Household Travel Survey 2013-14)



Now and the future

Current conditions

The Corridor is congested, impacting regional connectivity. Substantial areas are suitable for transformation, yet the attractiveness of investing in the Corridor is constrained by transport issues as well as a perception of the Corridor and Parramatta Road as noisy, congested, unsightly and generally undesirable.

The challenges

The Corridor faces a number of challenges:

- **Capacity constraints:** The M4 Motorway, Parramatta Road and T1 North Shore, Northern & Western Line experience congestion, particularly during peak periods. Trains often carry 40 per cent more passengers than there are seats in peak times. The T1 North Shore, Northern & Western Line and Blue Mountains Line are also shared with freight services limiting opportunity to provide more passenger services. Sections of Parramatta Road are recognised as some of Sydney's most congested traffic routes. During peak times, traffic volumes are high and speeds are low, resulting in longer journey times for car users, bus passengers and delivery vehicles and economic loss.
- **Congestion impacts:** The impact of congestion is more than just time delays, costing Sydney $5 billion per year - this is expected to grow to $8 billion per year by 2021 without intervention.[2] While there is some noise buffering from the M4 Motorway, Parramatta Road is an at-grade arterial roadway that generally includes two or three lanes of traffic. Properties along parts of Parramatta Road show the effects of proximity to heavy traffic. It carries 100,000 vehicles a day at some points, and its narrow lanes exacerbate congestion and impact how safe people feel. Rear-end crashes make up 43 per cent of all crashes on Parramatta Road (compared to the Sydney average of 26 per cent).[3] Parramatta Road is generally unpleasant for walking and cycling.
- **Impediments to development:** Commercial uses front onto Parramatta Road, typically abutting residential uses behind them, including neighbourhoods of predominantly freestanding housing. Many are on large allotments, which makes them highly attractive for redevelopment. However, in some areas, neighbourhoods have fallen into decline, and redevelopment opportunities are limited by the nature and quality of the commercial uses fronting directly onto Parramatta Road, as well as fragmented land ownership.
- **Physical constraints:** Geographic features and heritage-listed buildings, particularly at the eastern end of Parramatta Road, limit the potential to widen Parramatta Road.
- **Service limitations:** While bus services near the Sydney CBD are frequent and benefit from dedicated kerbside bus lanes, these lanes stop west of Leichhardt and bus services run less frequently and are less well connected in the western part of the Corridor.
- **Limited north-south connectivity:** North-south movement to, through and within the Corridor is constrained. Parramatta Road can be difficult to cross. Right turning movements at various intersections facilitate north-south movement, but further impede already congested east-west flows. It is a similar pattern on Parramatta River – from James Ruse Drive in the Corridor's west to The Bays Precinct in the east, there are few places to cross the River. Some crossings are for vehicles, others for rail only, and some serve various combinations including facilities for cyclists and pedestrians.

2. State Infrastructure Strategy – Update 2014
3. NSW Centre for Road Safety, 2014

- **Jobs imbalance:** Sydney CBD is currently the dominant employment centre in the metropolitan area, with over 300,000 jobs. Major population growth in Western Sydney could exacerbate the imbalance between the location of jobs and the location of housing. Jobs will need to be dispersed to multiple nodes across the Sydney metropolitan area, including Parramatta.
- **Freight movements:** Goods travel on rail lines through the Corridor to serve regional intermodal terminals at Chullora, Yennora and Enfield. Some minor transfer of goods occurs on barges at Glebe Island for travel along Parramatta River and Duck River to the Silverwater industrial area. Goods are also moved on trains that share the rail line with passenger services, which get priority. Freight volumes will increase with the expected growth in population and jobs and with the subsequent increase in construction in and around the Sydney CBD. The majority of freight movement is dispersed point-to-point and must be delivered by road.

The opportunities

While noting these challenges, this Strategic Transport Plan has allowed a regional view of the entire Corridor to identify key opportunities that can alleviate some issues and reinforce positive assets.

- **Matching the response to the type of trips taken:** This Plan's focus on local, intermediate and regional trips has identified opportunities to better match initiatives and planning with accessibility and connectivity.
- **Managing travel demand:** A focus on non-infrastructure initiatives can reduce the number of trips made and increase the efficiency of the existing transport system.
- **Addressing the jobs imbalance:** The high number of regional trips through the Corridor, most significantly east-west but also north-south, could be reduced with more activity (particularly jobs) in the western part of the Corridor, especially in Greater Parramatta.

Current initiatives

A number of transport initiatives in the Corridor have either commenced planning, commenced construction, or are under consideration.

While this Plan reflects the current NSW Government position in relation to these initiatives, many are still considered either potential or proposed projects. As is best practice, each project will be subject to standard government funding arrangements such as business cases and assurance reviews to comprehensively review costs, benefits and their ability to deliver value for money.

WestConnex is the catalyst initiative that will substantially contribute to the Corridor's transformation. The Motorway is expected, in the long term, to remove thousands of daily vehicle trips from parts of Parramatta Road, including up to 3,000 daily truck movements. This should substantially change the traffic environment along different parts of Parramatta Road, particularly in peak periods.

- **Stage 1** of WestConnex (construction from 2015-2019) will provide a widened M4 Motorway, east of Parramatta and an extension of the M4 via a tunnel to Parramatta Road and the City West Link, Haberfield.
- **Stage 2** (construction from 2015-2019) will provide increased capacity along the M5 East corridor and new motorway access to the Sydney Airport and St Peters areas, primarily through the use of tunnels.
- **Stage 3** (construction from 2019-2023) will join the first and second stages of WestConnex from Haberfield to St Peters.

Four **light rail** routes linking to Parramatta CBD are under investigation and subject to standard government funding arrangements. One that could link Parramatta CBD with Strathfield and Burwood via Sydney Olympic Park is under investigation. This could enhance Sydney Olympic Park's potential as a well-located, mixed use employment centre and strengthen connectivity throughout the western end of the Corridor.

Several public transport scenarios are under investigation for the section of Parramatta Road **between Burwood and the Sydney CBD**. The type of services and initiatives under investigation include:

- bus priority treatments to improve speed and reliability.
- frequent 'turn up and go' services that reduce wait times to no longer than 10 minutes during the week and 15 minutes on weekends.
- greater distances (from 800 metres to a kilometres) between stops on rapid routes to speed up customer travel.
- the ability to carry more customers on higher capacity buses.

When Stage 1 of WestConnex is complete in 2019, new priority bus measures will be implemented along Parramatta Road subject to road space availability. Two general traffic lanes with provision for public transport will be maintained in each direction. As the next stages of WestConnex are delivered, changes to Parramatta Road will be devised to provide capacity for faster and more frequent public transport services with public transport provision as well as two general traffic lanes in each direction. These proposals will be implemented subject to standard government funding considerations including business cases and assurance reviews.

Transport for NSW is progressing a range of **Parramatta River ferry initiatives**, including 80 extra weekly services, a new wharf at Rhodes, new River ferries and a wharf upgrade program.

The **Western Sydney Rail Upgrade Program** will increase capacity on the T1 North Shore, Northern & Western Line to allow faster and more frequent services. The Sydney Metro City & Southwest network will provide capacity and travel time improvements on the edges of the Corridor, attracting customers away from existing heavy rail services.

Sydney Metro has two core components: the 36-kilometre Sydney Metro Northwest link will open in 2019, and a 30-kilometre Sydney Metro City & Southwest will connect to the Northwest line in Chatswood and then move beneath Sydney Harbour, through Sydney CBD south west to Bankstown. Phase 2, expected to open 2024, will include six new stations (four in Sydney CBD), with a potential station at the University of Sydney or Waterloo, and conversion of the existing T3 Bankstown Line. Working together with major upgrades to the Western Line, Sydney Metro will deliver the capacity to increase the number of trains entering the CBD across the entire Sydney railway system from 120 to about 200 in the busiest hour of the day. This means the railway network across greater Sydney will have room for an extra 100,000 train customers an hour in the peak.

The **Homebush Bay Bridge** will open in 2016 and provide access across Homebush Bay between Rhodes and Wentworth Point for buses, pedestrians and cyclists, reducing the distance between Olympic Park and Rhodes Station from eight kilometres to less than one kilometre.

Future conditions

Growth and change in the Corridor

Some 210,000 additional people, approximately 13 per cent of expected metropolitan growth, could reside within the Corridor, while there is also expected to be an increase of approximately 80,000 jobs. This will mean many changes in where people live and work, and how they travel. While Sydney CBD will remain the metropolitan area's dominant employment centre, Greater Parramatta will experience significant employment growth.

The strongest demands to, from and through the Corridor are expected to occur on an east-west axis. Towards the east of the Corridor, for example, the number of trips could rise to around 600,000 daily trips in each direction by 2031.

North-south demand will also continue to grow, particularly in the northern axis between Burwood and Homebush, towards Ryde and the northern suburbs via Rhodes. This axis of demand is forecast to cater for 160,000 daily trips in each direction by 2031 compared to 100,000 trips each day in each direction now. North-south demand will continue to increase throughout the southern part of the Corridor.

Figure 14: Future corridors of demand (origin-destination trips, all day, 2031) (Sydney Strategic Travel Model)

While WestConnex will reduce the amount of regional freight traffic from surface roads within the Corridor, some goods need to reach customers within the Corridor. These trucks, vans and smaller commercial vehicles will continue to use local roads and their movements will increase as the Corridor adds population and employment.

Growth and change beyond the Corridor

A Plan for Growing Sydney estimates that Sydney's population will grow by 1.6 million people in the next 20 years, requiring 689,000 new jobs.

As Sydney grows and our population changes, the entire city will transition, with more jobs and housing in the city's west. Economic shifts will see more jobs in the knowledge-based economy, rather than traditional manufacturing industries. Demographic shifts are already seeing younger workers more likely to use public transport – trends show a decrease in driver licences and vehicle ownership.

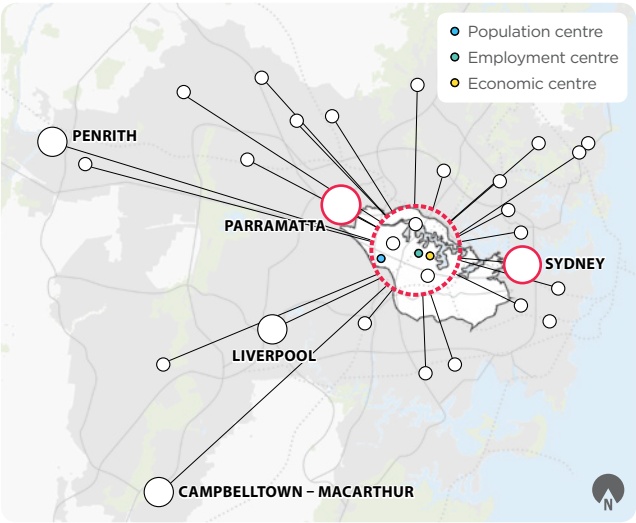


Figure 15: Metropolitan population, employment and economic centres

Developments associated with key nodes along the rail lines travelling north and west of Sydney CBD have created strategic centres at locations such as North Sydney, St Leonards, Chatswood, Macquarie Park, Castle Hill and Norwest, forming the Global Economic Corridor. Functionally, the Sydney CBD to Parramatta Corridor serves as an economic link that connects the eastern and western ends of the Global Economic Corridor.

Other major areas of growth across metropolitan Sydney that will influence how people use the Corridor include the North West and South West Priority Growth Areas, the Broader Western Sydney Employment Area, The Bays Precinct, the Central to Eveleigh Urban Transformation Program and the Bankstown to Sydenham Urban Renewal Corridor.

Freight movements from The Bays Precinct will continue to be important to construction and food and beverage industries that primarily use the Precinct's berths. Continued access must be maintained in future planning.

Future initiatives

NorthConnex is a tolled motorway linking the M1 Pacific Motorway at Wahroonga to the Hills M2 Motorway at West Pennant Hills currently under construction. The nine-kilometre tunnel will link Sydney's north to the orbital motorway network. It is recognised in the State Infrastructure Strategy and NSW Long Term Transport Master Plan as important infrastructure for freight traffic and to reduce congestion and improve traffic flows.

The **Western Harbour Tunnel** is a proposed north-south harbour crossing that could give road users a new route from Rozelle to employment centres in the north, complementing WestConnex by connecting directly with Sydney's northern suburbs and bypassing the Sydney CBD.

Vision and objectives

The vision is intended to serve as an overarching focus for the development of this Strategic Transport Plan against which future initiatives and actions can be measured.

Future growth and development will enhance the Sydney CBD to Parramatta Corridor as an important social, economic and functional spine, supporting and shaping metropolitan Sydney. Linking the Sydney CBD and Parramatta, the Corridor will be a great place to live, work, play and visit.

This vision is considered in terms of overall NSW Government objectives for the Corridor and the role it can play in a growing Sydney, as well as clear principles that will guide an integrated approach to land use and transport planning in the Corridor.

Whole-of-government objectives	Principles to meet these objectives
• Make it easier to move to, through and within the Corridor. • Support walking and/or cycling for local trips, buses and/or light rail for intermediate trips, rail and/or car for regional trips. • Realise and support urban transformation and transit-oriented development. • Facilitate additional east-west and north-south movements. • Enhance existing or create new desirable and affordable mixed use environments. • Optimise the Corridor's inherent social, economic and environmental resources, including freight-generating precincts. • Utilise excess road and rail capacity and non-infrastructure initiatives and optimise public investments in transport. • Contribute to regional resilience and sustainable communities.	• Improve transport and land use integration. • Provide access to multiple modes of transport and a greater degree of flexibility. • Support multi-modal trips with a connected network and seamless interchange. • Adjust land use decisions to locate growth, particularly in employment, towards the Corridor's west. • Ensure that infrastructure investments address multiple transport needs instead of individual functions. • Promote mixed use development. • Optimise the way land is used to reduce the need to travel. • Encourage behavioural solutions to optimise the capacity of transport resources. • Match transport type with travel demand. • Protect industrial, freight precincts and intermodal terminals.

Responding to growth and change in the Corridor

Integrating the trips people take with expected land uses

Integrating transport and land use

By ensuring significant jobs growth to match the housing growth expected in Western Sydney, and through Parramatta's designation as Sydney's second CBD, the Corridor could experience an increase in commute trips moving westward through the Corridor during the morning peaks and eastward during evening peaks, taking advantage of existing excess capacity in the non-peak direction. Without this, any capacity gained on an upgrade to the T1 North Shore, Northern & Western Line will only provide a better service to customers travelling through the Corridor rather than within the Corridor.

The Parramatta Road Urban Transformation Program and the identification of the Greater Parramatta to Olympic Peninsula Priority Growth Area will similarly provide additional jobs and housing and local enhancements, making it easier for people to travel shorter distances for their work or education, or day-to-day needs. A proper integration of transport and land use needs can help to manage travel demand and make the system more efficient. This focuses on non-infrastructure initiatives such as encouraging visitors to use non-car modes of travel to help alleviate congestion.

Key elements include:

- Modifying or altering the timing of trips, shifting from peak to off-peak periods
- Reducing the need for trips, by undertaking several tasks as part of a single trip
- Changing modes, such as taking a bus or cycling instead of using a private vehicle
- Changing trip routes to avoid areas of congestion
- Encouraging freight deliveries outside of times of peak road-use demand.

Given the importance of the Global Economic Corridor as a major jobs spine for Sydney, improved north-south transport links can connect directly to Macquarie Park to the north, strengthening connections to the Global Economic Corridor.

In the long term, WestConnex will improve access through the inner west and precincts along Parramatta Road and to key regional destinations such as Sydney Airport and Port Botany from both Western Sydney and within the Corridor. It will also reduce traffic congestion on the M4 and M5 Motorways, Parramatta Road and the wider road and rail network, particularly in peak periods. This will facilitate urban transformation and improve public and active transport along Parramatta Road and its immediate surrounds.

Matching transport options to trip types

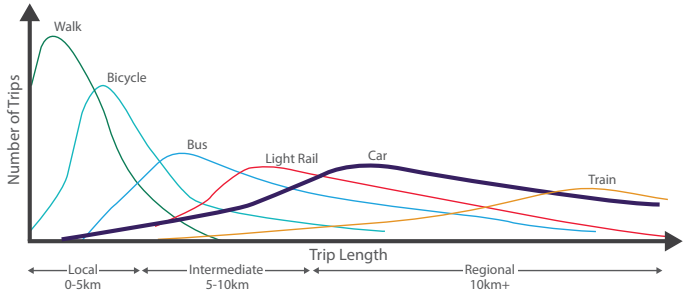


Figure 16: Urban trip market segment and transport mode suitability

Based on analysis of current demands within the Corridor, overall mobility can be enhanced through actions that address trips and travel modes:

- Local trips can be made, in general, on foot or by bicycle.
- Intermediate trips will continue to comprise the majority trips within the Corridor and, if supported by appropriate land uses, represent a key opportunity to enhance the capacity and efficiency of the transport network without necessarily requiring significant new infrastructure investments.
- Regional trips through the Corridor can be made by regional rail and in the future via WestConnex.

With the right priority measures, buses can compete with cars for local and intermediate trips. These types and lengths of trips are often to dispersed destinations within or adjacent to the Corridor. A connected public transport network – with links by bus, light rail or ferry – provides options to travel to many destinations easily, with the heavy rail network also taking some of the intermediate travel task. Interchange between modes and services are critical, requiring good frequencies and easy transfers between each transport node.

Intermediate trips could be served by high frequency, high priority, street-based public transport allowing boarding and alighting along the route but also providing good travel times between centres. A strong connection with land use will ensure appropriate supporting mixed use development along these routes.

Local trips

Local trips in the Corridor are often undertaken on foot or on bike. Footpaths are generally good quality, though cycling facilities vary. In the west of the Corridor, pedestrians contend with large block sizes, whereas shorter blocks in towards the centre and east are more conducive to walking.

Major roads and railways are difficult to cross safely and limit walking in the Corridor. Spacing between opportunities for crossing increases from 50 metres to over 800 metres in some parts. Pedestrians must sometimes deal with long wait times to cross major roads.

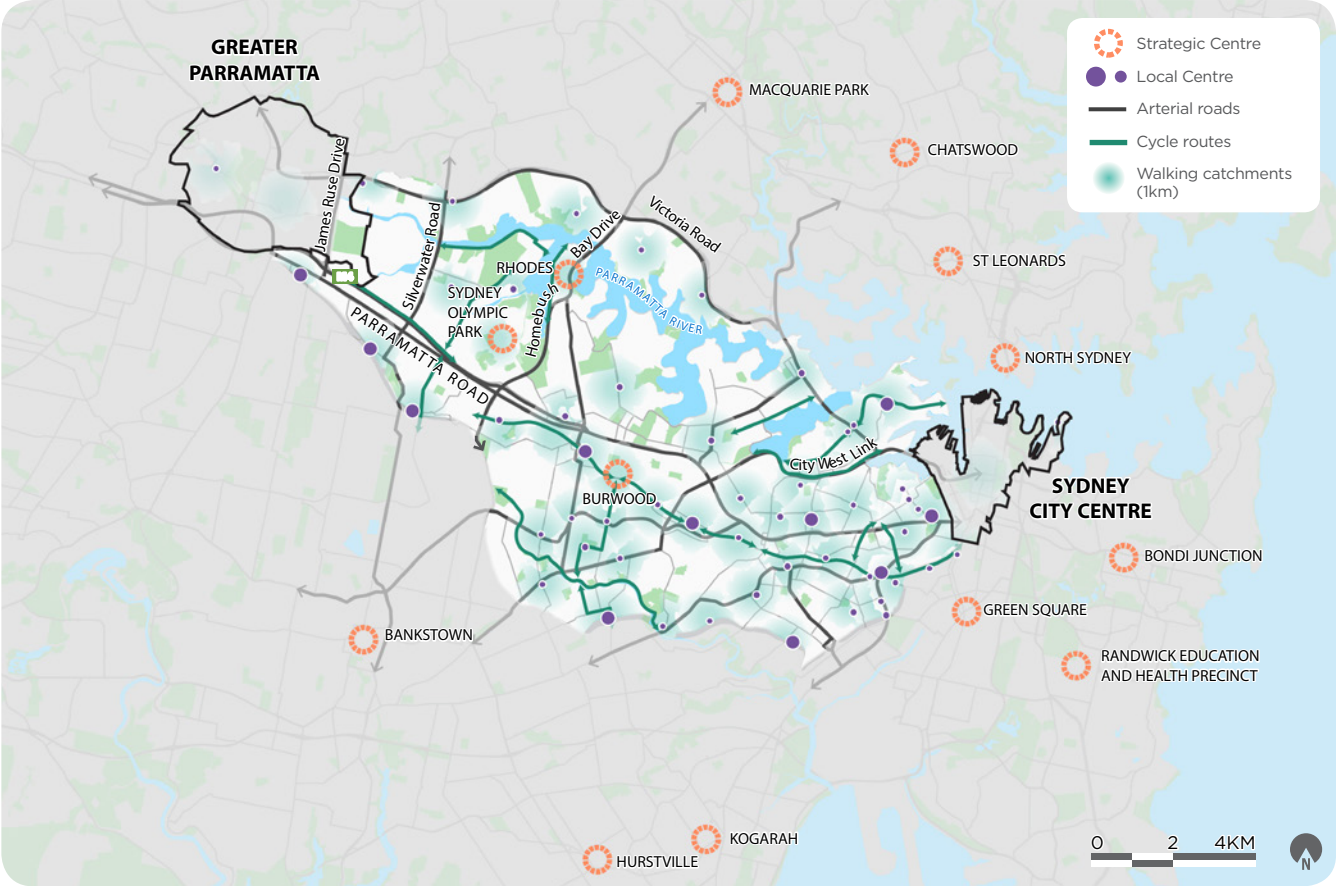


Figure 17: Current local routes

The share of travel to and from work by bicycle has increased from 0.7 per cent in 1991 to 2.2 per cent in 2011 – a significant increase from a low base. Infrastructure includes mix of separated pathways and on-road routes, both with and without markings to delineate space for cyclists. Generally, cyclists travel on the road with other traffic.

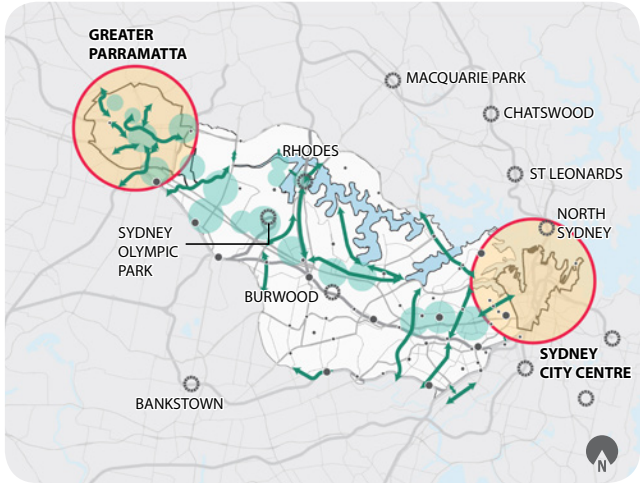


Figure 18: Proposed active transport improvements (schematic)

Many car trips on Parramatta Road are local trips, indicating that people use Parramatta Road to make short trips, and/or connect with north-south routes. Local car trips are relatively convenient with free parking in the majority of local centres, though less so as the Corridor nears the Sydney CBD. Major roads such as Parramatta Road, Homebush Bay Drive and Liverpool Road can only be crossed at major intersections, meaning that local trips by car also use these roads. The overall lack of through-connections pushes traffic on to major east-west roads even if north-south travel is desired.

Public transport accounts for around one in ten local trips in the Corridor. Public transport services are more frequent towards the Corridor's east; in its west, local travel by public transport is more difficult, with lower service frequencies, and larger distances between transport routes.

Response

- Shift more trips to active transport as land uses change and transformation provides more day-to-day destinations within local centres, placing destinations closer to residents. More people can access local centres and public transport nodes and reduced congestion will free up capacity for public transport and for the expected increase in local servicing and deliveries.
- Integrate walking and cycling into the design of transport interchanges to encourage active transport as part of public transport journeys.
- Work with councils to identify and co-fund local cycling infrastructure to connect local cycling networks to key centres and destinations. This will focus on completing cycle links within a five-kilometre catchment of major centres in the short term, expanding to a 10-kilometre catchment in the longer term.
- Consider other initiatives such as speed limit reductions, Travel Management Associations and traffic signal phasing improvements.

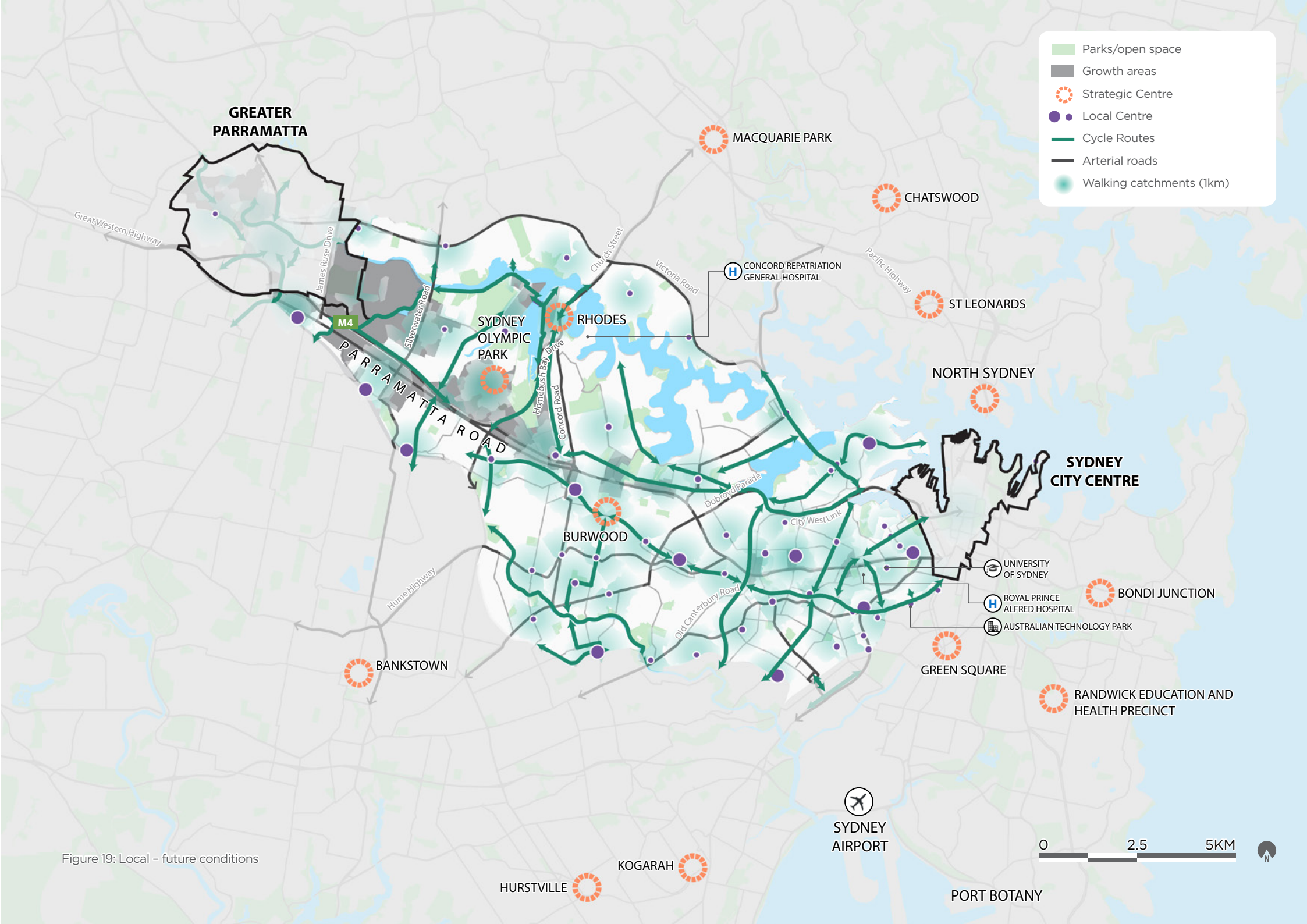


Figure 19: Local – future conditions

Intermediate trips

With cars mostly used for intermediate trips, people often travel on congested major roads with generally slow travel speeds, competing for road space with local and regional trips. North-south drivers often need to temporarily travel east or west before connecting to other north-south routes – this particularly impacts Parramatta Road.

Public transport connections use Parramatta Road, Victoria Road and King Street, as well as the L1 Dulwich Hill Light Rail Line. Rail frequency, reliability and travel speeds are also highly competitive throughout the Corridor. Ferries provide regular services on the Parramatta River, stopping at wharves along the length of the Corridor.

North-south bus connections within and through the Corridor are not as extensive as east-west services, though there are some services to and from Burwood, extending north across the Parramatta River to Macquarie Park, and south to Hurstville.

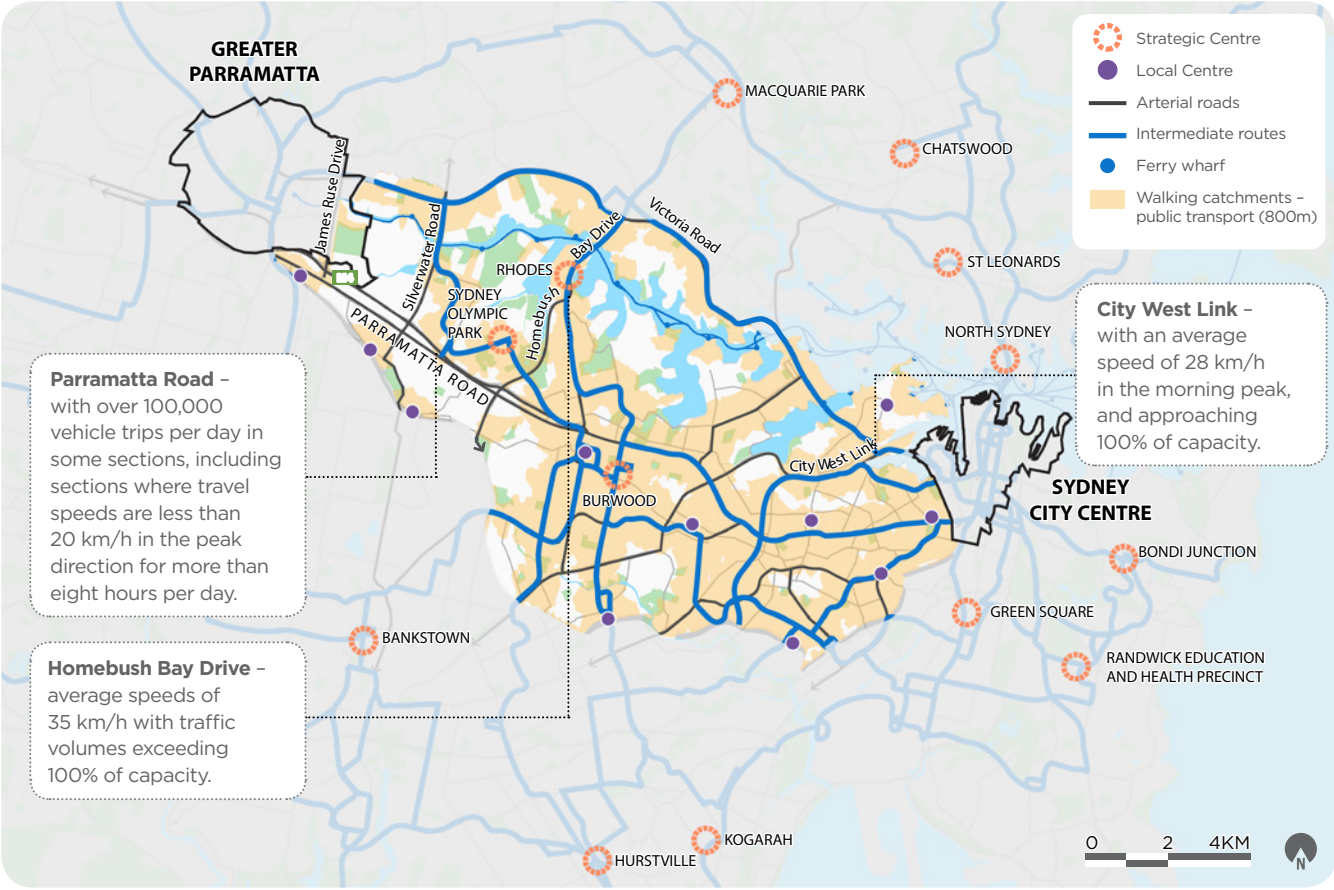


Figure 20: Current intermediate routes


Dulwich Hill
17
Transport Light Rail
CAF
Tap on
Tap off

East-west bus service drops off west of Leichhardt, and few buses serve Sydney CBD west of Burwood. Sydney Olympic Park and nearby high-density residential developments are not well connected by public transport. There are no direct rail services to Sydney Olympic Park during the working week from the Sydney CBD (although the area is well served during special events). However, opportunities to connect this and residents living in Wentworth Point to public transport will improve with the opening of the Homebush Bay Bridge.

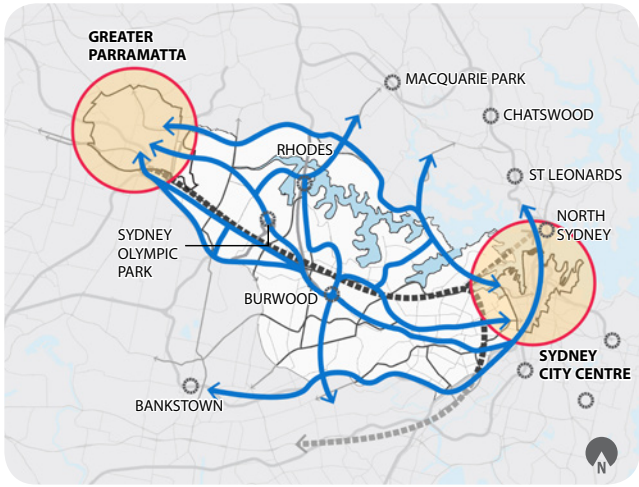


Figure 21: Key intermediate route improvements (schematic)

Rail and ferries provide reliable and comparatively fast travel times to, from and within the Corridor, whereas travel speed and reliability is a challenge for bus services, particularly during peak times. People travelling by bus closer to the Sydney CBD benefit from bus lanes and intersection priority, yet less priority is afforded to buses further west, where trips to, from and between centres are often indirect and slower and less reliable than car travel.

Response

- Shift more intermediate trips to existing and potential bus rapid transit routes. This can be implemented in stages as projects such as WestConnex are delivered.
- Ensure travel modes link major residential areas with important local and regional employment centres while also supporting shorter trips.
- Ensure the heavy rail network continues to play an intermediate role in the Corridor.
- Increase the frequency of Parramatta River services to western wharves, such as Sydney Olympic Park, Meadowbank, Abbotsford and Cabarita.

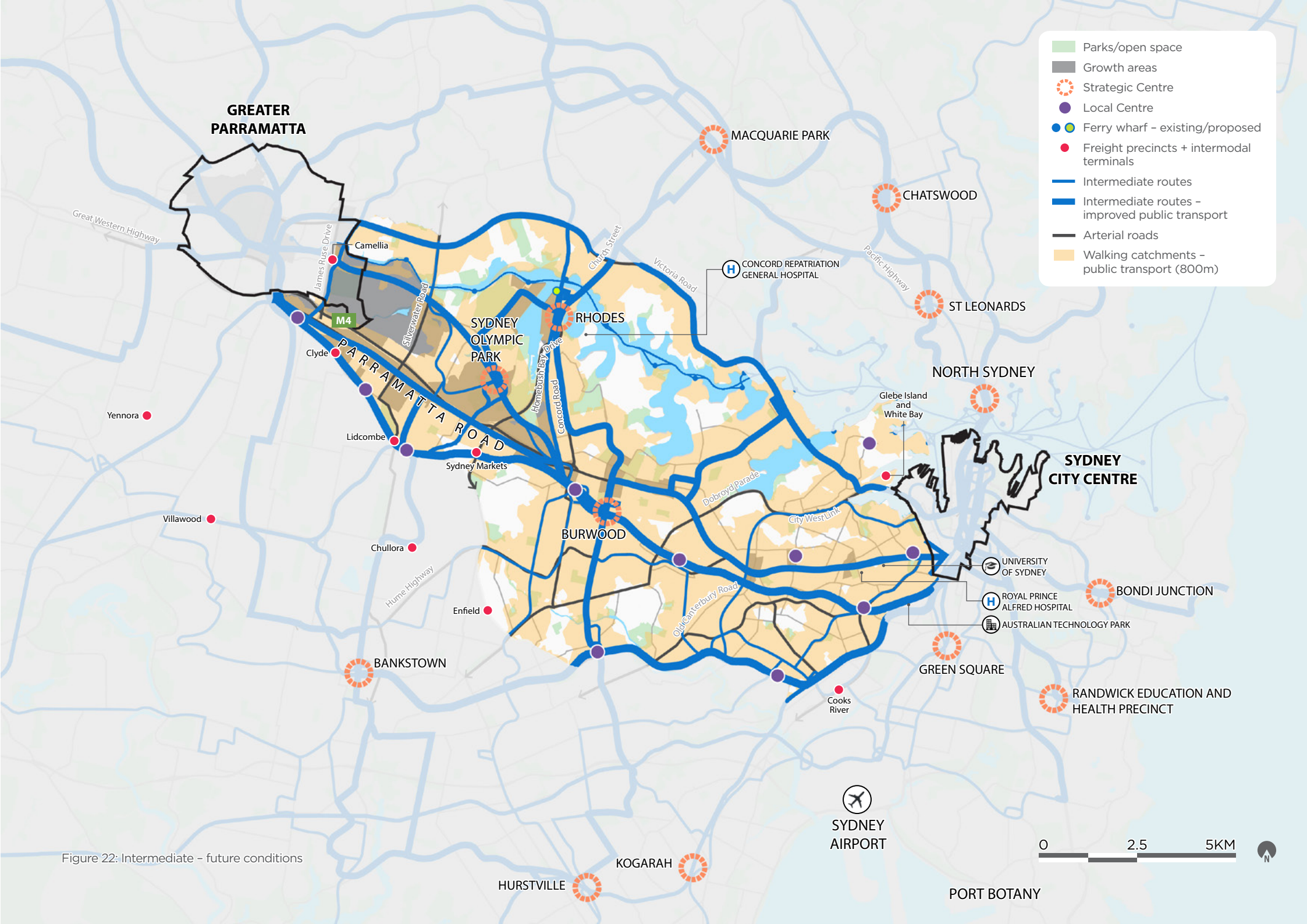


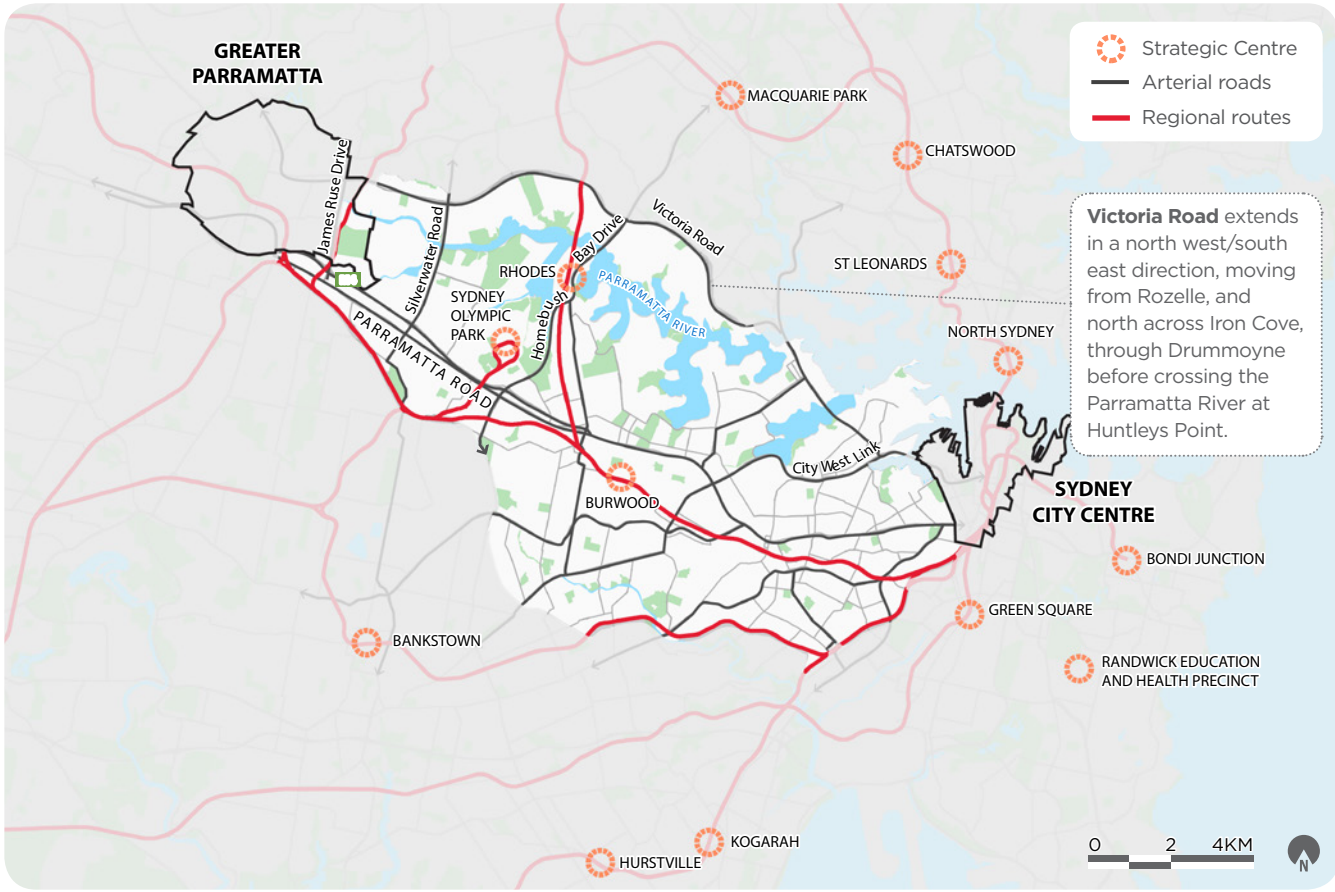
Figure 22: Intermediate – future conditions

Regional trips

Regional trips are undertaken on the rail network and regional roads. Regional networks routinely experience slow travel times, with unreliability and congestion on the road network and overcrowding on the rail network.

Each morning, around 20,000 trips pass through the Corridor by car. Major roads such as Parramatta Road, City West Link and Homebush Bay Drive carry in excess of 5,000 people per hour in each direction, but routinely experience volumes that significantly exceed capacity in the peak city-bound direction.

Most regional trips are undertaken on public transport, mainly the rail system. Travelling through the Corridor on the rail network is generally faster and more reliable than other modes of transport (for example, 10 to 20 minutes faster between Parramatta and Sydney CBD than car travel during peak hours). However, many trains carrying regional trips are already approaching capacity, carrying full loads of sitting and standing passengers when they enter the Corridor.



Victoria Road extends in a north west/south east direction, moving from Rozelle, and north across Iron Cove, through Drummoyne before crossing the Parramatta River at Huntleys Point.

Figure 23: Current regional routes


Transport
Sydney Trains

Figure 24: Key regional route improvements (schematic)

Given the jobs imbalance between parts of Sydney, any new capacity on the T1 North Shore, Northern & Western Line will benefit customers travelling through the Corridor rather than within it. Further investigations are required as to the best response for this area of Sydney that will likely require a higher-capacity transport solution in the future. This will involve analysis to compare the benefits provided by improvements or augmentation of the T1 North Shore, Northern & Western Line with the benefits of some new form of transport. This analysis will be considered within the context of requirements across the Sydney metropolitan area.

A small number of regional trips are also undertaken on buses primarily serving north-south travel between centres such as Hurstville and Macquarie Park. Regional buses experience slow travel times (often below 10 kilometres/hour in the peak) and unreliability, particularly at peak times, due to mixed traffic conditions and congestion.

Response

- Locate more activity (particularly jobs) in the western part of the Corridor and support transport connections from within the Corridor west to Parramatta and from the south, west and north to Parramatta.
- Optimise the advantages of WestConnex reducing traffic congestion on the M4 and M5 Motorways, Parramatta Road and the wider road and rail network with supporting packages such as the Pinch Point and Clearways programs.
- Deliver the Western Sydney Rail Upgrade Program to introduce faster and more frequent services, directly leading to better reliability on the T1 North Shore, Northern & Western Line.
- Consider the impacts of the Sydney Metro Northwest and Sydney Metro City & Southwest on the T1 North Shore, Northern & Western Line in shifting passengers away from that Line and how best to alleviate capacity constraints along the Corridor.

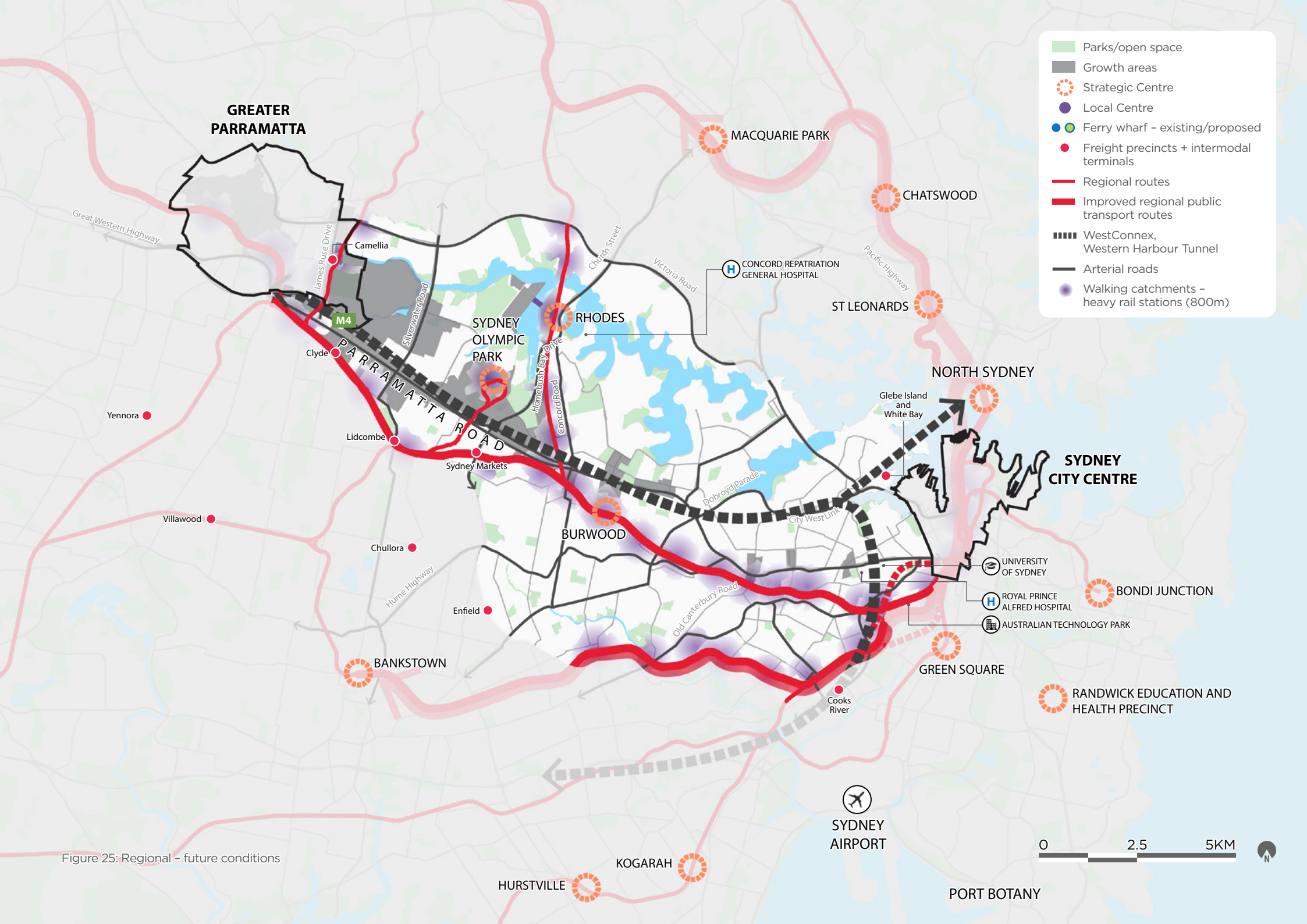


Figure 25: Regional – future conditions

Next steps

Key Challenges

1. Manage growth in centres, precincts and generally across the Corridor.
2. Manage long distance trips that occur through the Corridor.
3. Support land use planning with appropriate transport initiatives.
4. Support economic activity in centres and precincts.
5. Cater for the future transport task within available resources and funding.
6. Maintain and enhance liveability as development intensifies and travel demand increases.
7. Improve safety, security and equity.

Initiatives

Outcomes

A. Improve regional mobility to and through the Corridor.

B. Enhance the movement of people and goods to, through and within the Corridor.

C. Increase walking and cycling access to public transport for trips that start or finish within the Corridor.

D. Improve access to centres and public transport nodes.

E. Optimise existing infrastructure.

F. Improve connections between key centres within and outside the Corridor.

Key Challenges	Initiatives			Outcomes
	Short Term (2015-2019)	Medium Term (2020-2024)	Long Term (2025+)	
2, 5, 6	Complete WestConnex Stages 1 and 2	Complete WestConnex Stage 3	Investigate Western Harbour Tunnel motorway link	A, B, F
2, 4, 5	Commence implementation of the Western Sydney Rail Upgrade Program Introduce wider metropolitan rail timetable changes	Continue and complete implementation of the Western Sydney Rail Upgrade Program	Further investigate rail improvements	A, B, E, F
2, 3, 4, 5	Commence implementation of Sydney Metro City & Southwest	Complete Sydney Metro City & Southwest		A, B, C, D, F
5, 6, 7	Implement intersection improvements as identified by Road and Maritime Service's Pinch Point Program	Continue to implement Road and Maritime Service's Pinch Point Program		B, D, E, F
1, 3, 4, 5, 6	Identify potential preferred light rail route serving Parramatta from four shortlisted routes	Complete potential preferred light rail route serving Parramatta		B, C, D, F
1, 3, 4, 5, 6	Provide bus priority measures where possible along Parramatta Road from Burwood to the Sydney CBD	Deliver sections of new kerbside bus lanes along Parramatta Road from Burwood to the Sydney CBD	Deliver preferred public transport option with faster and more frequent services along Parramatta Road from Burwood to the Sydney CBD	B, C, D, F
1, 3, 4, 5, 6	Commence implementation of 'rapid' and 'suburban' bus routes as identified in *Sydney's Bus Future*	Continue implementation of bus improvements identified in *Sydney's Bus Future*	Complete implementation of bus improvements identified in *Sydney's Bus Future*	B, C, D, F
3, 5, 6, 7	Commence program to reduce wait times for pedestrians at intersections	Continue program to reduce wait times for pedestrians at intersections	Continue to deliver connected, accessible and safe walking networks	C, D
3, 5, 6, 7	Commence implementation of improved cycling facilities as outlined in *Sydney's Cycling Future*	Continue to deliver connected, accessible and safe cycling networks	Continue to deliver connected, accessible and safe cycling networks	B, C, D
3, 5, 6, 7	Work with councils to improve local walking and cycling networks and improve access to public transport nodes	Continue to work with councils to improve local walking and cycling networks and access to public transport nodes		B, C, D
2, 5	Investigate leveraging spare counter-peak transport capacity via customer campaigns involving travel information and potential policy incentives			A, B, E, F
1, 3, 4, 5, 6	Complete implementation of Parramatta River ferry initiatives, including extra services, new wharf at Rhodes and new River ferries	Continue implementation of initiatives identified in *Sydney's Ferry Future*	Complete implementation of initiatives identified in *Sydney's Ferry Future*	B, C, D, F
2,3,4,5	Complete Enfield Intermodal Logistics Centre and commence Enfield Staging Sidings	Complete Enfield Staging Sidings, and commence Chullora Junctions Upgrade and Western Sydney Freight Line	Complete Chullora Junctions upgrade and Western Sydney Freight Line Commence Southern Sydney Freight Line Enhancement	A, B, E

Figure 26: Summary of next steps

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