City of Ryde

INTEGRATED TRANSPORT STRATEGY

2041 - DRAFT

ACKNOWLEDGEMENTS

The *Integrated Transport Strategy 2041* was led by the new Transport Planning section, within City of Ryde's Transport Department. The core project team comprised of David Anderson, Senior Coordinator Transport Planning (Project Manager), Michael Dixon, Manager Transport (Project Director) and Marita Perry, Transport Data Analyst. The core project team greatly appreciates the input provided by the many internal and external stakeholders.

Special thanks to the ITS Councillor Working Group that met regularly to consider key transport proposals and planning principles. This strategy has also benefited from the expertise of various City of Ryde internal departments, including the Urban Strategy and Environment teams.

City of Ryde Transport Department

The Transport Department manages operational and strategic matters, ranging from road use permits through to traffic and parking, optimisation of transport outcomes from new land use proposals, road safety programs and projects, and long-term transport plans.
A key focus is ensuring that the transport system is safe, sustainable and efficient, and provides good connectivity across and within City of Ryde for all, especially to and from key places and facilities.

Publication and contact details

More information on transport at the City of Ryde can be found at **www.ryde.nsw.gov.au** or by contacting City of Ryde Customer Service Centre, 1 Pope Street, Ryde NSW 2112. Phone (02) 9952 8222 or email cityofryde@ryde.nsw.gov.au.

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1 MAYOR'S MESSAGE

This *Integrated Transport Strategy 2041* will define the City of Ryde's future direction toward 2041 and beyond.

We all need to travel for work, university, school, shopping, visiting family and friends, playing sport, medical appointments, or for many other reasons. The transport system is vital for us all.

In planning for the future, we must build on existing transport networks to accommodate the needs of a growing population, expected to increase from 134,000 persons in 2020 to 211,500 persons in 2041, an increase of almost 58 percent. At this rate of increase, the City of Ryde's population could exceed 250,000 residents by 2056, placing extreme pressure on our existing transport networks if we do not focus on more efficient ways of moving people and reducing travel demand.

Given this, we need to rethink how we plan and deliver transport infrastructure. The way we choose to travel will become even more important in the future, as we work toward creating a more sustainable transport system.

Emerging trends in transport technologies and land use impacts continue to shape our transport journeys. A key challenge is to find ways to have much needed transport infrastructure to support a growing population built sooner. The *Integrated Transport Strategy 2041* sets us on the path to meeting this challenge.

The NSW Government has released detailed plans for future travel in the Sydney Region, including *Future Transport Strategy 2056* and the associated *Greater Sydney Services and Infrastructure Plan 2056.* These plans support the Greater Sydney Commission's land use plans for Sydney, including the *Greater Sydney Region Plan – A Metropolis of Three Cities (2018) and the North District Plan (2018).*

At the same time, councils across Sydney have updated their Local Strategic Planning Statements and Local Environmental Plans. For the first time, Greater Sydney has a comprehensive and coordinated structure for local strategic planning.

At the City of Ryde our focus continues to be on maximising opportunities to increase public transport, walking and cycling networks, improving access to our town centres, while providing a more connected network, and reducing the reliance on private vehicles.

The *Integrated Transport Strategy 2041* is a comprehensive, evidence-based report that enables us to engage with government about our transport needs. It is a means of communicating with many stakeholders, collaborating to achieve sustainable transport networks, while positioning the City of Ryde for the future.

The City of Ryde has a well-earned reputation as a great place to live, work, play and visit. We need to continue working together as a community, to influence the way our city works and change travel behaviour. We look forward to working with our community and partners to best respond to change, by delivering a sustainable, safe and convenient transport system.

Clr Jerome Laxale
Mayor

2 EXECUTIVE SUMMARY

City of Ryde has long recognised the important link between transport planning and land use planning. By properly integrating the transport system into the built environment, it is possible to reduce the distances people need to travel whilst encouraging the use of more sustainable travel modes.

The *Integrated Transport Strategy 2041* represents a new direction for the City of Ryde. The Strategy explores the future and examines the impacts of a growing population and an expanding economy. It explores opportunities to use technology to influence the way we travel. The Strategy builds on Council's previously adopted transport and land use strategies by identifying and prioritising major transport infrastructure and services that will improve the customer experience and sustainably accommodate future demand. The strategy adopts a movement and place approach, focused on maximising the efficiency of people movement (over vehicle movement) and achieving outcomes that make successful places.

This strategy aims to align with the latest plans released for the Sydney Region, including the *North District Plan, Future Transport Strategy 2056* and the *Greater Sydney Services and Infrastructure Plan 2056.* It examines key transport challenges, including the city's unique mix of population and employment, household structures, and travel patterns. It also provides a framework for Council to investigate the appropriateness of the timing of State Government initiatives to provide for population and employment growth across Ryde.

Road safety, transport and technology trends are important aspects of this strategy. The availability of parking and access to employment are also considered, with planning principles aimed at providing guidance for internal decision making.

The way that freight is transported throughout the Ryde area and Sydney is changing, with a greater focus on last mile journeys undertaken by smaller trucks, vans and micro-mobility modes such as bicycles, scooters and motorbikes. This has been fuelled by a greater proportion of online orders and local distribution hubs across Sydney. There will be a need for Council to consider this growing group of new road users in terms of their safety and accessibility.

The Strategy identifies the vision, policies and objectives needed to help guide the City of Ryde. Active transport, public transport and freight strategies are identified. Strategies to preserve the unique character of local urban areas are also proposed. Actions needed in the short, medium and long term are identified, along with responsibilities, to give us the best chance of delivering on these actions.

The Strategy aligns with City of Ryde's new *Sustainable Transport Strategy 2021 - 2031,* a strategy for supporting and adoption of more sustainable travel behaviour. It also considers City of Ryde's *Local Strategic Planning Statement (LSPS)* as well as the *Ryde Resilience Plan 2030*, a plan that encourages active & public transport and a move to lower emission vehicles.

A total of 58 priority transport projects have been identified as having the opportunity to make a significant positive impact on City of Ryde's transport system and the community's travel habits.

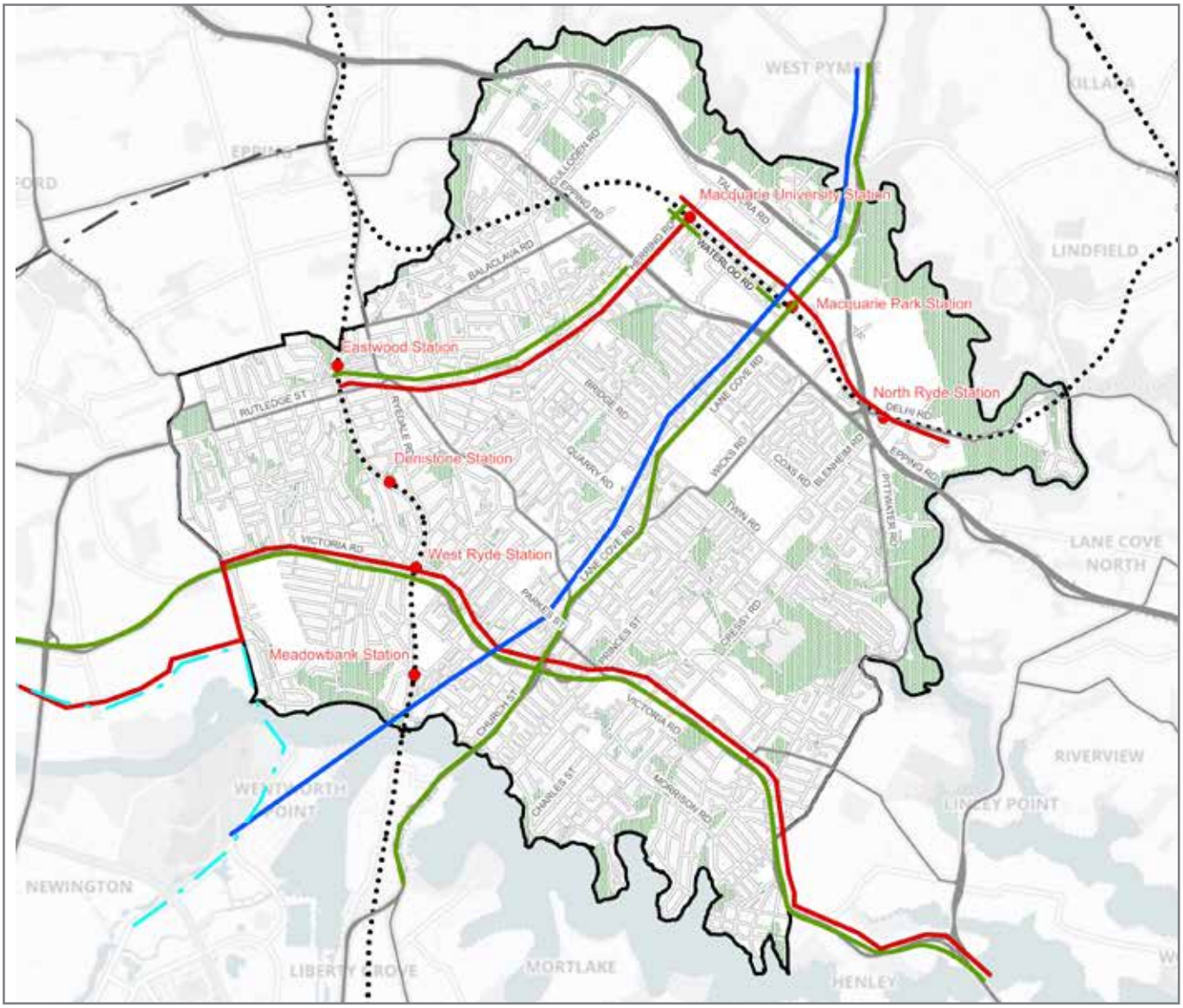
The majority of these projects involve new infrastructure of varying complexity, while five projects are best described as 'policy' projects. The remaining two projects are a combination of both infrastructure and policy initiatives. Policy projects involve, for example, reviewing existing public transport services, assessing areas for slower speed limits and planning for changes in the use of road space.

The transport project list focuses strongly on public and active transport improvements, recognising the importance of environmental sustainability and acknowledging that 'building our way out of trouble' with new roads is an inefficient method of moving large numbers of people and often detracts from achieving positive place outcomes. Notwithstanding this, there are some road improvements identified to address accessibility and known network pinch points.

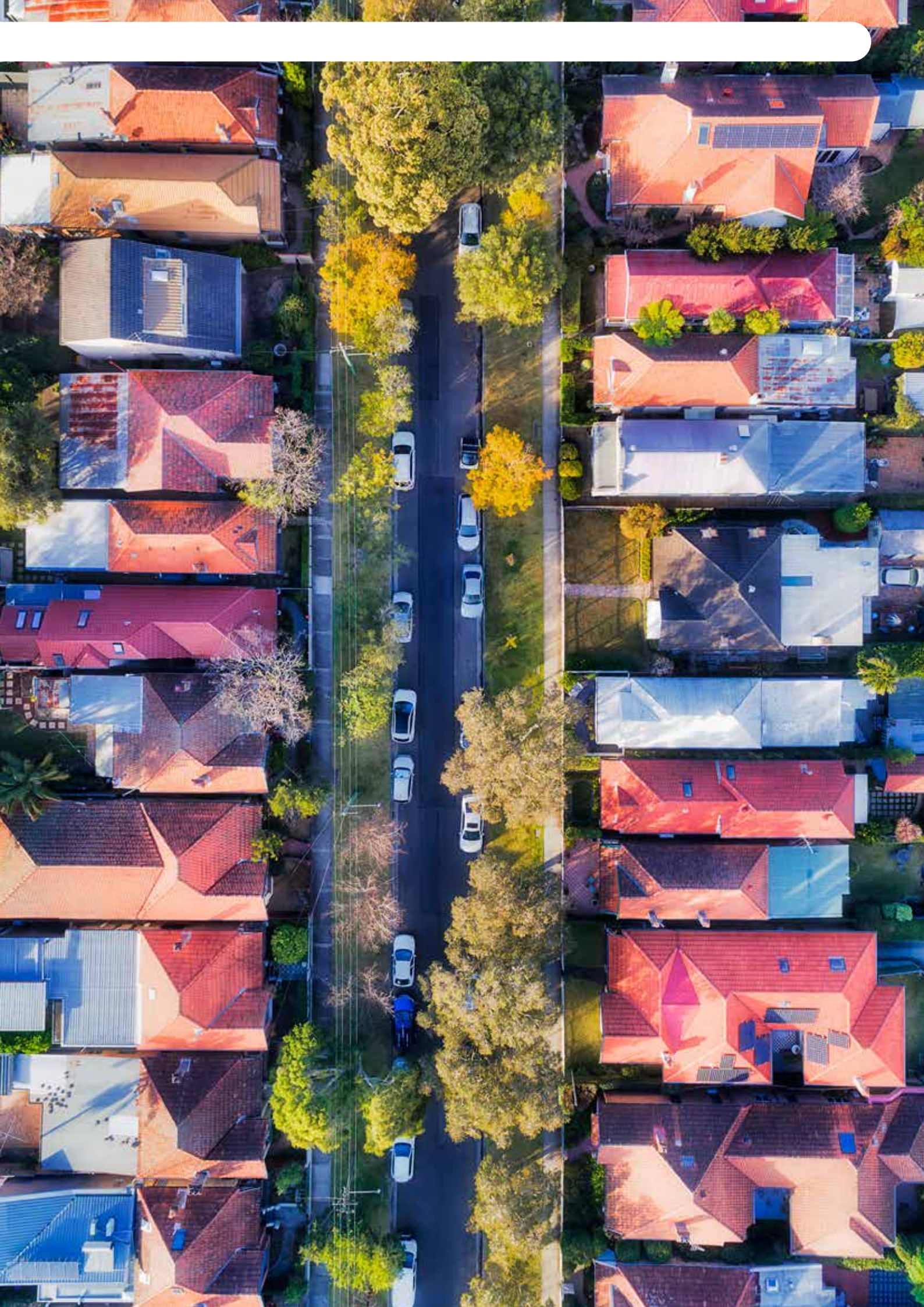
It is intended that this Strategy will also be a resource for advocacy work that will help ensure that City of Ryde secures the attention and funding it deserves from other levels of government.

The Strategy explores innovative funding arrangements with the private sector, that would see major transport infrastructure projects built sooner.

The Strategy has been developed after extensive consultation with neighbouring Councils, State Government agencies, the business community and our residents.



(Figure 1)
Visionary Transport Options



3 CONTEXT

3.1 TRANSPORT IN THE CITY OF RYDE – AN OVERVIEW

The City of Ryde prides itself on the area's amenity and liveability, with a diverse mix of residential developments, retail offerings, significant employment opportunities, open space and community facilities.

With an area of over 40 square kilometres and located only 12 kilometres from the Sydney CBD, the 16 accessible and well-connected suburbs that make up the City of Ryde continue to attract significant numbers of residents, workers and visitors. The city is home to around 134,000 residents, up from 116,302 in 2016. Forecast population for 2041 is 211,500.

(Figure 2)

Source: Map data ©2021 Google

There are more than 105,000 local jobs in the City of Ryde area. This makes the City of Ryde an important attractor of workers, with the number of job opportunities expected to grow. Macquarie University, for example, is expected to grow from 40,000 to 50,000 students by 2030, along with other growth areas including other parts of Macquarie Park, Riverside Business Park in North Ryde, Eastwood, Gladesville, Top Ryde and Meadowbank Education and Employment Precinct (MEEP). This requires additional workers to meet the needs of these education and employment hubs. There are around 14,000 local businesses throughout the City of Ryde, many located in Macquarie Park. There are approximately 45,000 employees who call Macquarie Park home, with this predicted to increase to 65,000 by 2031 according to the *Macquarie Park Place Strategy.*

POPULATION

133,224

estimated residents (ABS ERP 2020)

LAND AREA

40km²

(4,049ha)

POPULATION DENSITY

32.91

persons per ha

3 CONTEXT

Local employment opportunities create a significant daily transport task, with many trips involving the private car. In the context of a growing population and an expanding economy, it will be necessary to provide travellers with a greater range of alternative, sustainable transport options. The existing road network, while one of the community's most valuable assets, will be unable to cope with additional vehicles during peak periods.

The most recent household survey data confirms that, while the ratio of trips made as car driver / car passenger continues to decline gradually in favour of other modes, average commute times by car steadily increased between 2016/17 and 2018/19.

Vehicle mode split is currently around the following for forms of transport in the City of Ryde:

67 percent

Cars

23 percent

Public / active

The remaining 10 percent not travelling for work.

Average work commute

Takes 37 minutes each day, or around 21 minutes by car as a driver.

The competitiveness of car travel times in the Ryde area relative to other modes is a real challenge for getting people to use more sustainable transport modes.

This compares favourably with the Greater Sydney Region that has a mode split of 69 percent private vehicle and 21 percent public / active transport. Average work commute times for the Sydney Region are currently 37 minutes, or around 21 minutes by car as driver.

It is estimated that avoidable congestion on Sydney's roads costs the wider community more than $6 billion per year (2015), including additional fuel costs and lost time. Sydney's road congestion is estimated to cost more than $16 billion by 2031. While continuing to improve the efficiency and management of the road network, the capacity of the network is relatively fixed and efficiency gains will need to be prioritised towards commercial and service vehicles, emergency vehicles and active and public transport through the reallocation of road space.

The area is dissected by a network of major arterial roads – Victoria Road, Epping Road, Lane Cove Road – that allow commuting and commercial vehicles to move though the area to other parts of the Greater Sydney Region. As these roads are classified as State Roads, traffic management is under the control of Transport for New South Wales. City of Ryde is responsible for the maintenance, management and operation of all roads, except State Roads.

City of Ryde is responsible for the verges including footways on State arterial roads.

The City of Ryde has several key transport corridors that serve the local area as well as the wider Sydney Region, including:

- State roads - Lane Cove Road / Devlin Street / Church Street (A3 corridor), Epping Road, Victoria Road, Delhi Road, Blaxland Road, First Avenue/Rutledge Street and M2 Motorway
- Northern Rail Line and Metro North West
- Bus routes along major arterial roads
- Ferry services on the Parramatta River.

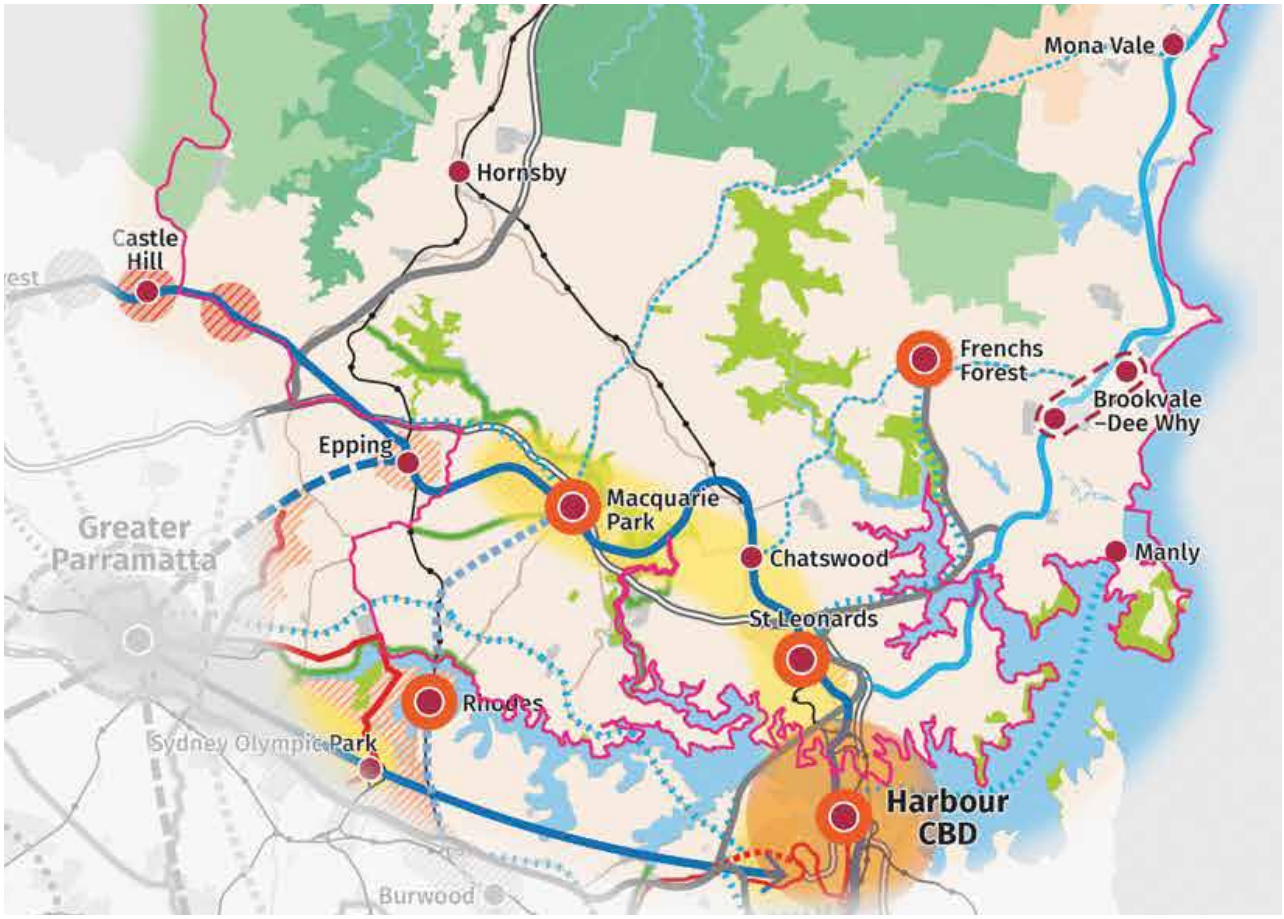
Future State corridor considerations include:

- Eastwood County Road Corridor
- Northern Rail Line duplication for freight
- Randwick to Macquarie Park via Kogarah Metro line
- Various new bus corridors, including Macquarie Park to Mona Vale.

Macquarie Park is part of the Sydney Economic Development Corridor, a major corridor of business activity and employment, stretching from Norwest Business Park, through Macquarie Park, Chatswood, North Sydney to Port Botany, also including Parramatta. The economic corridor is important from the point of view of strengthening Sydney's regional and international competitiveness, requiring effective transport infrastructure linking the corridor together. Macquarie Park is expected to be the fourth largest CBD in Australia by 2031.

Key policy goals for the City of Ryde proposed include:

- Maintaining the area's role, particularly Macquarie Park, as a key economic centre for Sydney by ensuring employment growth, while continuing to improve public transport use to address congestion
- Encouraging walking, cycling and public transport use by focusing growth in town centres, improving public domain and enhancing community safety.



(Figure 3)

Source: Greater Sydney Commission North District Plan

3.2 WHY WE ARE REFRESHING OUR ITS

City of Ryde recognised the benefits of actively integrating transport and land use planning some time ago. The Council's first Integrated Transport and Land Use Strategy, released in 2008, provided a framework for improved air quality and future transport.

A new *Integrated Transport Strategy 2016 – 2031* (2016 ITS) was prepared in 2015 based on the City of Ryde being 'regionally connected and locally accessible'. Key themes included:

- Integrated transport
- Land use
- Parking
- Active transport
- Public transport
- Roads and freight
- Local centres.

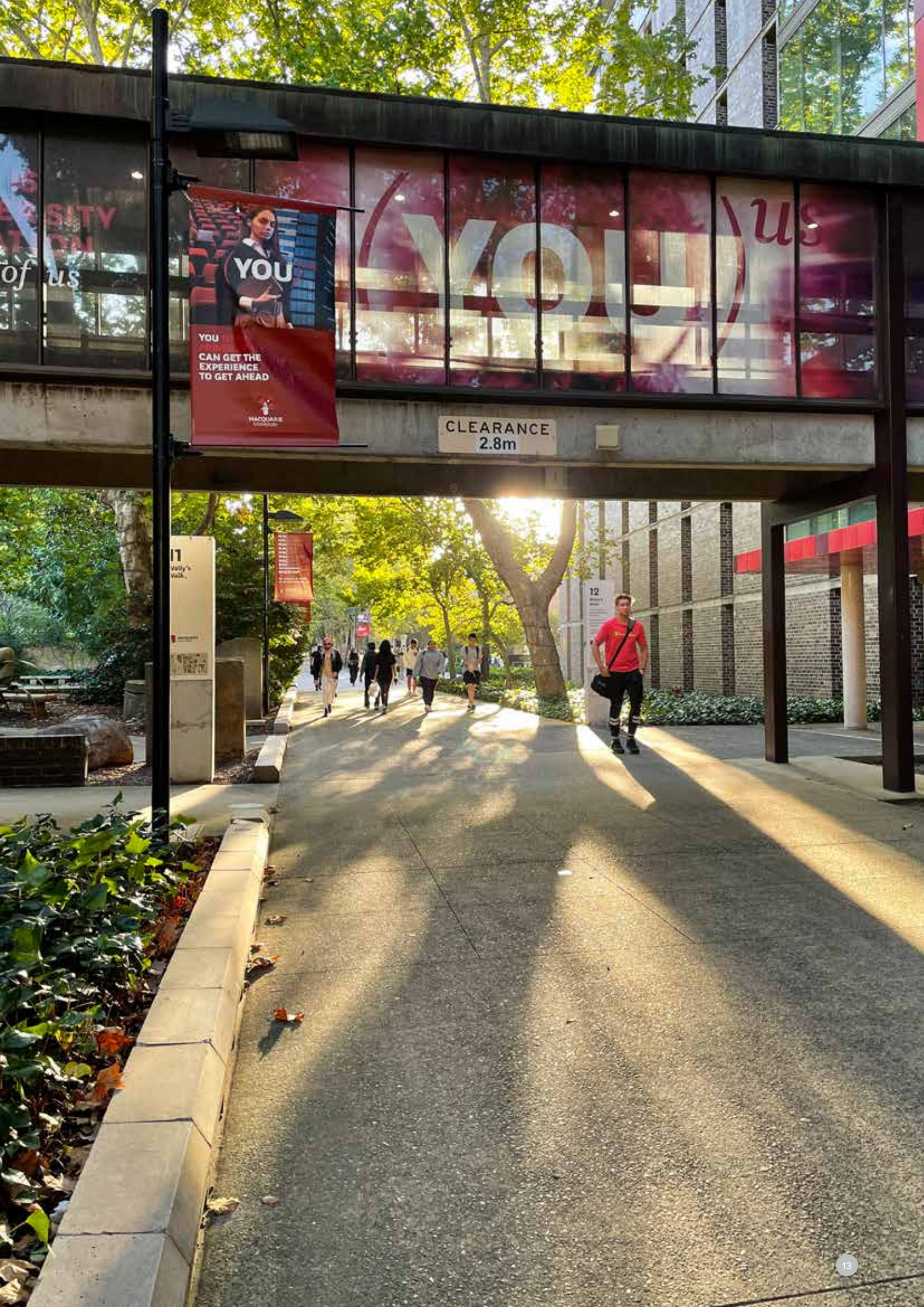
The strategy provided a policy framework for future transport and operational decisions, setting a foundation for more detailed investigations. Land use planning was identified as the key driver in creating an efficient transport network.

The *Integrated Transport Strategy 2041* has a different focus to the 2016 ITS. It seeks close alignment with a range of strategies and plans released by the NSW Government and identifies and prioritises 'big picture' transport infrastructure projects that will make a significant positive difference to the performance of local and regional transport networks within the City of Ryde. Recognising that many NSW Government transport proposals for the area remain 'visionary' in status, this document aims to serve as an advocacy resource. It will be Council's focus that these projects be brought forward in time, with the help of innovative funding solutions, so that the community and visitors can travel in a more sustainable and efficient manner over the next two decades.

Many of the principles of creating an integrated transport system remain the same. Public transport is used to efficiently move residents to key destinations within and outside the local area, maximising the use of infrastructure that provides a travel time advantage over cars. It can also be used to create more vibrant places due to greater people interaction. Roads are managed to optimise traffic efficiency and safety, with priority in terms of efficiency given to local freight, public and active transport modes. Streets are designed and managed to maximise accessibility, while prioritising safety and local amenity. The need to create successful movement and place outcomes for all residents and workers drives this strategy.

In the context of growth and more transport activity, City of Ryde residents have consistently indicated that 'amenity' and 'liveability' are key aspirations, alongside the desire to improve walking and cycling facilities as part of the City's active transport network. Unfortunately, car usage for trips to work and for shopping and recreation remains relatively high, partly due to the city's dispersed land use structure and the current inefficiencies connecting multiple origins and destinations quickly and directly using public transport. High parking provision in some key commercial areas including Macquarie Park currently detracts from efforts to increase the number of people walking and cycling.

As described in City of Ryde's draft *Infrastructure Strategy,* Council collaborates with the State Government, its agencies and other city partners to plan for and invest in city-shaping infrastructure. Councils are not responsible for major developments approved by the State Government, nor budgetary decisions on major transport infrastructure. Working in conjunction with other Councils, local government can be effective in advocating for major transport infrastructure projects and connected active transport networks.


YOU
YOU
CAN GET THE
EXPERIENCE
TO GET AHEAD
MACQUARIE
CLEARANCE
2.8m

3 CONTEXT

3.3 TECHNOLOGICAL CHANGE

Technology is changing constantly, and it is important that we understand that change so that we may respond to the risks that it presents but also take advantage of the opportunities that change present to us.

Technology impacts travel behaviour. People now use mobile phone applications ('apps') to plan their end-to-end journeys. Real time traffic information allows road users to avoid congestion and decrease travel times. When integrated with public transport, users can better select a time and cost-effective travel option for all trips.

On-demand public transport options, bicycle share, car share, ride share and park-share arrangements are all possibilities that have been made more available on a community scale thanks to web and app technologies.

Electric vehicles are slowly gaining in popularity as governments at different levels across the nation start to rollout incentive schemes and promote them. Electric vehicles, if powered by renewable energy, have the potential to significantly reduce transport-related greenhouse gas emissions. They are also quieter than vehicles powered by Internal Combustion Engines (ICE) and much cheaper to run. Hydrogen vehicles are also available, with this technology (in terms of large-scale rollout) still in its infancy. As private vehicles, alternatively powered vehicles are unlikely to receive additional priority on the road network.

On the roads, Intelligent Transport System tools are being used to improve traffic flow, accommodate greater vehicle demands, manage incidents more effectively, and improve road safety both during incidents and on an ongoing basis.

'Smart' motorways are a package of ITS tools that are growing in popularity as a means of managing vehicular demands and improving safety on motorways. The stated objectives include to reduce stop-start travel, improve safety, and provide more predictable travel times. Tools include variable speed limit and lane control signs, coordinated use of traffic lights on motorway on-ramps (ramp signals), travel time and electronic messaging signs, roadside data systems such as traffic detectors and closed-circuit television cameras to quickly detect and respond to incidents.

As the State Government considers how to manage congestion most effectively on the arterial road network, it may consider introducing area-wide road user charging beyond simply motorways. Users may be charged for their car travel based on characteristics such as location of the journey, trip length, time of day, and the purpose of their trip (e.g. a tradesperson may be charged a lower toll compared with a person driving to their office employment).

Cooperative ITS (C-ITS) will enable infrastructure to communicate with vehicles directly and facilitate the introduction of connected and automated vehicles. Whilst there are many ethical, safety and regulatory issues to be addressed before fully automated vehicles are introduced in NSW, these vehicles have the potential to further reduce the NSW road toll by eliminating driver errors that cause crashes. Automated car share schemes have the potential to reduce the number of private vehicles in use.

There is an opportunity for City of Ryde to utilise technologies to improve the customer experience. Some examples include:

- Parking management – effective navigation, dynamic charging and enforcement and occupancy data
- Promotion of micro-mobility to modes to increase the uptake of active transport modes such as bicycles, e-bikes, scooters, e-scooters (future), etc. This may be achieved through bike sharing platforms, user applications, easy booking of storage, website updates, etc.
- Supporting the rollout of electric vehicles and supporting infrastructure
- More cost-effective traffic monitoring to better respond to incidents on the road network.

The City of Ryde will continue to monitor developments in all technologies, particularly in the areas of vehicle automation and ride share. Planning will be needed to increase pick up / drop off space in retail areas and new housing developments to allow for users to be able to easy access these services. Vehicle automation may require additional roadside infrastructure to support the movement of connected and automated vehicles.

4 COMMUNICATION

City of Ryde's 2028 Community Strategic Plan (2018) outlines the community's collective vision for the next decade. It is a strategic roadmap developed after extensive consultation with residents, employees, businesses, community groups and Councillors. The plan aims to ensure that resources are directed to initiatives, services and outcomes that support City of Ryde's overall vision.

City of Ryde's *2028 Community Strategic Plan (2018)* outlines the community's collective vision for the next decade. It is a strategic roadmap developed after extensive consultation with residents, employees, businesses, community groups and Councillors. The plan aims to ensure that resources are directed to initiatives, services and outcomes that support City of Ryde's overall vision.

The plan identifies opportunities to address a growing and changing population, with particular focus on working with the NSW Government and key stakeholders to advocate for improved transport links. The plan aims to ensure that appropriate infrastructure is planned and delivered to support major developments.

Community consultation identified that traffic congestion and parking are the top issues of concern across City of Ryde. Residents want to see investment in infrastructure as the population grows, with village centres to remain vibrant places to meet. Traffic and parking issues have consistently been nominated as priority issues over subsequent surveys.

City of Ryde also conducted extensive community consultation as part of preparing its *Local Strategic Planning Statement (LSPS).* A key theme to emerge included the need for more transport infrastructure to be built to meet the demands of an increasing population. Feedback and suggestions for improving the area's transport system included the desire for more links, better connectivity and alleviation of traffic congestion.

Overwhelming support was demonstrated for investigating options for light rail and better bus connections, with support for an integrated bicycle network. Convenient parking was also seen as an area needing improvement, particularly in the context of future growth and development. Many participants believed that they already had access to a range of services within 30 minutes of their home. In terms of nominating a single transport improvement, more buses and trains were considered the most important initiatives.

In terms of the consultation program undertaken for this Strategy, a wide range of internal and external stakeholders were contacted and engaged. Internal stakeholders included areas such as Urban Strategy, Assets & Infrastructure, Business Infrastructure, Strategy & Innovation, Development Assessment, Environment, Strategic Property, Community & Ranger Services and Parks, as well as Councillors who nominated to be part of the ITS Councillor Working Group and the Council Executive Team.

Key external stakeholders included the Northern Sydney Regional Organisation of Councils (NSROC) and all surrounding local Councils, including Parramatta, Ku-ring-gai, Lane Cove, Hunters Hill and Willoughby, as well as key government agencies such as Transport for New South Wales (TfNSW), Greater Sydney Commission (GSC) and Department of Planning, Industry and Environment (DPIE). Various industry and advisory groups were also engaged, particularly owners, tenants and representative groups associated with Macquarie Park.

5 ALIGNMENT

5.1 KEY DOCUMENTS

The following key documents are considered important to the development of the Strategy

Future Transport Strategy 2056

The vision for Greater Sydney is one where people can access jobs and services in their nearest metropolitan city and strategic centre within 30 minutes by a combination of public transport and active transport, 7 days a week. Research indicates that if people are required to travel more than 60 minutes a day, then quality of life and liveability of a city are impacted.

There are two components to the 30-minute City:

- *Connecting people in each of the three cities to their nearest metropolitan centre*

These are the largest employment and service centres in each of the three cities – the Harbour CBD in the Eastern Harbour City, Greater Parramatta in the Central River City and WSA Badgerys Creek Aerotropolis, Greater Penrith, Liverpool and Campbelltown in the Western Parkland City.

- *Connecting residents in each of the five districts to one of their strategic centres*

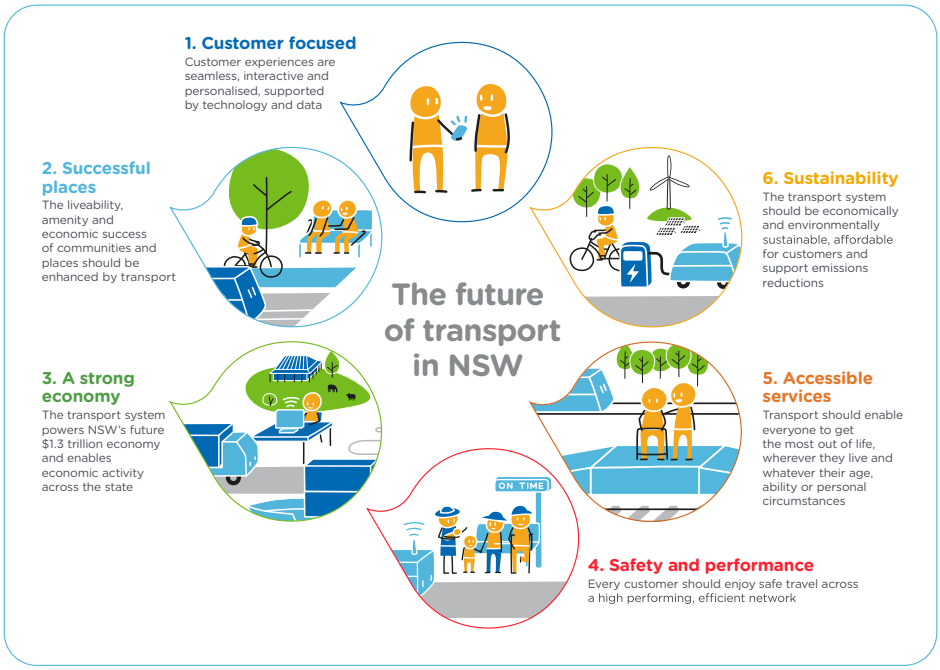
Strategic centres are major centres such as Macquarie Park and Chatswood, with jobs and services, supported by a public transport, walking and cycling networks. Use of public and active transport will give people 30-minute access to local jobs, goods and services.

Future Transport 2056 focuses on actions to improve key areas of productivity, liveability and sustainability. These include actions aimed at reducing commute times, improving access to employment, reducing congestion by encouraging local employment, as well as building a connected active transport network to encourage commuter use.

The vision for long-term planning and provision of transport is built on six outcomes:

- Customer focussed
- Successful places
- A strong economy
- Safety and performance
- Accessible services
- Sustainability.

These parameters provide valuable guidance for the City of Ryde in terms of future transport planning. The concept of a 30-minute city for public and active transport modes, along with associated performance measures, establishes a benchmark for access to local facilities and helps set priorities for transport projects.



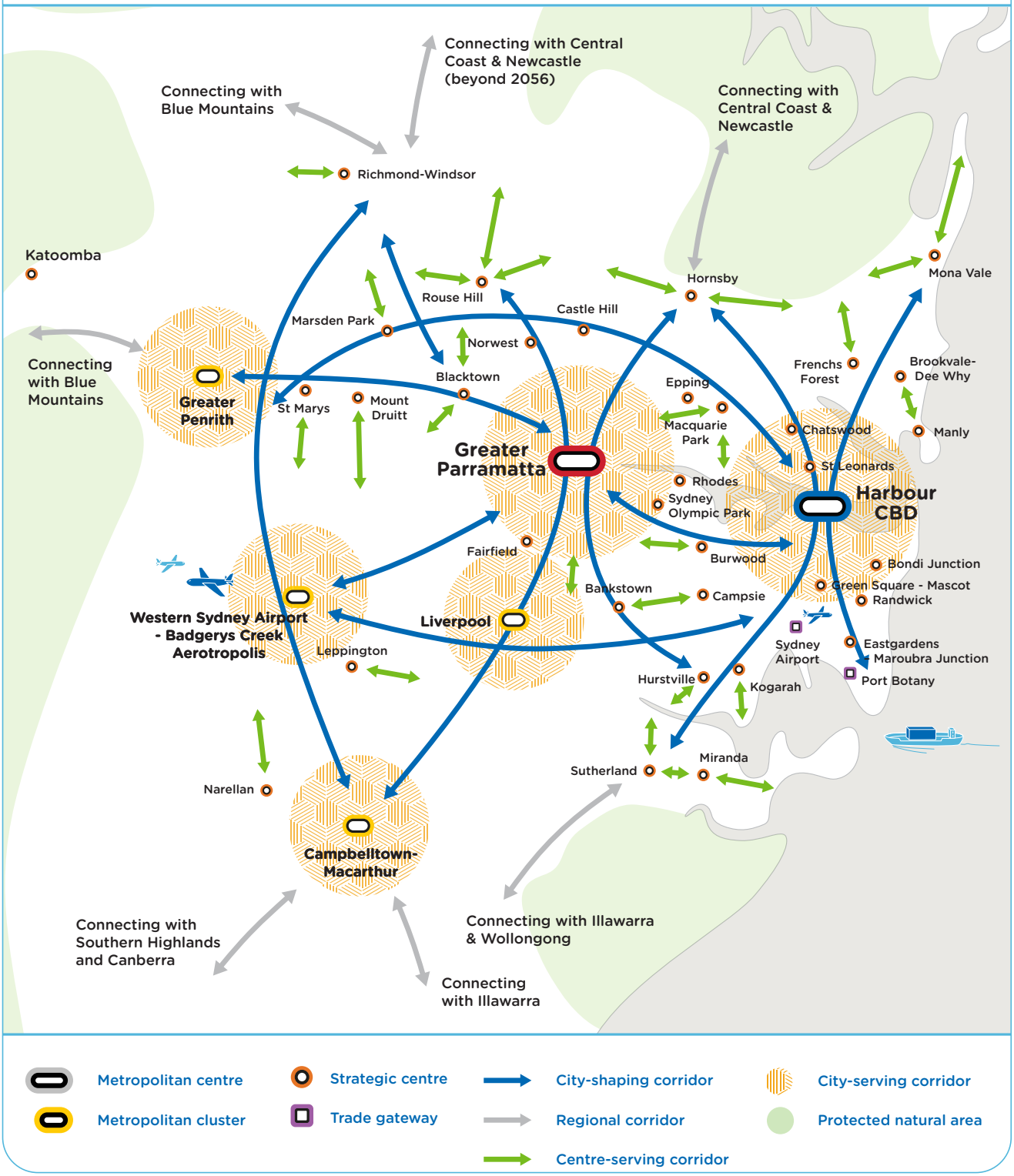
(Figure 4)

Source: Future Transport Strategy 2056

5 ALIGNMENT

Greater Sydney Strategic Transport Corridors

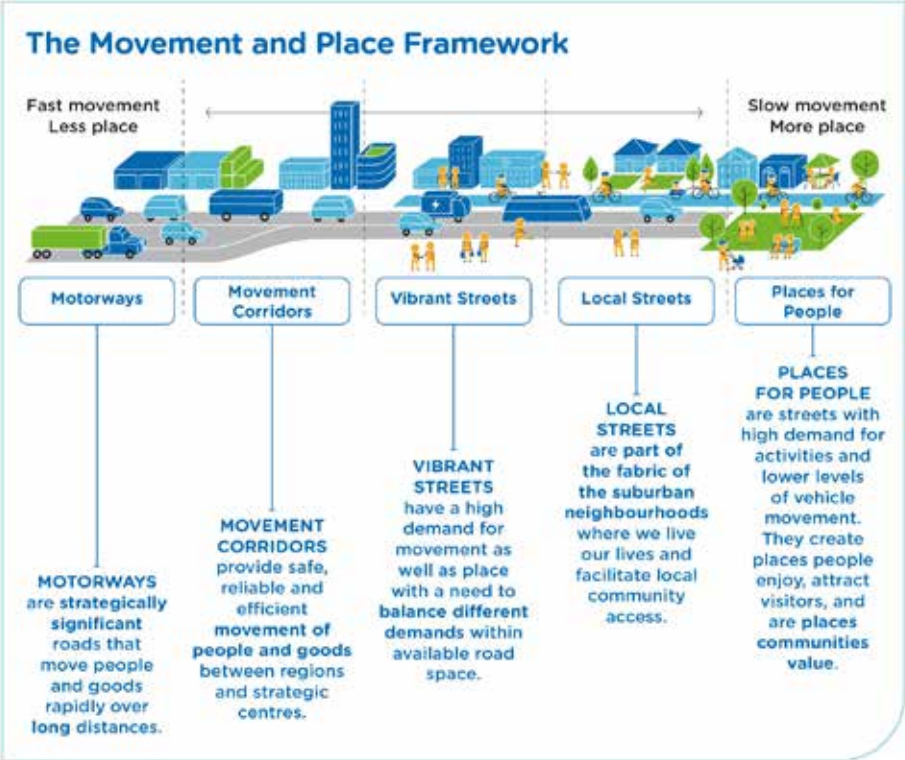
Corridors represent the way people move around using multiples modes of transport



(Figure 5)

Source: Future Transport Strategy 2056

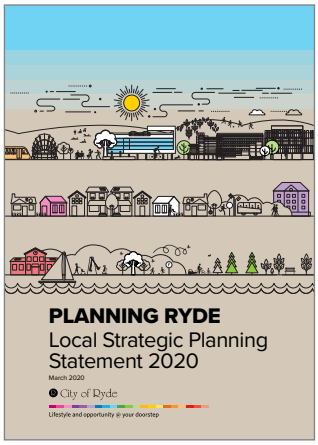
A further important consideration is the application of new Movement and Place principles. Movement and Place is described as a cross-disciplinary, 'place-based' approach to the planning, design, delivery, and operation of transport networks. It recognises the network of public spaces formed by roads and streets and the spaces they adjoin and impact. Movement and Place establishes a process that helps guide consultation, analysis, decision-making and evaluation of projects. Overall, Movement and Place aims to balance the movement of people and goods with the amenity and quality of places.



(Figure 6)

Source: Transport for NSW

5 ALIGNMENT



City of Ryde Local Strategic Planning Statement 2019

A Local Strategic Planning Statement (LSPS) is prepared by local councils to respond to the *Environmental Planning and Assessment Act 1979*, and the NSW Government's Metropolitan Plan and District Plan. The document provides a 20-year vision for the local area and guides Council's more detailed plans, planning controls and policies.

The LSPS describes Council's vision and planning priorities for the City of Ryde, as well as the actions Council will take to achieve them. The LSPS bridges the space between the Community Strategic Plan and the local planning framework. The Ryde Local Environmental Plan 2014 is the principal planning instrument for the City of Ryde.

Council's 20-year vision for land use planning in the City of Ryde includes:

- A liveable, prosperous, and connected City, that provides for our future needs while protecting nature and our history
- A City with diverse and vibrant centres, our neighbourhoods reflecting and servicing our residents and businesses
- Well-planned places enhancing the health, well-being, and resilience of our future community. They also foster innovation, equity, inclusion and resilience.

The LSPS describes how Council intends to use land use planning to help make the community's vision a reality. It adopts the priorities stated in the Community Strategic Plan and considers them in the context of the land use planning and place-making, underpinning the future built form of our City.

The City of Ryde has experienced sustained population and housing growth over the past decade, which has put pressure on the unique local character of our buildings, heritage, and natural areas. As the City of Ryde continues to be a desirable place to live and work, it will be crucial to ensure our growing community has access to a range of housing options, employment opportunities and services.

Our residents expect Council to manage development to ensure growth brings urban renewal and vibrancy to areas of need. At the same time, residents also want to see natural areas and open spaces protected and expanded. Residents also want efficient transport options that connect them to places locally and across the wider Sydney area.

As outlined in the Local Strategic Planning Statement (LSPS), City of Ryde's land use planning can be summarised as follows:

In relation to the provision of infrastructure:

The infrastructure needs of the City of Ryde community continue to be met as the area grows and develops. The provision of new infrastructure should match the pace of development and growth and deliver the same or a better experience for the community at no extra cost to them. Infrastructure provided by the State Government is planned and provided in a timely and constructive way in collaboration with Council and the community.

Specifically, in relation to the provision of transport:

Improve transport links between town centres and other destinations – including open space, residential areas, schools and Macquarie University – with a focus on active and public transport.

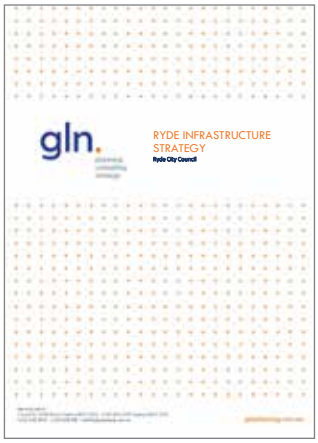
For Macquarie Park:

As NSW's second largest commercial district, Macquarie Park will continue to mature into a premium location for globally competitive business with strong links to the university and research institutions. It will become a vibrant, accessible CBD that balances work, recreation, and entertainment.

Macquarie Park will be characterised by a high quality, well-designed, safe and liveable environment that reflects the natural setting, with three accessible and vibrant train station areas providing focal points.

Housing will be focused in the Urban Activation Precincts (North Ryde Station Precinct and Macquarie University Station Precinct) providing opportunities for people to live and work in the area with supporting services and events that will bring vibrancy to the area beyond office hours.

Further information on changes to Macquarie Park (population, employment and the current Place Strategy) are provided in the Transport Challenges section of this document.



City of Ryde Infrastructure Strategy

City of Ryde has recently completed infrastructure studies that identify planning benchmarks and targets for different types of public and private facilities. Importantly, existing and future infrastructure needs have been identified, including current and future backlogs. The City of Ryde draft *Infrastructure Strategy* (2021) identifies 'infrastructure stresses, backlogs and pinch-points'.

The Strategy notes that while some sections of the community are unsure, sceptical or against further development in the City of Ryde, growth is still going to occur. The community faces a fundamental choice of supporting growth that improves quality of life and creates great places, or 'pretending growth can be prevented' and dealing with the consequences of this approach.

Significant challenges in meeting community expectations and infrastructure needs have been revealed, including improvements needed to meet the objective of '30-minute city' access and deficiencies in the provision of open space (both parks and green-grid projects). In terms of transport, the plan highlights concerns that the level of future access sought for Ryde households can only be achieved by providing all committed and proposed Metro rail proposals.

The strategy's core direction is that City of Ryde can only support additional development through planning proposals that support place plans (or master plan if applicable), creates better places, improves capacity, and use of facilities, effectively deals with infrastructure demands and meets minimum place infrastructure criteria.

The strategy outlines how developers of land within City of Ryde will contribute to infrastructure upgrades needed due to growth over the next 15 years. It is noted that while $612 million worth of open space, recreation and community facilities are included in contributions plans, only 60 percent of this cost will be met by developers with the remainder presently unfunded.

City of Ryde Sustainable Transport Strategy 2021 - 2031

City of Ryde recognises that current issues around growth and climate change requires urgent action by all levels of government. The document examines the influences and challenges of the external environment, opportunities under growth, as well as highlighting practical solutions that both Council and the community can adopt to improve movement within a sustainable transport-focused City.

With a strong emphasis on advocacy, collaboration, education and innovation, the strategy aims to reduce City of Ryde's emissions from transport, improving air quality, urban mobility, health and well-being. The strategy showcases some of City of Ryde's key environmental initiatives and achievements, while identifying future actions. The transport sector has been identified as the second largest source of greenhouse emissions, behind electricity generation.

The strategy proposes actions that can be taken in priority areas including active transport, public transport, shared mobility solutions and other low emission transport modes. It explores recent technological innovation in transport, with mobile-friendly networks expected to take a central role in the future. In line with this Strategy, a key aim of the Sustainable Transport Strategy is to give future travellers access to a broader range of transport options for all types of trips.

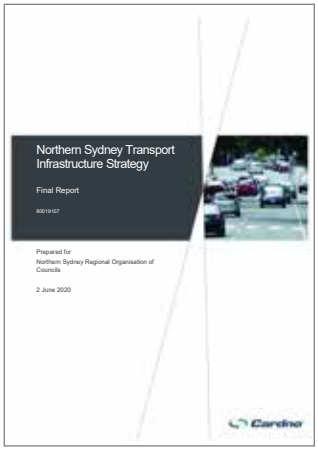
5 | ALIGNMENT

City of Ryde Resilience Plan 2030

City of Ryde has developed a local Resilience Plan to strengthen the community in becoming more resilient to the many challenges that are presented from chronic stresses and acute shocks. The community developed Plan reviews the challenges of urban growth and development, with links to the global impacts and climate risks.

The community developed Plan reviews the challenges of urban growth and development, with links to the global impacts and climate risks, as Ryde continues to grow towards building an action plan for city-wide resilience.

This strategy is a component of the first action identified in the Resilience Plan. Outcomes of this work include achieving the '30-minute city' accessibility (to nearest strategic or metropolitan centre by public and active transport modes), safe, convenient and amenable connectivity for pedestrians and cyclists, a more permeable Macquarie Park street network, and safe road environments for pedestrians in town centres.



NSROC Transport Infrastructure Strategy

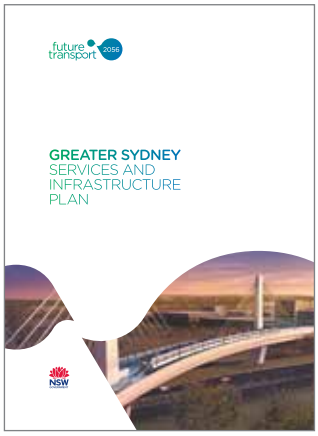
The Northern Sydney Regional Organisation of Councils (NSROC) has developed a Northern Sydney Transport Infrastructure Strategy (NSTIS) to guide improved approaches to transport infrastructure planning, as the region grows over the next 20 years and beyond. NSROC is an association comprised of eight councils in Northern Sydney, with the aim of jointly addressing regional issues by advocating on agreed regional positions and priorities.

NSROC key policy actions include working with the NSW Government on major transport infrastructure projects (e.g. Sydney Metro, Beaches Road Link, Western Harbour Tunnel), completion of priority 'missing links' (e.g. Epping - Carlingford Light Rail, Parramatta Light Rail – Stage 2, Mass Transit Willoughby - Northern Beaches), regional bicycle network improvements, mitigation of external traffic impacts, as well as supporting local traffic programs through access to development levies and potentially a new regional infrastructure charge recognising value capture.

City of Ryde Integrated Transport Strategy 2016-2031

The City of Ryde Integrated Transport Strategy 2016 - 2031 provided a policy framework for traffic and transport planning. The 73 recommended actions included in the report were intended to be regularly monitored, including a major review every five years. *Integrated Transport Strategy 2041* represents City of Ryde's commitment to conduct a major review.

Continuing strong future population and development, the release of new State Government transport plans and the need for additional transport alternatives are key drivers for the development of a new ITS.



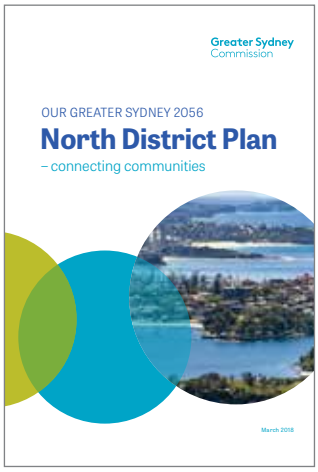
Greater Sydney Services and Infrastructure Plan 2056

The Greater Sydney Services and Infrastructure Plan 2056 sets out a broad range of future initiatives. Those most relevant to City of Ryde include:

- *Expansion of Travel Choices Program* to encourage customers to change travel behaviours to support better use of transport capacity. The status of this proposal is described as 'Committed, 0 - 10 years' and currently underway.
- *Implementation of the Movement and Place Framework* to balance the efficient movement of people and goods while supporting the liveability of places. The status of this proposal is described as 'For investigation, 0 – 10 years' and currently underway.
- *Trial of on-demand bus services* on selected local bus routes. The status of this proposal is described as 'Committed, 0 - 10 years' and currently underway.
- *Introduction of higher frequency transport services* across Greater Sydney. The status of this proposal is described as 'For investigation, 0 - 10, 10 - 20, 20+ years' and currently ongoing.
- *Western Harbour Tunnel and Beaches Link.* The status of this proposal is described as 'Committed, 0 - 10 years, Subject to final business case and funding' and is currently underway.
- *East – west public transport connection from Mona Vale to Macquarie Park.* The status of this proposal is described as 'For investigation, 0 - 10 years' and is undergoing early investigations.
- *Parramatta to Epping - mass transit link.* The status of this proposal is described as 'For investigation, 10 - 20 years'.
- *North South Metro (previously Hurstville mass transit link to Strathfield)* from Randwick to Macquarie Park via Kogarah and Kingsgrove. The status of this revised proposal is described as 'For investigation, visionary 20+ years'.

The more significant projects identified for City of Ryde are the Parramatta to Epping mass transit link and the North South Metro link. Both projects are identified for 'long-term investigation' and remain unfunded at this time. The proposed future public transport connection between Macquarie Park and Mona Vale is also considered a key initiative.

5 ALIGNMENT



Our Greater Sydney 2056: North District Plan

The North District covers Hornsby, Hunters Hill, Ku-ring-gai, Lane Cove, Mosman, North Sydney, Northern Beaches, Ryde and Willoughby local government areas. The North District Plan is a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision for Greater Sydney. It is a guide for implementing the Greater Sydney Region Plan, A Metropolis of Three Cities, at a district level.

A Metropolis of Three Cities has been prepared concurrently with the NSW Government's Future Transport Strategy 2056 and Infrastructure NSW's State Infrastructure Strategy 2018–2038 to integrate land use, transport and infrastructure across the region. In this context, all transport initiatives outlined in the District Plan are sourced from Future Transport 2056.

As the North District grows, planning and investment will integrate land use, transport and infrastructure, recognising and harnessing the city-shaping role of transport infrastructure. Initiatives to support integration in line with population and economic growth include:

- City shaping multi-modal transport providing higher speed links to both the Harbour CBD and the Central River City
- Capacity and reliability improvements on existing transport corridors serving the Harbour CBD and strategic centres.

Priorities include:

- *Improved city-serving and centre-serving transport links between strategic centres, and feeders into city-shaping corridors*

This includes transport improvements along Victoria Road and improved east-west bus services across the district. For example, improvements to the strategic road network, which may include both new roads and road space reallocation from the Northern Beaches to Chatswood. This will prioritise the efficient movement of people and goods on transport corridors and key intersections to improve through traffic and access to strategic centres.

- *Strategic freight network improvements, including the Northern Sydney Freight Corridor*

Key elements of the city-serving and centre-serving transport network to be considered in the next 20 years include:

- Additional ferries for Parramatta River
- Improved bus services between the Northern Beaches and Chatswood
- East-west public transport between Mona Vale and Macquarie Park.

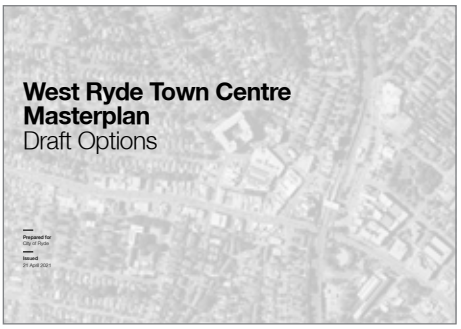
Proposed Victoria Road transport improvements aim to support frequent, reliable and efficient transport to the Harbour CBD and Greater Parramatta. On-demand bus services on selected local bus routes on the Northern Beaches will provide more convenience and improve the efficiency of the transport network. Investment in Smart Roads will support the financial sustainability of the transport system and enable future forms of mobility such as connected and automated vehicles.

The North District Plan proposes that a level of consistency in strategic planning approaches is needed to provide:

- Alignment in interpretation of the region and district plans that supports the development of local strategic planning statements
- Coordinated inputs by State agencies, particularly where State agency programs cross council and district boundaries, including for example, investment in major rail corridors or a new high school
- Ongoing review of regional and district plans that is informed by local inputs.

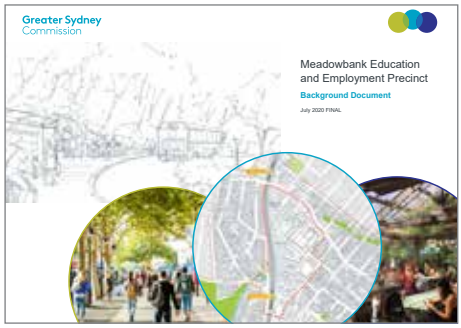
Disability Inclusion Action Plan

The City of Ryde, in collaboration with surrounding Councils, developed the Disability Inclusion Action Plan (2017). In terms of transport, the Plan aims to review whole-of-route accessibility along key movement corridors, investigate opportunities for accessible and demand-driven transport options, as well as the upgrading of bus stops to better accommodate disabled passengers. The Disability Inclusion Action Plan is now being updated and community feedback is being sought for this update.



West Ryde Masterplan

City of Ryde is in the process of preparing a masterplan for the West Ryde Town Centre. The masterplan will build on draft the West Ryde Town Centre Strategy that aims to rejuvenate the West Ryde Town Centre into a distinctive, vibrant and attractive local centre, providing retail and employment opportunities where people can meet. The masterplan will investigate ways to improve the function, look and feel of West Ryde, allowing City of Ryde to proactively plan for a vibrant and prosperous future for the town centre. Community consultation has highlighted the need for improved traffic, transport and parking conditions, as well as improved pedestrian and cycling connections.



Meadowbank Education and Employment Precinct

The Meadowbank Education and Employment Precinct (MEEP) Master Plan identifies ideas for improved public spaces, green streets, transport and accessibility options, local heritage consideration and enhanced employment opportunities. The Greater Sydney Commission plan identifies potential projects for the next ten years, focused around 'movement' and strengthening ‘place’ qualities. Key projects include an east-west railway underpass, closure of a limited number of streets to improve pedestrian safety, as well as a new north-south shared pathway that connects new schools and TAFE into regional pedestrian / cyclist routes.

Macquarie Park Place Strategy

The draft 20-year Macquarie Park Place Strategy aims to help Macquarie Park reach its full potential as a place for innovation, encouraging creativity and collaboration. Promoting better connections between places, businesses and people, the place strategy aims to:

- Transform Macquarie Park into an innovation district, creating new jobs and investment opportunities
- Ensure infrastructure accompanies new development via a Strategic Infrastructure and Services Assessment
- Make it easier to move around with more walking and cycling paths and better connections to public transport
- Create sustainable neighbourhoods, each with their own identity
- Create quality public open space and connections to the natural landscape.

5 ALIGNMENT

5.2 RELATIONSHIP BETWEEN KEY DOCUMENTS

The relationship between the various key strategies and plans above is as follows:

(Figure 7)

On the planning side, higher level documents such as the North District Plan and Council's Community Strategic Plan inform City of Ryde's Local Strategic Planning Statements (LSPS). The LSPS is a central resource for a range of more specific internal and external plans and strategies. On the transport side, high level strategic plans for Sydney by various State Government agencies have been used to inform both this Strategy and NSROC's Transport Infrastructure Strategy. There is a close relationship between this Strategy and Council's LSPS, as well as the new City of Ryde Sustainable Transport Strategy, which is a sub-level strategy relating directly to this ITS.

Ryde Riverwalk

6 VISION, POLICIES AND STRATEGIES

Macquarie Park Square Concept

6.1 KEY POLICY POSITIONS

The current vision for City of Ryde's traffic and transport system is:

The traffic and transport system supports economic growth and local amenity by stimulating land development, influencing the use of sustainable transport whilst promoting safety and equity. The City of Ryde is regionally connected and locally accessible.

A revised vision for City of Ryde is proposed:

A sustainable, safe and convenient transport system for a vibrant global city.

Key transport policies that support this vision are:

Active transport network

- The active transport (pedestrian and cycling) network caters for highly confident as well as cyclists of varying abilities, providing safe options for various travel purposes. Active transport is the most convenient option for short trips, particularly between town centres, shops, businesses, open spaces and residential areas, with walking and cycling promoted as sustainable and healthy travel modes.
- Improved pedestrian connections are prioritised in town centres, including Macquarie Park, Top Ryde, Eastwood, West Ryde and Gladesville (in collaboration with Hunters Hill Council), as well as pedestrian connections around schools.
- Active and public transport should be highly accessible around key urban centres. Integration of transport and land use helps achieve economies of scale and reduces dependence on private vehicle travel.

Public transport network

- Public transport efficiently moves passengers to key destinations, within and outside the City of Ryde, using direct, accessible and connected services. Public transport infrastructure is designed to provide a travel time advantage over cars, with equitable service coverage.
- Transport interchanges provide convenient connections between modes, and provide the user with a pleasant 'place' experience. Ideally, interchanges are located at activity centres.

Road network

- Roads are managed to maximise person-movement efficiency and safety, for all road users, including freight delivery and service vehicle access to local areas along with safe provision for 'last mile' services.
- The 'movement and place' framework is applied to balance 'movement' and 'place' priorities for more complex street environments.
- Parking is planned and managed to maximise local accessibility for on-street and off-street short stay, high value parking purposes. Parking is planned and managed to encourage increased use of alternative modes of transport, including active and public transport. Park and ride facilities are only provided where public and active transport accessibility is poor.
- Strategic freight transport through City of Ryde is supported, however where possible should be encouraged to use major roads and discouraged from using local streets.
- Local streets are designed and managed to provide local access, providing low speed and safe environments that prioritise active transport as a mode.
- Undertake 'movement and place' analysis for each town centre.

Land use integration

- Land use intensification is focused in the key urban centres, being most accessible by active and public forms of transport. Land use is planned to minimise trip making, achieving economies of scale for provision of active and public transport facilities.
- Local transport strategies are tailored to support the role and future development of urban centres, recognising that each centre has its individual character and needs. Pedestrian movements are prioritised over vehicular movements within town centres.
- Local transport strategies are to support the objectives of Town Centre Development Control Plans, which seek to achieve a high level of permeability or ease of movement for pedestrians and cyclists to / from train stations, major bus stops, open space and health / education precincts.
- Leverage opportunities that come through new developments to invest in improved all modes of transport and road infrastructure. Advocate for public transport changes that support evolving local needs, including routing, service level and infrastructure investment, particularly with regards to public transport provision.
- Negotiate with property owners for right-of-way corridors and through-site links to improve local accessibility, particularly for those walking and cycling to their destinations.
- Future land uses need to be self-sufficient in meeting parking needs, through the provision of internal parking facilities whilst supporting the use of active / public transport use.

6 VISION, POLICIES AND STRATEGIES

Technology

- While prioritising active and public transport modes, technologies are selectively adopted to improve the end-to-end journey experience for residents and visitors to Ryde, and better manage traffic movements. Technology is used to make the best use of on-street parking and reduce congestion, while supporting a current transition to car share schemes and future transition to driverless vehicles.
- Electric vehicles and other carbon neutral vehicles are supported over fossil-fuelled vehicles in order to reduce City of Ryde's carbon footprint.
- Promote innovation in transport planning and technology (e.g. connected and automated vehicles, parking technology, etc.) to address future transport challenges whilst also contributing to improving the attractiveness of City of Ryde as a place to live, work and socialise.

City of Ryde has considered where its objectives fit within the outcomes framework promoted by Greater Sydney Commission and Future Transport 2056. Some of the actions being taken by City of Ryde are as follows:

Customer Focus: Adoption of transport focussed apps provided by Transport for NSW and other providers, such as 'Park N Pay'. Investigation of future transport options including initiatives such as E-scooters / bikes, automated vehicles, use of drones and use of on-demand forms of transport.

Successful Places: Development of active transport connections including additional shared user paths, additional end-of-journey user facilities, separation of pedestrian and bicycle facilities, and increased number of areas where people can rest.

A Strong Economy: Promotion of 30-minute access by public and active transport to strategic centres such as Macquarie Park, Parramatta, Chatswood, Rhodes and Sydney CBD. Development of quick interchanging facilities between modes.

Safety and Performance: High frequency and efficient metro and bus services in peak periods. Through traffic movements for freight on arterial roads rather than unsuitable local roads.

Accessible Services: Developing a network of facilities that are disability compliant, including bus stops, pedestrian ramps and improved parking access. Progress City of Ryde Disability Inclusion Action Plan.

Sustainability: Forward funding program for capital and recurrent expenditure that is outcome based and where performance is measured. Recent release of Ryde Resilience Plan 2030 and Sustainable Transport Strategy.

6.2 MODE SPLIT TARGETS

Around 70 percent of journey-to-work trips are made by City of Ryde residents using a private vehicle, either as driver or passenger. If this trend were to continue to 2041, an additional 120,000 person trips per day would need to be accommodated on the road network, or approximately 80,000 vehicle trips per day. It is clear that private vehicles will be unsuccessful in accommodating such high demands.

Intensification of residential areas in City of Ryde around transport hubs suggests that public transport is increasing in its potential to attract a larger proportion of trips. On this basis, proposed public transport and active transport (cycling and walking) mode share targets for journey-to work that originate in Ryde for 2041 are:

50 percent
Private vehicle

40 percent
Public Transport

10 percent
Active transport

As for Macquarie Park, roads are at capacity now for some hours of the day. There are compelling reasons to target restraining private vehicle usage to current levels. On this basis and given the potential for increased public transport access to Macquarie Park, the following journey to work modal split targets for 2041 are proposed:

40 percent
Private vehicle

45 percent
Public Transport

15 percent
Active transport

If the above targets are met, there would be no significant increase in private vehicle traffic to Macquarie Park between now and 2041. Public transport trips would increase by nearly 20,000 passenger movements per day (one-way) and walking and cycling movements to Macquarie Park by 2,500 trips per day (one-way).

While proposed future public and active transport patronage target may be ambitious, this level of increase is considered vital to Macquarie Park maintaining its accessibility and attractiveness as a key regional business district.

80,000 jobs
Estimated employment located in Macquarie Park by 2041

20,000
Residential population increase

7 TRANSPORT CHALLENGES

Talavera Road - Macquarie Park

7.1 POPULATION AND EMPLOYMENT

Both population and employment are expected to increase in the City of Ryde, with population increasing approximately 58 percent from 134,000 (2020) to an estimated 211,500 (2041). Population increases are expected in key areas including Top Ryde, Meadowbank, North Ryde and Macquarie Park, with most new employment in Macquarie Park.

The ratio of jobs to residents within the City of Ryde is well above the average for the Greater Sydney area (2019), primarily due to Macquarie Park.

104,000 jobs

(approximately) in the City of Ryde

58,000 jobs

(approximately) in Macquarie Park

72,000

employed residents in Ryde LGA (2019)

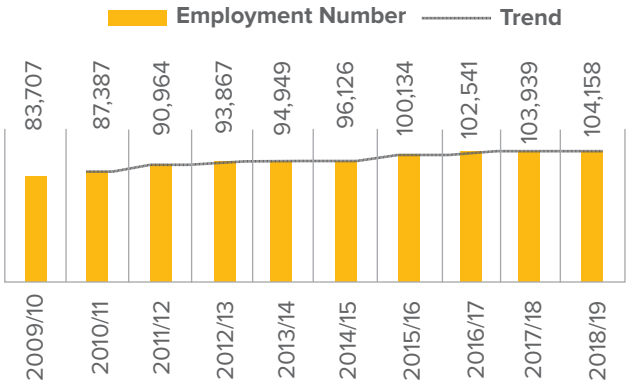
10 percent growth

from 65,000 (2016)

Journey to work travel results in congestion on major roads such as Lane Cove Road and Epping Road, near Macquarie Park.

There are an estimated 14,400 registered business in the City of Ryde as of June 2020, growing 19 percent from 2016 when there were 11,700 registered businesses. With a steady growth rate of 2.5 percent per annum over the last decade, the largest employment category being Professional, Scientific and Technical Services.

Employment Growth
City of Ryde 2009-2019



(Figure 8)

The challenge ahead will be ensuring that increased densities of population and employment do not occur in areas that are poorly serviced by public and active transport network

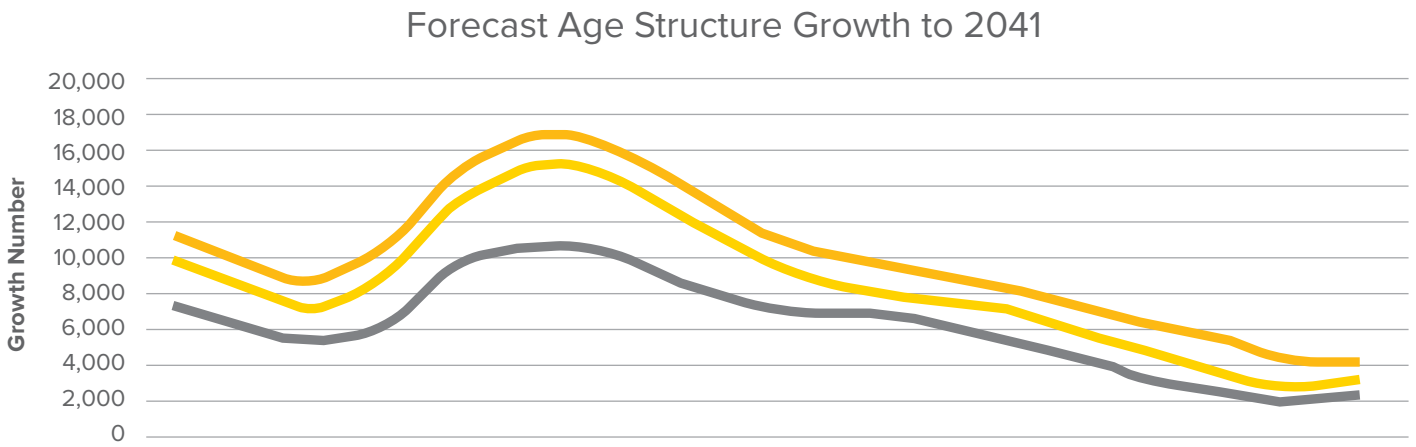
7 TRANSPORT CHALLENGES

7.2 AGE AND HOUSEHOLDS

Recent census data (2016) shows that City of Ryde has a slightly lower than average number of children and teenagers and a slightly higher than average number of persons 20 - 35 years compared to the Greater Sydney area. This suggests a work-focused region with relatively smaller households. There is a higher concentration of households with multiple incomes and fewer children than the Greater Sydney area average.

Persons aged 40 - 70 years in City of Ryde is consistent with the Greater Sydney area average, however there is a higher-than-average population aged 70 years plus. Locations such as Macquarie Park and Meadowbank have much younger populations, while more established areas with traditional single dwellings have higher than average ages. These are important considerations when deciding what types of transport are needed as redevelopment and renewal occurs.

In 2016, the dominant age structure for persons in the City of Ryde was the 25 - 29 age group, which accounted for 9.4 percent of the population. The largest 5-year age group in 2026 is expected to be 30 - 34 years, with a total of 16,202 persons.
The largest increase in persons between 2016 and 2026 is forecast to be in ages 30 - 34 years, which is expected to increase by 5,000 persons and account for 10 percent of the population.



	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85 and over
2016	7,646	6,730	5,564	6,443	10,344	11,445	11,202	9,486	8,192	7,430	7,322	6,656	5,851	4,975	3,582	3,014	2,362	3,027
2026	10,543	8,961	7,666	9,356	13,997	16,143	16,202	13,771	11,174	9,315	8,582	7,958	7,469	6,414	5,278	4,271	2,987	3,393
2041	11,453	10,024	8,904	10,877	15,526	17,349	17,538	15,341	12,939	11,268	10,349	9,533	8,640	7,748	6,799	5,899	4,683	4,618

Service Aged Groups

(Figure 9)

City of Ryde will have a significant workforce population by 2041 with over 111,000 residents in the 15 - 54 age ranges, this constitutes the users that will need to use multi model transport option to travel to work, school and beyond. This is an increase of a residental workforce by almost 40,000 from 2016. As the City of Ryde provides a significant number of employment opportunities for those living outside of the LGA, especially through the major employment hub of Macquarie Park, this presents a challenge in terms of influencing travel behaviour. It also means that the network supporting trips to and from the Ryde LGA needs to be able to accommodate large volumes of people. The existing road road network is at breaking point, meaning that improved public transport options are necessary.

Summary of population, household and dwelling projections

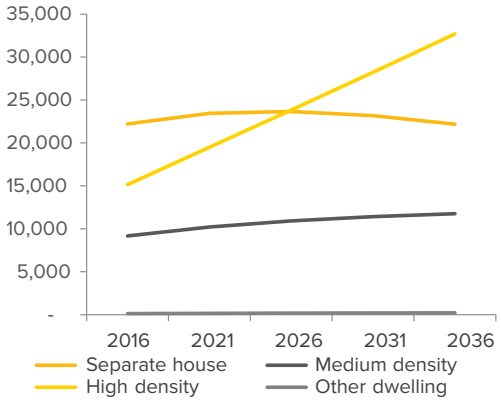
	DPIE projections	Forecast .id forecast
2016 population	119,950	121,807
2036 population	171,650	167,109
Population increase	51,700	45,302
2016 household size	2.56	2.62
2036 household size	2.50	2.50
2016 households	46,050	45,543
2036 households	66,700	61,419
Households increase	20,650	15,876
2016 dwellings	49,000	46,664
2036 dwellings	71,000	66,855
Dwellings increase	22,000	20,191

(Figure 10)

Source: DPIE 2016, forecast .id, from the City of Ryde Housing Strategy (DRAFT) 2020

There is a higher proportion of high density living in City of Ryde than in the Greater Sydney area, with the proportion of houses correspondingly slightly lower than average. The chart below shows the expected growth in housing that corresponds with expected population increase. More medium to high density is expected in designated locations, particularly around Macquarie Park, Eastwood, Meadowbank, and Ryde (south).

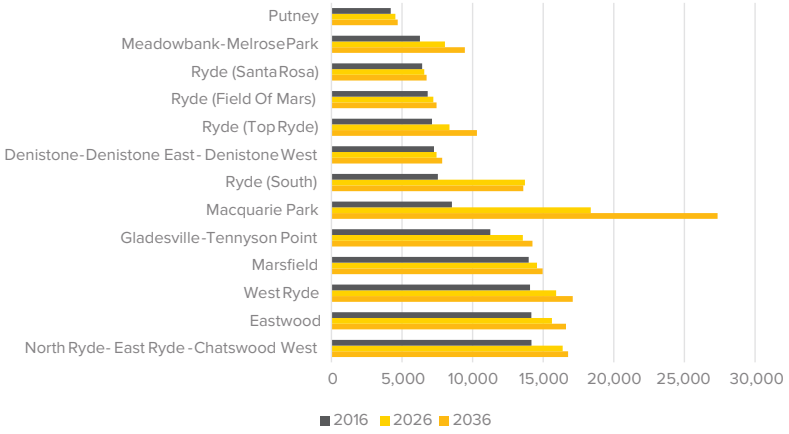
Projected new dwellings in the Ryde LGA 2016-2036



(Figure 11)

Source: City of Ryde Housing Strategy (DRAFT) 2020

Forecasted Population of Ryde City Suburbs: 2016, 2026, 2036



(Figure 12)

Source: City of Ryde Housing Strategy (DRAFT) 2020

7 TRANSPORT CHALLENGES

7.3 HOUSEHOLDS AND VEHICLES

The estimated number of households in City of Ryde (2020) was 50,900. Continued growth in medium and high-density dwellings will see this expand to 80,000 households by 2041.

There were 81,300 motor vehicles registered to City of Ryde households in 2019, an increase of 13 percent from 2016. The average number of vehicles per household in the City of Ryde is 1.5 vehicles per household, which is slightly below the average across the Greater Sydney area (1.7). If vehicle ownership continues at the same rate, future congestion on the road network is likely to be severe at times.

Income levels vary significantly across the City of Ryde, with vehicle ownership per household higher in more affluent areas. Median weekly income in the City of Ryde (2020) was $1,714, slightly below the median income for Sydney ($1,750). The age of vehicles is impacted by the socio-economic status of an area, lower income areas tend to have older less well-maintained vehicles, higher income areas tend to have new vehicles and often adopt new technology quickly. There are currently (only) 85 electric vehicles & 1,463 LPG, dual or alternative fuel vehicles registered in City of Ryde (2020), although adoption of electric vehicles is increasing nationally as vehicles improve and become more affordable.

7.4 TRAVEL PATTERNS

Of those living in the City of Ryde in 2016, 64 percent used a private vehicle for the journey to work, while 30 percent used public transport. Public Transport patronage has increased with the opening of the Metro rail stations at North Ryde, Macquarie Park and Macquarie University.

Ryde Mode of Travel to Work

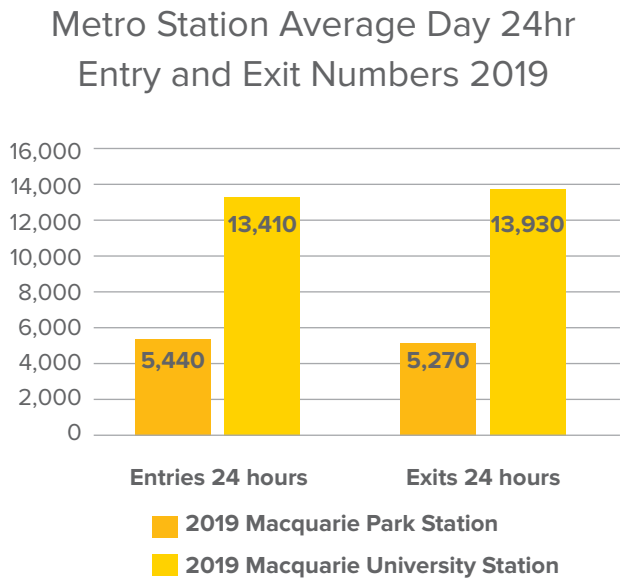
30,836 (63.5%)
(Car, Truck, Motorbike, Taxi)

16,616 (30.2%)
(Train, Bus, Tram)

6,673 (13.5%)
(Worked at home/didn't go to work)

2,354 (4.1%)
(Walked only)

331 (0.6%)
(Bike only)

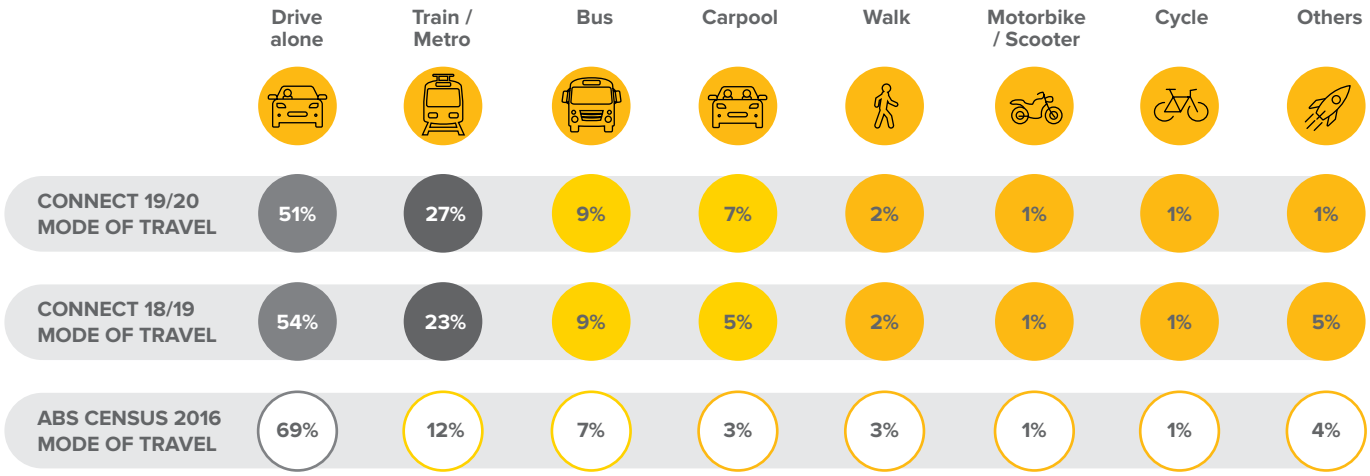


(Figure 13)

Macquarie University station with over 14,000 passengers per day is the City of Ryde's busiest, followed by Eastwood, (8,700), Meadowbank (5,700), Macquarie Park (5,200), and West Ryde (5,100) based on 2019 average day entry data.

There has been a reduction in private car use over the past 15 years and an increase in public transport usage for journey to work trips. At the current rate of 3.7 trips per person per day and at a 68 percent private vehicle mode share, there will be an additional 2,500 resident car trips generated per day by 2041.

Employment in Macquarie Park is the largest future trip generator in the City of Ryde and the use of inbound public transport and walking and cycling has a key future role. The chart below shows the gains made more recently in achieving modal shift to public & active transport for the more than 55, 000 workers who travel to area every working day.



(Figure 14)

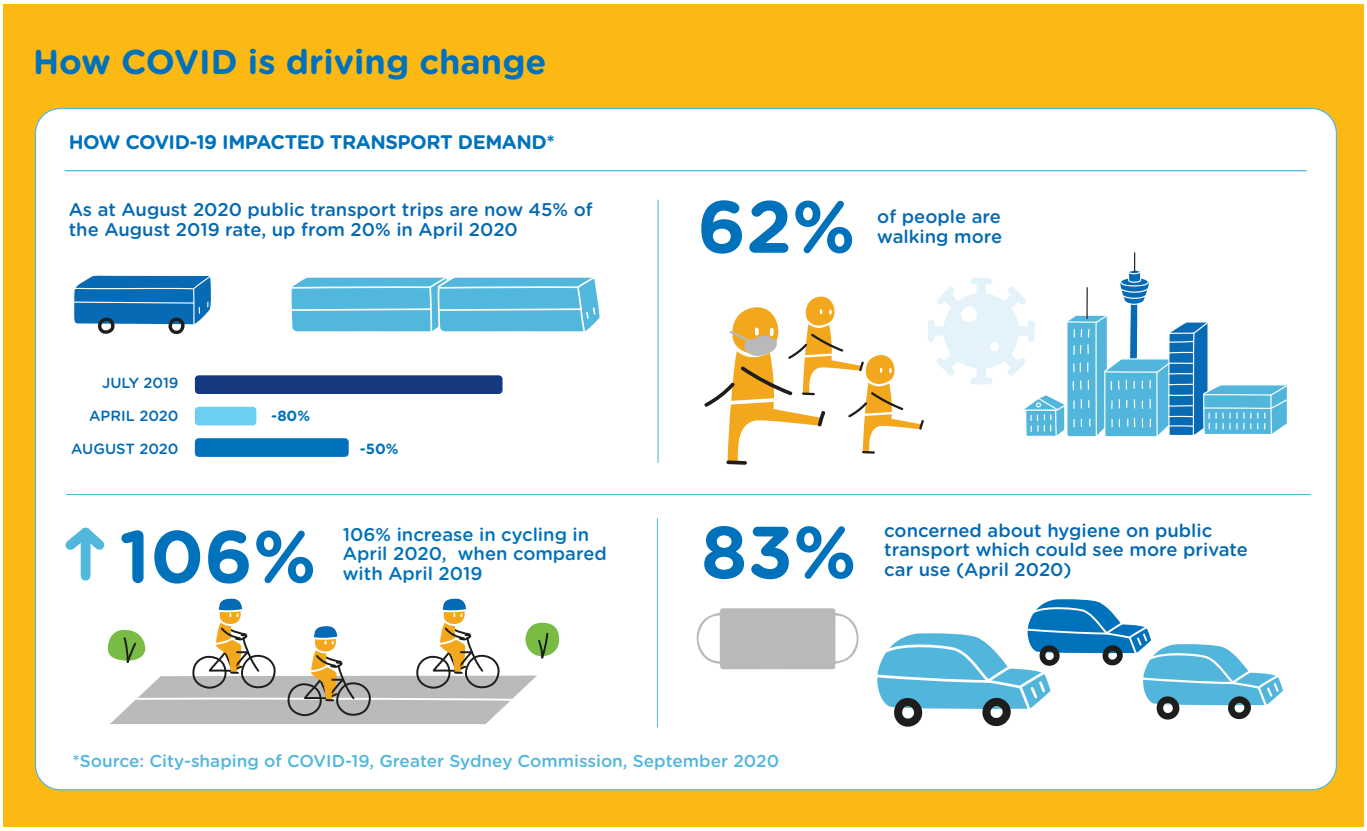
Source: Connect Member Travel Report FY20-2-2.pdf

The suburbs within the City of Ryde that have an above average proportion of general and work-related private vehicle use include Putney, East Ryde and Denistone. This is due to the lack of accessible public transport in these areas. The redeveloping suburbs of Eastwood, Meadowbank and Macquarie Park have the highest public transport, walking and cycling use for resident journey to work trips. All are close to major employment areas and train stations.

COVID-19 Pandemic

The COVID-19 pandemic has drastically altered travel patterns in Australia throughout 2020 and 2021. Lockdowns have resulted in more people staying at home, whilst the fear of catching the virus and need for traveller separation has resulted in reduced public transport patronage. Over time, as we emerge from the pandemic, it is expected that the confidence to travel using public transport will return. However, things will not 'go back to normal'. More people will be working from home on an ongoing basis, which will result in reduced demands on the transport system. Unfortunately, reduced travel may result in a greater proportion of people driving as the road network comes under less pressure. The challenge will be sustaining increased public transport usage in the months and years ahead, and to also maintain the uptake in active travel once the workforce returns to the 'new normal' travel patterns.

The bonus of more working from home option is the reduce travel patterns, particular of car as main mode, this has the benefit of reduction in congestion, however it may also result in the long term a longer peak hour period as workers spread their start and end times.



(Figure 15)

Source: Future Transport 2056 Covid Response

Lachlan's Line Pedestrian Bridge - North Ryde

7 TRANSPORT CHALLENGES

7.5 ROAD NETWORK AND CONGESTION

Compared to surrounding Local Government Areas, City of Ryde's road network is a dense grid of major arterial and sub-arterial roads. This is an advantage as it provides route options, with relatively level terrain over much of the local government area.

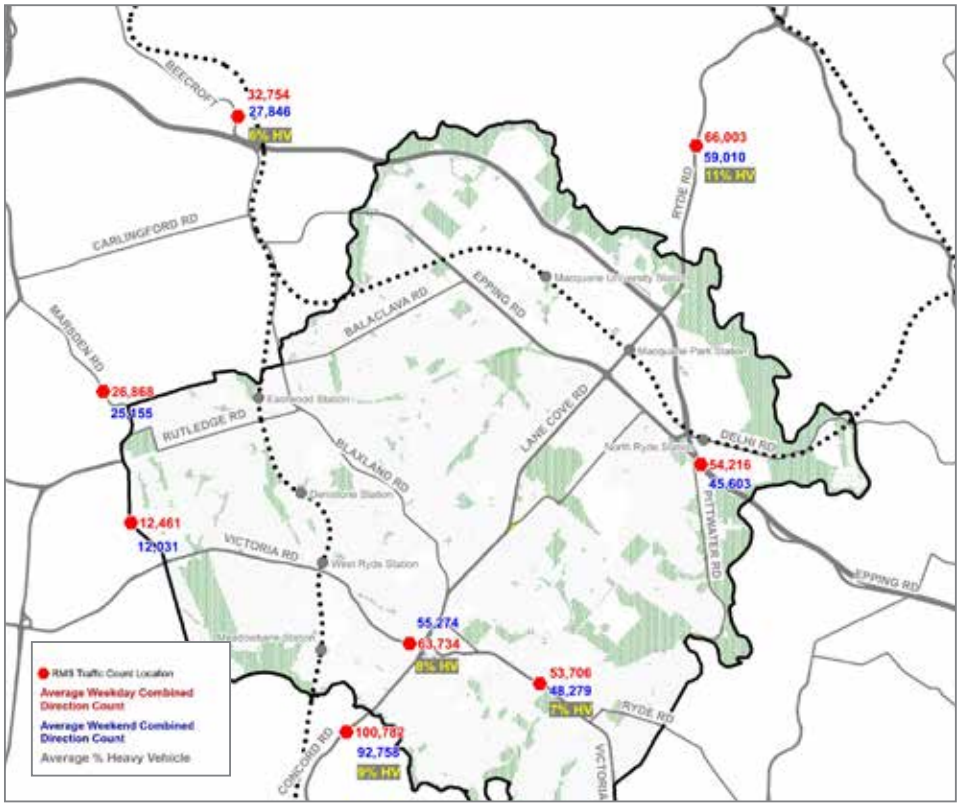
There are a relatively high number of intersections that represent key pinch points in the road network, particularly at signalised intersections where main roads intersect collector roads. The absence of efficient alternative major north-south routes to Lane Cove Road, for example, is a key constraint to local traffic accessibility and efficiency.

Reviewing average daily traffic volumes on major arterial roads and feeder network demonstrates that the network comes under pressure seven days a week, with weekend volumes only slightly behind those of average daily volumes on key arterial roads. Congestion is also contributed by trips generated outside of Ryde LGA as there is a significant amount of through traffic accessing the network as part of the journey to work / education and delivery routes. The high provision of parking, particularly in Macquarie Park, generates a significant number of private vehicle trips. Council has no minimum parking rates required by new developments, but does have maximum parking rates. These parking rates need to be reconsidered in order to reduce trip demand.

A recent report by Infrastructure Australia examining the costs of congestion found that the Mona Vale to Olympic Park corridor (including Lane Cove Road via Macquarie Park) is the 4th most congested Sydney road in the am peak and 3rd most congested Sydney road in the pm peak.

By 2031, transport modelling indicates that the volume of traffic is expected to increase by 37 percent on this road corridor, making it the second most congested in Sydney. The cost of travel time delays on this corridor in peak periods is estimated to increase from almost $200,000 (2016) per day to over $451,000 per day in 2031.

Employees from outside City of Ryde mostly travel from the north and west of the City of Ryde, highlighting the importance of better transport accessibility to / from these areas. There are few opportunities for new roads or additional lanes to supplement existing capacity.



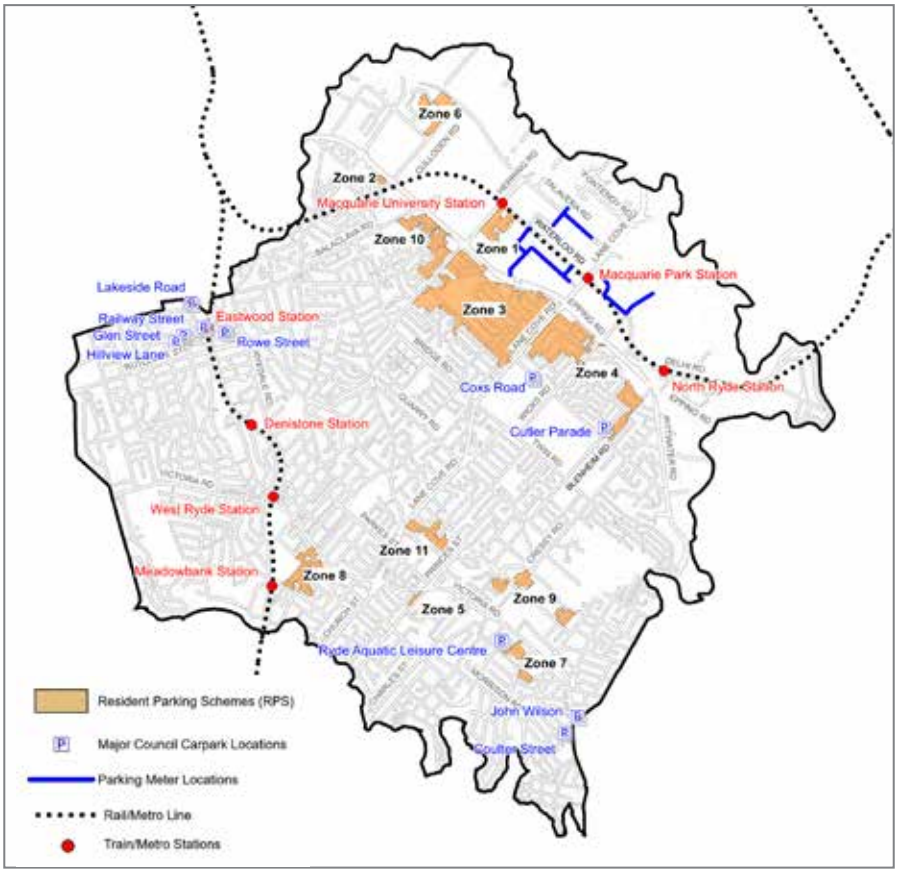
The percentage of freight trips on arterial roads across the City of Ryde averages 7 to 10 percent. This is typical of an arterial road network in an urban area that is located some distance from major freight generating activities.

(Figure 16)
Average Weekday & Weekend Bidirectional Traffic Counts 2019
Source: RMS Traffic Volume Viewer

7 TRANSPORT CHALLENGES

7.6 PARKING

A key challenge for parking management in the City of Ryde is the development of consistent parking management policies and implementation methods, founded on sustainable development principles. Current parking management has tended to evolve based on the needs of each key centre without consideration of broader land use and transport policy objectives.



(Figure 17)
Parking – Zones and Carpark Locations

The City of Ryde has a number of formal and informal public parking areas, mostly associated with its key centres and train stations. Public off-street parking opportunities are relatively few in the City of Ryde, with most off-street parking provided in each specific development site or on-street. As time limits have been introduced into commercial areas, longer stay parking may only be found in adjacent residential areas, causing amenity issues for residents.

Macquarie Park has a large amount of long-stay parking which limits the ability of the parking to support short-stay land uses. It also generates a large volume of private vehicle trips to the area, exacerbating traffic congestion. As the area transitions from a traditional business park to an office - mixed use CBD area, the importance of accessible short term / high turnover on-street parking increases.

Despite the large amount of parking available in Macquarie Park, there is still an overflow of commuter vehicles on surrounding residential streets. This has been somewhat mitigated through the introduction of resident parking schemes, which are discussed further in the *Parking Strategy* section. Overflow parking into residential areas is also a problem in the Gladesville area.

Rowe Street East Carpark concept

7 TRANSPORT CHALLENGES

7.7 PUBLIC TRANSPORT

The City of Ryde is fortunate to be served by multiple transport options that provide residents and workers with access to key employment and destination locations within the local area and beyond.

Heavy rail services connect Eastwood, Denistone, West Ryde and Meadowbank to Strathfield, Epping, Hornsby and beyond to the north and south. The Northern Line connects with both the western suburbs and Sydney CBD, as well as the North Shore Line which connects to the Central Coast and Newcastle. These services are supported by the new Sydney Metro North West line that link Chatswood and North Western Sydney via Macquarie Park. The Northern Line and Metro North West intersect at Epping Railway Station.

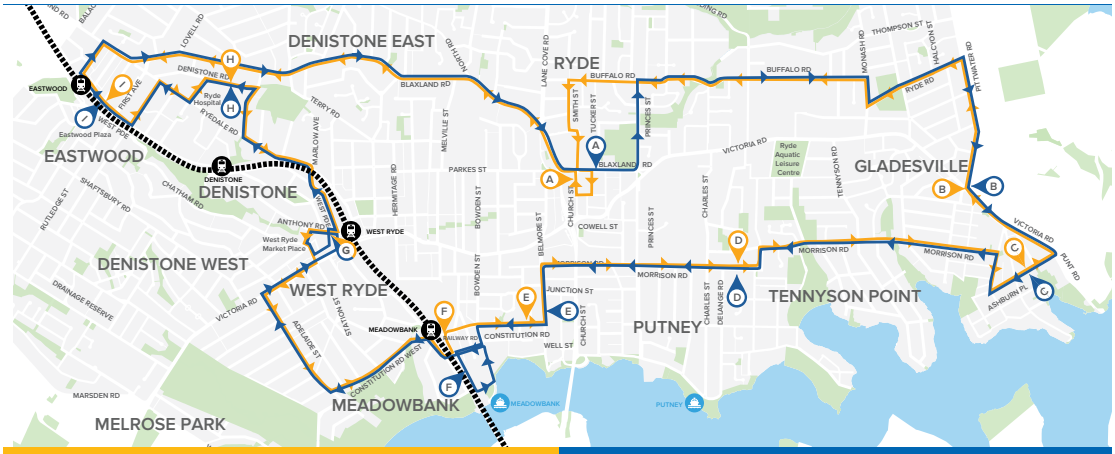
The new metro stations at North Ryde, Macquarie Park and Macquarie University provide a frequent, high-capacity service to and from the areas of Macquarie Park, North Ryde Business Park and Macquarie University. The Metro North West has provided improved access to areas such as Castle Hill, Norwest Business Park and Bella Vista. Access to other areas will increase further as the next planned stages of Sydney Metro to Sydney CBD, Parramatta and the Aerotropolis are completed.

Rail networks are complimented by an extensive bus network that services key retail and business hubs. Some areas have multiple bus services covering the same residential areas, with bus routes and service levels remaining relatively static. Bus services need to find a balance between broad coverage and providing direct access. Bus priority measures are limited to Victoria Road and Epping Road, catering mostly for CBD-orientated buses. Many bus services that travel through City of Ryde originate from north or south and then use the Victoria Road corridor. The combination of multiple routes, inconsistent frequencies and lack of bus priority create barriers to increased public transport use. City of Ryde supports re-development of the gateway Macquarie University Bus Interchange, designed to deliver improved place outcomes for the precinct.

Though there are numerous bus routes throughout City of Ryde, services are not particularly frequent. When adding in walk times, waiting times and bus stopping times, door- to-door bus travel times can be much longer than car-based travel times for the same trip. A lack of appropriate services is apparent in the indirectness of services connecting residential areas within the City of Ryde to key regional commercial areas. Bus network coverage, frequency and service improvements will be needed to cater for future demand. The East Ryde area in particular, is poorly served by bus services, with some residents having no access at all.

The layout of the existing the City of Ryde public transport network relies on interchanging based around train station locations, as well as Top Ryde shopping precinct. Station bus feeder services serve secondary roles in connecting residents and centres along the way. An increase in the proportion of young and elderly residents creates new challenges to provide transport for those less likely and less able to use a private vehicle, relying instead on public transport.

To supplement existing bus routes, City of Ryde introduced a bus service called ‘Shop Ryder’ in 2012. This service was provided as a way of connecting key town centres across residential areas with limited public transport services, reducing the number of single car passenger trips taken in the area. City of Ryde regularly monitors the performance of the service and looks for opportunities to ensure the service is catering for those most in need. For more information, refer to City of Ryde’s Sustainable Transport Strategy.



NEW TIMETABLE (FROM OCTOBER 2020):
ROUTE 1 MEADOWBANK TO WEST RYDE
VIA GLADESVILLE, TOP RYDE CITY, EASTWOOD AND RYDE HOSPITAL

30 min stopover will take place at Meadowbank Station

STOP	TIMES: Wednesday - Saturday				
(F) Meadowbank Station	8.30	9.30	10.30	11.30 # 12.00	1.00
(E) Crowle Home	8.31	9.31	10.31	12.01	1.01
(D) Putney Shops	8.37	9.37	10.37	12.07	1.07
(C) Ashburn House Aged Care	8.44	9.44	10.44	12.14	1.14
(B) Gladesville shops then Gladesville Library	8.46	9.46	10.46	12.16	1.16
(A) Top Ryde City shopping centre	9.00	10.00	11.00	12.30	1.30
(I) Eastwood Station	9.10	10.10	11.10	12.40	1.40
(H) Ryde Hospital	9.14	10.14	11.14	12.44	1.44
(G) West Ryde	9.17	10.17	11.17	12.47	1.47

NEW TIMETABLE (FROM OCTOBER 2020):
ROUTE 2 TOP RYDE CITY TO EASTWOOD
VIA GLADESVILLE, MEADOWBANK, WEST RYDE AND RYDE HOSPITAL

● 30 min stopover will take place at Top Ryde City

STOP	TIMES: Wednesday - Saturday				
(A) Top Ryde City shopping centre	8.30	9.30	10.30	11.30 ● 12.00	1.00
(B) Gladesville Library then Gladesville shops	8.41	9.41	10.41	12.11	1.11
(C) Ashburn House Aged Care	8.46	9.46	10.46	12.16	1.16
(D) Putney Shops	8.50	9.50	10.50	12.20	1.20
(E) Crowle Home	8.55	9.55	10.55	12.25	1.25
(F) Meadowbank – Shepherds Bay Shops	8.58	9.58	10.58	12.28	1.28
(G) West Ryde	9.10	10.10	11.10	12.40	1.40
(H) Ryde Hospital	9.15	10.15	11.15	12.45	1.45
(I) Eastwood Station	9.19	10.19	11.19	12.49	1.49

(Figure 18)

Shop Ryder Map and Stop locations (2021)

7 TRANSPORT CHALLENGES

The primary challenge for public transport in the City of Ryde is north-south connectivity between Meadowbank, Top Ryde, Macquarie Park and Gordon to the north. According to Infrastructure Australia the A3 corridor (Lane Cove Road), is one of the most heavily congested road corridors in Australia and there is no bus priority along the corridor. This means that car dependence is high. As the population continues to grow without infrastructure intervention, congestion can be expected to increase. will get even worse. Accessibility for freight and general traffic will be significantly affected.

Expected growth in private vehicle trips of 80,000 by 2040 represents a growth rate of 105 percent in vehicles on the roads during peak times. Clearly the existing road network cannot accommodate this level of increase and to maintain this at 37,000 vehicle trips requires a modal shift of more than 50 percent of users to either public or active transport. Even under existing proportions of active and public transport, an extra 32,000 active transport trips and 30,000 public transport trips per day would need to be accommodated. For this to occur, the transport network and service provision needs to improve substantially.

City of Ryde supports re-development of the gateway Macquarie University Bus Interchange, designed to deliver improved place outcomes for the precinct.

7.8 ACTIVE TRANSPORT

City of Ryde has invested heavily in walking and cycling paths in recent years, reflecting the importance of providing sustainable and accessible travel options to residents, workers and visitors to the area. Recent examples include the Epping Road Shared User Path and the Pittwater Road Shared User Path.

There is a network of parks and recreational walking facilities, as well as footpath connections along most residential streets. Recreational walking tracks include Ryde Riverwalk (along the banks of the Parramatta River), Field of Mars Walking Trails, Great North Walk (250 km walking track from Sydney to Newcastle), Shrimpton's Creek Walking Trail and the Ryde Heritage Walking Trail & Eco-walk, a short eco-education walk.

Intensification of development in suburbs such as Top Ryde, Meadowbank, Gladesville and Eastwood has the potential to increase pedestrian conflicts with traffic and will need to be managed to maintain pedestrian safety and accessibility. Pedestrian Access and Mobility Plans (PAMPS) have been prepared in the City of Ryde. These PAMPs have identified what needs to be done to improve walking conditions, including identification of deficiencies on the walking network, trip hazards and provision of facilities near public transport connection points.

City of Ryde has a footpaths expansion program which prioritises footpath development and maintenance based on use, road safety considerations, importance of connectivity and condition of the asset. There are still a number of links that present challenges for disabled pedestrians, with Council's Disability and Inclusion Action Plan also ensuring these are targeted on both pathways in the vicinity of trip attractors and at bus stops.

City of Ryde has an extensive cycle network consisting of off-road 'shared' paths, on-road cycle lanes, informal on-road cycle routes and off-road recreational bike routes. Although City of Ryde provides a network of formal and informal cycle routes, the terrain for cross-city cycling can be challenging. A key challenge is to fit safe cycling facilities connections (links) into constrained road corridors, particularly where traffic volumes / congestion are more significant. A related challenge is how to provide tree canopy in the design of Shared User Paths, particularly when verge widths are narrow.

City of Ryde's connectivity to regional cycling routes in surrounding LGAs is important. Ideally, infrastructure should be of a consistent type, standard and alignment so that cyclists are largely unaware that an LGA boundary has been crossed. The North District Plan released by the Greater Sydney Commission establishes a long-term plan for the development of cycleways in the Greater Sydney area. By supporting a common vision for cycleways, there is potential for more commuters to use bicycles for longer, regional journeys.

7.9 ROAD SAFETY

City of Ryde's role in road safety includes primary responsibility for the safety of local roads, including providing pedestrian and cyclist facilities on local roads, upgrading line marking, signage, pavement and other infrastructure on these roads, and undertaking general road maintenance. The City of Ryde has a duty to consider the road safety implications of decisions regarding land use and different types of development. City of Ryde seeks to engage, educate and empower the community in relation to road safety issues, by encouraging safe road user behaviour.

City of Ryde's responsibility for road safety is realised by integrating a 'safe system' approach into road network design, ongoing maintenance, road user education and other projects that involve people using the road network. The City of Ryde has, over many years, provided engineering solutions and programs aimed at influencing the behaviour of the users of the road network.

Key road safety challenges for the City of Ryde are:

- School zone safety - safety for vulnerable road users (children) around school pick-up and drop-off times, educating parents on safe driving behaviour
- Speeding (and the perception of speeding) on local streets
- Pedestrian safety in the vicinity of our town centres
- Cycling and Shared User Paths (SUPs) – particularly pedestrian safety on SUPs and cyclist safety on 'on-road' cycle lanes
- Discouraging unsafe and/or illegal travel behaviour that endangers both the safety of the individual and other road users.

The majority of serious crashes that occur in the City of Ryde take place on State managed roads (managed kerb to kerb by Transport for NSW). These roads include Lane Cove Road / Devlin Street / Church Street (A3 corridor), Victoria Road (A40), Delhi Road (A38), Epping Road, Blaxland Road, and First Avenue / Rutledge Street / Brush Road / Lawson Street. This is largely a result of the higher traffic volumes and vehicle speeds that these roads experience, compared to the regional and local defined roads that are managed by City of Ryde.

An emerging road safety issue is the rapidly expanding range of home delivery services, using bicycles, e-bikes and motor scooters. Consideration needs to given to improved safety for the 'last mile journey' and the ability to safely access / park in residential and commercial areas.

Political Challenges to Achieving Longer Term Gains

The solutions to transport challenges can be counter-intuitive. Measures such as adding more lanes to a road may ultimately result in increased congestion, while adding additional on-street parking can result in reduced levels of access. Transport infrastructure often requires a long-term commitment to funding, involving several political and news cycles. Provision of infrastructure such as a new Shared User Path may initially be under-utilised, requiring cultural and behavioural changes.

Poor utilisation in the short term does not necessarily represent failure, requiring commitment and investment to realise medium / long term community gains. It is a challenge to ask localised communities / residents to make compromises for the benefit of the wider community in the longer term. With all funding and investment decisions, there is an 'opportunity cost' of not having funding to spend on projects elsewhere.

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

8.1 LAND USE INTEGRATION STRATEGY

Increasing commercial and residential development in City of Ryde requires increased integration between transport planning and land use planning. With little spare capacity on the current major road system, it is important that more trip-making occurs in areas accessible by public transport, cycling and walking. These locations are generally around train stations, bus priority corridors and mixed-use development areas.

Key approaches for improving the integration of land use and transport include:

- Encouraging mixed use development, in the most accessible locations within existing centres, near recreational opportunities and major public transport hubs which encourages more linked and multi-purpose trips, resulting in reducing traffic generating trips by private car
- Development in centres designed with the aim of maximising walking, cycling and other forms of micro mobility, while improving access to public transport
- Public transport investment focussed in centres where sufficient employment or mixed-use development already exists
- Parking policies that encourage the use of public and active transport, including provision of parking stations on the fringe of a business centre
- DCP parking rates and planning controls that allow strategic location of parking to serve residents and visitors
- Reducing parking rates in private developments, providing some disincentive for car ownership
- Encourage the use of smaller on-demand bus services, with stops linked to the active transport network
- Future land use planning considers both the transportation needs of future occupants and the adequacy of existing transport facilities.

Key integrated planning considerations associated with population 'densification' in key areas include:

- More people concentrated near rail / metro stations, supporting bus services connecting to railway / metro stations
- Additional walking and cycling infrastructure in and around densification areas, as these areas have lower than average car ownership and higher than average usage of both public and active transport modes
- Residential parking controls encouraging occupation by lower-than-average car ownership families, such as car share schemes
- Complementary land uses such as personal business, shopping and education in close proximity to densification areas.

The Greater Sydney Commission is currently leading the coordination of land use and infrastructure planning for Macquarie Park to incorporate a whole of State and local government approach. The Department of Planning, Industry and Environment is working in collaboration with City of Ryde Council, the Greater Sydney Commission, Transport for NSW and other State agencies to deliver an integrated place strategy for Macquarie Park.

The draft place strategy is a 20-year plan for Macquarie Park to reach its potential as a 'world-class place for innovation and collaboration with a strong employment focus'. Key aspects include opportunities for up to 20,000 additional jobs, up to 7,650 new homes, and additional growth of over 10,000 students, along with improved access to public transport & additional walking and cycling paths. The draft place strategy does not seek to rezone land, instead outlining the first steps to ensure investment and infrastructure are aligned to anticipated growth.

The draft Macquarie Park Place Strategy was recently placed on exhibition for public comment and explores the development of Macquarie Park as connected villages with key features for each location to drive development of successful place outcomes.

The efficiency of the transport system is related to the intensity of land use. Increasing residential dwelling densities in centres with public transport will result in shorter trips. Benefits include:

- More trips suited to walking and cycling
- Shorter vehicle trips
- More trips closer to major public transport facilities.

Ideally, new residential development and employment centres should be based near existing activity centres and transport hubs. Ease of movement within urban centres helps increase the attractiveness of public transport and active transport options. Direct access should be provided through a major development site or plaza space that promotes access, particularly to major train stations and bus stops.

Land use development is assisted by complimentary parking policies that encourage the use of public and active transport. Land use strategies that aim to increase walking, cycling and public transport usage can be undermined if complimentary parking policies are not introduced at the same time. Where public and active transport options are attractive, parking should be restricted to land uses that rely upon a greater proportion of vehicular trips such as hardware stores, supermarkets and childcare centres.

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

8.2 PARKING STRATEGY

Parking planning and management is an important consideration when developing an integrated transport strategy, as the supply of available parking spaces influences choice of travel mode and impacts the accessibility of activity centres, recreational and residential areas.

The presence of parking plays a significant role in the viability of centres and on the amenity of surrounding residential areas. Parking policy requires consideration of:

- Land use and parking demand characteristics (day / time and duration of stay, purpose, special needs)
- The nature of parking supply (on-street, off-street, private, public)
- Parking regulations and pricing
- The level of intervention needed to influence travel behaviour, impacted by supply versus demand for parking, regulations, provision of public and active transport modes
- Changing circumstances (demand, supply, new technologies, new work practices).

Parking should be planned and managed to maximise local accessibility for short stay, high value parking purposes and to influence the use of alternative modes, especially for long stay, low value parking purposes.

Parking is used for a range of purposes and it is important to understand the mix of parking demand types in each suburb. The supply of tailored parking plays an important role in the economic prosperity of urban centres. The type, location and amount of parking provided in each urban centre can have a significant influence on mode share and the level of accessibility to businesses.

Key objectives for planning and managing parking in and surrounding key centres in City of Ryde are:

- The over-supply of off-street parking is discouraged in key centres where public and active transport are prevalent
- Maintenance of off-street parking for long stay purposes in 'car-dependant' areas is supported
- Short-stay parking accessibility is facilitated in areas which rely on passing trade, ensuring sufficient turnover
- Special parking such as loading zones, bus stops, taxi ranks, car share schemes and disability is provided
- New parking technologies are adopted to maximise parking efficiency, improving the user experience and reducing circulation of vehicles, especially in Macquarie Park and Eastwood
- Parking area classification and hierarchy is used, recognising the unique parking needs of each centre, including resident parking schemes and metred parking in residential areas
- Car share parking schemes to provide residents and workers access to a vehicle at key locations
- 'Unbundled' car parking arrangements, whereby parking spaces are rented or sold separately from the sale or lease of a property, be considered near transport hubs.

Parking classification should be consistent with the underlying principle that the shorter the duration of the stay, the closer the parking should be to the destination, creating high turn-over of spaces and moving long stay parking to outer areas. Centre-based parking studies would be needed before applying on-street and off-street parking principles at the local scale, while considering the availability of public and active transport. Future land use and transport conditions through to 2041 need to be considered.

Kerbside parking space is a valuable community asset and needs to be carefully managed. In urban centres, kerbside space is often at a premium. Bus stops, loading zones and taxi ranks are often provided in the most accessible locations. As centres grow, additional special parking arrangements are required to achieve short-term use of available parking spaces.

Kerbside allocation in urban centres should be prioritised for the highest value purposes. In priority order these are:

- Bus stops
- Loading zones
- Taxi ranks
- Drop-off and pick-up areas
- Disabled parking
- Scooters / motorbikes
- Car share schemes
- General public on street parking.

To mitigate against the overflow of parking onto residential streets affected by employment uses in Macquarie Park and Gladesville, the City of Ryde has introduced Resident Parking Schemes. These zones allow permit holders to park in time limited zones indefinitely, allowing local residents and visitors with limited other parking options to park in close proximity to homes. Permit zones aim to encourage less non-resident commuter parking in these zones. Before any new Resident Parking Scheme is considered, its introduction needs to be supported by a majority of residents living in the street, and the street needs to have a very high parking occupancy rate. The allocation of permits is based on the number of vehicles registered to the property, as well as the number of available parking spaces available on the property. However, there is also a cap to the number of permits that may be issued to residents.

Other emerging high-density growth areas like Meadowbank have limited on-street parking opportunities, encouraging the use of available public and active transport facilities.

Park and Ride capacity should be prioritised outside of centres that have sufficient bus feeder services. The need for Park and Ride facilities changes over time as the pattern of rail and bus patronage changes. Within an integrated transport strategy, Park and Ride should be carefully considered because it may:

- Undermine the potential for use of alternative, more efficient modes for connection to rail stations and major bus stops
- Take up valuable development space (for active uses) close to a rail station
- Introduce extra congestion into a centre surrounding the rail station.

In some locations, the benefits of supporting Park and Ride outweigh the disbenefits, particularly where this type of parking supports the use of public transport. Park and Ride carparks are provided at locations such as Eastwood, Denistone and West Ryde.

Park and Ride should be actively discouraged in town centres where effective bus to rail interchanging exists and / or there is a reasonably large 'walk-up' catchment to the centre. While it is difficult to remove Park and Ride spaces in these circumstances, there are clear reasons why pressures for increasing the supply of spaces should be resisted.

The provision of parking for new developments, especially high-density residential developments and commercial premises, should be considered within the broader scope of traffic generation and land use planning. This should be combined with strategies to implement travel demand management to encourage mode shift.

Developer and major employers will be encouraged to work with staff to develop Travel Plans to manage employee journey to work and travel times. The need to consider the '4 R's' of Reduce, Retime, Remode and Reroute to encourage sustainable travel choices and to not rely on the supply of parking in these areas.

Remode – take public transport, don't drive. Use active transport for part of the journey where possible.

Retime – Avoid travelling in peak periods, alter start and finish times where possible

Reroute – avoid driving in CBD areas, use alternate routes to avoid busy areas

Reduce – use technology to work from home or other office locations, reduce unnecessary peak travel and restructure working modes to suit.

The value of a Travel Plan

Travel Plans work because they are unique, evidence-based and tailored to the specific circumstances of an organisation or site. Thye lead to real benefits for the organisation, employees and broader community by developing sustainable and commonly agreed solutions.

VALUE TO YOUR ORGANISATION AND STAFF				
Employee health	Efficiency	Cost Reduction	Sustainability	Site development (if applicable)
• Generate an average of 20 min more exercise each day per person • Staff less likely to take sick leave • Staff up to three times more productive • Contribute to improved workplace culture, morale and engagement • Improve work life balance and reduce time spent commuting.	• Improve reliability of staff arrival times • Improve reliability of deliveries • Reduce staff downtime spent travelling • Repurpose onsite car parking space • Provide better site access experience for employees, visitors and customers • Reduce local area traffic congestion.	• Reduce costs associated with sick leave • Reduce parking costs • Reduce mileage claims • Improve staff recruitment and retention • Reduce travel costs for organisation and staff.	• Encourage use of sustainable transport options • Improve your standing as an 'employer of choice' • Improve company image – environmental, corporate and social responsibility • Build relationships among local community • Contribute towards Green Star building rating.	• Reduce development costs and potential to increase density of development (fewer parking spaces) • Enhance attractiveness and marketability of site • Increase property and/or letting value • Easier pathway to development approval • Mitigate adverse traffic impacts of a development • Improve community perception of development.

Source: http://data.mysydney.nsw.gov.au/documents/Travel%2BPlan%2BToolkit%2B2018.pdf

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

8.3 ACTIVE TRANSPORT STRATEGY

While active transport - cycling and walking - has been traditionally undertaken for recreational purposes, cycling has gained popularity as a mode of transport suitable for a wide range of trips including commuting.

While infrastructure and facilities improvement can be a key means of attracting greater usage of active transport modes, particularly cycling, land use structure and the mix of development are important drivers of substantial shifts to active transport mode share. More activities and employment closer to where people live reduce walking and cycling distances, increasing the attractiveness of these modes. The option to setback buildings to allow for wide footpaths that can encourage more linked walking in key areas, and add to place and movement outcomes in high density locations.

In terms of walking activity, Macquarie University and its train station, along with Macquarie Centre and the Herring Road precinct are good examples of areas with active transport potential, as the wide public domain areas and adjacent bicycle corridor linking Macquarie Park to other areas of the City of Ryde support

Apart from improved walking and cycling conditions reducing the use of private vehicle travel, there are numerous other benefits such as health benefits, improved connections to / from public transport and economic flow-on benefits associated with more street-level activity in town centres.

Key objectives for planning and managing the active transport network and facilities in City of Ryde are:

- A connected, accessible and layered network of cycle facilities balancing the needs of specific user groups
- Local traffic management and parking decisions acknowledge movement priority for pedestrians over other modes of transport
- New residential, retail and commercial developments include appropriate and sufficient end of trip facilities - including lockers, showers, toilets and service areas
- Active transport networks are integrated with key public transport stops / stations
- Safe cycling routes are encouraged within one kilometre of all public schools
- Walking and cycling programs – both behavioural and infrastructure delivery - are to be used to encourage increased levels of active transport usage.
- In line with Future Transport 2056, for short trips to activity centres and key destinations, walking and cycling should be the most convenient option.

Different cycling users require different types of cycling facilities. Footpath and cycleway facilities connecting key destinations such as employment centres, universities, shopping centres, schools, parks etc. are typically constructed for specific purposes. City of Ryde's Disability Inclusion Action Plan helps provide facilities suitable for all users, with the Plan currently being reviewed and updated.

Cycle facilities fall into three categories, 'cycleway' off-road cyclists only path, 'shared user path' cycleway shared with pedestrians and 'bike lanes' usually on-street lanes for cyclists only. Bike lanes can be protected or unprotected from traffic via physical separation devices (typically concrete). The lowest level of facility is bicycle logo markings, more suitable in low speed, low volume environments. Connecting bicycle facilities through completion of 'missing links' significantly adds value to purpose-specific route facilities to create a network of cycle facilities and footpaths. Wayfinding signage or branding of key cycle corridors is beneficial as it guides cyclists whilst promoting the use of the routes.

A cyclist and pedestrian 'way finding' strategy will provide benefits in improving network legibility, while highlighting the presence of cycling and walking as alternative options to the private vehicle. The use of other personal mobility devices such as e-bikes and e-scooters may offer an alternative mode of transport in the future, as acceptance of these facilities increases and supporting legislative changes are made.

New developments should include appropriate 'end of trip' for both public and private occupants to encourage greater cycle and walk trips. End of trip facilities typically include storage for bicycles and shower and change room areas. Where significant potential exists to attract more cyclists and to deter private vehicle use, developments should provide a higher level of end of trip facilities to reduce traffic impacts. Council's DCP regulates the need for such facilities. Additional end of trip facilities, such as bike lockers, cages and change facilities, are also needed at key transport interchanges, encouraging cycling for all types of trips.

Cycling to school introduces a range of benefits to the transport system. The separation of cycling facilities in school areas from traffic and the need to ensure street crossing point treatments recognise the fact that children are vulnerable road users. Ideally, safe cycling routes should be extended outwards from each school location and within at least a one-kilometre catchment.

Developing a program to construct missing cycleway links will improve the connectivity of the overall cycleway network, increasing access to train stations, universities / colleges, schools, employment areas and recreational routes.

Active transport networks need to be integrated with key public transport stops / stations through route location design and the provision of end of trip facilities. Walking and cycling connections to public transport are key to encouraging the use of public transport. Direct, level, open, aesthetically pleasing and safe connections influence the attractiveness of using active transport. Providing shade and facilities for cyclists also provides an opportunity to promote use of pathways.

Catchments within a 10 minute walk of stations and major bus stops should be supported by high quality footpath and cycleway facilities. This approach should be considered for existing facilities and when designing new facilities, including major bus stops and interchanges in new locations. Major bus stops, interchanges and train stations should include secure bicycle storage facilities.

City of Ryde recently engaged a consultant to prepare the *Bicycle Strategy 2021 – 2031,* aimed at identifying what we need to do to make walking and riding an attractive travel choice. This will update the 2014 Bicycle Strategy. City of Ryde's aim is to create an environment where everyone who chooses to ride can do so from 'their front door, workplace or education facility'. The strategy identifies four key outcomes, including Connect Ryde – a connected, comprehensive bicycle network, Ryde Easy – inclusive and attractive facilities, Ryde More – proactively encourage participation and Ryde Ahead – positively influencing the image of cycling. For each outcome a range of actions have been recommended, including Connect Ryde (20), Ryde Easy (11), Ryde More (11), Ryde Ahead (9). Strategic actions to develop a more connected bicycle network are aligned to the active transport projects proposed in this Strategy.

City of Ryde is also developing a Green Links Masterplan, focused on greening land reservations and Council reserves whilst opening such areas for the enjoyment of residents. As part of the Green Links masterplan, cycle routes have been identified. Negotiations are underway with Transport for NSW to make use of the Eastwood County Road Corridor, which has been closed to the public since 1951. Negotiations are also underway with Sydney Water in relation to land south of Shrimpton's Creek corridor.

In terms of place amenity, City of Ryde has a number of car dependant town centres that do not currently provide an environment that encourages active transport use. This detracts from the amenity of a centre, lessening the experience of visitors. George Street in Sydney CBD, for example, is an area where vehicles came to dominate the route and has become 'unbalanced' from a place perspective. Through the re-routing of traffic, reconfiguring of bus services and reintroduction of light rail, conditions are being improved for pedestrians, cyclists and visitors.

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

Figure (19)

The Centre-to-Centre Network -
An extension to the regional routes

Figure (20)

Centre to Centre Network –
feasible treatment types and upgrades

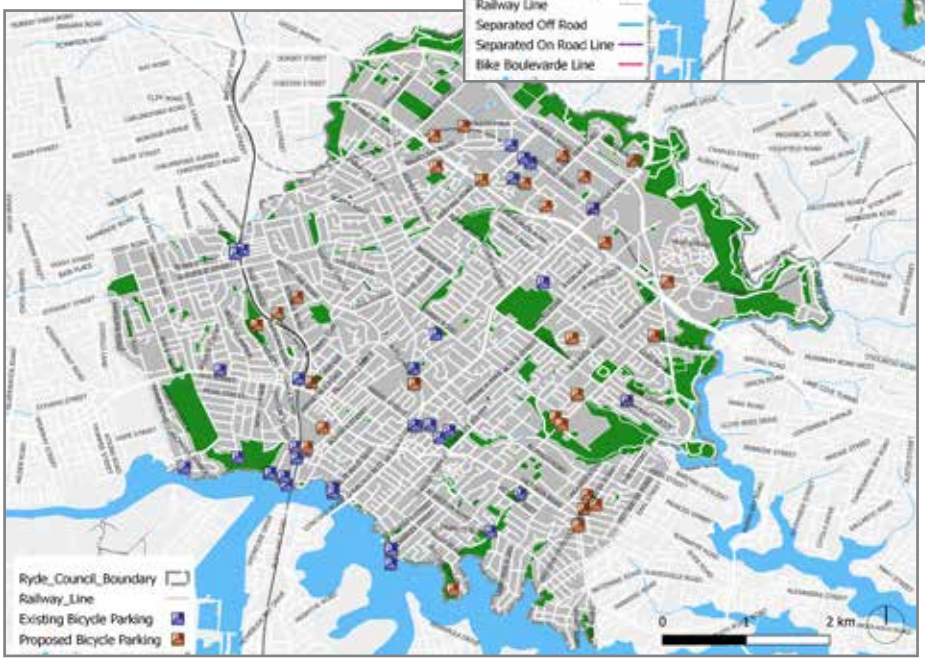


Figure (21)

Existing and planned bicycle parking facilities

Source: City of Ryde Asset Data Base -
Bicycle Parking, 2020

8.4 PUBLIC TRANSPORT STRATEGY

Public transport is needed to efficiently move people to key destinations within and outside City of Ryde, using direct, accessible and connected services. It is in the community's interest that public transport infrastructure is utilised as much as possible to efficiently move large numbers of people.

Only a relatively small proportion (30 percent) of trips are made in City of Ryde by public transport. In order to attract a larger proportion of trips to public transport, travel times and cost of using public transport need to be competitive with the private motor vehicle. For travel times to be competitive, routes need to be direct and a substantial amount of bus priority measures are needed. Parking costs and travel time benefits of rail over a private vehicle make trains an attractive choice for the commute from City of Ryde to Sydney CBD. However, locations away from the Metro and Northern Rail Line are generally not areas where catching public transport makes sense for most people.

This accessibility advantage near train stations attracts high density residential development to these station areas, which in turn introduces opportunities for mixed use development and increased public transport usage.

The current bus network in City of Ryde is relatively complex, providing a variety of services requiring frequent interchanging and the routes are often indirect. In most cases, with the exception of some longer distance services on Epping Road and on Victoria Road, bus travel times are much longer than car travel times for a trip within City of Ryde. There is an absence of north-south bus priority infrastructure, except within Macquarie Park.

Bus services and priority measures are primarily orientated towards Sydney CBD and there is little bus priority infrastructure that caters for bus services to / from the Macquarie Park. Victoria Road and Epping Road bus lane / bus priority measures are orientated radially to / from the Sydney CBD.

Public transport travel times need to match or be less than private vehicle travel times in peak times. Modal shift from private vehicles to public transport is heavily reliant on the comparison of the door-to-door travel times. Public transport travel times often include reasonably long components of walk and wait time, which is impacted by the reliability of public transport services. Unless public transport in-vehicle travel times can be at least as competitive as car travel times, then modal shift relies on restrictive and expensive parking fees to offset the additional time walking, waiting and interchanging. While it may appear that the area is well covered, many services are infrequent, particularly in off-peak periods.

Macquarie Park is a major potential destination for future bus services. Providing faster bus travel times via north-south movements along Lane Cove Road through bus priority measures would introduce significant benefits for buses compared to cars for accessing the centre and hence encourage modal shift. Lane Cove Road is an important arterial traffic route and the way in which bus lanes are implemented would need to consider the impact on existing traffic movements. In some locations it may be possible to repurpose general traffic lanes for bus priority, whilst in others it may be necessary to utilise existing wide road reserve to add a lane, or acquire property, earmark land for future strip acquisition, or work with developers to have them dedicate land for the additional lanes.

Key objectives for planning and operating public transport in City of Ryde are:

- Efficient modal integration occurs at public transport interchanges by reducing interchange times and increasing interchange convenience
- Park and Ride capacity is supported only in centres that have insufficient bus feeder services and poor interchange convenience
- Eensure the bus route network is simple and direct but with significant coverage
- Bus travel times are equal to or less than private vehicle travel times in peak times in key corridors
- Public transport modes are introduced where they can leverage off development growth and help to shape a more sustainable land use form.
- Council supports TfNSW rapid bus corridor projects:
  - Eastwood to Parramatta rapid bus
  - Macquarie Park to Blacktown rapid bus
  - Macquarie Park to Mona Vale (and Hurstville) rapid bus
  - Parramatta to Sydney CBD via Ryde along Victoria rapid bus.

Efficient modal integration should occur at public transport interchanges. As travel patterns become more complex and development intensifies within City of Ryde, relying on 'same seat' journeys from origin to destination becomes more difficult. Within City of Ryde, train stations and services are primarily used for longer distance, commute-style trips or for university trips into Macquarie University Station. Without effective bus-rail interchanging at key locations, the demand for Park and Ride is higher than it needs to be, or trips are made by private vehicle instead of public transport.

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

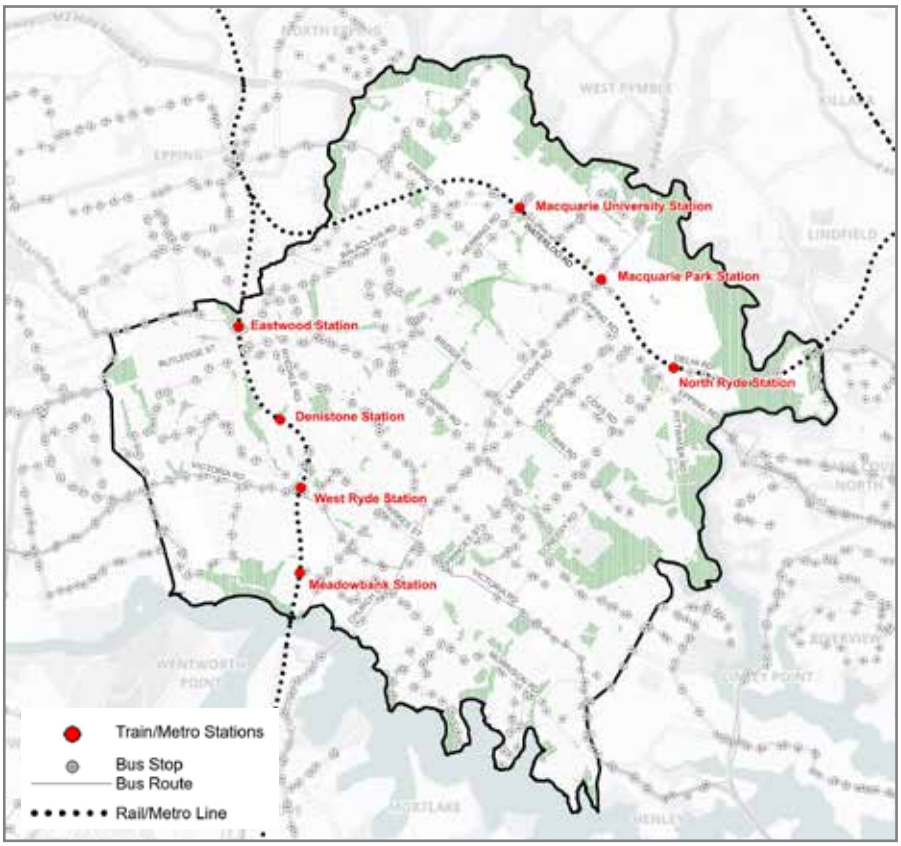
Eastwood and West Ryde are relatively well served by existing bus-rail interchanges, with emerging interchange points along the new Metro North West. High frequency rail services create opportunities for reduced waiting times, making interchanging between bus and rail more attractive. Macquarie University Station in particular, will increase its importance in the metropolitan rail network over time, becoming a key interchange hub.

The key strategies for increasing the effectiveness of bus-rail interchanging within the City of Ryde are:

- For high volume locations, identify opportunities for closer integration of bus stops and rail stations
- For medium volume locations, identify measures to improve the quality of the pedestrian connections between bus stops and rail stations to improve the interchange experience
- For low volume locations or locations where no integration occurs at all, investigate re-routing existing bus services or adding additional services such that local residents have some opportunity for using buses for access to rail stations.

Real time travel information can help customers manage their time when services are unreliable on any given day. In this respect, apps should be encouraged, along with real time information at major public transport stops.

While the ferry network plays a limited role in overall transportation of people, there are plans to further upgrade ferry infrastructure and services. Ferry wharfs are being progressively upgraded to improve customer service, in areas such as amenity, safety and efficiency. More efficient interchanging with other modes of transport, both public and private, is also planned.



(Figure 22)
Existing Public Transport Routes

8.5 ROAD SAFETY STRATEGY

The City of Ryde Road Safety Plan provides a framework and direction for an integrated and holistic approach by identifying priority road safety issues and actions required to address them. The Road Safety Plan sets out intended actions and activities that are necessary to reduce the number of crashes and road trauma in the local area. The Road Safety Plan assists City of Ryde to integrate efforts with neighbouring councils, Transport for NSW, NSW Police, and the community to deliver a safe road network.

Targeted programs include:

- Speed awareness program – fixed and mobile speed check signs located on key streets
- Shared user path safety program – promoting safety for pedestrians and cyclsts on SUPs and 'share the path' awareness
- Pedestrian safety program – with particular focus on Culturally and Linguistically Diverse (CALD) communities
- Youth road safety program – partnering with Ryde Police Area Command (PAC) and Eastwood Gladesville Liquor Accord
- School zone safety program focusing on safety around pick-up/drop-off zones
- Active travel programs for local schools and support cycling programs in partnership with Bicycle Advisory Committee and Bike North.

Recurring programs include:

- Child Car Seat Checking Program
- Learner Drivers workshops for parents and supervisors
- Walking Safely for Seniors presentations
- Safer Driving for Seniors workshops
- Supporting TfNSW road safety campaigns on Council media platforms.

Further information about City of Ryde's Road Safety Plan can be found on Council's website at **www.ryde.nsw.gov.au/roadsafetyplan**

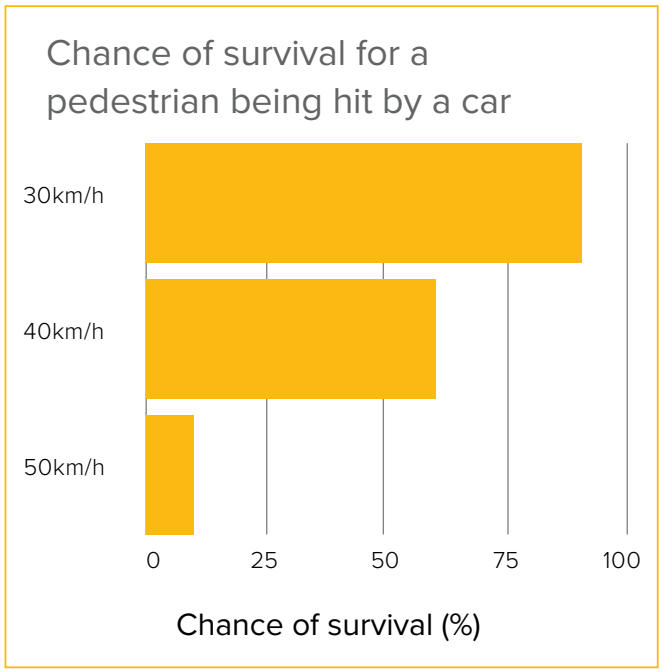
(Figure 23)

State Road Safety Strategy – Vision Zero - Safe systems approach (NSW Centre for Road Safety)

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

Vehicle crash patterns across the City of Ryde have become more dispersed in recent years, meaning there are few crash 'hotspots' - specific locations where multiple crashes are occurring or with a defined pattern in terms of crash type. As a result, Council is placing more emphasis on a proactive approach to road safety, working with TfNSW to use road environment risk ratings, and acquiring 'near miss' data to understand where crashes are likely to occur. We also have a rolling program of signage, line marking, pedestrian facility and intersection improvements to reduce the risk of crashes occurring.

Council is investigating a number of locations where a lower speed limit may improve road safety. Focused on CBDs with high pedestrian activity, lower speed limits would help to reduce the risk of serious injury crashes and fatalities. In recent times attention has been placed on lowering the speed limit in 'High Pedestrian Activity Areas' (HPAAs) from 40 km/h to 30 km/h due to the increased chance of survival by a person being struck by a vehicle at this lower speed.



The chance of survival jumps from just 10 percent at 50km/h to 90 percent at 30km/h. (The ConversationL NSW Transport Metropolitan Roads (2019)).

Adapted from Source: https://www.abc.net.au/news/2021-05-20/busting-myths-30-kilometres-per-hour-zones-speed-limits/100151294

(Figure 24)

These 30 km/h zones have been introduced as a road safety measure in Manly and Liverpool in Sydney. When City of Ryde investigates reduced speed limits in Meadowbank, West Ryde and Eastwood, the forecast benefits of a 30 km/h (as opposed to 40 km/h) will be investigated. It is important to note that reduced speed limits do not typically slow the majority of drivers that are already driving cautiously and to the conditions in town centres, aware of the presence of pedestrians and activity.

8.6 ROADS AND FREIGHT STRATEGY

Through traffic movement on the arterial road network should be efficient, however recognise the need for public transport modes to be competitive. Local accessibility needs have to be addressed, as well as the needs of freight and service vehicles. Freight transport through City of Ryde should be required to use major roads, with the exception of trips that must use local roads.

Traffic movement efficiency provides economic benefits through productivity gains due to travel time savings. Through movement efficiency on arterial roads has partially been achieved by progressively restricting local access to these roads whether it be through cutting off local streets, barring right turn movements or reducing the amount of signal green time from local streets to major intersections. As networks evolve and arterial roads become congested, a balance needs to be struck between trying to preserve through movement efficiency and allowing local movements.

Within City of Ryde, restricted local accessibility is present near the major through movements on Victoria Road, Epping Road and Lane Cove Road. Most issues with accessibility across these roads stem from the limited number of crossings / full intersections which consolidate traffic movements, creating fewer but larger intersections which have more green time priority being allocated to the arterial routes and combined with turning restrictions at some intersections, contributes to exacerbating access issues to/from State roads.

The City of Ryde local road network is essentially split by the three primary state government arterial routes of Victoria Road, Epping Road and Lane Cove Road (also incorporating Devlin Street - Church Street). Beyond these roads, there is a hierarchy of secondary local government roads. These roads perform important through movement functions but have direct property access. Opportunities to separate local traffic movements from through traffic movements should be identified and considered.

Efficient freight movement is important to both the local and regional economy. The evolution of land use sometimes mean that freight-generating activities can be located in residential areas that develop around them, presenting freight traffic and residential traffic issues. City of Ryde uses three tonne road limits to restrict heavy vehicle access to certain local roads.

City of Ryde currently has a number of minor industrial areas connected to the existing NSW freight network that are directly adjacent to local residential areas. Examples of these areas can be found within Macquarie Park, Ryde, Gladesville and Meadowbank.

Local area traffic management schemes (LATM) in local streets should promote residential amenity. Residential amenity in local streets can be improved by encouraging traffic travelling through the area to either avoid these streets or to do so at a reduced speed. With a well-established functional road hierarchy, traffic would be encouraged to use arterial, distributor and collector routes rather than local streets. While the use of LATM schemes can be attractive to local residents to help divert traffic, there are often challenges in implementing such schemes due to the noise created by vehicles driving over speed humps and the loss of parking associated with traffic management devices.

City of Ryde has a relatively poor definition of street function due to the way its grid street network has evolved over time. In some locations, this has led to excessive traffic volumes or excessive speeds in local streets. There are few opportunities for new roads or additional lanes to augment the existing capacity of the road network.

Key objectives for planning and operation of the road network within the City of Ryde include:

- Through traffic movement on the arterial road network is efficient but recognises local accessibility needs
- Residential amenity in streets is preserved by limiting the volume and speed of through traffic by implementing local area traffic management schemes where necessary
- Manage available road space to maximise the person-movement capacity of corridors
- Road investment targets value for money pinch point improvements
- Limit heavy vehicle movements in local residential streets and encourage industrial uses adjacent to major roads
- Apply the movement and place philosophy to streets to ensure movement needs and place priorities are balanced.

As roads in physically constrained corridors approach capacity, options for upgrades become limited. Rather than providing additional road capacity, it can be more effective to manage the existing road corridor to maximise its person-movement capacity through initiatives such as encouraging a mode shift towards greater active / public transport use.

When an urban network reaches capacity, the sources of congestion are most likely at intersections rather than mid-block. Capacity issues seen in an urban corridor can be due to isolated pinch points where traffic demand reaches capacity. In these situations, the works required to provide relief and to better balance delays along a corridor may be minor and cost effective to fix. These upgrades should always consider benefits to public and active modes of transport.

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

City of Ryde has a mature road network and numerous pinch points have become apparent. These include locations such as Epping Road / Delhi Road, Lane Cove Road / Kent Road, Epping Road / Pittwater Road, Lane Cove Road / Waterloo Road, Victoria Road / Bowden Street and Constitution Road. As roads in physically constrained corridors approach capacity, options for further road widening with additional traffic lanes become limited, involving impacts on the surrounding area and are generally too expensive.

The main northern railway line acts a barrier to road travel, with limited existing east-west crossing opportunities.

Transport for NSW has a number of pinch point programs, including the Easing Sydney Congestion Program. Examples of local road projects include the upgrading of the Devlin Street / Blaxland Road / Parkes Street intersection and the planned widening of Victoria Road at West Ryde (for bus priority). Extension of clearway restrictions have either been recently introduced or planned for the near future.

Freight efficiency is largely related to the efficiency of the State Road system. While there are some pockets of light industry in City of Ryde, most major freight movement is through the area, particularly along Lane Cove Road. Light industry is located near major roads such as Victoria Road with limited heavy vehicle effects in residential areas.

8.7 TECHNOLOGY STRATEGY

Transport has benefited greatly from technology in recent years, including better managed roads and vehicles. Access to real-time information, both on electronic signage and mobile phones, has increased travel options for a wide variety of trips. Transport apps on mobile phones will become more common, allowing better selection, coordination and scheduling of trips.

Smart motorways use real time information, communication and smart traffic management systems that help smooth traffic flow, particularly during peak periods. The M4 Motorway in Sydney's west has recently been upgraded to be a smart motorway. Variable Message Signs inform drivers about expected travel times and traffic conditions ahead, allowing drivers to better plan their journey or choose an alternative route. Variable speed limit signs are used to vary speed limits if there is heavy traffic, an incident or bad weather. Smart motorway upgrades to the M2 motorway and improved use of intelligent transport system tools on major arterials through City of Ryde have the potential to ease traffic conditions.

Future travel will involve a significant increase in electric vehicles that users can drive themselves, followed by driverless electric vehicles that will self-navigate, allowing time to be spent undertaking other activities and assisting in reducing driver errors that contribute to crashes on our roads. Automated vehicles will be able to react to real-time traffic situations, dynamically selecting appropriate routes. City of Ryde is supporting the rollout of electric vehicles through the provision of public electric charging stations, as well as through guidelines aimed at supporting further public charging infrastructure. Public charging stations have already been installed at Ryde and Macquarie Park, as well as in the Church Street carpark and Giffnock Street, and in Council's new 'Ryde Central' facilities.

Travellers will have access to a range of additional 'micro-mobility' devices, including e-bikes and e-scooters. At the same time, the management of roads will continue to include smart motorways and improvements to the way traffic signals work. These help to accommodate increased trip demand and improve road user safety. The use of additional cameras to monitor and influence traffic conditions will also help to better understand and regulate traffic. The widespread use of drones to monitor traffic conditions, as well as deliver goods, is also on the horizon. The use of technology to clearly understand how all users travel on the network will allow for responsive planning to meet changing needs.

'Mobility as a service' has been described as a new mobility solution that uses new digital technology to enable users to plan, book, and pay for multiple types of mobility services. Rather than rely on personal forms of transport to get from origin to destination, the user is presented with a personalised range of coordinated transport options that aim to minimise wait and transfer times. A combination of car share, public transport and active transport modes are offered. Mobility as a service is facilitated through State Government services as well as private business operators.

Smaller, shuttle-like public bus services could be requested via an app. Patrons request a trip and the bus route is developed in real-time based on multiple passenger locations and destinations. The real time routing aspect allows slight alterations if additional patrons are added en-route. City of Ryde recently participated in a two-year Keoride trial that demonstrated the service was viable and well patronised compared to most other areas travelled in the Greater Sydney area.

The trial commenced in March 2018 and concluded March 2020, during that time 80,000 trips were taken, with an average of 4,800 trips per month. The service operated 6am to 7pm Monday to Friday with an expanded timetable at peak times. Pricing was based on kilometres travelled with payment only by credit card. Customer satisfaction was high (96 percent) as it was safe and convenient, taking passengers between their homes and key hubs in the Macquarie Park precinct. City of Ryde supports the return of the successful Keoride service, using third-party contributions and advertising support.

Mobility as a service will be further enhanced with the future introduction of driverless electric vehicles, enabling options for at-call driven services. Such services have the potential to reduce the need for vehicle ownership, particularly in highly densified areas and town centres. Driverless vehicles have the potential to pick up passenger(s) from a home destination, providing a convenient, cost-effective and all-weather travel option. On-demand transport also has the potential to provide many of the advantages of using a private vehicle, in a more environmentally friendly and efficient manner.

Micro-mobility refers to a range of small, lightweight vehicles operating at lower speeds and driven by users personally. Micro-mobility devices include bicycles, e-bikes, electric scooters, electric skateboards, shared bicycles and electric pedal assisted bicycles. Micro-mobility devices are best suited to short distance travel, playing a role in reducing road congestion and improving the amenity of places. At this time, the use of electric scooters on a road or road-related area is not permitted. However, over time it is expected that legislation will be changed to be more accommodating of these devices.

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

Public bike share schemes have been implemented across Europe, US and Australia with considerable success in encouraging localised cycle trips while reducing traffic impacts. A sufficient cycle network is needed to utilise this type of scheme successfully. Further opportunities exist in using e-bikes in the system to encourage 'non-recreation' cycling or to assist travel on adverse terrains. However, these programs are not without logistical challenges.

Car share and ride share schemes are gaining in popularity. Ride share vehicles connect people who have common origin or destination points to ride in the same vehicle to work via an app. Ride share schemes are particularly effective in large business centres. Public car share schemes provide on-street parked vehicles that can be hired, unlocked and used by anyone via an app for short periods. City of Ryde has approved 25 on-road car share bays in key locations. The advantage of car share is people are less likely to need to own a vehicle themselves, reducing the need for parking. Also, they are not likely to be used on a daily basis, encouraging people to use alternative forms of transport that are more sustainable most of the time.

City of Ryde is pursuing the introduction of new parking systems for Macquarie Park and Eastwood, where real time information is used to provide significant benefits to both users and managers of parking infrastructure. New technologies provide opportunities for dynamic parking management and integration of on-street / off-street availability.

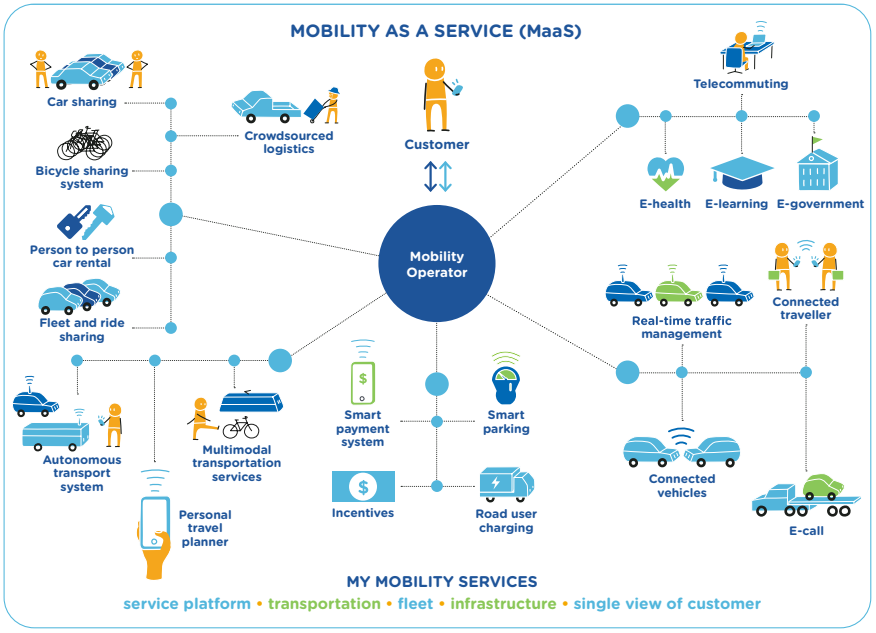
New parking schemes can include real-time:

- Occupancy monitoring
- Information to potential users through on road information and App-based systems
- Parking pricing for selected areas to manage demand and supply
- Monitoring of duration of stay for enforcement purposes.

In the future, there is also the opportunity to implement dynamic signage which allows for the re-allocation of kerb-side space for different uses at different times of the day. This technology may provide benefits to parking management in 'hot spots' such as Macquarie Park and Eastwood.

Clearways remain an important measure to balance daily peak flows and parking provision along State roads. However, the implementation of such measures should be considered very carefully, as kerbside space may be better utilised for bus priority measures which provide a greater opportunity to move larger numbers of people and thereby reduce congestion on arterial roads.

City of Ryde's Sustainable Transport Strategy 2021 – 2031 aims to help the environment by encouraging greater use of alternative transport that has a lesser impact. While exploring the latest technology options available, the Strategy provides practical advice on how to change travel behaviour in favour of more sustainable transport outcomes.



(Figure 25)

8.8 LOCAL CENTRES STRATEGY

City of Ryde has many local centres that support their own vibrant community. They all function in different ways and provide options to encompass changes in local area strategy. Macquarie Park functions very differently from the other centres within Ryde, being a strategic health and education centre, with a significant role as an office precinct. Macquarie Park is home to multi-national companies, Macquarie University and one of the largest shopping malls in Australia, Macquarie Centre. Macquarie Park is Sydney's and NSW's second largest commercial district.

Ryde and Eastwood are the next largest centres in the City of Ryde. Both centres serve communities that extend beyond the boundaries of City of Ryde and are the focus of local activities and events. Eastwood is an established multicultural centre, particularly relied upon by the Chinese and Korean communities. Ryde centre or 'Top Ryde' is the home of local government in Ryde, with the new Ryde Central precinct under development.

West Ryde and Gladesville serve mainly local neighbourhoods. West Ryde in particular, is well served by rail and bus public transport and will be a focus for redevelopment in the future. Shepherds Bay at Meadowbank is one of the smallest of Ryde's centres but is maturing into a significant mixed precinct.

Recommended projects have been classified according to when action is required, including short-term infrastructure (SI), medium-term infrastructure (MI), long-term infrastructure (LI), or local area (LA) in nature.

Macquarie Park

Macquarie Park is positioned midway between the Eastern Harbour City and the Central River City in the Greater Sydney Commission's regional plan for Greater Sydney – A Metropolis of Three Cities. Its performance as a connected centre of innovation and employment is important to improving connections between strategic centres across the Greater Sydney area.

The NSW State Government has noted in the recent Strategic Infrastructure and Service Assessment (SISA) investigation that Macquarie Park is expected to be the fourth largest CBD in Australia by 2031.

Macquarie Park is maturing into a premium location for globally competitive business, with strong links to university and research institutions. It is anticipated that the area will evolve into a vibrant, accessible CBD that balances work, recreation and entertainment. Macquarie Park will be characterised by a high-quality, well-designed, safe and liveable environment that reflects the natural setting, with three accessible and vibrant train station areas providing focal points. Housing options in the area will provide opportunities for people to live, work and play locally.

Macquarie Park is evolving as an important urban centre, as office space increases and manufacturing and warehousing relocates. Macquarie Park has more office space than either North Sydney or Parramatta, with a doubling of office space already allowable under existing planning controls. Macquarie Park is currently a business park, with dispersed buildings set in landscaped grounds and tree-lined streets. Despite the dispersed nature of the development, it is Sydney's second largest commercial district.

Macquarie Park is facing significant transport challenges, as it evolves from being a business park into a mixed use, multi-purpose centre. Traffic capacity in the surrounding area is a key concern, with locally-generated traffic adding congestion at major road intersections. Metro North West and its frequent railway services has assisted in reducing reliance on private vehicles. Metro North West however only serves Macquarie Park from areas to the south-east and north-west. Efficient bus services are key to the continued success of Macquarie Park, however bus priority measures on key corridors to and from Macquarie Park are still very limited.

Mode shift to public transport and other forms of alternative transport is essential to address future development and expected population increase. A supporting on-street and off-street parking strategy will be an important component of managing future transport conditions. Additional residential development in the Herring Road Urban Activation Precinct and in the North Ryde Station Urban Activation Precinct will help localise a proportion of trip making, improving the level of trip containment.

The Greater Sydney Commission (GSC) recently facilitated (2021) a Strategic Infrastructure and Services Assessment (SISA) aimed at identifying future transport options for Macquarie Park. The Macquarie Park Place Strategy is the overarching strategy for the area. After identifying 35 transport-related improvements, potential projects were assessed and ranked according to criteria including highest strategic alignment and feasibility. Short-listed interventions include key projects such as the Parramatta – Epping Mass Transit Link / Train Link (Metro extension), strategic bus corridors (including bus priority measures), the Macquarie University Bus Interchange (MUBI), continued development of a 'fine grain' road network that supports active transport connections within Macquarie Park, as well as improvements to road intersections on major roads.

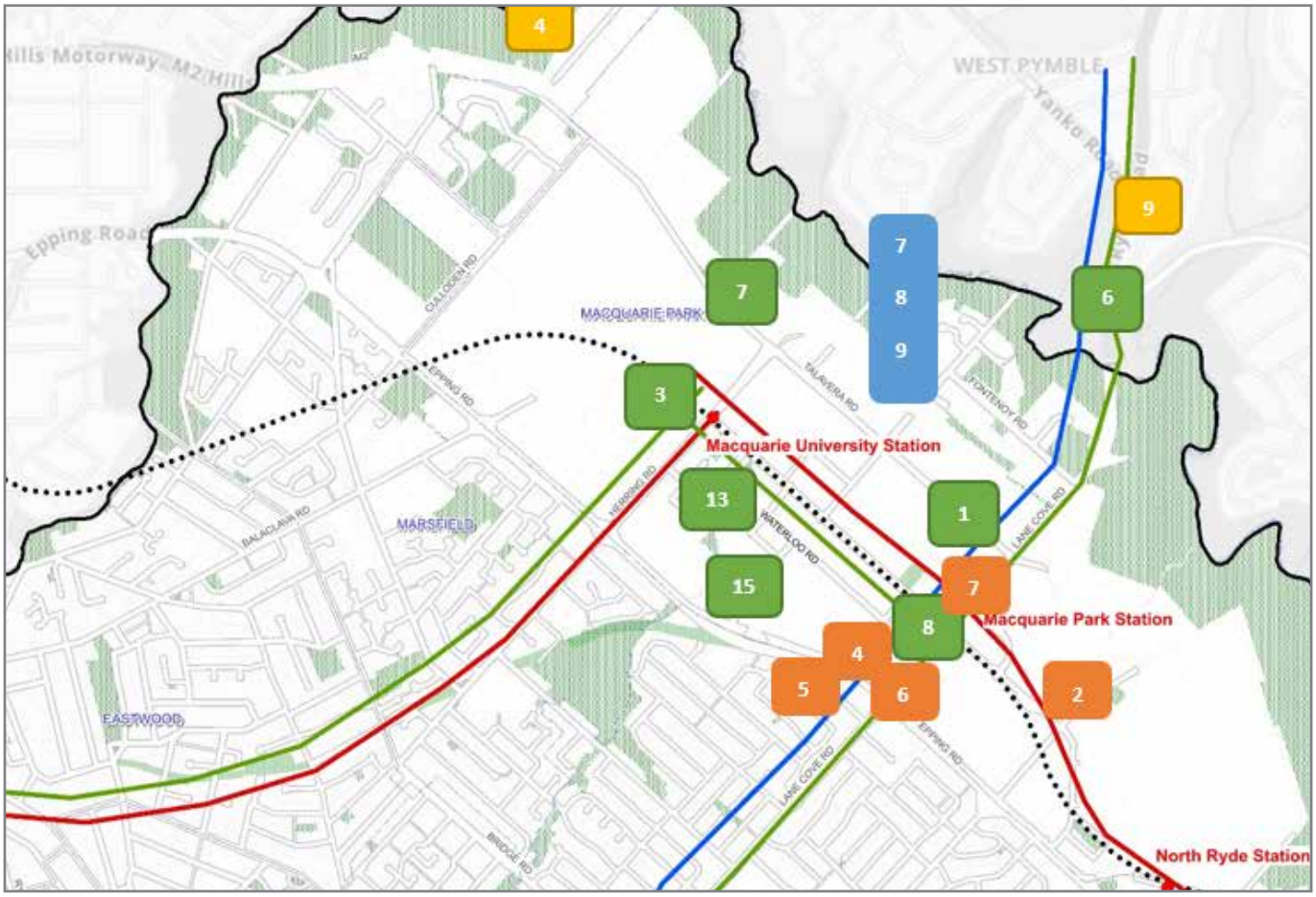
8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

In terms of the SISA, the option of delivering a fine grain road network had the highest strategic alignment. Others options in order of importance were:

- Macquarie University Bus Interchange
- Parramatta - Epping Mass Transit Link
- Delivering strategic bus corridors
- Pedestrian crossings along Waterloo Road
- Macquarie Park to Mona Vale bus priority improvements
- Re-allocation of road space on Waterloo Road and Herring Road
- Developing a comprehensive network of dedicated cycle and micro-mobility connections.

In the future, SISA priorities are expected to play a significant role in shaping future transport improvements in Macquarie Park. The application of a 'movement and place' framework to the area will also be significant. Modal shift to public transport is essential and cannot be achieved through increasing services or infrastructure alone. A key challenge is how to progressively implement an integrated on-street and off-street parking strategy that aims to deter all day off-street parking and free up short term on-street parking. In this regard, City of Ryde is progressing the installation of electronic parking systems while reducing the availability of all day on-street parking in Macquarie Park.

Council will also work to control parking spaces within development via DCP conditions, aiming to reduce the volume of onsite parking available and to control the access to on street parking by reducing time zones and altering charging to make the option of all day parking unattractive.

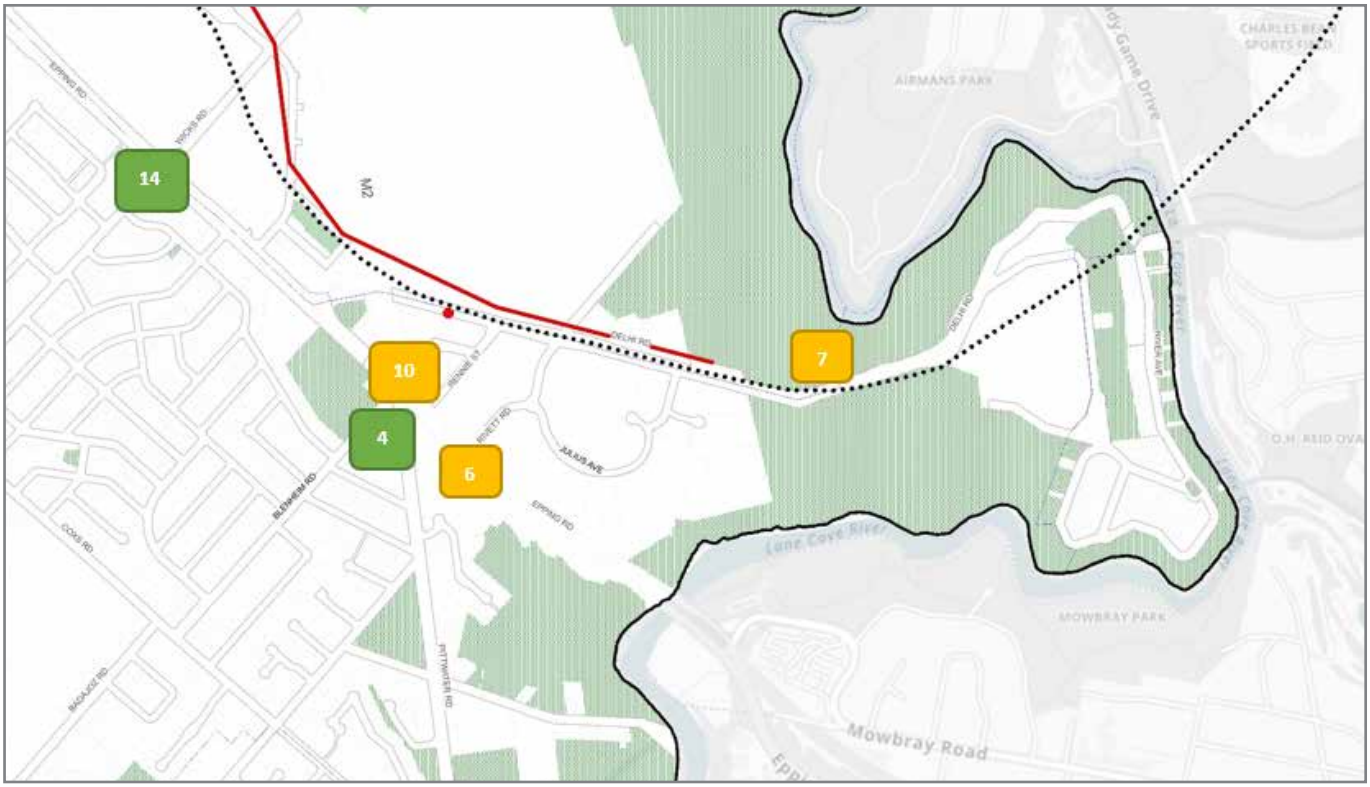


(Figure 26)

Macquarie Park Map

Item	Project Description
	SHORT TERM
1	Lane Cove Road / Talavera Road, Macquarie Park - Intersection improvements
3	BPIP Stage 1A and 1B, Macquarie Park - Bus priority lanes with intersection upgrades
6	Macquarie Park to Mona Vale rapid bus connection
7	Macquarie University Bus Interchange - Public and active transport plaza
8	Lane Cove Road / Waterloo Road, Macquarie Park - Grade separated active transport link
13	BPIP Stage 2 - Waterloo Road, Macquarie Park - Bus lanes with intersection upgrades
15	Waterloo Road / Road 16, Macquarie Park - Intersection upgrade
	MEDIUM TERM
4	Browns Waterhole - Improved active transport link (flood immunity)
9	External bicycle network - Link from Macquarie Park to Gordon
	LONG TERM
2	Macquarie Park Light Rail - Macquarie University to Riverside Business Park, North Ryde
4	Lane Cove Road / Dirrabari Road, Macquarie Park - Grade separated active transport crossing
5	Lane Cove Road / Hyundai Road, Macquarie Park - Grade separated active transport crossing
6	Epping Road / Lyon Park Road, Macquarie Park - Accommodate additional traffic movements
7	Waterloo Road / Eden Park Drive, Macquarie Park - Intersection improvements
	LOCAL/POLICY
7	Develop Waterloo Road linear park, Macquarie Park
8	Develop fine grain road network, Macquarie Park
9	Waterloo Road, Macquarie Park - Reduced speed limit

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM



(Figure 27)
North Ryde Map

Item	Project Description
	SHORT TERM
4	Epping Road / Pittwater Road, North Ryde - Intersection upgrade
14	Epping Road / Wicks Road, Macquarie Park - Intersection upgrade
	MEDIUM TERM
6	Epping Road at Rivett Road, North Ryde - Install eastbound acceleration lane
7	External bicycle network - Link to Chatswood West via Dehli Road
10	Rennie Street / Pittwater Road, North Ryde - Active transport crossing over Epping Road

Eastwood

The vision for Eastwood town centre is a locality with a 'sense of place' drawn from its cultural diversity and traditional built form and character. It is a vibrant centre for cultural events and night-time activity, building on its reputation as a convenient centre for dining, shopping and services.

It is a compact, mixed-use centre with convenient access to bus and train services. It is an important local shopping centre with a significant level of economic activity, with a range of community services and amenities available.

Eastwood would benefit from additional pedestrianisation, improved cross-rail pedestrian connection, higher bus frequencies, rapid bus connection to Parramatta, as well as an active transport link to Macquarie Park.

Key transport issues facing Eastwood including lack of short-term parking opportunities, traffic circulating looking for parking during peak periods, impact of pedestrians on road traffic in the vicinity of the mall, as well as (as the centre grows) limited pedestrian access across the railway line that divides the shopping precinct. A traffic and parking study of Eastwood town centre commissioned in 2019 by City of Ryde recommended a range of measures, including installation of new traffic signals, reconfiguration of traffic signals and introduction of additional turning restrictions.

To address the lack of parking opportunities, City of Ryde is currently constructing a new multi-level carpark in Rowe Street, while examining the viability of replacing the existing Glen Street carpark with a new multi-level carpark on Shaftsbury Road, thus removing the significant traffic volumes from the town centre. In terms of improving traffic flow and pedestrian safety in the vicinity of the mall, while minimising disruption to traffic flow, mid-block pedestrian activated traffic signals are being installed at either end of the mall.

Pedestrian access between the two sides of Eastwood has recently been improved, following recent upgrading of the railway station. New parking arrangements around schools has increased 'kiss and drop' zones, assisting both traffic flow and levels of pedestrian safety. On street parking restrictions around the centre have recently increased from 1/2P to 1P, allowing extra time for visitors to stay and shop.

In the future, consideration will be given to the extending the pedestrian mall once the off-street short term car parking spaces are relocated to Shaftsbury Road, thereby removing traffic from this part of the town centre, improving the place outcomes. Opportunities to provide additional pedestrian links across the railway line will be explored, part of a future movement and place analysis. The viability of providing a rapid bus transit connection between Eastwood and Macquarie Park will also be investigated.

Item	Project Description
SHORT TERM	
8	Eastwood Carpark - Shaftsbury Road
MEDIUM TERM	
5	Eastwood CBD - Extension of pedestrian mall to the north
LONG TERM	
9	Rowe Street to Rowe Street East - Upgraded pedestrian link
10	Rowe Street at West Parade and The Avenue, Eastwood - Install traffic signals
11	Glen Street / Lakeside Road, Eastwood - Install roundabout* (*required should pedestrian area not be expanded)

(Figure 28)
Eastwood Map

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

Rowe Street, Eastwood

Gladesville

The vision for Gladesville is for a socially and economically successful mixed-use town centre, with a concentrated mix of successful restaurants and food outlets. Upgrades to the public domain has improved pedestrian amenity and connectivity to support the shopping strip along Victoria Road. Key sites are being re-developed as a catalyst for change and to deliver new community benefits.

A cohesive built form and landscaped public domain will provide improved amenity, while also building on the historical elements of the centre. A series of connected public domain spaces are being developed, as part of a safe convenient pedestrian network. These spaces will be well lit and designed to provide opportunities for night-time activity.

Key transport issues in Gladesville include growing congestion on Victoria Road, as well as redeveloped sites along Victoria Road placing pressure on local roads. There are limited turning opportunities along Victoria Road, with various pinch points during peak periods. There is also limited pedestrian accessibility across Victoria Road between Westminster Road and Pittwater Road.

Following the successful operation of night markets, City of Ryde will identify opportunities to work with Hunters Hill Council (responsible for northern side of shopping precinct) to promote the area. Further development of laneways behind existing shops will be explored.

The future role of buses along the strategically important Victoria Road corridor will be assessed to ensure their efficient movement is supported as a means of reducing congestion caused by private vehicles and maximise resident accessibility to other areas of the local government area and beyond.

(Figure 29)
Gladesville Map

Item	Project Description
	SHORT TERM
9	Victoria Road – Improved active transport link

Victoria Road, Gladesville

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

Meadowbank

The vision for Meadowbank is for the precinct to continue as a transit-oriented development location with higher density housing within a five-minute walk of the train station and ferry wharf, in a desirable riverfront location. Much of the Shepherd's Bay area has now been developed. The Greater Sydney Commission has recently developed a Meadowbank Masterplan, while City of Ryde has recently commissioned a Meadowbank Traffic and Transport Study.

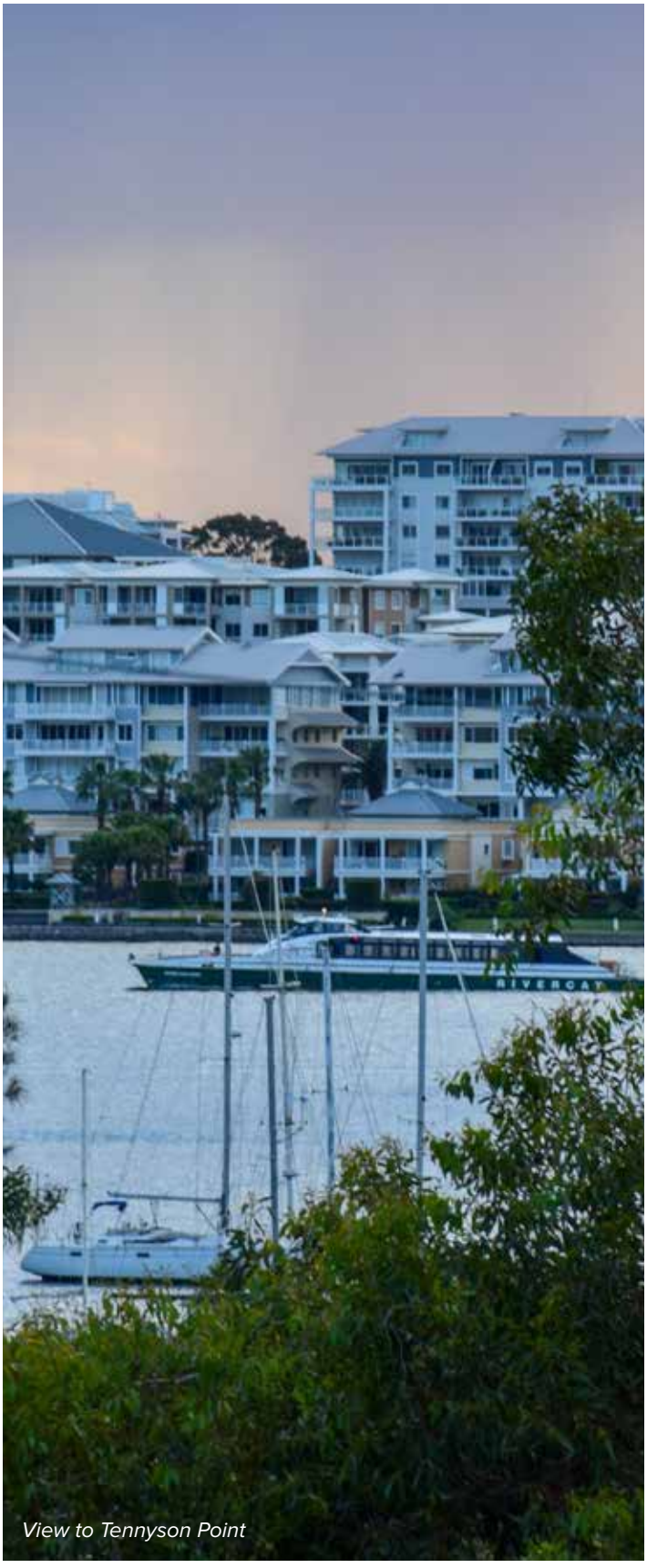
The Shepherd's Bay development has changed the character of Meadowbank and is changing its traffic, transport and parking needs. With more local traffic generated in the area, and with Victoria Road congestion continuing to grow, the Constitution Road corridor is evolving into a key supporting traffic link in the network. Constitution Road through Meadowbank is reaching capacity in peak periods, exacerbated by the large number of intersections through Meadowbank and the significant traffic movements at intersections either side of the retail precinct. There is limited access to the arterial road network, with Bank Street as the only crossing location.

The new Meadowbank Education and Employment Precinct will deliver new schools, including a combined primary and secondary college, and revitalised TAFE facilities, with supporting open space also accessible and connected to the residential precinct. The new facilities will cater for over 2,600 school students, as well as TAFE students. Meadowbank will complement strategic employment centres at Macquarie Park, Rhodes, Olympic Park and Parramatta.

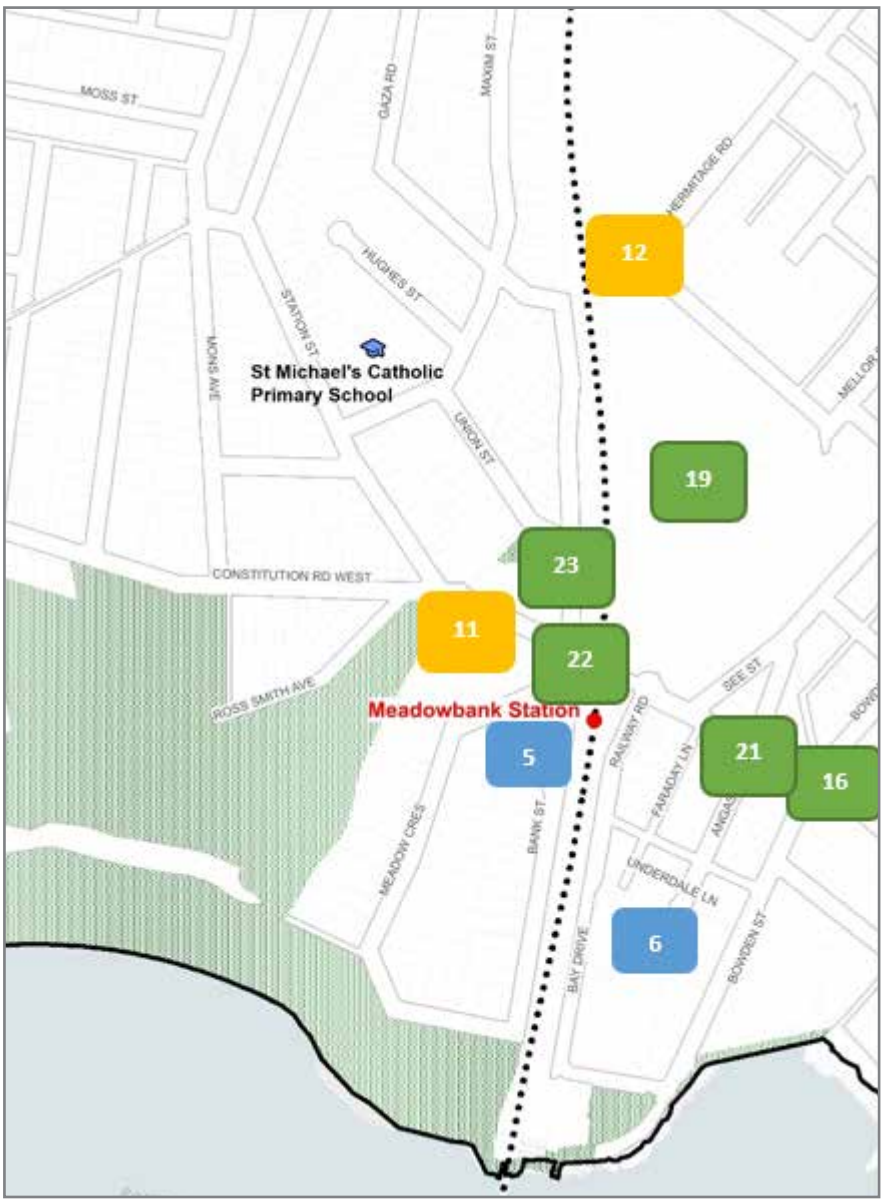
The strategy for Meadowbank centre involves establishing a better traffic link across the railway line for use, with additional capacity for pedestrians and cyclists. Upgraded transport facilities will be needed to accommodate extra trips generated by the nearby Payce Melrose Park Village development currently under construction. This single development has a capacity of 6,700 residential apartments and a maximum capacity of around 11,500 apartments, located outside City of Ryde but significantly impacting Meadowbank and West Ryde in the future.

To address the completion of the Meadowbank Education and Employment Precinct, a new pedestrian and cyclist link under the railway line is planned. This link will allow better accessibility between both sides of the centre, improving access to bus services and planned kiss and ride facilities.

In the future, the alignment of the road bridge across the railway line is being investigated. The option of diverting traffic around the existing centre is being examined, providing an opportunity to restrict traffic through the centre and increasing dedicated pedestrian areas. This would increase the attractiveness and appeal of the centre, improving traffic flow in the Meadowbank area during peak periods. Opportunities to further improve active transport linkages are being examined.



View to Tennyson Point



(Figure 30)

Meadowbank Map

Item	Project Description
	SHORT TERM
16	Constitution Road / Bowden Street, Meadowbank - New signalised intersection
19	Meadowbank Education & Employment Precinct Masterplan - At-grade active transport improvements
21	Angas Street bridge upgrade, Meadowbank
22	Constitution Road / Constitution Road West, Meadowbank - Road link across railway line
23	Active transport underpass at Meadowbank Railway Station and pickup / drop off zone
	MEDIUM TERM
11	Improvements to intersections west of Meadowbank Railway Station
12	Active transport link - Meadowbank Railway Station to Victoria Road, West Ryde
	LOCAL/POLICY
5	Bank Street bridge upgrade, Meadowbank (minor upgrade)
6	Investigate better 'place' outcome with traffic diverted via Underdale Lane & Faraday Lane, Meadowbank

8 STRATEGIES FOR IMPROVING OUR TRANSPORT SYSTEM

Ryde

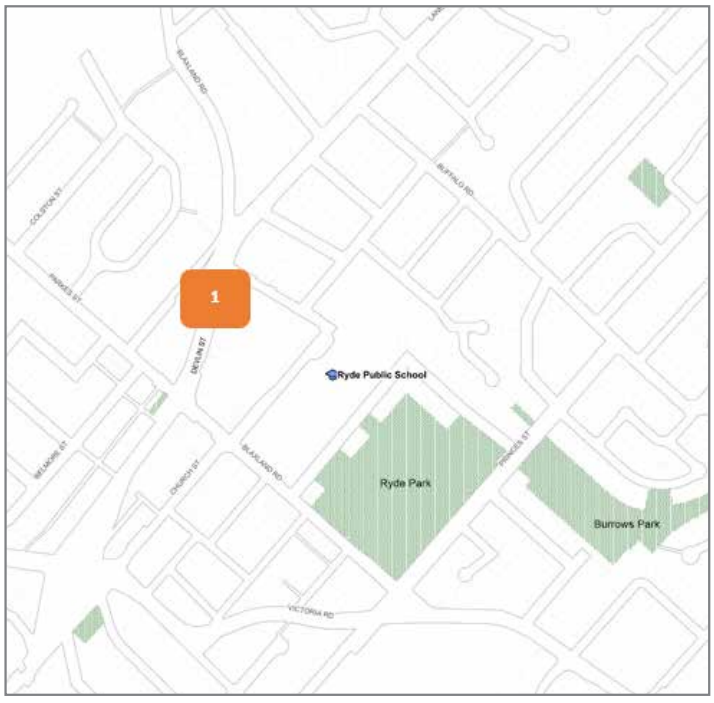
The Ryde centre will be a vibrant, attractive and safe place to live, work and visit, with a diversity of public spaces and opportunities for leisure, learning, shopping and business that reinforce the role of Ryde Centre as the civic and commercial hub of the City of Ryde. The centre will be enlivened by outdoor dining, with opportunities for a diverse community driven by arts and culture.

Ryde central business district will consist of a renewed civic precinct (Ryde Central currently under construction), shopping centre and mall, main street, heritage precinct, as well as recreational opportunities at Ryde Park. Ryde centre is supported by development above the shopping centre, as well as by mixed use developments.

A major traffic pinch point occurs at the intersection of Blaxland Road and Devlin Street, both in peak hours and at most other times. Ryde centre is isolated by both Blaxland Road and Devlin Street, with major pedestrian overpasses currently the most viable means of crossing Devlin Street. Access issues occur on Blaxland Road as a result of bus stop and pedestrian pinch point constraints on Blaxland Road.

Whilst there is a pinch-point project underway by Transport for NSW to improve the operational performance of the Devlin Street / Blaxland Road /Parkes Street intersection. Ryde centre would benefit from the grade separation of Devlin Street allowing better traffic flow, public transport and active transport to be improved. The 'Top Ryde' area has become a major bottle-neck in the State Road network, creating congested conditions along Church Street during the morning period (in the vicinity of Ryde Bridge) and along Lane Cove Road southbound during the afternoon period.

Grade separation at Top Ryde would allow 'boulevard' at-grade treatments between the new Ryde Central development and the Top Ryde shopping centres, allowing an extensive bus interchange to be constructed and allowing 'place' improvements to assist pedestrians. Improvement to the active transport network would also be included, with improved connection to the regional bicycle network. In the longer term, the Ryde centre would be an ideal location for connection to the planned north-south Metro line.



(Figure 31)
Ryde Map

Ryde Central Concept

Item	Project Description
	LONG TERM
1	Devlin Street pedestrian bridge and plaza

West Ryde

A new identity and attractive character are planned for the West Ryde Town Centre through a new master 'land use' plan being developed by City of Ryde's Urban Strategy team. Improvements to key public domain areas will see the creation of a series

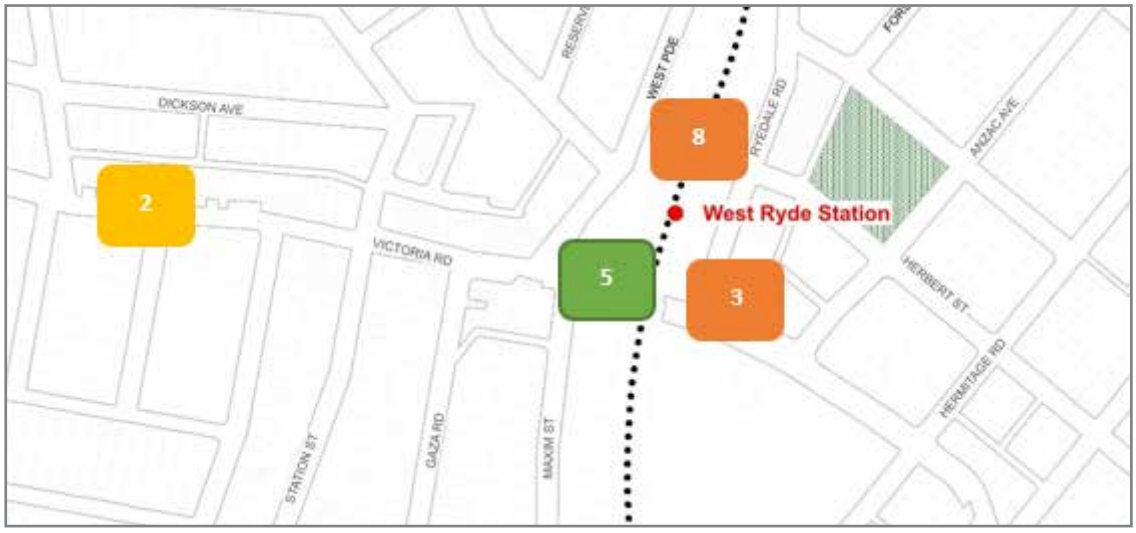
The core will become a pedestrian-priority environment. Existing open spaces will be enhanced, offering increased amenity to surrounding residential development. New developments and increased densities will be focused at the core, close to areas of high pedestrian activity, public transport facilities and open space areas.

To the west of the station, the centre will take on a mixed use and civic village character with shopping centre retail, a central plaza, and surrounding community service facilities. To the east of the station the area's heritage character will be retained, with improvements to pedestrian amenity and improved connectivity to Anzac Park.

The station is generally well connected to the centre, however the link through the bus interchange to the train station can be improved. Similar to Eastwood, the centre is divided by the railway line with significant challenges for pedestrians and cyclists. The commercial centre is owned by a significant number of property owners, with little development occurring since the opening of the Top Ryde redevelopment.

Transport improvements to the centre are currently being made, with redevelopment and expansion of the at-grade commuter carpark along Ryedale Road adjacent to the railway line by Transport for NSW. The entire streetscape along Ryedale Road is being rebuilt by City of Ryde to improve pedestrian connectivity, with new footpaths, landscaping and street furniture. The option of making sections of Ryedale Road one-way are also being investigated. A West Ryde Masterplan is currently being developed by City of Ryde.

In the future, it is expected that Victoria Road in the vicinity of the railway line will be upgraded to three lanes in each direction. This will address a major traffic bottle-neck at West Ryde, where some sections of Victoria Road are presently two lanes. The project would allow the introduction of more connected bus lanes, as well as assisting general traffic flow outside of peak periods. A cycling and pedestrian overpass across Victoria Road is also being planned. This will remove a major traffic bottle-neck at West Ryde, where some sections of Victoria Road are presently two lanes, accommodation bus priority measures. As well as assisting traffic flow in peak periods and at other times, the project would allow the introduction of more connected bus lanes. At the same time, a cycling and pedestrian overpass across Victoria Road is being planned. This would greatly help connectivity to regional bicycle routes. This will be particularly relevant to local access when the Meadowbank Education and Employment Precinct is completed. An upgrade of the existing bus interchange at West Ryde station is also envisaged, providing more attractive and all-weather protection to public transport commuters.



(Figure 32)

West Ryde Map

Item	Project Description
	SHORT TERM
5	Victoria Road - Widening for bus lanes & active transport overbridge, West Ryde
	MEDIUM TERM
2	Parramatta Light Rail Stage 2 - Extension from Melrose Park to West Ryde
	LONG TERM
3	Active transport link across West Ryde Railway Station
8	West Ryde Station Bus Interchange - Upgrade

9 PRIORITY TRANSPORT PROJECTS

Sydney Metro

The development of a new Integrated Transport Strategy has been an opportunity to look into the future and consider the types of transport projects that would make a real difference to the City of Ryde. A comprehensive list of future transport projects has been assembled, including a broad selection of proposals ranging from small local road projects through to extensions of Sydney's Metro rail system.

In line with efforts to provide travellers with more competitive, sustainable transport options, the majority of priority transport projects involve active transport, public transport or a combination of both types of transport improvement. While most projects involve infrastructure development, some projects are best described as 'policy' initiatives aimed at improving existing services.

Selection criteria

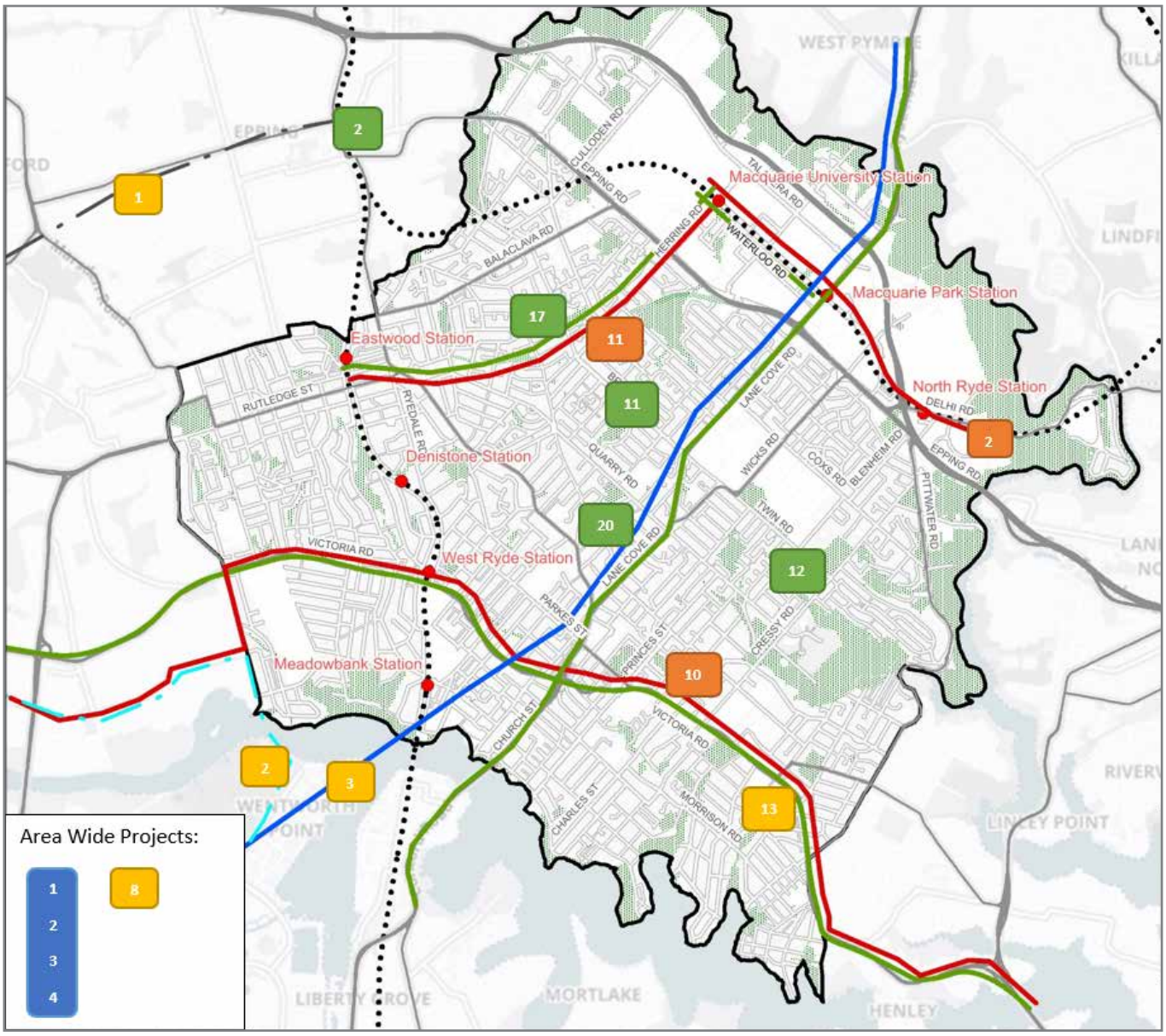
The State Government's future transport outcome criteria has been considered in comparing recommended priority transport projects, with 'next level down' indicators considered by City of Ryde. Future transport outcomes relate to considerations such as customer focus, successful places, strong economy, safety and performance, accessible services and sustainability. Ten indicators were used to consider the relative benefits of proposed transport projects.

The list of priority transport projects does not represent every transport-related project that City of Ryde will undertake during the next 20 years. Recommended projects included in this Strategy are 'strategic proposals' that City of Ryde will further investigate and, for larger scale projects, build an evidence-based case that will be used to advocate for the project to be built sooner than what is currently proposed in the State Government's Future Transport 2056 plan.

Securing a commitment to fund each proposal is seen as a key part of initiating and moving each project forward. City of Ryde will continue to roll-out its existing smaller scale infrastructure programs and programs relating to behavioural road safety and active transport promotion.

Map number	Project Description
	SHORT TERM
2	Parramatta to Epping Metro Rail
11	Regional Bicycle Route 3 - Completion of missing links between West Ryde and Macquarie Park
12	Regional Bicycle Route 4 - Completion of missing links between Putney and North Ryde
17	Eastwood County Road Corridor - Active transport link
20	A3 corridor - Macquarie Park to Ryde Bridge bus lanes
	MEDIUM TERM
1	Parramatta Light Rail Stage 1 - Extension from Carlingford to Epping
3	Randwick to Macquarie Park Metro Rail - via Kogarah and Olympic Park
8	Local bicycle network - Completion of gaps (missing links)
13	Victoria Road - Bus lanes along full length within City of Ryde
	LONG TERM
10	Victoria Road - Bus lane transition to light rail
11	Eastwood County Road Corridor - Transit link
	LOCAL/POLICY
1	LGA review of existing bus routes and services
2	High Pedestrian Activity Areas (HPAAs) - Eastwood, West Ryde and Meadowbank
3	Develop an individual parking strategy for each suburb
4	High pedestrian Shared User Path network - Review safety and performance

9 PRIORITY TRANSPORT PROJECTS



(Figure 33)
Area-wide projects

Project list

A total of 58 priority transport projects have been identified as having a significant role in City of Ryde's transport system of the future. The majority (51) of these projects involve new infrastructure improvements of varying complexity, while five projects are best described 'policy' projects and the remaining two projects a combination of both infrastructure & policy. Policy projects involve, for example, reviewing existing public transport services, assessing areas for slower speed limits and planning for changes in land use.

Specifically, policy-related projects include reviewing the existing bus network, developing individual parking strategies for each key centre, introducing high pedestrian activity areas, assessing the safety of pedestrian routes and, for Macquarie Park, ensuring land is reserved for development of a new linear park and a 'fine grain' road network.

In terms of the right balance of transport projects, the priority transport project list includes:

- 22 active transport projects
- 14 public transport projects
- 4 projects that are a combination of active / public transport
- 2 projects that are a combination of active / road transport, and
- 16 road-related projects.

While it is important to create new opportunities for active transport and public transport modes, it is also important to make the best use of the existing road network – which ultimately assists buses, taxis, cyclists, freight vehicles, as well as private vehicles.

Types of projects

Of all proposed projects, 40 percent have been classified as Short-Term Infrastructure, 22 percent as Medium-Term Infrastructure, 19 percent as Long-Term Infrastructure projects, the remaining 19 percent being local area in nature. **These priorities represent the time at which action should be commenced (not necessarily when they should be delivered)**, with Short-Term Infrastructure projects being those where first steps should be initiated within a five-year timeframe, Medium Term Infrastructure projects in a 5 – 10 year timeframe, and Long Term Infrastructure projects beyond 10 years – within the second half of this Strategy's timeframe. Local Area projects identified tend to be smaller scale and more local in nature, being addressed through normal business processes.

- 7 major projects (indicative cost over $1 billion)
- 18 medium-sized projects
- 33 relatively small (in a strategic sense) transport projects (indicative cost under $200 million).

In terms of location within City of Ryde:

- 16 projects are LGA-wide initiatives
- 17 projects specifically-relate to Macquarie Park
- 9 projects are in Meadowbank
- 5 projects have been identified for North Ryde, adjacent to Macquarie Park
- 5 projects have been identified for the commercial area of Eastwood
- 4 projects are in West Ryde
- 1 large-scale project in Ryde
- 1 project in Gladesville.

A majority of projects (62 percent) will require advocacy by the City of Ryde, the remaining projects (36 percent) considered 'non-advocacy' in nature. One transport project is best described as 'Committed'. In terms of responsibilities:

- 21 projects are identified as being the responsibility of Transport for NSW (or State Government)
- 18 projects are the responsibly of City of Ryde
- 6 projects are joint responsibility, with City of Ryde as the lead agency with Transport for New South Wales.
- 7 projects are joint responsibility, with Transport for New South Wales as the lead agency.

Of the remaining projects, responsibility for projects includes City of Ryde / Developer (2), Developer (1), State Infrastructure New South Wales (SINSW) / TAFE / TfNSW / CoR (1), TAFE / SINSW / CoR (1) and City of Ryde / Ku-ring-Gai Council (1).

Priority Projects

Short-term infrastructure projects identified are as follows:

- Lane Cove Road / Talavera Road, Macquarie Park - Intersection improvements
- Parramatta to Epping Metro Rail
- BPIP Stage 1A and 1B, Macquarie Park - Bus priority lanes with intersection upgrades
- Epping Road / Pittwater Road, North Ryde - Intersection upgrade
- Victoria Road - Widening for bus lanes and active transport overbridge, West Ryde
- Macquarie Park to Mona Vale rapid bus connection
- Macquarie University Bus Interchange - Public and active transport plaza
- Lane Cove Road / Waterloo Road, Macquarie Park - Grade separated active transport link
- Victoria Road, Gladesville - Improved pedestrian connectivity

9 PRIORITY TRANSPORT PROJECTS

- Real-time dynamic management parking systems - Macquarie Park and Eastwood
- Regional Bicycle Route 3 - Completion of missing links between West Ryde and Macquarie Park
- Regional Bicycle Route 4 - Completion of missing links between Putney and North Ryde
- BPIP Stage 2 - Waterloo Road, Macquarie Park - Bus lanes with intersection upgrades
- Epping Road / Wicks Road, Macquarie Park - Intersection upgrade
- Waterloo Road / Road 16, Macquarie Park - Intersection upgrade
- Constitution Road / Bowden Street, Meadowbank - New signalised intersection
- Eastwood County Road Corridor - Active transport link
- Eastwood Carpark - Shaftsbury Road
- Meadowbank Education & Employment Precinct Masterplan - At-grade active transport improvements
- A3 corridor - Macquarie Park to Ryde Bridge bus lanes
- Angas Street bridge upgrade, Meadowbank
- Constitution Road / Constitution Road West, Meadowbank - Road link across railway line
- Active transport underpass at Meadowbank Railway Station and pickup / drop off zone.

A number of 'big ticket' infrastructure projects have been identified as requiring action in the short-term. These transport projects represent major improvements to the transport network, serving both City of Ryde and the wider Greater Sydney area.

The new Metro rail system has the potential to revolutionise public transport, both in terms of providing superior levels of service and attracting travellers away from private transport. The Parramatta to Epping Metro Rail project would address an obvious missing link between Parramatta and Epping, completing a direct orbital network closely linking Sydney CBD, Parramatta and Macquarie Park.

On a smaller scale, the Lane Cove Road / Talavera Road – Intersection improvements proposal would provide better 'gateway access' to Macquarie Park for vehicles, with Waterloo Road developed as a key access route for public transport. The Victoria Road – Widening for bus lanes and active transport overbridge, West Ryde would allow for continuous bus lanes through West Ryde, while providing an important cycling and pedestrian overbridge allowing direct travel between West Ryde and Meadowbank via the Meadowbank Employment and Education Precinct.

BPIP Stage 1A and 1B, Macquarie Park - Bus priority lanes with intersection upgrades, the Macquarie Park Bus Priority Infrastructure Program, will prioritise buses along Herring Road and Waterloo Road, including road space reserved for the exclusive use of buses, upgraded intersections and facilities, as well as treatments to allow better access to Lane Cove Road and Epping Road.

The Lane Cove Road / Waterloo Road - Grade separated active transport link project would provide a separated active transport link across Lane Cove Road at Waterloo Road that would help better connect the two main sections of Macquarie Park, while promoting active transport access.

Real-time dynamic management parking systems – Macquarie Park and Eastwood, allowing better management of on-street parking using cashless, ticketless and mobile phone-based technology.

Provision of an Active transport underpass at Meadowbank Railway Station and pickup / drop off zone will allow vehicle passengers to be managed on either side of the station, while the project extends the active transport network. This project is a key feature of the Meadowbank Education and Employment Precinct Masterplan.

Medium-term infrastructure projects identified are as follows:

- Parramatta Light Rail Stage 1 - Extension from Carlingford to Epping
- Parramatta Light Rail Stage 2 - Extension from Melrose Park to West Ryde
- Randwick to Macquarie Park Metro Rail - via Kogarah and Sydney Olympic Park
- Browns Waterhole - Improved active transport link (flood immunity)
- Eastwood CBD - Extension of pedestrian mall to the north
- Epping Road at Rivett Road, North Ryde - Install eastbound acceleration lane
- External bicycle network - Link to Chatswood West via Dehli Road
- Local bicycle network - Completion of gaps (missing links)
- External bicycle network - Link from Macquarie Park to Gordon
- Rennie Street / Pittwater Road, North Ryde - Active transport crossing over Epping Road
- Improvements to intersections west of Meadowbank Railway Station
- Active transport link - Meadowbank Railway Station to Victoria Road, West Ryde
- Victoria Road - Bus lanes along full length within City of Ryde.

Waterloo Linear park

9 PRIORITY TRANSPORT PROJECTS

The largest scale medium-term project is the Randwick to Macquarie Park Metro Rail - via Kogarah and Sydney Olympic Park extension, would significantly improve north – south access to both Macquarie Park and the City of Ryde. Limited north-south public transport access encourages car use on Lane Cove Road, one of Sydney's busiest and congested roads during peak hour periods.

A number of logical extensions of the Light Rail network (under construction) have been proposed, including Parramatta Light Rail Stage 1 – Extension from Carlingford to Epping and a modification of Parramatta Light Rail Stage 2 – Extension from Melrose Park to West Ryde route to include West Ryde.

Extension of Stage 1 to include Epping would provide the opportunity to interchange seamlessly with all forms of public transport, including heavy rail, Metro rail, Light Rail services, as well as buses and taxis. Altering the route of Stage 2 to include a loop from Melrose Park to West Ryde would provide greatly improved access to heavy rail and buses at the West Ryde Bus Interchange. At the same, City of Ryde and surrounding areas, including high density residential developments, would have an effective service to access prominent areas including the Sydney Olympic Park precinct.

City of Ryde's preference for improved transit connection between Epping and Parramatta remains construction of the Parramatta to Epping Metro link.

At a smaller scale, an Active transport link - Meadowbank Railway Station to Victoria Road would link up with the proposed overpass of Victoria Road, providing improved active transport access to students and staff attending the Meadowbank Employment and Education Precinct once completed.

Long-term infrastructure projects identified are as follows:

- Devlin Street pedestrian bridge and plaza
- Macquarie Park Light Rail - Macquarie University to Riverside Business Park, North Ryde
- Victoria Road - Bus lane transition to light rail
- Lane Cove Road / Dirrabari Road, Macquarie Park - Grade separated active transport crossing
- Lane Cove Road / Hyundai Road, Macquarie Park - Grade separated active transport crossing
- Eastwood County Road Corridor - Transit link
- Active transport link across West Ryde Railway Station
- Epping Road / Lyon Park Road, Macquarie Park - Accommodate additional traffic movements
- Waterloo Road / Eden Park Drive, Macquarie Park - Intersection improvements
- West Ryde Station Bus Interchange – Upgrade
- Rowe Street to Rowe Street East - Upgraded pedestrian link.

The Devlin Street pedestrian bridge and plaza project would provide an improved pedestrian bridge to improve access from the new Council Community Facility (Ryde Central) to Top Ryde City over Devlin Street. The facility would act as a plaza, supporting commercial activity between the two major developments.

The Macquarie Park Light Rail - Macquarie University to Riverside Business Park, North Ryde project would provide a stand-alone light rail service connecting Macquarie University, Macquarie Shopping Centre and Riverside Business Park, greatly enhancing connectivity and creating capacity for the efficient movement of large numbers of people.

The Victoria Road - Bus lane transition to light rail project is aimed at moving an increasing number of people along this important movement corridor in an effective manner. The West Ryde Bus Interchange - Upgrade project will help manage the increasing number of future commuters using the railway station, improving access to the heavy rail network. Similarly, the Eastwood County Road Corridor - Transit link project will improve public transport use into and out of Macquarie Park.

Local Area projects identified:

- LGA review of existing bus routes and services
- Develop an individual parking strategy for each suburb
- High Pedestrian Activity Areas (HPAAs) - Eastwood, West Ryde and Meadowbank
- High pedestrian Shared User Path network - Review safety and performance
- Bank Street bridge upgrade, Meadowbank (minor upgrade)
- Investigate better 'place' outcome with traffic diverted via Underdale Lane & Faraday Lane, Meadowbank
- Develop Waterloo Road linear park, Macquarie Park
- Develop fine grain road network, Macquarie Park
- Waterloo Road, Macquarie Park - Reduced speed limit
- Rowe Street at West Parade and The Avenue, Eastwood - Install traffic signals
- Glen Street / Lakeside Road, Eastwood - Install roundabout.
-

Investigate better 'place' outcome with traffic diverted via Underdale Lane / Faraday Lane, Meadowbank would provide improved public transport and active transport facilities, while providing support for the shopping centre.

Of the local area projects identified above, specific policy projects include:

- LGA review of existing bus routes and services
- Develop an individual parking strategy for each suburb
- High Pedestrian Activity Areas (HPAAs) - Eastwood, West Ryde and Meadowbank
- High pedestrian Shared User Path network - Review safety and performance
- Develop Waterloo Road linear park, Macquarie Park
- Develop fine grain road network, Macquarie Park
- Waterloo Road, Macquarie Park - Reduced speed limit.

The policy project LGA review of existing bus routes and services recognises that existing bus routes and services should be assessed to see whether passenger's needs are being met, both now and in the future. WIth changing land use and housing densities, it is necessary to ensure that bus demand is being matched by bus supply. The Develop an individual parking strategy for each suburb project is designed to assess parking demand around key centres, making the best use of limited short-term parking opportunities. Parking demand changes over time and this needs to be reflected in the types of parking zones provided, based on a hierarchy of users.

The High Pedestrian Activity Areas (HPAAs) - Eastwood, West Ryde and Meadowbank project involves assessing three key centres for the potential introduction of slower 30 km/h speed limits. This road safety measure could be expected to offer higher levels of protection to pedestrians and cyclists in commercial areas, while creating a better place outcome. A review of the High pedestrian Shared User Path network - Review safety and performance is aimed at assessing safety issues of shared user paths, where pedestrians and cyclists travel in close proximity. The project will also focus on improved safety in high pedestrian areas such as schools and shopping centres.

High pedestrian Shared User Path network - Review safety and performance relates to an identified need to assess the level of safety and performance of shared user paths, where conflict can occur between cyclists and pedestrians moving in close proximity. This project has both policy and infrastructure elements.

Develop Waterloo Road linear park, Macquarie Park refers to an exciting open space design concept for key access route into Macquarie Park. A linear park on either side of Waterloo Road will provide a continuous park environment, encouraging active forms of transport. Additional tree cover will provide shade for users of the shared user path, providing an attractive way to travel around within Macquarie Park. This project has both policy and infrastructure elements.

The linear park will be supported by the Develop fine grain road network, Macquarie Park is a combination policy / infrastructure project that supports direct travel between major developments. Instead of pedestrians needing to travel around the perimeter of a block to access a destination, minor roads will be provided to encourage interaction across Macquarie Park. Planned access routes will support business activity, while providing side access to new developments.

The final project Waterloo Road, Macquarie Park - Reduced speed limit supports, also a combination policy / infrastructure project, is designed to support both the linear park and fine grain road network concepts. Following the introduction of bus priority measures, including upgrading of intersections, the speed limit along Waterloo Road should be reviewed to determine whether the existing speed limit remains appropriate.

10 FUNDING

Finding and securing sources of funding for the priority transport projects identified in this Strategy is essential to making much needed transport improvements a reality. Funding large and complex transport projects from a single source, whether government or private, is becoming more challenging. Instead of traditional single sources of funding, innovative funding sources and partnerships are being used to assemble the millions (or billions) of dollars needed to build, operate and maintain transport infrastructure.

In examples such as Sydney's motorways and the Sydney Harbour Tunnel, the private sector has built, maintained and operated the facility for a contracted period before the infrastructure is transferred to government ownership. Under these arrangements, the facility has been introduced much earlier than would otherwise be the case and a 'user pays' model adopted.

Various tiers of governments and the private sector are increasingly interested in 'value-capture' arrangements, where the benefits and the extra generated value of an area can be shared. The uplift in the quality of facilities available and the increase in the attractiveness of an area, such as Macquarie Park, is of interest to City of Ryde in terms of creating great spaces for residents and the private sector in terms of attracting large organisations, their employees and customers. There are a range of effective funding models and arrangements that can be used to secure priority transport projects.

The Grattan Institute's What price value capture? (2017) defined 'value capture' as the name given to a policy by which governments capture some of the value of land that results from the building of a piece of new infrastructure. The Institute notes that typically, the money the government 'captures' is used to help fund the project, recommending that governments use a fair and efficient combination of user charges and taxes.

Further, it was recommended that State Governments use legislation to apply value capture arrangements to every transport project with an identifiable beneficiary catchment – applying a broad-based land tax (without exemption). City of Ryde believes additional funding could then be made available to local governments from the revenue collected, enabling supporting infrastructure to be provided.

The Australian Government has examined and explored its role in promoting the use of value capture arrangements. In its discussion paper Using value capture to help deliver major land transport infrastructure: Roles for the Australian Government (2016) it was acknowledged that around Australia the need for further transport infrastructure projects is 'greater than can presently be funded using these well understood taxpayer and user-based funding sources'. Subsequently, 'we are committed to assessing all projects for their suitability for innovative financing arrangements and new revenue streams – including equity, loans, government guarantees, user charging and value capture'.

As a way of stimulating the use of value capture in the delivery of transport infrastructure, establishing a specific program for projects with value capture and stimulating market-led value capture projects was proposed. The paper noted that 'rail projects..... offer value capture opportunities. Land around stations becomes more valuable, particularly if rezoned to allow multi-storey development and higher value uses.'

City of Ryde's *Infrastructure Strategy* highlighted that the world's best cities provide citizens with access to infrastructure services and utilities that support a great quality of life and productivity, noting that 'great places and their supporting infrastructure do not happen by accident'. Great places require careful planning of infrastructure, with a business-as-usual approach only resulting in 'incremental, inadequate outcomes' with infrastructure decisions continuing to be made 'in isolation from the goal of creating great places'. The Plan identifies City of Ryde's key infrastructure challenge as needing to collaborate with infrastructure providers to better align growth and infrastructure, as well as putting arrangements in place to address the infrastructure backlogs and funding shortfalls.

City of Ryde's local infrastructure contributions plan, which aims to address growth needs up to 2041, has estimated to have a total cost of $262 million. However, Council only expects to receive $121 million from contributions, leaving a $141 million for community, library and cultural facilities to be funded from other sources. Significantly, these estimates are based on established population and growth projections. The latest indicators for future commercial growth in Macquarie Park are indicating that rates are achieving the most optimistic forecasts.

10 FUNDING

Connect Macquarie Park Innovation District (CMPID), a peak business representative group for Macquarie Park, recently raised concerns about the need to use revised growth forecasts, scale and time infrastructure to match development and expedite new transport connections. CMIPD believes that 'there is risk that either the number of employees and residents will grow larger than infrastructure is designed to serve, or employee growth will be held back by a lack of infrastructure. Either alternative is seen as a significant impediment to the progress of Macquarie Park's transformation into a leading innovation district'.

Future requirements for all planning proposals relevant to transport include showing evidence that additional demands on utilities infrastructure can be accommodated, traffic and transport studies showing mitigation measures, negotiated coverage of maintenance and recurrent costs, contributions toward investigations of mass transit proposals and consideration of costs associated with 'out of sequence' development.

Existing State Government requirements mean that local contributions are not sufficient to cover the full costs of infrastructure. Various funding options are available to City of Ryde, are as follows:

Sources of revenue and service provision from planning systems tools:

- Section 7.11 contributions
- Section 7.12 levies
- Section 7.4 planning agreements (e.g. Voluntary Planning Agreements)
- Section 7.24 Special Infrastructure Contributions (SICs)
- 'Key sites' planning provisions
- Direct developer provision through planning
- Controls requirements
- Developer works conditions of consent
- Public – private partnerships

Other sources of revenue and service provision:

- General fund
- Other Council general income (fees, charges, rents etc)
- Special rate variation
- Special rate (local) - Macquarie Park Special Rate Reserve
- Stormwater management levy
- Proceeds redevelopment of Council land
- Proceeds from asset sales
- Non-council providers of facilities
- State and Federal Government grants

Future potential source of revenue:

- Taxing Properties Reserve (value capture).

Returning to the *Infrastructure Strategy,* City of Ryde will continue collaborate with the State Government, its agencies and other city partners, to plan for and invest in city-shaping infrastructure. While local government is not responsible for budgetary decisions on major transport infrastructure, it can be effective in advocating for an early start on strategic transport links. Collaboration is needed to move priority transport actions forward, allowing City of Ryde to evolve from car dependency to more sustainable and environmental forms of future transport.

Gladesville at night

11 NEXT STEPS

For each of the 58 priority transport projects included in the Strategy, a 'next step' (or first step) has been identified, with commencement subject to City of Ryde funding being available.

The majority of next steps involve reviewing any existing plans and determining the current status of the proposal with Transport for NSW. For major proposals that have not yet commenced, completion of an initial feasibility study and a preferred project design is recommended. In some cases, promotion of the benefits of the project, such as the benefits of improved public transport services, has also been recommended. For other projects, actions such as continuing to develop and promote alternative upgrade options, prioritising 'missing links' and developing detailed designs have been recommended.

Close involvement in the development of projects and building of 'evidence-based' business cases are considered effective ways of achieving the future transport needs of City of Ryde. Advocacy can be used as a way of influencing decisions within the political environment, either to have a project started or an alternative option considered.

An important element in the advocacy and implementation process is the involvement of the most relevant internal sections of City of Ryde to progress priority transport projects. While the Transport Department is expected to take a lead role in most recommended projects, Urban Strategy and Assets & Infrastructure are expected to take the lead on relevant projects due to their primary functions of managing land use planning and civil infrastructure planning respectively.

While Urban Strategy and Assets & Infrastructure have also been identified as having a significant supporting role, there are a range of other sections that have a role in providing support for projects. These include a diverse range of areas including Environment, Community and Ranger Services, Development Services, Parks, Communications & Engagement, Strategic Property and Information Technology (IT). More information on the assignment of responsibilities for each project can be found at the end of this document.

City of Ryde has an internal four-year operational cycle that is used to fund a wide range of projects. It is intended that priority transport projects will be built into this operational cycle, so that funding is made available to initiate and progress projects at the right time. While smaller projects are generally addressed through regular operational budgets, larger projects will be costed and the financial capacity of City of Ryde to meet indicative costs assessed.

Where shortfalls are identified, City of Ryde will consider what advocacy measures or innovative funding arrangements are needed to ensure that the priority transport project is implemented.

The 'next step' for each project can be found listed at the end of this document.

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- Epping and Carlingford Roads
- Delhi Road
- Mona Vale Road
- Belfield to Ryde
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13 ATTACHMENTS

Attachment 1: Priority Transport Projects – Detailed information

Attachment 2: Full Project List And Multi-Criteria Analysis

Attachment 3: Next Steps

Attachment 4: City of Ryde Internal Responsibilities

Attachment 5: Future Transport 2056 Network Plans

ATTACHMENT 1: PRIORITY TRANSPORT PROJECTS – DETAILED INFORMATION

SHORT-TERM PROJECTS

1 Lane Cove Road / Talavera Road, Macquarie Park - Intersection improvements

(Macquarie Park Map) Figure 26

This intersection is a key access point to Macquarie Park from both the north and south. Congestion on Talavera Road can impact the performance of the entire Macquarie Park road network, including slowing public transport and active transport. In line with the recent Macquarie Park Investigation (DPIE), Talavera Road is a key route for vehicular traffic, with Waterloo Road likely to shoulder heavy public transport movements into the future. Congestion at this intersection also impacts the performance of Lane Cove Road. It is expected that access will become slower as congestion increases in the future, given the current and future function of Talavera Road.

2 Parramatta to Epping Metro Rail

(Area Wide Map) Figure 33

City of Ryde has benefited from the introduction of the Metro North West, linking north-west Sydney and Chatswood via Macquarie Park. Sydney's new Metro system is in the process of being extended from Chatswood to Parramatta via the Sydney CBD. Extending the Metro from Epping to Parramatta would provide an orbital route between Parramatta and the Sydney CBD, on both sides of the Parramatta River, discouraging private vehicle trips between the Central River City of Parramatta and the Strategic Centres of Epping and Macquarie Park. This project is listed in Future Transport 2056 as 'For Investigation: 10 - 20 years' and should be fast tracked.

3 BPIP Stage 1A and 1B, Macquarie Park - Bus priority lanes with intersection upgrades

(Macquarie Park Map) Figure 26

The Macquarie Park Bus Priority Infrastructure Program (BPIP) projects aim to improve public transport access and performance levels, providing dedicated bus lanes and stops along major routes including Herring Road, Waterloo Road and Lane Cove Road. Buses will be able to travel relatively unimpeded by general traffic, providing improved access to major destinations such as Macquarie Shopping Centre, Macquarie University and Metro stations. BPIP Stage 1A consists of the Lane Cove Road / Waterloo Road intersection, whilst Stage 1B consists of Herring Road improvements between Waterloo Road and Epping Road. This project is currently under construction, with Council seeking more generous sidewalks for pedestrians and cyclists.

4 Epping Road / Pittwater Road, North Ryde - Intersection upgrade

(Macquarie Park Map) Figure 26

Pittwater Road is an important access link between Epping Road at North Ryde and Victoria Road at Gladesville. The capacity of the intersection is challenged during peak periods, with considerable traffic feeding into the intersection from Macquarie Park, the M2 motorway and Victoria Road. Intersection upgrades would provide additional turning opportunities, including new and extended lanes on Pittwater Road. Some planning has been undertaken on this project by both Transport for NSW and Council.

5 Victoria Road – Widening for bus lanes & active transport overbridge, West Ryde

(West Ryde Map) Figure 32

Traffic flow either side of West Ryde is impeded daily during peak periods. Buses have no priority, needing to share travel lanes with general traffic along this strategic bus corridor (Parramatta to Sydney CBD). This project would introduce bus lanes through the West Ryde CBD, increasing the competitiveness of public transport. The project is currently in the road widening option assessment phase. Further to this, an active transport link across Victoria Road immediately to the east of the existing railway bridge would allow a safe and efficient connection between the new Meadowbank Education and Employment Precinct and areas to the north of West Ryde, while linking cyclists and pedestrians to bus and rail services.

6 Macquarie Park to Mona Vale rapid bus connection

(Macquarie Park Map) Figure 26

Whilst Macquarie Park is relatively well serviced from the east and west by rail services, public transport access to the north and south is poor, with no direct rail network or bus priority measures on the A3 road corridor. With Lane Cove Road and Ryde Road at capacity and significant population and employment growth forecast in the short to medium term, there is a need to offer a new service, in the form of north-south bus priority, to cater for travel demands. This project is identified in Future Transport as 'For Investigation: 0 - 10 years'.

7 Macquarie University Bus Interchange – Public and active transport plaza

(Macquarie Park Map) Figure 26

The Macquarie University Bus Interchange on Herring Road (MUBI) is a project currently in development to cater for the large amount of growth planned for Macquarie Park. It will provide a much-needed expansion of the existing interchange for buses adjacent to Macquarie University and the Macquarie Shopping Centre to manage higher volumes of passengers. Transport for NSW (TfNSW) have developed a concept plan that would see the retention of Herring Road traffic and wider sidewalks either side of the road. City of Ryde has been advocating

for a number of years for a better place outcome than that proposed by TfNSW, including a large open pedestrian mall that would become the new 'heart' of Macquarie Park and also provide a safer pedestrian environment.

8 **Lane Cove Road / Waterloo Road, Macquarie Park - Grade separated active transport link**
(Macquarie Park Map) Figure 26

As an important measure to improve pedestrian and cyclist accessibility through Macquarie Park, an overpass across Lane Cove Road at Waterloo Road has been proposed as part of the Macquarie Park Place Strategy (DPIE). Lane Cove Road is a significant barrier to east-west movements and the intersection is currently saturated with pedestrians who need to wait to cross at the traffic signals. This will only get worse as the area continues to grow quickly in employment and population.

9 **Victoria Road, Gladesville - Improved pedestrian connectivity**
(Gladesville Map) Figure 29

As a measure to improve access across Victoria Road at Gladesville, an additional at-grade crossing is proposed. This would also improve pedestrian safety. Victoria Road represents a significant barrier between the main commercial areas of Gladesville, with redevelopment of the shopping precinct expected on the northern side and higher density residential and parking opportunities on the southern side. An increase in education activity and street markets on the southern side is also expected.

10 **Real-time dynamic management parking systems - Macquarie Park and Eastwood**
(Macquarie Park Map) Figure 26 & (Eastwood Map) Figure 28

City of Ryde is currently moving toward the introduction of real-time dynamic parking management systems in both Macquarie Park and Eastwood. Drivers will be able to use the NSW Government's 'Park n Pay' mobile application to locate available on-street parking opportunities, as well as pay for use. Enforcement will also be made more efficient, ensuring equitable access to parking opportunities. Short term on-street parking opportunities are needed to support business activity. Residential and visitor parking permits will become electronic, eliminating the need for paper permits. The system will provide Council officers with valuable information about parking occupancy and turnover. Parking meters will become cashless, and wayfinding signage implemented in locations where it is most needed.

11 **Regional Bicycle Route 3 - Completion of missing links between West Ryde and Macquarie Park**
(Area Wide Map) Figure 33

A direct cycling connection between West Ryde town centre and Mona Vale is being developed, with a combination of on-road and off-road cycling facilities. This project focuses on the sections that are yet to be completed between West Ryde and Macquarie Park (wholly within the City of Ryde). The route is being examined as part of the new City of Ryde Bicycle Strategy.

12 **Regional Bicycle Route 4 - Completion of missing links between Putney and North Ryde**
(Area Wide Map) Figure 33

A direct active transport route between Chatswood and Burwood is being developed, with a combination of on-road and off-road cycling facilities. This project focuses on the sections that are yet to be completed between Putney and North Ryde (Epping Road). The route is being examined as part of the new City of Ryde Bicycle Strategy.

13 **BPIP Stage 2 - Waterloo Road, Macquarie Park - Bus lanes with intersection upgrades**
(Macquarie Park Map) Figure 26

The Macquarie Park Bus Priority Infrastructure Program (BPIP) aims to improve public transport access and performance levels, providing dedicated bus lanes and stops along major routes. BPIP Stage 2 extends dedicated bus lanes along Waterloo Road, including upgrading of intersections and removal of some roundabouts. The project fills in the 'gap' along the central section of Waterloo Rd between the project extents of BPIP Stages 1A and 1B.

14 **Epping Road / Wicks Road, Macquarie Park - Intersection upgrade**
(Macquarie Park Map) Figure 26

This intersection is part of an important cross-regional link between Lane Cove Road and Epping Road, providing heavy vehicle access to the Waste Transfer Station at Porters Creek and general access to the eastern section of Macquarie Park. The capacity of the intersection is challenged during peak periods, with considerable traffic using Wicks Road. An intersection upgrade would provide additional capacity for turning movements, reducing delays and queue lengths for motorists.

15 **Waterloo Road / Road 16, Macquarie Park - Intersection upgrade**
(Macquarie Park Map) Figure 26

Road 16 forms part of Macquarie Park's future fine grain road network, providing access between major new developments. Upgrading of the intersection is needed to provide improved access to / from Waterloo Road, particularly during peak periods, and improve pedestrian accessibility across Waterloo Road.

16 **Constitution Road / Bowden Street, Meadowbank - New signalised intersection**
(Meadowbank Map) Figure 30

Constitution Road is a significant collector road providing traffic access through the Meadowbank area and, via connecting roads, to Gladesville and Ermington. It is proposed that the existing roundabout at its intersection with Bowden Street be upgraded to a signalised intersection, providing improved traffic flow and pedestrian accessibility in the vicinity of Meadowbank railway station and recently completed medium density housing developments.

17 **Eastwood County Road Corridor - Active transport link**
(Area Wide Map) Figure 33

The Eastwood County Road Corridor is an undeveloped land corridor that has been gazetted for over 70 years. Originally reserved for the future construction of a road, with the land currently sitting idle, City of Ryde would like to take the opportunity to implement an active transport connection to provide a safe connection for pedestrians and cyclists between Eastwood and Macquarie Park. City of Ryde is also interested in greening the corridor, with a proposal through the Greenlinks Masterplan to do just that. This would complement the active transport link well. Some sections of Shared User Path (SUP) have already been installed, with agreements needed with TfNSW as the majority landowner to progress Council's plans.

18 **Eastwood Carpark - Shaftsbury Road**
(Area Wide Map) Figure 33

The decommissioning of the Glen Street carpark and development of a new carpark on Shaftsbury Road is an opportunity to provide better 'place' outcomes for Eastwood. By moving the existing carpark to the west of the CBD, streets can be modified to create a better pedestrian environment, with less traffic.

19 **Meadowbank Education & Employment Precinct Masterplan – At grade active transport improvements**
(Meadowbank Map) Figure 30

The Meadowbank Education and Employment Precinct is a Greater Sydney Commission initiative that will see a future-looking TAFE and new schools delivered in Meadowbank, increasing the attractiveness of the area as a place to learn and in close proximity to employment opportunities in Macquarie Park as well as Sydney Olympic Park and Rhodes to the south. Redevelopment of the existing TAFE and the relocation of school facilities are well advanced, with supporting transport arrangements being progressively implemented. Key projects include improved connectivity for pedestrians, creation of 'living streets', north – south shared paths and redevelopment of adjacent Sydney Water property.

20 **A3 corridor - Macquarie Park to Ryde Bridge bus lanes**
(Area Wide Map) Figure 33

The A3 corridor is one of the most congested arterial roads in Australia and will come under intense pressure in the future as population and employment growth continues. Bus lanes would provide for the efficient movement of a large volume of people along this critical north-south transport corridor. In terms of implementation, a combination of existing road reserve, property acquisition and lane conversion would likely be required. Transport modelling will be required to determine the best path forward.

21 **Angas Street bridge upgrade, Meadowbank**
(Meadowbank Map) Figure 30

This existing single lane bridge is currently being studied to assess the impacts and benefits of providing for two-way traffic movements or closing the bridge to vehicular traffic altogether to be used as an active transport link to assist with the north-south movement of pedestrians and cyclists as Meadowbank and West Ryde continue to grow.

22 **Constitution Road / Constitution Road West, Meadowbank - Road link across railway line**
(Meadowbank Map) Figure 30

Meadowbank local centre is dissected by the railway line, dividing Constitution Road into two separate sections. Subject to whether LA-7 proceeds, traffic flow through Meadowbank would benefit from an overpass (or underpass) allowing Constitution Road to be connected directly with Constitution Road West. This measure would allow vehicles to travel directly through Meadowbank without the need to navigate the 'dog leg' via the narrow Bank Street bridge. Traffic using the Bank Street route is also currently impacted by disembarking train passengers on either side of the station. The site has land constraints on the western side, with limited area available for new road infrastructure presenting a major challenge to the future delivery of this project.

23 **Active transport underpass at Meadowbank Railway Station and pickup / drop off zone**
(Meadowbank Map) Figure 30

This project would provide improved active transport access between the two sides of the Meadowbank local centre. The facility would allow pedestrians to be picked up / dropped off on the western side of the railway station (in addition to the eastern side), as well as making it both easier and safer for cyclists to navigate the area. This project would help meet the expected travel needs of pedestrians from areas to the west accessing the Meadowbank Education and Employment Precinct, whilst reducing traffic congestion on the eastern side of the railway station.

MEDIUM-TERM PROJECTS

1 **Parramatta Light Rail Stage 1 - Extension from Carlingford to Epping**
(Area Wide Map) Figure 33

The Parramatta light rail project (Stage 1), currently under construction, provides a connection from Parramatta to Carlingford. As Carlingford is only 2 - 3 kilometres from Epping, in the absence of a metro rail link between Epping and Parramatta there is an opportunity to link these two fast growing residential centres thereby improving public transport accessibility between Parramatta and Macquarie Park.

2 **Parramatta Light Rail Stage 2 - Extension from Melrose Park to West Ryde**
(Area Wide Map) Figure 33

To continue the Westmead – Carlingford Light Rail project currently under construction, the State Government is planning a Stage 2 line from Parramatta to Sydney Olympic Park. It is planned that light rail would extend as far east as Melrose Park before it heads south via a new bridge over the Parramatta River. Council considers that there would be significant benefit from extending the link to the West Ryde rail / bus interchange to provide efficient access to the main northern railway line. Further investigation is needed to determine whether extension to Meadowbank station would be a more feasible option.

3 **Randwick to Macquarie Park Metro Rail - via Kogarah and Sydney Olympic Park**
(Area Wide Map) Figure 33

A new metro rail link from Randwick to Rhodes via Kogarah has been identified as a 'visionary' long term project (for investigation in 20+ years) in recent State Government plans. This project is necessary to accommodate trip demand across the Parramatta River in the future, as north-south arterial roads are already at capacity in peak periods. Given congestion on the A3 corridor, Council considers that this project needs to be accelerated.

4 **Browns Waterhole – Improved active transport link (flood immunity)**
(Macquarie Park Map) Figure 26

Improvements to the existing creek crossing have been proposed for many years in order to provide improved flood immunity for cyclists and pedestrians. The bushland location at the base of a valley becomes impassable after moderate amounts of rain. It is anticipated that a new bridge is needed to provide an improved link north into South Turramurra.

5 **Eastwood CBD - Extension of pedestrian area to the north**
(Eastwood Map) Figure 28

The Eastwood mall on Rowe Street encourages business activity by creating a pleasant pedestrian environment that is also safe and protected from the noise of through traffic. This proposal aims to extend the existing mall along Rowe Street toward Trelawney Street and along The Avenue, Lakeside Road to Glen Street (subject to the decommissioning of the Glen Street carpark), and potentially along Progress Avenue.

6 **Epping Road at Rivett Road, North Ryde - Install eastbound acceleration lane**
(North Ryde Map) Figure 27

Rivett Road provides access to the Riverside Business Park, a popular base for multinational companies and slated for significant intensification in the future. At the intersection of Rivett Road with Epping Road, vehicles need to accelerate rapidly to reach the 80 km/h speed limit eastbound on Epping Road. For road safety reasons, an acceleration lane should be installed on Epping Road.

7 **External bicycle network - Link to Chatswood via Delhi Road**
(North Ryde Map) Figure 27

As part of providing an integrated and connected bicycle network, this proposal would provide improved access across the Lane Cove River towards Chatswood. The terrain and narrow road carriageway make riding conditions difficult for cyclists, and will make construction a challenge. In conjunction with a dedicated overbridge across Epping Road, the cycleway will connect with Pittwater Road. City of Ryde is in the final stage of completing a cycleway along Pittwater Road, providing access between Epping Road and Victoria Road at Gladesville.

8 **Local bicycle network - Completion of gaps (missing links)**
(Area Wide Map) Figure 33

City of Ryde is developing an extensive local bicycle network in support of key centres and the regional bicycle network. Completion of remaining 'missing links' will raise the profile of active transport as a safe, viable and effective mode of transport for many types of trips, particularly short trips. These links are identified in the City of Ryde's Bicycle Strategy.

9 **External bicycle network - Link from Macquarie Park to Gordon**
(Macquarie Park Map) Figure 26

Continuation of Regional Route 3 from Macquarie Park to Gordon. While the final route is yet to be finalised, it is anticipated that additional bicycle facilities will be required either along Lane Cove Road (A3) across De Burghs Bridge or a connection from Khartoum Road to Yanko Road (and on to the A3) via Rudder Creek Trail.

10 **Rennie Street / Pittwater Road, North Ryde - Active transport crossing over Epping Road**
(North Ryde Map) Figure 27

Provision of an active transport overpass across Epping Road would provide an efficient pedestrian and cyclist connection between Pittwater Road and Riverside Business Park as well as the North Ryde metro station. City of Ryde has nearly completed the cycleway along the full length of Pittwater Road south to Gladesville.

11 **Improvements to intersections west of Meadowbank Railway Station**
(Meadowbank Map) Figure 30

It is proposed that intersections to the west of the railway line at Meadowbank be reviewed for opportunities to maintain traffic flow in the area and improve the pedestrian environment. While the provision of an improved road crossing of the railway line remains challenging, intersections along Constitution Road West are expected to experience additional pressure from the Melrose Park Village development. This development, located outside the City of Ryde area, will consist of around 11,500 apartments when completed. Meadowbank will be the nearest railway station to the development.

12 **Active transport link – Meadowbank Railway Station to Victoria Road, West Ryde**
(Meadowbank Map) Figure 30

This active transport link would provide access between Meadowbank Station and West Ryde, running parallel to the existing railway line and adjacent to the new Meadowbank Education and Employment Precinct currently under construction. When combined with a proposed overpass across Victoria Road, the new facility would provide MEEP students and staff with a healthy alternative for accessing all local facilities, while forming part of an important connection in the regional active transport network linking City of Ryde to Rhodes across the Parramatta River.

13 **Victoria Road - Bus priority measures along full length within City of Ryde**
(Area Wide Map) Figure 33

In line with SI-5, this proposal consists of the further extension of bus priority lanes and other bus priority measures to ensure bus movements along Victoria Road are more competitive compared to the private vehicle. This project is necessary to keep people moving between local destinations along the Parramatta to the Sydney CBD corridor. To be delivered most effectively, it would require some land dedication, which should be planned for now. The project is in the early planning stage with various options being considered. This project is in line with the current rapid bus network plan.

LONG-TERM PROJECTS

1 **Devlin Street pedestrian bridge and plaza**
(North Ryde Map) Figure 27

This location is a congested section of the road network and is soon to be upgraded by Transport for NSW to improve performance in the short to medium term. Intersection improvements are being undertaken as part of the Pinch Point Program. Provision of an improved pedestrian bridge would provide improved access from the new Council Community Facility (Ryde Central) to Top Ryde City over Devlin Street. The facility would be sufficiently wide to act as a plaza, supporting commercial activity between the two major developments.

2 **Macquarie Park Light Rail - Macquarie University to Riverside Business Park, North Ryde**
(Macquarie Park Map) Figure 26 & (North Ryde Map) Figure 27

Macquarie Park is dispersed over an area of 235 hectares, with an east – west orientation. While the area is bounded by the M2 Motorway to the north and Epping Road to the south, Macquarie Park is dissected by Lane Cove Road. While Metro North West provides for longer distance trips, as population and employment growth occurs, along with more mixed land uses, so will demand for shorter pedestrian trips within the precinct. In the long-term, a stand-alone light rail service connecting Macquarie Shopping Centre in the west (and potentially Macquarie University) to Riverside Business Park in the east would greatly enhance connectivity and provide for the efficient movement of large numbers of people. Such a service would interchange with bus and metro services.

3 **Active transport link across West Ryde Railway Station**
(West Ryde Map) Figure 32

Similar to Eastwood, the West Ryde commercial area is currently divided by the heavy rail line. Commercial development has occurred on both the eastern and western sides of the station, with an overpass for rail passengers the only way of moving between business districts. The railway line represents a significant barrier to accessing the existing bus interchange, with pedestrians required to either use stairs or wait for a lift. A dedicated active transport link would assist both pedestrians and cyclists, promoting 'place' in support of the West Ryde Masterplan.

4 **Lane Cove Road / Dirrabari Road, Macquarie Park - Grade separated active transport crossing**
(Macquarie Park Map) Figure 26

A grade separated crossing across Lane Cove Road will provide an efficient and safe connection between the north western and north eastern sections of Macquarie Park, supporting future population and employment growth and future mixed land uses in the area. This project was identified in the Macquarie Park Place Strategy.

5 **Lane Cove Road / Hyundai Road, Macquarie Park - Grade separated active transport crossing**
(Macquarie Park Map) Figure 26

A grade separated crossing across Lane Cove Road will provide an efficient and safe connection between the south western and south eastern sections of Macquarie Park, supporting future population and employment growth and future mixed land uses in the area. This project was identified in the Macquarie Park Place Strategy.

6 **Epping Road / Lyon Park Road, Macquarie Park - Accommodate additional traffic movements**
(Macquarie Park Map) Figure 26

A new intersection layout for the intersection of Epping Road and Lyon Park Road to allow for additional traffic movements beyond the current left-in, left-out arrangement. This would improve vehicular access into and out of Macquarie Park, taking pressure off the intersections at Herring Road and Lane Cove Road.

7 **Waterloo Road / Eden Park Drive, Macquarie Park - Intersection improvements**
(Macquarie Park Map) Figure 26

This project would result in the existing roundabout being replaced with traffic signals, aimed at better managing traffic congestion and improving pedestrian accessibility in this growing mixed-use precinct.

8 **West Ryde Station Bus Interchange – Upgrade**
(West Ryde Map) Figure 32

The existing West Ryde Station Bus Interchange is located on the western side of the West Ryde Railway Station. Bus access tends to be restricted, with one entry and one exit intersected by a set of traffic lights at the intersection of Anthony Road and West Parade. As well as providing all-weather protection for commuters and improved access to service information, upgrading of the site may provide opportunities to improve bus access to the interchange. The interchange will potentially play a more significant role in the local transport network, with higher residential densities and additional bus lanes on Victoria Road. West Ryde will continue its role as a significant public transport node.

9 **Rowe Street to Rowe Street East, Eastwood - Upgraded pedestrian link**
(West Ryde Map) Figure 32

The extensive commercial area of Eastwood is divided by the long-standing heavy rail line. There are currently two pedestrian connections to link the two main areas of Eastwood. The more significant of the two forms part of the Eastwood Railway Station, located some distance away from Eastwood Mall. The other more direct crossing near the end of Eastwood Mall is a small underpass that is narrow, with the entrance not immediately obvious. This proposal would involve a wide crossing close to the mall area that would encourage interaction between the separated areas of Eastwood, providing a direct and appealing connection for pedestrians and potentially cyclists.

10 **Victoria Road - Bus lane transition to light rail**
(Area Wide Map) Figure 33

This proposal would see conversion of bus lanes to light rail infrastructure once residential densities are high enough to support such a service. This service would extend Parramatta Light Rail - Stage 2 to provide improved access to West Ryde, Top Ryde Shopping Centre and Gladesville. Parramatta Light Rail - Stage 2 will connect Parramatta with Sydney Olympic Park, improving public transport access to new higher density developments in Melrose Park.

11 **Eastwood County Road Corridor - Transit link**
(Area Wide Map) Figure 33

In the longer term, the Eastwood County Road Corridor could potentially be further developed to include public transport options. The corridor could be developed to incorporate either a direct bus or light rail link to connect the key local centres of Macquarie Park and Eastwood. The corridor is capable of supporting both active transport and public transport alternatives. It is likely that significant land use intensification would be required to support the viability of this proposal.

LOCAL AREA/POLICY PROJECTS

1 LGA review of existing bus routes and services

(Area Wide Map) Figure 33

Some areas of Ryde need to have bus routes reviewed and upgraded to meet commuter demands, in response to changes in demographic characteristics, housing densities, land use and work opportunities. A review of the long-standing bus network will help determine whether current services meet the needs of existing and potential customers. Areas such as East Ryde have no access to bus services, while other residents need to change buses or use indirect routes to reach a final destination.

2 Develop an individual parking strategy for each suburb

(Area Wide Map) Figure 33

The implementation of a parking strategy requires an understanding of the current parking characteristics of each centre, as well as expected future transport and land use conditions. Both on-street and off-street parking needs to be considered, in terms of future availability and use. Centre-based parking studies are needed to assess parking needs, with maps of each centre made available to residents to help guide their parking decisions.

3 High Pedestrian Activity Areas (HPAAs) - Eastwood, West Ryde and Meadowbank

(Area Wide Map) Figure 33

City of Ryde is investigating introducing High Pedestrian Activity Areas (HPAAs) in Eastwood, West Ryde and Meadowbank in order to improve pedestrian safety and create a better place outcome for these centres. There may also be an opportunity to trial a 30km/h speed environment in one of these centres, as this speed environment has been demonstrated to dramatically reduce the risk of pedestrian fatalities and serious injuries.

4 High pedestrian Shared User Path network - Review safety and performance

(Area Wide Map) Figure 33

This project will identify locations within City of Ryde where there is a large volume of both pedestrians and cyclists, and review the safety and performance of these active transport routes. Particular attention will be given to increasing safety around high pedestrian areas such as schools, shopping centres, bus stops and busy recreational routes. Opportunities to increase pedestrian safety through measures such as improved infrastructure and signage will be considered. The program will align with existing City of Ryde road safety programs, including Safety Around Schools.

5 Bank Street bridge upgrade, Meadowbank – (minor upgrade)

(Meadowbank Map) Figure 30

The existing Bank Street bridge carries vehicular traffic across the railway line at Meadowbank. The bridge is relatively narrow with a single traffic lane in each direction, reaching capacity during morning and afternoon peaks. The location and alignment of this important local bridge represents a barrier to smooth traffic flow, with vehicles needing to travel adjacent to shops and the railway station. This project would consider a new bridge across the railway line at the same location and/or aligned to Underdale Lane. City of Ryde is also exploring options to divert through traffic around the Meadowbank local centre (see LA-6).

6 Investigate better 'place' outcome with traffic diverted via Underdale Lane / Faraday Lane, Meadowbank

(Meadowbank Map) Figure 30

Diversion of through traffic away from the Meadowbank local centre would be an opportunity to provide a better place and pedestrian environment close to the existing shops and railway station. Railway Road could be developed into a pedestrian plaza with Constitution Road still accommodating bus movements and delivery/service vehicles. The successful diversion of traffic around the Meadowbank local centre would require widening of Underdale Lane and Faraday Lane and a new connection onto Constitution Road. The proposal would accommodate pedestrian access to the Meadowbank Education and Employment Precinct when completed, while reducing the traffic impact when pedestrians disembark from trains.

7 Develop Waterloo Road linear park, Macquarie Park

(Macquarie Park Map) Figure 26

A linear park has been designed for both sides of Waterloo Road in Macquarie Park that will provide a continuous park environment, extending from Herring Road to Wicks Road. This project is expected to be implemented progressively, as redevelopment of properties along the route occurs. The linear park concept will include a shared user path to encourage use of sustainable, 'last mile' transport within Macquarie Park. As well as increasing the amount of open space and park land area available, the project will provide valuable shade and support the environment through extra tree canopy cover.

8 Develop fine grain road network, Macquarie Park

(Macquarie Park Map) Figure 26

The development of an extensive fine grain road network in Macquarie Park aims to encourage more direct travel between major developments. The fine grain street network allows pedestrians and cyclists to access popular destinations such as shops and cafes, without the need to navigate the pre-existing large blocks, which are not pedestrian friendly. These planned access routes, often achieved through land dedication as properties are redeveloped, will be progressively implemented and encourage interaction and business activity within Macquarie Park.

9 **Waterloo Road, Macquarie Park - Reduced speed limit**
(Macquarie Park Map) Figure 26

Following the implementation of BPIP Stage 2 (SI-13), including the upgrade of intersections, the speed limit along Waterloo Road should be reviewed to determine whether the existing speed limit remains appropriate. As a gateway route to Macquarie Park, the speed limit along Waterloo Road needs to be considered in terms of future road safety, pedestrian amenity and the efficient movement of sustainable forms of transport.

10 **Rowe Street at West Parade and The Avenue, Eastwood - Install traffic signals**
(Eastwood Map) Figure 28

To provide a safe pedestrian environment whilst managing vehicular congestion in Eastwood, this project proposes the replacement of the existing raised pedestrian crossings at either end of the mall with pedestrian signals.

11 **Glen Street / Lakeside Road, Eastwood - Install roundabout**
(Eastwood Map) Figure 28

Should extension to the existing Eastwood pedestrian mall not be fully implemented (MI-5), then the provision of a roundabout should be investigated for the intersection of Glen Street and Lakeside Road, to enhance safety for motorists and balance queuing on these roads.

ATTACHMENT 2: FULL PROJECT LIST AND MULTI-CRITERIA ANALYSIS

Item	Location	Project	Project type	Relative project size	Transport type	Customer focus		Successful places		A strong economy		Safety and performance	Accessible services	Sustainability	Responsibility for delivery	Approach
						Improved public transport access	Building an integrated network	Additional walking & cycling facilities	Better centre access & amenity	Greater trip containment	Improved cross-regional freight	Efficient vehicle movement	Accessibility for all users	Contribution to Net Zero Emissions 2050		
SHORT TERM PROJECTS																
1	Macquarie Park	Lane Cove Road / Talavera Road, Macquarie Park - Intersection improvements	Infrastructure	Medium	Road	√	—	—	—	X	√	√	—	—	TfNSW	Advocacy
2	City of Ryde	Parramatta to Epping Metro Rail	Infrastructure	Major	Public transport	√	√	—	√	—	√	√	—	√	TfNSW	Advocacy
3	Macquarie Park	BPIP Stage 1A and 1B, Macquarie Park - Bus priority lanes with intersection upgrades	Infrastructure	Medium	Public transport	√	√	√	√	—	√	√	√	√	TfNSW	Committed
4	North Ryde	Epping Road / Pittwater Road, North Ryde - Intersection upgrade	Infrastructure	Small	Road	—	—	—	—	—	√	√	—	—	TfNSW / City of Ryde	Non-advocacy
5	West Ryde	Victoria Road - Widening for bus lanes & active transport overbridge, West Ryde	Infrastructure	Medium	Public / active transport	√	√	√	√	—	—	—	—	√	TfNSW	Advocacy
6	Macquarie Park	Macquarie Park to Mona Vale rapid bus connection	Infrastructure	Medium	Public transport	√	—	—	—	X	—	—	—	√	TfNSW	Advocacy
7	Macquarie Park	Macquarie University Bus Interchange - Public and active transport plaza	Infrastructure	Medium	Public / active transport	√	√	√	√	√	X	X	—	√	TfNSW / City of Ryde	Advocacy
8	Macquarie Park	Lane Cove Road / Waterloo Road, Macquarie Park - Grade separated active transport link	Infrastructure	Medium	Active transport	—	—	√	√	√	—	—	√	√	TfNSW	Advocacy

ATTACHMENT 2: FULL PROJECT LIST AND MULTI-CRITERIA ANALYSIS

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Item	Location	Project	Project type	Relative project size	Transport type	Customer focus		Successful places		A strong economy		Safety and performance	Accessible services	Sustainability	Responsibility for delivery	Approach
9	Gladesville	Victoria Road, Gladesville - Improved pedestrian connectivity	Infrastructure	Small	Active transport	—	—	√	√	—	—	—	√	√	TfNSW	Advocacy
10	City of Ryde	Real-time dynamic management parking systems - Macquarie Park and Eastwood	Infrastructure	Small	Road	—	—	—	√	X	—	√	—	—	City of Ryde	Non-advocacy
11	City of Ryde	Regional Bicycle Route 3 - Completion of missing links between West Ryde and Macquarie Park	Infrastructure	Small	Active transport	—	√	√	√	√	—	—	√	√	City of Ryde	Non-advocacy
12	City of Ryde	Regional Bicycle Route 4 - Completion of missing links between Putney and North Ryde	Infrastructure	Small	Active transport	—	√	√	√	√	—	—	√	√	City of Ryde	Non-advocacy
13	Macquarie Park	BPIP Stage 2 - Waterloo Road, Macquarie Park - Bus lanes with intersection upgrades	Infrastructure	Medium	Public transport	√	√	√	√	—	√	√	√	√	TfNSW	Advocacy
14	North Ryde	Epping Road / Wicks Road, Macquarie Park - Intersection upgrade	Infrastructure	Small	Road	—	—	—	—	X	√	√	—	—	TfNSW	Advocacy
15	Macquarie Park	Waterloo Road / Road 16, Macquarie Park - Intersection upgrade	Infrastructure	Small	Road	X	—	√	√	—	—	√	√	—	Developers	Non-advocacy
16	Meadowbank	Constitution Road / Bowden Street, Meadowbank - New signalised intersection	Infrastructure	Small	Road	—	—	√	—	—	—	—	√	—	City of Ryde	Non-advocacy
17	City of Ryde	Eastwood County Road Corridor - Active transport link	Infrastructure	Small	Active transport	—	—	√	—	√	—	—	√	√	City of Ryde	Advocacy

ATTACHMENT 2: FULL PROJECT LIST AND MULTI-CRITERIA ANALYSIS

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Item	Location	Project	Project type	Relative project size	Transport type	Customer focus		Successful places		A strong economy		Safety and performance	Accessible services	Sustainability	Responsibility for delivery	Approach
18	Eastwood	Eastwood Carpark - Shaftsbury Road	Infrastructure	Medium	Road	X	—	—	—	√	—	—	—	—	City of Ryde	Non-advocacy
19	Meadowbank	Meadowbank Education & Employment Precinct Masterplan - At-grade active transport improvements	Infrastructure	Small	Active transport	—	√	√	—	—	—	—	√	√	SINSW / TAFE / TfNSW / CoR	Advocacy
20	City of Ryde	A3 corridor - Macquarie Park to Ryde Bridge bus lanes	Infrastructure	Medium	Public transport	√	—	—	√	—	—	—	—	√	TfNSW / City of Ryde	Advocacy
21	Meadowbank	Angas Street bridge upgrade, Meadowbank	Infrastructure	Small	Road / Active Transport	—	√	√	√	—	—	√	√	√	City of Ryde	Non-advocacy
22	Meadowbank	Constitution Road / Constitution Road West, Meadowbank - Road link across railway line	Infrastructure	Medium	Road	—	—	—	√	—	√	√	—	—	City of Ryde	Non-advocacy
23	Meadowbank	Active transport underpass at Meadowbank Railway Station and pickup / drop off zone	Infrastructure	Small	Active transport	—	—	√	√	√	—	√	√	√	TfNSW	Advocacy

ATTACHMENT 2: FULL PROJECT LIST AND MULTI-CRITERIA ANALYSIS

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Item	Location	Project	Project type	Relative project size	Transport type	Customer focus	Successful places	A strong economy	Safety and performance	Accessible services	Sustainability	Responsibility for delivery	Approach
MEDIUM TERM PROJECTS													
1	City of Ryde	Parramatta Light Rail Stage 1 - Extension from Carlingford to Epping	Infrastructure	Major	Public transport	√	√	—	√	—	—	—	—	√	TfNSW	Advocacy
2	West Ryde	Parramatta Light Rail Stage 2 - Extension from Melrose Park to West Ryde	Infrastructure	Major	Public transport	√	√	—	√	√	—	—	√	√	TfNSW	Advocacy
3	City of Ryde	Randwick to Macquarie Park Metro Rail - via Kogarah and Olympic Park	Infrastructure	Major	Public transport	√	√	—	√	X	√	—	√	√	TfNSW	Advocacy
4	Macquarie Park	Browns Waterhole - Improved active transport link (flood immunity)	Infrastructure	Small	Active transport	—	—	√	—	—	—	—	√	√	City of Ryde / Ku-ring-Gai	Non-advocacy
5	Eastwood	Eastwood CBD - Extension of pedestrian mall to the north	Infrastructure	Small	Active transport	—	—	√	√	—	—	√	√	√	City of Ryde	Advocacy
6	North Ryde	Epping Road at Rivett Road, North Ryde - Install eastbound acceleration lane	Infrastructure	Small	Road	—	—	—	—	—	√	√	—	—	TfNSW	Advocacy
7	North Ryde	External bicycle network - Link to Chatswood West via Dehli Road	Infrastructure	Medium	Active transport	—	√	√	—	—	—	—	—	√	City of Ryde / TfNSW	Advocacy
8	City of Ryde	Local bicycle network - Completion of gaps (missing links)	Infrastructure	Small	Active transport	—	√	√	√	√	—	√	√	√	City of Ryde	Non-advocacy
9	Macquarie Park	External bicycle network - Link from Macquarie Park to Gordon	Infrastructure	Medium	Active transport	—	√	√	—	—	—	—	—	√	City of Ryde / TfNSW	Advocacy

ATTACHMENT 2: FULL PROJECT LIST AND MULTI-CRITERIA ANALYSIS

...CONTINUED

Item	Location	Project	Project type	Relative project size	Transport type	Customer focus		Successful places		A strong economy		Safety and performance	Accessible services	Sustainability	Responsibility for delivery	Approach
10	North Ryde	Rennie Street / Pittwater Road, North Ryde - Active transport crossing over Epping Road	Infrastructure	Small	Active transport	—	—	√	√	—	—	—	—	√	TfNSW	Advocacy
11	Meadowbank	Improvements to intersections west of Meadowbank Railway Station	Infrastructure	Small	Road	√	—	√	√	—	—	√	√	—	City of Ryde	Non-advocacy
12	Meadowbank	Active transport link - Meadowbank Railway Station to Victoria Road, West Ryde	Infrastructure	Small	Active transport	—	√	√	—	—	—	√	√	√	TAFE / SINSW / CoR	Advocacy
13	City of Ryde	Victoria Road - Bus lanes along full length within City of Ryde	Infrastructure	Medium	Public transport	√	—	—	√	X	—	—	—	√	TfNSW / City of Ryde	Advocacy
LONG TERM PROJECTS																
1	Ryde	Devlin Street / Parkes Street / Blaxland Road, Ryde - Grade separation	Infrastructure	Major	Road	√	—	√	√	X	√	√	√	—	TfNSW / City of Ryde	Advocacy
2	Macquarie Park	Macquarie Park Light Rail - Macquarie University to Riverside Business Park, North Ryde	Infrastructure	Major	Public transport	√	√	—	√	√	—	—	√	√	TfNSW / City of Ryde	Advocacy
3	West Ryde	Active transport link across West Ryde Railway Station	Infrastructure	Small	Active transport	—	√	√	√	—	—	—	√	√	City of Ryde / TfNSW	Non-advocacy
4	Macquarie Park	Lane Cove Road / Dirrabari Road, Macquarie Park - Grade separated active transport crossing	Infrastructure	Medium	Active transport	—	—	√	√	—	—	—	√	√	TfNSW	Advocacy
5	Macquarie Park	Lane Cove Road / Hyundai Road, Macquarie Park - Grade separated active transport crossing	Infrastructure	Medium	Active transport	—	√	√	√	—	—	√	√	√	TfNSW	Advocacy

ATTACHMENT 2: FULL PROJECT LIST AND MULTI-CRITERIA ANALYSIS

...CONTINUED

Item	Location	Project	Project type	Relative project size	Transport type	Customer focus		Successful places		A strong economy		Safety and performance	Accessible services	Sustainability	Responsibility for delivery	Approach
6	Macquarie Park	Epping Road / Lyon Park Road, Macquarie Park - Accommodate additional traffic movements	Infrastructure	Small	Road	—	—	—	X	—	√	√	—	—	TfNSW	Advocacy
7	Macquarie Park	Waterloo Road / Eden Park Drive, Macquarie Park - Intersection improvements	Infrastructure	Small	Road	—	√	√	√	—	—	√	√	—	City of Ryde / TfNSW	Advocacy
8	West Ryde	West Ryde Station Bus Interchange - Upgrade	Infrastructure	Small	Public transport	√	—	√	√	—	—	—	—	√	TfNSW	Advocacy
9	Eastwood	Rowe Street to Rowe Street East - Upgraded pedestrian link	Infrastructure	Small	Active transport	—	—	√	√	—	—	—	—	—	City of Ryde	Non-advocacy
10	City of Ryde	Victoria Road - Bus lane transition to light rail	Infrastructure	Major	Public transport	√	√	—	—	—	—	—	√	√	TfNSW	Advocacy
11	City of Ryde	Eastwood County Road Corridor - Transit link	Infrastructure	Medium	Public transport	√	√	—	√	—	—	√	—	√	TfNSW	Advocacy
LOCAL AREA AND POLICY PROJECTS																
1	City of Ryde	LGA review of existing bus routes and services	Policy	Small	Public transport	√	√	—	√	√	—	—	√	√	City of Ryde	Advocacy
2	City of Ryde	Develop an individual parking strategy for each suburb	Policy	Small	Road	—	—	—	√	√	—	—	—	√	City of Ryde / TfNSW	Non-advocacy
3	City of Ryde	High Pedestrian Activity Areas (HPAAs) - Eastwood, West Ryde and Meadowbank	Policy	Small	Active transport	X	—	√	√	—	—	—	√	—	TfNSW / City of Ryde	Non-advocacy
4	City of Ryde	High pedestrian Shared User Path network - Review safety and performance	Policy & Infrastructure	Small	Active transport	—	√	√	√	√	—	—	√	√	City of Ryde	Non-advocacy

ATTACHMENT 2: FULL PROJECT LIST AND MULTI-CRITERIA ANALYSIS

...CONTINUED

Item	Location	Project	Project type	Relative project size	Transport type	Customer focus		Successful places		A strong economy		Safety and performance	Accessible services	Sustainability	Responsibility for delivery	Approach
5	Meadowbank	Bank Street bridge upgrade, Meadowbank (minor upgrade)	Infrastructure	Small	Road	—	√	√	√	—	√	√	√	√	City of Ryde	Non-advocacy
6	Meadowbank	Investigate better 'place' outcome with traffic diverted via Underdale Lane & Faraday Lane, Meadowbank	Infrastructure	Small	Active Transport / Road	—	—	√	√	—	√	√	—	—	City of Ryde	Advocacy
7	Macquarie Park	Develop Waterloo Road linear park, Macquarie Park	Policy & Infrastructure	Medium	Active transport	—	√	√	√	√	—	—	√	√	City of Ryde / Developers	Advocacy
8	Macquarie Park	Develop fine grain road network, Macquarie Park	Policy	Medium	Active transport / Road	—	√	√	√	√	—	—	√	√	City of Ryde / Developers	Advocacy
9	Macquarie Park	Waterloo Road, Macquarie Park - Reduced speed limit	Policy	Small	Active Transport	—	—	—	√	—	—	X	—	—	City of Ryde / TfNSW	Non-advocacy
10	Eastwood	Rowe Street at West Parade and The Avenue, Eastwood - Install traffic signals	Infrastructure	Small	Road / Active transport	—	—	—	—	—	√	√	—	—	City of Ryde	Non-advocacy
11	Eastwood	Glen Street / Lakeside Road, Eastwood - Install roundabout*	Infrastructure	Small	Road	—	—	—	—	—	—	√	—	—	City of Ryde	Non-advocacy

ATTACHMENT 3: NEXT STEPS

Item	Location	Project Description	Next Steps
SHORT TERM PROJECTS			
1	Macquarie Park	Lane Cove Road / Talavera Road, Macquarie Park - Intersection improvements	Review current plans / determine current status with TfNSW. Conduct initial feasibility study and recommend intersection design.
2	City of Ryde	Parramatta to Epping Metro Rail	Review current plans / determine current status with TfNSW. Conduct initial feasibility study and recommend project design.
3	Macquarie Park	BPIP Stage 1A and 1B, Macquarie Park - Bus priority lanes with intersection upgrades	Continue to advocate for improved pedestrian and cyclist space on footways. Promote benefits of improved local public transport services.
4	North Ryde	Epping Road / Pittwater Road, North Ryde - Intersection upgrade	Continue to support TfNSW in developing the Final Business Case for the project.
5	West Ryde	Victoria Road - Widening for bus lanes & active transport overbridge, West Ryde	Review current plans and provide comments. Promote benefits of bus priority measures.
6	Macquarie Park	Macquarie Park to Mona Vale rapid bus connection	Review current plans / determine current status with TfNSW. Promote benefits of an improved regional rapid bus link.
7	Macquarie Park	Macquarie University Bus Interchange - Public and active transport plaza	Continue to develop and promote alternative upgrade option that provides a better place outcome.
8	Macquarie Park	Lane Cove Road / Waterloo Road, Macquarie Park - Grade separated active transport link	Review current plans / determine current status with TfNSW. Promote benefits of an improved active transport link.
9	Gladesville	Victoria Road, Gladesville - Improved pedestrian connectivity	Further investigate benefits of improved active transport links and pedestrian risks. Determine current status with TfNSW.
10	City of Ryde	Real-time dynamic management parking systems - Macquarie Park and Eastwood	Implement latest parking technologies in Macquarie Park and Eastwood - sensors, cashless meters, 'park n pay' app, e-enforcement.
11	City of Ryde	Regional Bicycle Route 3 - Completion of missing links between West Ryde and Macquarie Park	Prioritise remaining missing links and develop detailed designs.
12	City of Ryde	Regional Bicycle Route 4 - Completion of missing links between Putney and North Ryde	Prioritise remaining missing links and develop detailed designs.
13	Macquarie Park	BPIP Stage 2 - Waterloo Road, Macquarie Park - Bus lanes with intersection upgrades	Seek advice from TfNSW on the current status and advocate for collaboration on progression of the design.
14	North Ryde	Epping Road / Wicks Road, Macquarie Park - Intersection upgrade	Review current plans / determine current status with TfNSW. Conduct initial feasibility study and recommend intersection design.
15	Macquarie Park	Waterloo Road / Road 16, Macquarie Park - Intersection upgrade	Continue to oversee progression of the design.
16	Meadowbank	Constitution Road / Bowden Street, Meadowbank - New signalised intersection	Finalise intersection design and construct with developer contribution.
17	City of Ryde	Eastwood County Road Corridor - Active transport link	Further develop designs and gain agreement from TfNSW for use of their land parcels.
18	Eastwood	Eastwood Carpark - Shaftsbury Road	Progress planning through the broader Eastwood Central project.

ATTACHMENT 3: NEXT STEPS...CONTINUED

Item	Location	Project Description	Next Steps
19	Meadowbank	Meadowbank Education & Employment Precinct Masterplan - At-grade active transport improvements	Collaborate with all stakeholders to prioritise improvements and assign responsibilities.
20	City of Ryde	A3 corridor - Macquarie Park to Ryde Bridge bus lanes	Review current plans / determine current status with TfNSW. Investigate feasibility and land dedication requirements. Advocate for bus priority.
21	Meadowbank	Angas Street bridge upgrade, Meadowbank	Develop and promote alternative designs.
22	Meadowbank	Constitution Road / Constitution Road West, Meadowbank - Road link across railway line	Assess feasibility and recommend project design.
23	Meadowbank	Active transport underpass at Meadowbank Railway Station and pickup / drop off zone	Review current plans / determine current status with TfNSW. Liaise with TfNSW to achieve best design and see project realised.
MEDIUM TERM PROJECTS			
1	City of Ryde	Parramatta Light Rail Stage 1 - Extension from Carlingford to Epping	Review current plans / determine current status with TfNSW. Conduct initial feasibility study and recommend project design.
2	West Ryde	Parramatta Light Rail Stage 2 - Extension from Melrose Park to West Ryde	Review current plans / determine current status with TfNSW. Conduct initial feasibility study and recommend project design.
3	City of Ryde	Randwick to Macquarie Park Metro Rail - via Kogarah and Olympic Park	Review current plans / determine current status with TfNSW. Conduct initial feasibility study and recommend project design.
4	Macquarie Park	Browns Waterhole - Improved active transport link (flood immunity)	Further develop, in collaboration with Ku-ring-Gai Council, alternative crossing designs.
5	Eastwood	Eastwood CBD - Extension of pedestrian mall to the north	Conduct initial feasibility study before recommending any extensions to pedestrian mall.
6	North Ryde	Epping Road at Rivett Road, North Ryde - Install eastbound acceleration lane	Review current plans / determine current status with TfNSW. Assess feasibility and recommend project design.
7	North Ryde	External bicycle network - Link to Chatswood West via Dehli Road	Complete feasibility assessment and advocate with TfNSW for grant funding to be allocated.
8	City of Ryde	Local bicycle network - Completion of gaps (missing links)	Complete local links as defined in the City of Ryde Bicycle Strategy.
9	Macquarie Park	External bicycle network - Link from Macquarie Park to Gordon	Complete feasibility assessment and advocate with TfNSW for grant funding to be allocated.
10	North Ryde	Rennie Street / Pittwater Road, North Ryde - Active transport crossing over Epping Road	Promote benefits of an improved active transport link with reference to Council's LSPS.
11	Meadowbank	Improvements to intersections west of Meadowbank Railway Station	Assess future scenarios from Meadowbank Traffic Study.
12	Meadowbank	Active transport link - Meadowbank Railway Station to Victoria Road, West Ryde	Review current plans / determine current status with GSC. Review in context of completed Meadowbank Education and Employment Precinct.
13	City of Ryde	Victoria Road - Bus lanes along full length within City of Ryde	Review current plans / determine current status with TfNSW. Investigate feasibility and land dedication requirements. Advocate for bus priority.

ATTACHMENT 3: NEXT STEPS...CONTINUED

Item	Location	Project Description	Next Steps
LONG TERM PROJECTS			
1	Ryde	Devlin Street pedestrian bridge and plaza	Review current plans / determine current status with TfNSW. Conduct initial feasibility study and recommend project design.
2	Macquarie Park	Macquarie Park Light Rail - Macquarie University to Riverside Business Park, North Ryde	Work with internal stakeholders and TfNSW to future proof for a future implementation.
3	West Ryde	Active transport link across West Ryde Railway Station	Review current plans / determine current status with TfNSW and Property & Development NSW (DPIE). Conduct initial feasibility study and recommend project design.
4	Macquarie Park	Lane Cove Road / Dirrabari Road, Macquarie Park - Grade separated active transport crossing	Review current plans / determine current status with TfNSW. Promote benefits of an improved active transport link.
5	Macquarie Park	Lane Cove Road / Hyundai Road, Macquarie Park - Grade separated active transport crossing	Review current plans / determine current status with TfNSW. Promote benefits of an improved active transport link.
6	Macquarie Park	Epping Road / Lyon Park Road, Macquarie Park - Accommodate additional traffic movements	Review current plans / determine current status with TfNSW. Assess feasibility and recommend intersection design.
7	Macquarie Park	Waterloo Road / Eden Park Drive, Macquarie Park - Intersection improvements	Review current plans and determine current status. Commence intersection design, considering land requirements.
8	West Ryde	West Ryde Station Bus Interchange - Upgrade	Promote benefits of improved public transport facility. Work with TfNSW on design options.
9	Eastwood	Rowe Street to Rowe Street East - Upgraded pedestrian link	Determine feasibility, considering pedestrian numbers, land requirements and costs.
10	City of Ryde	Victoria Road - Bus lane transition to light rail	Consider future proofing required for this project when bus priority improvements are being made and land use changes proposed.
11	City of Ryde	Eastwood County Road Corridor - Transit link	Continue to advocate for improved access by public transport into Macquarie Park and consider in land use planning.
LOCAL AREA AND POLICY PROJECTS			
1	City of Ryde	LGA review of existing bus routes and services	Assess current routes and bus service levels.
2	City of Ryde	Develop an individual parking strategy for each suburb	Assess existing parking arrangements and outline way forward to balance user needs in a sustainable manner - focus on key local centres.
3	City of Ryde	High Pedestrian Activity Areas (HPAAs) - Eastwood, West Ryde and Meadowbank	Identify key local areas suitable for reduced speed limits.
4	City of Ryde	High pedestrian Shared User Path network - Review safety and performance	Identify key pedestrian transit routes and safety risks. Develop education / campaign resources and infrastructure recommendations.
5	Meadowbank	Bank Street bridge upgrade, Meadowbank (minor upgrade)	Develop and promote alternative designs.
6	Meadowbank	Investigate better 'place' outcome with traffic diverted via Underdale Lane & Faraday Lane, Meadowbank	Investigate options, aligning with targeted traffic movement outcomes.
7	Macquarie Park	Develop Waterloo Road linear park, Macquarie Park	Continue to develop plan for both sides of Waterloo Road and incorporate into strategic planning documents. Liaise with developers.

ATTACHMENT 3: NEXT STEPS...CONTINUED

Item	Location	Project Description	Next Steps
8	Macquarie Park	Develop fine grain road network, Macquarie Park	Amend plan if necessary and liaise with developers.
9	Macquarie Park	Waterloo Road, Macquarie Park - Reduced speed limit	Recommend reduced speed limit to Transport for NSW.
10	Eastwood	Rowe Street at West Parade and The Avenue, Eastwood - Install traffic signals	Finalise plans and liaise with TfNSW before commencing construction.
11	Eastwood	Glen Street / Lakeside Road, Eastwood - Install roundabout	Assess traffic flow and road safety benefits of proposal.

ATTACHMENT 4: CITY OF RYDE INTERNAL RESPONSIBILITIES

	ITS Priority Project List	Lead Section	Supporting Section
SHORT TERM PROJECTS			
1	Lane Cove Road / Talavera Road, Macquarie Park - Intersection improvements	Transport	
2	Parramatta to Epping Metro Rail	Transport	Urban Strategy
3	BPIP Stage 1A and 1B, Macquarie Park - Bus priority lanes with intersection upgrades	Transport	Assets & Infrastructure / Urban Strategy / Environment
4	Epping Road / Pittwater Road, North Ryde - Intersection upgrade	Transport	Environment
5	Victoria Road - Widening for bus lanes & active transport overbridge, West Ryde	Transport	Urban Strategy / Assets & Infrastructure
6	Macquarie Park to Mona Vale rapid bus connection	Transport	Urban Strategy / Assets & Infrastructure
7	Macquarie University Bus Interchange - Public and active transport plaza	Transport	Urban Strategy / Assets & Infrastructure / Environment
8	Lane Cove Road / Waterloo Road, Macquarie Park - Grade separated active transport link	Transport	Urban Strategy
9	Victoria Road, Gladesville - Improved pedestrian connectivity	Transport	
10	Real-time dynamic management parking systems - Macquarie Park and Eastwood	Community & Ranger Services	Transport / I.T. / Communications & Engagement
11	Regional Bicycle Route 3 - Completion of missing links between West Ryde and Macquarie Park	Transport	Parks
12	Regional Bicycle Route 4 - Completion of missing links between Putney and North Ryde	Transport	
13	BPIP Stage 2 - Waterloo Road, Macquarie Park - Bus lanes with intersection upgrades	Transport	Urban Strategy / Environment / Assets & Infrastructure
14	Epping Road / Wicks Road, Macquarie Park - Intersection upgrade	Transport	
15	Waterloo Road / Road 16, Macquarie Park - Intersection upgrade	Transport	Development Assessment
16	Constitution Road / Bowden Street, Meadowbank - New signalised intersection	Transport / Assets & Infrastructure	
17	Eastwood County Road Corridor - Active transport link	Transport	Parks
18	Eastwood Carpark - Shaftsbury Road	Assets & Infrastructure	Community & Ranger Services / Transport / Urban Strategy / Strategic Property

ATTACHMENT 4: CITY OF RYDE INTERNAL RESPONSIBILITIES...CONTINUED

	ITS Priority Project List	Lead Section	Supporting Section
19	Meadowbank Education & Employment Precinct Masterplan - At-grade active transport improvements	Transport	Assets & Infrastructure / Urban Strategy
20	A3 corridor - Macquarie Park to Ryde Bridge bus lanes	Transport	Urban Strategy / Environment
21	Angas Street bridge upgrade, Meadowbank	Assets & Infrastructure	Transport
22	Constitution Road / Constitution Road West, Meadowbank - Road link across railway line	Assets & Infrastructure	Transport / Strategic Property / Urban Strategy / Environment
23	Active transport underpass at Meadowbank Railway Station and pickup / drop off zone	Transport	Urban Strategy / Environment
	MEDIUM TERM PROJECTS		
1	Parramatta Light Rail Stage 1 - Extension from Carlingford to Epping	Transport	Urban Strategy
2	Parramatta Light Rail Stage 2 - Extension from Melrose Park to West Ryde	Transport	Urban Strategy
3	Randwick to Macquarie Park Metro Rail - via Kogarah and Olympic Park	Transport	Urban Strategy
4	Browns Waterhole - Improved active transport link (flood immunity)	Transport	Assets & Infrastructure / Environment
5	Eastwood CBD - Extension of pedestrian mall to the north	Urban Strategy	Transport
6	Epping Road at Rivett Road, North Ryde - Install eastbound acceleration lane	Transport	Assets & Infrastructure / Environment
7	External bicycle network - Link to Chatswood West via Dehli Road	Transport	Environment / Assets & Infrastructure
8	Local bicycle network - Completion of gaps (missing links)	Transport	Environment / Parks / Urban Strategy
9	External bicycle network - Link from Macquarie Park to Gordon	Transport	Environment / Assets & Infrastructure
10	Rennie Street / Pittwater Road, North Ryde - Active transport crossing over Epping Road	Transport	Urban Strategy / Environment / Parks
11	Improvements to intersections west of Meadowbank Railway Station	Transport	Assets & Infrastructure, Urban Strategy, Environment
12	Active transport link - Meadowbank Railway Station to Victoria Road, West Ryde	Transport	Urban Strategy
13	Victoria Road - Bus lanes along full length within City of Ryde	Transport	Urban Strategy

ATTACHMENT 4: CITY OF RYDE INTERNAL RESPONSIBILITIES...CONTINUED

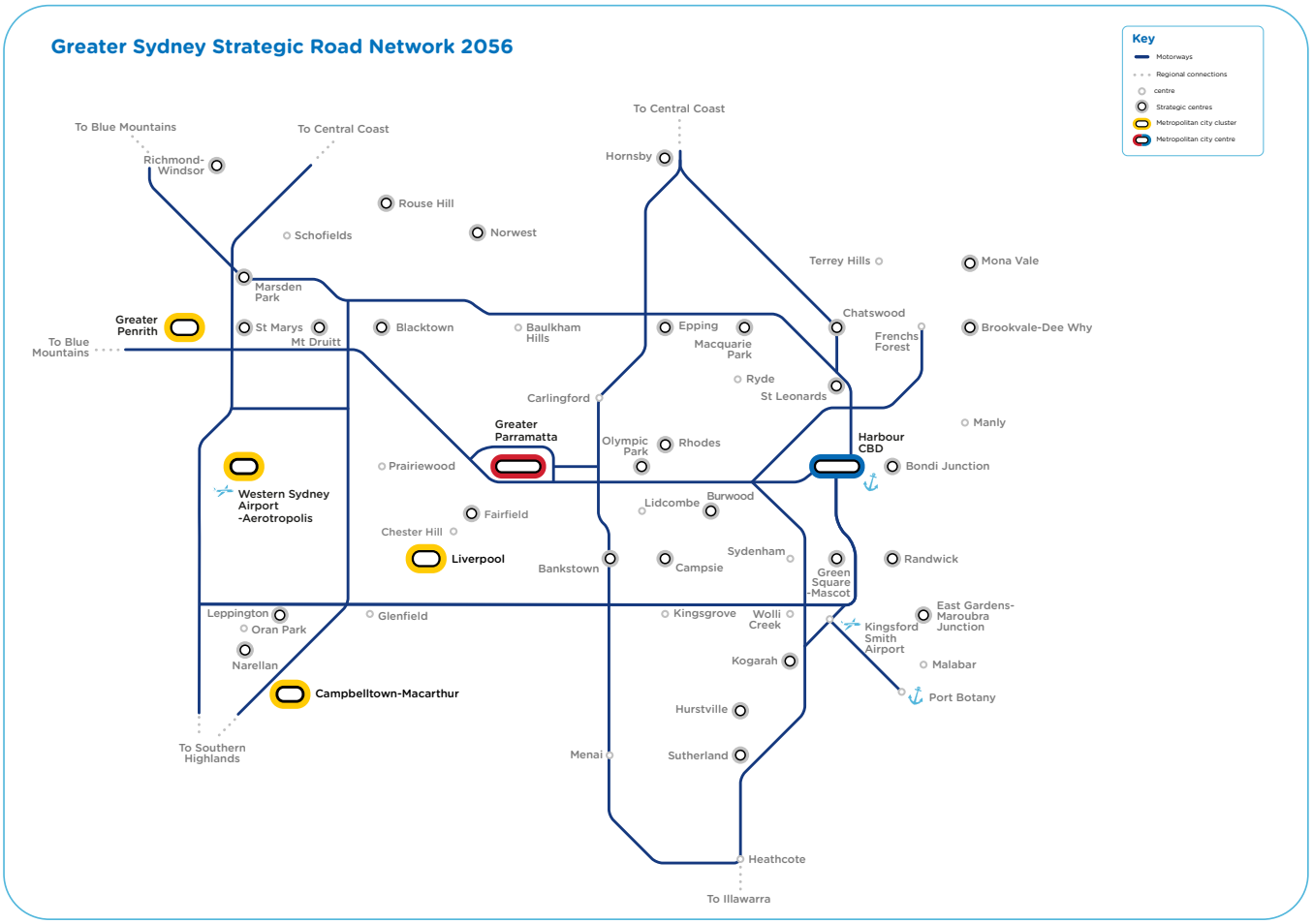
	ITS Priority Project List	Lead Section	Supporting Section
LONG TERM PROJECTS			
1	Devlin Street pedestrian bridge and plaza	Transport	Urban Strategy / Assets & Infrastructure
2	Macquarie Park Light Rail - Macquarie University to Riverside Business Park, North Ryde	Transport	Urban Strategy
3	Active transport link across West Ryde Railway Station	Transport	Assets & Infrastructure / Urban Strategy
4	Lane Cove Road / Dirrabari Road, Macquarie Park - Grade separated active transport crossing	Transport	Urban Strategy
5	Lane Cove Road / Hyundai Road, Macquarie Park - Grade separated active transport crossing	Transport	Urban Strategy
6	Epping Road / Lyon Park Road, Macquarie Park - Accommodate additional traffic movements	Transport	Urban Strategy
7	Waterloo Road / Eden Park Drive, Macquarie Park - Intersection improvements	Transport	Assets & Infrastructure
8	West Ryde Station Bus Interchange - Upgrade	Transport	Urban Strategy
9	Rowe Street to Rowe Street East - Upgraded pedestrian link	Transport	Assets & Infrastructure / Urban Strategy
10	Victoria Road - Bus lane transition to light rail	Transport	Urban Strategy / Environment
11	Eastwood County Road Corridor - Transit link	Transport	Urban Strategy / Parks / Environment

ATTACHMENT 4: CITY OF RYDE INTERNAL RESPONSIBILITIES...CONTINUED

	ITS Priority Project List	Lead Section	Supporting Section
LOCAL AREA AND POLICY PROJECTS			
1	LGA review of existing bus routes and services	Transport	Community & Ranger Services / Environment
2	Develop an individual parking strategy for each suburb	Transport	Urban Strategy / Assets & Infrastructure / Environment / Parks / Community & Ranger Services
3	High Pedestrian Activity Areas (HPAAs) - Eastwood, West Ryde and Meadowbank	Transport	
4	High pedestrian Shared User Path network - Review safety and performance	Transport	Parks / Assets & Infrastructure / Urban Strategy / Environment
5	Bank Street bridge upgrade, Meadowbank (minor upgrade)	Transport	Assets & Infrastructure
6	Investigate better 'place' outcome with traffic diverted via Underdale Lane & Faraday Lane, Meadowbank	Transport	Development Assessment / Assets & Infrastructure / Urban Strategy
7	Develop Waterloo Road linear park, Macquarie Park	Urban Strategy	Parks / Transport / Assets & Infrastructure / Development Assessment
8	Develop fine grain road network, Macquarie Park	Urban Strategy	Transport, Assets & Infrastructure, Development Assessment
9	Waterloo Road, Macquarie Park - Reduced speed limit	Transport	
10	Rowe Street at West Parade and The Avenue, Eastwood - Install traffic signals	Transport	Assets & Infrastructure
11	Glen Street / Lakeside Road, Eastwood - Install roundabout	Transport	Assets & Infrastructure

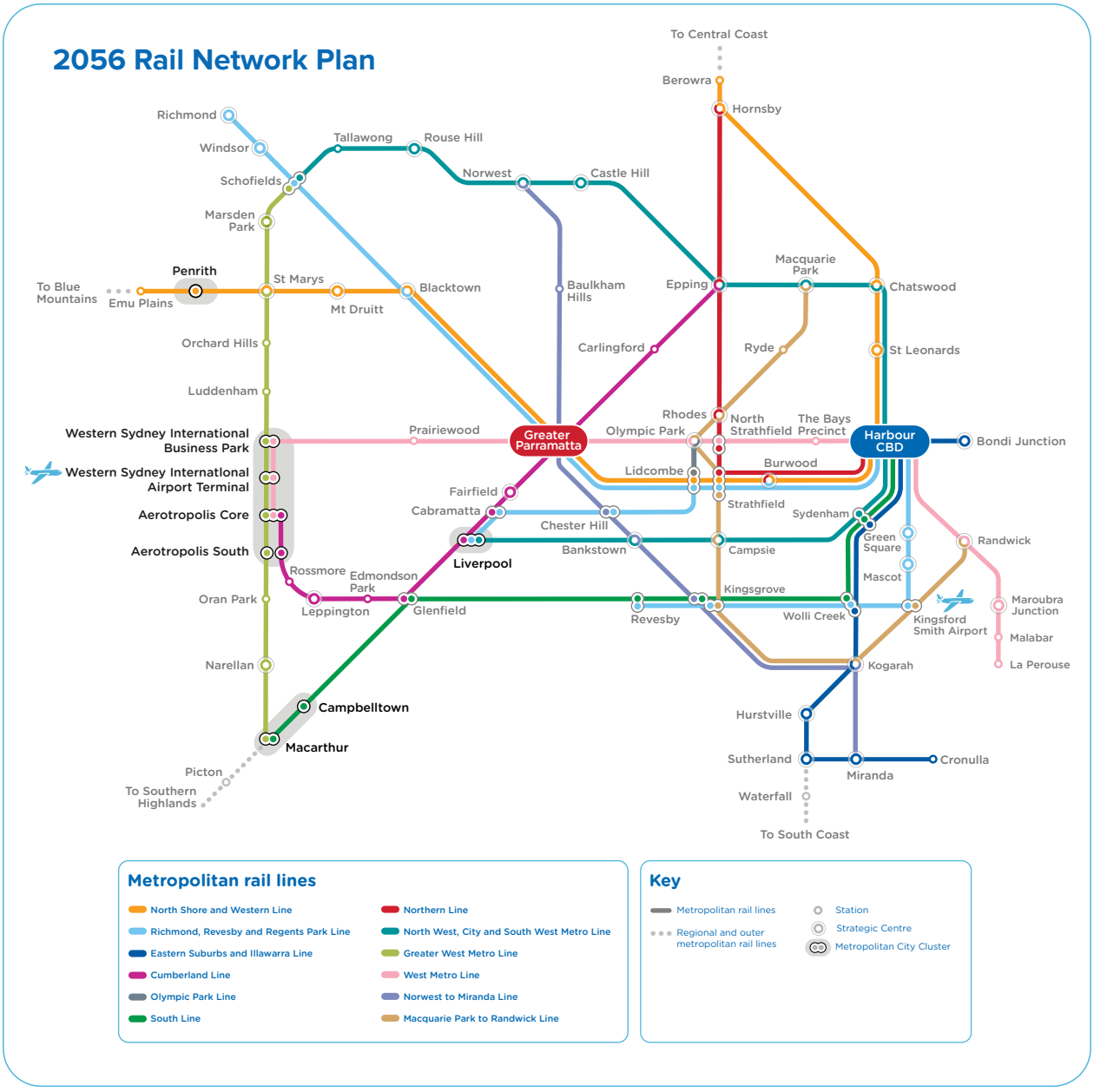
ATTACHMENT 5: FUTURE TRANSPORT 2056 NETWORK PLANS

https://www.transport.nsw.gov.au/projects/strategy



(Figure 28)

Source: Strategic Road Network 2056 – Transport for NSW



(Figure 35)

Rail Network Plan 2056

ATTACHMENT 4: FUTURE TRANSPORT 2056 NETWORK PLANS

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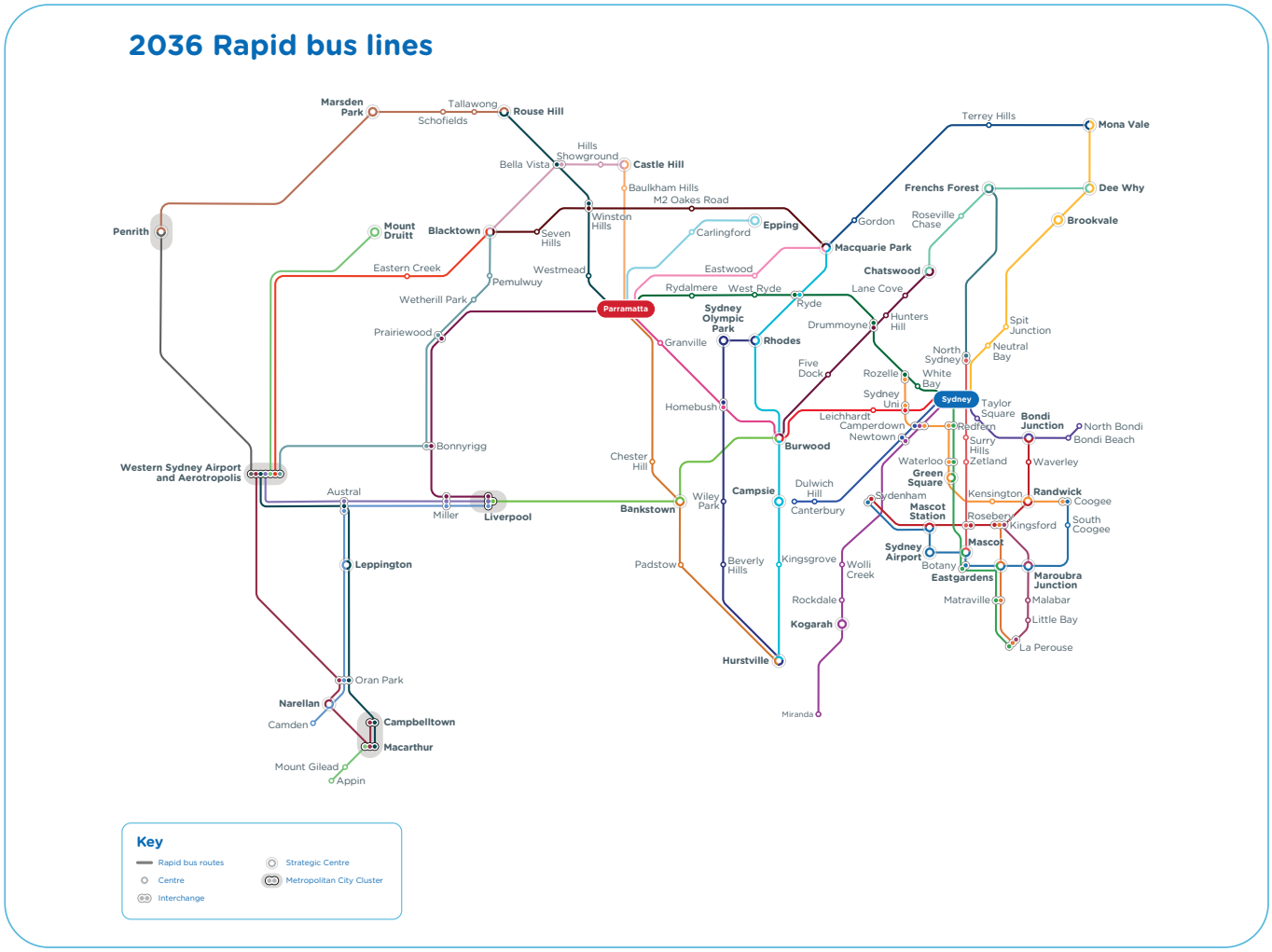

(Figure 36)

Rapid Bus Network Plan 2036

ATTACHMENT 4: FUTURE TRANSPORT 2056 NETWORK PLANS

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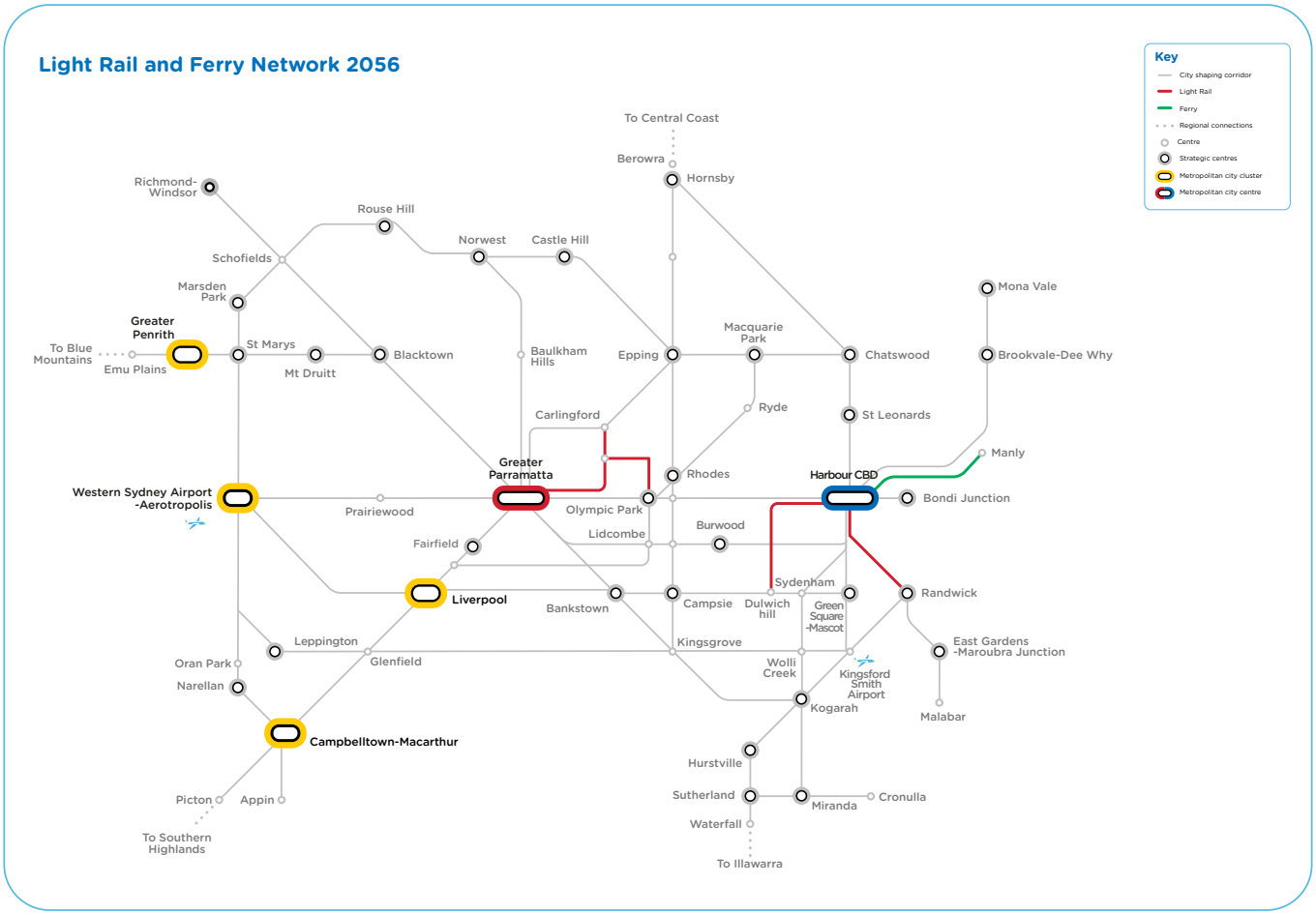
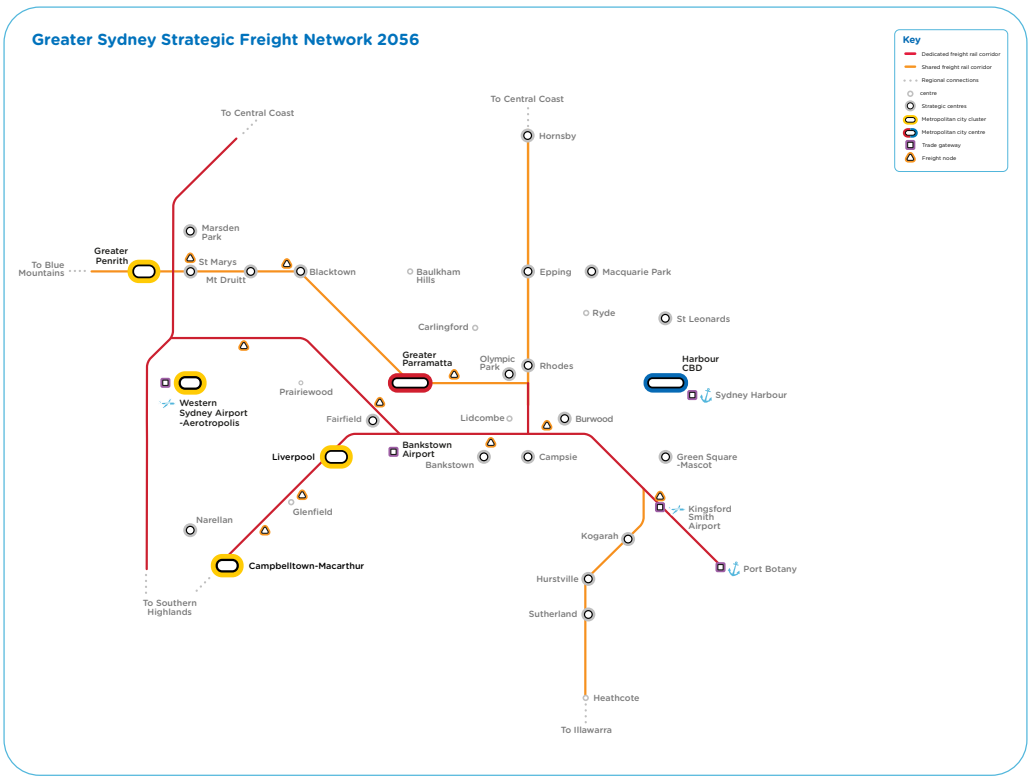


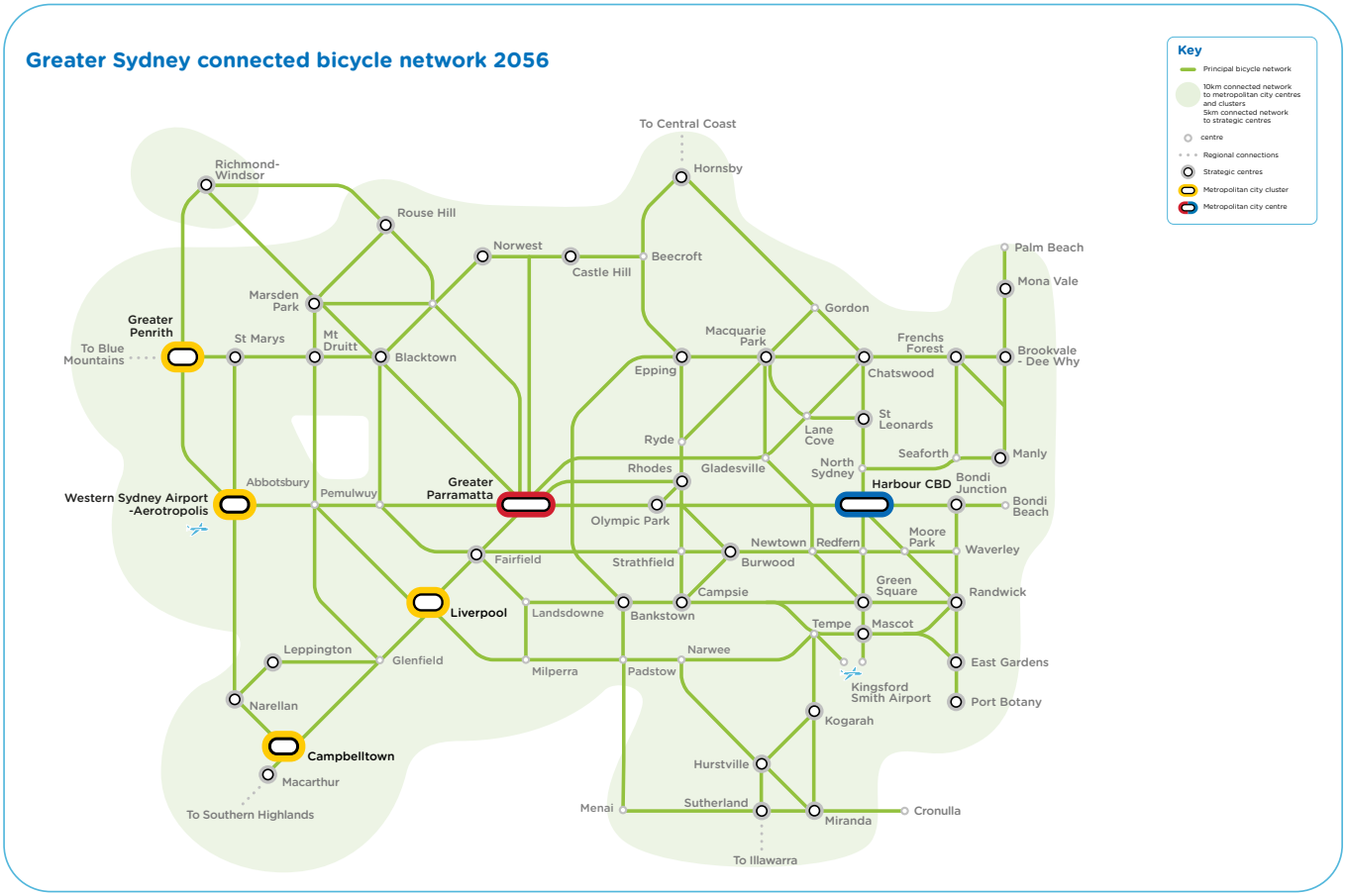
(Figure 37)

Light Rail and Ferry Network Plan 2056



(Figure 38)

Strategic Freight Network 2056



(Figure 39)

Connected Bicycle Network 2056

City of Ryde

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