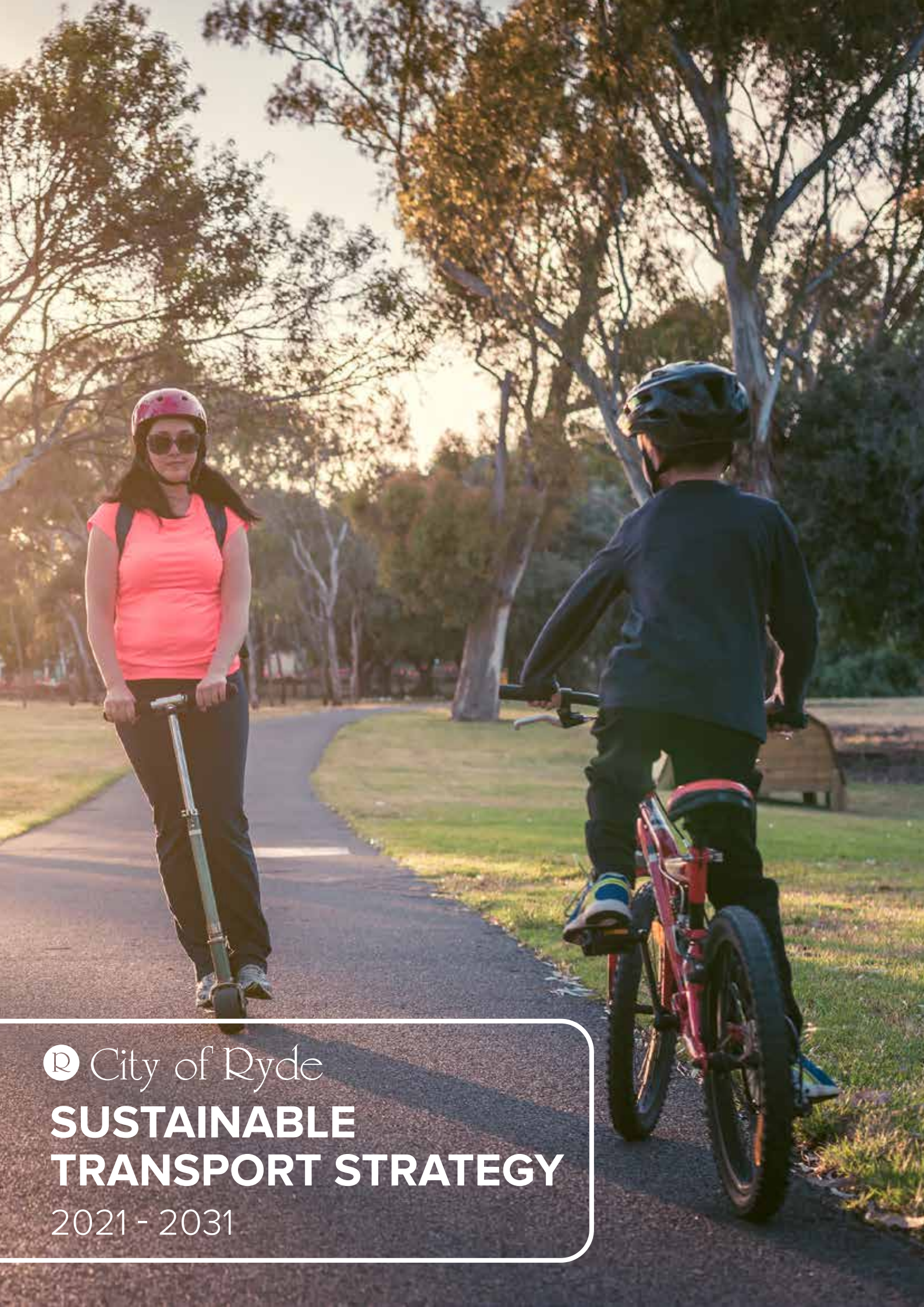

City of Ryde

SUSTAINABLE TRANSPORT STRATEGY

2021 - 2031

ACKNOWLEDGEMENTS

Ryde Sustainable Transport Strategy 2021-2031 was prepared by a project team within the Environment Department of City of Ryde, including: Diego Uzzun, Senior Sustainability Transport and Environment Coordinator as principal author and project manager for the Strategy's development, and Kylie McMahon, Manager Environment, as project director.

Special thanks also to Katie Helm, Senior Coordinator Environment, David Anderson, Senior Coordinator – Transport Planning, Marita Perry, Data Analyst – Transport, for their invaluable assistance by providing feedback and contributions to content, and Council's Communications team (Michael East, Renee Mitchell, Isobel McPherson and Julia Trent) for their very professional graphic design work and proofing.

Publication and contact details

For more information on sustainable transport at the City of Ryde go to **www.ryde.nsw.gov.au/sustainabletransport** or contact 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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CONTENTS

1 EXECUTIVE SUMMARY

City of Ryde is committed to facilitating emerging technologies associated with the transportation of goods and people across our City, supporting a hierarchy of different transport modes. This hierarchy has been used to develop priority areas and actions proposed under this strategy for the next 10 years.
Active transport, public transport, shared mobility solutions and other low emission transport modes are prioritised over single driver vehicles, for all types of trips when travelling is needed.

In 2019, City of Ryde declared a climate emergency and has recently commenced work on a Net Zero Emissions Plan which will include emissions reduction pathways for Council's own operations as well as community targets. Council acknowledges that the current situation requires urgent action by all levels of government on the causes and impacts of climate change.

This *Sustainable Transport Strategy* provides a framework and sets key directions under which Council will work to deliver on priority areas identified. To assist us to monitor the successful implementation of this strategy and guide us towards achieving our vision, several actions have been nominated. These actions clearly identify responsibilities, key stakeholders involved, and proposed timeframes.

The priority areas outlined in this strategy have been designed to address community and Council needs through collective thinking and action towards a more sustainable future. With a strong emphasis on advocacy, collaboration, education and innovation, this strategy aims to reduce our City's emissions from transport and improve air quality, urban mobility, health and wellbeing, while providing community and Council with practical information to achieve more sustainable transport outcomes that will benefit us all.

By aligning Council's objectives with those of regional and State policies, residents will be informed of opportunities and benefits of changing travel behaviours, including the importance of reducing private car use. Some of Council's initiatives and achievements related to sustainable transport are showcased to demonstrate our commitment, alongside future actions to be implemented.

With transport currently the second largest source of greenhouse gas emissions in our City, it has never been more important to work together with our community to increase the use of sustainable transport modes. Data analysed shows that a 'business as usual' approach to transport modes is not sustainable, and residents want Council to demonstrate leadership in environmental and sustainability issues. This strategy addresses these concerns.

While trying to envisage what the future of transport will look like is difficult, recent technological innovation and future transport modelling indicate that the transportation mix will likely shift towards mobility-friendly networks where personally owned cars no longer play a central role.

The rapid progress being made by technologies and tools such as Artificial Intelligence (AI) and Mobility as a Service (MaaS) have the potential to drive positive change and enable further adoption of transportation modes with low to no impact on the environment, better customer experience and more accurate data on emissions based on real transit data.

Consideration has also been given to the recent impacts of COVID-19 on our community's mobility and the creation of a 'new normal' that promises to be more sustainable, resilient and inclusive.

This strategy aligns with other Council's other plans and policies, both existing and currently under development in the areas of transport, strategic planning, net zero emissions and resilience. The journey to a sustainable future cannot be driven by one strategy alone, but requires a collaborative approach which can create systemic transformation and behavioural changes from all sectors of the community.

2 CITY OF RYDE PROFILE

City of Ryde encompasses an area of approximately 40 square kilometres, including waterways, major river systems (Lane Cove and Parramatta rivers) and parklands in Greater Sydney's North District. It includes 16 suburbs being Chatswood West (part), Denistone, Denistone East, Denistone West, East Ryde, Eastwood (part), Gladesville (part), Macquarie Park, Marsfield, Meadowbank, Melrose Park (part), North Ryde, Putney, Ryde, Tennyson Point and West Ryde.

Our local government area (LGA) neighbours are Hornsby and Ku-ring-gai to the north, Willoughby City, Hunters Hill and Lane Cove to the east, and Parramatta LGA to the west. It is important to recognise regional links when planning for transport, including a focus on sustainable and active transport connections.

Figure 1 shows the current City of Ryde layout.

(Figure 1)

Source: City of Ryde LSPS 2020

2 CITY OF RYDE PROFILE

City of Ryde is home to several key transport corridors that service the LGA and provide critical links to the Greater Sydney area. The transport network includes:

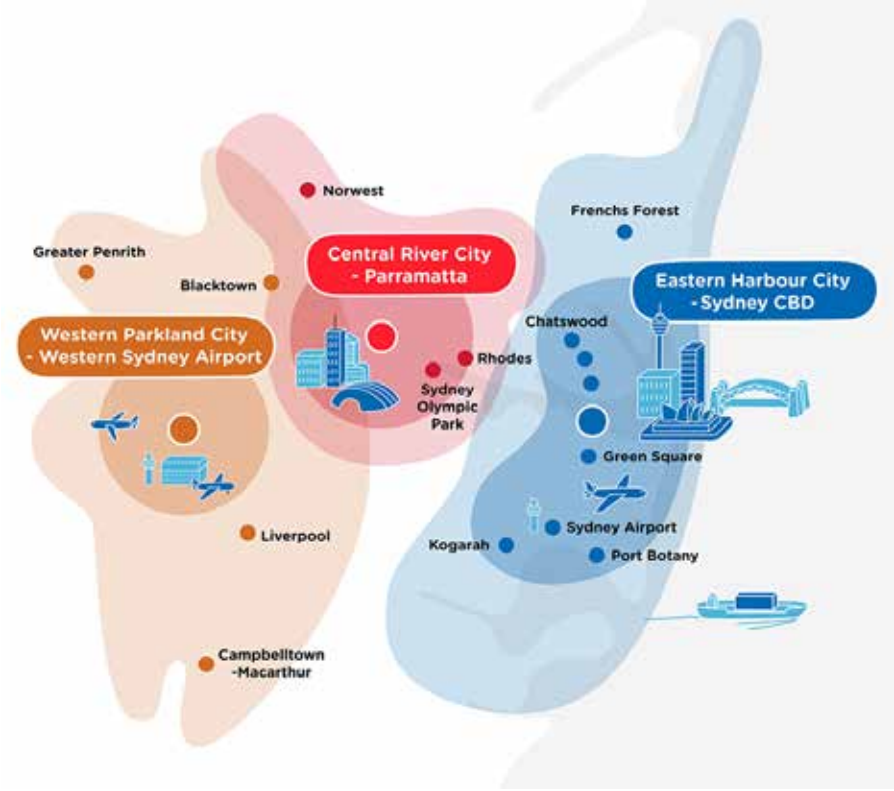
- Arterial roads including Lane Cove Road, Epping Road, Ryde Road and the Hills M2 Motorway
- Northern rail line and Sydney Northwest Metro
- Strategic bus corridors, which run along major roads through the city
- Ferry services on the Parramatta River.

Future corridor considerations include Eastwood County Road Reservation, the possible Northern rail line amplification for freight and passengers and the potential expansion of the Global Economic Corridor. This economic corridor of jobs and major infrastructure stretches from Macquarie Park to Port Botany.

The strategic centre of Macquarie Park is a health and education precinct and an economic and employment powerhouse. Macquarie Park contributed over $9.5 billion to the NSW economy in 2018 and is the largest non-CBD office market in Australia. Several planning initiatives from the State Government to strengthen Macquarie Park are set to bring more growth to this strategic centre, which will benefit from the planning of more sustainable transport future for its residents, workers and visitors.

Industrial areas throughout the south of the LGA, including Gladesville and West Ryde are focal points for productivity, employment and diversity. This assists our City to progress towards the State Government's vision of a '30-minute City', where people can travel from their homes to their nearest major centre within 30 minutes on public or active transport.

Council's commitments are designed to align with the State Government's vision of Greater Sydney as a 'Metropolis of Three Cities', connecting the Western Parkland City, the Central River City (which includes the Ryde LGA) and the Eastern Harbour City, as shown in Figure 2 below.



(Figure 2)
Source: Future Transport NSW

POPULATION AND AGE PROFILE

THE POPULATION OF GREATER SYDNEY IS

4.7 MILLION

AND IS PROJECTED TO GROW BY

1.7 MILLION

TO 2036.

THIS GROWTH WILL BE DISTRIBUTED ACROSS THE CITY.

116,302

CITY OF RYDE RESIDENTS IN 2016

160,000

CITY OF RYDE RESIDENTS IN 2031

(Figure 3)
Source: ABS 2016 Census data and 2015 NSW and Local Government Area population and Household projections and implied dwelling requirements.

According to Figures 3 and 4, our City is expected to reach 160,000 residents by 2031, while our State's population is forecast to reach 12 million people by 2056. The expected increase in population and new developments, particularly in our key town centres and commercial centres, will have a significant impact on the way people travel and on the environment.

Our City's current town centres are well placed to serve the local community in the long term, provided there is continued investment in infrastructure, innovation and education, particularly to enhance connectivity and sustainability across our City. It is also important that our community is kept informed of their travel options and on the importance of planning their journeys.

(Figure 4)
Source: Future Transport Strategy 2056

3 CONTEXT

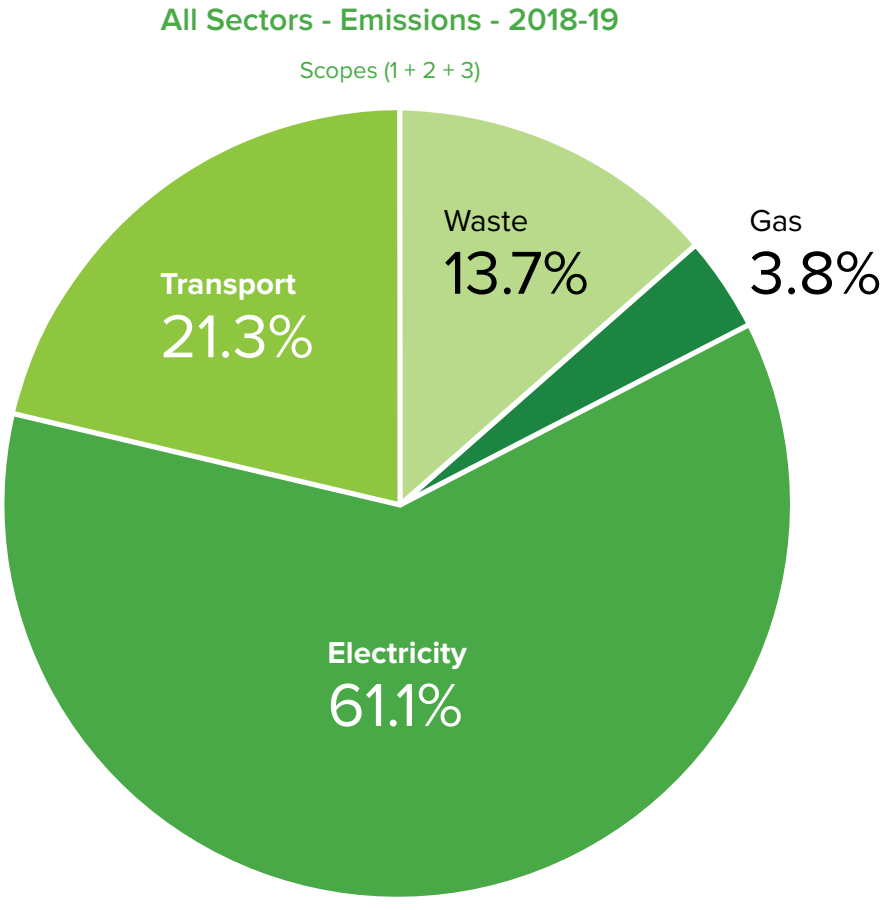

Recycle
Sustainable development
CO_2
Climate change
Greenhouse gas
Environment
Industry
Energy saving

Transport will need to adapt to the many challenges related to City of Ryde's growth and densification, leveraging from current and emerging technologies. Change needs to be embedded in the way Council plans for transport and growth in order to provide a long-term vision and a framework that will not be quickly superseded.

Traffic congestion is a big issue not only across our City but in most parts of the world, with many people not having access to safe, efficient, and sustainable transport options. The *Resilient Sydney Strategy*, released by the City of Sydney in 2018 on behalf of 33 metropolitan Councils of Sydney (including City of Ryde), has identified transport congestion as one of the chronic stresses Sydneysiders are currently experiencing.

Figure 5 shows mapping by Resilient Sydney based on 2018-2019 data. It shows that emissions from transport currently account for over 20 percent of overall emissions attributed to City of Ryde. This mirrors the national emissions profile for transport which is also approximately 20 percent.

At a national, state and local level, the data available has demonstrated that our world is at risk of irreversibly degrading the natural systems that sustain us and the window of opportunity is closing fast.



(Figure 5)
Source: Resilient Sydney Platform – Kinesis - 2021

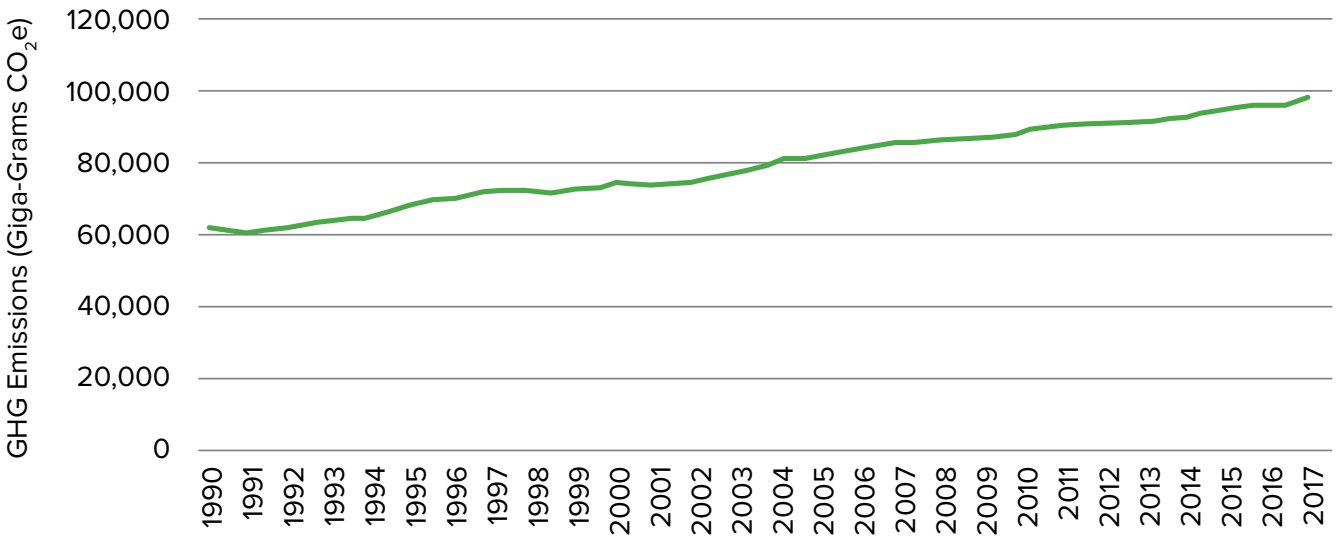
3 CONTEXT

The Federal Government has committed to reducing greenhouse gas emissions to 26-28 percent below 2005 levels by 2030, with recent data showing that emissions targets are not being met. Mitigating the impacts of climate change is one of the biggest ongoing challenges our City and the nation face as governments plan to accommodate population growth. To succeed long-term, full collaboration between all layers of community and governments will be required.

According to Austroads' 2020 paper *Decarbonisation of Road Transport Network Operations in Australia and New Zealand Report*, transport needs to be a key element in emissions reduction strategies for improvements to be realised. Figure 6 below shows that national emissions from the transportation sector have continued to increase over time.

This upward trajectory shows that a 'business as usual' approach is not sustainable. To create a downward trend in emissions, a coordinated approach from all three levels of government is required. Council has a key role to play in contextualising and developing locally relevant strategies and targets from higher level agencies.

Australian transportation sector emissions (1990-2017)



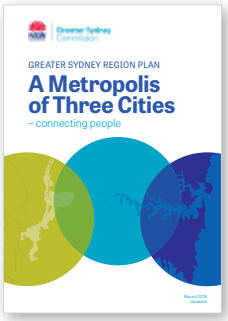
(Figure 6)
Source: Data obtained from the Australian Greenhouse Emissions Information System. Department of the Environment and Energy. Accessed 25 October 2019.

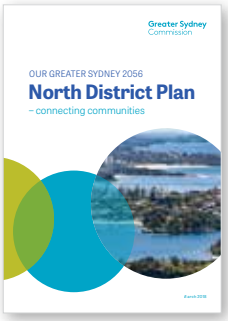
4 ALIGNMENT

This strategy has been informed by plans, policies, legislation and strategic documents adopted at state, district, regional and local levels. Together, they provide directions and planning priorities for Council to deliver a connected, healthy, well planned city catering for growth, employment and change.

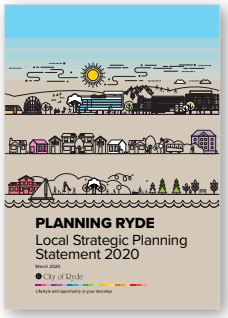
Figure 7 below shows a list of the key documents consulted, considered and currently under development at different levels:

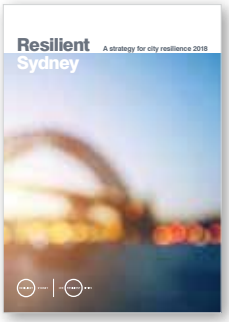
Regional



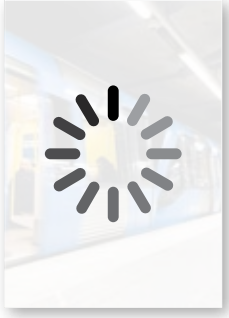


Local - current





Local - under development



City of Ryde Integrated Transport Strategy (ITS) 2016-2031
(2021 review and update currently under development)

City of Ryde Bicycle Strategy
(new *Active Transport Strategy* currently under development for adoption later in 2021)

(Figure 7) Key documents

4 ALIGNMENT

The *Greater Sydney Region Plan* and *North District Plan* provide direction for the City of Ryde's future development and growth. City of Ryde plays a key part in the region due to the significant role the area plays in major transport connections, in terms of the movement of both people and freight.

The *North District Plan 2018* released by the Greater Sydney Commission also serves to guide state agencies and assist councils and the private sector to plan for and manage growth, as well as outlining key planning priorities that councils should plan for and respond to.

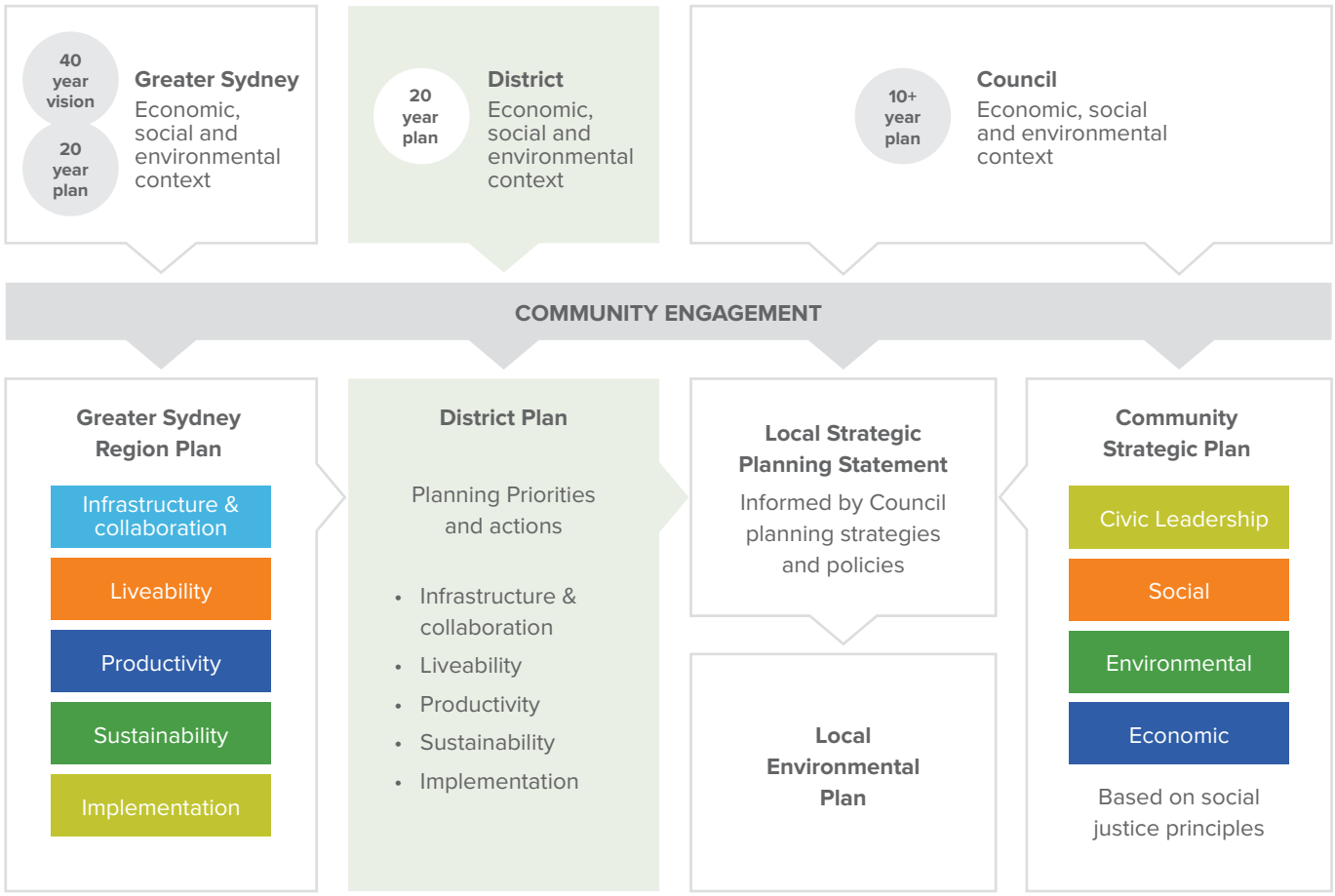
Future Transport Strategy 2056 aims to achieve six key outcome areas for the future of mobility in New South Wales, creating a positive impact on the environment, economy and communities. These outcomes aim to ensure the community can travel safely using an efficient, affordable, and environmentally sustainable transport network that supports emissions reduction.

The State Government's *Net Zero Plan Stage 1 (2020)* is a plan for reducing emissions across the state with targets of a 35 percent emissions cut by 2030 (compared to 2005 levels), supporting a range of initiatives that include electric vehicles and hydrogen technology among others to address climate change and reach net zero emissions by 2050.

At the local level, the *Sustainable Transport Strategy 2021-2031* is informed by and complements other plans, framework policies and long-term strategies developed by City of Ryde, including the *Integrated Transport Strategy 2016-2031* (currently being revised), *Community Strategic Plan 2028, Local Strategic Planning Statement 2020* and *Ryde Resilience Plan 2030.*

In responding to regional objectives for increasing and planning for sustainable transport, Council acknowledges that policy consistency and alignment plays a major role in ensuring future policies, controls and commitments address priorities outlined by State and Federal Governments.

Figure 8 below outlines the relationship between regional, district and local plans, with associated community engagement levels:



(Figure 8) Source: North District Plan 2018

5 CHALLENGES

Our City is changing. Growth in medium and high density residential and commercial development is responding to population growth, placing extra pressure on our transport and services. Managing travel and traffic, while prioritising the reduction of greenhouse gas emissions, is becoming more crucial and increasingly challenging. How we travel is an important consideration for future planning policies.

Ryde already experiences heavy traffic congestion in many parts of the City. In fact, existing levels of congestion across our City, particularly work-related business trips, are above the Greater Sydney area average, impacting both our environment and our economic productivity.

"The annualised cost of road congestion for Sydney will increase from $6.6 billion in 2016 to $13.1 billion in 2031"

(Figure 9)
Source: Infrastructure Australia, Urban Transport Crowding and Congestion, June 2019.

Tackling private car use in our City is particularly challenging. As indicated in Figure 10 below, currently, 59 percent of our City's residents use a private vehicle for the journey to work and 69 percent of visitors use a private vehicle to visit Ryde, demonstrating a high reliance on private vehicles.

OF THE PEOPLE LIVING IN RYDE IN 2016

59%
USED A PRIVATE VEHICLE FOR THE JOURNEY TO WORK

WHILE FOR THOSE COMING TO CITY OF RYDE
69%

(Figure 10)
Source: Ryde Resilience Plan 2020

5 CHALLENGES

Changing community travel behaviour in terms of private vehicle use will be neither quick nor easy. Personal vehicles are perceived by many as providing comfort, convenience and even security, while sustainable transport alternatives can be viewed as less favourable or convenient. One of the main challenges for increasing use of sustainable transport modes by the community is to change commuter behaviour, made more difficult by the status associated with private car ownership.

Recent data for City of Ryde made available by Transport for NSW indicates a high percentage of single passenger vehicle trips. Moreover, existing travel patterns, particularly the proportion of commute and work-related business trips within our City are above Greater Sydney average.

Travel by mode, Ryde 2018/19

	Number of trips	% of total trips	Mode share %*
Vehicle Driver	217K	36.7	45.7
Vehicle Passenger	101K	17.1	21.2
Train	27K	4.7	5.8
Bus	44K	7.5	9.3
Walk only	80K	13.5	16.8
Walk linked	116K	19.7	N/A
Other	6K	0.9	1.2

(Figure 11)
Source: Transport for New South Wales

*Mode share is calculated excluding walk linked trips

Growing carbon emissions originating from our transport systems are currently threatening commitments to limit global warming, pushing our nation further away from tackling climate change as pledged under *The Paris Agreement* signed by Australia in 2016 to reduce greenhouse gas emissions.

Our ageing population coupled with our City's challenging topography, with some steep and narrow roads throughout the LGA, represent significant barriers to increased use of sustainable travel options such as walking and cycling. These barriers result in lower physical activity and potential future health issues related to a sedentary lifestyle.

While we are living longer than ever before, by 2031 it is expected that one in three people in New South Wales will be aged 50 years or older. Council supports the State Government's vision of ensuring the needs of an ageing population are met by a connected transport network to enhance independence, social inclusion and overall wellbeing of older people.

Challenges that are regularly linked to the uptake of active transport by community include:

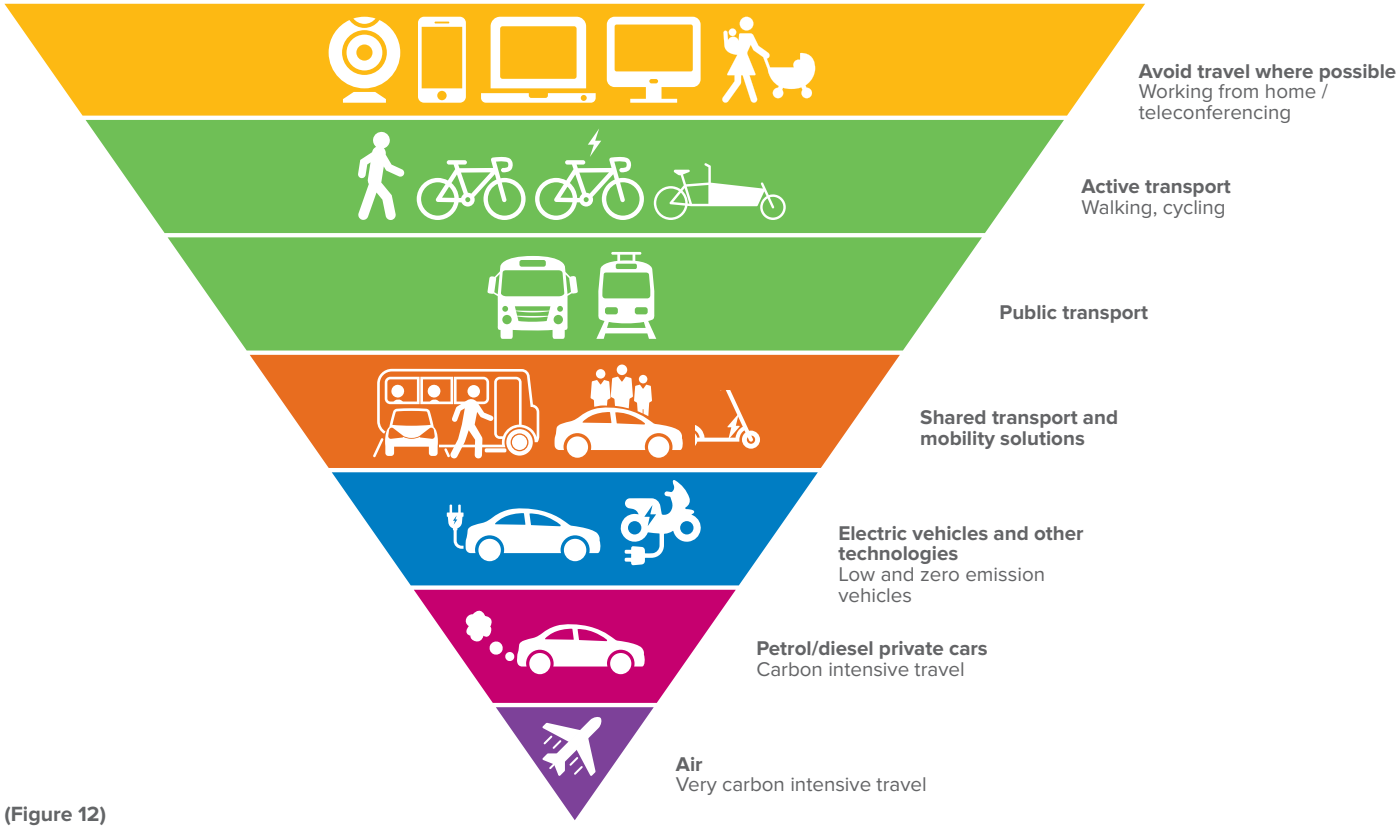
- Reduced number of dedicated lanes and supporting infrastructure/end of trip facilities for pedestrians and cyclists
- Gaps in cycling and footpath networks that impact on the perception of active transport as a safe alternative to private and mass transit, resulting in many people not feeling confident to ride a bicycle
- Active travel requires a certain degree of fitness
- Weather component may cause people to choose alternative travel options

Other challenges include limited funding, incentives and lengthy decision-making processes from Federal and State Governments to deliver sustainable transport programs and infrastructure. Delayed action slows the testing and approval of new transport technologies via trial programs, postponing necessary innovation needed to shift travel behaviour. A forward-thinking approach towards integrated land use and transport planning is required to accommodate future trends and mobility needs, paving the way to a more sustainable transport system.

6 VISION, TRAVEL HIERARCHY AND KEY STAKEHOLDERS

The vision for the City of Ryde is to be a more connected City where residents and visitors have safer, more convenient and reliable access to sustainable travel options that reduce emissions. Active, public and shared transport modes will be prioritised over single occupancy car use, with enhanced focus on the community's health and wellbeing, innovation and ambitious goals aligned with regional and state policies.

City of Ryde is committed to guiding future policies, delivering projects and decision-making processes that align with the vision above and are based on a Sustainable Travel Hierarchy illustrated in Figure 12 below. The aim is to protect vulnerable road users and encourage residents and visitors to choose the most sustainable travel option for every journey, where available. Some of the outcomes and advantages for our City include reduction of congestion on roadways and consequently in emissions generation, improving air quality and community wellbeing.



(Figure 12)
Adapted from Source:
UK Energy Savings Trust

The first mode at the top of the hierarchy refers to the need to travel at all. It includes the potential use of alternative technology such as video conferencing and flexible working arrangements to minimise trips.

When travelling is necessary, active transport (second option) should be prioritised and includes walking and cycling, followed by public transport (third option) and shared mobility solutions (fourth option) which reduces impact on our City and environment. Cars, especially petrol and diesel models, are at the bottom of the hierarchy due to their negative impacts related to tailpipe emissions, traffic congestion and space requirements. Vehicles should not be given priority in urban areas when these are served by more sustainable options.

6 VISION, TRAVEL HIERARCHY AND KEY STAKEHOLDERS

It is expected that the recovery from the COVID-19 pandemic will provide a wide range of opportunities. People have realised the benefits of working from home, resulting in cleaner air, more time, healthier lifestyles and boosted resilience. Cities around the world have experienced increased active mobility and subsequently a reduction of carbon emissions.

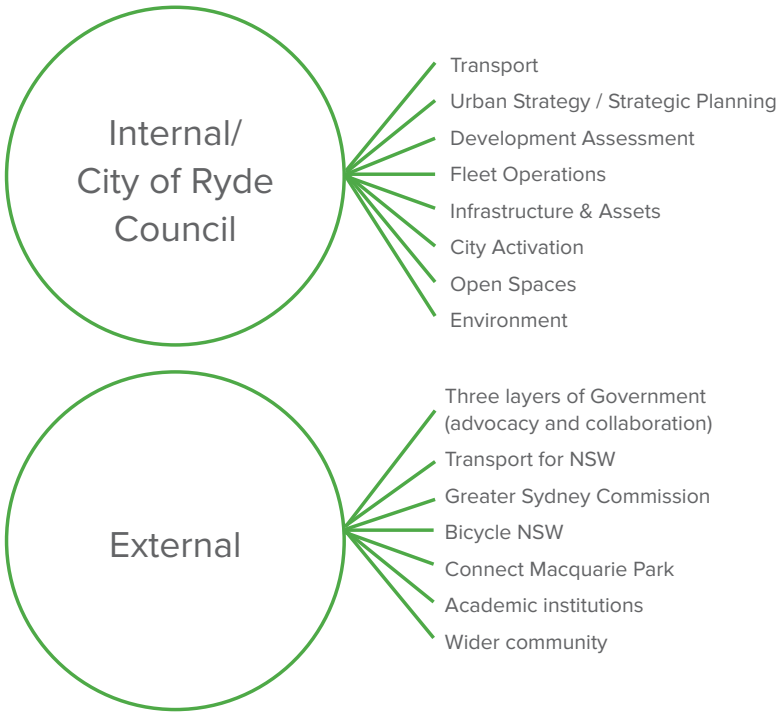
According to an article published by C40 Knowledge (2020), many cities around the world have committed to ambitious plans for more equitable road space reallocation, including London, Montreal and Paris. Countries such as Mexico, Colombia and India have seen increased demand from their citizens and are investing more in green infrastructure, putting walking, cycling and other sustainable travel options at the centre of recovery efforts.

While COVID-19 negatively impacted many people and all sectors of the economy, the result of less people travelling had positive impact for the environment. A potential new normal has occurred, where people are seeing the benefits of active transport.

With travel restrictions in place, active transport modes such as walking and cycling have emerged as alternative ways to move both people and goods around. Studies indicate that sustainable transport – with emphasis on public transport, walking and cycling – should play a key role and become an integral part of our response to the global pandemic. Low-cost, equitable and safe transport solutions can help us tackle climate concerns.

Council acknowledges that encouraging and successfully increasing the uptake of sustainable transport modes in our City is a long journey. Collaboration with a wide range of both internal and external stakeholders will be required for planning and community support to shift travel behaviour. It will involve all levels of government with industry and community participation.

Figure 13 below shows some of the key partners that will play important collaborative roles, assisting Council achieve the outcomes outlined in this strategy. It embeds the vision above into future projects and investments.



(Figure 13)
Key partners

City of Ryde is committed to taking a leading role in building internal and external relationships with strategic partners, including seeking funding opportunities and innovative solutions to deliver on the priority areas proposed in this strategy.

One of the priority areas identified for action relates to increased advocacy and encouragement for workplaces, including Council's operations, to offer flexible working arrangements for employees and remote work options where possible.


control
option
command

7 STRATEGIES AND PRIORITIES TO ACHIEVE OUR VISION

7.1 AVOID TRAVEL WHERE POSSIBLE

While Council acknowledges that the post-COVID-19 new digital era is not universal or appropriate to everyone, the pandemic has shown us different ways to resume economic activities and is expected to have a lasting impact on how we work and travel in the future.

This strategy aims to assist community understand the carbon implications of their travel and identify ways to reduce their carbon emissions where possible. Video calls to replace face-to-face meetings by connecting virtually is one of the ways to avoid emitting carbon. Avoiding travel can save time, money and carbon.

When travelling is necessary, it is still possible to reduce emissions and save time and money by reducing the number of trips. Some examples for consideration include combining business trips with leisure trips, or combining multiple trips to the same destination or region into a single, longer trip.

A public survey conducted by Europe's leading clean transport campaign group, Transport & Environment (2020), asked people whether they wanted to maintain pandemic levels of air pollution. Cities were selected given their significant changes to air pollution and mobility behaviour, with results of the survey showing that the majority of residents want their local governments to take measures against air pollution from road traffic, as shown in Figure 14.

During the lockdown, I have sensed/experienced good clean air and I don't want to go back to the air pollution levels we previously had

	Total	Brussels (Belgium)	French cities	German cities	Italian cities	Spanish cities	UK cities
Strongly agree	34%	39%	41%	26%	44%	44%	37%
Somewhat agree	30%	38%	30%	26%	35%	30%	32%
Neither agree nor disagree	21%	11%	18%	25%	15%	17%	22%
Somewhat disagree	6%	6%	4%	9%	3%	5%	5%
Strongly disagree	5%	2%	3%	8%	2%	3%	2%
Don't know	4%	4%	5%	6%	2%	1%	3%
Total agree	64%	77%	71%	52%	78%	74%	69%
Total disagree	11%	8%	6%	18%	5%	8%	7%

TRANSPORT & ENVIRONMENT @transenv @transenv transportenvironment.org

(Figure 14)
Source: No going back: European public opinion on air pollution in the COVID-19 era, Transport & Environment's.

7.2 ACTIVE AND PUBLIC TRANSPORT

Active transport includes any form of transport that involves physical activity, most commonly walking and cycling (including pedal-assist electric bikes). As the most cost-effective travel option available for medium and short journeys, active transport not only serves to connect people to public transport services but can also serve the commute to work or other destinations. Cycling is also a recreational activity with proven benefits to people's health and fitness.

Active transport provides a range of benefits for those who adopt walking or cycling as their preferred travel option. It can benefit the broader community by:

- Significantly reducing travel costs
- Making communities healthier and more productive
- Reducing carbon emissions and improving air quality
- Reducing area for parking spaces
- Reducing congestion
- Providing time savings
- Improving mental health and level of fitness

City of Ryde supports increasing the number of people walking and cycling as an important component of a more sustainable future for our transport system. Active transport will require greater consideration in future policy making, integrated land use and transport planning, urban design decisions, as well as advocacy for improved green infrastructure.

City of Ryde, within its development assessment and planning framework, requires certain new multi-unit developments to submit and implement Green Travel Plans to encourage the use of sustainable transport choices and encouraging active and public transport trips.

Additionally, City of Ryde also has an active street tree planting program aimed at increasing canopy and providing shading and cooling to those walking or cycling on City streets, and have undertaken various Pedestrian Access and Mobility Plans as part of Council's *Integrated Transport Strategy* to improve the walking environment for all pedestrians across key town centres.

Continuous community engagement will be needed to promote the benefits of active travel, building confidence in choosing non-motorised options for all types of travel. The introduction of new technologies such as e-bikes (electric bikes) is expected to assist in this regard.

An e-bike is an electrically assisted pedal cycle providing motor powered assistance when pedalling and a battery that can be charged up in the user's home or place of work using a normal plug socket. Electric bikes offer similar health benefits to regular cycling or walking, but can enable riders to travel faster, further, with heavier loads (for cargo bikes), helping to make cycling more accessible.

E-bikes provide a solution to many of the obstacles that prevent people from riding more often, such as topography, loading capacity and fitness levels. E-bike riders tend to cycle more often than conventional bike riders. E-bike trips tend to be longer than normal bicycle rides and can replace vehicle trips.

7.2 ACTIVE AND PUBLIC TRANSPORT

In relation to the role of public transport, City of Ryde is constantly investigating new ways to improve traffic flow and encourage residents to leave the car at home for local trips. One example is the Shop Ryder free community shuttle bus service that Council has been running since 2012, connecting town centres in the southern areas of the City that have limited alternative transport options apart from cars.

Owned and managed by Council, two Shop Ryder community buses provide a pick-up and drop-off service for passengers at various locations along a designated route, four days per week. Further details of this service are available on Council's website.

While many parts of City of Ryde are currently well serviced by public transport, Council is committed to partnering with the State Government to improve the frequency and reach of the public transport network that serves and connects our residents.

Combined with more efficient integration with other transport modes (such as active transport and shared mobility solutions), increased use of public transport by our community and visitors can be achieved and provide greater mobility. The electrification of buses is currently gaining momentum and will assist in reducing carbon emissions in our City.

To increase sustainable transport in our City, some of Council's adopted strategies such as the City of Ryde *Integrated Transport Strategy 2016-2031* and *Ryde Resilience Plan 2030* proposed targets in relation to resident-generated trips by public, active and private transport modes to be reached within the next 10 to 20 years.

Council's new strategies *Integrated Transport Strategy* and *Active Transport Strategy* (to be adopted later in 2021) will address the following areas:

- Extension of the existing dedicated cyclist and pedestrian networks
- Levels of road safety and facilities
- Needs of pedestrians and cyclists who use the transport network
- The latest technological resources to meet forecast increases in use
- Funding opportunities to deliver priority projects involving connected networks and active transport facilities

Priority Areas:

Actions	Responsibilities	Timing
Advocate for and facilitate improvements by State Government agencies to the frequency and coverage of public transport services within City of Ryde	Environment (lead) with Transport	2021 - 2025
Investigate opportunities that improve, leverage, expand or replace community shuttle services within City of Ryde, including the Shop Ryder bus service, to reduce single passenger car trips and better connect town centres	Environment (lead) with Transport	2021 - 2025
Advocate for safe and easy access from and to neighbouring local government areas (LGAs), with emphasis on active transport connections	Environment (lead) with Transport	2021 - 2025
Advocate for increased end-of-trip facilities in multi-unit developments, as well as retrofit projects wherever possible, to encourage the uptake of sustainable transport modes by residents, workers and visitors within Ryde LGA	Environment (lead) with Transport	2021 - 2025
Investigate the feasibility of implementing trial programs involving shared bicycles (including e-bikes) or micro-mobility devices in suitable town centre areas within the Ryde LGA	Environment (lead) with Planning and Transport	2021 - 2025
Apply for and/or propose funding models to support the expansion of walking and cycling networks within City of Ryde that enable investment in safe, direct and continuous green corridor connections	Environment (lead) with Transport and Parks	2021 - 2025
Support and educate businesses to assist staff – including Council's staff – to travel to and from work by public and active transport, influencing workers to plan their journeys while aiming to reduce demand for peak-period private vehicle travel	Environment (lead) with Transport and Parks	2022 onwards
Promote rewards or incentives offered by government to community regarding sustainable transport, with focus on active transport	Environment	2022 onwards

7.3 SHARED TRANSPORT AND MOBILITY SOLUTIONS

Shared transport is an umbrella term that encompasses a variety of transportation modes, including but not limited to car sharing, bike sharing, carpooling, micro-mobility, ridesharing and on-demand ride services.

Shared transport modes allow users to access services on an as-needed basis, sharing a vehicle either at the same time (e.g. ride-sharing like Uber) or over time (e.g. bike sharing or car sharing). The cost of their journey is shared between passengers. This provides a realistic compromise between the benefits of public transportation and private vehicle use.

Both shared mobility and on-demand services have been laying the foundations for what the future of transportation could look like. Taking into consideration the growth projected for the City of Ryde, current rates of private car ownership will need to be reduced. Hailing a ride, shifting to public transport or on-demand ride services will increasingly play a key role in future travel behaviour.

The way people are choosing to move around is changing and it is important to think beyond conventional modes of mobility. With road networks struggling to meet transport demand, the recent emergence of the sharing economy and shared-use mobility shows that more and more people are turning to alternative travel options.

While public transport services are essential to moving people around, some people may have difficulties travelling to and from public transport hubs. This is known as 'the first and last-mile problem'. The increased use of shared, short-range mobility services in our City has the potential to complement our conventional transport networks, enabling our residents and visitors to reduce their reliance on private vehicle ownership.

'Multimodal urban transportation' is an alternative to personally owned modes of transportation and an effective way to provide a competitive transport solution in many cases. It refers to people travelling by various transport modes, including but not limited to bikes, cars, train, and micro-mobility devices such as electric scooters. This is not uncommon to those who ride, walk or drive to public transport hubs to work.

Through integrated land use and transport planning, the right infrastructure and supporting services can benefit the community by increasing opportunities for multimodal transportation, in line with the State Government's vision of a 30-minute city for Greater Sydney.

To illustrate what increased opportunities would look like, think of a commuter in our City starting their journey on a shared micro-mobility device to a train station, then taking a train to a work commitment, later walking to the grocery store, and finally carrying groceries home in a taxi. In this example, four different modes of transport replaced a privately-owned car, each of them corresponding to the most suitable travel option for each journey, or part of the journey, according to the commuter's requirements.

7.3 SHARED TRANSPORT AND MOBILITY SOLUTIONS

Improvements in technology and social acceptance will continue to change our urban spaces and travel behaviours, with a growing number of people utilising smartphones for trip planning. In coming years, a growth in customised transit solutions benefiting from advanced Artificial Intelligence and an increase in on-demand services are expected. This technology will target the first and last mile connectivity problems we currently face to get more people to the first node of the public transport system.

In this context, Mobility as a Service (MaaS) plays a key role and is already used by many of our City's residents, workers and visitors as they plan their trips and the modes of transport available to go from point A to point B. It started as a concept that proposed to rethink transport and evolved to a real world system that can reduce travel costs and time, improve customer choices, increase network capacity and efficiency.

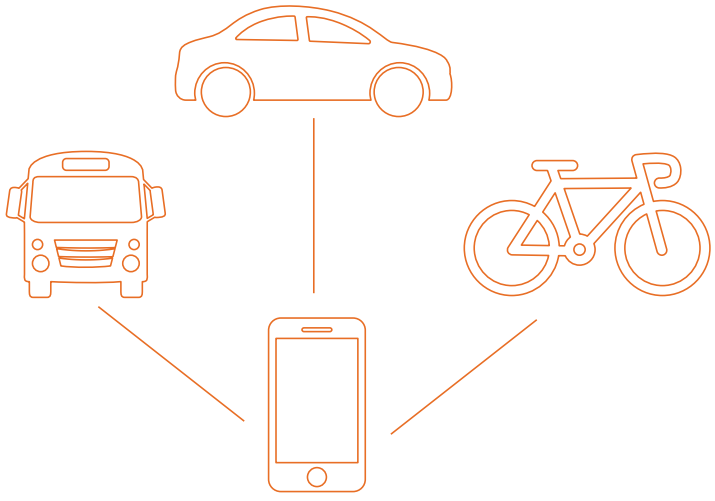
Personal mobility is undergoing the most significant shift since the invention of the car, including entirely new ownership models, multimodal transportation methods and eventually vehicles that drive themselves.

Source: www.whichcar.com.au

A comprehensive definition of MaaS is available in Cubic's paper *Mobility as a Service: Putting Transit Front and Center of the Conversation* as follows:

Mobility as a Service is a combination of public and private transportation services within a given regional environment that provides holistic, optimal and people-centred travel options, to enable end-to-end journeys paid for by the user as a single charge, and which aims to achieve key public equity objectives.

Source: www.cubic.com



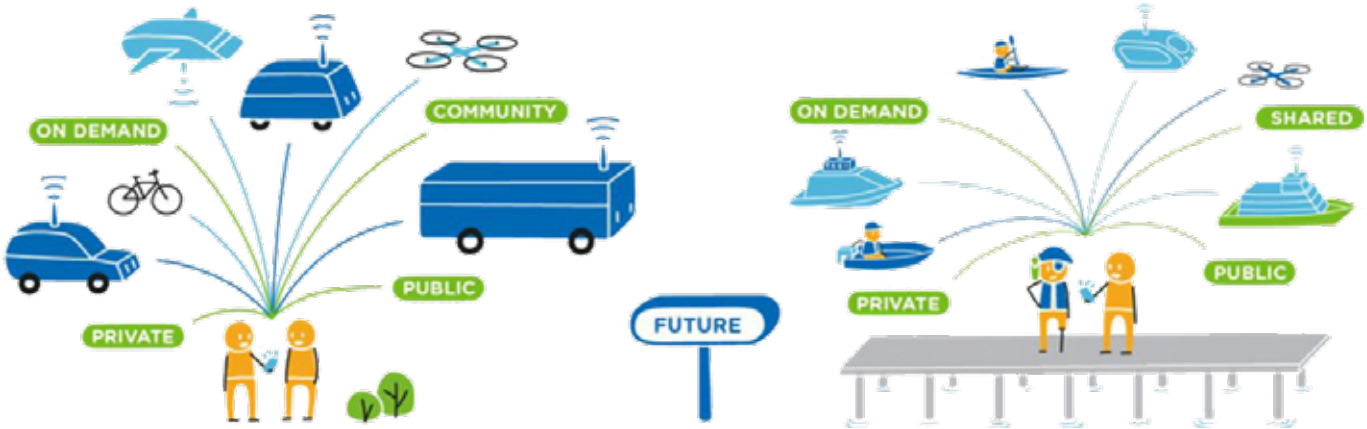
According to the Australian Trade and Investment Commission, while car share, ride share and hailing services have been growing in popularity, MaaS seeks to integrate a number of different transport modes such as car and ride share, with public and even active transport options.

MaaS is characterised by integrated mobility which includes journey planning, booking and payment, providing intelligent and seamless transportation for users. Evolving from a market that has embraced the sharing economy, the sector is expected to grow in Australia and across the globe.

Among the key objectives and benefits of MaaS to both (smart) cities and communities, the following aspects are in alignment with the outcomes of this Strategy:

- Limits congestion, particularly during peak travel times
- Reduces the reliance on private car ownership, car usage and the number of vehicles on roads
- Improves the customer experience using a more integrated transport network
- Lessens the environmental impact of transportation

Figure 15 below from the State Government's *Future Transport Strategy 2056* refers to a future vision of our transport network in Greater Sydney, where different transport modes are interconnected and work seamlessly as part of an integrated system, with shared transport and mobility solutions playing a special role in complementing the other travel options available to residents and visitors.



(Figure 15)
Source: Future Transport NSW

Recognising the diversity of City of Ryde, its residents and visitors, shared mobility solutions represent great opportunities for improved connection across our suburbs, aligning with regional sustainable transport goals and objectives.

Shared transport services are one part of an ever-evolving space. Each option can provide a key role towards a more sustainable future for our transport network. Some of the most popular shared mobility solutions are summarised in this section including some that Council has already implemented.

7.3.1 CAR SHARE

Car sharing services provide cars on demand, for rent either by the hour or by the day, supported by hassle-free parking in key centres. Users can register with a preferred car share company that operates within their area, pay a fee and book a car either by phone or over the internet. Cars are picked up and dropped off at car share bays nearest to the user's location.

Car share is an effective way of enabling people to walk, cycle and use public transport services for most of their trips, while having access to a vehicle for infrequent trips where travelling by car is the most suitable mode. It provides an opportunity for community-based greenhouse gas emission reductions and is consistent with Council's sustainability objectives.

Council adopted its *Car Share Policy and Guidelines* in 2018 for fixed car share parking spaces located on-street and within Council-owned carparks to increase the availability of car share services to the community.

In November 2020, Council approved 25 new dedicated bays across our City for car share vehicles. Details of Council's car share program and locations are available on Council's website.

The benefits of car sharing include:

- Efficient use of on-street parking spaces: by reducing the parking demand created by underused private vehicles
- Reducing traffic congestion, vehicle trips and greenhouse gas emissions: by reducing vehicle kilometres travelled, and shifting travel to more fuel-efficient vehicles
- Reducing the growth in private car ownership: By using car share vehicles, car share users defer or reduce their private car ownership
- Increasing social inclusion: by enabling access to a variety of vehicles to households who could not otherwise afford them
- Increasing health as people walk and cycle more

Advances in car sharing technologies and current projections for the increased use of self-driving vehicles have the potential to provide a reduction in the number of vehicles using the streets. This shift is expected to be permanent as more transport modes transition to on-demand services, supporting private vehicle ownership and single occupant vehicle trip reduction.

7.3.2 CARPOOLING

Carpooling is the sharing of vehicles by passengers, reducing the number of cars on the roads and parking pressure. Less car on the roads means less carbon emissions too. Considered to be an effective way to reduce private vehicle trips, the adoption of carpooling options has been growing in recent years.

Unlike 'ride-sharing' apps and services, carpooling is considered a 'cost-sharing' initiative. When people carpool, they can agree on sharing the running costs of driving, while saving on parking fees and tolls. There are several carpooling programs on the market matching passengers and drivers with similar commutes for regular scheduled trips, for example from home to work and back.

Benefits from carpooling are numerous, including social (providing opportunity for drivers and passengers to make new connections), economic (from job creation as these models grow), and environmental (from reduced emissions).

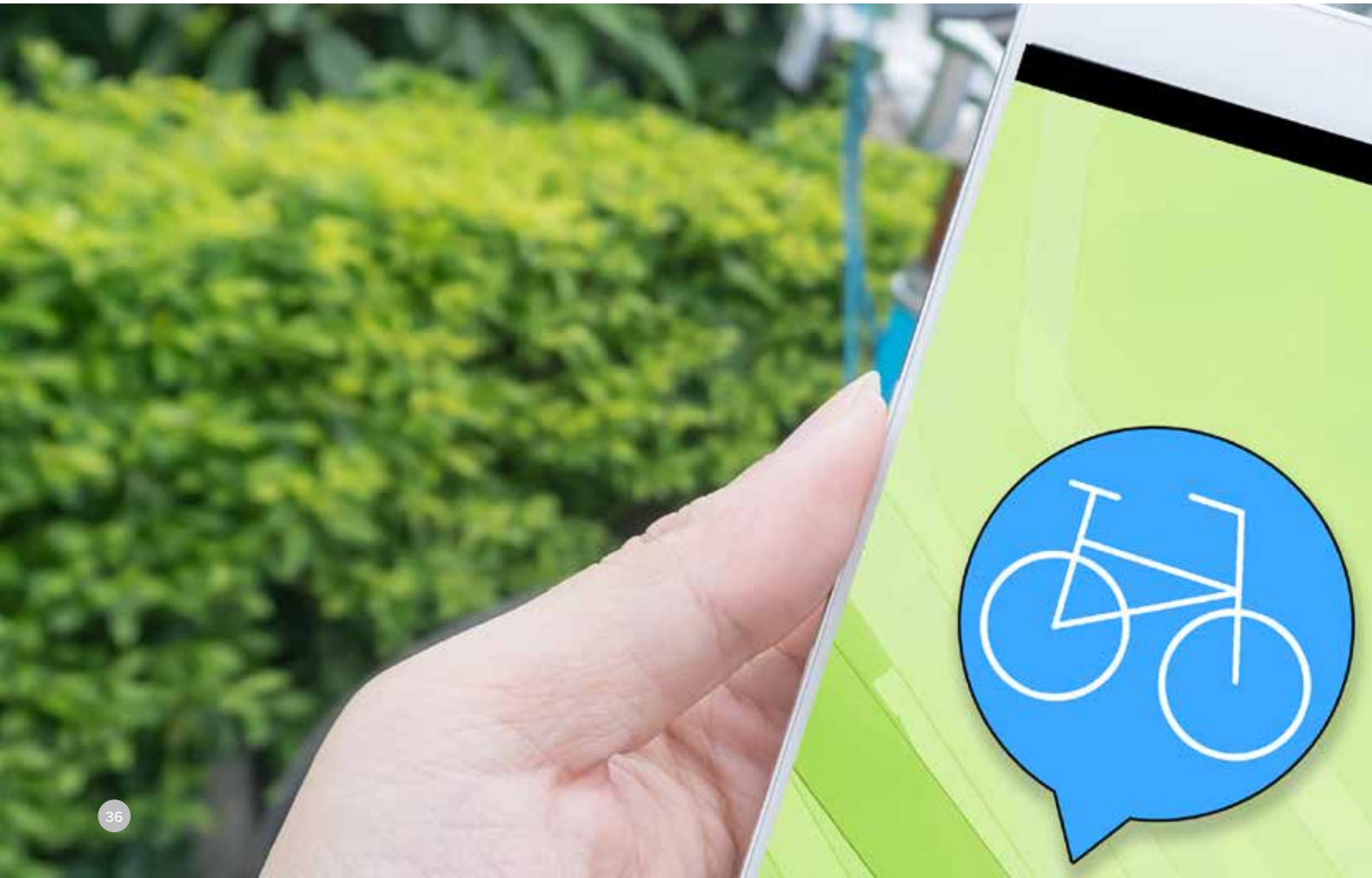
Council supports carpooling programs in our City and will continue to investigate opportunities to implement projects aimed at assisting the corporate community and the broad community to adopt ride-sharing sustainable transport.

7.3.3 ON-DEMAND SERVICES

On-demand services refer to ‘point to hub’ or ‘point to point’ services run as a ‘feeder’ service to major transport point as a ‘first and last mile’ style service. These services increase mobility in areas that may have inefficient fixed route transit services or need relief to their busy and congested business districts.

The development and delivery of on-demand public transport services have been increasing, with several providers offering on-demand public transport trials in Sydney. The Keoride On-Demand bus service ran in Macquarie Park and North Ryde from 2018 to 2020 and proved to be one of the most successful trials undertaken by the State Government. Keoride enabled residents and workers to book a pick up from within 500 metres of their house and take them to their nearest transport hub or place, such as Macquarie Shopping Centre and Macquarie University.

Keoride aimed to increase mobility within the busy and sometimes congested North Ryde and Macquarie Park business districts. The more personalised and often faster travel experience for our community served as a sustainable alternative to private vehicle use and contributed to shared alternatives. The purpose of the trial was to test new technology, collect customers feedback and learn more about the delivery of on-demand transport services. Learnings from the trial are expected to be applied to future public transport initiatives.



7.3.4 BIKE SHARE

Since the release of Council's *Integrated Transport Strategy 2016-2031*, investigating the feasibility of a bike share scheme for our City has been part of Council's efforts to support sustainable transport.

Regulations for bike share schemes were updated by the State Government in November 2018 to ensure operators provide services that prioritise public safety and amenity. This addressed community concerns about vandalised, abandoned and poorly parked bikes. This followed negative experiences from bike share programs implemented in Greater Sydney in recent years.

Since then, councils and other impounding authorities have been given expanded powers to manage shared bicycles on public domain.

Councils have also been encouraged to collaborate on issues like user education, preferred parking zones and data sharing.

City of Ryde is working to improve connections to and from important public transport hubs, increasing sustainable transportation alternatives in high-density areas and growth corridors. Part of Council's plan is to further investigate the potential implementation of schemes to increase community uptake, including shared bikes (both conventional and electric).

Prior to any future bike share programs being implemented, Council will carefully investigate road safety issues, collaborate with expert providers in the market, collect relevant data on mode share via community consultation and learn from other programs successfully implemented by other councils.

7.3.5 PERSONAL MOBILITY DEVICES OR MICRO-MOBILITY

Personal Mobility Devices (PMDs) such as electric scooters, electric skateboard, and segway-style devices are usually small, portable and fit for purpose for short to medium distances. These devices have been gaining in popularity all over the world as people seek more innovative and efficient ways to escape traffic congestion, save parking costs and move around urban areas.

Council undertook a pilot project with Macquarie University utilising these devices under a State Government grant in 2012-2013.

The project tested four types of PMDs in a nominated Macquarie Park pilot area to assess functionality, usability, connections and future uptake.

Council has been monitoring this space to see what opportunities exist as technologies advance. However, at present there are a number of legislative hurdles to be resolved in some states, including NSW where riding electric scooters on public roads and footpaths remains illegal.

Council is committed to working with the State Government and its agencies to facilitate the implementation of trial programs in our City, once safety concerns and enforcement regimes have been addressed.

Council will continue to collect feedback from our community on the potential use of these devices, while exploring avenues to assist the State Government revise regulations. The aim is to encourage industry innovations that can improve road safety and promote low and zero emissions modes of transportation.

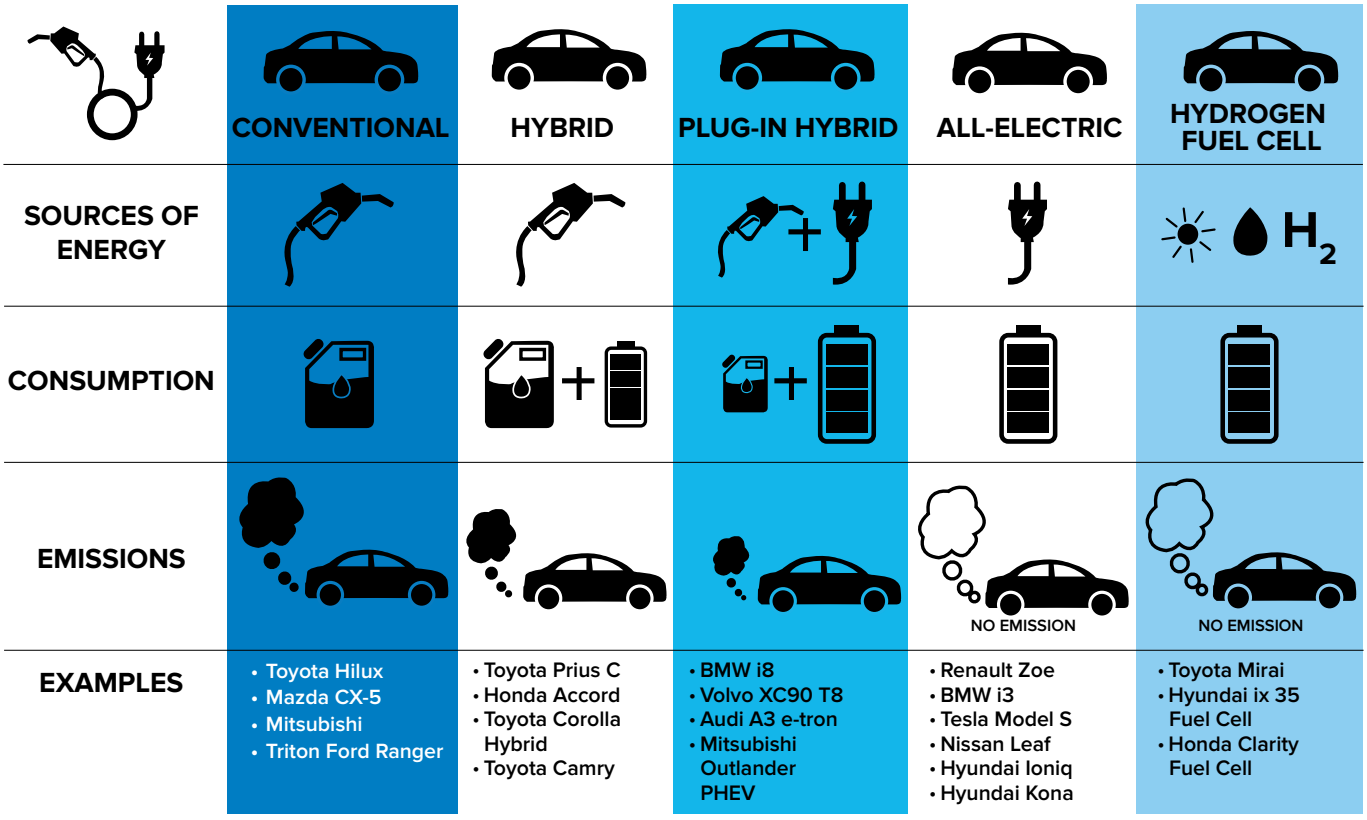
A leading example in this space comes from the ACT. The ACT Government changed its laws in August 2020 to allow e-scooters to be ridden at a speed of up to 15 km/h on footpaths and up to 25 km/h in other suitable locations. It was a first step by the ACT to join a growing number of cities around the world, including Brisbane and Adelaide, to embrace 'first and last mile' transport options.

Priority Areas:

Actions	Responsibilities	Timing
Raise community awareness of sustainable transport options available, with focus on MaaS solutions, encouraging residents and visitors to plan their journeys in advance	Environment (lead) with Transport	2022 - 2024
Continue Car Share programs, working closely with car share operators to remove barriers and investigate alternative ways to expand car share services in our City, including as part of new developments	Environment	2022 onwards
Explore funding opportunities with State and Federal Government agencies to support the implementation of suitable shared transport schemes that integrate effectively with the transport network, encourage healthy lifestyles, and provide alternative and safe transport options for residents and visitors	Environment with Transport	2022 - 2024
Investigate the feasibility of carpooling trial programs across the City to reduce existing levels of single occupancy vehicle trips	Environment	2022 - 2024
Monitor customised transit solutions, including on-demand and shared transport services for 'first and last mile' trips to improve connectivity to key town centres and major transport hubs	Environment with Transport	2022 - 2024
Work with State Government and its agencies to facilitate the implementation of PMDs trial programs	Environment with Transport	2022 - 2024
Investigate the relevance to develop policy for shared mobility transport to support and regulate new schemes in the City	Environment	2022 - 2024

7.4 ELECTRIC VEHICLES AND OTHER TECHNOLOGIES

Electric Vehicles (EVs) are cars or other vehicles that are propelled by electric motors. Unlike traditional internal combustion engine vehicles that use liquid fuels, electric vehicle motors are powered by electricity. EVs are part of a wide class that includes battery electric vehicles or fully electric vehicles, plug-in hybrid electric vehicles, non-plug-in hybrid vehicles and fuel cell electric vehicles typically fuelled by hydrogen as shown in Figure 16.



(Figure 16) Source: adapted from www.energymining.sa.gov.au

While a form of private transport, EVs are a key component of the sustainable transport mix. EVs are particularly effective when powered by electricity produced from renewable sources such as solar or green hydrogen.

Council has been supporting the transition to EV technology through the provision of community education workshops, new policy and guidelines for EV charging infrastructure. Council has also commenced work to transition Council's fleet to low and zero emission vehicles.

According to community surveys conducted by Council and leading motoring clubs in Australia, the main barriers to the adoption of EVs include access to charging infrastructure, cost of purchase, depreciation, range anxiety and limited model availability. However, significant improvements have been achieved as the market evolves and matures, with further information available on the lifespan and replacement of batteries.

Council acknowledges that many of its residents do not have access to home charging, particularly residents of multi-unit developments that represent over 50 percent of dwelling types. In early 2021, Council lobbied state agencies to consider the inclusion of EV charging controls and measures in their policies and projects, making new and retrofit buildings 'EV ready'.

A functional EV charging network will require charging infrastructure on both private and public land. EV chargers that can be installed by residents and businesses are encouraged as a way of supporting the growing number of fast-charging networks currently being rolled out by private suppliers.

Some initiatives are being co-funded by government programs. Wherever possible, charging infrastructure will cater for charging transport modes including bicycles, motorbikes, freight and other types of low and zero emission vehicles.

One of the most compelling reasons for broad adoption of EVs rather than a reliance on traditional vehicles) is that Australia's transport fleet depends almost exclusively on imported fuels. Such a reliance could place our country in a vulnerable position if imported liquid fuels were disrupted for any reason, with reserves only able to last a few weeks.

Council understands that it is also important to advocate to the State and Federal Government for approval and implementation of stricter emission standards for on-road vehicles, while lifting standards for fuel quality.

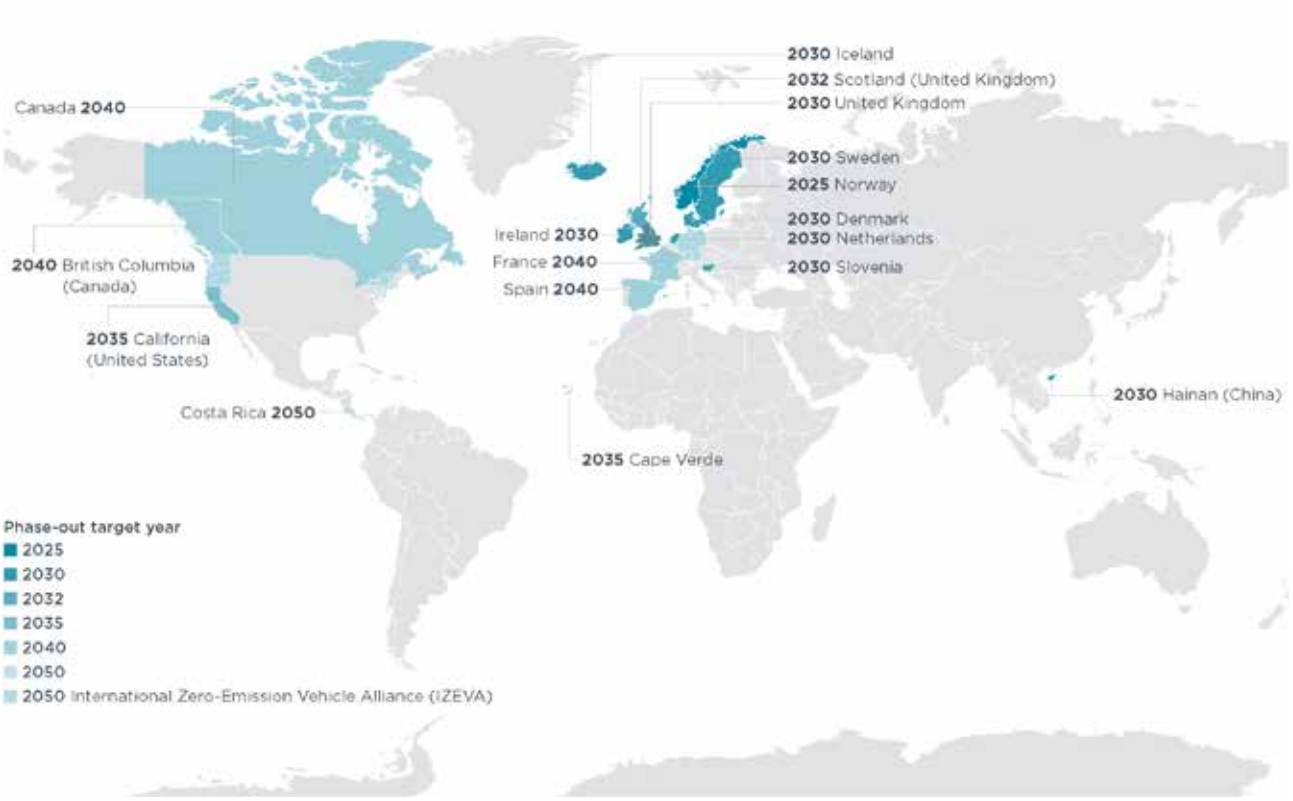
Successive delays in introducing higher standards for internal combustion engines impact the reduction of greenhouse gas emissions and current air pollution levels that are associated with health problems. Australia is regularly described as a dumping ground for dirty and less efficient vehicles when compared with stricter limits for tailpipe emissions (based on volume of carbon dioxide or grams of CO_2 per kilometre travelled) adopted overseas in countries like Japan, South Korea, United States of America and many parts of Europe.

According to its *Projections for Small-Scale Technologies* report released in 2020, CSIRO estimated a rapid adoption of EVs in Australia, reaching approximately 50 percent of new vehicle sales by 2035 and 100 percent by 2050. The same report also considered the uptake of solar and battery storage as drivers of EV uptake, reliant on support from government.

One of the reasons many projections around the world are forecasting a significant growth in EVs is due to an expectation that these vehicles will match traditional petrol vehicles on both upfront price and range by the mid-2020s, further encouraging community uptake.

7.4 ELECTRIC VEHICLES AND OTHER TECHNOLOGIES

Major traditional car manufacturers are aware of technological advances, with recent announcements revealing significant investment in EVs and fuel cell hydrogen vehicles. Figure 17 outlines how all around the world, governments have been passing legislation to ban the sale of internal combustion engine vehicles (ICEs), mostly by the 2030s.



(Figure: 17)
Source: https://theicct.org

In addition to facilitating the provision of EV charging, City of Ryde has an educational role to play in advocating for lower emissions vehicles in the community. In webinars held with the community, Council identified opportunities and promoted benefits for early adopters of emerging technologies.

When purchasing a vehicle, buyers tend to focus on the upfront capital costs. EVs are currently more expensive to buy compared to an equivalent internal combustion engine vehicle. When whole of life costs or total cost of ownership of a vehicle are considered, EVs can be a more cost-effective option, given the greater cost of running a traditionally powered vehicle.

Current policies and strategies by State and Federal Governments related to EVs and other technologies are yet to set ambitious targets for corporate fleets, offering limited incentives or subsidies to encourage community uptake. This creates a level of uncertainty, with the global auto sector viewing Australia as a small market, resulting in limited vehicle choice and not enough affordable options.

7.4.1 HYDROGEN

There has been significant media coverage, advocacy and action in recent years supporting the development of a hydrogen industry both in Australia and overseas. Hydrogen is an alternative clean energy source to help decarbonise various sectors of the economy, improving fuel security and energy storage.

The hydrogen sector is seen as promising due to its application across multiple industries and its role to provide zero emission solutions through 'green hydrogen'. However, concerns remain around production, storage, handling, transport and distribution.

The application of hydrogen technologies is technically possible for all forms of transport and can help to achieve zero emissions and air quality targets for the transport sector. Refuelling times are shorter than the charging technology currently available for battery electric vehicles. However, a key barrier is the current capital cost of producing fuel cell electric vehicles and lack of infrastructure supporting their use.

Fuel cell technology using hydrogen is particularly promising for the energy and heavy vehicle transportation sectors, but less so for light passenger vehicles. The number of hydrogen-powered vehicle models in Australia is limited and the few existing hydrogen plants in Australia are still trial projects. Potential production of 'green hydrogen' in the near future will initially be utilised to power homes.

City of Ryde has been closely monitoring the emergence of a hydrogen industry, including CSIRO's National Hydrogen Roadmap and investment strategies being led by the Federal Government. More recently, City of Ryde has been monitoring the State Government's Net Zero Industry and Innovation Program which aims to support and partner with industry to reduce emissions and help NSW businesses prosper in a low carbon world, including future investments in green hydrogen projects and hubs.

Priority Areas:

Actions	Responsibilities	Timing
Develop new policy and guidelines to set the framework for the installation of EV charging infrastructure across City of Ryde	Environment	2021 - 2022
Monitor usage and uptake of EV charging stations owned or managed by Council to inform potential future rollouts for community use	Environment	2021 - 2024
Educate the community about lower and zero emission vehicle technologies and their role in helping reduce emissions	Environment	Ongoing
Advocate for Federal and State Governments to implement stricter emission standards for on-road vehicles, lift standards for fuel efficiency, and introduce incentives and subsidies for community uptake of EVs and other technologies aimed at reducing emissions	Environment	2021 - 2024
Monitor the emerging hydrogen fuel market for opportunities suitable for Council's operations and community scale, following broader legislative adoption and support to assist uptake	Environment	2021 onwards

7.4.2 DECARBONISATION OF COUNCIL'S FLEET

City of Ryde is committed to transitioning its fleet operations to lower and zero emissions technologies as a key element in assisting with Council's commitment to achieve Net Zero emissions before 2050.

In April 2020, Council introduced two fully EVs and accompanying solar-powered charging stations to its fleet operations. In 2021, at least two public EV charging stations for community use will be completed. These represent the first steps in transitioning away from petrol-only cars, while encouraging the community to adopt clean technologies that can help reduce our City's carbon footprint.

Council is also working to develop an understanding of what current vehicle emissions under a 'business as usual' scenario would look like. Comprehensive fleet scenario planning will be undertaken for 2030, 2040 and 2050 timeframes, seeking to set achievable fleet emission reduction targets. This will involve numerous considerations that expand from cost implications of charging infrastructure required for financial planning and feasibility analysis.

Many of the State Government's planning priorities and actions relate to the decarbonisation of fleet operations and mitigation of climate change.

Similarly, existing Council policies also propose further actions aimed at transitioning to low emission transport. This includes the delivery of trial programs to evaluate EV charging stations at key locations in the LGA, powered by renewable energy.

Leading by example, City of Ryde will encourage and assist the community to follow the same path. One of the benefits of government transitioning to lower carbon vehicles is the creation of a second-hand market for EVs that are more affordable for the broader community.

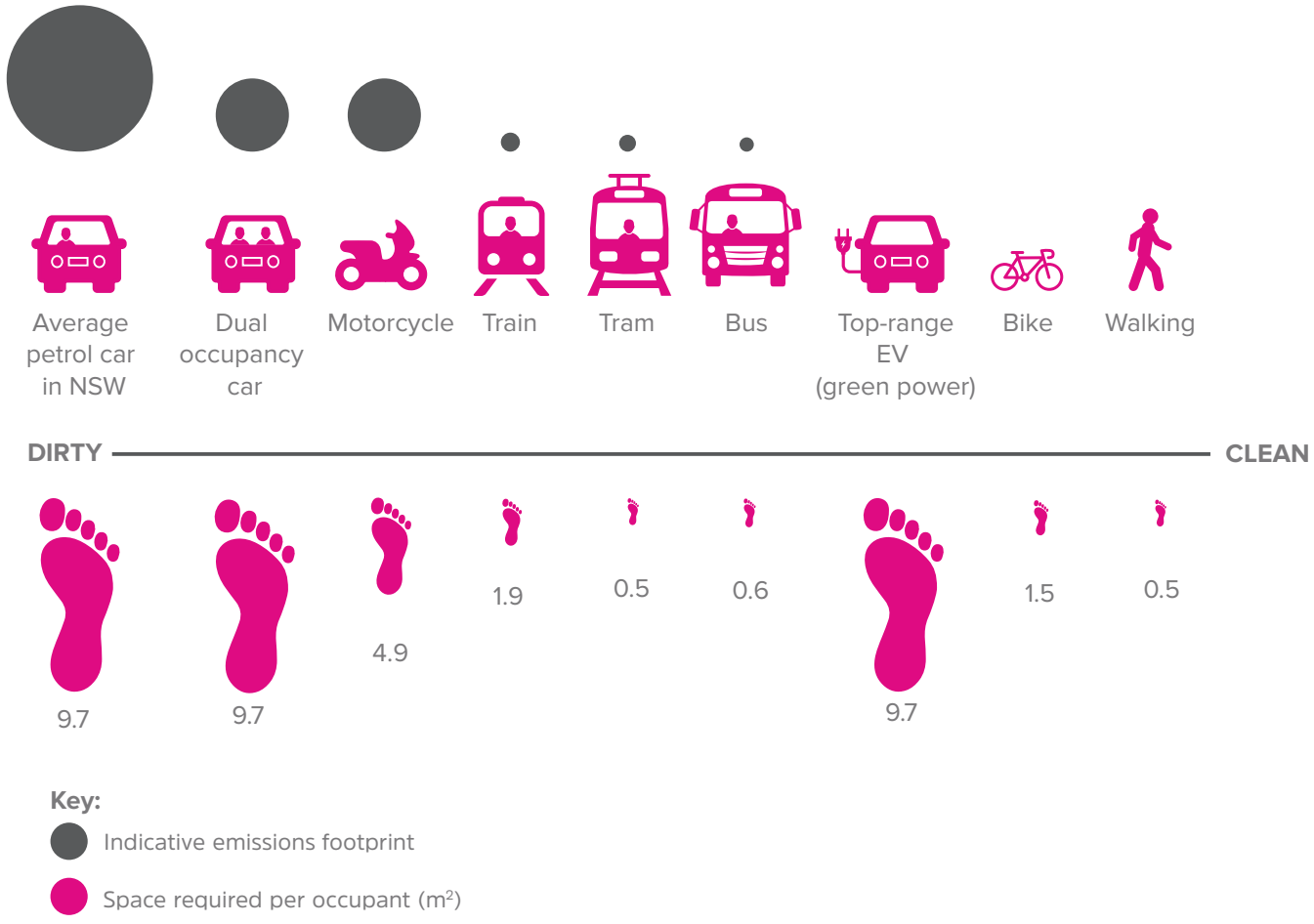
Priority Areas:

Actions	Responsibilities	Timing
Develop a Net Zero Emissions for City of Ryde that include targets for decarbonising Council's vehicle fleet	Environment (lead) with Fleet Operations	2021 - 2023
Investigate opportunities to trial the transition of Council-owned high-use passenger vehicles and heavy vehicles to low and zero emission options	Environment (lead) with Fleet Operations	2021 onwards
Review and update Council's fleet policies and list of fit-for-purpose vehicles to reflect emissions reduction targets	Environment (lead) with Fleet Operations	2021 - 2024
Monitor the performance of Council-owned EVs and produce a comparison report on their operating costs against equivalent petrol and diesel vehicles	Environment (lead) with Fleet Operations	2021 onwards

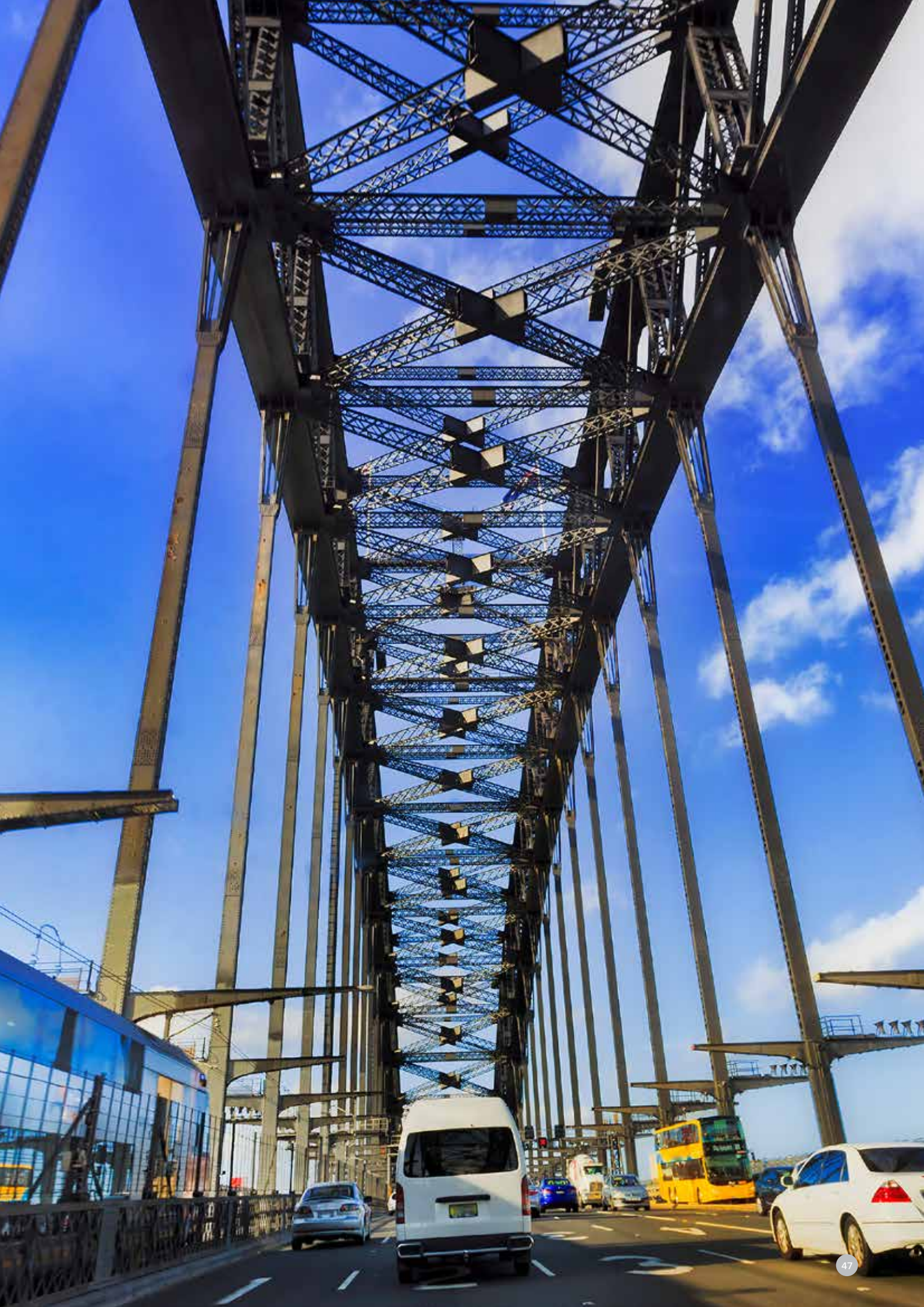
7.5 PRIVATE CAR USE

One avenue to reduce private car use and assist the community to increase the use of sustainable modes of travel is to strengthen the alignment between land use and transport planning, ensuring new homes are located near public transport connections and served by active transport links. If people, particularly the elderly, don't need to walk far from their homes to access public transport they are more likely to use sustainable alternatives.

Figure 18 shows the environmental impact of our transport system, indicating how and why it is important to move away from present levels of private car usage



(Figure 18)
Source: Concept from City of Melbourne, Transport Strategy 2030



7.5 PRIVATE CAR USE

Another opportunity to reduce private car use is through creating greater awareness of the cost advantages of using sustainable transport when compared to the real cost and standing charges associated with owning a private vehicle, particularly when underutilised. Data shows that cars are the most expensive mode of travel when compared to alternatives such as public and active transport.

Beyond the purchase price of a vehicle, the following costs also need to be considered for a fully informed decision and can influence the actual cost to customers over time:

- Fuel
- Registration and licensing
- Insurance
- Maintenance costs and servicing
- Roadside assistance
- Car loan costs
- Toll road costs
- Depreciation

One policy intervention could be for Australia to adopt a standard on fuel efficiency and targets to regulate the environmental footprint of the transport industry. Currently, Australia is one of the only developed nations not to have adopted such standards. This is one of the contributing reasons to Australian vehicles emitting more greenhouse gas pollution per kilometre than many other developed countries.

Priority Areas:

Actions	Responsibilities	Timing
Educate community on opportunities and benefits of reducing current levels of private car ownership and single occupancy vehicle trips	Environment (lead) with Transport	2022 onwards

8 GREEN TRAVEL PLANS FOR MAJOR DEVELOPMENTS

Under Council's current development planning controls, Green Travel Plans (GTPs) are required for all new developments that exceed 10,000 square metres of new floor space, or any development that Council believes has the potential to generate significant traffic and transport impacts.

A Green Travel Plan is a site-specific plan designed to reduce the impact of a development by managing travel demands and maximising the use of sustainable modes of travel.

A GTP is a site-specific plan designed to reduce the impact of a development by managing travel demands and maximising the use of sustainable modes of travel.

GTP address local travel issues around the development site and encourage the uptake of walking, cycling, public transport, car sharing and car-pooling. GTPs aim to reduce dependency on private cars and the need for parking in areas with public transport options.

The benefits of GTPs are expected to have ongoing benefits for employers, employees, residents, businesses and the wider community, beyond the specific site for which the plan was developed. It contributes to a positive built environment and better land use planning outcomes, with some of the benefits including:

(Figure 20)
Source: *City of Ryde Travel Plan Guidelines 2015*

8 GREEN TRAVEL PLANS FOR MAJOR DEVELOPMENTS

The *City of Ryde Travel Plan Guidelines 2015* outline the requirements for the preparation of GTPs that are submitted by development applicants for Council approval during the development application process. Successful GTPs require effective implementation following the occupation of new buildings, ongoing assessment, monitoring and review.

Development applicants are required to comply with the implementation of GTPs, which upon occupation of the building is then transferred over to the nominated travel plan coordinator for implementation.

Every new development is responsible for maximising its contribution to creating a more liveable and sustainable environment for the broader community within its area, including existing and future residents, workers and visitors. This principle reflects an integrated approach to land use and transport planning, providing a more sustainable way for people to travel to and from City of Ryde.

Priority Areas:

Actions	Responsibilities	Timing
Review and update *City of Ryde Travel Plan Guidelines 2015* to increase the influence of sustainable transport objectives, ensuring developer's compliance	Environment	2021 - 2023
Provide ongoing review of GTPs submitted as part of development assessment processes, ensuring the best sustainable transport outcomes for new developments and the neighbourhood	Environment	Ongoing

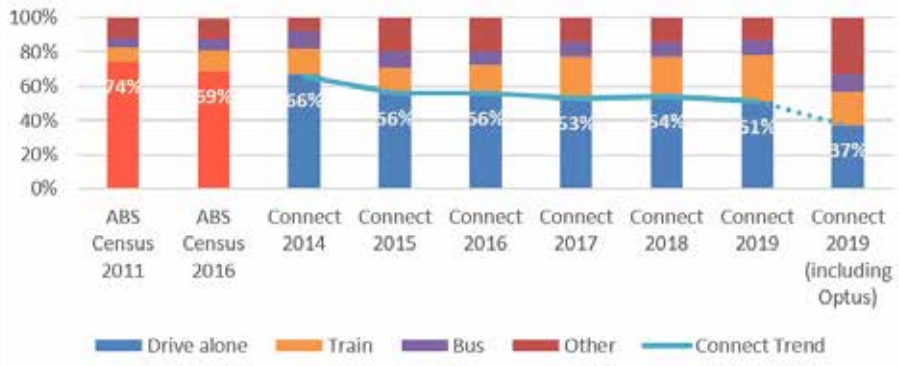
9 CASE STUDY: SUSTAINABLE TRANSPORT IN MACQUARIE PARK

Macquarie Park and North Ryde are home to one of Australia's most congested roads. Leading employers have identified congestion as a significant potential barrier to increased growth and productivity.

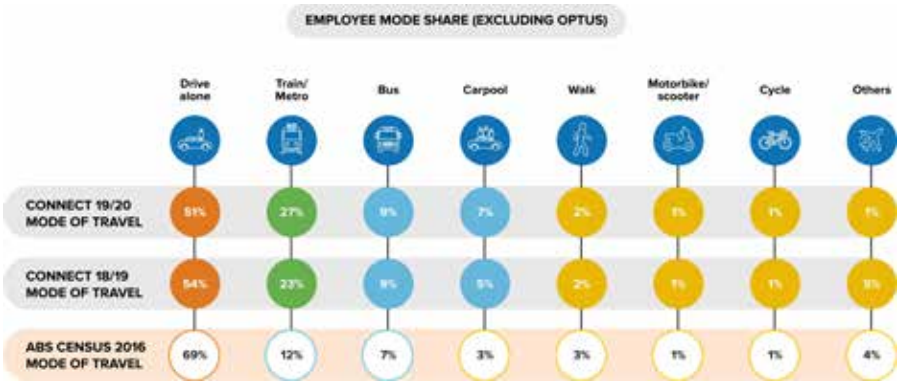
Local organisation Connect Macquarie Park & North Ryde is a unique partnership in Australia, bringing together leading landowners and workplaces with State and Local Government to grow Macquarie Park, without increasing congestion. City of Ryde is a key supporter of the group, along with several committed business partners.

Connect helps employers boost their flexible and remote work culture, and encourages landowners and government to improve accessibility, adopting more sustainable alternatives.

Using ongoing travel surveys to measure impact in Macquarie Park, Connect's members are having an impact. They have reduced their drive alone rate on a steady basis. When including the impact of the biggest local employer, Optus, Connect's members drive alone rate is a low 37 percent compared to the area average of 69 percent. (2016 ABS Census).



(Figure 21)
Source: Connect Macquarie



(Figure 22)
Source: Connect Macquarie

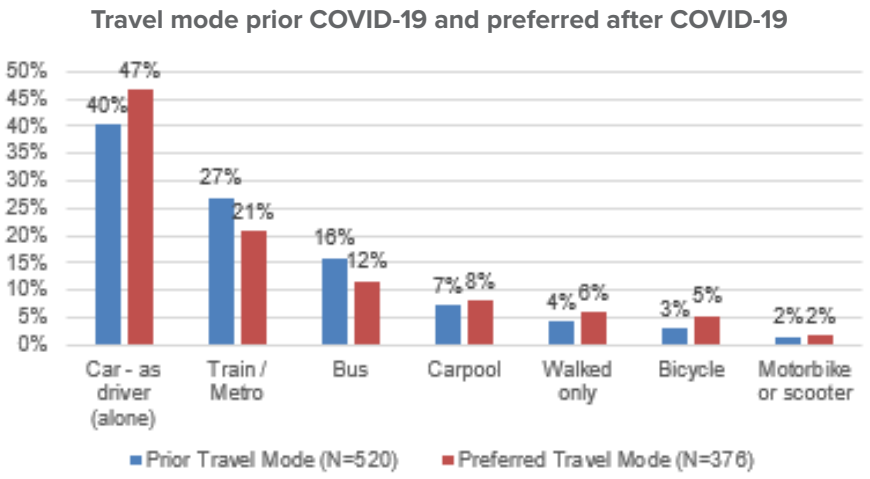
The insights and data that inform the present case study have been published by Connect Macquarie in September 2020 as part of their report *Finding the path forward: Measuring the impact of COVID-19 on work and travel in Macquarie Park*. Further information and updates are available for download at **www.connectmacpark.com/business.**

9 CASE STUDY: SUSTAINABLE TRANSPORT IN MACQUARIE PARK

Across Connect's members, more employees are using the train, bus and carpooling. Almost half of Connect's member employees commute in a more sustainable way than by traditional single car passenger trips daily.

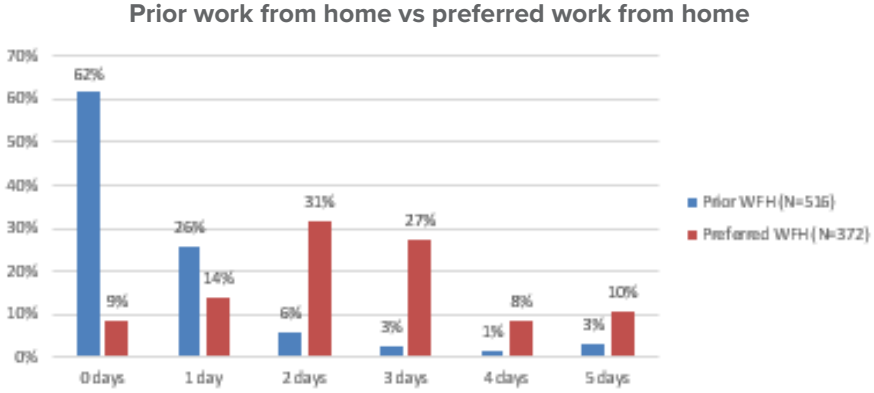
Connect measured the impact of COVID-19 on employee behaviour in Macquarie Park between April and June 2020, collecting insights into how the area and travel behaviour changed during this exceptional time.

As expected, employee's concerns about the pandemic did change travel behaviour. Employees indicated they intend to drive, walk or cycle more when they return to the workplace, and will use public transport less. This is expected to change over time as the impacts of the global pandemic lessen and people realise that public transport services are not necessarily unsafe.



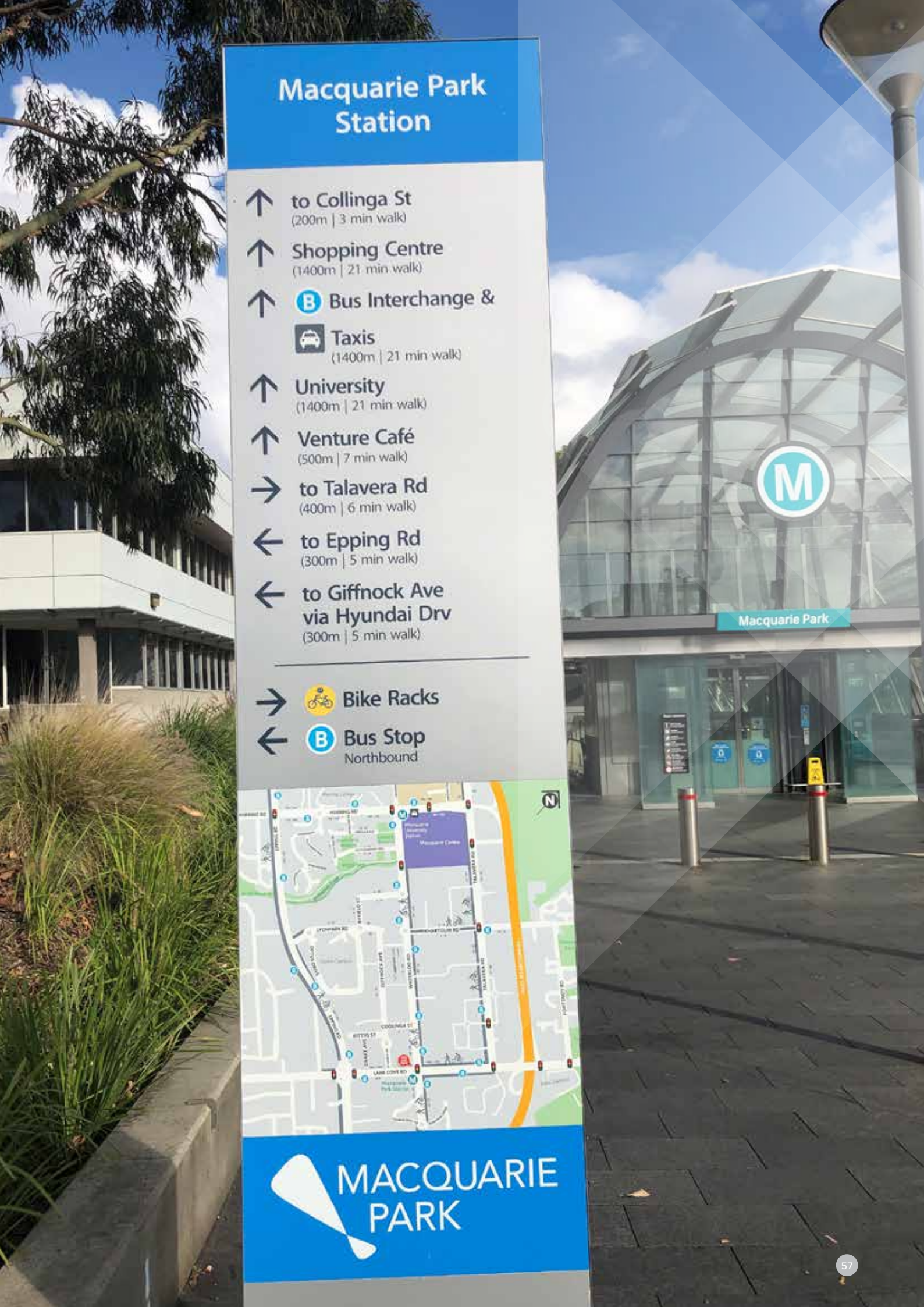
(Figure 23)

Despite many workplaces having work from home policies, employees in Macquarie Park – including non-members – told Connect that they never or only rarely worked from home prior to the pandemic. It is anticipated that working from home arrangements will remain as a preferred option for many as technology has demonstrated the ability for many workers to do so successfully.



(Figure 24)

Employees told Connect that after the pandemic, and based on their recent experience, they would like to continue working remotely two or three days a week. Workers under the age of 25 told Connect they would prefer to work from home less than their older counterparts.


Macquarie Park Station
to Collinga St
(200m | 3 min walk)
Shopping Centre
(1400m | 21 min walk)
Bus Interchange &
Taxis
(1400m | 21 min walk)
University
(1400m | 21 min walk)
Venture Café
(500m | 7 min walk)
to Talavera Rd
(400m | 6 min walk)
to Epping Rd
(300m | 5 min walk)
to Giffnock Ave
via Hyundai Drv
(300m | 5 min walk)
Bike Racks
Bus Stop
Northbound
MACQUARIE PARK
Macquarie Park

10 THE FUTURE OF SUSTAINABLE TRANSPORT

The future of urban transportation will likely be mobility-friendly networks where cars are just one element. As people slowly move away from personally owned vehicles, models of a multimodal future of on-demand driverless vehicles, ride-sharing and seamless public transit, all powered by clean energy sources, will gather momentum. In this future, motorised vehicles will be shared and will have zero emissions, improving the air quality and long-term health of citizens.

Walking and cycling (including electric devices) will grow in importance as a viable transport mode with the associated benefits to health, environment and the economy. The full impacts of COVID-19 are uncertain in relation to transportation but are expected to have a lasting effect on the way we travel, with focus on more local travel.

It is also expected that the fastest and most convenient modes of transport for local trips will range from walking, riding bikes or electric scooters, to transit services that take advantage of priority lanes.

In tomorrow's city, it is likely that most destinations within urban areas will be accessible without a private car. City streets will be redesigned to be less accommodating of cars, with fewer unrestricted parking spaces, more short term and paid parking. Road infrastructure will be adjusted to accommodate bikes, scooters and priority vehicles.

A smart, multimodal transportation platform will enable travellers to seamlessly compare cost, route, and schedules of different transport services, and pay for it all at once, leveraging the benefits of digital connection and smart cities.

The increase of Mobility as a Service (MaaS) and the growing application of Artificial Intelligence (AI) to urban mobility, that already influence how people and goods are moved, will help to create smarter cities and continue to improve customers experience and connections in real-time. The optimisation of routes using the least congested routes will help reduce congestion, road accidents and emissions.

10 THE FUTURE OF SUSTAINABLE TRANSPORT

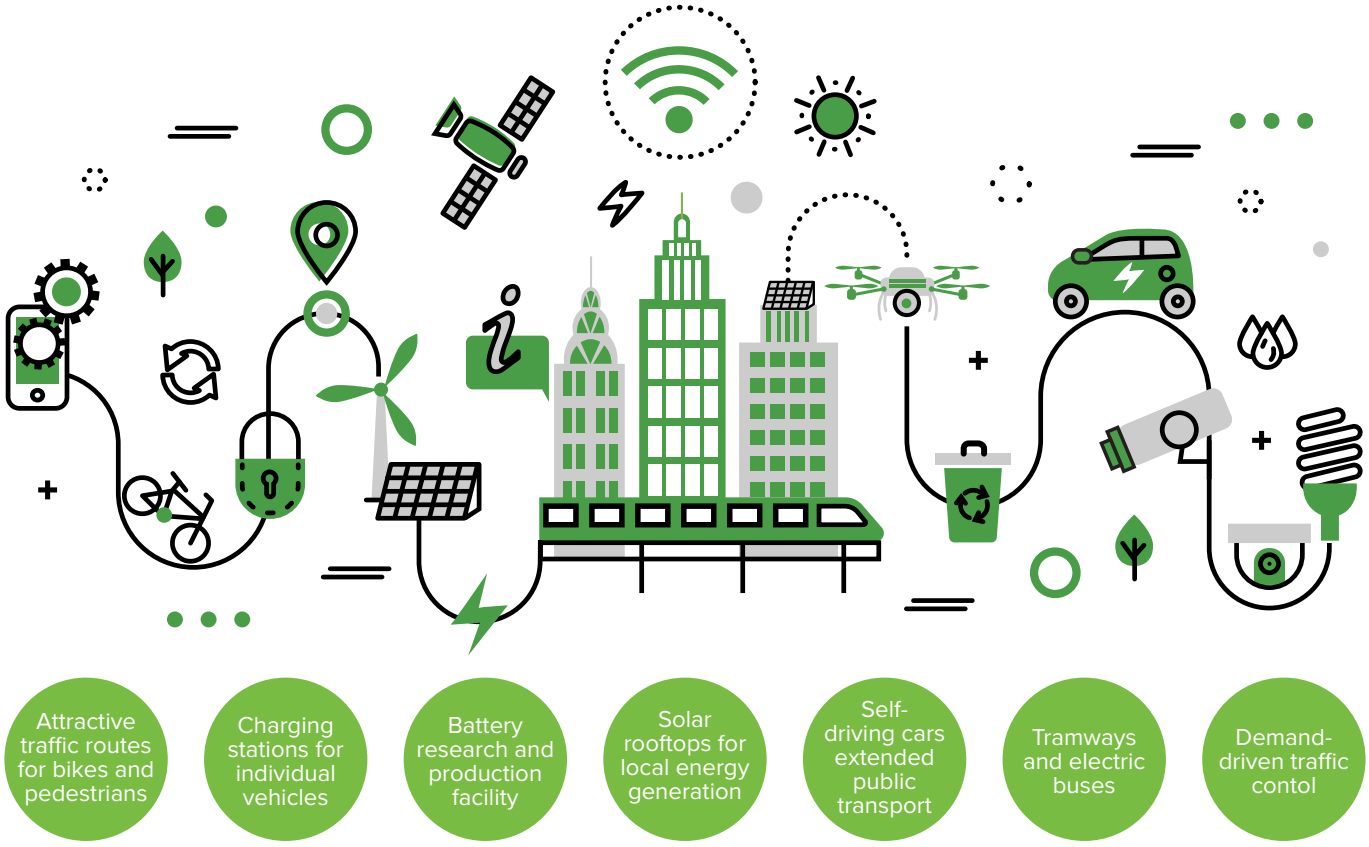
According to the State Government's *Future Transport Strategy 2056*, the infrastructure network comprising physical corridors, roads, rail systems and surrounding land uses represent the 'backbone' upon which technology and services operate. To meet future challenges, network development must be flexible and embed future optionality, maximise capacity and re-use of assets, and support innovative service and technology provision.

There are currently a significant number of new technologies being tested, both locally and internationally. From flying cars to delivery drones to connected and automated vehicle and other emerging technologies that offer a wide range of alternatives for our current transport system. Council's role will be to welcome and facilitate innovation by continuously considering new technologies as they become available. By adapting technologies to the context and needs of our community, everyone can benefit from a more integrated and sustainable transport system.

AI has been advancing quickly and has great potential, if utilised responsibly, to drive positive change. It has many strategic uses such as providing more accurate data on transport emissions (from real traffic activity data), developing key smart mobility initiatives (autonomous vehicles), and delivering multiple benefits through MaaS.

MaaS technologies can improve trip planning, and improve customer experience while limiting congestion. AI relates to a machine's ability to simulate the human mind by interpreting data it receives from its environment, learning from experience and using that learning to successfully complete tasks.

Many of these future transport trends are reliant upon increased collaboration between all levels of government and community. City of Ryde is committed to delivering the priority areas identified in this strategy with focus on developing a smarter, cleaner, safer, better connected and accessible transport network as illustrated in Figure 25 below.



(Figure 25)
Accessible transport network

Priority Areas:

Actions	Responsibilities	Timing
Investigate and facilitate the implementation of innovative solutions related to smart cities technologies to improve urban mobility across City of Ryde	Environment with Transport	2022 onwards

11 IMPLEMENTATION AND MONITORING

This strategy is intended to be a 'living document' that will guide City of Ryde's activities and priorities aimed at increasing sustainable transport. It is to be regularly monitored, reviewed and updated through Council's corporate reporting process.

Ongoing monitoring will confirm the effectiveness of the strategic directions identified, record the overall success of the actions implemented, and highlight technology advances. A review of this strategy shall be conducted every three years from its release by Council.

Each review shall assess progress towards the proposed strategic directions and priority areas identified, including the following:

- Details of the directions/actions implemented since the last review
- An assessment of whether actions have been successful, along with the identification of challenges met along the way
- A summary of future directions/ initiatives to be undertaken or other changes required to meet the overall key outcomes proposed.

Council acknowledges that implementation of the directions and actions contained in this strategy provides significant opportunities to improve the efficiency, convenience, reliability and safety of sustainable transport modes. To ensure this strategy remains responsive to community needs, Council will engage with community for feedback and incorporate improvement opportunities into future reviews as relevant.

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City of Ryde

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