

## ITEM 2 PUBLIC EXHIBITION - WOLLONGONG INTEGRATED TRANSPORT STRATEGY

The Wollongong Integrated Transport Strategy allows Council to set the vision and direction for sustainable transport options that meet the Community's expectations to enable economic development and job creation, limit congestion and environmental impacts, and maintain the quality of life of our community.

This report seeks Council's endorsement for the public exhibition of the draft Wollongong Integrated Transport Strategy.

### RECOMMENDATION

- 1 The draft Wollongong Integrated Transport Strategy be endorsed for public exhibition for a minimum period of 28 days.
- 2 Following public exhibition, a report on submissions and recommendations be presented to Council for consideration and finalisation of the Wollongong Integrated Transport Strategy.

### REPORT AUTHORISATIONS

Report of: Nathan McBriarty, Manager Infrastructure Strategy + Planning (Acting)  
Authorised by: Joanne Page, Director Infrastructure + Works

### ATTACHMENTS

- 1 Wollongong Integrated Transport Strategy (draft)

### BACKGROUND

The transport network across the Wollongong Local Government Area (LGA) is a complex system that provides connectivity between the wide breadth of land uses across the city, and accommodates several modes of transport. Council manages most of the transport network (by length) across the City, in its role as the local road authority network. Public transport services and state road management is the responsibility of State Government agency, Transport for NSW. Working collaboratively between Council, State, and the private sector we aim to deliver a cohesive and legible transport system to move people, goods, and services.

To date, transport mode specific plans have been developed by Council to facilitate the management of several components of this transport system including:

- Wollongong Cycling Strategy 2030,
- City of Wollongong Pedestrian Plan,
- Precinct-based plans,
- Town Centre Masterplans,
- Keiraville - Gwynneville Access and Movement Strategy.

The Wollongong Integrated Transport Strategy provides a single strategy to address the key modes of transport across the city and their interrelationship to support Wollongong with high degrees of mobility as the population of the City grows.

Our Wollongong Our Future 2032 Community Strategic Plan includes six community goals which provide direction for the work Council does. Goal six is that we have accessible and affordable transport. A strategy to directly support this goal by providing a framework to manage the transport network across our city is needed to shape Council's role in managing the local road network, and to align with transport infrastructure and services provided by the NSW government. The Integrated Transport Strategy (ITS) will provide this framework and a platform for Council to advocate for the provision of services and infrastructure upgrades that will support the City's growth and day-to-day lives of the Wollongong community.

In 2023, Council engaged transport consultants Urbis Ltd to develop an Integrated Transport Strategy for Wollongong.

Council is currently preparing a draft Wollongong City Centre Movement and Place Plan, which is scheduled to be presented to Council for endorsement for public exhibition in May 2024. This plan aims to:

- Recognise that some transport facilities are about movement, and others are about the place,
- Identify how our current road environment will be respond to our forecast population and jobs growth in the city,
- Identify proposed changes to the road environment to respond and enable the City's growth,
- Recognise that streets can act as places and serve multiple modes of transport.

## PROPOSAL

The draft ITS has been developed using current best practice approaches to transport planning, guided by significant consultation with key stakeholders. The strategy incorporates a new approach to planning transport networks called the 'vision and validate' approach, in contrast to a traditional 'predict and provide' approach. Historically, transport networks have been planned by predicting future needs and subsequently providing transport infrastructure, mainly road based, to meet these predicted needs. This has largely resulted in a transport network that facilitates private motor vehicle use to a higher standard than sustainable transport modes including walking, bike riding and public transport. Road space is limited, and it is a complex balancing act to consider all modes of transport to accommodate people on their journeys, while providing options on how they wish to travel.

The consultant's work was undertaken across the 3 stages.

Stage 1 centred on establishing the existing challenges for our transport network and the establishment of a future vision. This stage was facilitated using the vision and validate approach. Relevant data and background documents were reviewed and analysed to establish current transport challenges and opportunities. Findings were then used to facilitate conversations with a broad range of key stakeholders at workshops to:

- refine a list of transport challenges,
- develop a vision, principles, and a list of goals to deliver the vision.

Stage 2 of the project focused on potential future scenarios to consider how the transport system may operate if we continue along the current trajectory. Then further analysis was undertaken to understand how we can move towards a preferred scenario, in line with the Vision established during Stage 1. Forecasts associated with a 'business-as-usual' scenario in 2041 indicate significant increases in car travel with:

- a 22% increase in vehicle kilometres travelled in the AM peak, representing an annual environmental cost of some \$48M to the community.
- 13% more car trips in the City Centre in the AM peak (13,000 more car trips).
- 38% more car trips from the West Dapto (3,800 more car trips)

These additional demands on the road network are predicted to increase delays across the LGA by 21% which means longer and less predictable journeys across the city. This analysis was used for the Preferred Way Forward Workshop with key stakeholders, which set out a range of potential responses before a preferred future scenario was developed.

Stage 3 involved the iteration and refinement of the draft strategy document, with additional detail added through mapping of key steps to achieve success and determination of time-bound strategies and actions, to achieve the vision.

## Integrated Transport Strategy Vision, Principles and Goals

The Vision put forward in the ITS is that:

*Wollongong is a liveable and sustainable city where everyone has viable transport choices for connected journeys through Country that are safe, reliable, and accessible.*

The following principles were identified to help guide the development of goals for the ITS:

- *Connecting to Country and Place.*
- *Sustainability-focused.*
- *Multi-modal transport options for all.*
- *Integrated land use and transport decisions.*
- *Work with the community for change.*
- *Comfortable and convenient active travel.*

The following six goals are nominated in the ITS to deliver the Vision:

#### *1. Competitive Public Transport*

For most of the community, public transport does not provide an attractive option for travel as it is generally infrequent and is significantly slower than a private vehicle. More public transport use will be important in the future to make more efficient use of available road space, enhance transport equity and reduce road infrastructure costs.

#### *2. Everyday needs within 15 minutes*

Everyone in Wollongong should have access to services and amenities locally. This goal supports the approach that everyday services and amenities are within a 15-minute walk or bike ride from people's homes. Efficient journeys improve the quality of urban life by reducing travel time, promoting active travel, strengthening local economies, enhancing social connections, reducing environmental impact, and improving public spaces.

#### *3. Sustainable Transport Options*

Wollongong has the potential to build on its existing walking, bike riding and public transport assets to evolve beyond an often car-centric culture, into a more sustainable future. While cars offer convenience, a person travelling in a car requires significantly more land for transportation, than a person travelling in any other mode of transport. As communities grow, we need to support multiple transport options for people to move around. This transition not only promises reduced living costs for many, but it also heralds a healthier, greener future as residents embrace communal and active transit options.

#### *4. All ages and abilities can get around with ease*

This goal relates to designing transport systems to consider the needs of vulnerable people including the elderly, children and people living with disability. Critical infrastructure should be designed or upgraded to reflect the latest standards that support and provide optimal outcomes for all community members.

#### *5. Increase use of active modes*

While surveys show significant use of the existing bike riding routes for recreation in our city, bike riding to work or for minor shopping and social trips is limited. Increasing bike riding and walking for non-recreational trips will reduce congestion on our roads and support the physical health and mental well-being of our communities.

#### *6. A connection to Country and sense of place*

We acknowledge the Traditional Custodians of the land on which this city is built, Dharawal Country. We recognise and appreciate their deep connection to this land, waters and the greater community. Their history and knowledge of country is an important factor in developing the future of Wollongong's transport network. An important step to reconciliation is understanding and listening to the needs of traditional owners. New transport projects will build knowledge, acknowledge and appropriately recognise the traditional routes used by the Traditional custodians through Dharawal country.

The draft ITS contains an action plan to achieve the six identified goals. As the transport network includes key modes of transport and infrastructure not managed by Council, there are various actions that will need to be led by the state government with the support of Council and in some cases with federal government support. Each action has an associated time horizon either in the short term (0-2 years), medium term (3-5 years) or long term (5 to 10 years), which may support one or more modes of transport as noted in the Action Plan.

### **Public Exhibition**

It is proposed that the attached draft ITS is placed on public exhibition for a minimum period of 28 days. Following this period, all submissions received will be reviewed and where appropriate used to refine the strategy to a final draft version that will be reported to Council for endorsement.

### **Implementation**

Delivery of the actions recommended in this strategy will be carried out in several ways including but not limited to:

- establishment of operational projects through Council's business proposals process,
- changes in business practises related to transport infrastructure and services,
- amendments to planning policy documents including development control plans as part of review processes,
- upgrades to current infrastructure for inclusion in future infrastructure delivery programs,
- identification of new projects for inclusion in future infrastructure delivery programs,
- advocacy by Council through multiple channels of engagement between local, state, and federal levels of government.

## **CONSULTATION AND COMMUNICATION**

The draft ITS incorporated the community's views on the transport network were collated from previous Community Engagement activities from a range of Council's Supporting documents including:

- Our Wollongong, Our Future 2032 – Community Strategic Plan,
- A City for People, our vision for Wollongong City Centre,
- Wollongong Cycling Strategy 2030,
- City of Wollongong Pedestrian Plan,
- Walking and Cycling participation survey,
- Town centre masterplans
- biannual Community Survey results.

In addition, consultation was carried out with a broad range of stakeholders at two face-to-face workshops. Some 40 attendees were present at each workshop with representatives from Council, various NSW Government agencies, Shellharbour Council, transport operators, service authorities, private industry, education institutions, advocacy groups, user groups and Council's Walking, Cycling and Mobility Reference Group. Workshops were also carried out with representatives from the neighbourhood forums online and in person.

Broad community consultation on the draft ITS document is proposed to occur over a minimum period of 28 days. All stakeholders previously involved in the workshops will be contacted during this exhibition period.

## **ROLES AND RESPONSIBILITIES**

The roles and responsibilities to deliver on the Top Moves identified in the draft Integrated Transport Strategy are summarised in the table below.



Top Moves from the ITS	Responsible (Lead) Agency	Council's role
Develop a public transport service plan that has high service standards including route coverage, frequency, travel time, journey time and reliability on priority corridors.	Transport for NSW	Advocacy to NSW Government
More on-road bus priority for more competitive bus travel times.	Transport for NSW	Advocacy to NSW Government
Investigate and prepare a feasibility study for high quality, high frequency transport (rapid transport)	Transport for NSW	Advocacy to NSW Government
Delivery of the South-West Illawarra Rail Link (SWIRL) for passenger and freight to support connections to Western Sydney.	Transport for NSW	Advocacy to expand to include passenger connections
Assess and upgrade bridges along M1 to support oversize and overweight loads to and from the Port	Transport for NSW	Advocacy and support on economic benefits
Build knowledge and acknowledge the traditional routes of the Dharawal people and develop a plan of how the routes may be appropriately recognised to honour this history through signage, information and art.	Council	Develop a plan to inform infrastructure
Enhanced 15-minute walking and bike riding infrastructure town centres.	Council	Inclusion of priority infrastructure in future IDPs and grant applications.
Pedestrian-focused town centres, including connections to train stations.	Council	Inclusion of priority infrastructure in future IDPs and grant applications.
Develop a public domain planting guide to support walking and cycling to reduce urban heat island effect. Integrate this guide into the Urban Greening Strategy.	Council	Update of Council's public domain guideline.
Implement 30 km/h speed limits within school zones and in town centres.	Transport for NSW – speed zone	Inclusion of priority infrastructure in future IDPs and grant applications.
	Council – infrastructure and Safety Routes to School program to support the changes.	Council's Safety Routes to School program developed in consultation with each school.
Creating Park Streets by retrofitting micro-parks into road space and allowing access for active transport only.	Council	Update of Council's public domain guideline.
Developing a kerbside use framework that continues and expands the use of parklets, wider footpaths and planting, while balancing parking and loading.	Council	Update of Council's public domain guideline.

Top Moves from the ITS	Responsible (Lead) Agency	Council's role
Car light tourism including an emphasis on cycle-tourism taking advantage of routes with train station access and coastal highlights.	Council	Advocacy for major cycle-tourism events  Develop guidelines for Green Transport Plans
Road environment changes can be trialled through tactical urbanism projects that can make temporary changes and test approaches to inform future infrastructure spending and engage with community.	Council	Inclusion of priority infrastructure in future IDPs and grant applications

## PLANNING AND POLICY IMPACT

This report contributes to the delivery of Goal 6 from 'Our Wollongong, Our Future 2032 – Community Strategic Plan' *We have affordable and accessible transport* and is aligned with the following strategies to achieve this Goal:

- 6.1 Plan for the delivery of multi-modal public transport together with sustainable transport modes such as the Gong Shuttle, walking and cycling to meet the community's needs.
- 6.2 Wollongong continues to build infrastructure and programs to fulfil its role as a UCI Bike city.
- 6.3 Effective and integrated regional transport with a focus on road, bus, rail and freight movement (including the port of Port Kembla).
- 6.4 Plan and provide sustainable infrastructure for safe and liveable places integrated with the environment and accessible to key transport routes.
- 6.5 Advocate for strong transport links within the Local Government Area and connections to Sydney, the South Coast, and the Southern Highlands to provide physical and economic opportunities.
- 6.6 Improve active transport links and connectivity to our unique places and spaces, including marine access along the Local Government Area and accessibility from the Central Business District to the foreshore.
- 6.8 Community transport options for frail older people, people with disabilities and the transport disadvantaged are actively promoted and available.

## SUSTAINABILITY IMPLICATIONS

The Vision for the transport network across Wollongong and its supporting goals and strategies in the draft Wollongong Integrated Transport Strategy aim to:

- increase the attractiveness and utilisation of sustainable transport modes including public transport, walking, and cycling.
- reduce the use of motor vehicles for commuting and short trips, which will reduce carbon emissions and noise pollution.

The draft ITS recognises our streets as places for people to live, work and play, not just as connections for movement. The ITS supports Council's *Urban Greening Strategy* by providing more shade trees on our transport network to make it more attractive for walking, cycling, and staying activities and contribute to Council's climate change mitigation targets.

## RISK MANAGEMENT

There will be significant environmental, social, and economic risks associated with not transitioning our transport network to sustainable transport modes in the near future. Maintaining a business-as-usual approach to the management of the transport network will result in increased congestion on our roads, longer and less predictable journeys and higher costs for road infrastructure.

Without an integrated transport strategy that addresses all key modes of transport, there is a risk of misalignment between Council's transport network and the NSW Government transport network. Achieving the community's aspiration for accessible and affordable transport requires a transport system with a range of transport choices which requires the coordination and alignment of effort across all levels of government.

## FINANCIAL IMPLICATIONS

Various actions proposed by this strategy will be delivered as part of core business. Numerous actions recommend the delivery of infrastructure and services that require funding and / or other resourcing from state and federal governments.

Funding will be sought from ongoing and one-off grant programs such as *Get NSW Active*, *Safer Roads Program* and *Black Spot Program* for Council led actions, where support is required from other levels of government. Actions proposed to be led by the NSW Government will be funded externally.

Actions relating to new or upgraded infrastructure on Council's local road network can be addressed by including specifications in Council's Asset Management Plan and as part of project identification and scoping within existing infrastructure delivery program areas. For example, specifying wider shared paths in areas of elevated demand.

## CONCLUSION

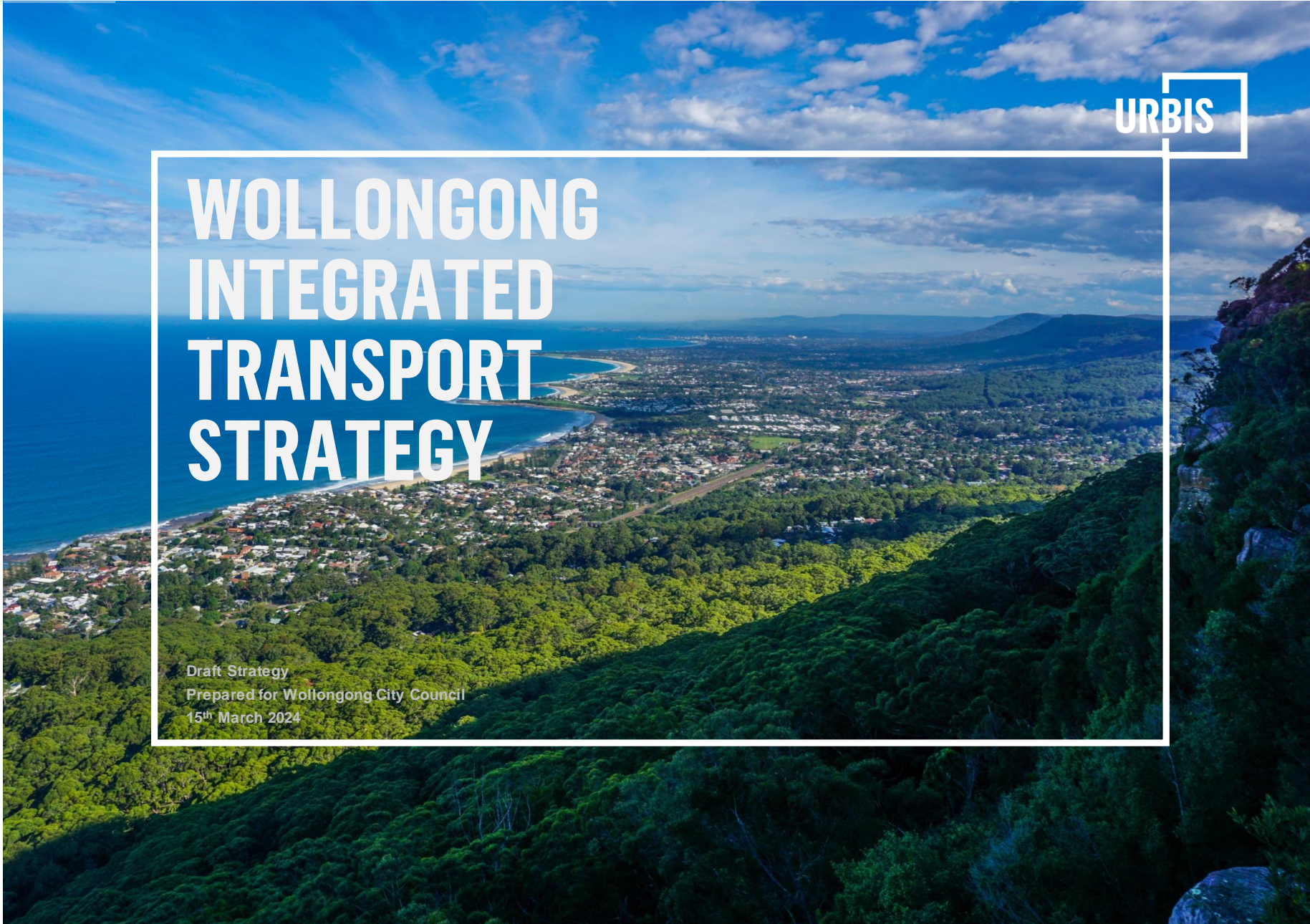
The Wollongong Integrated Transport Strategy provides an overarching framework for transport planning and initiatives across the Wollongong Local Government Area.

The Strategy will create strategic alignment and a cohesive approach for the transport network to meet the Community's expectations to:

- enable efficient, accessible, and sustainable movement,
- facilitates economic development and job creation,
- enables future land use growth and activity,
- create purposefully and directed transport infrastructure delivery and budgets considering movement and place,
- optimise on how we invest in our transport infrastructure and advocate for State and Federal funding,
- support future Council operational plans to seek continual improvement of the urban environment,
- promote multi-modal transport and transport innovation,
- sustain the Community's quality of life through the form and function of our streets.

This report proposes a public exhibition for the draft Wollongong Integrated Transport Strategy to allow for community and stakeholder input to shape the framework for achieving their Goal for affordable and accessible transport.





URBIS

# WOLLONGONG INTEGRATED TRANSPORT STRATEGY

Draft Strategy  
Prepared for Wollongong City Council  
15<sup>th</sup> March 2024



# ACKNOWLEDGMENT OF COUNTRY

**We acknowledge the Traditional Custodians of the land on which this city is built, Dharawal Country. We recognise and appreciate their deep connection to this land, waters and the greater community. We pay respect to Elders past and present and extend our respect to all Aboriginal and Torres Strait Islander people who call this city home.**



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Urbis has made all reasonable inquiries that it believes is necessary in preparing this report but it cannot be certain that all information material to the preparation of this report has been provided to it as there may be information that is not publicly available at the time of its inquiry.

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For this project Urbis was assisted by  
**Movement & Place Consultants, VLC and TMA.**



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# EXECUTIVE SUMMARY

## WHY DO AN INTEGRATED TRANSPORT STRATEGY?

- 1 **The Wollongong region is growing.** Council should take the lead on facilitating sustainable transport options to enable economic development and job creation while limiting congesting, sustaining quality of life and minimising environmental impacts.
- 2 **Better equity of access for all transport users.** This strategy looks at ways Council can improve and advocate for access for all ages and abilities to ensure equal opportunity to accessible transport. That way everyone has the same level of opportunity for work, recreation, social interaction and education.
- 3 **The Wollongong community wants change.** While cars are an important mode of transport, this strategy addresses the community's desire for more viable alternatives which reduce dependence on cars and supports walking, bike riding and use of public transport.
- 4 **Limit our climate impact:** How we travel plays a pivotal role in climate change because our transportation choices directly impact greenhouse gas emissions. With more sustainable modes of transportation, such as walking, bike riding, or using public transport, we're able to support our community to move away from car-dependency and reduce their carbon footprint.

## WHY DO THINGS NEED TO CHANGE?



79%

The majority of trips in Wollongong are undertaken by car



55%

Over half of car trips are under 1 km

### WITHOUT CHANGE, IN 2036 THERE WILL BE ...



+21%

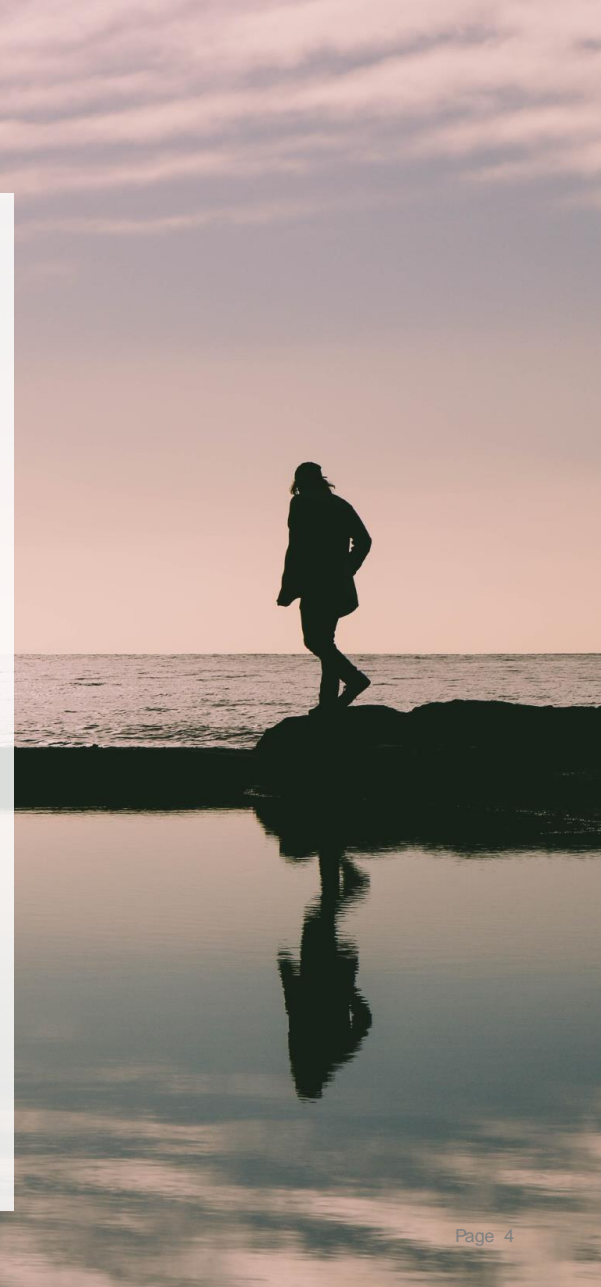
More delay hours, resulting in longer journeys



+13,000

More car trips in Wollongong's City Centre in AM Peak

Refer to Section 3 for more on 'The Case for Change'



# EXECUTIVE SUMMARY

## TOP 14 NEW MOVES

### THE VISION



**Wollongong is a liveable and green city where everyone has viable transport choices that provide connected journeys through Country that are safe, reliable and accessible.**

### GOALS THE STRATEGY SETS OUT TO ACHIEVE

#### SIX GOALS

1 <b>COMPETITIVE PUBLIC TRANSPORT</b>	2 <b>EVERYDAY NEEDS WITHIN 15 MINUTES</b>	3 <b>SUSTAINABLE TRANSPORT OPTIONS</b>
4 <b>ALL AGES AND ABILITIES CAN GET AROUND WITH EASE</b>	5 <b>INCREASED USE OF ACTIVE MODES</b>	6 <b>A CONNECTION TO COUNTRY AND SENSE OF PLACE</b>

Refer to Section 4 for more on the strategic framework guiding the strategy.

### TOP 14 MOVES



#### ADVOCATE TO STATE GOVERNMENT FOR BETTER PUBLIC TRANSPORT AND FREIGHT INCLUDING:

1. Develop a public transport service plan that has high service standards including route coverage, frequency, travel time, journey time and reliability on priority corridors.
2. Investigate and prepare a feasibility study for high quality, high frequency transport (rapid transport technology)
3. More on-road bus priority for more competitive bus travel times.
4. Delivery of the South West Illawarra Rail Link (SWIRL) for passenger and freight to support connections to Western Sydney.
5. Assess and upgrade bridges along M1 to support oversize and overweight loads to and from the Port of Port Kembla to stop detouring.



#### CONNECT TO COUNTRY AND PLACE THROUGH:

6. Build knowledge and acknowledge the traditional routes of the Dharawal people and develop a plan of how the routes may be appropriately recognised to honor this history through signage, information and art.



#### MAKE BIKING AND WALKING MORE ATTRACTIVE FOR ALL ABILITIES BY:

7. Enhanced 15-minute walking and bike riding infrastructure around town centres.
8. Pedestrian-focused town centres, including connections to train stations.
9. Develop a public domain planting guide to support walking and cycling to reduce the urban heat island effect. Integrate this guide into the Urban Greening Strategy.
10. Creating Park Streets by retrofitting micro-parks into the road space and allowing access for active transport only.
11. Implement 30 km/h speed limits within school zones and in town centres.
12. Developing a kerbside use framework that continues and expands the use of parklets, wider footpaths and planting, while balancing parking and loading.
13. Car light tourism including an emphasis on cycle-tourism taking advantage of routes with train station access and coastal highlights.



#### EMBRACE TACTICAL URBANISM EXPERIMENTS:

14. Road environment changes can be trialled through tactical urbanism projects that can make temporary changes and test approaches to inform future infrastructure spending and engage with community.

Refer to Section 6 for more on the Action Plan.

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# ABOUT THIS PROJECT

01

Wollongong Integrated Transport Strategy

**KANAHOOKA PARK, LAKE ILLAWARRA**

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## ABOUT THIS PROJECT

Wollongong Local Government Area (LGA) has an estimated population of approximately 222,000 people and is growing. Within 20 years, Wollongong will be home to over 270,000 people\*.

The objective of this Integrated Transport Strategy (ITS) is to guide planning and investment in future transport infrastructure and services necessary to protect and improve the economic, social and environmental prosperity of growing and diverse communities. The ITS spans the whole LGA and includes recommendations relevant to Shellharbour City Council. It intends to shape a fit-for-purpose, accessible and sustainable transport system which meets community and industry needs now and in the decades ahead.

This document:

- Explains projected growth in population and employment as well as transport trends across Wollongong.
- Describes what the goals of the ITS will look and feel like for future generations of Wollongong and an Action Plan for how they will be achieved.
- Details potential future issues should the current travel behaviours continue.
- Outlines the strategic framework including Vision, Guiding Principles, Goals developed by stakeholders.
- Outlines the opportunities and actions necessary to achieve the projects Goals.

The Wollongong ITS has been developed with a consultant team led by Urbis with support from Movement and Place Consulting, VLC and TMA.

\*Estimated population for 2024 and 2041 provided Forecast ID.



## MOVING BEYOND BUSINESS-AS-USUAL

There are two dominant and opposing approaches commonly employed in transport planning- *Predict and Provide* and *Vision and Validate*.

### WHAT IS 'PREDICT AND PROVIDE'?

This concept relates to a transport planning approach where traffic volumes are predicted based on historical trends and the road network is developed to support that prediction.

Predict and provide results in inducing demand, a phenomenon where increasing the supply of something (like roads) makes people want that thing even more. As it becomes more convenient, efficient and cheap relative to other options, it can result in requiring more supply to maintain existing levels. This can lead to a negative feedback loop which happens almost every time new roads are built<sup>1</sup>.

### WHAT IS 'VISION AND VALIDATE'?

Rather than solely looking at infrastructure provision to meet projected demand, this approach sets the transport vision for the future. It uses data analysis and insights to establish pathways and different strategy levers, to develop an action plan to achieve the future vision.

In this project, the validation process uses a transport and land use model to consider all modes. It suggests ways to improve alternate travel options which meet the needs of the future vision.

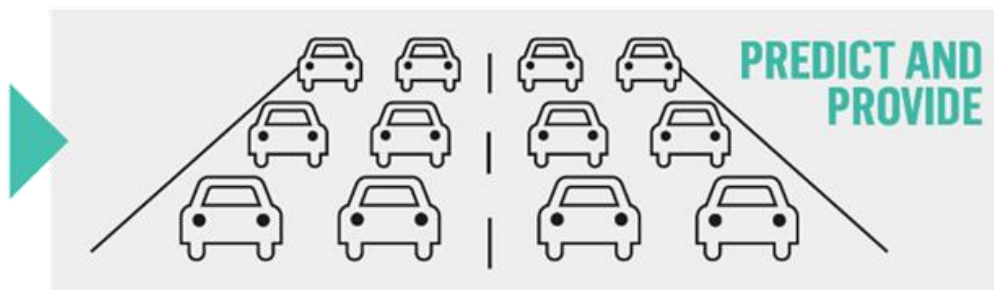
**The development of the Wollongong ITS has employed the vision and validate approach.**

Reference

1) Duranton and Turner, 2009, The Fundamental Law of Road Congestion: Evidence from US Cities, NBER

### WHAT ARE SOME APPROACHES TO COPE WITH AN INCREASE IN DEMAND FOR MOVEMENT?

#### A PROVIDE MORE AND MORE SPACE FOR MOVEMENT IN RESPONSE TO PREDICTIONS



#### B SET THE VISION, THEN WORK OUT HOW TO ACHIEVE IT





# METHOD FOR DEVELOPING THE WOLLONGONG INTEGRATED TRANSPORT STRATEGY

## INTEGRATED TRANSPORT STRATEGY PROCESS

Using the Vision and Validate approach (see Page 9) this project has been undertaken as follows

- In the preliminary stages Wollongong City Council collected data and developed a LGA-wide Traffic Model.
- Stage 1** collated relevant data and background documents to set the scene for known transport challenges. This information was used at the Vision Workshop, where the Vision, Principles and Objectives were developed.
- Stage 2** examined forecasts to look at what the region's transport looks like in 2041 (under a Business-as-Usual Scenario). These forecasts were used at the Preferred Way Forward Workshop, where a range of potential responses were considered before ultimately a preferred future scenario was developed.
- Stage 3** additional detail was added through mapping of key steps, through time-bound strategies and actions, to achieve the vision.

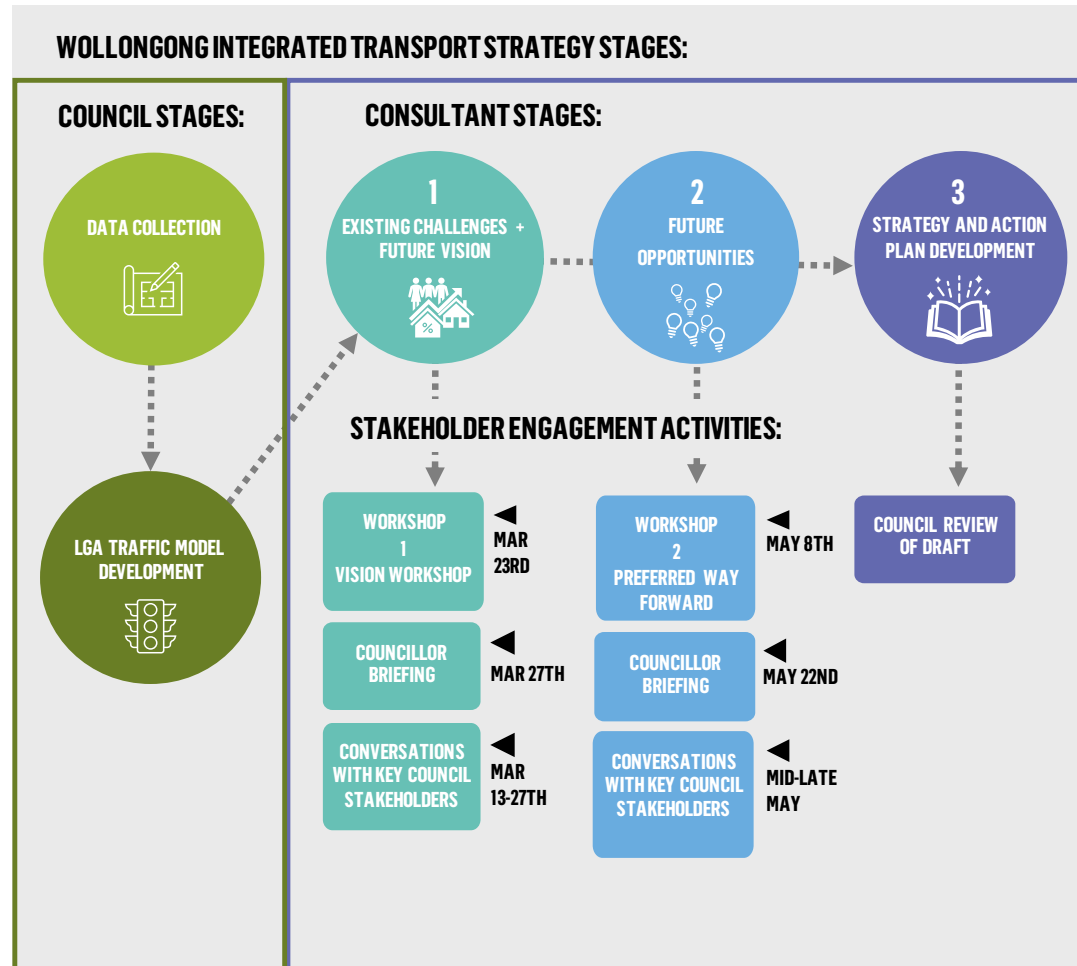
## TARGETED COMMUNITY INPUT

The Wollongong City Council Integrated Transport Strategy has been developed over a nine-month period from February 2023 to December 2023.

In addition to two workshops where key community stakeholders were engaged, Councillors and key Council staff members were engaged throughout.

Community feedback received as part of the biannual community survey and during the development of various transport plans and strategies also informed this project.

Further information on community engagement is shown in **Appendix A and E** of this report.



# BACKGROUND ANALYSIS

This chapter outlines why this project is important at this time and considers the challenges and opportunities facing the region.

# 02

Wollongong Integrated Transport Strategy

THIRROUL WATERFRONT



## FROM PLANNING TO DOING: THE STRATEGIC FRAMEWORK



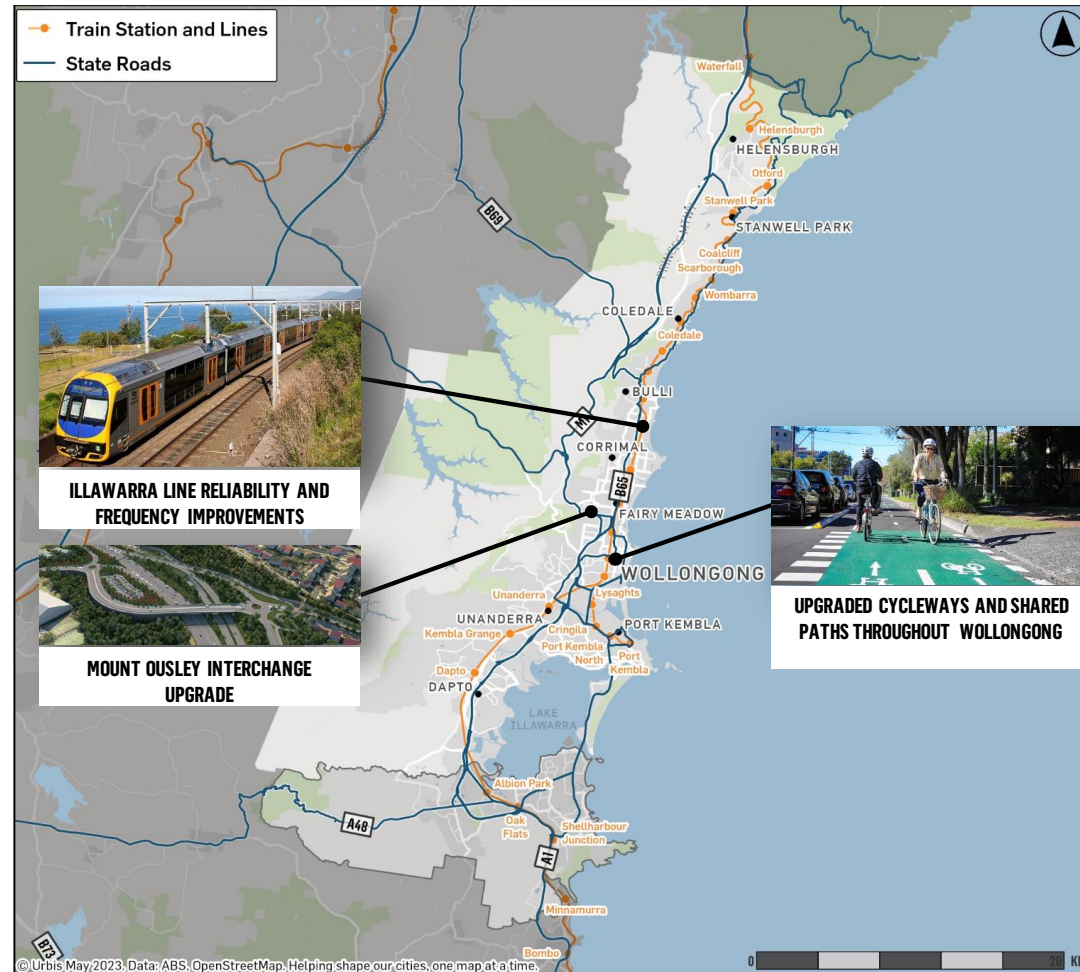


## CURRENT PLANNED PROJECTS IN WOLLONGONG

Planned transport projects of note, include:

- NSW Government's Mount Ousley Interchange upgrade for enhanced connectivity, safety, and efficiency.
- Council's annual Infrastructure Delivery Program delivering road, pathway and intersection works across the City.
- Design and construction of cycleways in the City Centre and across the City to connect with coastal and local trails and support university routes.
- City-wide footpath and shared use path installations to improve walkability to key sites.
- More Trains More Services, continued advocacy for the Illawarra Rail Line increasing the frequency of services between Sydney and Wollongong to four trains per hour in the peak.
- Redesigning bus stops for attractiveness and accessibility throughout the LGA.
- West Lake Illawarra development connecting new communities to transport corridors including the Northcliffe Drive extension and investigation of the South West Illawarra Rail Link (SWIRL).

In addition to larger and more significant projects, Council also continues to focus on projects aimed at creating new priority crossings for pedestrians and bike riders, as well as improving the safety of traffic signals and roundabouts for all users. These projects, together with Structure Plans, have been factored into an understanding of what 'Business-as-Usual' looks like for the future of Wollongong (refer to **Section 3** of this report).



## STRATEGIC CHANGES IN WOLLONGONG

There are a range of location-specific strategic plans, urban development and transport strategies and studies of note in the region.

Strategic plans and projects that will impact how the region functions from the perspective of employment and freight distribution include:

- Renewal and expansion of Port Kembla.
- M1 (Princes Motorway) upgrades.
- Development intensification within and around Wollongong City Centre and North Wollongong.
- Bluescope Masterplan for Port of Port Kembla surplus lands.
- Offshore Wind Renewable Energy Zone.
- Wollongong Sports and Entertainment Precinct.
- Wollongong Health Precinct.

Future strategies outline development opportunities for housing growth in areas such as:

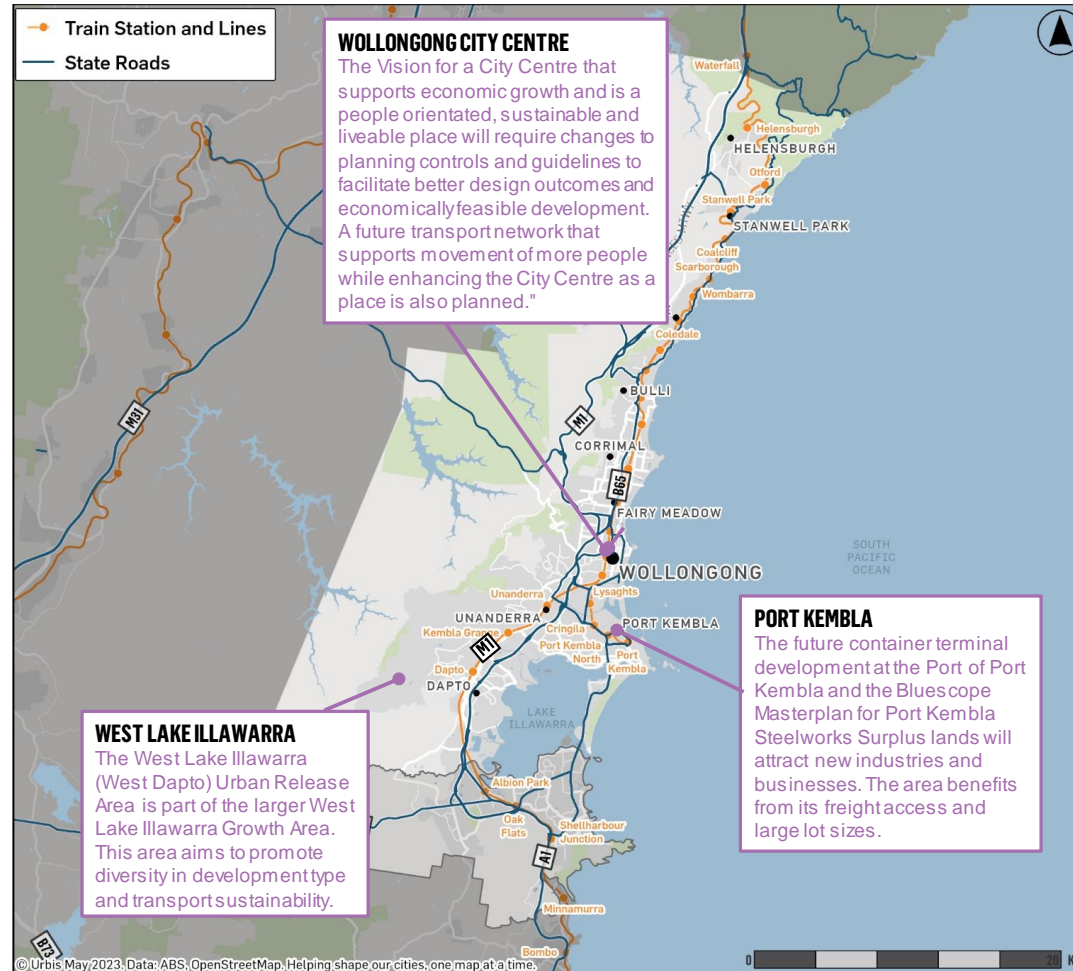
- Wollongong City Centre and surrounds.
- University of Wollongong (on campus student accommodation).
- Tallawarra Lands Project.
- West Lake Illawarra Area (incl. West Dapto, Tallawarra and Calderwood).
- State-led Transport Orient Development (TOD) at North Wollongong, Corrimal and Dapto.
- Corrimal.
- Warrawong.



### INSIGHT

Regional access on the motorway and railway increase access to services and employee catchments.

The University of Wollongong, the Wollongong Health Precinct and the City Centre are key generators of regional travel demand.



## TRADITIONAL TRAVEL ROUTES IN WOLLONGONG

This map shows the locations of traditional travel routes used by the Dharawal people and other indigenous peoples, travelling through Wollongong. It was developed in consultation with traditional owners by the NSW Department of Planning and Environment. There are a number of traditional routes that mirror key transport routes today. These are as follows:

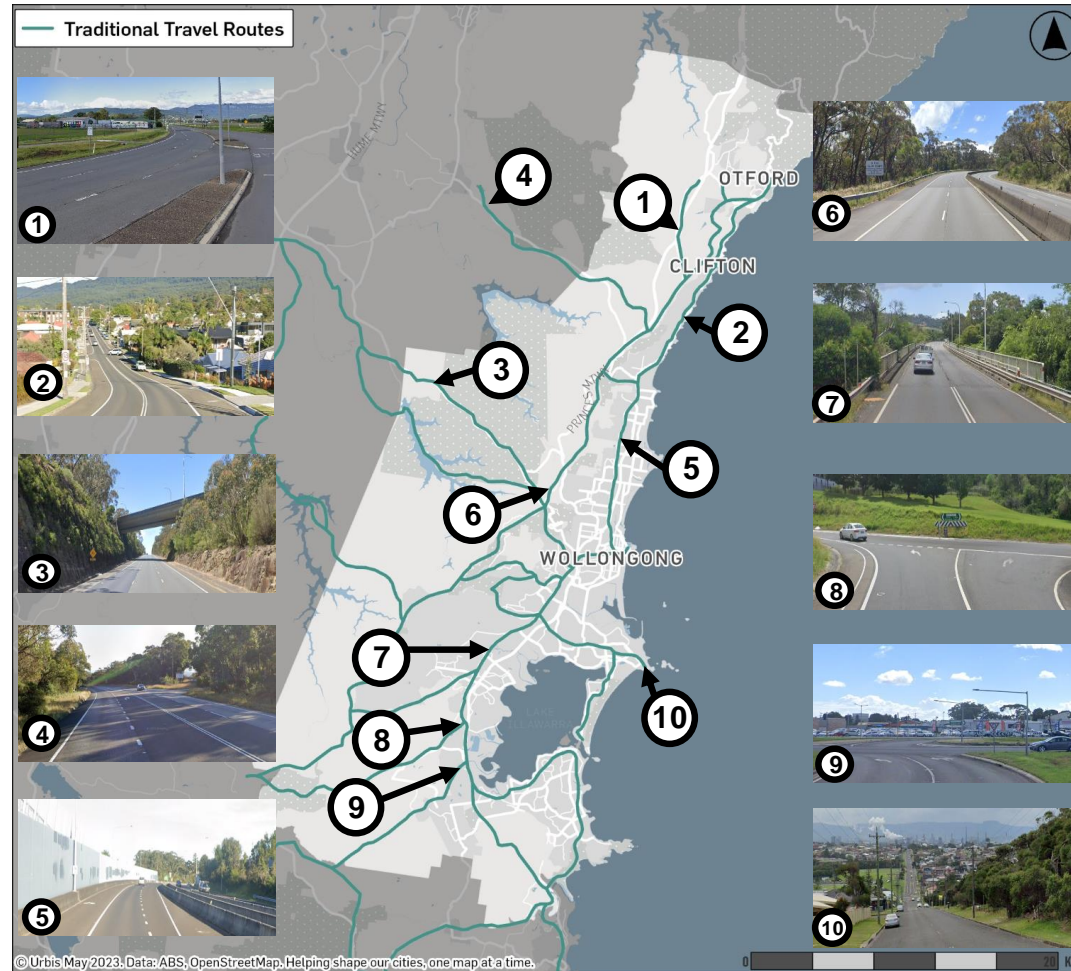
- **Princes Motorway (M1)** – Connects the South Coast and Wollongong to the northern suburbs of Wollongong and Sydney.
- **Lawrence Hargrave Drive (B65)** – Connects the eastern suburbs of Wollongong (Windang to Bulli) to the M1.
- **Picton Road (B88)** – Connects the M1 (from Mt Ousley) to the M31 Hume Motorway (Wilton).
- **Appin Road (B69)** - Connects the M1 (and B65 Bulli Pass) to Appin town centre.

These routes should be identified and celebrated and the story of their origins shared for generations to come.



### INSIGHT

Many of the traditional travel routes used by first Australians mirror the major thoroughfares that still exist today. In the Illawarra, they reflect the geography and ridgelines of the escarpment and coastal routes.



Source: Based on NSW Department of Planning and Heritage, *Early Contact Map*  
[www.environment.nsw.gov.au/resources/cultureheritage/illawarraAboriginalHistoryPoster.pdf](http://www.environment.nsw.gov.au/resources/cultureheritage/illawarraAboriginalHistoryPoster.pdf)



## TRANSPORT NETWORK - PUBLIC TRANSPORT

Wollongong's public transport is managed by Transport for NSW and includes a north/south train line and bus network. Despite high coverage, public transport use is low due to infrequent service and poor competitiveness with cars (see Page 17 for more).

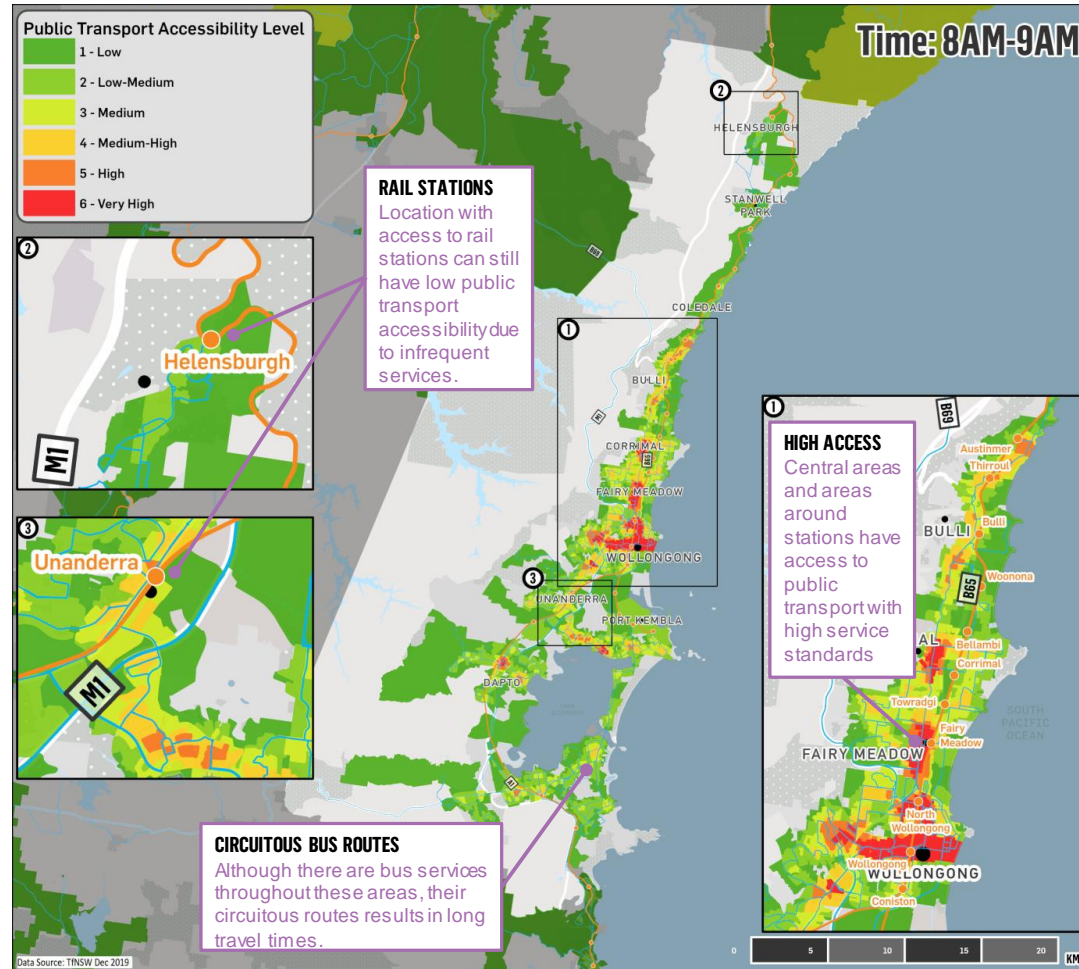
Numerous railway stations are separated from Wollongong's major town centres. This impacts public transport accessibility, door to door journey durations and requires active transport networks to connect workers and customers to rail transport. Developing higher service quality connections improves competitiveness with private cars. For example the 'Gong' Shuttle Bus, a free service that links the centre of Wollongong with the railway station, hospital, and TAFE/university campuses. This service delivers the highest patronage in NSW for the number of buses provided to the community.

Public Transport Accessibility Level (PTAL) is a measure the frequency and reliability of public transport services. It is based on the distance to a public transport station or stop, the number of services available and the wait times for those services.



### INSIGHT

The public transport network operates on a coverage model which has resulted in a network that would be prohibitively expensive to deliver quality services. A rationalised network with quality active transport connection to high frequency corridors is an alternative.



1) Public Transport Service Planning Guidelines, Rural and Regional NSW

## SERVICE STANDARDS - PUBLIC TRANSPORT

In Wollongong, public transport coverage is high, but journey times are not always competitive. People who have car access will choose the car over trains or buses if travel times are not competitive.

The analysis on this page shows the difference between how far people can travel from the middle of Wollongong City Centre in the AM and PM Peaks. It shows that:

- You can travel far further in a car in 15 minutes than you can by public transport.
- In the AM Peak services are better for northbound travel due to the way trains are timetabled to favour trips to Sydney.
- In the PM Peak services are better for southbound travel due to the way trains are timetabled to favour trips to Sydney.



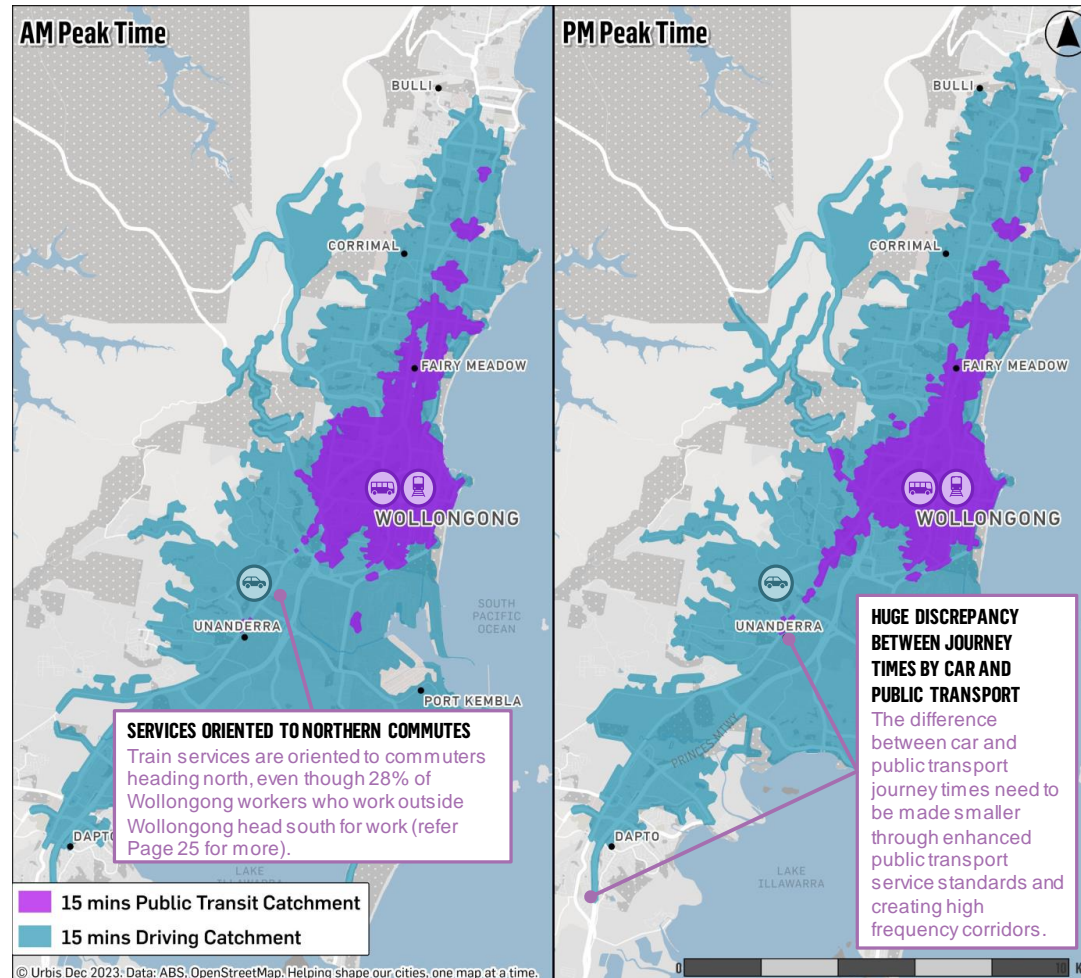
### INSIGHT

In the AM Peak northbound travel is convenient and every 20 minutes. On the flipside, if you want to travel south to Wollongong, by train in the AM Peak frequencies are much lower.



### INSIGHT

Enhancing the competitiveness of public transport journey times is key to getting more people using public transport.



Note: We've chosen a number of points in the CBD that align with public transport stops/stations so that the analysis of public transport catchments do not require a walk to the public transport stop/station at the origin/end of the trip.

## TRANSPORT NETWORK - ACTIVE TRANSPORT

There are a number of key bike riding corridors connecting Wollongong. Key routes include

- Northern Coastal Route (connecting Thirroul to the Wollongong City Centre).
- Southern Coastal Route (connecting Shell Cove in Shellharbour LGA to Port Kembla and the Wollongong City Centre).
- Dapto/Unanderra to Port Kembla Route.
- Lake Illawarra Route.

The images below show select examples of infrastructure on these routes.

**1** NORTHERN COASTAL ROUTE



**2** SOUTHERN COASTAL ROUTE



**3** DAPTO - PORT KEMBLA

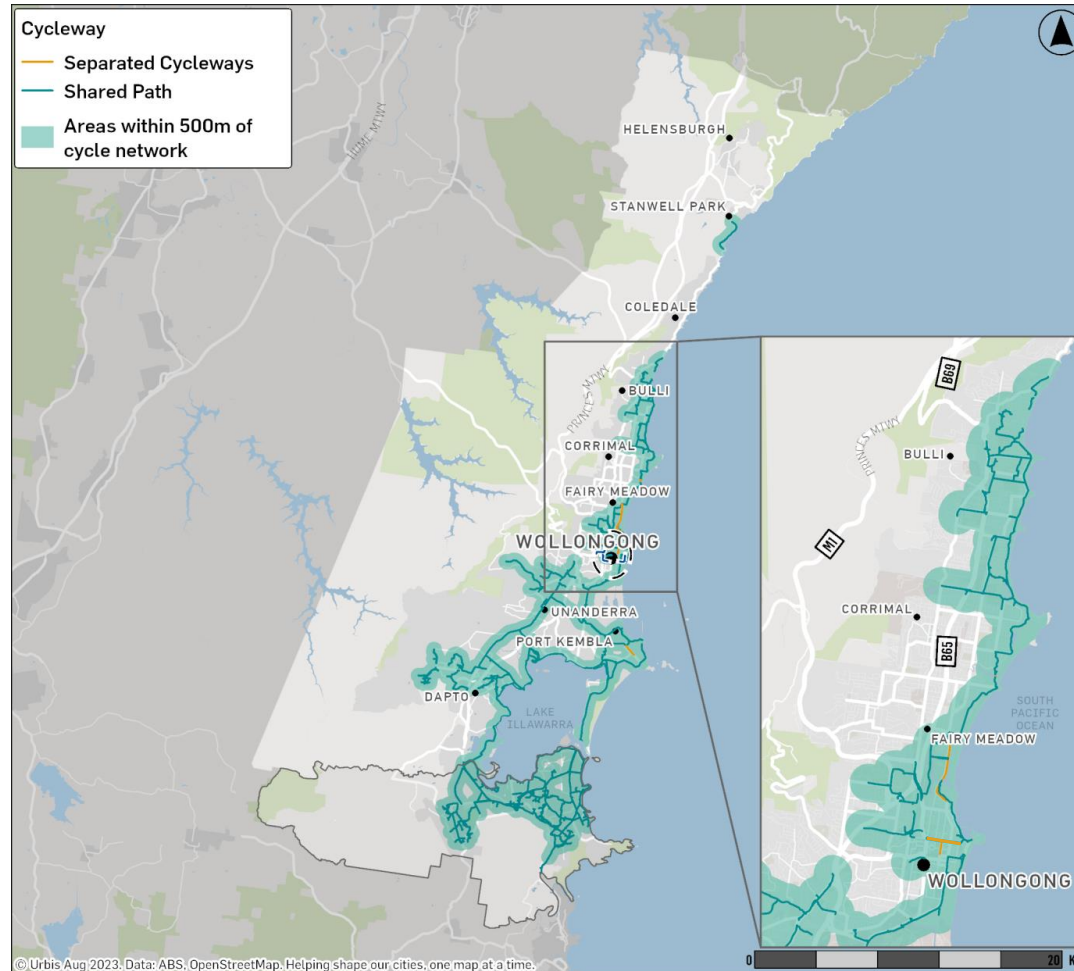


**4** LAKE ILLAWARRA ROUTE



### INSIGHT

There are limited north-south and town centre connections away from the coastal cycleway network in the north. East-West connections to the coastal cycleway are also infrequent north of Wollongong City Centre.





## TRANSPORT NETWORK - ROADS

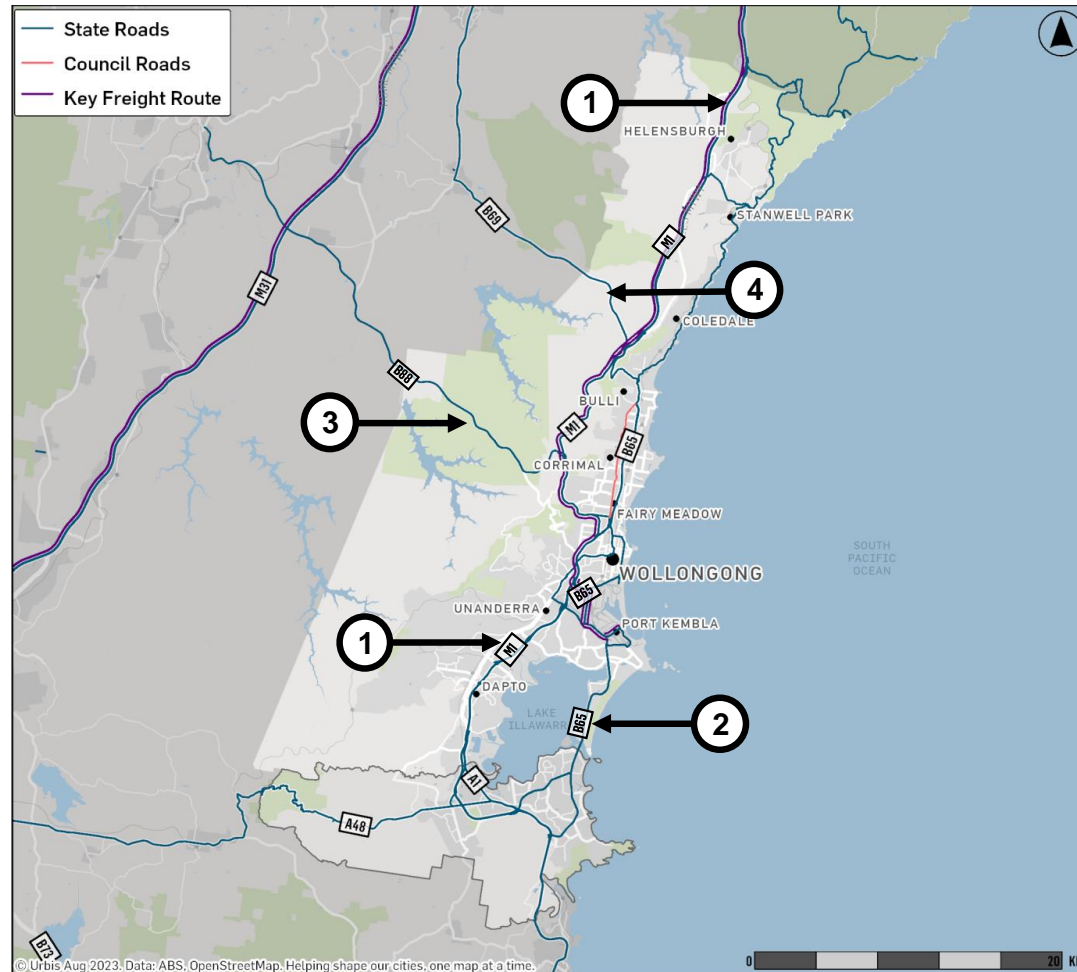
There are a number of important State Roads and Key Routes connecting Wollongong to Sydney and the Interstate Road and Freight network. These principally include

- ① **Princes Motorway/Princes Highway (M1/A1)** – Connects the South Coast and Wollongong to the northern suburbs of Wollongong and Sydney.
- ② **Lawrence Hargrave Drive (B65)** – Connects the eastern suburbs of Wollongong (Shellharbour to Bulli) to the M1 and Port of Port Kembla.
- ③ **Picton Road (B88)** – Connects to the Hume Motorway towards Canberra, Wilton and Western Sydney.
- ④ **Appin Road (B69)** - Connects the M1 (and B65 Bulli Pass) to Appin, Campbelltown and Western Sydney.



### INSIGHT

Freight routes need to accommodate overmass and overweight vehicles. This is so that a range of industries can move materials and minimise truck movements through less suitable local routes.



## WHY PEOPLE TRAVEL IN WOLLONGONG

People living in Wollongong travel around for a broad range of reasons. Often there is an emphasis on commuting as data for Journey to Work as reported in the ABS census. The Household Travel Survey undertaken by Transport for NSW shows that commuting for work is only the fourth most common trip type.

Creating a transport network that caters to a variety of trip purposes day and night is essential.

This includes meeting community needs in response to the sustained change in how we work since the COVID-19 pandemic. Given its proximity to major employment centres in Sydney and Canberra, the relatively affordable housing and lifestyle quality presents an opportunity for Wollongong to capitalise on the ongoing work-from-home trend.

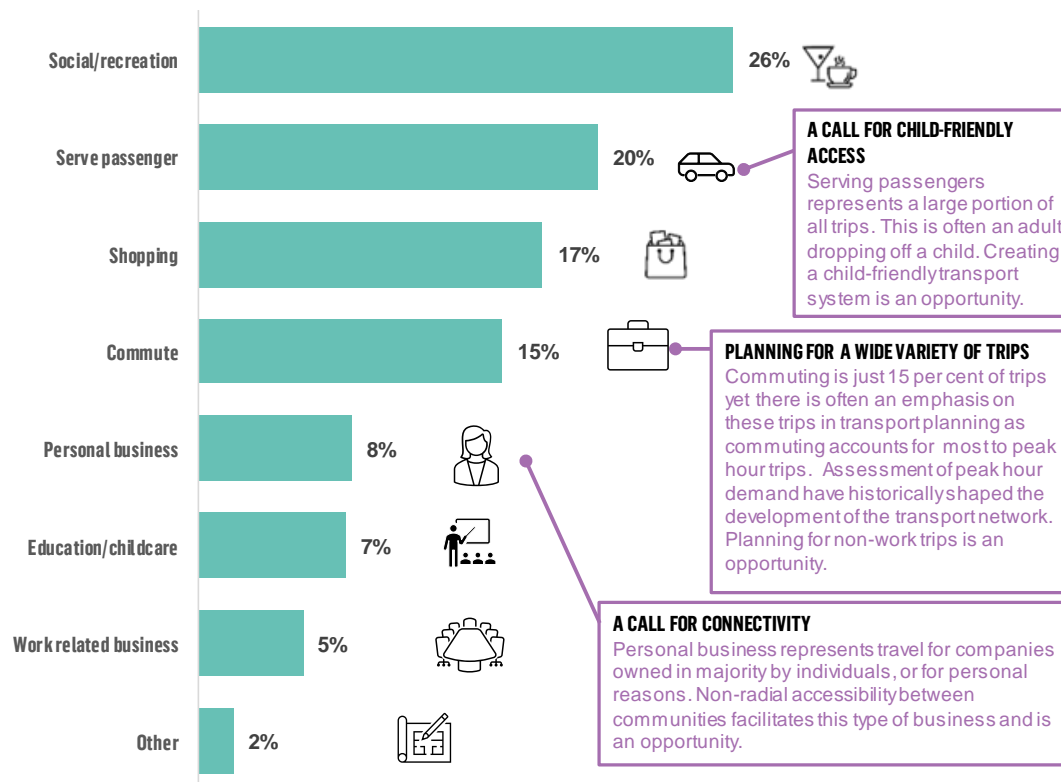


### INSIGHT

Planning for a broad array of trip types is essential (rather than a focus on just commuting trips) to create less car reliance in Wollongong.

Work-from-home workers should be catered for, to ensure things like access to libraries and local lunch spots are accessible from people's homes.

### WOLLONGONG – TRIP PURPOSES



Source – Based on Household Travel Survey 2018-2019  
Note: Household Travel Survey (HTS) from the 2018-2019 was used as this year reported on more types compared to the latest data set and also no impact of COVID-19.

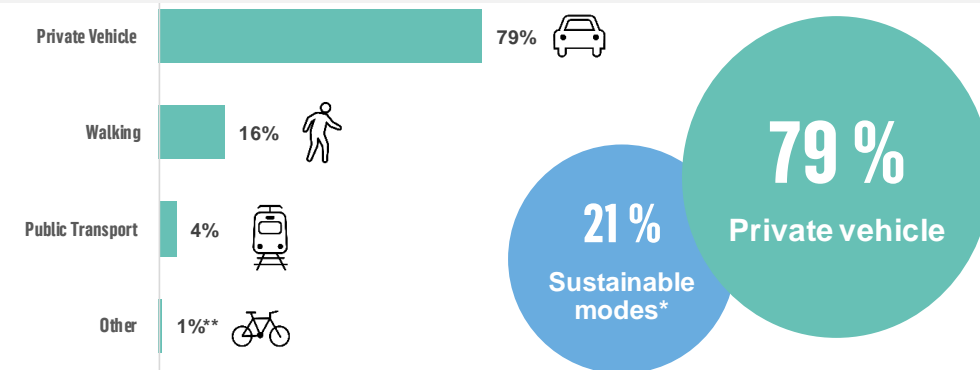
## MOVEMENTS AROUND WOLLONGONG

The majority of trips undertaken by residents living in Wollongong are by private vehicle. Walking trips is notable at 16 per cent with public transport use trending lower at 4 per cent. However, many of these walking trips are likely to be for social and recreational purposes rather than transport.

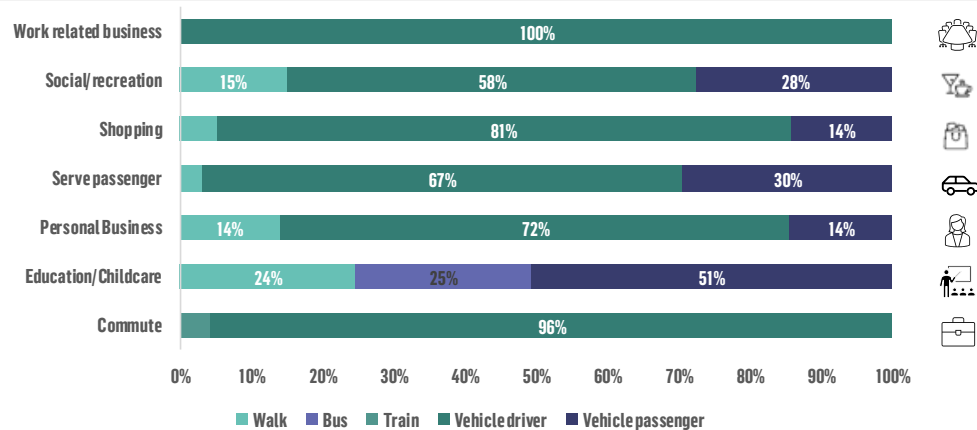
Trips for Education/Childcare and Social/Recreation trips are the trips that people are most likely to do by sustainable modes. There is an extensive school bus network in operation throughout Wollongong, which is likely to account for the high rate of bus use to school.

Other trip purposes, notably commuting, work-related business and shopping trips are dominated by private vehicle trips.

### MOVEMENT AROUND WOLLONGONG – MODE SPLIT



### MOVEMENT AROUND WOLLONGONG – MODE SPLIT AND TRIP PURPOSE



#### INSIGHT

The majority of trips in Wollongong are undertaken by private vehicles. This could be due to the perceived convenience of driving and a poor public and active transport network.

Source – Based on Household Travel Survey 2018-2019

Notes: Data based on the dominant mode used for the trip. \*\*Cycling considered in 'Other', 'Serve passenger' is trips for the purpose of taking another person somewhere (eg: taking a child to school).



## HOW FAR DO PEOPLE TRAVEL AROUND WOLLONGONG?

While active transport accounts for a high number of trips under one kilometre, over 50 per cent of short trips are private vehicle trips. This dramatically increases in trips between one and two kilometres – likely a result of the hilly topography of the area and a perceived inconvenience of active travel use.

Public transport trips also remain quite low across all trip distances. It is the highest at trips over 10 kilometres and is likely undertaken by those commuting to Eastern Sydney for work or tertiary education.

### CASE STUDY OF TRIP DISTANCES TO THE UNIVERSITY OF WOLLONGONG

Staff and students generally live close to the University of Wollongong. In a 2023 survey, 43% of respondents resided within 5 km travelling distance from the main University of Wollongong campus. This would be a relatively comfortably cyclable distance from campus. This strategy discusses ways to capitalise on these opportunities through better active and public transport connections.

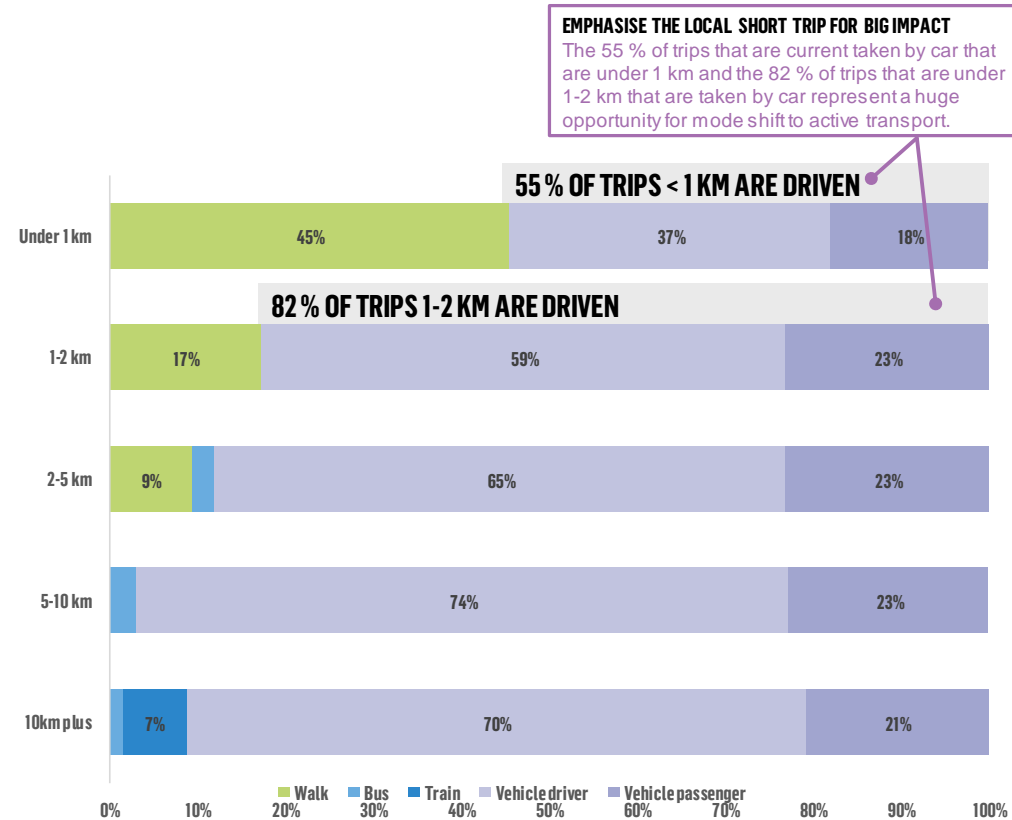
Source: University of Wollongong, 2023



#### INSIGHT

Short local trips that are currently being taken by private vehicle are 'low hanging fruit' which are best targeted for mode shift.

### MOVEMENT AROUND WOLLONGONG – LENGTH OF TRIP BY MODE



Source – HTS 2018-19

## EMPLOYMENT AND POPULATION DENSITY

In the Wollongong and Shellharbour Cities, population is concentrated around the coastal areas. Outside of Wollongong City Centre and North Wollongong, population density is typically between 1000 – 2000 per square kilometre. This is reflective of the low-density residential nature of the City. Fast-growing West Dapto is the western most local centre in Wollongong, and beyond that area, it is peri-urban or rural.

Employment is concentrated in Wollongong City Centre, as well as the Pork Kembla industrial precinct. However, sparse population and concentrated employment present challenges when planning comprehensive transport networks.

Enlarged versions of these maps are shown in **Appendix B**.

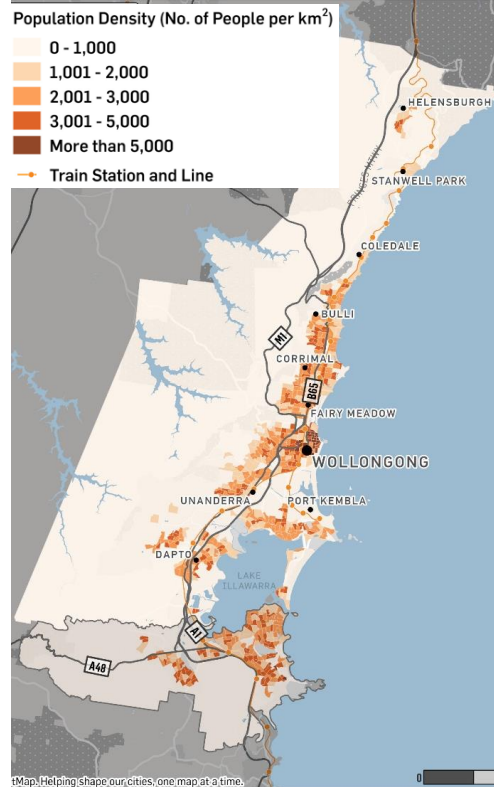


### INSIGHT

A decentralised population and concentrated employment present challenges when planning transport networks to serve people.



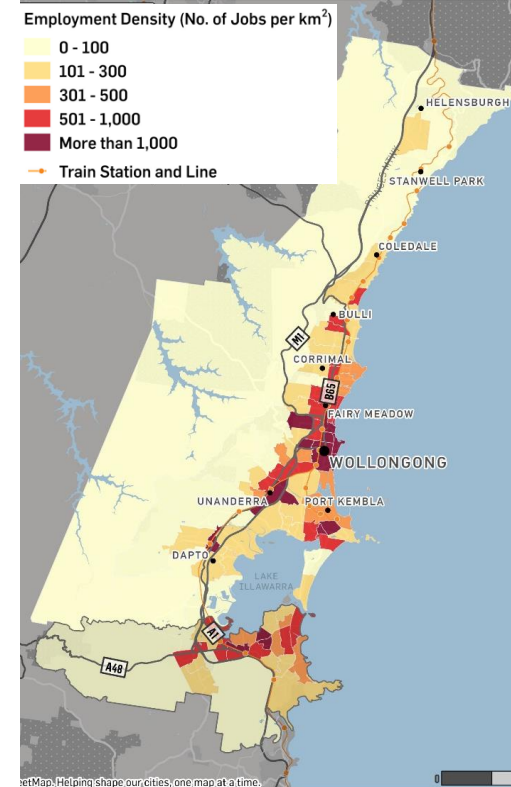
### POPULATION DENSITY



Source: ABS Census, 2016



### EMPLOYMENT DENSITY



## HOW DO PEOPLE TRAVEL FOR WORK IN WOLLONGONG?

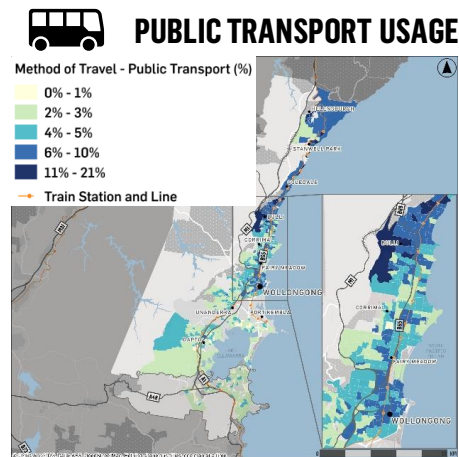
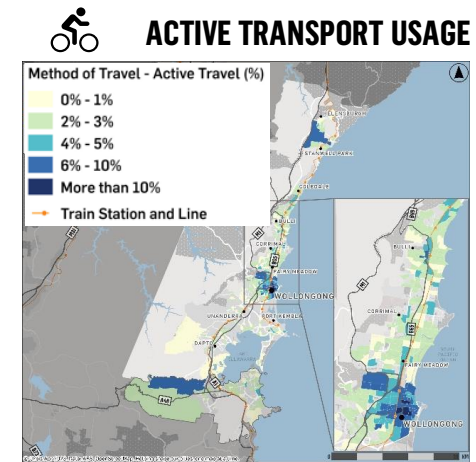
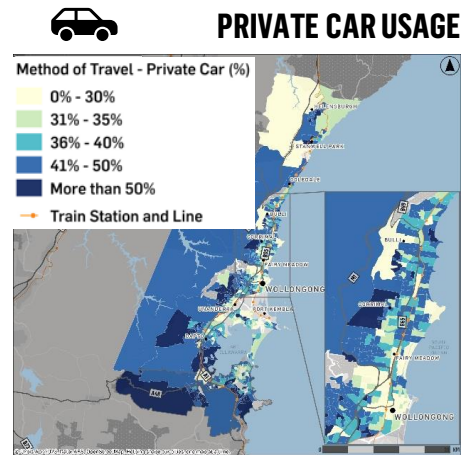
Most people in Wollongong drive to work. This is likely due to a large number of residents working in southwest or central Sydney, or because they're driving to work in Wollongong from Shellharbour as there is poor public transport coverage and difficulty with service issues.

In the northern suburbs, where residential areas are more closely concentrated around public transport links and there's a closer connection to Sydney, public transport is a viable option to travel to work.

Active transport is sparsely used within the western part of Wollongong to travel to work. While there are some strong active travel connections, these are focused on coastal routes and do not connect residential areas to regional employment centres.

2021 Census data was not used in journey-to-work analysis due to the impacts of COVID-19 on the latest census which resulted in a disproportionate number of people not attending work or working from home.

Enlarged versions of these maps are shown in **Appendix F**.



Source: ABS Census, 2016.



### INSIGHT

There is a division in many areas of Wollongong around car usage. Locational factors and ease of access to green travel options are not evenly split and result in varied dependency on private modes of transport. As a result, there are significant economic and cost savings to those who live in areas that are well serviced by public transport options. Suburbs with high socioeconomic disadvantage including Warrawang, Berkeley, Bellambi, Cringila, Koonawarra have low car ownership and require effective public transport services and active transport networks.

## WORKER INFLOW/OUTFLOW

Every day 32,500 Wollongong residents travel outside of Wollongong for work and some 21,500 non residents come into Wollongong for work. Wollongong is a net-exporter of workers. Key findings show that

- The key outflow of workers is from the northern suburbs showing a strong pull to work in Sydney.
- A significant proportion also go to Shellharbour City, the single largest LGA where people worked outside of Wollongong.
- The vast majority of inflow workers comes from the south, with Shellharbour City being particularly dominant.

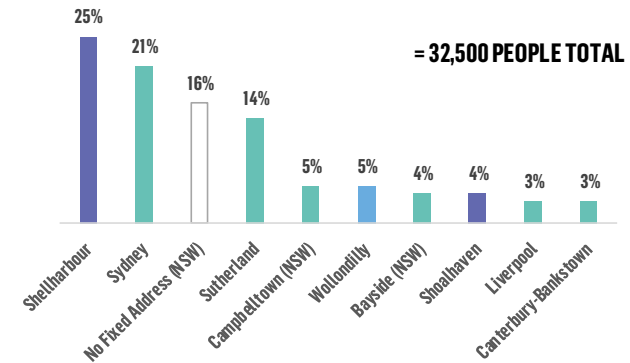
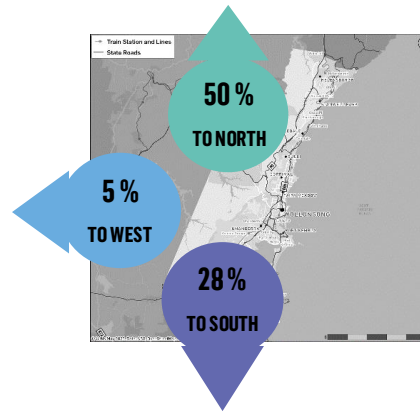
There is substantial congestion on the M1 from Dapto to Figtree, and the data displayed on the right provides some insight into the reasons for this congestion. There is both a high demand for movement as well as lack of public transport options for commuters to and from the south (refer to Page 17). At the same time there is a very strong commuter connection between residents of Shellharbour and Wollongong for work.



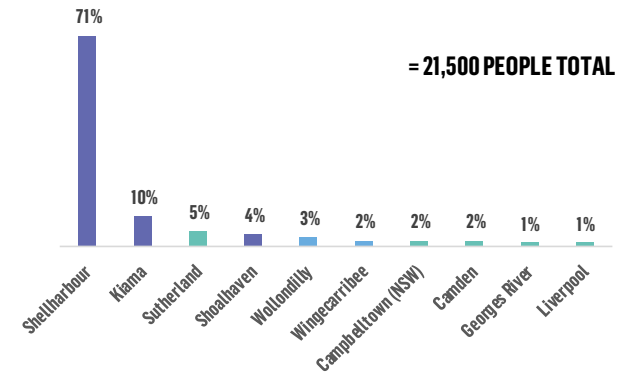
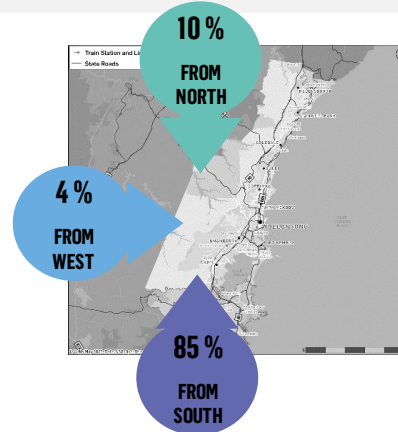
### INSIGHT

The connection to the Shellharbour LGA and the Sydney CBD are both important considerations to enhance public transport for commuters and to provide active transport corridors to Shellharbour.

### Where Wollongong residents travel to work



### Where non-resident workers in Wollongong travel from



Source: Based on ABS Census, 2016, Occupation Dataset



## CAR OWNERSHIP

Wollongong households typically own at least one car. Car ownership is typically lower in the areas around and to the north of the City Centre. Car ownership is much higher in the south and in growth areas such as West Lake Illawarra. More than 50 per cent of households in Wollongong have at least two vehicles. This is slightly higher than the Greater Sydney average where 45 per cent of household have more than two cars. This comparison suggests a greater car reliance in Wollongong than in Greater Sydney on average, although this is highly variable across both geographies.

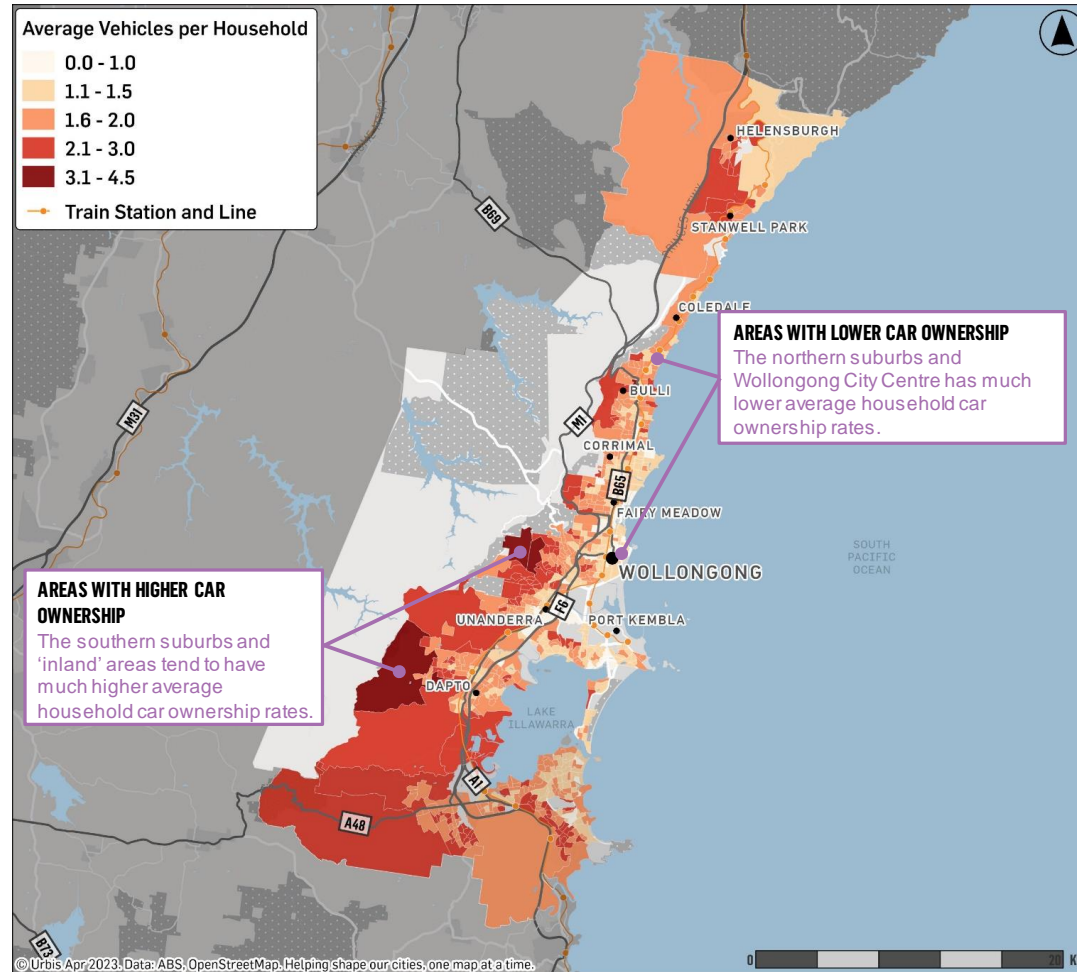
West Lake Illawarra has one of the highest levels of car ownership, with more than 3 vehicles per household on average. This is likely due to the disconnected public transport connections from West Lake Illawarra to the rest of Wollongong, slower journeys by public transport and a lack of local services and employment, resulting in residents' high car reliance.

By improving public transport services and active transport options, there is an opportunity to curb high car ownership and usage in in West Lake Illawarra.



### INSIGHT

In locations where infrastructure doesn't currently support active and public transport such as West Lake Illawarra, residents are forced into higher car ownership putting addition strain on household expenditure.



Source: ABS Census, 2021

## CHALLENGES

Wollongong's topography, the existing public transport links as well as established driving habits, are all significant challenges when it comes to transport. These challenges have been identified through feedback from our community, targeted stakeholder engagement and analysis of the existing transport network, industry operations and travel behavior.

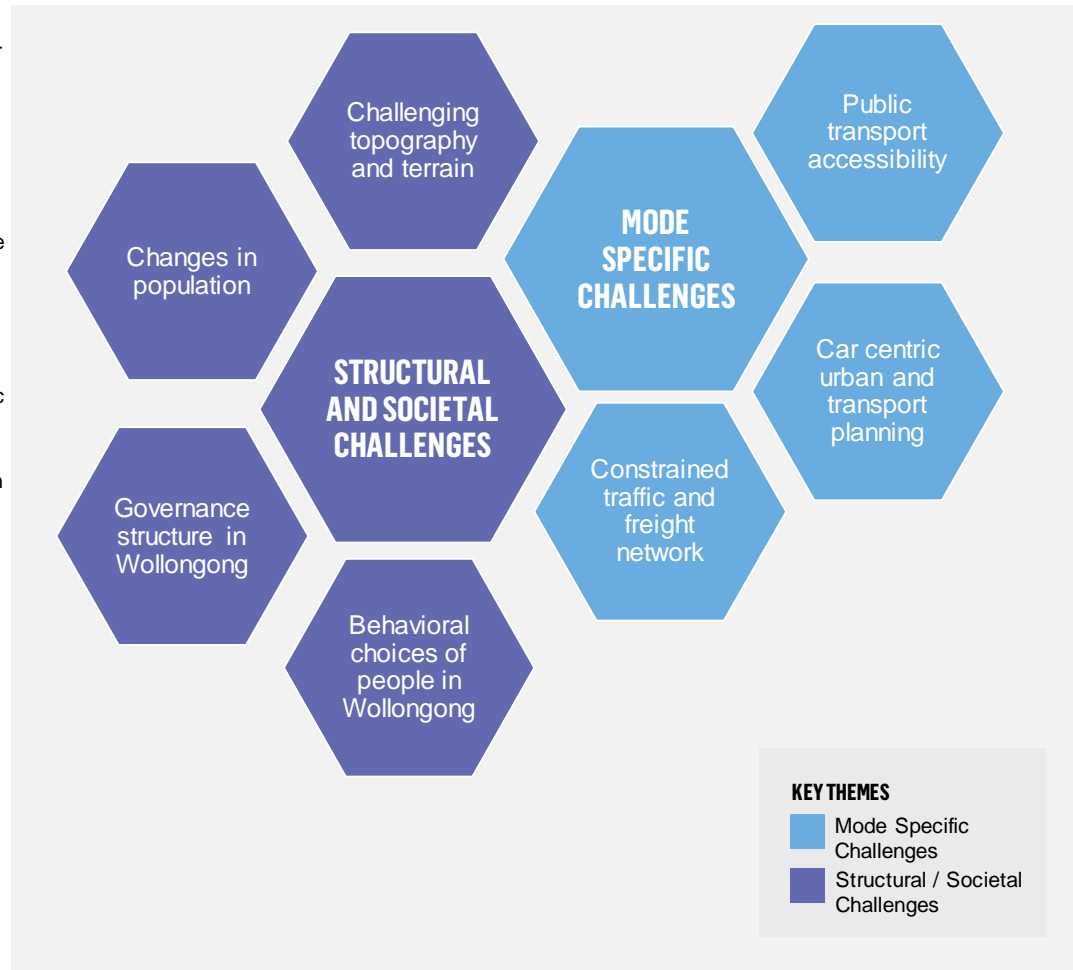
### STRUCTURAL AND SOCIETAL CHALLENGES

- Wollongong topography creates barriers to transport options as many roads follow natural ridges, limiting the potential for connections in the valleys between.
- There is a lack of street continuity, as well as major physical barriers (such as motorways) that hinder the connectedness of transport networks.
- While the population is growing, there is a lack of public transport strategy to support the future transport needs of the growing population.
- The assumed right to a car park in front of a destination can be a barrier to other innovations for kerbside use (such as outdoor dining and street improvements).

### MODE SPECIFIC CHALLENGES

- Train and bus services do not properly cater for local trips as the frequency is low and travel times can be lengthy.
- The public transport network does not effectively service the masses.
- The need to change the political narrative around the importance of parking and move away from car-centric planning.
- How will the current transport infrastructure cope with freight growth across Wollongong (including Port of Port Kembla expansion).
- Disconnected suburbs create a reliance on cars.

**Appendix E** details further information about reported challenges in Wollongong.



# THE CASE FOR CHANGE

**This chapter outlines what 2036 looks like if Wollongong continues down the current path. It also highlights the desire among members of the community for better sustainable transport options and the need to consider more space efficient (and environmentally sound) transport options in the future as the population of Wollongong grows.**

**03**

Wollongong Integrated Transport Strategy

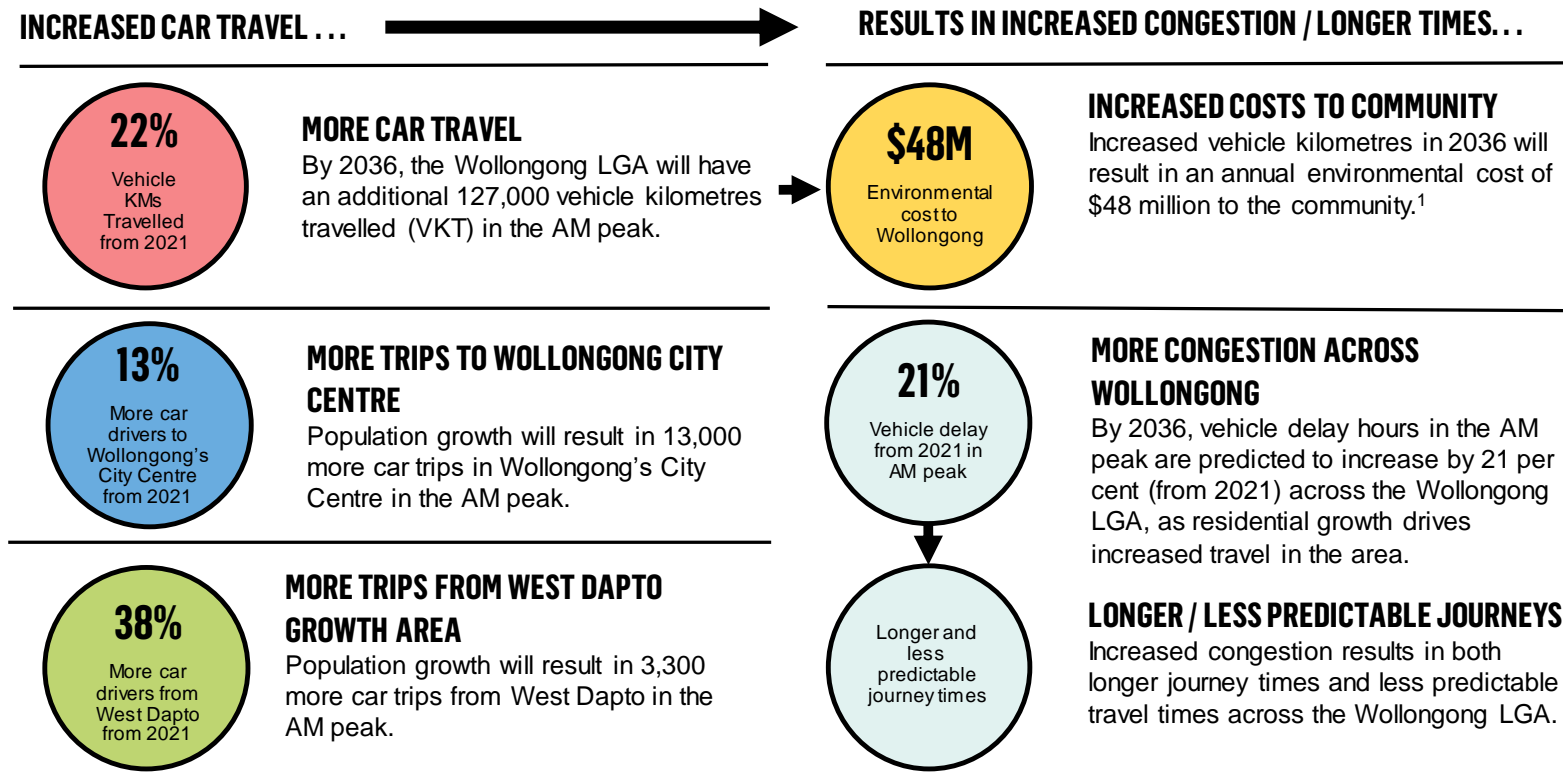
**MEMORIAL DRIVE**





## 2036 THE FUTURE WILL BE MORE CAR BASED WITHOUT INTERVENTION

A 2036 business-as-usual growth rate will result in more pollution, traffic, delays and a greater proportion of car use than sustainable modes compared to 2016 patterns. Specific changes are shown on this page.



Assumptions—private vehicle mode share percentage of the working age population (18 – 64 years) were considered to derive values for the increase in drivers.  
1. Economics values obtained from Transport for NSW Economic Parameter Values (June 2020, Version 2.0), Part 6 Environmental Impacts.

## 2036 BUSINESS-AS-USUAL CAR TRAVEL INVOLVES MORE DELAYS

### LARGE INCREASE IN VEHICLE DELAY HOURS

In a 2036 business-as-usual scenario, motorists in Wollongong are projected to experience significant delays on some section of roads. AM peak delay hours are predicted to increase by 21 per cent overall. The Wollongong City Centre specifically will see a 5 per cent increase in delay hours.

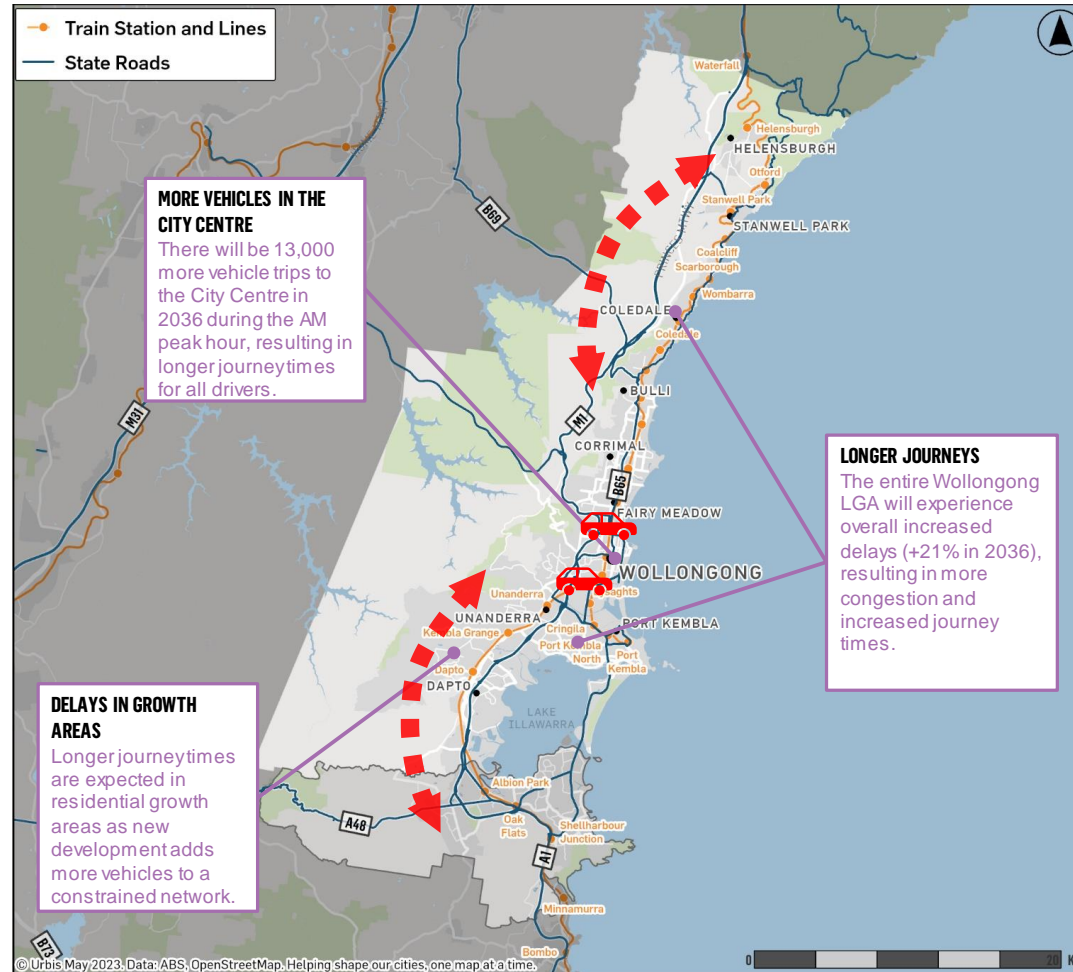
The map on this page and in **Appendix F** shows two key areas where there will be a significant change from the current conditions. Dapto is highlighted as this is a key development area and is starting from a low base in terms of existing vehicle delay.

Area	2036 Vehicle delay hours (AM peak)	Change From 2021
Wollongong LGA	3,300	+560 (+21%)
Wollongong City Centre	380	+18 (+5%)



#### INSIGHT

A significant increase in delay hours and travel time leads to people spending extra time on the road than in current conditions, reducing efficiency and quality of life for residents. The business-as-usual scenario with high congestion will impose congestion costs and loss of productivity on Wollongong's economy.



## PEOPLE WANT TO USE ACTIVE TRANSPORT MORE

Past Council engagements have shown the community wants more daily bike riding options and a broader active transport network. Similar sentiments are found across Australia, where nearly half of respondents prefer bike prioritisation over cars and feel bike riding is too dangerous in their region (see figure on right).

Riding and walking offers a multitude of health benefits, such as cardiovascular fitness and mental health benefits. Catching public transport is also good for your health as there is usually a walk at either end of the journey. An Australian study found that people using public transport usually got an additional 12-15 minutes of walking per day<sup>2</sup>.

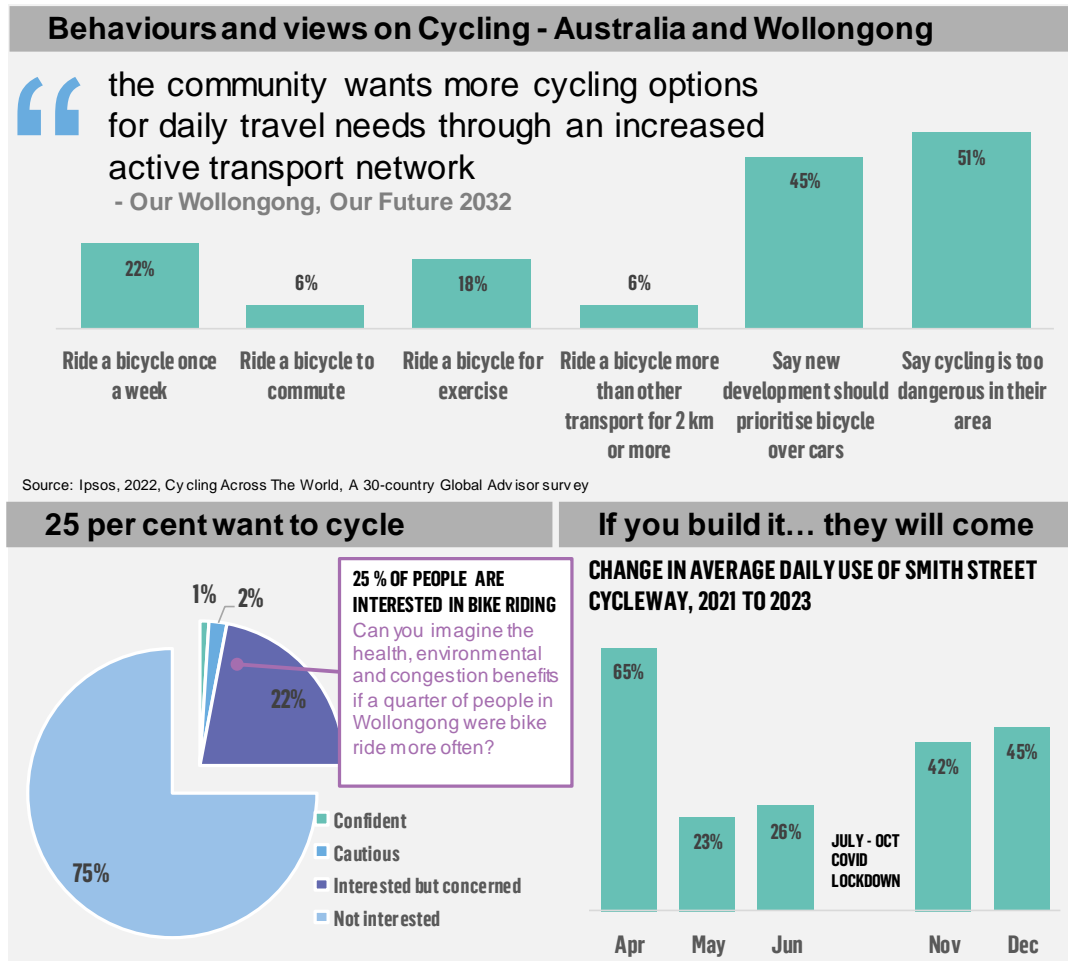
Safety, driver behaviour, physical barriers and difficult terrain are among the reasons people decide against walking and bike riding. Long-term change is about incrementally removing barriers, where possible. Creating a great place for walking and bike riding isn't just the domain of the inner city or European towns. What is needed is a focus on and investment in infrastructure and little by little the benefits of a healthier, more connected and more affordable community will result.

1) Rissel et al, 2012, *Physical Activity Associated with Public Transport Use—A Review and Modelling of Potential Benefits*, *International Journal of Environmental Research and Public Health*.



### INSIGHT

There are many more people who want to ride a bike, than currently do ride a bike in Wollongong. People are calling for more walking and bike riding options.



Source: National Cycling participation survey, 2020 (as cited in the Wollongong Cycling Strategy 2030)

Source: National Cycling participation survey, 2020 (as cited in the Wollongong Cycling Strategy 2030)



## INCREASED PUBLIC TRANSPORT IS A MATTER OF ENHANCED COMPETITIVENESS

In the context of a growing population, there is a need to enhance the efficiency of how people get about. There are only three options

- ✓ **More space-efficient options** – active transport is needed, but public transport is vital for moving large volumes of people (image to right).
- ✗ **Provide more road space** – this is not an option that can be adopted due to the impact on urban areas and induced demand (refer Page 9).
- ✗ **Do nothing** – face more congestion (see the following page).

Many studies have been undertaken to examine how to get more people to use public transport<sup>1,2</sup>. They find that a combination of ‘sticks’ (disincentives for car use) and ‘carrots’ (incentives for public transport use) are effective:

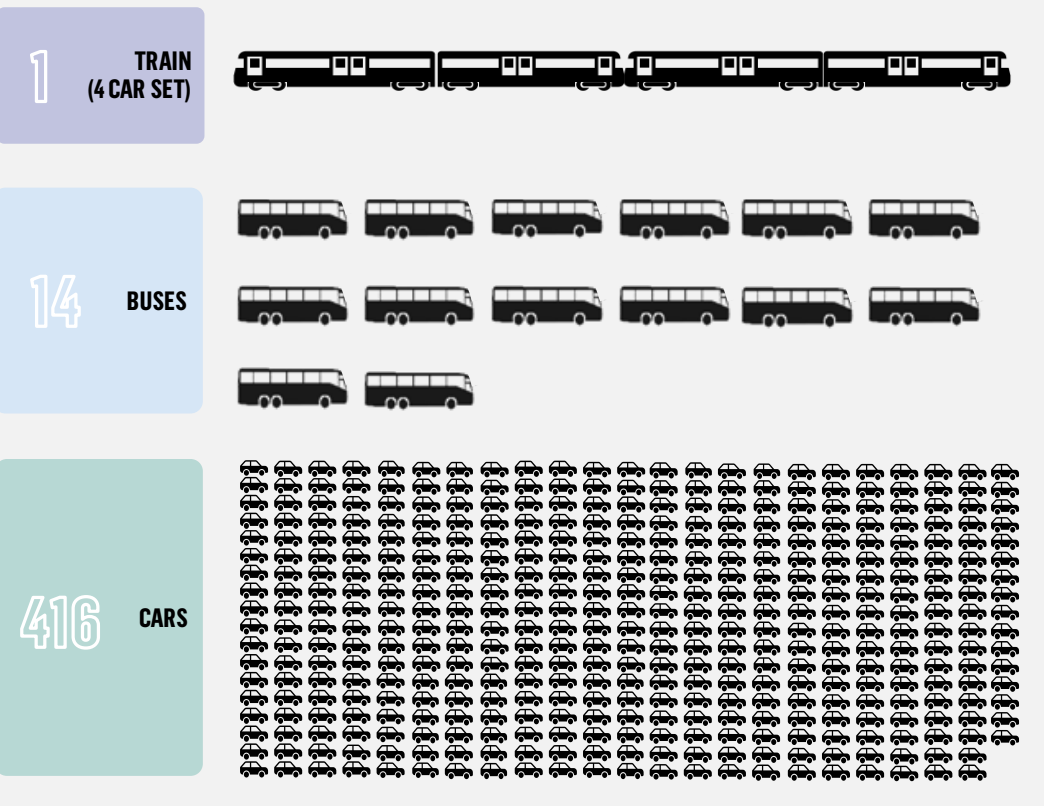
- ✓ Public Transport level of service including service frequency.
- ✓ Focussing high-quality services on high-demand corridors.
- ✓ Urban density - particularly around stops/stations.
- ✓ Provision of park-and-ride, or quality active transport connections to stations.
- ✓ Journey time.
- ✓ Road congestion / parking charges at destinations (for example in the City of Sydney they reduce on-street parking by 3 per cent per year).



### INSIGHT

Mode shift from private vehicles to public transport needs to incorporate both a “carrot” and “stick” approach. Public transport needs to become a more attractive option over driving to see real behaviour change.

### Options for moving 500 people



1) Smith et al, 2020, Factors Influencing Public Transport Patronage Trends - Perth 2015 – 2019, iMOVE Project CRC 3-007  
 2) Khan et al, 2021, Increasing public transport patronage – An analysis of planning principles and public transport governance in Swedish regions with the highest growth in ridership, Case Studies on Transport Policy, Volume 9, Issue 1  
 Note 1) Assumes bus occupancy 35 people, train (4x car set) occupancy of 500 and car occupancy of 1.2 people

# CLIMATE CHANGE

## LOCAL IMPACTS

Land and sea temperatures are rising, with greater risks of extreme rainfall and fires. This leads to hotter days, prolonged droughts, rising sea levels, and intensified rain events. Wollongong's Climate Change Mitigation Plan (2023-2030) identifies the **urgent need to respond to climate change**. Wollongong's railway line is often shutdown during high rainfall events. Cycling and other active transport is a lot more challenging in rain and extreme heat. Council is also developing a Coastal Management Program which will identify future impacts to Council foreshore areas and any potential impacts to infrastructure (including transport infrastructure).

Wollongong needs to adapt its urban areas and reduce local environmental impacts.

## A BETTER FUTURE

Wollongong's future hinges on effective climate change management. Without sustainable investment and strategy, there could be more private vehicles, resulting in more emissions and congestion. The city needs pollutant-free, user-friendly spaces, focusing on sustainable innovations like energy efficiency, urban greening, and waste management. Climate resilient strategies are integral for Wollongong moving forward. Aboriginal and Torres Strait Islander communities are especially vulnerable to climate effects, which can disrupt their connection to Country. Upholding the bond First Nations have with Wollongong's history is vital.



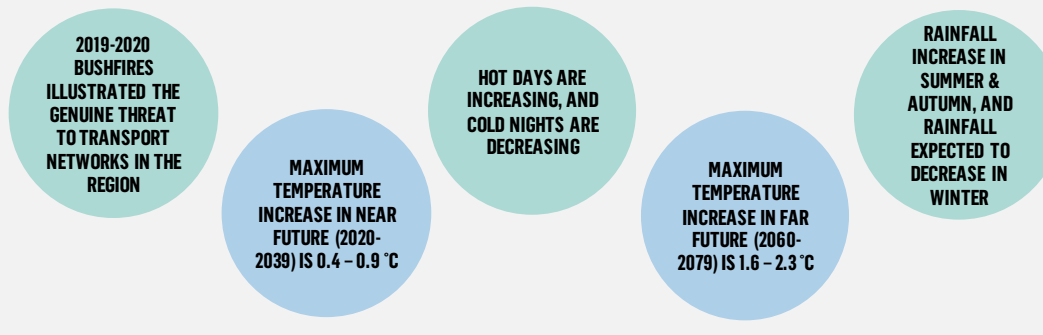
### INSIGHT

The costs associated with ignoring climate change far outweigh the costs associated with addressing it. Sustainable innovation is at an all-time high, Wollongong should continue its investment in the industry.

## WE NEED MORE OF THIS



## ILLAWARRA REGION AND CLIMATE CHANGE – ADAPT NSW



1) Lowitja Institute, 2021, Climate Change and Aboriginal and Torres Strait Islander Health, Discussion Paper  
Sources: New South Wales Government, 2023, Australian Climate Change Observations, AdaptNSW  
New South Wales Government, 2014, Illawarra Climate Change Snapshot, AdaptNSW

# GUIDING THE STRATEGY

**This chapter outlines how the strategy has been guided by principles of Movement and Place, Connecting to Country, sustainability and the strategic framework established by stakeholders attending workshops.**

## 04



## GUIDING THE STRATEGY

# MOVEMENT AND PLACE

The *NSW Movement and Place Framework* is a cross-government framework for planning and managing roads and streets across NSW.

### PURPOSE AND BENEFITS

The *Movement and Place Framework* looks to create successful streets and roads by balancing the movement of people and goods with the amenity and quality of places. Movement and Place can consider Wollongong's whole street network including roads, footpaths, public spaces and those that use them. This framework defines four key street environments:

### MAIN ROADS

Main roads preference movement over place functions and are essential for the efficient movement of people and goods.

### MAIN STREETS

Main streets have high place intensity and movement function.

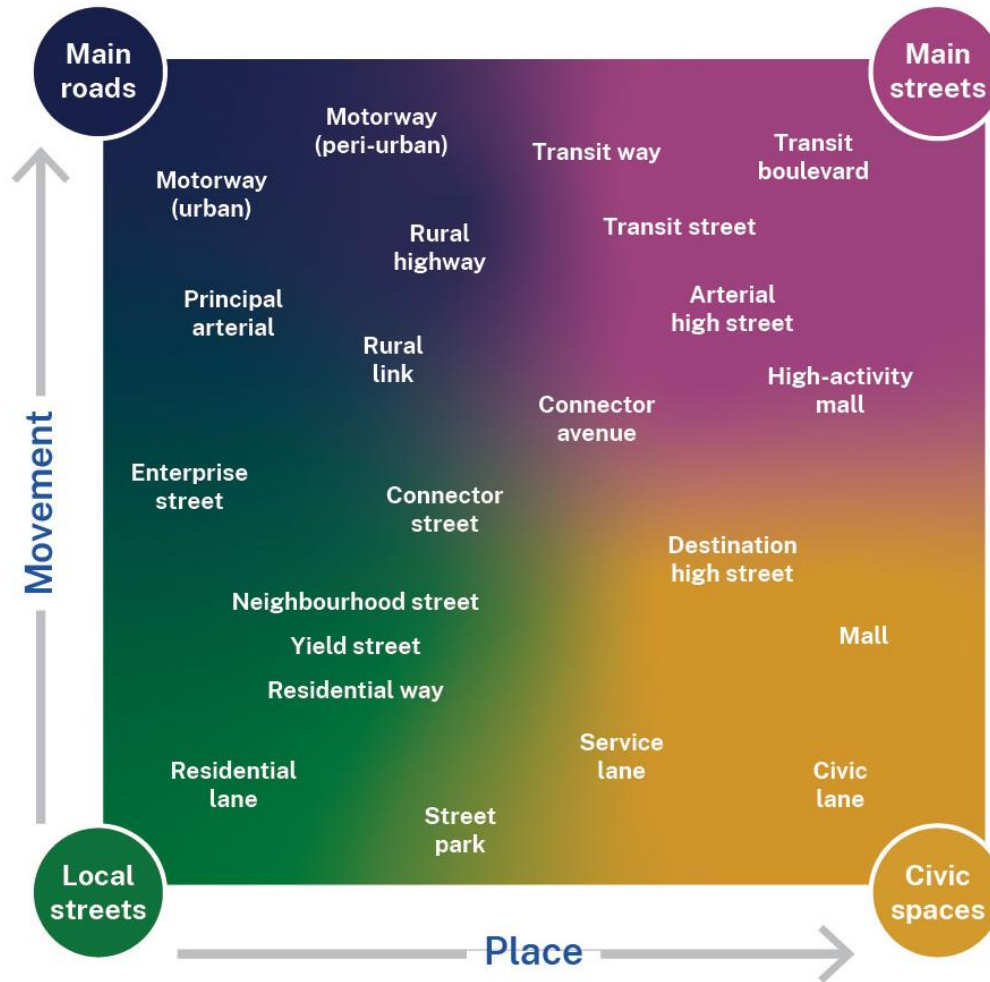
### LOCAL STREETS

Local streets are influenced by their edge conditions and adjacent properties.

### CIVIC SPACES

Civic spaces are at the heart of communities and are important destinations for large numbers of people.

Within the four environments, 21 road and street types are described in the framework. While these categorisations are not exhaustive, they act as an aspiration for how roads and streets in NSW should be designed to fit both their purpose and serve their user.

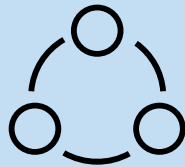


Sources: Transport for NSW, Movement and Place Framework

## GUIDING THE STRATEGY

# GUIDING PRINCIPLES

### CONNECTING TO COUNTRY AND PLACE



The Traditional Owners of the Wollongong region are the Dharawal people, with many culturally significant sites that are thousands of years old. With the region undergoing significant changes, there is an increasing need to protect and enhance this cultural history.

Many of the routes that are travelled today are based on the traditional travel routes of the area.

### SUSTAINABILITY-FOCUSED



Wollongong is committed to a sustainable future. *Sustainable Wollongong 2030: A Climate Healthy City Strategy* outlines this commitment through such actions as:

- Adopting emissions of reduction targets of net zero by 2050 for Wollongong.
- Incorporating the United Nations Sustainable Development Goals (SDGs) into Council's Community Strategic Plan.

### MULTI-MODAL TRANSPORT OPTIONS FOR ALL



Providing multi-modal transport options for all is a crucial element in creating a sustainable transport future for Wollongong. Currently, Wollongong is a highly car-dependent city, personified by the Princes Highway separating its eastern and western suburbs.

Additionally, active transport connections are very tourist-focused and do not support bicycle and walking commuting into the City Centre or to a transport node.

### INTEGRATED LAND USE AND TRANSPORT DECISIONS



Land use planning and transport planning should be integrated in Wollongong. Typically, transport planning has followed the 'predict and provide' method of transport planning, which is to build infrastructure as demand increases.

Adopting a 'vision and validate' method for land use and transport planning embeds the city vision and good infrastructure decisions into early planning.

### WORK WITH THE COMMUNITY FOR CHANGE



Wollongong is a city with more than 20,000 years history of from the first nation people, to the early Europeans, the post-war migrants attracted by the city's industrial prowess to the people of today, who move to Wollongong for the high quality of life.

The people of Wollongong make the city what it is and should be consulted on key issues relating to transport.

### COMFORTABLE AND CONVENIENT ACTIVE TRAVEL



Wollongong is a city of natural beauty. This natural beauty is best experienced through active transport. Existing coast walks and shared paths extend along the coast from the northern to the southern coastline of Wollongong.

While these are fantastic active travel connections, they are very recreation-oriented. There is a need to create strong active travel connections that are accessible and comfortable for all users.

## GUIDING THE STRATEGY

# OUR GUIDING PRINCIPLES, VISION AND GOALS

### GUIDING PRINCIPLES AND VISION

The strategic framework for the Wollongong Integrated Transport Strategy is shown on the right. This has been guided by stakeholder involvement in Workshop 1.

This vision has been formed based on the six guiding principles of

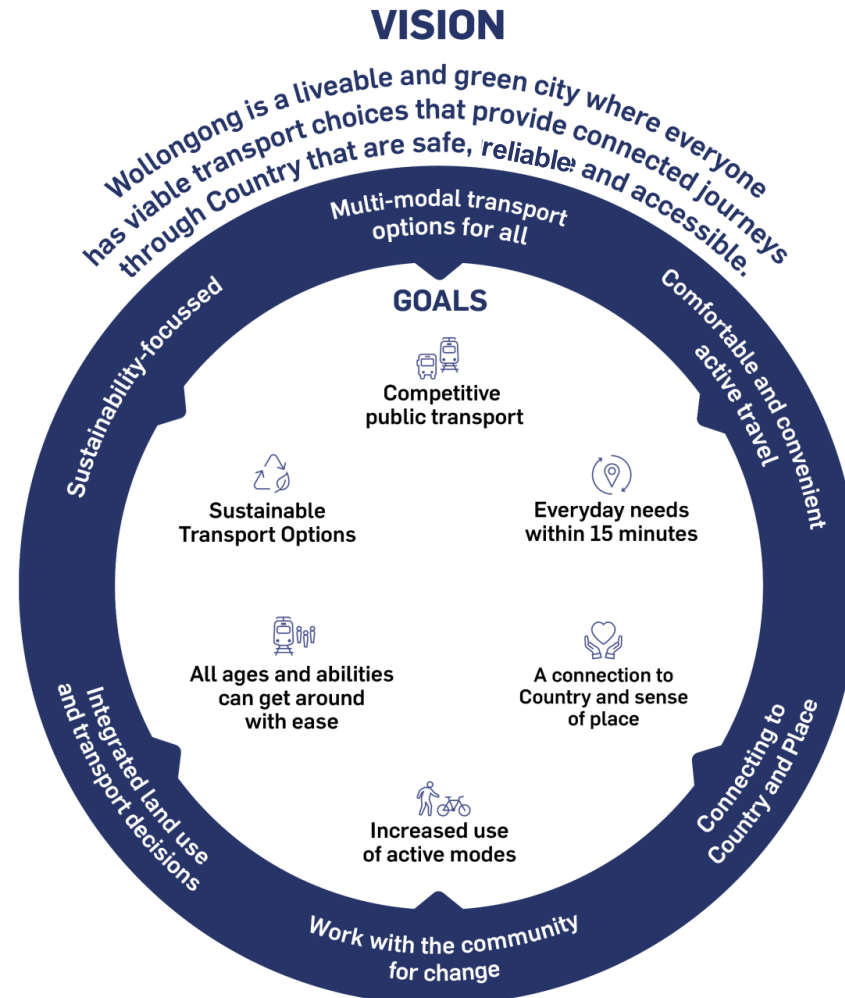
- Connecting to Country and Place.
- Sustainability-focused.
- Multi-modal transport options for all.
- Integrated land use and transport decisions.
- Work with the community for change.
- Comfortable and convenient active travel.

### GOALS AND INDICATORS

The goals developed for this strategy have been set with a view to describing a future Wollongong based on themes that emerged from Workshop 1.

The strategies and actions which form the engine room of the Wollongong Integrated Transport Strategy (where the action happens) are structured around these Goals.

Social, Economic, Environmental and Cultural Indicators have been developed for these Goals. These Goals, and how they interact with the vision for the Wollongong Integrated Transport Strategy is shown in the figure on the right.





# WHAT DOES THE FUTURE LOOK AND FEEL LIKE?

This chapter outlines an alternative version of the Wollongong region based on key opportunities developed for this project. What will it feel like to live and visit the Wollongong region in the future if this strategy is realised and delivered?

# 05



# WALKING

## WHAT DOES THE FUTURE LOOK AND FEEL LIKE IF YOU'RE TRAVELLING ON FOOT/MOBILITY DEVICE?

Walking will be a more desirable and a viable option for more people irrespective of ability, age or gender. There will be high quality pedestrian networks connecting all the key destinations like educational facilities, shops, public transport hubs, and recreational spaces. These will have shade, convenient crossings, be well maintained, designed for all abilities, have passively surveillance and follow desire lines. More people will want to walk instead of taking short car trips

WOLLONGONG CITY CENTRE



## WALKING

# OPPORTUNITIES WALKING ENVIRONMENTS FOR ALL ABILITIES AND GENDERS

### ACCESSIBLE WALKING ENVIRONMENTS

Six per cent (or 13,090) people in Wollongong have a core need for assistance in their day-to-day lives<sup>1</sup>. The likelihood of living disability increases with age. One in two people aged 65 and over is likely to experience some form of disability. Under the Disability Discrimination Act 1992 (Cth) (DDA), Wollongong City Council is required to provide accessible services to people with disabilities in a manner that is not discriminatory. The Disability Inclusion Action Plan 2020-2025 outlines the Council's plan for improved accessibility. The following aspects of our walking environments are critical:

- **Design and maintenance of paths** involve making sure paths are designed to specifications and are well maintained to reduce trip hazards. Footpaths must be wide, flat and connect with kerb ramps.
- **Low noise** routes are a necessity for some people in the Autism community and are preferable for the wider community.
- **Shaded seating and regular rest points** reduces the barrier to walking, particularly for the elderly.
- **Clear and simple signage** helps reduce the effort and time needed for users to find and reach their destination.
- **Safe Crossing Opportunities** that cater for a range of users (refer to page 42).

### SAFETY FOR WOMEN

30 per cent of women feeling unsafe in public spaces during the day (increasing to 90 per cent of women at night)<sup>2</sup>. Poor safety/ perceptions of safety are inhibitors to vulnerable groups (women, young people and elderly people) walking more often. Creating well-lit routes to key destinations is key. This should be coupled with locating routes in locations where there is passive surveillance (see Page 41 for more on CPTED).

1) Disability Inclusion Action Plan: <https://our.wollongong.nsw.gov.au/58034/widgets/296484/documents/171456>  
2) Women's Opportunity Statement: Womens Safety: [www.nsw.gov.au/womens-opportunity-statement/background/womens-safety](http://www.nsw.gov.au/womens-opportunity-statement/background/womens-safety)



SHADED SEATING

Image from Wollongong Urban Heat Strategy



ADEQUATE PATH WIDTHS

Market Street, Wollongong



LOW NOISE

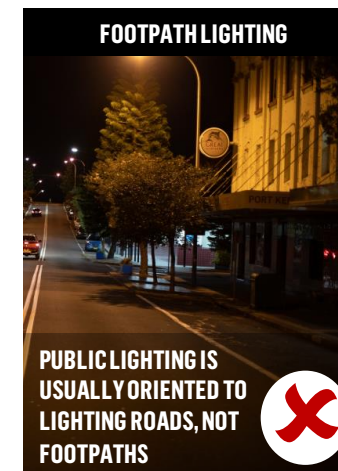


CLEAR SIGNAGE



PASSIVE SURVEILLANCE

Pedestrians in Wollongong City Centre



FOOTPATH LIGHTING



## WALKING

# OPPORTUNITIES A PERMEABLE AND SAFE WALKING NETWORK

### PERMEABILITY FOR PEOPLE (RATHER THAN CARS)

Permeable networks increase accessibility to amenities and increase the convenience of active transport. A set of principles has been developed to embody best practice in planning permeable networks for people:

- **Promote grid street networks for walking** with high intersection density for more walkable neighbourhoods, providing pedestrians time saving options and improved safety on low traffic streets.
- **Park Streets** can be retrofitted in residential streets where car through-traffic is not required, while still allowing pedestrians and bike riders to go through. This creates pocket-sized parks in former road space and is a way to get filtered permeability in residential areas particularly.
- **Filtered permeability** treatments such as shared zones or modal filters encourage active and public transport, community connection but limits private vehicle access.
- **Multiple access points** can increase neighbourhood cohesion and safety, providing options if a route is unsafe.

### CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

The thoughtful planning and design of urban areas can reduce opportunities for crime. CPTED employs four key strategies

- **Territorial re-enforcement:** Places with community presence detract crime.
- **Surveillance:** Permeable networks can increase passive surveillance as more eyes are on the street.
- **Access control:** Appropriate signage and provision of access by transport modes (such as filtered permeability) are crime prevention measures.
- **Space / Activity Management:** Well-cared for and maintained areas detract crime.

Wollongong Integrated Transport Strategy

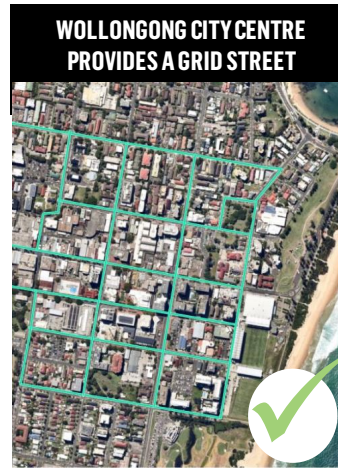


Image: Aerial, Wollongong City Centre



Image: Great Buckingham Street, Redfern



Image: Modal filter (Source: Cycling Embassy of Great Britain)

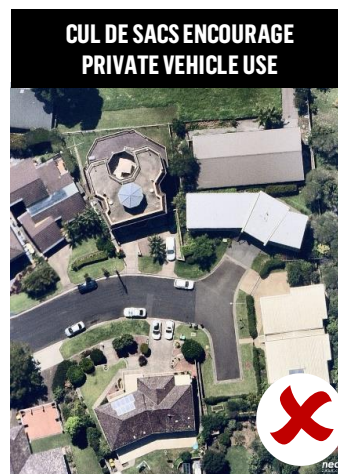


Image: Colleen Grove, Wollongong

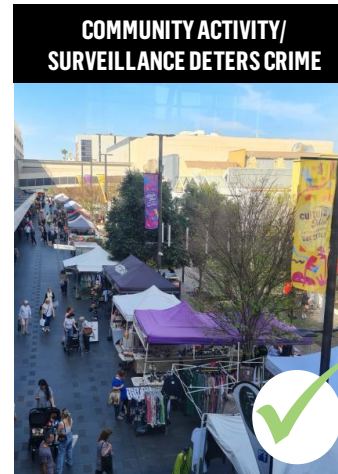


Image: Crown Street Mall, Wollongong City Centre



Image: Globe Lane, Wollongong City Centre

## WALKING

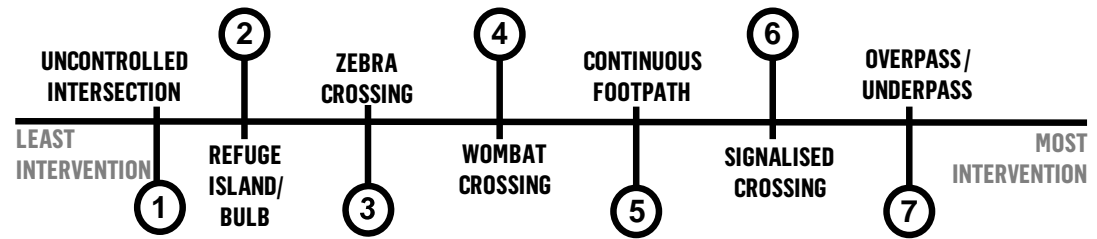
# OPPORTUNITIES INCLUSIVE PEDESTRIAN CROSSINGS

### TYPES OF PEDESTRIAN CROSSINGS

There are a range of types of pedestrian crossings that can be used to enhance pedestrian safety and comfort. This page provides an overview of common pedestrian crossing types and their associated benefits and drawbacks.

Refuge islands are also a feature that can be implemented in pedestrian crossings to slow traffic and allow pedestrians to cross in two stages.

These pedestrian crossings can integrate urban greenery and Water Sensitive Urban Design (WSUD) to make for a more visually appealing public domain and superior user experience.



### PEDESTRIAN CROSSING TYPES: PROS AND CONS

Crossing Type	Pedestrians don't wait	Slows traffic	Child friendly	Access for all abilities	Passive Surveillance
Uncontrolled intersection	Yellow	Yellow	Red	Yellow	Green
Signalised crossing	Red	Green	Green	Green	Green
Zebra crossing	Green	Yellow	Green	Green	Green
Wombat crossing	Green	Green	Green	Green	Green
Continuous footpath	Green	Green	Green	Green	Green
Over/Underpass	Green	NA	Red	Yellow	Red





## WALKING

# OPPORTUNITIES A COOLER WALKING ENVIRONMENT

### THE URBAN HEAT ISLAND EFFECT AND HARDSTAND PAVING

Urban surfaces such as roads and roofs absorb, hold, and re-radiate heat, raising the temperature in urban areas. Human activities such as traffic, industry, and electricity usage also generate heat that adds to the urban heat island effect. In some new residential areas, the prominence of large garages and crossovers onto the street reduces the chance for large shade trees either on the verge or in people's front yards. The cumulative effect is hotter urban areas with less scope for greening.

The **Wollongong Urban Heat Strategy 2023** outlines appropriate management strategies to deal with these impacts into the future. There are areas in Wollongong that are particularly vulnerable areas to urban heat, such as Wollongong City Centre, areas around the Princes Highway from Unanderra to Bulli, suburbs surrounding Lake Illawarra and the West Dapto Land Release Area. In urban places with less shade people are less likely to walk<sup>1</sup>.

### MEASURES TO COOL URBAN ENVIRONMENTS

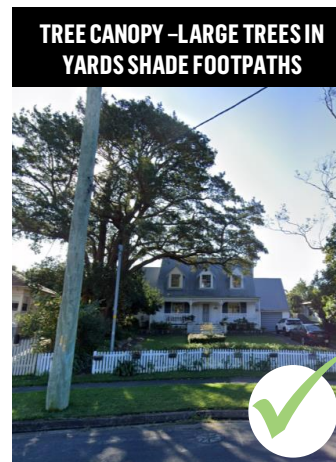
Appropriate mitigation strategies can help places become cooler, particularly in light of our changing climate. Such measures include:

- Increasing the tree canopy, with an emphasis on active transport routes initially.
- Most housing developments are carried out as complying under the State Environmental Planning Policy (Exempt and Complying Codes) 2008 which requires planting of mature trees at the front and rear of properties. It has been observed that these plantings rarely eventuate. Better certification practices are needed to ensure this requirement is realised.
- Incorporation of WSUD and permeable pavements that are effective in reflecting heat from the sun and can reduce pavement temperatures. Additionally, water is able to drain through the pavement, reducing the need for drainage infrastructure and assisting trees and shrubs to grow.
- Use of 'smart waterwise tree' design already trialed in Wollongong, which capacity to double tree size by redirecting water from kerb and gutter.
- Use of crushed granite for paths to achieve WSUD and increased path widths where demand is higher.

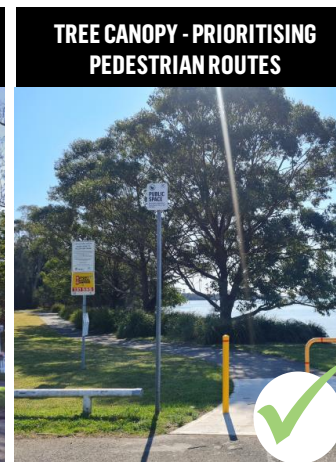
1) Municipal Association of Victoria, Ishade: A Resource for Local Government



"Living Roof" Bus Stop, Leicester, UK



Home in Gwynneville with front yard tree shading public footpath





## WALKING

# LOCAL AREA APPLICATION PLANNING FOR WALKING

### METHOD FOR DETERMINING ACCESSIBILITY TO AMENITIES

The figure on the right shows the comparison between generating walking catchments using 'as the crow flies' radius as compared to walking isochrones (which are based on the formal walking network). This example uses a 1.25 km walking catchment which approximates to a 10-minute walking journey for an able-bodied adult.

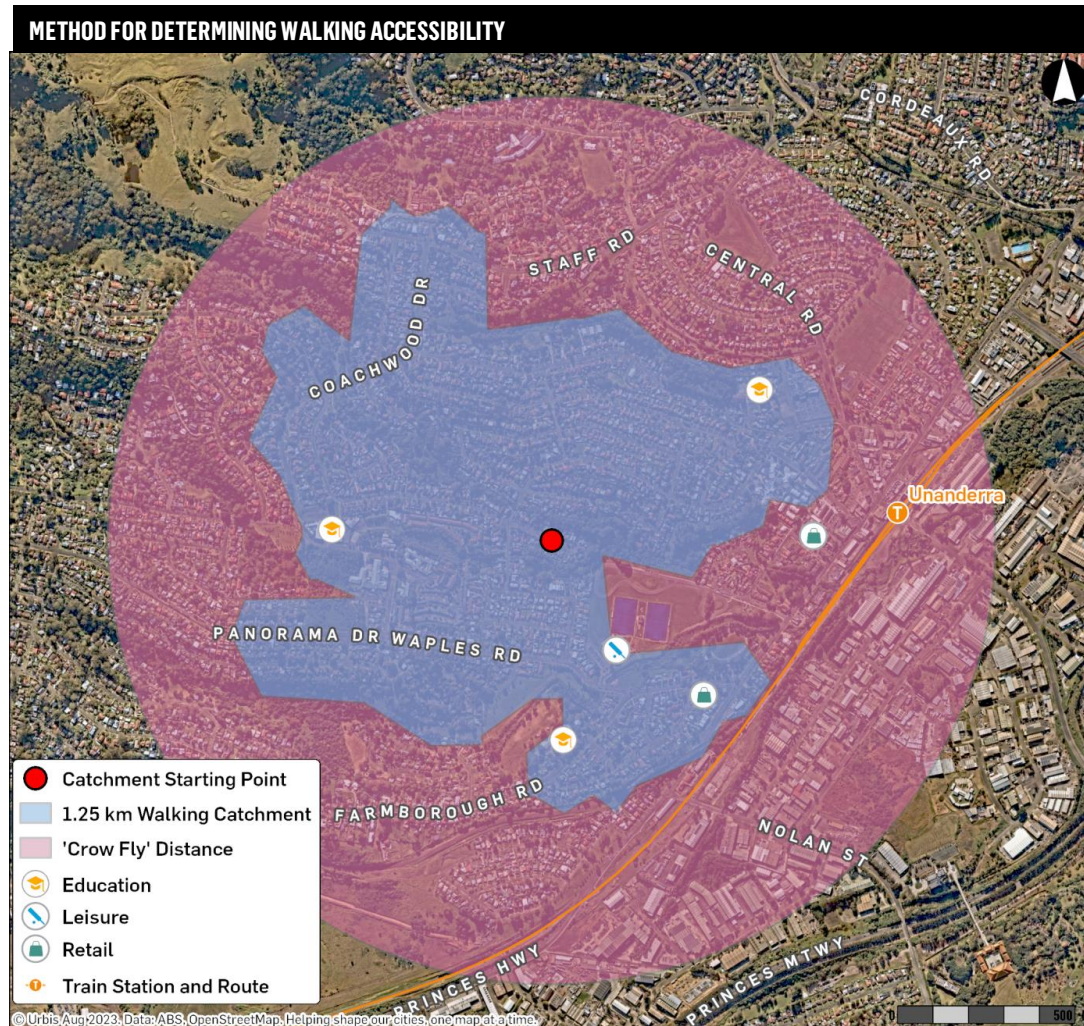
Walking isochrones present an indication of true accessibility, as this is reflective of the walking network available to pedestrians. In the example on the right, the crow fly radius shows that pedestrians can reach Unanderra town centre and train station within the 1.25 km catchment.

### WALKABILITY TO KEY ACTIVITY GENERATORS

Key activity generators include

- Schools and other educational institutions
- Shops and activity centres
- Recreation such as playgrounds, sports fields and the beach
- Public transport nodes such as train stations, major bus stops
- Employment hubs.

Connecting people to these places and creating walkable activity centres is key. The following page gives an example of small pathway changes that can be made to increase the catchment to key activity generators.



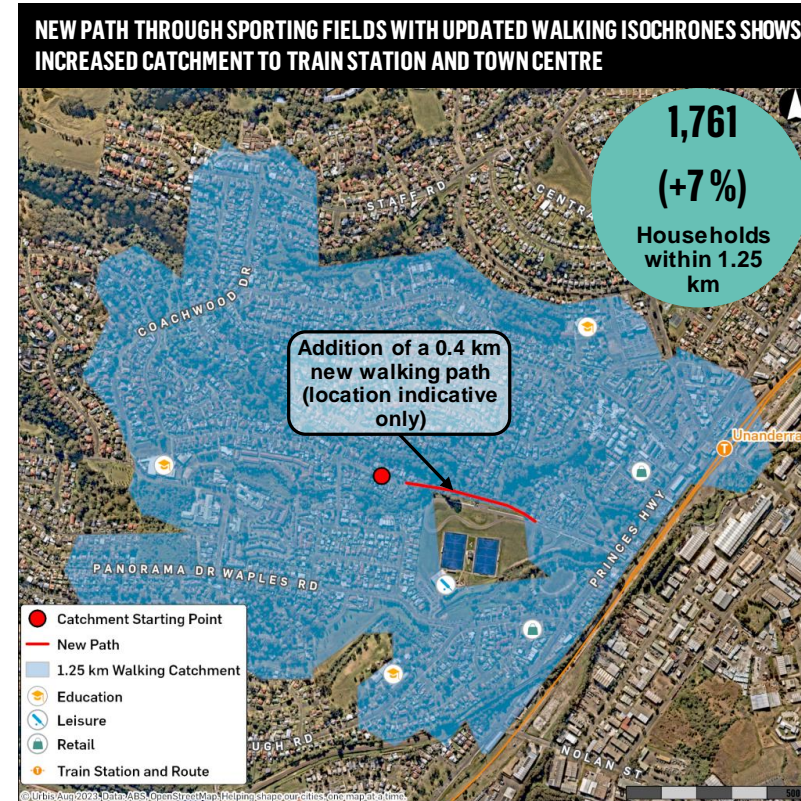
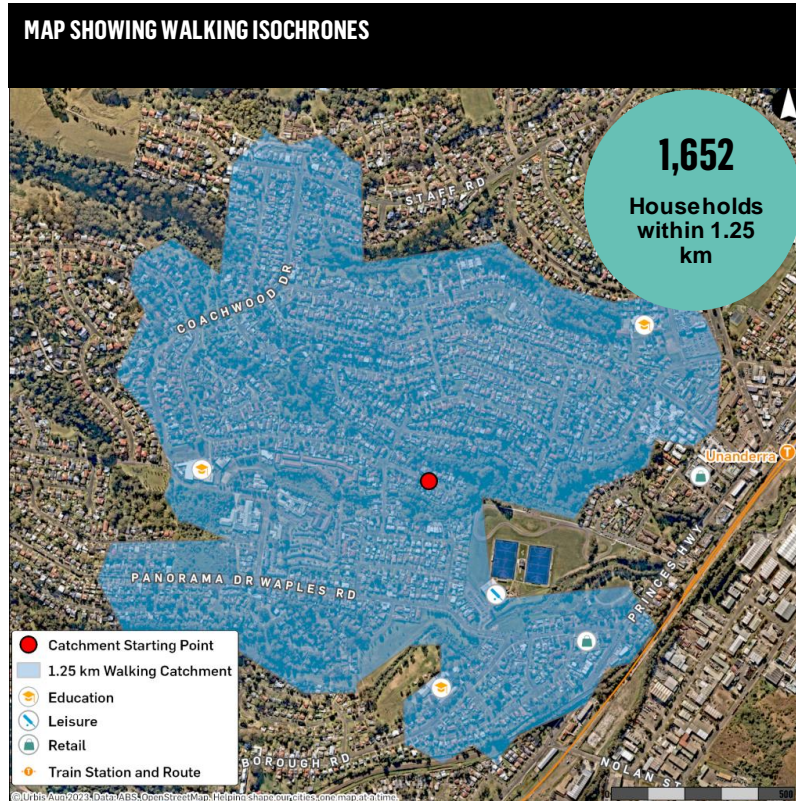


## WALKING

# LOCAL AREA APPLICATION IMPROVING WALKING PERMEABILITY IN UNANDERRA

### IMPROVING ACCESSIBILITY AND PERMEABILITY WITH MORE DIRECT WALKING ROUTES

Accessibility can be improved through more direct walking connections. The two mapped images below provide an example of a hypothetical formal walking path through the sporting field adjacent to Illawarra Hockey Centre. The availability of this path increases the permeability of the neighbourhood and expands the walking catchment to incorporate the town centre and train station.



## WALKING





# LGA-WIDE APPLICATION PLANNING FOR WALKING TO AND FROM TRAIN STATIONS

### PLANNING FOR BETTER WALKING EXPERIENCES

Walking connections should be deliberately planned and consider the experience walking to and from a station, for example.

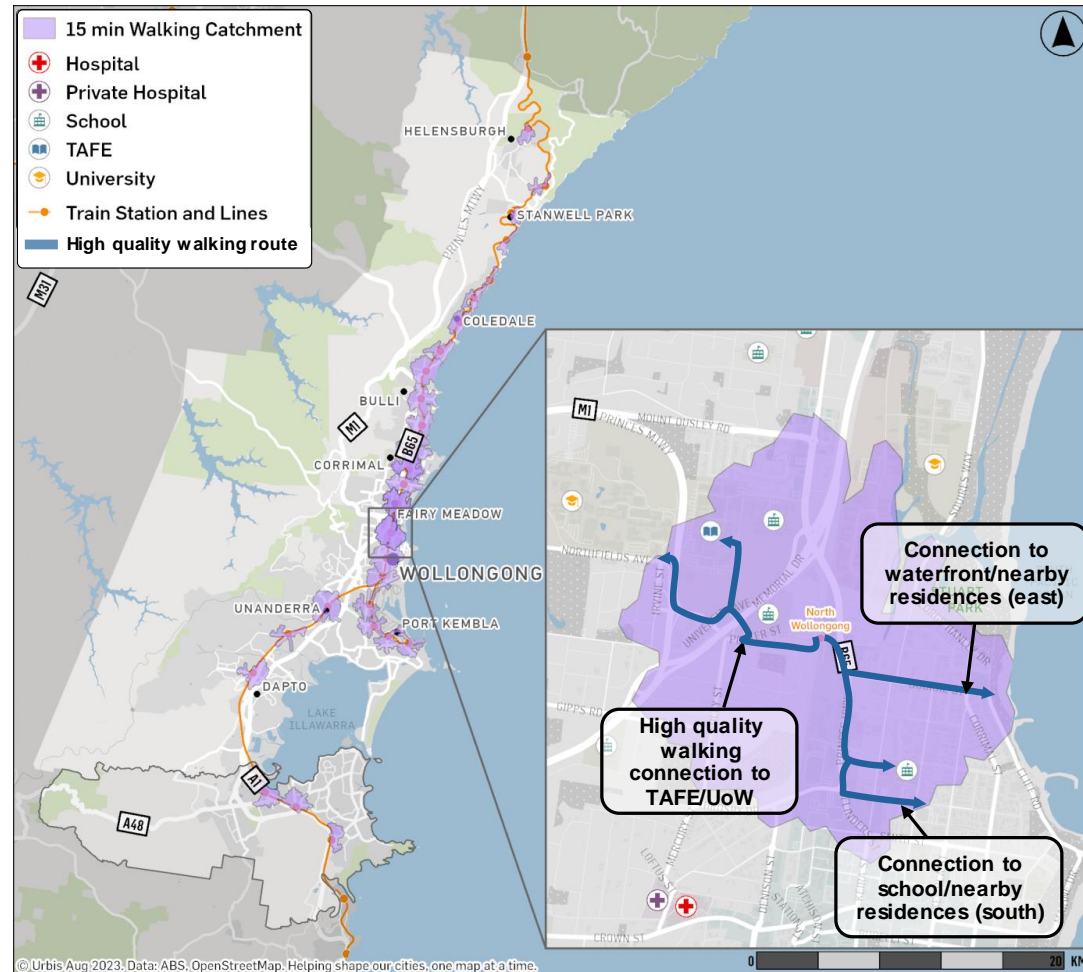
We can enhance walking connectivity to train stations by prioritising key pedestrian routes and ensuring that opportunities for improvements are delivered.

This includes planning pedestrian routes that have:

-  Accessible walking environments (refer Page 40)
-  A convenient and safe walking environment (refer Page 41)
-  Inclusive pedestrian crossings (refer Page 42)
-  A cooler walking environment (refer Page 43)

The figure on the right demonstrates such pathways, using North Wollongong Station as an example. It shows connections to the TAFE/UoW sites (to the west), a school and southern residential catchments and the waterfront and eastern residential catchment. Some of these connections (such as the Bourke Street footpath) have been identified as projects in the Council's Infrastructure Delivery Program 2022 – 2026.

As more services come online at train stations, there will be increased demand for access on foot. This should be planned for particularly at stations earmarked for increased density.





# BIKE RIDING AND OTHER MICRO MOBILITY

## WHAT DOES THE FUTURE LOOK AND FEEL LIKE IF YOU'RE TRAVELLING BY BIKE/OTHER MICRO MOBILITY?

Getting about by bike and e-scooter is more attractive when the connections are linked to the places people want to ride. As the network grows in quality and quantity it will attract a more diverse cohort to feel safe to use bike riding/micro mobility for everyday trips. Wollongong will also see more bike riding tourism, capitalising on its scenic location and supporting the region's economy. More people will want to use bikes and e-scooters to replace short/medium car trips, as it links are improved.

**KING GEORGE V OVAL, SHARED PATH, PORT KEMBLA**



## BIKE RIDING AND OTHER MICRO MOBILITY

# OPPORTUNITIES BEST PRACTICE BIKE RIDING INFRASTRUCTURE

### GUIDANCE FOR BIKE RIDING INFRASTRUCTURE

Creating an inclusive bike riding network will see a greater variety of people bike riding. Many studies have shown that more women, children and inexperienced bike riders will choose to get about by bike when appropriate infrastructure is provided (Refer **Appendix G**). This means more bike riding infrastructure that is either:

- Separated from traffic (bike paths one/two way and shared paths).
- Provided on-road only in locations in which traffic has been calmed and is low-volume (shared zones and quietways).

The *NSW Cycleway Design Toolbox 2020* provides detailed guidance on what standards should be adopted. Appendix G contains a useful tool on when to consider different infrastructure types.

The below infographic outlines guidance for the safest and most functional bike riding paths for Wollongong to implement.



1 Auburn / Swan Street, Wollongong



2 Gladstone Avenue, Mount Saint Thomas



3



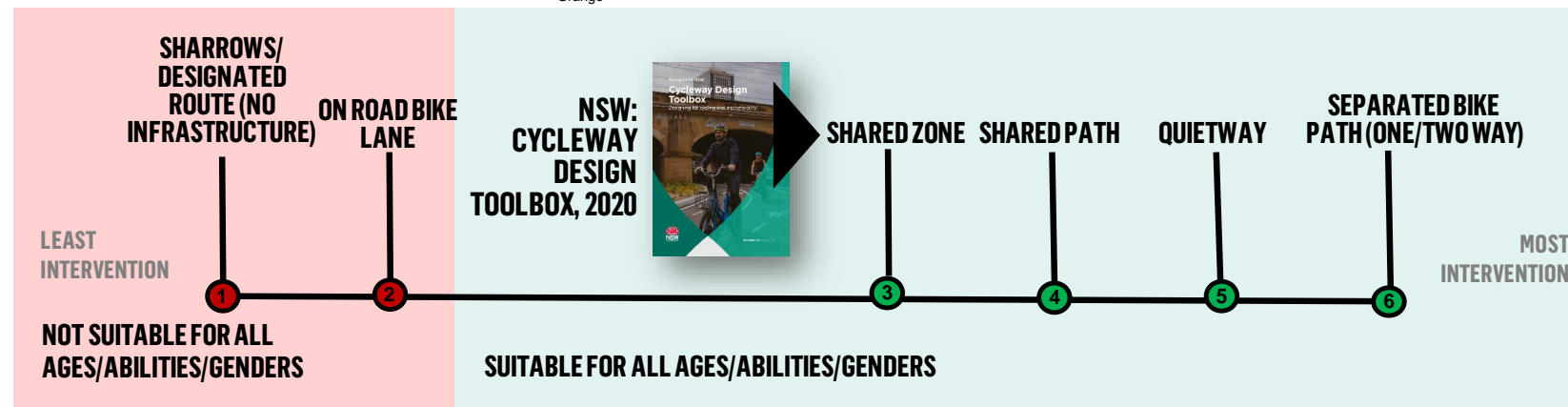
4 Princes Highway / West Dapto Road, Kembla Grange



5 Example of a Quietway in New Zealand



6 Kembla Street, Wollongong



## BIKE RIDING AND OTHER MICRO MOBILITY

# BICYCLE FACILITIES SELECTION DECISION SUPPORT TOOL

### BIKE PATH (ONE/TWO WAY)

A bike path is a path designated for bicycle use with a physical separator from motor vehicle traffic. Separation typically occurs through raised kerbs, bollards or landscaping.

### SHARED PATHS

A shared path in Australia is a designated route where both pedestrians and bike riders can travel. There are potential conflicts between faster-moving bike riders and slower-moving pedestrians and so locations where there are high user volumes are managed appropriately.

### QUIETWAY

A quietway is a network of low-traffic routes for bike riders offering a quieter alternative to main roads. Key requirements include

- Low volume routes (< 2000 cars per day)
- Low speed / design speed (< 30km per hour)
- Regular traffic calming measures

Note: Full list of requirements found in the TfNSW, Cycleway Design Toolbox, 2020

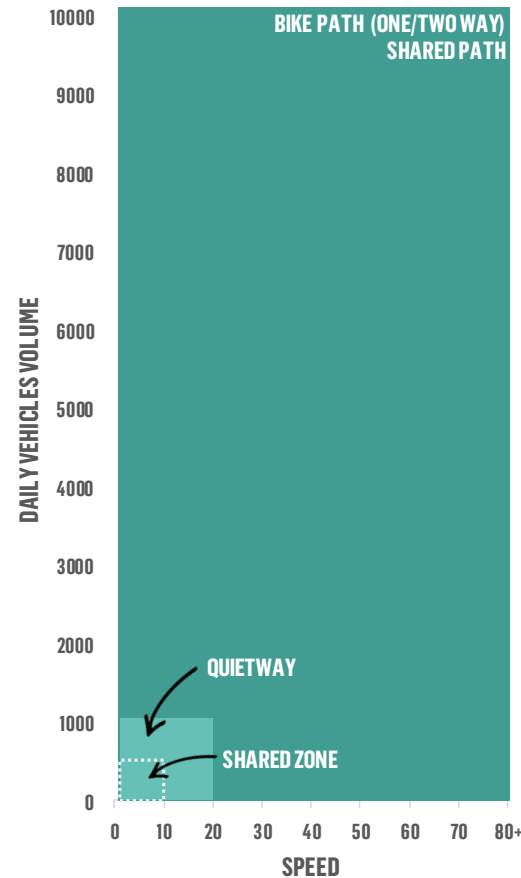
### SHARED ZONE

A shared zone refers to a street in which all users have equal priority. Key requirements include

- The speed limit in shared zones is typically 10 km/h.
- The pedestrian volume should be reasonably high to justify a shared zone. If not, vehicles might dominate the space, negating the purpose of the shared zone.
- Traffic volumes should be very low, providing occasional access to adjoining properties.

Full list of requirements found in Austroads, Guide to Traffic Management Part 10: Traffic Control and Communication Devices

### GUIDANCE FOR SELECTING BIKE RIDING INFRASTRUCTURE



Adapted from requirements/guidance provided in:

Shared Zones: Austroads, Guide to Traffic Management Part 10: Traffic Control and Communication Devices,

Quietways: TfNSW, Cycleway Design Toolbox, 2020

## BIKE RIDING AND OTHER MICRO MOBILITY

# OPPORTUNITIES ROAD SPACE REALLOCATION OF LOCAL STREETS

### HOW CAN LOCAL ROADS BE RETROFITTED FOR IMPROVED BIKE RIDING?

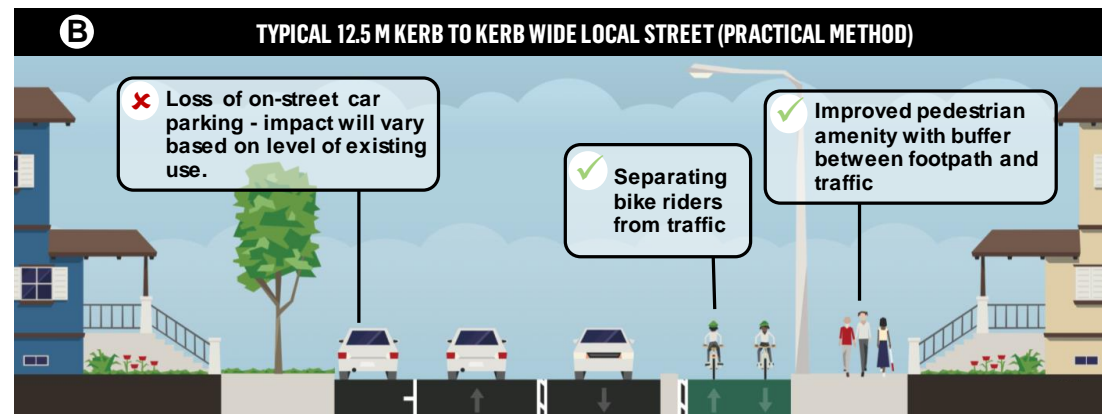
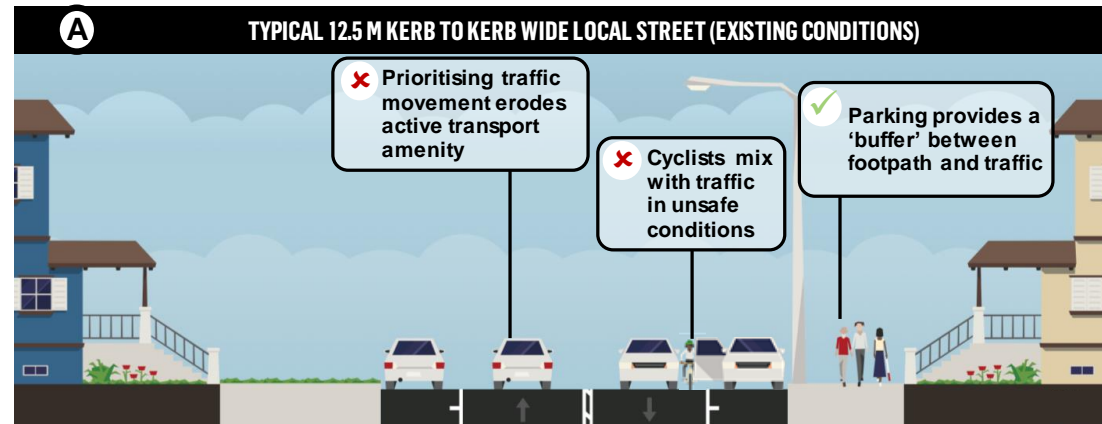
In Wollongong there is some consistency between typical street widths with many of the local streets around 12.4 to 12.6 metres in width. This page provides some context and design advice around how these typical street types can be retrofitted to allow for bike riding that is safe and will attract a broad array of users.

To complement improved bike riding infrastructure, it is also essential to also provide high quality bike parking. This includes secure and accessible bike parking for all abilities, improved bike parking at local centres and improved bike parking at schools.

### WON'T REMOVING PARKING BE BAD FOR DRIVERS?

While less parking may be challenging at first, with time the community will adapt and change, with some turning to other modes. This, in turn, frees up car parking spaces.

To create better bike riding infrastructure, we often need to make space on our existing roads. Currently, a significant portion of road space is allocated to on-street parking. Demand for this space is not high on many local streets. Given the constraints of road width and the necessity to maintain lanes for vehicular traffic in most scenarios, the removal of on-street parking often emerges as the most feasible solution to accommodate bike riding infrastructure. This needs to be examined and managed in context. In some situations, it may also be feasible to create one-way streets.





## BIKE RIDING AND OTHER MICRO MOBILITY

# OPPORTUNITIES ROAD SPACE REALLOCATION OF ARTERIAL STREETS

### HOW CAN ARTERIAL ROADS BE RETROFITTED FOR IMPROVED BIKE RIDING?

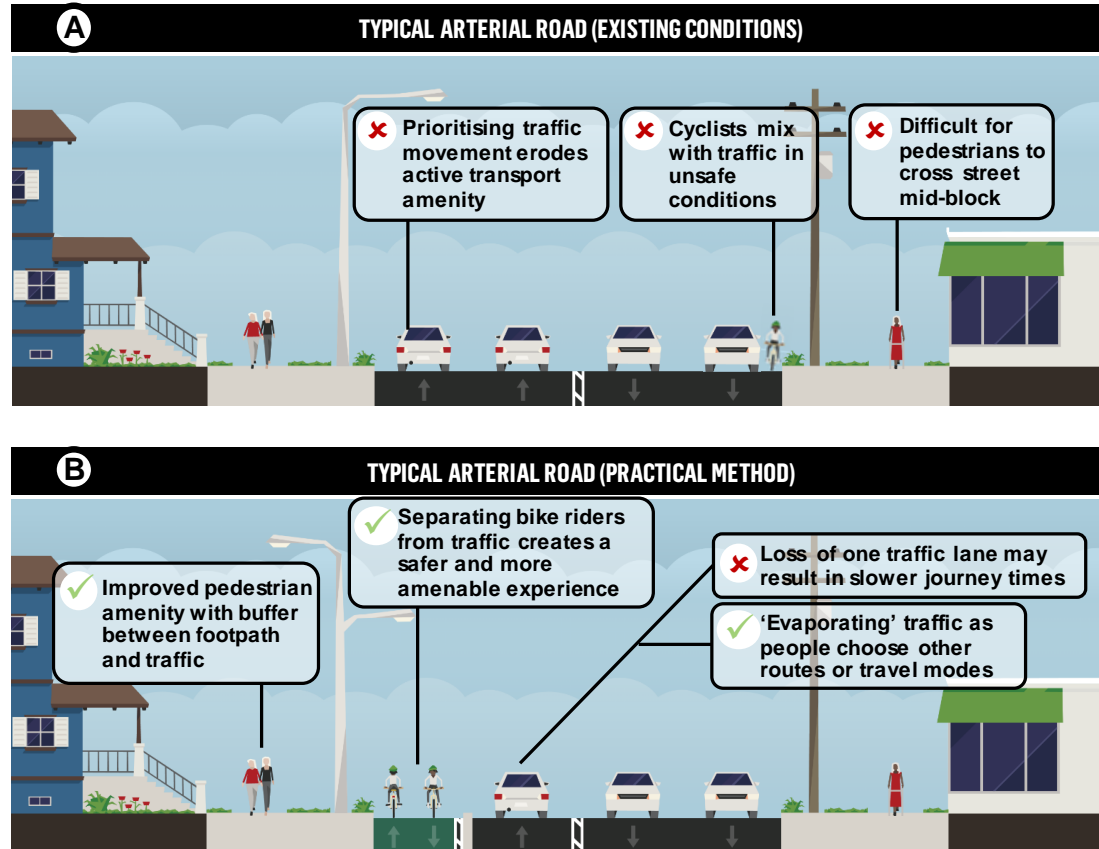
Arterial roads in Wollongong tend to be about 20 metres in width. This page provides some context and design advice around how these typical street types can be retrofitted to allow for bike riding that is safe and will attract a broad array of users.

### WON'T REMOVING A LANE CAUSE CONGESTION?

The trade-off for improved bike riding infrastructure in this example is the loss of a lane of traffic. Would this cause traffic chaos? Not necessarily.

"Evaporating traffic" refers to the idea that when you reduce or limit road space for cars, the overall amount of car traffic can actually decrease. This happens because people might choose other ways to travel, like bike riding or walking, or they might decide not to make some trips at all. So, by making less room for cars, you can end up with fewer cars on the road.

In some town centres, the removal of on-street parking can require ancillary parking projects to offset parking loss.



## CYCLING AND OTHER MICRO MOBILITY

# OPPORTUNITIES NO-CAR OR PARK-ONCE TOURISM

More can be done to capitalise Wollongong's proximity to Sydney ensuring tourist destinations are connected to public transport hubs and tourists are offered experiences which allow them to leave their car at home or park once and use other modes.

**WAYFINDING SIGNAGE** Wayfinding signage plays a role in connecting tourist destinations. Signs ensure visitors can move around easily between transport options and their destination.

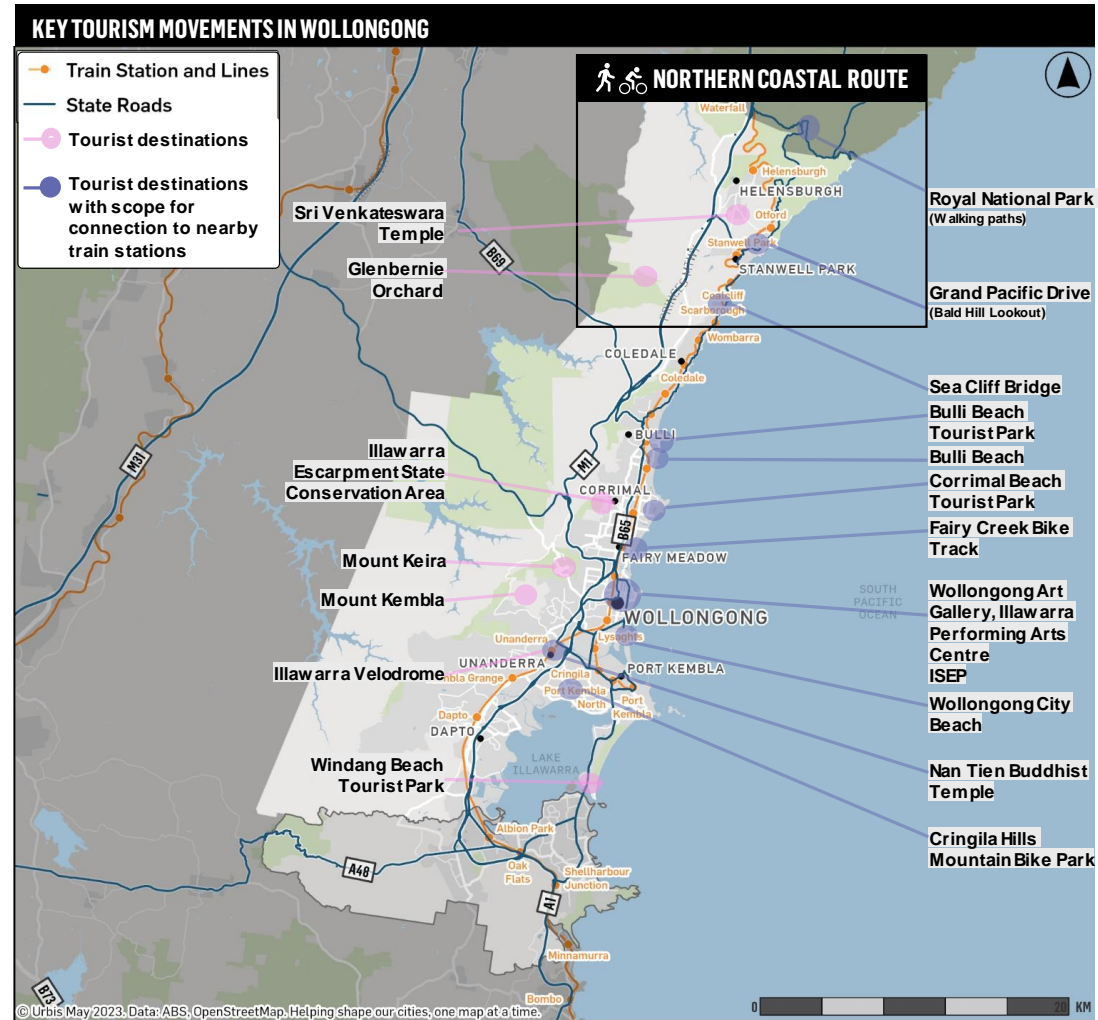
**FIRST/LAST MILE AT STATIONS** Shared e-bikes/scooters and cars (carshare<sup>1</sup>) can conveniently and sustainably connect train stations to attractions. Strategically placed micro-mobility stations offer flexible first/last-mile travel for tourists and have the ability to support low or no-car tourism. More on this can be found on Page 54.

**NORTHERN COASTAL ROUTE** There is an opportunity to leverage the proximity of the Sea Cliff Bridge to train stations and other tourist sites to turn Lawrence Hargrave Drive into a renowned bike riding route and evolve the Grand Pacific Walk into a bike riding tourism destination.

**LIGHT RAIL/TRACKLESS TRAM CONNECTING RAIL TO BEACH** Connecting Wollongong Rail Station to the foreshore could enhance the visitor experience (more detail on this idea is contained in the Central Wollongong Movement and Place Plan).

**PROMOTING BIKE RIDING TOURISM** Wollongong is almost 50 km long with an almost complete scenic coastal bike riding route taking in many tourist attractions. Bike riding tourism has been found to have significant economic benefits<sup>2</sup>.

1) At the time of writing car share was being trialed at Wollongong Station aimed at visitors/tourists.  
2) The 2021 Evaluation of Ngā Haerenga Great Rides and the New Zealand Cycle Trails and Cycle Tourism Insights Research Report



Based on: Destination Wollongong, visitwollongong.com.au, Destination NSW, visitnsw.com/destinations/south-coast/Wollongong-and-surrounds

## CYCLING AND OTHER MICRO MOBILITY

# LGA WIDE APPLICATION WOLLONGONG BIKE RIDING NETWORK OPPORTUNITIES

### BIKE RIDING NETWORK

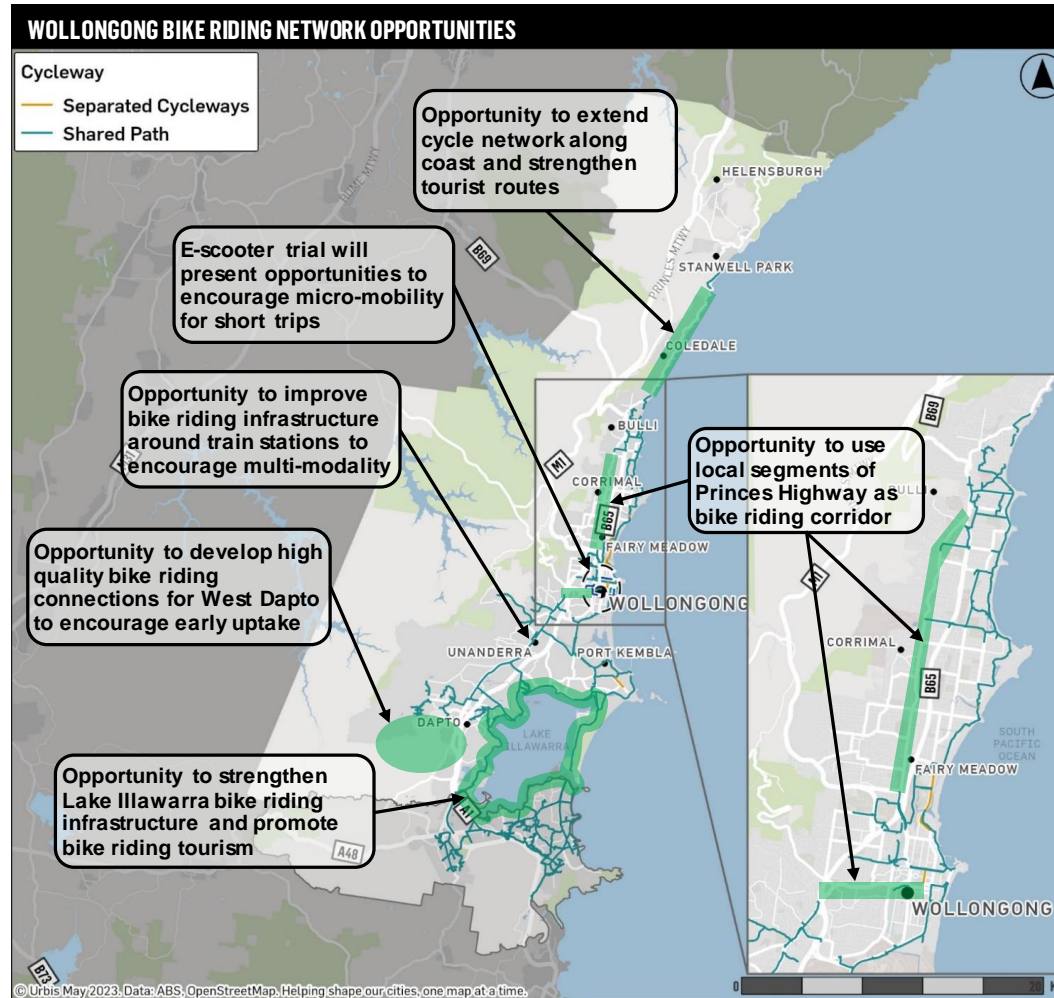
Wollongong has a developing bike riding network that is predominantly focused around coastal routes and the City Centre.

There are a number of gaps in Wollongong's bike riding network that could be filled relatively easily to support better active travel connections into the City Centre. These would take advantage of existing infrastructure, particularly along the coastline.

Building upon the Cycling Strategy 2030, the map on the right shows opportunities to strengthen the Wollongong bike riding network. Key principles guiding these opportunities include

- Promoting routes that will strengthen and encourage bike riding tourism, such as the routes along the Grand Pacific Walk and Lake Illawarra.
- Promoting high-quality bike riding infrastructure near train stations and other public transport nodes to encourage multi-modality and first and last mile journeys.
- Promoting high-quality bike riding infrastructure in new development areas such as West Dapto to encourage bike riding as the obvious choice for short trips.
- Exploring opportunities to improve east-west bike riding connections, as highlighted as a key action in the Cycling Strategy 2030.

In 2023 Wollongong City Council in collaboration with Transport for NSW and Neuron have started an e-scooter trial in key locations across the LGA. A safer and more convenient bike riding network will create further opportunities to trial initiatives such as E-bike sharing schemes through strategic partnerships and targeted bike riding tourism campaigns.





## CYCLING AND OTHER MICRO MOBILITY

# LGA WIDE APPLICATION OTHER MICRO-MOBILITY IN WOLLONGONG

### MICRO-MOBILITY IN NSW

Micro mobility refers to a range of small, lightweight transport options that includes bicycles, electric bicycles (e-bikes), electric scooters (e-scooters) and other light electric vehicles. These transport options typically travel at speeds less than 25 km/h and encompass a wide range of technologies. Micro-mobility vehicles can be owned privately or shared publicly. These car-free transport alternatives provide benefits to individuals and communities by being affordable, convenient and sustainable. The spectrum of options across micro-mobility creates options for all people, regardless of age, ability and circumstances.

Electric micro-mobility provides a significant opportunity to overcome the topographical challenges away from the coastal path network and allow people to ride up and over the ridge lines near the escarpment.

### E-SCOOTER TRIAL IN WOLLONGONG

Commitment to exploring more sustainable transport solutions has led to the implementation of an e-scooter trial, which has been launched as part of the NSW E-Scooter Shared Scheme Trial. Within the first 3 months of the e-scooter trial Wollongong City Council saw 132,000 km of travel undertaken by shared e-scooters by 22,000 people. Implemented in September 2023, the trial will run for at least 12 months.

The trial aims to review their use through End-to-End Journeys, First and Last Mile Journeys and Recreational Journeys as a potential alternative and sustainable transport option for the community. Once the trial concludes, Council and Transport for NSW will be reviewing all recorded data such as the number of e-scooter trips taken, km travelled, hours travelled, and areas travelled to determine e-scooters success in meeting trial objectives.

### FIRST AND LAST MILE CONNECTIONS

First and last mile connections refer to the journey between an individual's origin or destination and public transport stop. This can include trips such as travelling to work, shopping centres, tourist locations or other amenities.

The hilly terrain and established car-centric culture in Wollongong can present obstacles to connecting to public transport nodes via sustainable travel options. The electrification of micro-mobility presents a considerable opportunity to overcome the terrain constraints in the region and provide a viable alternative for those wanting to embrace this.

There are a range of ways first and last mile journeys can be encouraged, including

- Prioritising location and security of bike parking over car parking at public transport nodes.
- First and last mile journeys are typically undertaken during the early morning or early evening. It is important to consider safety during these peak times, including appropriate provision for lighting and personal security.
- Campaigns and initiatives to encourage micro-mobility first and last mile journeys (such as park and ride or subsidised e-scooter / e-bike use).

### E-SCOOTER TRIAL

“ Within the first 3 months of the e-scooter trial Wollongong City Council saw 132,000 km of travel undertaken on shared e-scooters by 22,000 people.





# PUBLIC TRANSPORT

## WHAT DOES THE FUTURE LOOK AND FEEL LIKE IF YOU'RE TRAVELLING PUBLIC TRANSPORT?

**More frequent and more direct services by rail and bus will make public transport more competitive with car travel.**

**With increased development happening around select train stations, more people will live in proximity to high quality public transport.**

**The connections to public transport will be comfortable and easy to reach using active transport. When customers get to their destination there will be comfortable places to wait and get the information they need about their services.**

**BUS STOP IN WOLLONGONG CITY CENTRE**



**PUBLIC TRANSPORT**

**OPPORTUNITIES COMPETITIVE PUBLIC TRANSPORT**

The railway line through Wollongong is a significant public resource. Current patterns of use for people using public transport for work trips show that these are mostly focussed on people within a relatively close proximity to train stations (see page 24).

The current bus network provides operates on the principle of maximising 'coverage' of services. The downside of this is a prevalence of circuitous routes that are not competitive with car travel (see page 16).

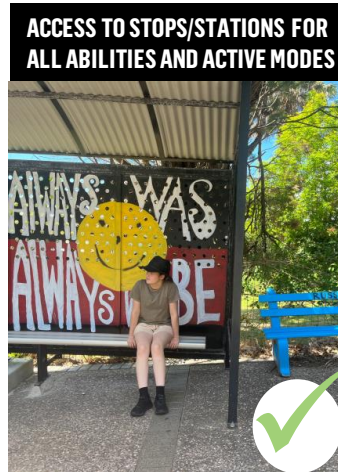
Responsibility for public transport service sits with Transport for NSW and Wollongong City Council support the service to bus stop infrastructure and connectivity. There are 1,135 bus stops in Wollongong and there is a program of working achieving compliance with DSAPT. A full list of the division of responsibilities is shown in Appendix F.

**SEAMLESS EXPERIENCE TO STOPS AND STATIONS**

High-quality public transport starts with the experience as soon as a customer steps outside their door. A seamless journey to the bus stop or train station (whether that is by bike, mobility device, or foot) is part of how a customer experiences their public transport journey. This also includes a seamless transition between bus/train. More on what a 'seamless experience' for pedestrians and bike riders looks like is covered on Pages 45 and 46.

**COMPETITIVE PUBLIC TRANSPORT**

Public transport itself should include "turn up and go" frequencies on key corridors that provide a direct route, comfort and a generous span of hours no matter what day of the week or hour of the day. Without a network that is connected, reliable and enables travel for all abilities across the whole day, Wollongong will not have a system that people can rely on.



**ACCESS TO STOPS/STATIONS FOR ALL ABILITIES AND ACTIVE MODES**

**SEAMLESS EXPERIENCE TO STOPS AND STATIONS**



**MULTI-MODAL JOURNEYS**



**AMENITY AT STOPS/STATIONS**



**ACCESSIBILITY**

**COMPETITIVE PUBLIC TRANSPORT**



**SERVICE STANDARDS: RELIABILITY/FREQUENCY/SPAN**



**DIRECTNESS OF ROUTE**

**AVOID INDIRECT ROUTES**



## PUBLIC TRANSPORT

# LGA-WIDE APPLICATION FUTURE PUBLIC TRANSPORT NETWORK

The opportunity provided by the More Trains, More Services (MTMS) program from Transport for NSW, along with power supply upgrades between Unanderra and Shellharbour Junction provides an opportunity to significantly improve the public transport system.

### TRUNK AND LOOP NETWORK

The train network, along with Lawrence Hargrave Drive, the Princes Highway and Shellharbour Road corridors can form a high frequency, connected spine enabling connections between suburbs. Local loop services will connect the east-west movements and within suburbs providing more opportunities to for people to not use their car to travel around the city and have a time competitive trip.

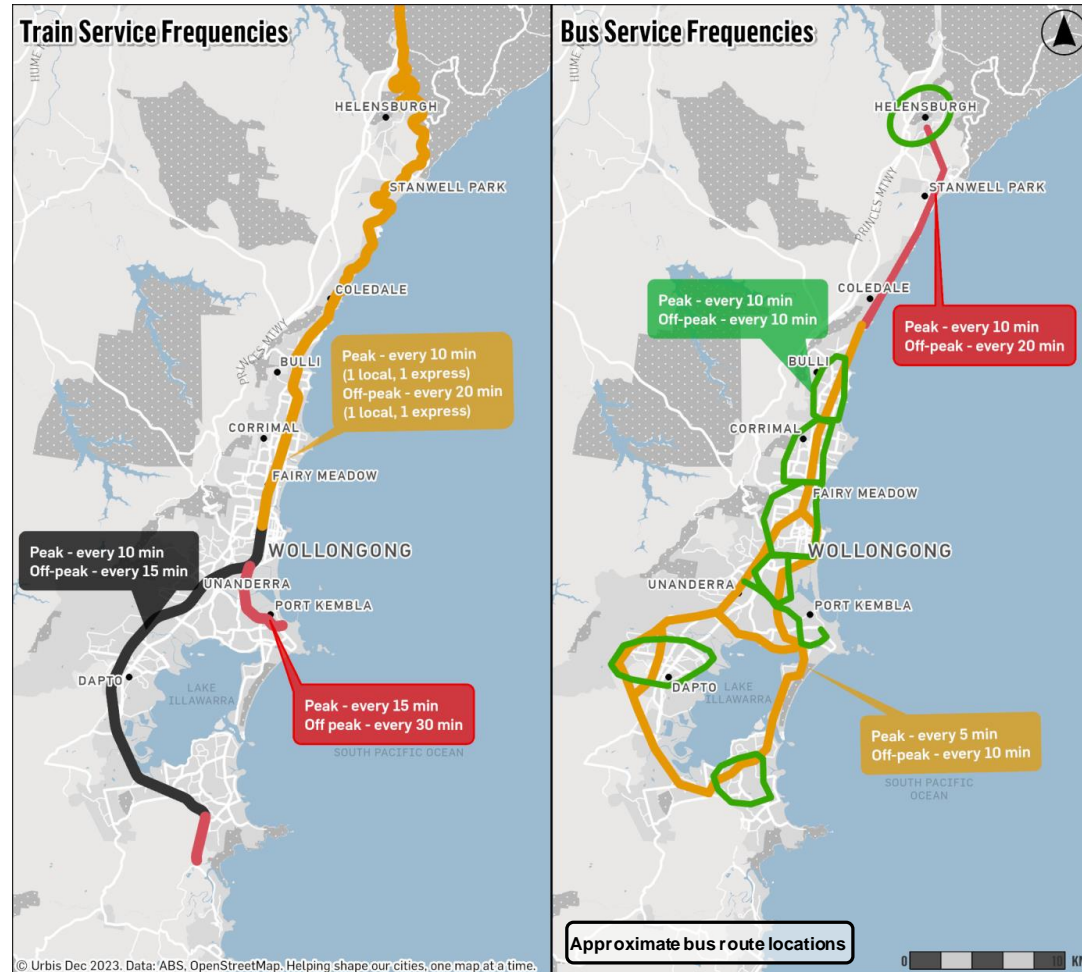
By removing every bus from terminating in the Wollongong City Centre and “through running” services, current layover spaces can be reallocated to other, more productive uses.

This network design will also bus service kilometres and service hours to be reallocated from near empty buses running from all locations to Wollongong to providing increased connectivity and frequency.



### INSIGHT

The route 2 bus from Stanwell Park Wollongong could be curtailed to Thirroul with the MTMS program, providing more services from Stanwell Park and reducing overall travel times to Wollongong.



## PUBLIC TRANSPORT

# LOCAL AREA APPLICATION STATION PRECINCT UPGRADES

Transport for NSW upgrades train stations through a variety of mechanisms, notably the Transport Access Program (TAP). TAP projects generally aim to improve station access for those with a disability, limited mobility or parents with prams. The following principles apply for station precinct upgrades

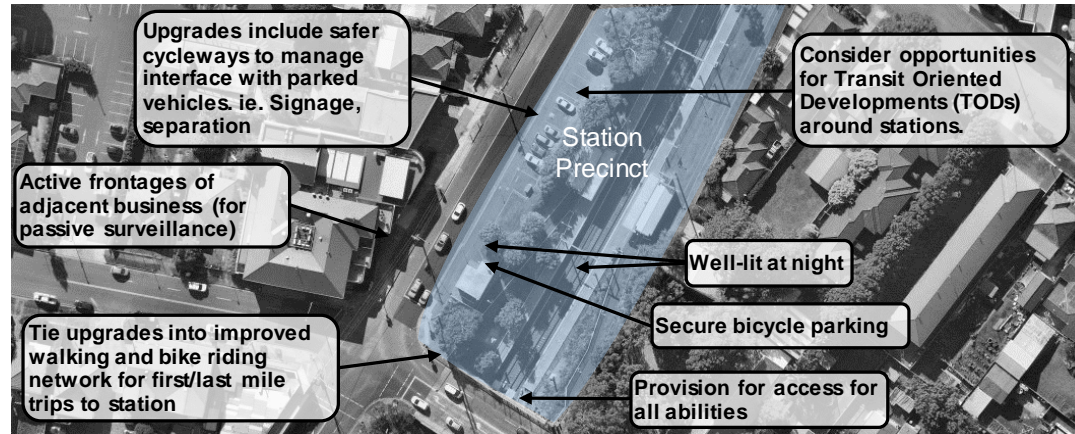
- Wollongong City Council and Transport for NSW should collaborate on any station precinct upgrades within Wollongong.
- Explore opportunities to undertake concurrent activities within the station precinct in a single mobilisation for the optimisation of resources.
- Any station upgrades need to adequately tie into the surrounding area, ensuring safe and seamless journeys.

The image to the right (top) demonstrates how these principles can be applied in practice, using the example of Coniston Station. Key factors include

- Addressing safety issues of bike riders and parked vehicles.
- Active frontages of adjacent business (for passive surveillance).
- Tying upgrades into adjoining active travel network.
- Consider opportunities for Transit Oriented Developments (TODs) around stations.
- Well-lit at night.
- Secure bicycle parking.
- Provision for access for all abilities.

The image to the right (bottom) shows some examples of the type of best practice upgrades that should be prioritised near stations including (though not limited to) bike lockers, kiss and ride bays and safer cycleways.

### Station Precinct Upgrade best practice – Coniston Station



### Examples of best practice upgrades at stations



**BIKE LOCKERS**

Bike sheds and lockers for bike parking provide safe short-term storage options. They are often Opal-enabled and bookable through the Opal transport system.



**INTERCHANGE**

Kiss and ride parking bays near stations allow quick entry and exit for drop-offs and pick-ups. Well placed bus stops can support efficient use of buses. Bus stops as well as kiss and ride area should provide adequate waiting space including shelter, seating and provisions for all accessibility needs.



**SAFER CYCLEWAYS**

Upgrades to cycleways near station precincts can significantly help to increase rider safety. This opportunity can also help to encourage green travel modes over car options and facilitate last mile journeys.

## PUBLIC TRANSPORT

# OPPORTUNITIES STRATEGIES TO INTEGRATE WITH OTHER TRANSPORT MODES

### STRATEGIES FOR MULTI-MODAL INTEGRATION

A transport interchange is a location where people can seamlessly transfer from one transport service to another in the same location, sometimes across multiple transport modes. Given the concentration of transport options in the area, the land around these interchanges often becomes desirable for investment and uplift. Multimodal transport interchanges are generally confined to higher tier stations in the rail network.

There are examples of transport interchanges in Wollongong such as the University of Wollongong bus interchange and Wollongong Station multi-modal interchange.

There are opportunities to develop a high-quality transport interchange at Dapto Station, with considerable development occurring in this area (see Page 60). Other key opportunities to develop better transport interchanges include Warrawong (King St and Cowper St) and Wollongong Station (at Crown St) as well as Unanderra, Thirroul and Helensburgh stations.

When planning transport interchanges, it is important to consider how these nodes interact with other transport modes such as active transport. Transport interchanges should prioritise access by walking and bike riding, other public transport modes, rideshare and then private vehicles. They should also have high quality walking and bike riding connections to nearby amenities.

### RAPID TRANSPORT FEASIBILITY

The proximity of the train station to key attractors such as the Sports and Entertainment Centre and Wollongong Foreshore has the potential to reshape behaviours, how people experience Wollongong and attract visitors using sustainable transport.



High frequency bus interchange, Lane Cove

Lane Cove interchange is an example of a high frequency bus interchange. This interchange features parallel bus stands that allow for concurrent boarding. This type of interchange allows for more efficient scheduling and caters to higher demand of services.



Bus interchange, University of Wollongong

The University of Wollongong bus interchange is an example of a modern and efficient bus interchange system. The interchange is served by five bus routes. This bus interchange has provided a consolidated location for students to access all services. There is seating, shelter and convenient access between bus services.



Multi-modal interchange, Sutherland Station

Sutherland Station in the Sutherland Shire is an example of a Multi-Modal interchange. The train station is situated adjacent to a bus interchange, offering services towards areas such as Bankstown, Parramatta and Woronora. The interchange offers convenient access and sightlines between train and bus, comfortable seating, shelter, passive surveillance and information for passengers.



## PUBLIC TRANSPORT

# LOCAL AREA APPLICATION DAPTO STATION INTERCHANGE

The NSW Government has developed the Transport Oriented Development Program which seeks to rezone land around public transport nodes to allow for new affordable homes. Preliminary outputs from this program have identified Dapto, North Wollongong and Corrimal train stations as locations for high-density development.

The Dapto Station precinct has been identified by the NSW Government as a location for Transit Oriented Developments (TOD) within 800 m of the Station. There is an opportunity to create a high-quality transport interchange at Dapto Station. West Lake Illawarra is the fastest-growing residential area in NSW outside the Sydney region. Over the next few decades, it will become home to around 19,000 new homes and more than 50,000 people. West Lake Illawarra will also bring new employment land and job opportunities to Wollongong. Planning of a high-quality multi-modal interchange at Dapto Station is urgently needed. It will encourage sustainable travel behaviour from the time that residents first move to the area and resist embedding high car reliance in the West Dapto area.

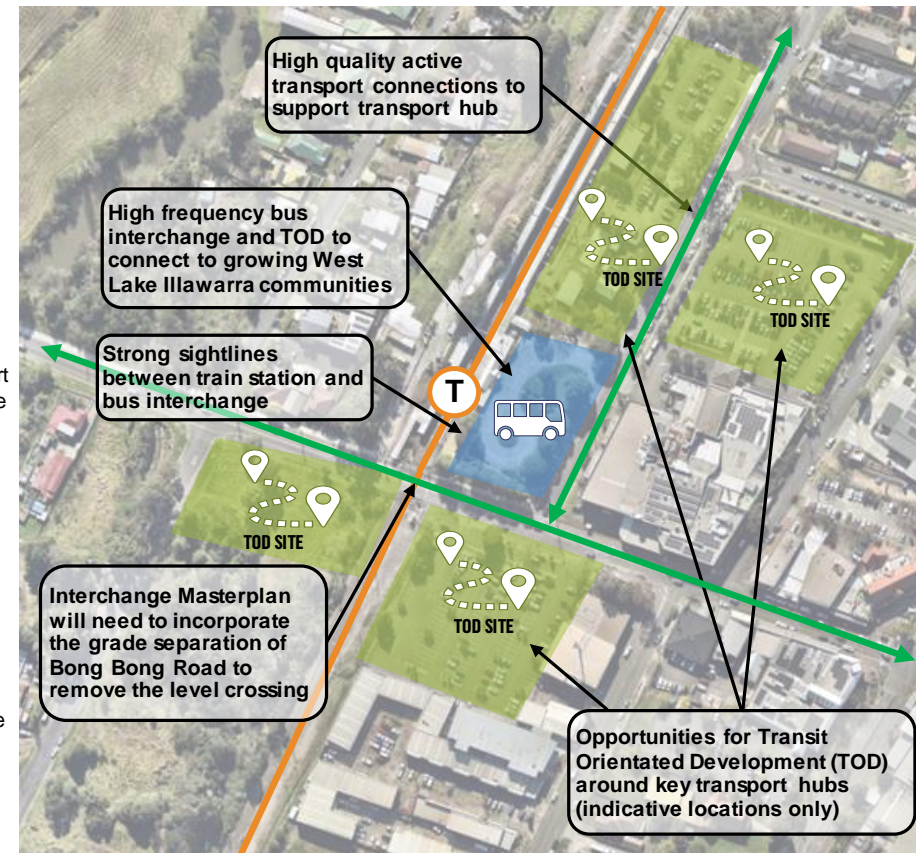
The integration of rail, bus, active travel, micro-mobility, park-and-ride and smart mobility services will provide a multitude of convenient options to discourage the use of private vehicle trips.

The following principles should be applied to stations in Wollongong for the greatest success of a multi-modal interchange

- Well planned bus station near train station. There needs to be strong sightlines between train station and bus station to encourage interchanging journeys.
- Seamless connections between transport modes through high-quality pedestrian connections.
- Adequate and secure parking for bike riding and other micro-mobility vehicles.
- Development of nearby land for mixed use and areas with high amenity value and encouragement of Transit-oriented Development (TOD).

Integrating sustainable transport with best practice solutions will help to provide a well-planned and designed local area. Priority areas include bus stations that connect to other public transport modes with high-frequency services, transit-oriented local development, as well as effective sightlines that encourage use and detail flow. These practices will not just ensure the effective planning of Dapto's multi-modal station and surrounds but also encourage connection to the Shellharbour and Wollongong region.

### Integrating Sustainable Transport – Best Practice Options





# FREIGHT



## **WHAT DOES THE FUTURE LOOK AND FEEL LIKE FOR FREIGHT TRANSPORT?**

The increasing significance of the Port of Port Kembla requires a rethink of how freight moves through the region. There will be more freight than ever coming in/out of Port Kembla but this will look different as it will be transported to Western Sydney by a designated freight rail line. This will result in less travel time/congestion on roads for commuters travelling to Western Sydney.

On a more local level, deliveries to local businesses will increasingly happen off-street. Where on street loading occurs, it will be managed efficiently so that businesses can be serviced while also balancing the needs of other kerbside uses.



## FREIGHT

# OPPORTUNITIES FUTURE HEAVY FREIGHT ROUTES

Port Kembla is one of NSW's key ports and primarily responsible for vehicles (importing) and grain (exporting)<sup>1</sup> and it is slated to become NSW's next container port when Port Botany approaches capacity. The increasing significance of Port Kembla will require a rethink of how freight moves through the region. There are two key moves regarding the future of heavy freight - South West Illawarra Rail Link (SWIRL) and M1 bridge upgrades.

### SWIRL

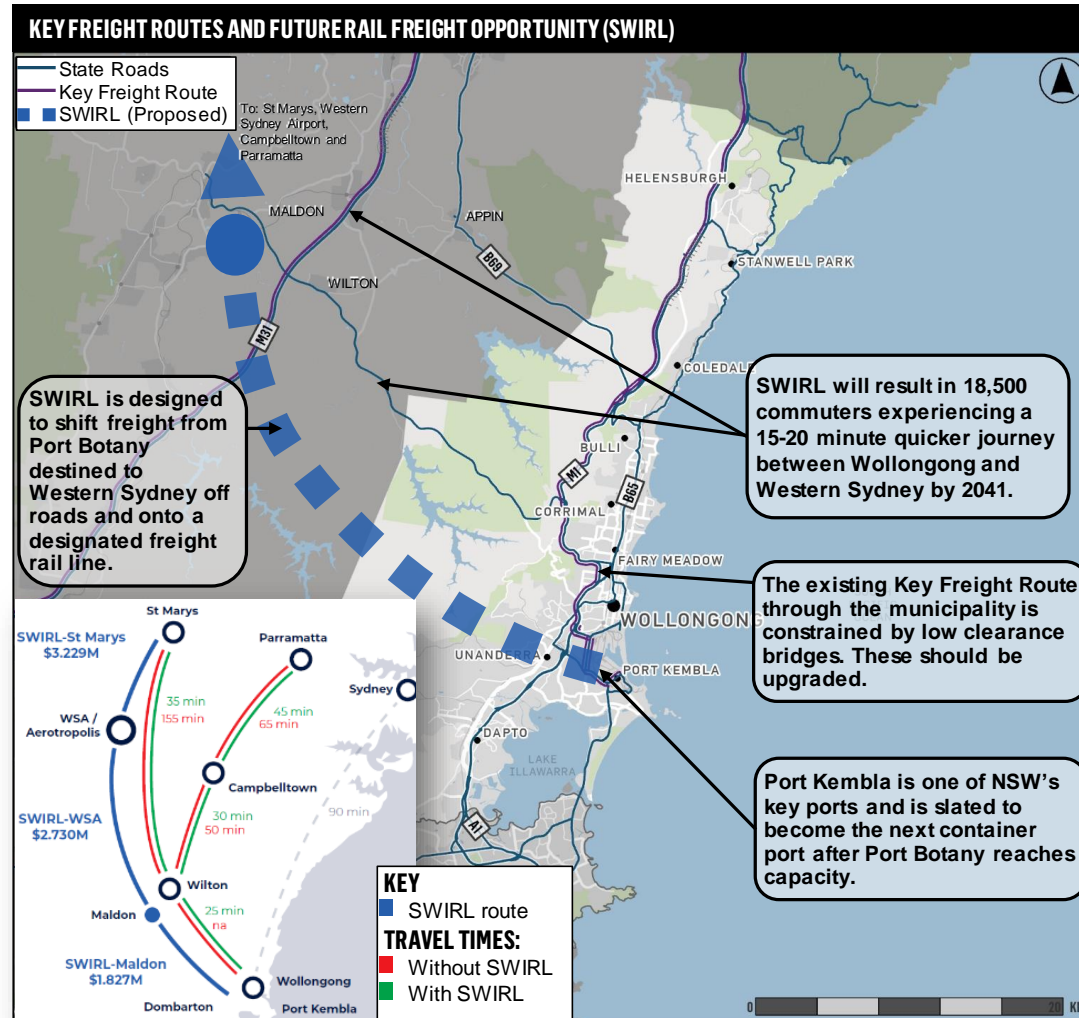
The NSW Government has committed to a number of projects in NSW that segregate rail freight from the passenger network and improving capacity. One of these projects is the South West Illawarra Rail Link (SWIRL)<sup>2</sup> which presents a complete freight bypass to the congested east-west corridor of Sydney.

SWIRL will address the current risk of 100% reliance on the South Coast Line to Sydney for both passenger/freight rail.

With more freight slated for this rail link to Western Sydney, there will be added benefit of less truck movements on our at capacity roads.

### M1 BRIDGES UPGRADE

Some bridges on the M1 limit the movement of oversize loads, resulting in detours and impacts on surrounding communities. Significant increases in oversize and over-mass movements are expected to originate from Port Kembla in the future. Bridges on the M1 should be assessed in relation to these anticipated movements from the Port of Port Kembla and be upgraded as needed to accommodate them.





## OPPORTUNITIES KERBSIDE DELIVERIES AND ALTERNATIVES

Local deliveries are an important part of our community ecosystem that keeps businesses functioning and provides convenience for households. It is important that guiding principles are set for these circumstances, especially in the context of kerbside space and peaceful enjoyment of neighbourhoods. This is in line with the NSW Government recommendation for freight networks to minimise 'loss of amenity and impact to the environment'<sup>1</sup>. In commercial areas kerbside space is becoming more recognised as a valuable resource. Kerbsides are used for parking, loading needs and now more than ever, extended kerbsides that support dining, pedestrian amenities such as shade and wider footpaths. Specific opportunities for kerbside loading include:

- ① Kerbside loading must be efficient, and regulated to promote turnover so businesses can get the goods and services they need and prevent idling and misuse.
- ② In appropriately scaled future developments and land use changes, there should be provision appropriate off-street loading facilities to remove deliveries from kerbsides.

More efficient freight delivery frees up space for other ways to support businesses such as:

- ③ Replacing the occasional car park with kerbside bike parking.
- ④ Parklets and other dining areas.
- ⑤ Wider footpaths.
- ⑥ Planting and other street amenities.

Details on the above are provided on Page 72.

1) Transport for NSW, 2018, NSW Freight and Ports Plan 2018-2023





# ROADS, PARKING AND PLACE

## WHAT DOES THE FUTURE LOOK AND FEEL LIKE FOR BALANCING ROADS, PARKING AND PLACE?

Roads and parking will be balanced to provide access for vehicles where appropriate, but provide space for other street users in line with the *Movement and Place Framework* and *Road User Allocation Policy* in other areas. When using this approach particular opportunities to rethink school access and rethink the suburban street to re-prioritise people, place and parks occurs.



MARKET STREET, WOLLONGONG

## ROADS, PARKING AND PLACE

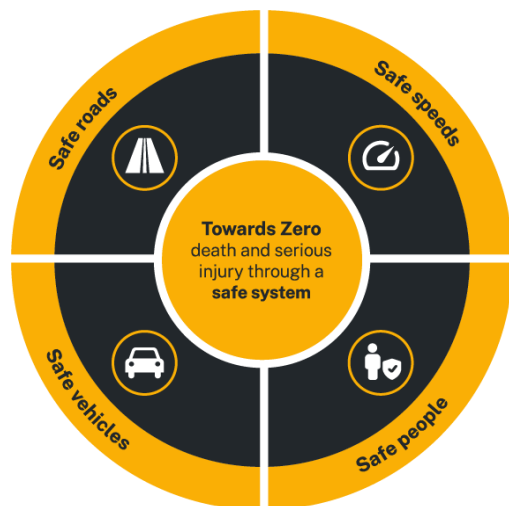
# OPPORTUNITIES SAFE SYSTEMS APPROACH

### SAFE SYSTEMS APPROACH

The Safe Systems Approach is an initiative from the NSW Government to achieve the goal of zero deaths and serious injuries on NSW roads. It is underpinned by three key principles






1. People sometimes make mistakes.
2. Roads, roadsides and vehicles need to be designed to minimise crashes or reduce forces if a crash happens.
3. Road safety is a shared responsibility – everyone needs to make safe decisions on and around the road to prioritise safety.

Safe roads, safe speeds, safe vehicles and safe people should integrate to achieve this goal on Wollongong roads.



Source: Safe Systems Approach, NSW Government

### WHAT APPROACHES ARE APPROPRIATE FOR COUNCIL TO ADOPT IN WOLLONGONG?

<p><b>SAFE ROADS CAN BE ACHIEVED THROUGH</b></p> 	<ul style="list-style-type: none"> <li>Improving road infrastructure</li> <li>Line markings</li> <li>Traffic calming measures</li> <li>Road safety measures for child-friending streets particularly around schools*</li> </ul>
<p><b>SAFE ROADS CAN BE ACHIEVED THROUGH</b></p> 	<p><b>X</b> The Safe System Approach endorses pedestrian fencing, but they're often unsuitable due to pedestrian amenity concerns.</p>
<p><b>SAFE SPEEDS CAN BE ACHIEVED THROUGH</b></p> 	<ul style="list-style-type: none"> <li>Undertaking speed zone reviews on key roads</li> <li>Implementing reduced speed zones in accordance with new standards</li> </ul>
<p><b>SAFE VEHICLES CAN BE ACHIEVED THROUGH</b></p> 	<ul style="list-style-type: none"> <li>Ensure safe vehicles in Council fleets</li> </ul>
<p><b>SAFE PEOPLE CAN BE FOSTERED THROUGH</b></p> 	<ul style="list-style-type: none"> <li>Traffic enforcement</li> <li>Education programs</li> <li>Community consultation to understand road safety concerns in Wollongong</li> </ul>



## ROADS, PARKING AND PLACE

# MOVEMENT AND PLACE FRAMEWORK

It is valuable to look at Wollongong through the lens of the Movement and Place framework (See Page 35 for more information). This enables an understanding of how the city currently uses road space and allows effective planning for the future.

The figure on the right shows different street types for selected streets across Wollongong. It is important to note that all street types have a valuable purpose in communities. The Movement and Place framework is not scoring street types, but rather understanding which street type is most suited for a context and planning our towns and cities in ways that align with the vision for the area.

Movement corridors prioritise efficient movement of people and goods. Significant place function prioritises staying activities and slow modes of travel such as walking and bike riding while providing convenient access to public transport.

Since the emergence of the private car in the mid 20<sup>th</sup> century, streets in Wollongong have been built with an emphasis on movement and parking as opposed to walking and staying activities. Measures to increase place-based components of streets include:

- Improving public transport and active travel infrastructure
- Providing public spaces and amenities
- Adopting traffic calming measures (slowing speed limits, installing speed humps)
- Implementing modal filters
- Increase safety and accessibility
- Enhancing landscaping and greening
- Promoting mixed land uses

### MOVEMENT AND PLACE CATEGORISATION IN WOLLONGONG



Images (Clockwise from top left): Main Road at Fowlers Road Bridge, Main Street at Gipps Street in Keiraville, Civic Space in Crown Street Mall, Wollongong and Local Street at Kembla Street in Wollongong.

## ROADS, PARKING AND PLACE

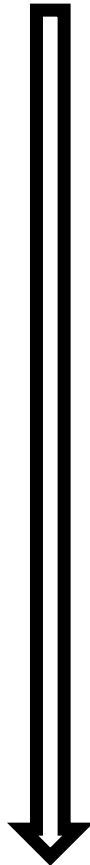
# ROAD USER SPACE ALLOCATION POLICY

The allocation of road space plays a crucial role in determining street usage and the transport options that are both available and feasible for individuals. Transport for NSW published the *Road User Space Allocation Procedure* in 2021. It builds upon advice provided in the *Movement and Place Framework* and describes how the different street/road types have different requirements for how each road user is treated and what is considered appropriate, however the following also applies:

- All users should be considered
- People spending time, vulnerable road users, public transport should all be considered first (in that order) before freight and private vehicles.

This approach seeks to reprioritise how decision regarding who is planned for when streets are designed away from car-centric planning models, which have often left place and active transport as afterthoughts in the planning and design process.

**CONSIDER FIRST**



**CONSIDER LAST**

1	<b>PEOPLE SPENDING TIME</b>	
2	<b>WALKING</b>	
3	<b>CYCLING</b>	
4	<b>ON-STREET PUBLIC TRANSPORT</b>	
5	<b>FREIGHT AND SERVICES</b>	
6	<b>PRIVATE VEHICLE AND POINT-TO-POINT</b>	

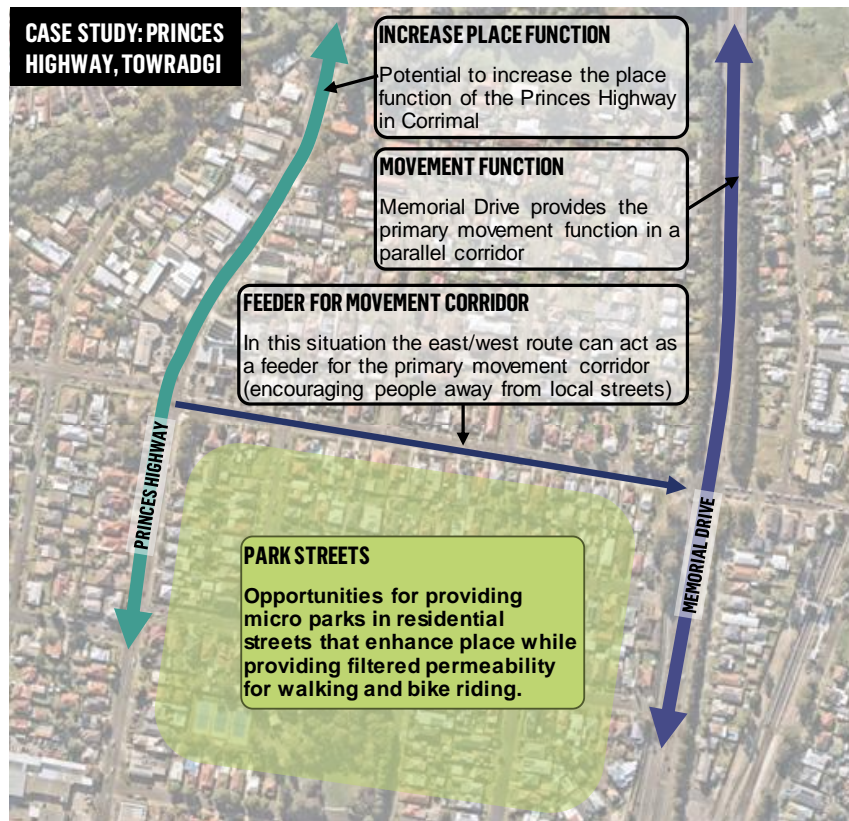
Adapted from requirements/guidance provided in: Transport for NSW, (2021) *Road User Space Allocation Procedure*.

## ROADS, PARKING AND PLACE

# LOCAL AREA APPLICATION: MOVEMENT AND PLACE / ROAD USER ALLOCATION

The decision-making framework on this page outlines the viability for transiting a movement corridor to a more place-based street. While this is not an exhaustive framework and does not aim to inhibit improving place components of all roads and streets, it is useful to understand potential for shifting the prioritisation from movement to place. This is about rationalising the streets which have been allocated road space primarily for movement to allow space for place and active transport.

The Princes Highway in Towradgi presents a case study for the potential transition of a movement corridor towards a more place-based street. This section of the Princes Highway is currently an arterial high street with a high movement priority. This decision-making framework explores the viability of increasing the place component of the road at the expense of some of its movement function.



**1** **IS THERE AN ALTERNATIVE ROUTE FOR MOVEMENT?**  **MEMORIAL DRIVE PROVIDES THE PRIMARY FUNCTION ALONG THE NORTH-SOUTH CORRIDOR**

**2** **IS THERE MODE SHIFT POTENTIAL?**  **THE NATURE OF THE RESIDENTIAL CATCHMENT CREATES MANY LOCAL TRIPS, WITH POTENTIAL FOR ACTIVE TRANSPORT**

**3** **ARE KEY ACTIVITY GENERATORS PRESENT?**  **THERE ARE MANY ACTIVITY GENERATORS ALONG THE PRINCES HIGHWAY, INDICATING PLACEMAKING POTENTIAL**



## ROADS, PARKING AND PLACE

# OPPORTUNITIES ROAD SAFETY & SCHOOLS

There are a wide range of measures that can be implemented to promote road safety around schools. Not all measures need to be costly, and it is important to understand measures that are best suited to certain contexts.

### SHORT TERM / LOW RESOURCE

- **School crossing supervisors:** Crossing supervisors at key crossings can assist children crossing streets.
- **Green travel plans:** Less traffic creates safer environments around schools.
- **Traffic enforcement:** Increase police or security presence during pick-up and drop-off times to enforce traffic rules.
- **Speed Limits:** Implement 30km/h speed limits around schools.
- **Parking restrictions:** Introduce restrictions to stop cars from parking near crossings or busy pedestrian zones, ensuring clear visibility for both drivers and pedestrians. A more extreme example of this is the "School Streets" program, detailed below.
- **Flashing Beacons:** Research shows that flashing lights help reduce vehicle speeds outside schools during the 40 km/h school speed zones<sup>1</sup>.

### LONGER TERM / HIGHER RESOURCE

- **Safer Routes to School Programs:** Infrastructure upgrades for safe routes walk/bike trips to school up to 800 m from schools.
- **Traffic calming:** Common methods like speed bumps and road narrowing help slow down traffic. There are also art-based techniques.
- **School Streets:** Europe is leading the way with removing traffic from streets surrounding schools at pick up/drop off time or permanently.
- **School Bus Service Expansion:** provide increased school bus services.



REMOVE AMBIGUITY AT CROSSINGS



LOWER SPEED LIMITS AROUND SCHOOLS AND ON KEY ROUTES

Image source: ABC News / The Conversation



IDENTIFY AND PRIORITISE SAFE ROUTES TO SCHOOL

Image source: Government Architect NSW



TRAFFIC CALMING MEASURES

Traffic Calming in Yarraville, Victoria.  
Image source: Maribyrnong City Council.



SCHOOL STREETS

School Street example in Brunswick, Vic.  
Image source: Bicycle Network



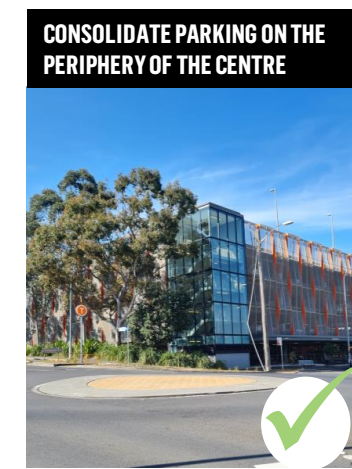
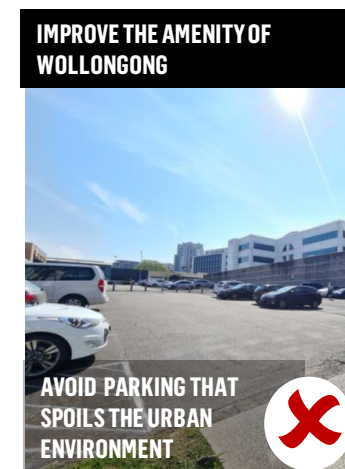
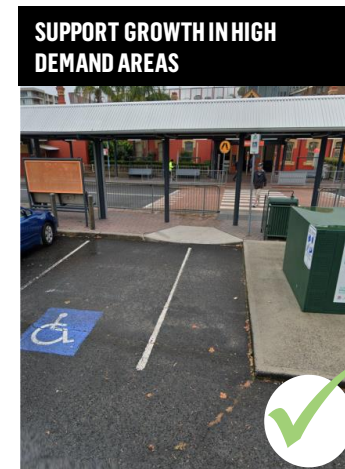
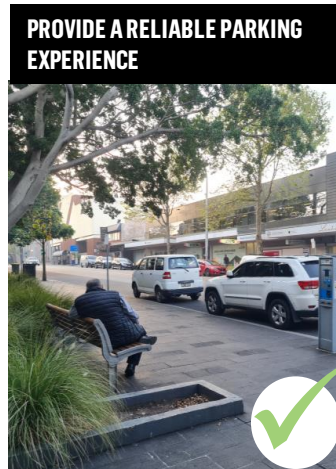
SCHOOL BUS SERVICES

## ROADS, PARKING AND PLACE

### OPPORTUNITIES PARKING

A transparent and evidence-based approach is needed to manage public parking in Wollongong. Parking has a big impact on amenity, activation and traffic congestion. Six key objectives are proposed:

- **Provide a reliable parking experience**  
Customer frustration is high when parking is unavailable. Reduce frustration by ensuring parking is available when and where it is needed. Parking needs to be timed and or paid for so people can make an economic choice over the value of the space and time being used. Review the parking management framework and tools to improve reliability through better controls.
- **Support growth in high demand areas**  
Manage parking in high growth areas to ensure equitable access to destinations with a focus on active modes and people with specific needs including freight and disability access.
- **Strengthen economic competitiveness**  
Repurposing some parking space for more active uses for lively, economic activity in key locations across Wollongong will strengthen the city's economic competitiveness.
- **Balance competing demands**  
Manage precincts given their respective contexts and parking demands such as:
  - Town centre parking (balance place-making and access for those who need it)
  - Foreshore parking (balance access with natural environment features).
- **Improve the amenity of Wollongong**  
At-grade car parking reduces activity and amenity and undermines the value of surrounding areas
- **In Wollongong's City Centre specifically, consolidate parking in the periphery:**  
Parking is currently provided throughout the Wollongong City Centre, creating more traffic congestion and reducing reliability. Larger parking facilities on the periphery will improve access for all.





## ROADS, PARKING AND PLACE

# OPPORTUNITIES INNOVATION

### A WORD OF CAUTION

It is important to track innovations in the transport industry to allow opportunities for sustainable mode shift and integration of practices that will provide safer and more equitable journeys. But innovation should only be embraced where it serves the community, rather than having Wollongong being designed to serve the technology. Some examples of the latter include:

- Some studies have shown that ride hailing services (such as Uber) cause congestion as people are attracted away from public transport use<sup>1</sup>.
- Google maps and similar wayfinding apps have been blamed for increased 'rat running' in local streets<sup>2</sup>.

### OPPORTUNITIES FOR WOLLONGONG

Smart mobility refers to a developing approach to mobility that combines technologies and transport planning to provide sustainable and efficient services. There are a range of technology-based solutions that could be useful to Wollongong, including:

- **Smart parking** systems direct people to parking options without as much need for circulating (systems could potentially be app based or physical as in image to right).
- **On-demand bus services** can provide flexible services based on needs. These are useful in areas that can't justify a fixed route (for example, due to low population density).
- **Real-time travel information** at bus stops can shorten the perceived wait time for services and can be used by those with a visual impairment to signal which bus is arriving through audio-prompts so the passenger knows when to signal driver<sup>3</sup>.
- **Carsharing** service offer members hourly or daily car use through a network of cars parked on-street in convenient locations. These could also be useful for no-car tourism, car free households, as a second car for households and businesses.
- **Shared micro-mobility** provides users with short-term access to small, often electric, vehicles like scooters or bikes for short-distance travel. There is a particular opportunity for this being first/last mile solutions in Wollongong or for no-car tourism options (see pages 53 and 54).

- 1) Clew low et al, 2017, Disruptive Transportation: The Adoption, Utiliation and Impacts of Ride Hailing in the United States, University of California, Davis <https://escholarship.org/uc/item/82w2z91j>
- 2) Calcea, N., 2022, *How Google Maps is ruining your neighbourhood*, City Monitor, <https://citymonitor.ai/community/neighbourhoods/google-maps-local-traffic>
- 3) Watkins, K et al, 2011, *Where is My Bus? Impact of mobile real-time information on the perceived and actual wait time of transit riders*, Transportation Research Park A Policy and Practice, Washington [https://nacto.org/wp-content/uploads/2016/04/10-Watkins-Where-is-my-Bus\\_2010.pdf](https://nacto.org/wp-content/uploads/2016/04/10-Watkins-Where-is-my-Bus_2010.pdf)



Smart Parking, City of Unley, SA



On-demand bus service, Port Macquarie, NSW

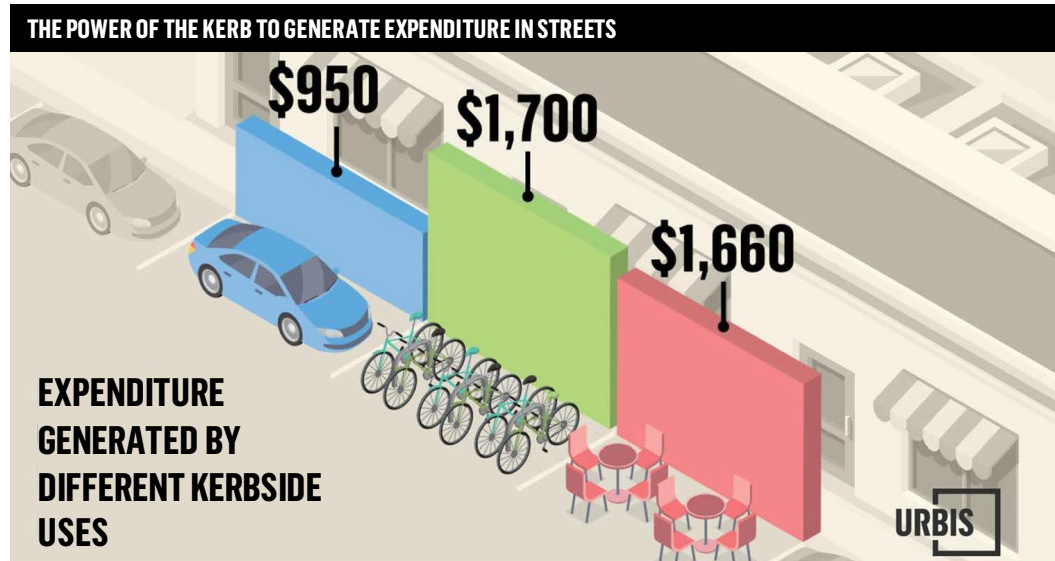




## ROADS, PARKING AND PLACE

# OPPORTUNITIES RETHINKING THE KERB IN SHOPPING AREAS

How we use kerbsides in shopping areas matters – it can make the difference between a dull and lifeless retail experience to one that is full of activity and interest. Stepping away from a monoculture of kerbside parking and towards a mixed kerbside is not only a positive for amenity but also makes good sense for businesses. In work conducted in inner Melbourne it was shown that the daily expenditure generated in streets by parking was around 80 per cent less than if that space was turned into a more highly used space for things such as bike parking or outdoor dining. Beyond these uses, general street amenity improvements such as more planting, outdoor dining, parklets, wider footpaths and slower speeds have also been shown to be accountable for an estimated 22 per cent increase in expenditure in high streets<sup>1</sup>.



Urbis, 2021, based on the following sources:

- Dining Parklet occupancy, expenditure and duration of stay based on: Urbis, 2021, Extended Outdoor Dining Program Evaluation, for Cities of Melbourne, Yarra and Stonnington
- Bike parking occupancy, expenditure and duration of stay based on: Alison Lee & Alan March (2010) Recognising the economic role of bikes: sharing parking in Lygon Street, Carlton, Australian Planner,



1) Urbis, 2023, Attractive Streets Attract More People, <https://urbis.com.au/insights-news/attractive-streets-attract-more-people/>

Locations and Image Sources (images to right):

- 1) Sawtell, NSW: Source: Expedia Tourism, 2023
- 2) Lygon Street, Carlton: Source: Timeout, 2023
- 3) Crown Street, Wollongong
- 4) New York: Source: Wound Resources Institute/ Bloomberg Philanthropies
- 5) Manly, Sydney: Source: Victoria Walks, 2023

# ACTION PLAN

**This chapter details the actions that will need to take place to realise the Wollongong ITS's Vision of being a liveable and green city where everyone has viable transport choices that provide connected journeys through Country that are safe, reliable and accessible.**

**Change takes patience, fortitude and a good action plan.**

# 06

## ACTION PLAN OVERVIEW

The actions in this chapter are based on input from a range of stakeholders.

To maintain Wollongong's wellbeing, productivity and prosperity in a period of population growth, a much greater effort will be required, with local and state governments working together to understand the region's transport challenges and respond proactively.

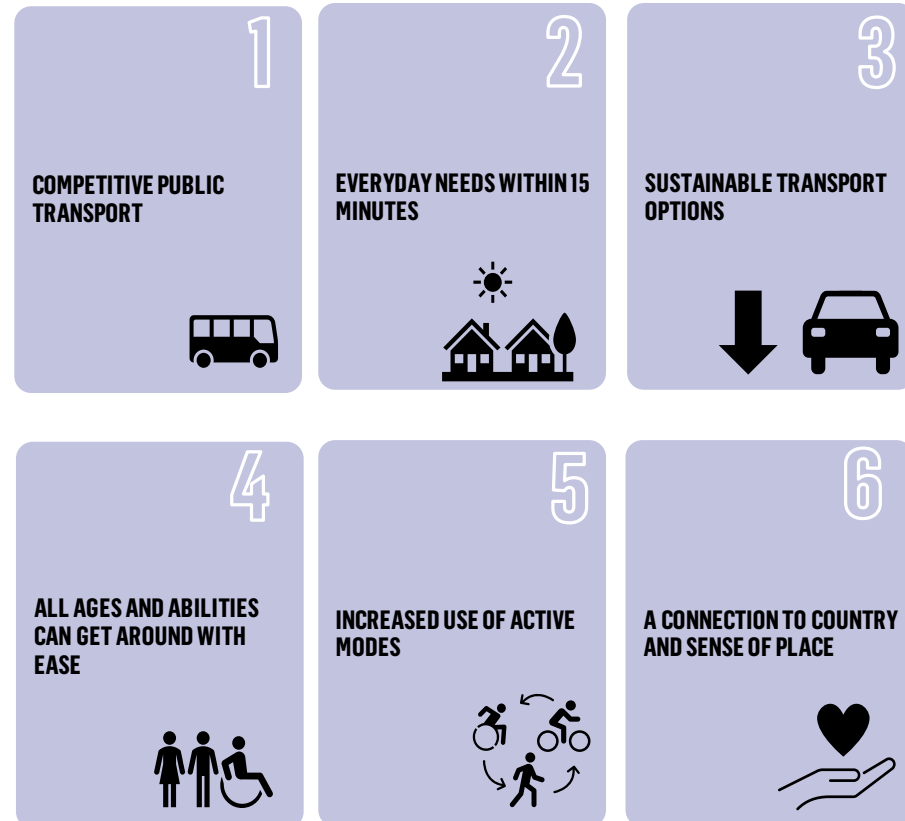
The case for change shown in Chapter 3 outlines that if the current transport trends continue there will be significant ramifications on the number of cars on the road, congestion and environmental costs.

The actions outlined here describe the activities, effort and agencies needed to capitalise on the opportunities outlined in Chapter 5.

Recommended actions will need to be prioritised and localised where appropriate to deliver a sustainable transport system that supports thriving, connected communities and is safe and accessible for all across Wollongong.

Time is of the essence. The action we take now will ease pressure on the current community and benefit future generations to come. Change takes patience, fortitude and a good action plan.

### WOLLONGONG INTEGRATED STRATEGY GOALS





# INTEGRATED TRANSPORT STRATEGY ACTION PLAN

<b>Goal 1</b> Competitive Public Transport	<b>Goal 2</b> Everyday needs within 15 minutes	<b>Goal 3</b> Sustainable transport options	<b>Goal 4</b> All ages and abilities can get around with ease	<b>Goal 5</b> Increased use of active modes	<b>Goal 6</b> A connection to Country and sense of place
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ID	Project	Responsibilities	Goals						Horizon	Transport modes Supported	
			1	2	3	4	5	6			
01	Develop a public transport service plan that has high service standards including route coverage, frequency, travel time, journey time and reliability on priority corridors.	State (Lead) Local (Support)	X		X	X			X	Short (0 – 2 years)	
02	Provide more frequent and faster rail and bus services in the Wollongong Local Government Area for both peak and off-peak periods.	Local (Lead) State (Support)	X		X	X				Short (0 – 2 years)	
03	Design and implement on-road measures to prioritise public transport such as dedicated bus traffic light signalling, queue jumps and bus lanes on key transport corridors.	State (Lead) Local (Support)	X							Medium (3 – 5 years)	
04	Prioritise improvements to amenity at high-use public transport stops by developing guidelines to support service delivery and inform public domain and private development infrastructure. The guidelines to cover items like wayfinding, shade/shelter and bike parking.	Local (Lead) State (Support) Private (Support)	X							Medium (3 – 5 years)	
05	Plan and deliver the Southern Gong shuttle bus.	State (Lead) Local (Support)	X		X	X			X	Short (0 – 2 years)	
06	Investigate and prepare a feasibility study for high quality, high frequency transport (rapid transport technology) between Wollongong and Oak Flats via Shellharbour City Centre and Wollongong and West Lake Illawarra.	Local (Lead) State (Support)	X		X	X			X	Long (5 – 10 years)	






# INTEGRATED TRANSPORT STRATEGY ACTION PLAN

<b>Goal 1</b> Competitive Public Transport	<b>Goal 2</b> Everyday needs within 15 minutes	<b>Goal 3</b> Sustainable transport options	<b>Goal 4</b> All ages and abilities can get around with ease	<b>Goal 5</b> Increased use of active modes	<b>Goal 6</b> A connection to Country and sense of place
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ID	Project	Responsibilities	Goals						Horizon	Transport modes Supported
			1	2	3	4	5	6		
07	Investigate and prepare a feasibility study for high quality, high frequency transport (rapid transport technology) connection between NSW Health Precinct, Wollongong Station and Wollongong Foreshore via either Crown Street or Burelli Street.	Local (Lead) State (Support)	X		X	X			Long (5 – 10 years)	
08	Trial an on-demand bus service in key precincts within the LGA	Local (Lead) State (Support)	X		X	X			Medium (3 – 5 years)	
09	Develop an infrastructure investment tool and standard designs for Station Precinct Upgrades for local government owned public domain.	Local (Lead) Private (Support)	X		X				Medium (3 – 5 years)	
10	Embrace the 15-minute neighbourhood concept. Prepare a network map detailing where people can travel within 15 minutes of their location in town centres by walking or active transport options like cycling.	Local (Lead) Private (Support)		X		X	X	X	Medium (3 – 5 years)	
11	Prepare a parklet design guide and permit scheme and add these into the city's outdoor dining permit documentation.	Local (Lead) State (Support) Private (Support)					X	X	Short (0 – 2 years)	
12	All town and village centres, and any Master Planned development, have a tailored Movement and Place plan developed.	Local (Lead)		X	X		X	X	Medium (3 – 5 years)	
13	Develop a walking plan to provide high-quality pedestrian routes in town centres that are co-located with train stations: Stanwell Park, Coledale, Austinmer, Thirroul, Bulli, Woonona, Corrimal, Fairy Meadow, Coniston, Port Kembla, Unanderra and Dapto. The plans to consider lighting, crossings and shade/shelter.	Local (Lead)			X		X	X	Short (0 – 2 years)	

# INTEGRATED TRANSPORT STRATEGY ACTION PLAN

<b>Goal 1</b> Competitive Public Transport	<b>Goal 2</b> Everyday needs within 15 minutes	<b>Goal 3</b> Sustainabl e transport options	<b>Goal 4</b> All ages and abilities can get around with ease	<b>Goal 5</b> Increased use of active modes	<b>Goal 6</b> A connection to Country and sense of place
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ID	Project	Responsibilities	Goals						Horizon	Transport modes Supported
			1	2	3	4	5	6		
14	Develop Wollongong Movement Framework study to understand current categorisation of road network and look for opportunities for enhanced permeability function through Parks and Schools	Local (Lead) Private (Support)					X	X	Long (5 – 10 years)	
15	Develop an 'investment weighting' tool that provides a transparent evaluation of merits for all proposed projects. A suite of criteria should be set in the tool that will show how to deliver the greatest benefit for the community and help build the integrated network and aligned with the safe systems approach.	Local (Lead) Private (Support)	X	X	X	X	X	X	Short (0 – 2 years)	
16	Implement a car share trial including a space allocation policy and permit scheme.	Local (Lead)			X			X	Short (0 – 2 years)	
17	Develop an eco-friendly travel tourism strategy and plan across the LGA incorporating a program of targeted: <ul style="list-style-type: none"> <li>Wayfinding signage at train stations</li> <li>Carshare near train stations</li> <li>Micro-mobility at train stations connecting to key tourist destinations</li> <li>Event green travel plan</li> </ul> Marketing material promoting Wollongong as a tourist destination accessible by train for Sydney-residents.	Local (Lead)	X	X	X	X	X	X	Medium (3 – 5 years)	
18	Develop a live data dashboard to support Council's Transport Advocacy to encourage strategic investment. An example of this is advocacy for the SWIRL train link for freight, demonstrating the increased number of trucks on Mt Ousley Road.	Local (Lead) State (Support)	X					X	Short (0 – 2 years) Medium (3 – 5 years)	



# INTEGRATED TRANSPORT STRATEGY ACTION PLAN

<b>Goal 1</b> Competitive Public Transport	<b>Goal 2</b> Everyday needs within 15 minutes	<b>Goal 3</b> Sustainable transport options	<b>Goal 4</b> All ages and abilities can get around with ease	<b>Goal 5</b> Increased use of active modes	<b>Goal 6</b> A connection to Country and sense of place
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ID	Project	Responsibilities	Goals						Horizon	Transport modes Supported
			1	2	3	4	5	6		
19	Develop a live tourism travel behaviours, data dashboard that includes origin and destination which can be used to drive behavioural change on how people travel to and from events, informing future strategies and infrastructure projects.	Local (Lead) State (Support)	X		X				Medium (3 – 5 years)	
20	Develop a multi-modal transport plan for people wanting to visit the Seacliff Bridge and surrounds from Coalcliff and/or Scarborough Stations.	State (Lead) Local (Support)			X				Short (0 – 2 years)	
21	Develop an implementation plan to improve accessibility at public transport stops.	Local (Lead)			X	X			Short (0 – 2 years)	
22	Develop a future mobility plan that considers emerging technologies to better support all ages, all abilities access at key transport nodes.	Local (Lead) State (Support)	X			X			Short (0 – 2 years)	
23	Implement 30 km/h speed limits within school zones and in town centres.	Local (Lead) State (Support)						X	Medium (3 – 5 years)	
24	Ensure all new and renewed intersections within 500m of a train station or school prioritise pedestrians through options like continuous footpaths, raised "wombat" crossings and signals.	Local (Lead) State (Support)						X	Medium (3 – 5 years)	
25	All traffic signals to have late/start or red arrow hold for parallel pedestrian movements.	Local (Lead)						X	Long (5 – 10 years)	
26	Create a community reporting system for poor access in transport infrastructure and a council audit register to prioritise upgrading infrastructure based on priority.	Local (Lead) State (Support)				X		X	Short (0 – 2 years)	

# INTEGRATED TRANSPORT STRATEGY ACTION PLAN

<b>Goal 1</b> Competitive Public Transport	<b>Goal 2</b> Everyday needs within 15 minutes	<b>Goal 3</b> Sustainable transport options	<b>Goal 4</b> All ages and abilities can get around with ease	<b>Goal 5</b> Increased use of active modes	<b>Goal 6</b> A connection to Country and sense of place
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ID	Project	Responsibilities	Goals						Horizon	Transport modes Supported	
			1	2	3	4	5	6			
27	Through Council's Safer Routes to School, develop 15-minute walking and 5-minute cycling catchment plans around schools to support child-friendly routes to schools.	Local (Lead)			X			X		Short (0 – 2 years)	
28	Develop a Safe Systems program and suite of projects to address road safety throughout the Wollongong LGA.	Local (Lead)						X	X	Short (0 – 2 years)	
29	Develop a campaign to educate school communities options for walking, bike riding and public transport to reduce car reliance.	Local (Lead) Private (Support)						X	X	Short (0 – 2 years)	
30	All new developments to provide minimum bicycle parking, high-quality end of trip facilities and a green travel plan. Integrate clear direction into the Development Control Plan.	Local (Lead)			X			X		Short (0 – 2 years)	
31	Develop a public domain planting guide to support walking and cycling to reduce urban heat island effect. Integrate this guide into the Urban Greening Strategy.	Local (Lead) State (Support)			X			X		Medium (3 – 5 years)	
32	All town centre traffic signals to have pedestrian and bicycle priority and low cycle times to promote walking and bike riding.	Local (Lead) State (Support)						X	X	Medium (3 – 5 years)	
33	Council adoption of a LGA Cycling Network Plan	Local (Lead)			X					Short (0 – 2 years)	
34	Provision of secure cage bicycle parking at all train stations and Council facilities which are linked to Opal or credit card	State (Lead) Local (Support)						X		Short (0 – 2 years) Medium (3 – 5 years)	

# INTEGRATED TRANSPORT STRATEGY ACTION PLAN

<b>Goal 1</b> Competitive Public Transport	<b>Goal 2</b> Everyday needs within 15 minutes	<b>Goal 3</b> Sustainable transport options	<b>Goal 4</b> All ages and abilities can get around with ease	<b>Goal 5</b> Increased use of active modes	<b>Goal 6</b> A connection to Country and sense of place
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ID	Project	Responsibilities	Goals						Horizon	Transport modes Supported	
			1	2	3	4	5	6			
35	Create a tactical urbanism toolbox to support the rapid rollout of parklets, pedestrian safety kerb extensions, shared zones and pop-up cycle lanes.	Local (Lead)			X			X		Medium (3 – 5 years)	
36	Develop a Micro Mobility Policy to support the roll-out of shared e-scooter and e-bike schemes across the City. Policy to focus on first/last mile public transport trips, events and tourism experiences such as the coastal paths.	Local (Lead) State (Support)			X					Short (0 – 2 years)	
37	Develop a multi-modal transport plan to connect to the NPWS Great Southern Walk from the Royal National Park	Local (Lead)			X			X		Short (0 – 2 years)	
38	Develop a cycle-tourism strategy that incorporates sites and routes other than the Grand Pacific Walk that can bring in and maintain a multi-day bike riding tourism.	Local (Lead) State (Lead)			X			X		Short (0 – 2 years)	
39	Build knowledge and acknowledge the traditional routes of the Dharawal people and develop a plan of how the routes may be appropriately recognised.	Local (Lead)							X	Short (0 – 2 years) Medium (3 – 5 years)	
40	Develop a wayfinding plan and infrastructure design standard for walking and cycling recognising the stories of the Dharawal people.	Local (Lead) State (Support)			X			X	X	Short (0 – 2 years) Medium (3 – 5 years)	
41	Develop sound activated story telling at culturally significant places along peoples journeys	Local (Lead)							X	Short (0 – 2 years) Medium (3 – 5 years)	
42	Develop a program for infrastructure that supports staying activities, rest, and a sense of place. This may include seating, shade trees and water bubblers.	Local (Lead) State (Support)							X	Short (0 – 2 years) Medium (3 – 5 years)	



# INTEGRATED TRANSPORT STRATEGY ACTION PLAN

<b>Goal 1</b> Competitive Public Transport	<b>Goal 2</b> Everyday needs within 15 minutes	<b>Goal 3</b> Sustainable transport options	<b>Goal 4</b> All ages and abilities can get around with ease	<b>Goal 5</b> Increased use of active modes	<b>Goal 6</b> A connection to Country and sense of place
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ID	Project	Responsibilities	Goals						Horizon	Transport modes Supported
			1	2	3	4	5	6		
43	Council adopt a 'play on streets' policy and procedure to create opportunities for community building by allowing groups to run small events such as street Christmas parties, birthday parties, and school fundraisers.	Local (Lead)						X	Short (0 – 2 years)	
44	Undertake a Development Control Plan Review supporting multi-modal transport planning identified through the Integrated Transport Strategy	State (Lead) Local (Support)						X	Short (0 – 2 years)	
45	Prepare a multi-agency feasibility study for a cycling commuter corridor within the unused lands of the rail network, with connection to the Lake Illawarra Shared Use Path Plan.	Local (Lead) State (Support)			X			X	Medium (3 – 5 years)	
46	Develop a micro-mobility park and ride plan for Thirroul Station and Church Street car park.	Local (Lead)			X			X	Short (0 – 2 years)	
47	Develop a timed parking policy and procedure for foreshore car parking areas	Local (lead)						X	Short (0 – 2 years)	
48	Trial a developer led Urban Release Area public transport model	Local (Lead) Private (Support)	X		X	X			Short (0 – 2 years)	
49	Seek State and Federal funding for the Northcliffe Drive Extension to the M1	Local (Lead) State (Support) Federal (Support)						X	Short (0 – 2 years)	
50	Delivery of the SWIRL rail link for freight and passenger services	State (Lead) Local (Support)	X		X				Medium (3 – 5 years) Long (5 – 10 years)	

# INTEGRATED TRANSPORT STRATEGY ACTION PLAN

<b>Goal 1</b> Competitive Public Transport	<b>Goal 2</b> Everyday needs within 15 minutes	<b>Goal 3</b> Sustainable transport options	<b>Goal 4</b> All ages and abilities can get around with ease	<b>Goal 5</b> Increased use of active modes	<b>Goal 6</b> A connection to Country and sense of place
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ID	Project	Responsibilities	Goals						Horizon	Transport modes Supported
			1	2	3	4	5	6		
51	Implementation of the Wollongong Station Masterplan	Local (Lead) State (Support)	X	X	X	X	X	X	Medium (3 – 5 years) Long (5 – 10 years)	
52	Delivery of More Trains More Services	State (Lead) Local (Support)	X		X		X		Short (0 – 2 years)	
53	Develop a freight and services plan for the Wollongong LGA	State (Lead) Local (Lead)			X				Short (0 – 2 years)	
54	Develop a plan to manage services and utility infrastructure impacts to our footpath networks	Local (Lead)			X	X	X		Short (0 – 2 years)	
55	Develop a road safety plan and education campaign for the Wollongong LGA. Including addressing the use of high speed, illegal e-bikes.	Local (Lead)						X	Short (0 – 2 years)	



# NEXT STEPS

**This chapter concludes the report and provides a brief outline of the next steps that will be taken to implement the Wollongong Integrated Transport Strategy.**

# 07

**WEST DAPTO**



## THE NEXT STEPS

### WORKING GROUPS

We recommend setting up working groups based on the action items outlined in **Chapter 6**. These groups should include representatives from the council, state government, pertinent technical advisors and members from related community organisations.

### FUNDING PARTNERS

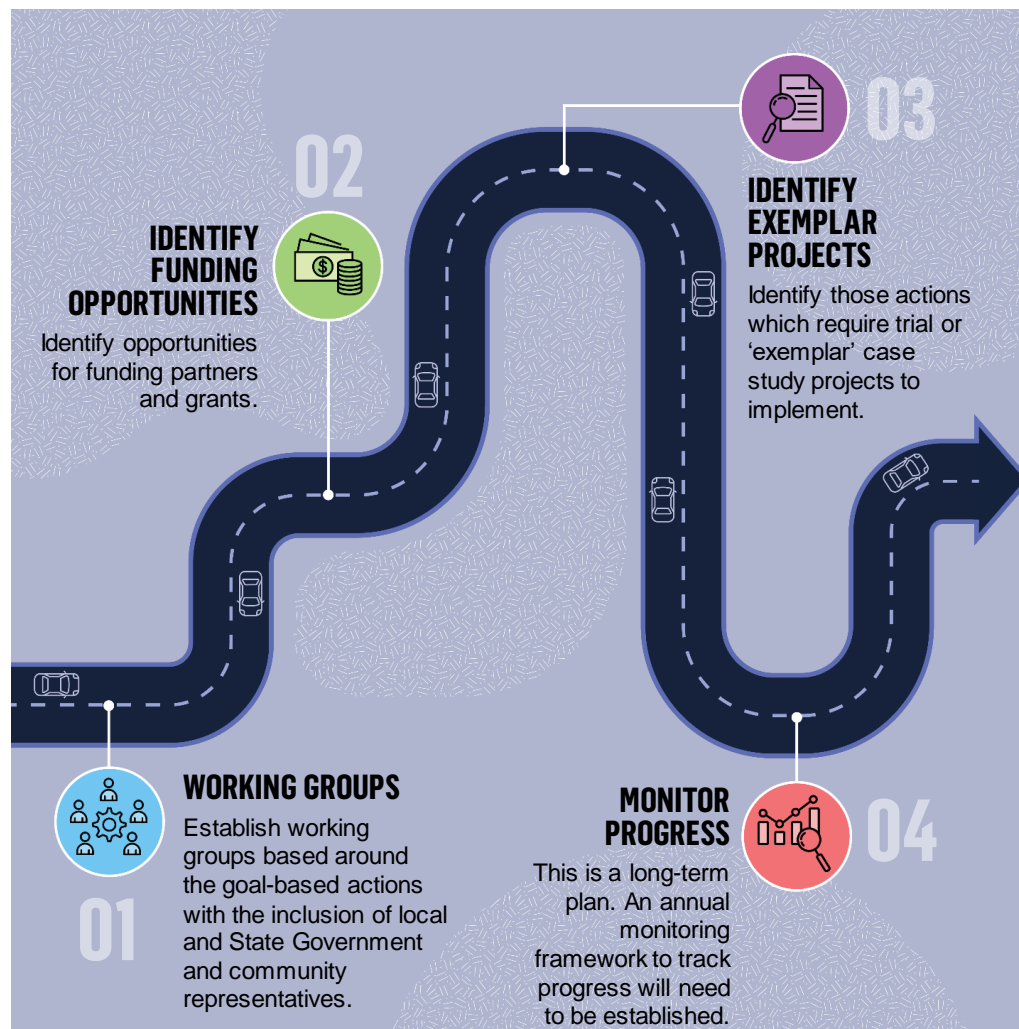
A number of funding partners have been identified in **Chapter 6**. The working groups should be charged with further developing funding opportunities for projects through government grants, partnerships and other means.

### EXEMPLAR PROJECTS

Several of the actions contained in **Chapter 6** suggest opportunities for exemplar projects to be used as case studies to garner enthusiasm for what would be seen as new ideas by many members of the community. Exemplar projects present an opportunity to show in a tactical way the benefits of some of these new ideas. Positive lessons from exemplar projects should be widely disseminated.

### MONITOR PROGRESS

This is a long-term plan and a monitoring framework will need to be established to ensure it is implemented in an appropriate manner. It is suggested that the working groups be responsible for reporting progress against the plan twice annually.





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# APPENDIX A

## STAKEHOLDER ENGAGEMENT



## STAKEHOLDER ENGAGEMENT

### WORKSHOPS

The Wollongong community was engaged by Urbis in the development of the Wollongong Integrated Transport Strategy at every step in the form of workshops and feedback sessions. The outcomes of these engagement sessions helped mould the Wollongong transport vision, direction and preferred way forward in the region.

### NEIGHBOURHOOD FORUMS

Three neighbourhood forums were attended, with feedback sought regularly in the development of this project. Neighbourhood forums were kept abreast of workshop outcomes as well as feedback being sought to local issues and ideas.

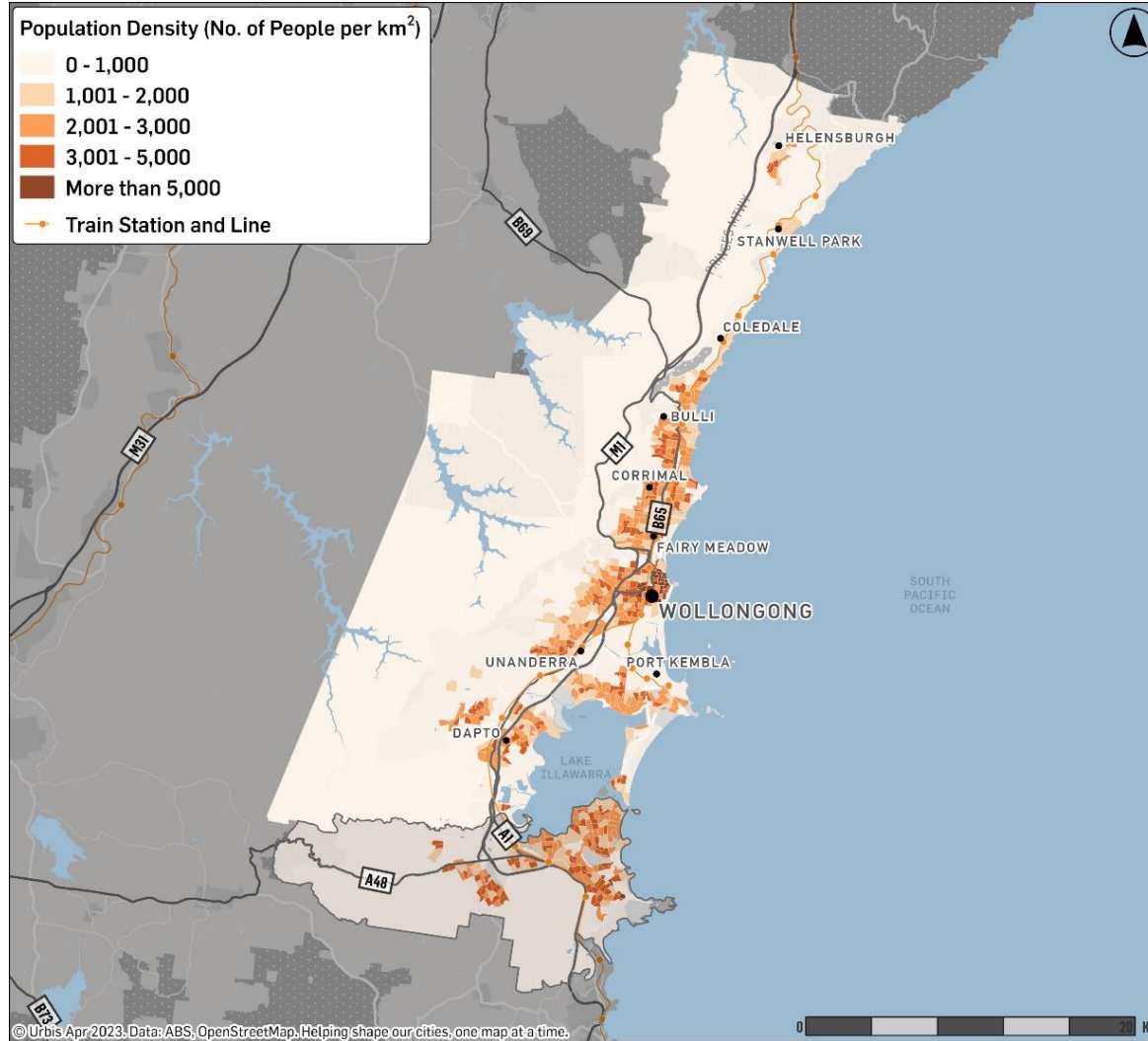
### WORKSHOP PARTICIPANTS



# APPENDIX B

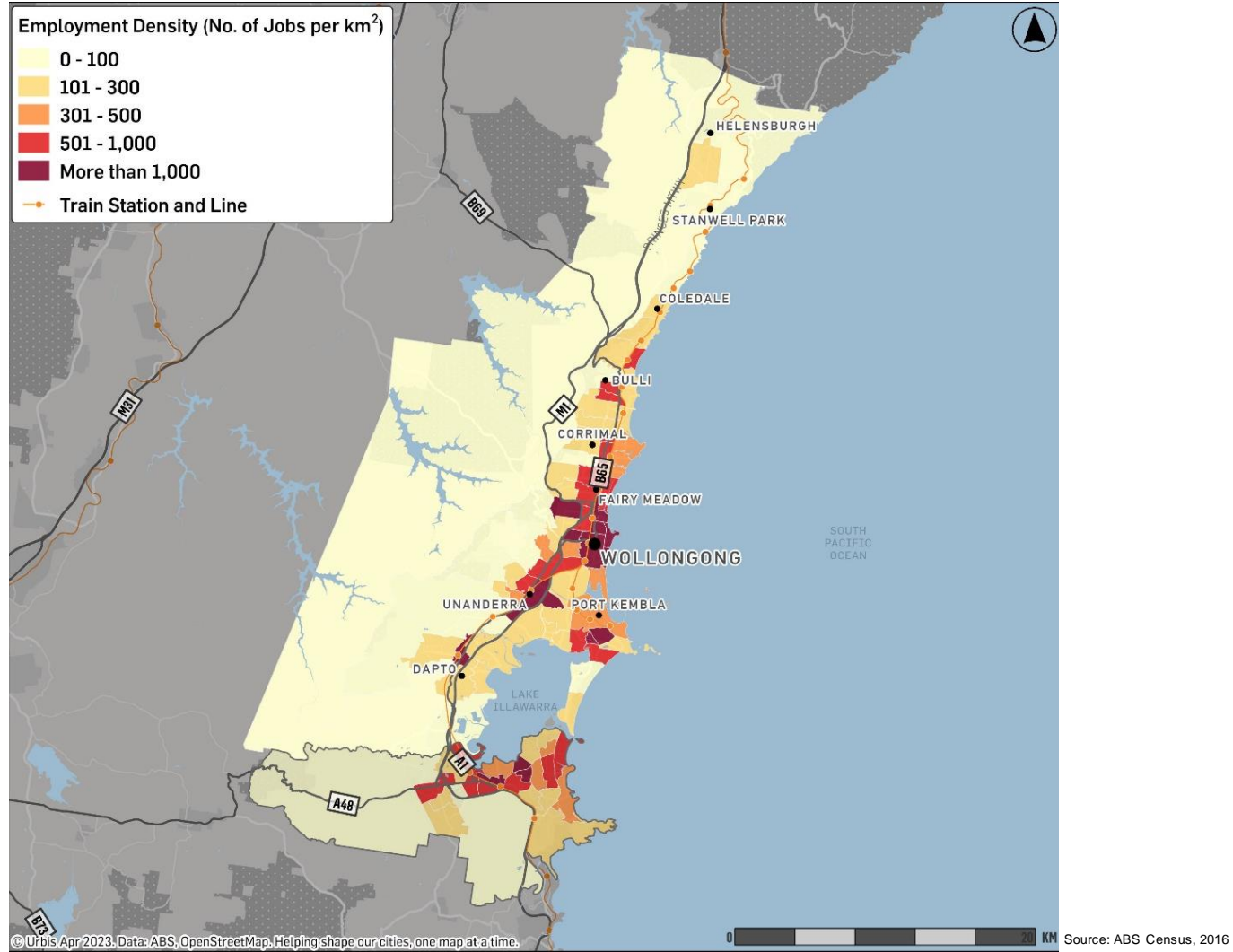
## POPULATION AND EMPLOYMENT FIGURES

# POPULATION DENSITY MAPPING





# POPULATION DENSITY MAPPING



# APPENDIX C

## TRANSPORT POLICY DETAILS

## DETAILS OF RECENT ADOPTED TRANSPORT POLICY

Two recently adopted policies closely align with this Integrated Transport Strategy and deserve a closer look due to their overlapping content.

### WOLLONGONG PEDESTRIAN PLAN 2017-2021

The Wollongong Pedestrian Plan 2017-21 emphasises the significance of walking for transportation. Yet, walking in Wollongong is decreasing. Several key reasons were pinpointed as deterrents to walking. These include

- Population profile-related issues.
- Prioritisation of pedestrians throughout the network transport network.
- Substandard design of pedestrian facilities.
- Geographic and obstruction-based issues.

Five key goals emerged from the Pedestrian Plan. These were

1. Encourage walking.
2. Create pedestrian-friendly places.
3. Make walking safe.
4. Make walking easy and convenient.
5. Work effectively to implement the Pedestrian Plan.

#### Vision

Walking is the preferred means of transport for short trips in the city and adjoins a public transport trip for longer journeys. The walking network is accessible to all and is a safe, quick and pleasurable way to move to and through centres and other popular destinations in the city. High-quality walking information including wayfinding and trip planning is readily available to the travelling public. The wide-ranging benefits of walking are recognised and valued in the community.

### WOLLONGONG CYCLING STRATEGY 2030

The Wollongong Cycling Strategy 2030 has been developed based on community feedback, research and case studies, and works toward a 10-year vision in which bike riding is a preferred option for transport in the local community. By 2030 the plan seeks to

- Provide an additional 50km of on-road and 35 km of off-road bike riding routes.
- Deliver significant cycleways alongside regional and state roads.
- Connect Wollongong's residential areas to the city centre by delivering missing bike riding links.
- Develop shared infrastructure that is inclusive and allows for safe access by those who are unable to cycle.

The Wollongong 2030 bike plan sets a platform for change and presents a number of opportunities to improve Wollongong bike riding infrastructure.



# **APPENDIX D**

## **SELECT RELEVANT COUNCIL POLICIES RELATING TO THE WOLLONGONG ITS**

## THE EXISTING STRATEGIC CONTEXT

Wollongong City Council's strategies for design, sustainability, transport, and urban planning are outlined in key documents listed here.

### DESIGN

- An "attractive and diverse city" (Urban Design Framework, 2020).
- "Improving safe beach access" (Beach and Foreshore Access Strategy, 2019-2028).
- A community with "diverse viewpoints" (Disability Inclusion Plan, 2020-2025).

### SUSTAINABILITY

- "10,500 new jobs in ten years" (Economic Development, 2019-2029).
- A city "in harmony with our environment" (Climate Change Adaptation, 2022).
- "Emissions reduction and climate action" leadership (Mitigation Plan, 2020).

### TRANSPORT

- "Sustainable, affordable transport" (Pedestrian Plan, 2017-2021) - refer to Appendix C for further details.
- Making Wollongong "a cycling city" (Cycling Strategy, 2030) - refer to Appendix C for further details.
- Changing travel behaviours for "increasing demand" (Access and Movement, 2013).

### PLANNING

- Understanding the community to "plan for the future" (Community Strategic Plan, 2022).
- Protecting the environment; building an "educated, connected community" (Local Strategic Planning Statement, 2020).
- Supporting housing opportunities (Wollongong Housing Strategy, 2023).



# APPENDIX E

## STAKEHOLDER IDENTIFIED CHALLENGES



## WORKSHOP THEMES – CHALLENGES

The first breakout in Workshop 1 investigated the challenges and opportunities facing the Wollongong Region. This slide specifically talks to the challenges.

The biggest theme to emerge from the Structural and Societal Challenges was the challenging topography, which emerged in 34 per cent of challenge themes. Other items such as population change, governance and behavioural challenges accounted for less than five per cent of the themes.

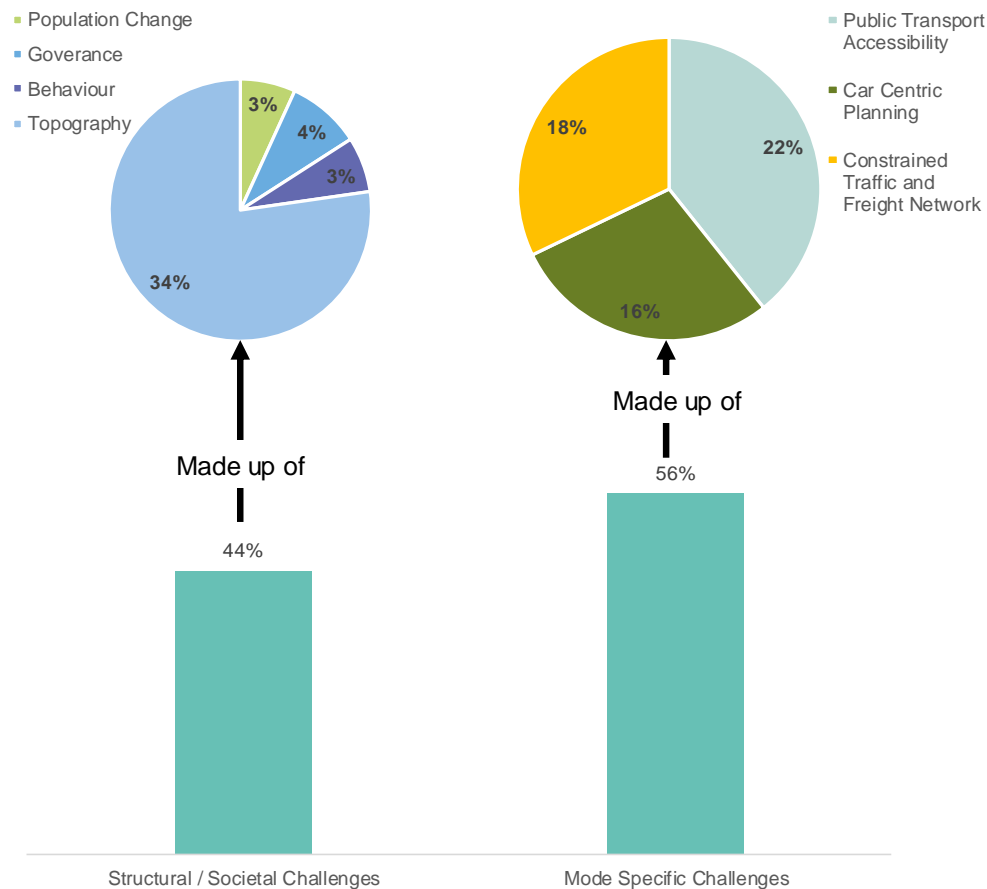
Mode Specific Challenges saw a more even split of themes, the largest being public transport accessibility, with that theme arising in 22 per cent of instances. Issues such as car-centric planning and a constrained traffic and freight network also rank highly when considering the two overarching themes holistically.



### INSIGHT

Issues such as topography, public transport accessibility, car-centric planning and a constrained transport network ranked highly among reoccurring themes. This suggests while there are challenging geographic conditions, transport planning can be done better to maximise the effectiveness of non-car modes and create efficiencies.

### WORKSHOP 1 – STAKEHOLDER IDENTIFIED CHALLENGES



## WORKSHOP THEMES – OPPORTUNITIES

The first breakout in Workshop 1 investigated the challenges and opportunities facing the Wollongong Region. This slide specifically talks to the opportunities. The majority of opportunities were related to structural and societal challenges. The biggest theme to emerge from was the opportunity for integrated transport and land use planning, which emerged in 28 per cent of themes. Other key opportunities included the changing political landscape, the strategic proximity of Wollongong to Port Kembla and Sydney and Access to Country.

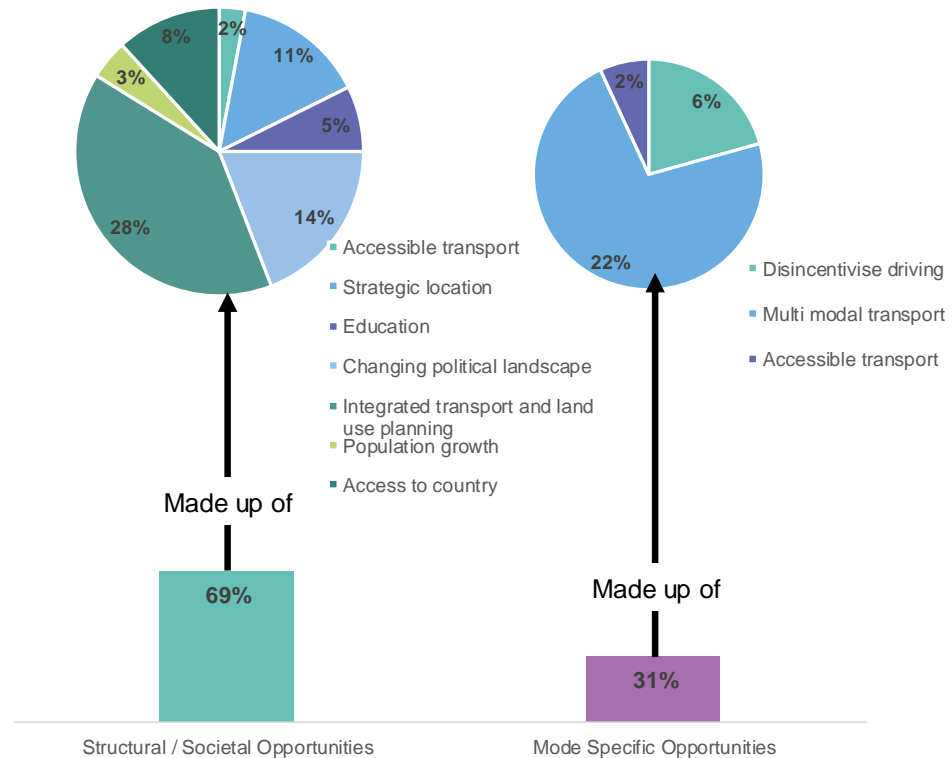


### INSIGHT

Workshop participants felt that there was a huge opportunity to increase knowledge and an understanding of Country through the transport network, which many understood to be based on traditional travel routes.

People also saw the changing understanding and appreciation of the seriousness of climate change in the community and elected officials as a potential opportunity catalyst for change.

### WORKSHOP 1 – STAKEHOLDER IDENTIFIED OPPORTUNITIES



## WORKSHOP THEMES – PRINCIPLES

The third breakout in Workshop 1 investigated the principles that may be adopted to transport strategy within the Wollongong Region.

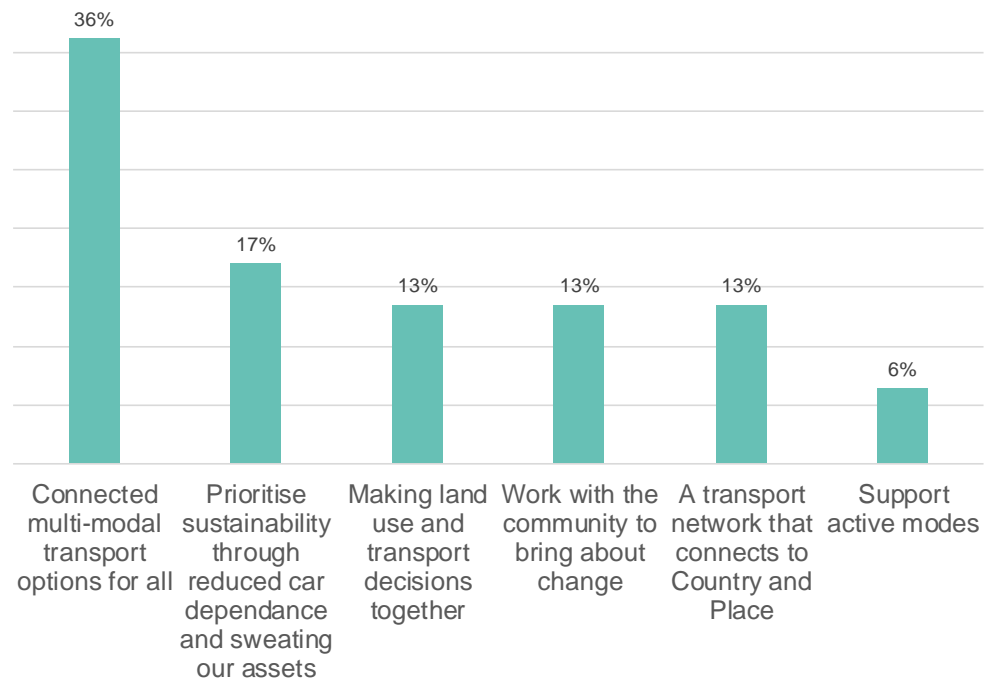
As a clear front-runner people voted on the importance of providing connected multi-modal transport options that were suitable for everyone. This stand-out result points to participants feeling like people in the municipality are forced into car use through lack of viable alternatives.



### INSIGHT

There was a strong focus on creating connected places and a sense of place throughout principles. Workshop participants value the impact of transportation on the creation of the sense of community and place making. Importantly, the role of Country and the opportunities to connect to Country while getting from A to B were seen as important.

### WORKSHOP 1 – STAKEHOLDER IDENTIFIED PRINCIPLES





## WORKSHOP THEMES – GOALS

The fourth breakout in Workshop 1 investigated the goals to introduce to transport strategies within the Wollongong Region.

Two key themes emerged from the challenges, these are

- Mode Specific Goals
- Structural/Societal Goals

The biggest themes to emerge from the session was the goal to improve public transport and choice, which surfaced in 35 per cent of themes. This overarching theme includes goals regarding increasing choice of transport options as well as capacity. Additionally altering peoples perception of public transport was raised to increase overall uptake. Other key goals include the increase of active transport and increased transport accessibility.

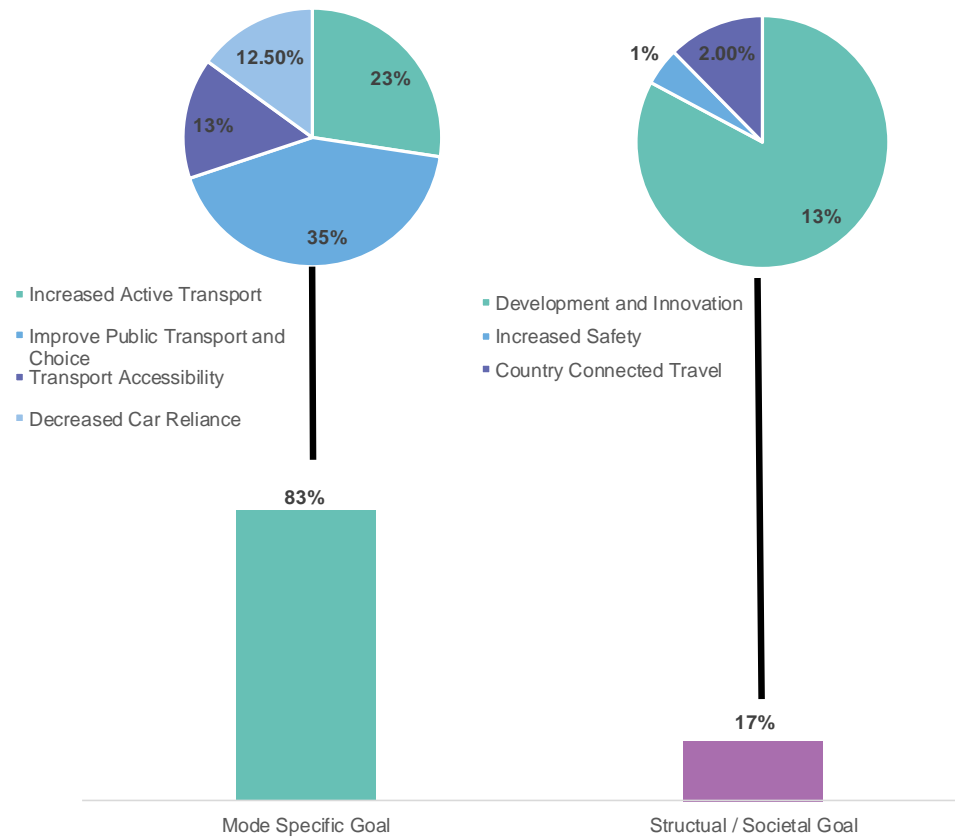
Structural or societal goals focused around increased development and innovation which includes investment and new strategies to improve transportation options within the Wollongong area.



### INSIGHT

Respondents focused on improving Wollongong's public transport and active transportation infrastructure which suggests people are focused on moving away from a car dominated network. Focus on changing perceptions of these modes of transport was also mentioned to seek to transition into the adoption of more sustainable methods of transportation.

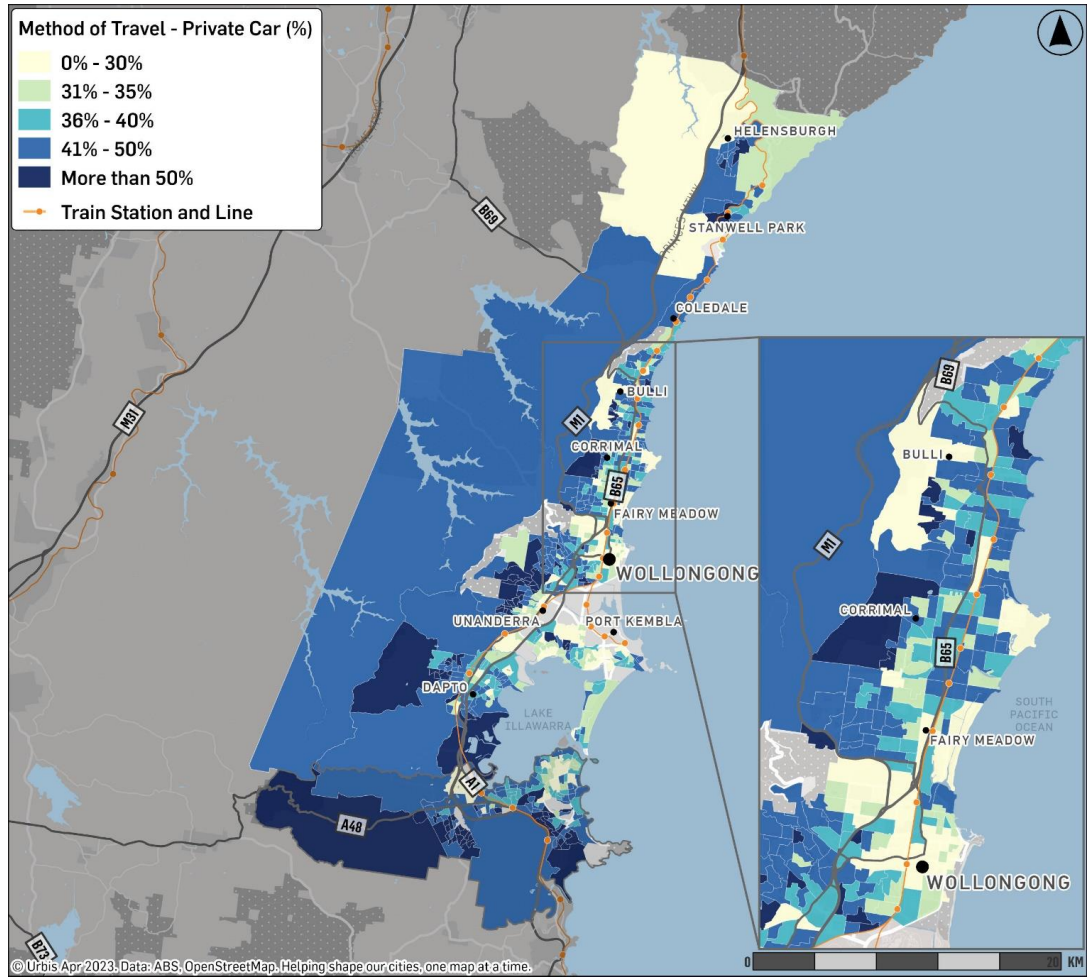
### WORKSHOP 1 – STAKEHOLDER IDENTIFIED GOALS



# APPENDIX F

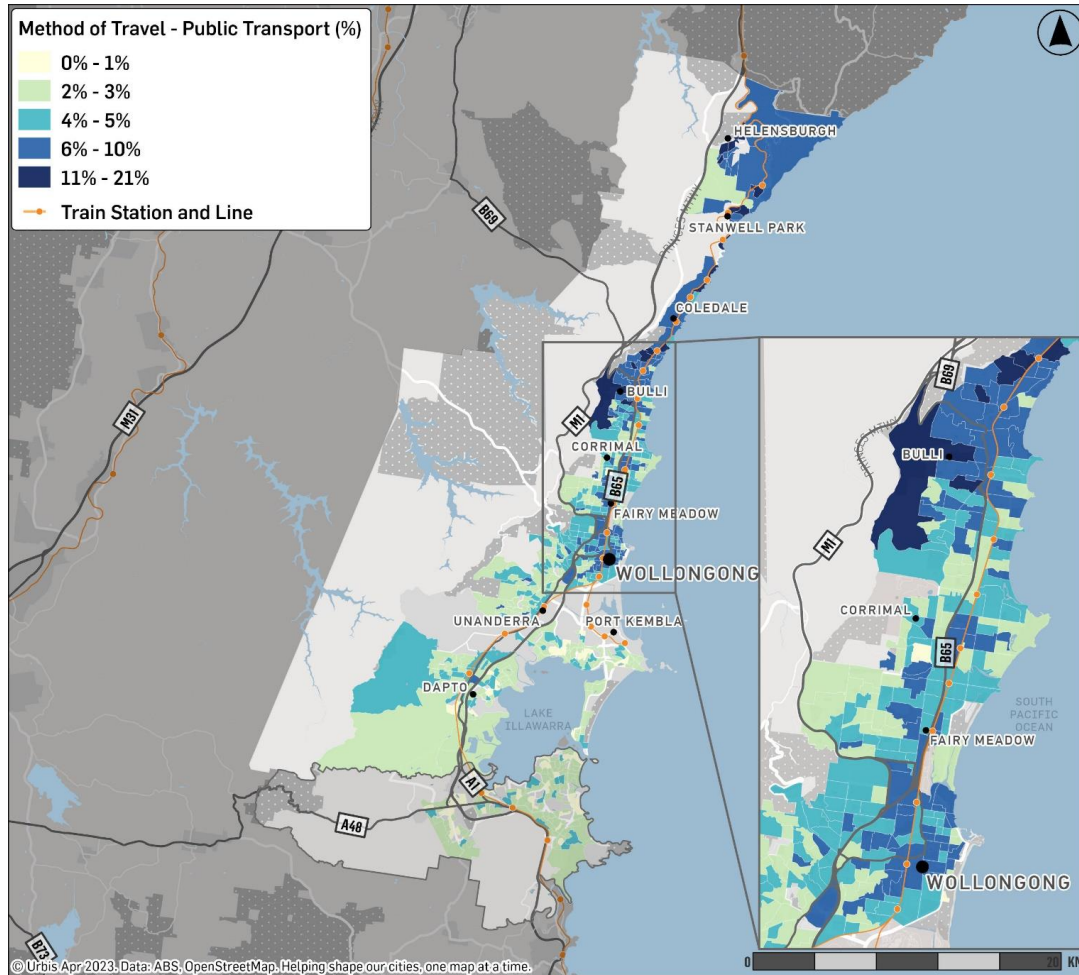
## MAPS

# PRIVATE VEHICLE USAGE

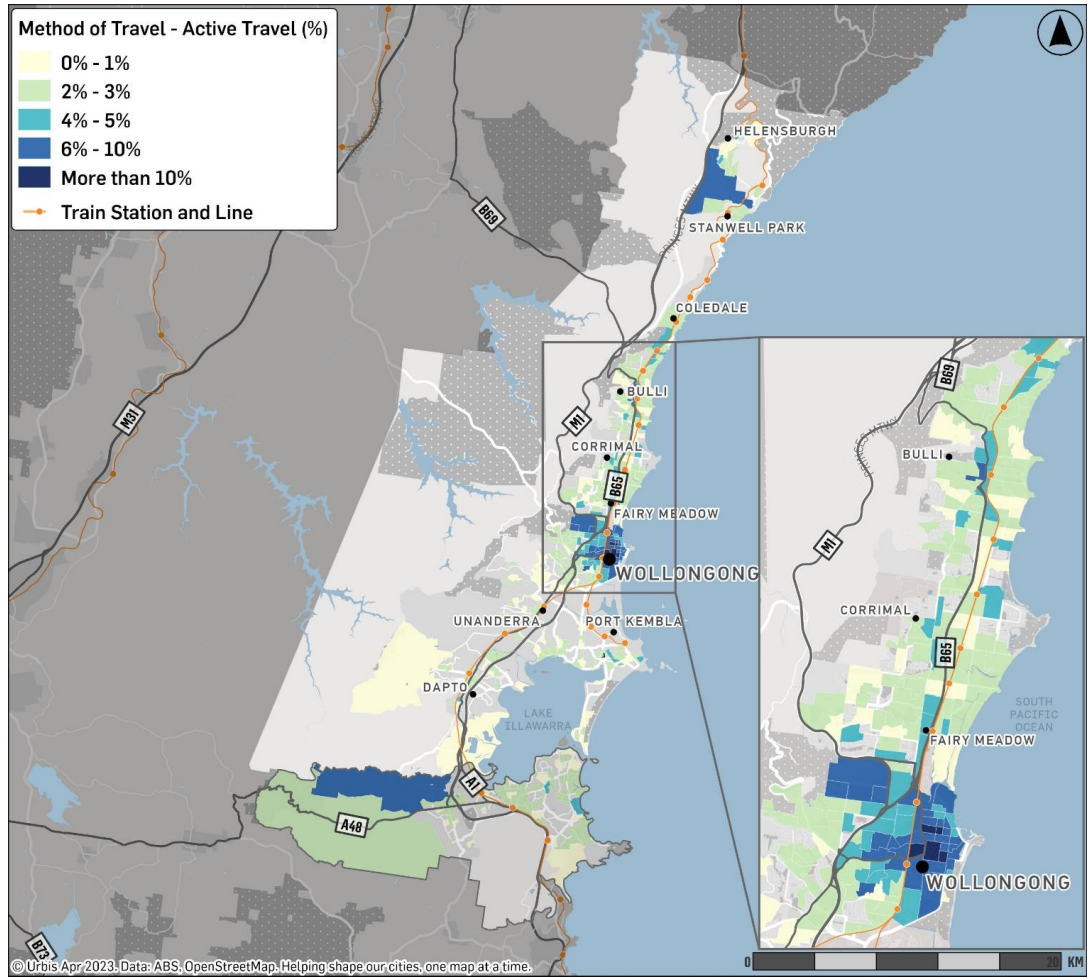




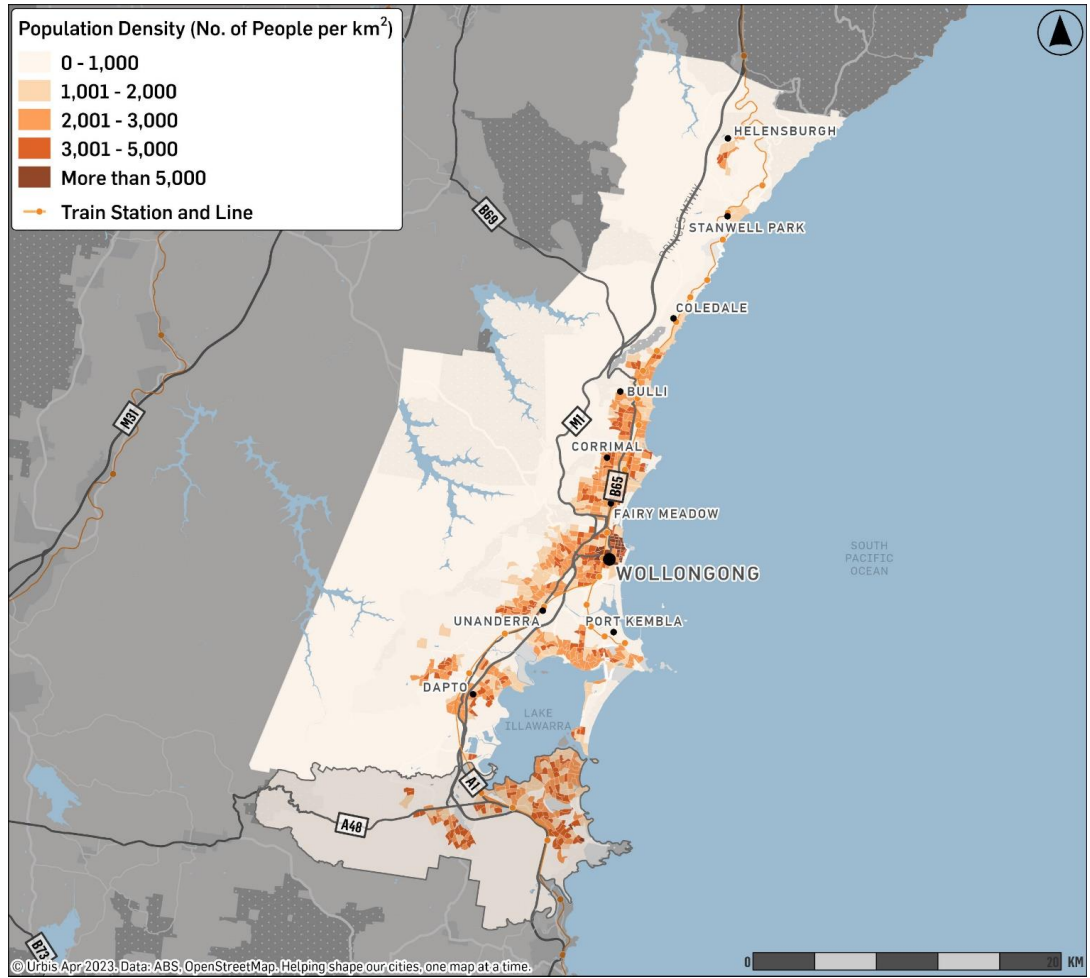
## PUBLIC TRANSPORT USAGE



# ACTIVE TRAVEL USAGE

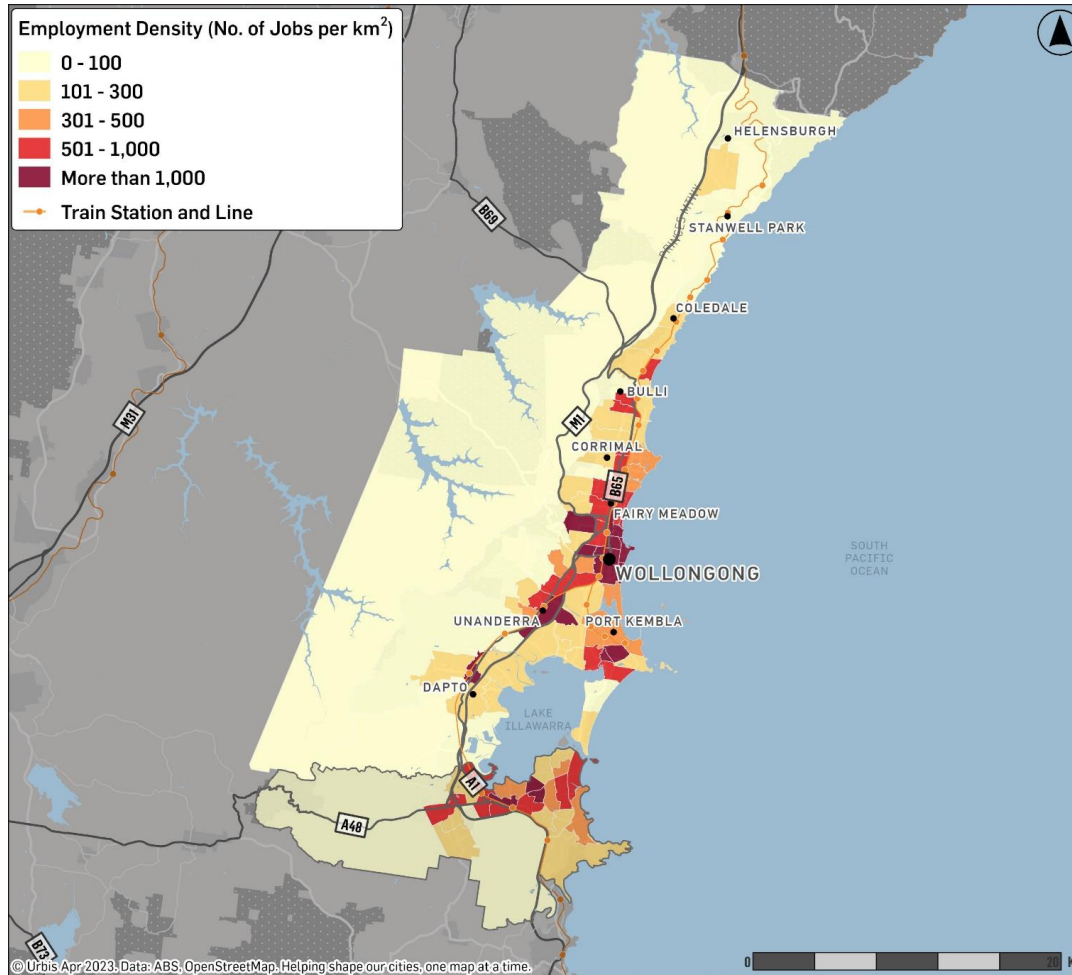


# POPULATION DENSITY

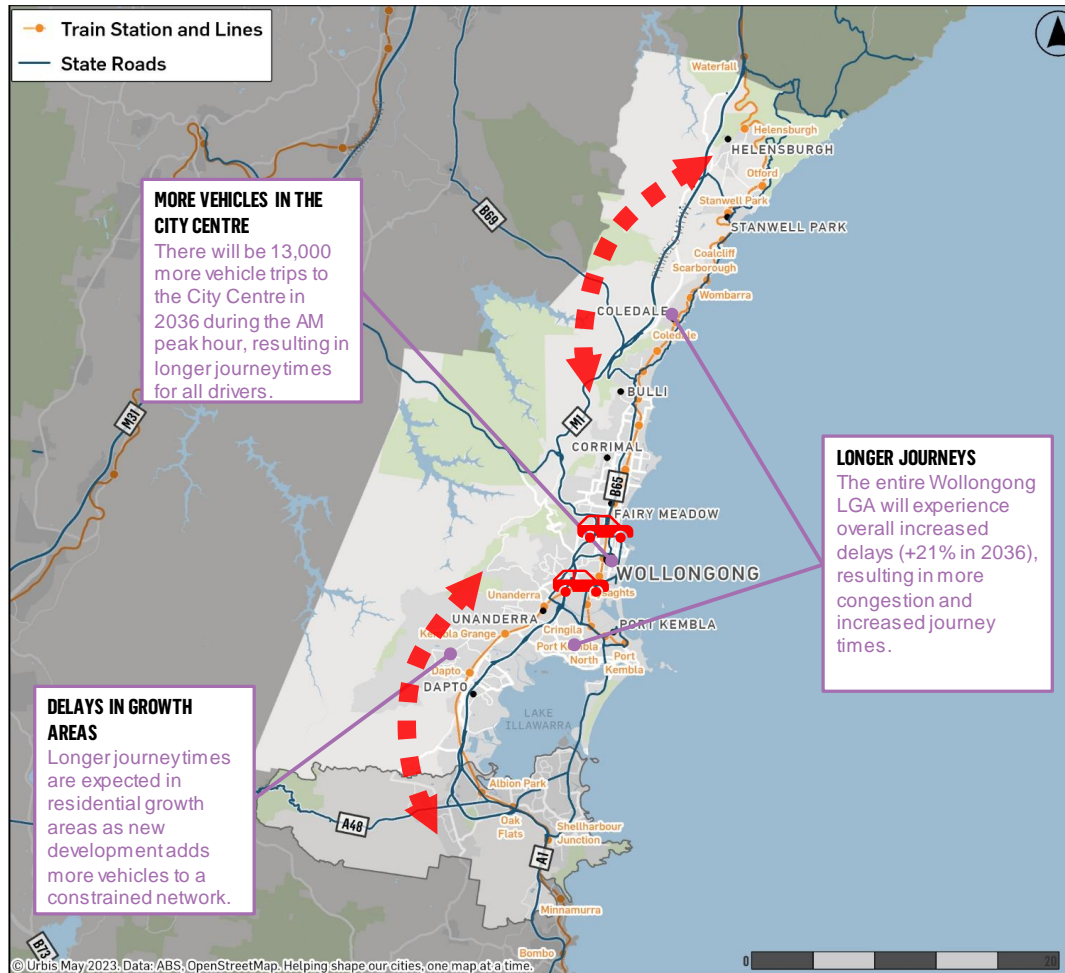




## EMPLOYMENT DENSITY



## 2036 BUSINESS-AS-USUAL CAR TRAVEL INVOLVES MORE DELAYS



# APPENDIX G

## ACTIVE TRANSPORT CASE STUDIES



## SELECT STUDIES ON GENDER AND AGE INCLUSIVE DESIGN OF BIKE RIDING INFRASTRUCTURE

### Gender:

- Inclusive roads in NYC: Gender differences in responses to cycling infrastructure [www.sciencedirect.com/science/article/pii/S0264275122001585](http://www.sciencedirect.com/science/article/pii/S0264275122001585)
- Can Protected Bike Lanes Help Close the Gender Gap in Cycling? Lessons from Five Cities [www.researchgate.net/publication/312307230\\_Can\\_Protected\\_Bike\\_Lanes\\_Help\\_Close\\_the\\_Gender\\_Gap\\_in\\_Cycling\\_Lessons\\_from\\_Five\\_Cities](http://www.researchgate.net/publication/312307230_Can_Protected_Bike_Lanes_Help_Close_the_Gender_Gap_in_Cycling_Lessons_from_Five_Cities)
- Rivera, O., Erik, Ellder. (2023) *Are bicycle streets cyclist-friendly? Micro-environmental factors for improving perceived safety when cycling in mixed traffic*, Accident Analysis & Prevention, Volume 184, University of Gothenburg, Sweden. (<https://www.sciencedirect.com/science/article/pii/S0001457523000544>)
- Pearson, L., et al. (2023) *What a girl wants: A mixed-methods study of gender differences in the barriers to and enables of riding a bike in Australia*, Transportation Research Part F: Traffic Psychology and Behaviour, Volume 94, Monash University, Australia. (<https://www.sciencedirect.com/science/article/pii/S136984782300061X?via%3DiHub>)
- Graystone, M., Mitra, R., Hess, P. (2022) *Gendered perceptions of cycling safety and on-street bicycle infrastructure: Bridging the gap*, Transportation Research Part D: Transport and Environment, University of Toronto, Canada. (<https://www.sciencedirect.com/science/article/abs/pii/S1361920922000670>)

### Gender and Age:

- Cycling provision separated from motor traffic: a systematic review exploring whether stated preferences vary by gender and age [www.tandfonline.com/doi/full/10.1080/01441647.2016.1200156](http://www.tandfonline.com/doi/full/10.1080/01441647.2016.1200156)

# APPENDIX H

## PUBLIC TRANSPORT

### DIVISION OF

### RESPONSIBILITIES

## DIVISION OF PUBLIC TRANSPORT RESPONSIBILITIES

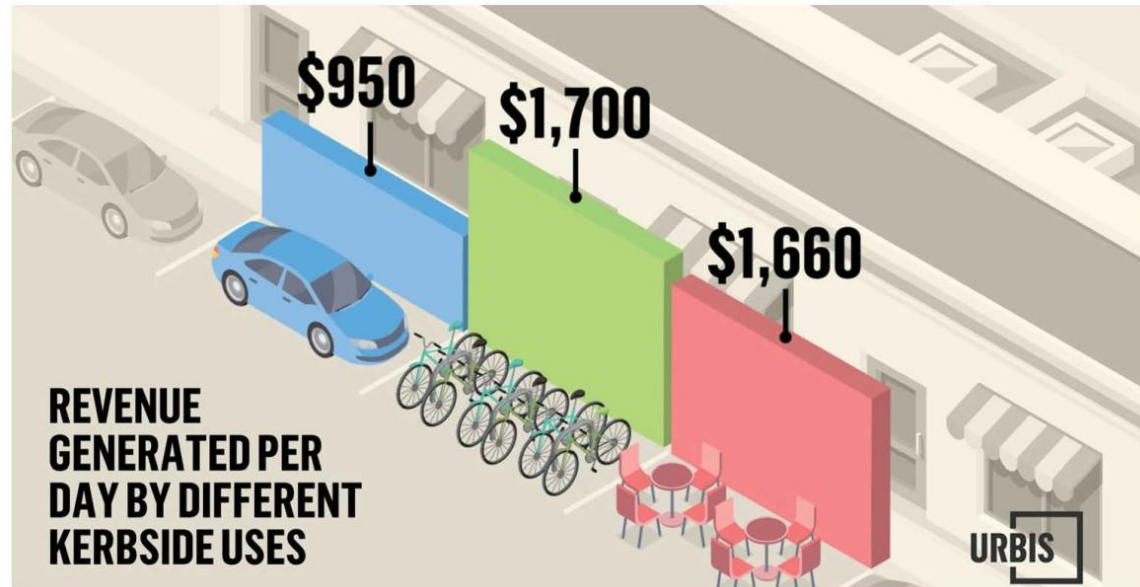
	Council	TfNSW
State Roads		X
Local Roads	X	X
Train stations		X
Train fleets		X
Train services		X
Bus stops	X	X
Bus fleet		X
Bus contracts		X
Access / connections to stations / stops	X	
Bike parking at train stations		X



# APPENDIX I

## REVENUE GENERATED BY KERBSIDE USES /SOURCES AND ASSUMPTIONS

## FULL LIST OF ASSUMPTIONS ASSOCIATED WITH CALCULATIONS



Source: Urbis, 2021

Based on the following sources

- Dining Parklet occupancy, expenditure and duration of stay based on: Urbis, 2021, Extended Outdoor Dining Program Evaluation, for Cities of Melbourne, Yarra and Stonnington
- Bike parking occupancy, expenditure and duration of stay based on: Alison Lee & Alan March (2010) Recognising the economic role of bikes: sharing parking in Lygon Street, Carlton, Australian Planner, 47:2, 85-93, DOI: 10.1080/07293681003767785 (factored into 2021 Australian Dollars)

Assumptions and Notes

- Occupancy- bike parking 6 spaces, car parking 1.2 people per car, dining parklet 10 seats.
- No. of hours per day of occupancy- bike parking 8 hours, car parking 14 hours, dining parklet 8 hours.
- Bike Parking Occupancy 61%, Dining Parklet Occupancy 63%, Car Parking Occupancy 85%



[URBIS.COM.AU](http://URBIS.COM.AU)