2021 – 2030

On our bikes

A plan for safe and connected cycling in the Newcastle LGA

City of Newcastle

newcastle.nsw.gov.au

Acknowledgement

City of Newcastle acknowledges that we operate on the grounds of the traditional country of the Awabakal and Worimi peoples. We recognise and respect their cultural heritage, beliefs and continuing relationship with the land and waters, and that they are the proud survivors of more than two hundred years of dispossession. City of Newcastle reiterates its commitment to address disadvantages and attain justice for Aboriginal and Torres Strait Islander peoples of this community.

We are committed to contributing towards achievement of the United Nations' Sustainable Development Goals (SDGs). We have adopted the SDGs and New Urban Agenda as cornerstones for our planning.

In September 2015, Australia was one of 193 countries to commit to the SDGs. These goals provide a global roadmap for all countries to work towards a better world for current and future generations.

For information about the Cycling Plan, contact Transport and Compliance, City of Newcastle.

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Message from the Lord Mayor

Nuatali Nelmes

City of Newcastle is striving to be a smart, liveable and sustainable global city and changing how we travel is a big part of this shift.

We know that more 'active transport', such as cycling - and walking - benefits everyone.

Every time someone rides to work, study, socialise, swim, or shop rather than drive a car means less congestion, less noise and less pollution.

We believe that Newcastle has the potential to become a great cycling city.

Our climate is favourable, much of the city is relatively flat, and the increasing uptake of e-bikes means that topography is not the barrier it once was. Many workplaces, schools, shopping centres, parks, beaches and other attractions are within easy walking or riding distance of many local residents.

That's why City of Newcastle is committed to promoting cycling as a genuine transport option for residents, families, commuters and recreational users.

In recent years, the City has made significant investment in new, safe cycleways. Almost $5 million has been allocated to cycleways projects under the 2020-21 capital works budget, including $3.1 million for the first stage of the City Centre to Merewether cycleway.

By prioritising our investment in Newcastle's cycleway infrastructure we hope to enable cycling to play an even larger role within Newcastle's transport mix now and in the future.

Our new plan for safe and connected cycling across our City will help make walking and riding the natural and safe choices for short trips in Newcastle.

We know that community perceptions about lack of safety is the key deterrent to increased participation in cycling.

We are dedicated to building a bike network that provides safe, convenient connections between our centres, favourite places to visit, and homes.

By improving safety and connecting the network, we will realise Newcastle's fantastic potential and our community's aspiration for more people to ride, more often.

Councillor Nuatali Nelmes
Lord Mayor of Newcastle

Message from the CEO

Jeremy Bath

The Newcastle 2030 Community Strategic Plan reflects the community's vision for our city. Since it was first developed in 2011, it has outlined a vision for Newcastle in which walking, cycling and public transport are viable options for the majority of trips.

Throughout this period, we have unfortunately not witnessed significant change in mode share from cars to more active forms of transport. As is often the case, the translation of strategic goals for more active and sustainable transport use into action on the ground, is challenging.

Today we are seeing an increasing emphasis in State and local government on public space and place-based planning, partly in response to poor public space outcomes arising from past approaches, but also to respond for the need for physical distancing due to COVID-19, which has forced a fundamental rethink for many in our city in terms of their health and wellbeing desire to exercise and work differently.

Urban streets and roads are where the majority of our transport happens and comprise a large percentage of our public space. The way in which our streetscapes have been designed and built affects our decisions about how we choose to move around, how easily we can incorporate physical activity into our daily routine, the quality of the air we breathe, our exposure to risk of a collision, our ability to interact with others and our general health and wellbeing.

In developing this new Cycling Plan, City of Newcastle has looked to best practice examples and reshaped them for our local context and focused on action to provide safe and connected cycling infrastructure to increase the participation in cycling and normalise cycling for short trips.

Delivering on the actions of this Plan will not be easy. We know the most effective way to reduce fatalities and severe injuries on our streets is to reduce vehicle speeds. To improve safety and comfort, we need to design and implement new cycle routes that are separated from motorised traffic or achieve a low speed, low volume environment. This will address community perceptions about the lack of safety which is the key deterrent to increased participation in cycling.

A holistic approach – which optimises our potential and the opportunities for our streetscapes, whilst recognising and addressing the challenges – is how we will 'flip the power' from a narrow perspective focused on cars, to a broader perspective focused on people.

Jeremy Bath
Chief Executive Officer

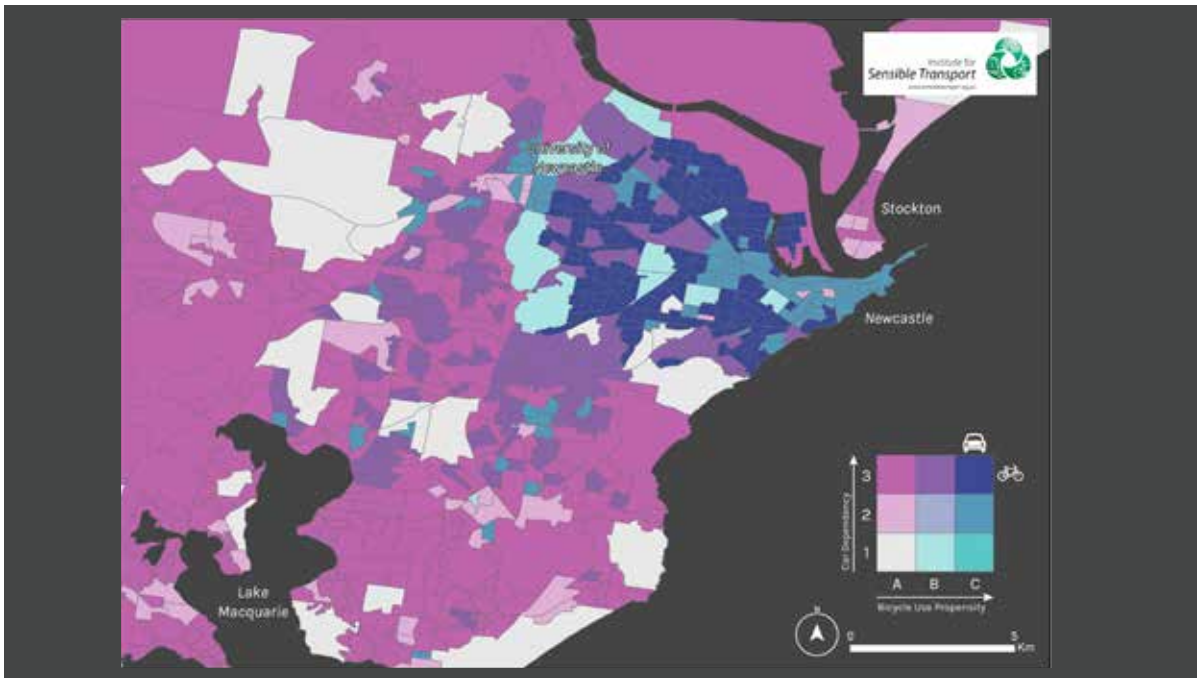
Newcastle's cycling potential

Newcastle aspires to be a smart, liveable and sustainable global city. Changing how we travel is a critical part of this. More cycling - and walking - benefits everyone. Every time someone rides to work, to university, to the beach or to the local shops instead of using a car means less congestion, less noise and less pollution – and better streetscapes for people.

Newcastle has many attributes required to become a great cycling city. Our climate is favourable. Much of the city is relatively flat. We have workplaces, schools, shopping centres, parks, beaches and other attractors within easy walking or riding distance of our residences.

Most of the car trips that we make in Newcastle are under 10km and a significant proportion (approximately 37%) are under 2km.

Research[1] undertaken to support the Transport for NSW Strategic Business Case for Cycling involved examining the spatial relationship between areas with high propensity for cycling with high concentrations of short distance car trips. The mapping undertaken highlights the areas that show an overlap of high latent demand for cycling and concentrations of car dependence. As indicated in the report, a new cycling trip that replaces a trip formerly done by car is 'more 'valuable' in terms of its positive impact on congestion, emissions, physical activity and transport affordability than a trip coming from another mode'. High scores in both categories indicate areas that are likely to see the greatest mode shift away from car use. Of the areas studied, which included Greater Sydney, Wollongong, Gosford and Newcastle, it was concluded that Newcastle would likely see the greatest mode shift away from car use following greater investment in high-quality bicycle infrastructure.



Source: Institute for Sensible Transport, May 2019, Understanding the spatial relationship between cycling propensity and car dependence (Transport for NSW Cycling Infrastructure Investment Program)

We want to make walking and riding the natural choices for short trips in Newcastle – natural, because they are safe, pleasant and convenient modes for all Novocastrians and visitors, whether young, old, male, female, experienced riders or not.

The measures implemented in response to the COVID-19 pandemic have turned the focus around the world on how our cities and public spaces provide for the safe movement of people. We have seen a surge of interest in cycling, with reports of record bike sales during the pandemic, counts up on popular shared paths and people making the most of quiet, relatively traffic free streets.

We want to ride the wave of this renewed focus on active transport and realise the potential that a significant shift to walking and cycling can have for our city, in terms of improving the health of our residents, the amenity of our streetscapes and overall liveability.

However, we know that there is a long way to go. Though some progress has been made since adoption of the Newcastle Cycling Strategy and Action Plan in 2012, it has not been as much as hoped.

To develop this new Plan, we sought feedback on the barriers to riding and what is needed to increase participation. We engaged with a range of businesses, stakeholders and community groups for input on how we can make riding safer and more appealing to a wider range of people and how we can make the most of our streetscapes.

We heard that we need to focus more on people, and to integrate safe infrastructure for walking and riding in all our projects that touch on the public domain, from our feasibility studies of cycling routes through to local centre public domain plans and comprehensive local area traffic management plans.

We also need to engage more with the community about our projects, tell people what we are planning, invite their input and bring them along on our journey.

Perceptions about the lack of safety remain the key barrier to more people riding in our city. This also applies to those that are already riding. When asked to nominate what City of Newcastle (CN) can do to increase cycling participation, the overwhelming majority of respondents indicated they felt cycleways should be separated from motorised traffic. Many current riders simply do not feel safe using our roads, because of the speed and volume of traffic, lack of dedicated space, discontinuities in provision of cycling infrastructure or the behaviour of motorists. Simply put, we have to address people's fear of being hit by a car if we are going to substantially increase mode share to cycling. Improving safety is therefore one of our key objectives and will be a core consideration in all of our actions.

More people will ride if there are safe, convenient connections. Streets in which people walk and ride, and feel safe and comfortable doing so, exhibit characteristics of liveable cities, as they support the health, well-being and quality of life of residents and workers. How we design, build and manage our streets, for mobility and access, will enhance or detract from the liveability of our city.

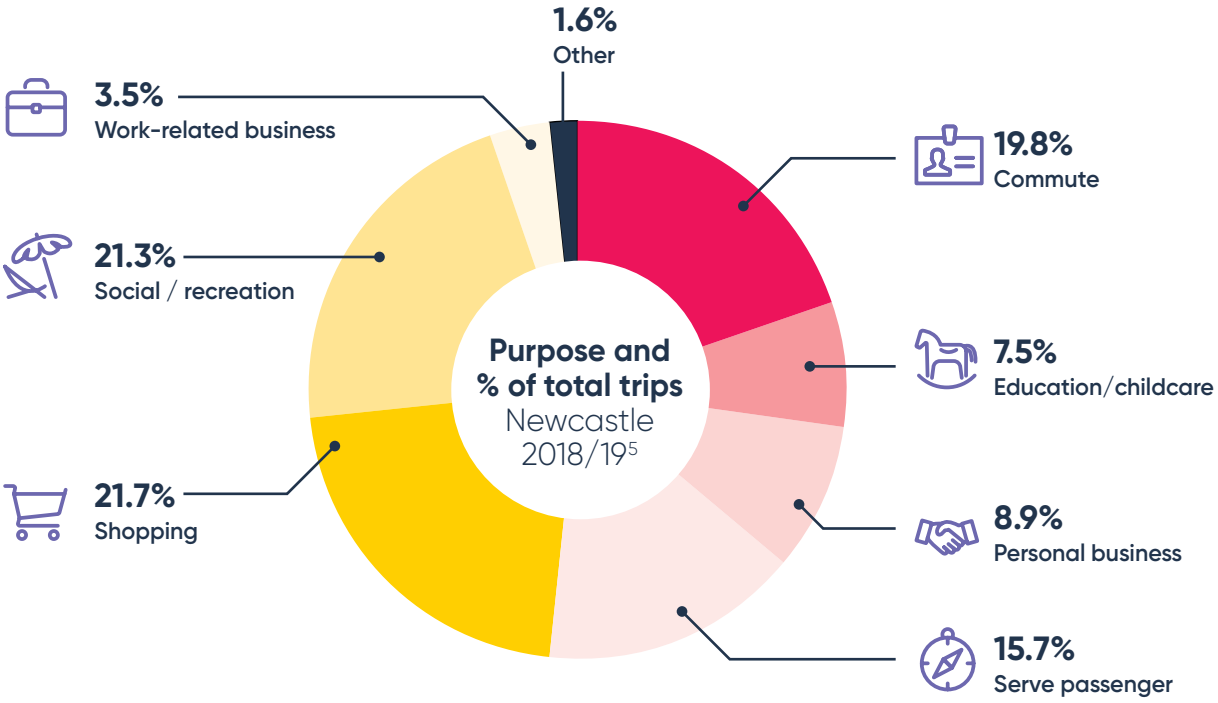
Travel patterns and cycling participation

78%
8km

In the Newcastle SA3[2] (a similar area to the Newcastle LGA), approximately 78% of all weekday trips are by private vehicles, with an average trip distance of less than 8km.[3]

5km

Over half of the trips made by Greater Newcastle's (five LGAs of the Lower Hunter) residents are journeys under 5km.[4]



Riding

1.9% of residents ride to work.[6]

The highest cycling participation rate (measured as those who had ridden in the past week) was among children aged under 10.[7]

Approximately 16% of Newcastle residents ride a bike in a typical week.[7]

The majority of cycling trips are for recreation.

Nationally, cycling is one of the most common forms of physical activity.

What you told us about cycling

To develop this Plan, we asked the community and key stakeholders about their thoughts on riding and what it is like in Newcastle. We researched best practice, reviewed the policy framework and we had ongoing discussions with our Cycling Working Party. We reviewed our progress with implementation of the Newcastle Cycling Strategy and Action Plan 2012 – what worked, what did not, and the reasons for not reaching desired outcomes.

Early engagement workshops

In September 2020, we undertook early engagement with a range of government, business and other stakeholders through a series of workshops in which we discussed the roles of cycling, parking and our streetscapes in contributing to the outcomes we want for our city. Stakeholders consulted included:

- Transport for NSW
- Department of Regional NSW
- Hunter and Central Coast Development Corporation
- University of Newcastle
- Property Council
- Urban Development Institute of Australia
- Newcastle Cycleways Movement
- Hunter Business Chamber
- Representative for Business Improvement Associations
- CN Liveable Cities Advisory Committee
- CN Strategy and Innovation Advisory Committee
- CN Cycleways Working Party
- CN staff

The early engagement workshops explored principles and issues around four key areas:

1. streetscapes
2. cycling
3. parking
4. implementation.

There was broad agreement that our streetscapes need to safely accommodate a range of uses and purposes, including walking, bike riding, travelling by car or public transport, parking, as well as contributing to our sense of community and facilitating business activity. The evolving transport scene globally was noted, with emergence of different technologies having potential to change how we move in the future.

It was acknowledged that our streets are a precious, finite and public resource and that with constrained space, some trade-offs will be required. A prominent theme in many of the discussions was for greater consideration of people in our streetscapes – not just cars, and not just from an infrastructure perspective. It was also acknowledged that all streets are not the same – whether main roads or suburban streets – and therefore the needs of those streets are not the same. Explicit definition of a hierarchy of uses for the different types of streets in our city was suggested as a way to provide clarity about needs and opportunities.

Consistent with the outcomes of the community survey and research (discussed further below), addressing perceptions of lack of safety was seen as key to increasing participation, along with bike routes which connect to where people want to go and information about those routes. Normalising cycling, integration with public transport, catering for needs of all types of cyclists and education were also raised.

Many groups discussed the need for evidence-based decision making, good communication of the reasons for decisions and early and ongoing consultation in project development and implementation. The need for flexibility of approach was raised, with implementation of trials, whether for testing permanent measures or to prove or debunk a theory, noted as a valuable tool. Genuine and ongoing engagement, education and transparency in decision making were seen as critical to building the case for change and achieving a shift in behaviour to more sustainable transport use.

National cycling participation survey – Newcastle

Since 2017, CN has participated in the annual National Cycling Participation Survey, a standardised survey undertaken throughout Australia to measure participation, with optional additional questions to obtain information on perceptions of riding.

Fieldwork for the 2020 survey was conducted between March and May 2020, which coincided with significant restrictions imposed in response to the COVID-19 pandemic.

The survey sample consisted of 677 households containing 1444 individuals. Those who had ridden in Newcastle at least once in the past 12 months (116) were asked the questions about perceptions.

Respondents were asked to prioritise actions that CN could take to encourage bike riding. The most supported actions were:

More off-road paths and cycleways

(90% of respondents rated this a very high or high priority)

Better connections

- between bike paths and schools (80%)
- between bike paths and parks and swimming pools (73%)
- between bike paths and shops (67%)

More signs highlighting bicycle routes

Results – consultation survey[8]

CN undertook a survey to gain information about perceptions of cycling in Newcastle, cycling behaviours, and incentives and barriers to increased cycling. Riders and non-riders were encouraged to participate. 2,383 online surveys were completed by the public, providing insights and feedback on their riding habits, views about safety and their key concerns.

More off-road paths and more physically separated on-road lanes were viewed as encouraging participants (frequent and infrequent riders) to ride more.

Safety was raised as the most common reason for infrequent riders not currently riding on a regular basis (30%).

11% of frequent[9] cyclists agree/strongly agree that cycle routes are well-connected.

9.5% agree/strongly agree that drivers are courteous towards cyclists.

46.5% agree/strongly agree that cyclists and pedestrians are courteous towards each other on shared paths.

Frequent riders feel safest on shared paths (61.7%), physically separated lane on road (57%) and quiet or low traffic streets (49.7%).

751 comments were received suggesting that enforced safety policy, education and awareness would make the biggest impact on cycling safety in Newcastle LGA.

Recommendations:

In order to encourage riding, incorporate more off-road paths and address safety issues.

Implement cycling safety education campaign, including driver education, pedestrian and cyclist etiquette.

Investigate other cities' cycle models.

Repeat the survey in two years to monitor results over time.

Encourage infrequent cyclists to ride more through greater promotion of cycle routes that may be best suited to inexperienced cyclists, including off-road paths and physically separated on road lanes.

In summary, we heard that for more cycling, safer facilities and better connections are needed. Also apparent is the need for non-infrastructure related initiatives, to encourage more gracious behaviour by all road users and wider acceptance of cycling in the community.

The policy settings for cycling are all in place

Our aspirations for cycling in the Newcastle LGA are already embedded in a comprehensive suite of local, regional, state and national strategies.

High level alignment with the Newcastle 2030 Community Strategic Plan (CSP) is essential to the long-term implementation and success of the Cycling Plan. The actions of this Plan have been designed to clearly integrate with the community objectives and strategies of the CSP across the seven strategic directions as well as the UN Sustainable Development Goals.

The strategic direction for transport in the Newcastle 2030 CSP is:

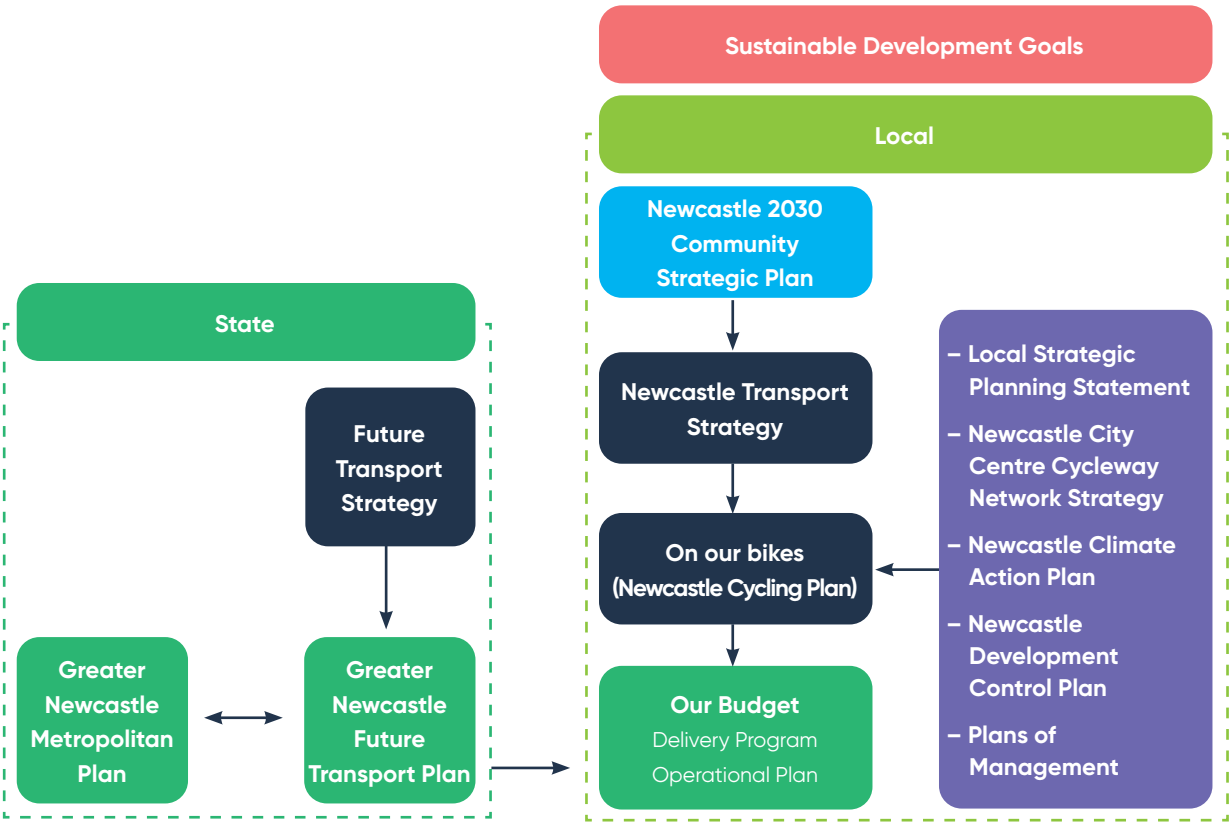
Transport networks and services will be well connected and convenient. Walking, cycling and public transport will be viable options for the majority of our trips.

Reduction in private vehicle use and shifts to active and public transport are central to CN's Newcastle Transport Strategy.

Sustainable Development Goals and New Urban Agenda

Newcastle is a United Nations City and has adopted the Sustainable Development Goals (SDGs) and the New Urban Agenda as cornerstones for planning. Achieving the SDGs and the New Urban Agenda requires partnerships between stakeholders, including all levels of government, community and the private sector. The Cycling Plan aligns with and contributes to the realisation of the following SDGs:

The Cycling Plan is supported by initiatives at other levels of government to reduce mode share to private vehicles, improve safety for all road users and increase liveability.



In addition to the above, increasing active transport is central to the following strategies and policies of external stakeholders:

NSW Government
Transport for NSW, Cycling Safety Action Plan
Transport for NSW, Road Safety Plan 2021
NSW Government Architect, Better Placed – Aligning Movement and Place

Australian Government
Australia's Physical Activity and Sedentary Behaviour Guidelines
Smart Cities Plan
Walking, Riding and Access to Public Transport – Supporting Active Travel in Australian Communities Ministerial Statement

Newcastle 2030 Community Strategic Plan

The Cycling Plan is aligned with the following community objectives and strategies of Newcastle 2030:

Objective 1.2:	Linked networks of cycle and pedestrian paths
Strategy 1.2a:	Continue to upgrade, extend and promote cycle and pedestrian networks
Objective 1.3:	Safe, reliable and efficient road and parking networks
Strategy 1.3a:	Ensure safer road networks through effective planning and maintenance
Objective 3.1:	Public places that provide for diverse activity and strengthen our social connections
Objective 4.2:	Active and healthy communities with physical, mental and spiritual wellbeing
Strategy 4.2a:	Ensure people of all abilities can enjoy our public places and spaces
Strategy 4.2c:	Promote recreation, health and wellbeing programs
Objective 5.2:	Mixed-use urban villages supported by integrated transport networks
Strategy 5.2b:	Plan for an urban environment that promotes active and healthy communities
Objective 6.3:	A thriving city that attracts people to live, work, invest and visit
Objective 7.1:	Integrated, sustainable, long-term planning for Newcastle and the Region
Objective 7.3:	Active citizen engagement in local planning and decision-making processes and a shared responsibility for achieving our goals
Strategy 7.3a:	Provide opportunities for genuine engagement with the community to inform Council's decision-making
Strategy 7.3b:	Provide clear, consistent, accessible and relevant information to the community

The importance of our streetscapes

The streetscapes in Newcastle are one of our most important public assets. They are in effect 'the veins' of our city, enabling movement of people, vehicles, goods, services and infrastructure. In fact, our streetscapes are a significant contributor to the economic, social, environmental, cultural and physical wellbeing of our city – and the people who live, work and visit.

Streetscapes underpin our sense of place and play an important role in contributing to the liveability of our city.

Streetscapes are also a finite, precious resource – we aren't creating many new streets, and most streets are unable to be made any wider. Yet demands on our streets are ever increasing, be it for cars or bikes or walking or business or infrastructure (above and below ground) or trees or initiatives identified as part of our improvement programs for our city and local centres.

For many years, the car was, and to an extent still is, at the centre of road planning, with little consideration of non-motorised modes. However, streets are for much more than cars. Streets are for people – whether in their cars, on their bikes, on foot, or in their homes and businesses.

The Newcastle 2030 Community Strategic Plan, since it was first developed in 2011, has outlined a vision for Newcastle in which walking, cycling and public transport are viable options for the majority of trips. In the intervening period though, we have not witnessed significant change in mode share from cars to more active forms of transport. As is often the case, the translation of strategic goals for more active and sustainable transport use into action on the ground is challenging.

Urban streets and roads are where the majority of our transport happens and comprise a large percentage of our public space. The way in which our streetscapes have been designed and built affects our decisions about how we choose to move around, how easily we can incorporate physical activity into our daily routine, the quality of the air we breathe, exposure to risk of a collision, our ability to interact with others and our general health and well-being.

In our local area, examples abound where facilities for walking and riding are non-existent, where long straight sections of road encourage speeding and where lack of shade and shelter is a deterrent to being out and about. Development requirements, standards and societal norms have varied over time, which have contributed to substantial variation in the amount and quality of walking and cycling facilities throughout the city. Some areas in Newcastle have grid-like street layouts and footpaths both sides while others are virtually devoid of any paths.

In parts of Newcastle, densification and population growth are putting pressure on the transport networks, essentially our roads and streets. Providing more space for cars is usually not the answer but a reassessment of how the space can best be used to do what is needed to support and enrich our daily lives.

The concepts of travel demand management and efficient use of road space are not new. What is different, or at least, providing increased impetus for action, is the focus on our streets as a result of the evolving COVID-19 pandemic situation.

We are seeing an increasing emphasis in State and local government on public space and place-based planning,[10] partly in response to poor public space outcomes arising from past approaches, but also in response to the need for physical distancing due to COVID-19, which has forced a fundamental rethink for many cities around the world.

Allied with the increasing understanding that improved community health outcomes can be achieved with the creation of vibrant neighbourhoods and more active transport, greater consideration needs to be given to the desired functionality of space and how streetscapes can be destinations in their own right.

Internationally, similar responses are evident in initiatives such as the Healthy Streets Approach in the UK[11] and in North America, documents produced by the National Association of City Transportation Officials (NACTO), such as the Urban Street Design Guide and Transit Street Design Guide.

For Newcastle, our streetscapes need to safely accommodate a range of uses and purposes. These include walking, bike riding, travelling by car or public transport, along with parking and other infrastructure, as well as contributing to our sense of community, facilitating business activity and allowing for future trends and needs.

If cars have been at the centre of planning for our streets for decades, we need to shift our focus to a 'people first' approach. After all, the cars which are the dominant user of our streets are driven by people, and it is those people who need to get from A to B, and who also want to see a transition to more sustainable transport modes and better streetscapes.

This is as much about behavioural change as it is about infrastructure or design. Bringing the community on the journey through engagement, education and communication of key initiatives is essential to build trust.

A holistic approach– which optimises our potential and the opportunities for our streetscapes, whilst recognising and addressing the challenges – is how we will 'flip the power' on our streets from a narrow perspective focused on vehicles to a broader perspective focused on people.

Rowlands Park, Glebe Road

Designing our streetscapes for safety

We know that community perceptions about lack of safety is the key deterrent to increased participation in cycling. This has to change.

Movement and Place and the Safe System approach are embedded in key NSW Government transport and urban planning documents, such as the Greater Newcastle Metropolitan Plan and the Greater Newcastle Future Transport Plan. These concepts (which are outlined below) will be integral to our future design of cycling infrastructure and facilities – indeed, to all our public domain planning for our streetscapes.

How we shape our public spaces, prioritise the different users and the space they are allocated, will be key to meeting our Newcastle 2030 vision for a liveable city in which walking and cycling are our preferred modes of travel.

Movement and Place Framework

In NSW, the Movement and Place Framework has been developed and adopted as a cross disciplinary 'place-based' approach to the planning, design and delivery of transport networks.

For Movement, the role of a road is to accommodate through traffic, as part of a wider traffic network, providing a conduit from origin to destination with minimal disruption. For Place, the role of the road is as a destination, a location where activities occur along or adjacent to the road.[12]

Movement and Place aims to achieve 'efficient investment, by thinking about the built environment holistically including the social, environmental and economic context'.[13]

National Park

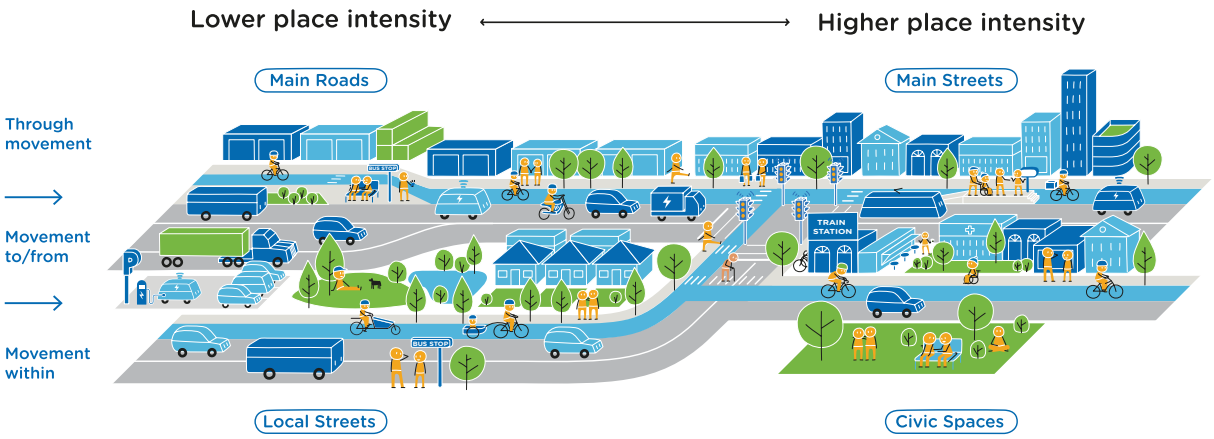
As indicated in the Practitioners' Guide to Movement and Place,[14] the objective is to achieve roads and streets that:

contribute to the network of public space within a location, where people can live healthy, productive lives, meet each other, interact, and go about their daily activities

are enhanced by transport and have the appropriate space allocation to move people and goods safely and efficiently, and connect places together. Balancing movement and place recognises that trade-offs may be required to achieve a best fit for the objectives.

Movement is also a key enabler of places – done well it can enhance and contribute to successful places, by improving liveability, services and economic success. It can create places, as can be seen around our major transport hubs … Designed poorly, movement can diminish places and contribute to their decline.[15]

The Movement and Place Continuum



Source: Transport for NSW

Safe System approach

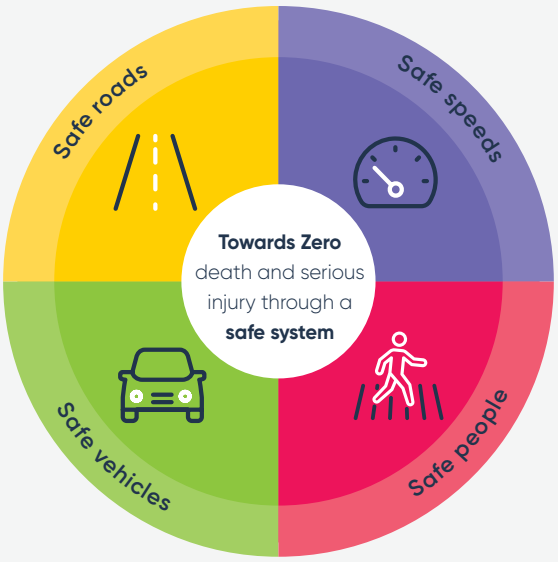
As indicated in Austroads (2018),[17] there are strong synergies between urban design and the harm minimisation objectives of the Safe System approach to road safety.

The Safe System approach, adopted in Australia and around the world, ultimately aims to eliminate fatal and serious injury on the road. It involves a holistic view of the road transport system and the interactions between elements of the road system – the road users, roads and roadsides, vehicles and travel speeds. While recognising the need for responsible road user behaviour, it accepts that users make errors that can lead to a crash and that limits to the forces a human body can withstand are directly linked to the type of crash and speed of impact. It aims to create a road transport system better adapted to the physical tolerance of its users.

Safe System approach

The Safe System approach aims to design and build a transport system that will protect road users and reduce the number of deaths and serious injuries. The four elements are:

- Safe people
- Safe roads
- Safe speeds
- Safe vehicles



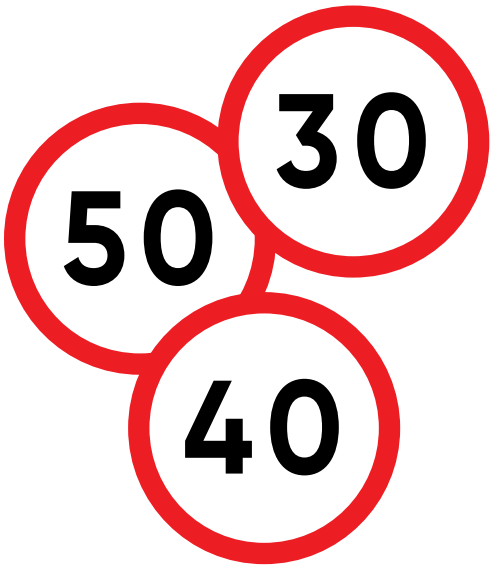
The guiding principles to this approach are:[16]

1. **People make mistakes**
   Humans will continue to make mistakes, and the transport system must accommodate these. The transport system should not result in death or serious injury as a consequence of errors on the roads.
2. **Human physical frailty**
   There are known physical limits to the amount of force our bodies can take before we are injured.
3. **A 'forgiving' road transport system**
   A Safe System ensures that the forces in collisions do not exceed the limits of human tolerance. Speeds must be managed so that humans are not exposed to impact forces beyond their physical tolerance. System designers and operators need to take into account the limits of the human body in designing and maintaining roads, vehicles and speeds.

A holistic perspective which takes into account the desired functionality of the street, its surrounding area and the activities it supports (beyond the motorised traffic movement function), will likely lead to greater use of elements that minimise harm. For Place locations, lower speed environments are typically required and the vulnerability of pedestrians and cyclists is the starting point for design.

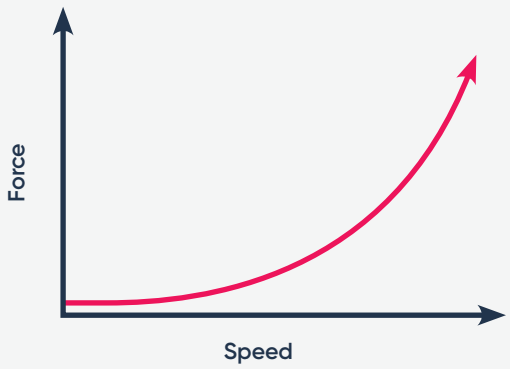
Reducing speed limits

While earlier work on the Safe System approach focused on motor vehicles and drivers,[18] there is now very clear guidance that pedestrians and cyclists should be separated from motorised traffic or speeds reduced to 30km/h or less.[19] Overall, the most effective way to reduce fatalities and severe injuries on streets is to reduce vehicle speeds.[20] Lower speeds result in fewer crashes as road users have more time for reacting and decision making and can stop within a shorter distance. Consequently, impacts on the people and vehicles involved are less severe and there is less likelihood of serious injury or death.

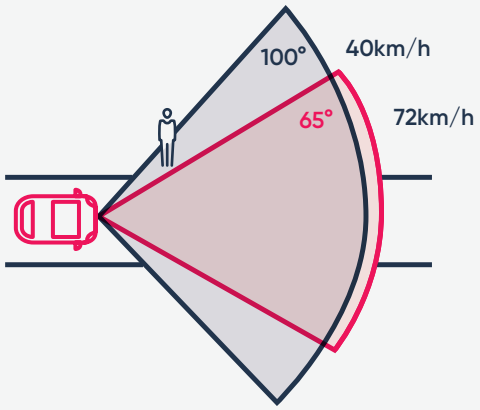


How speed kills

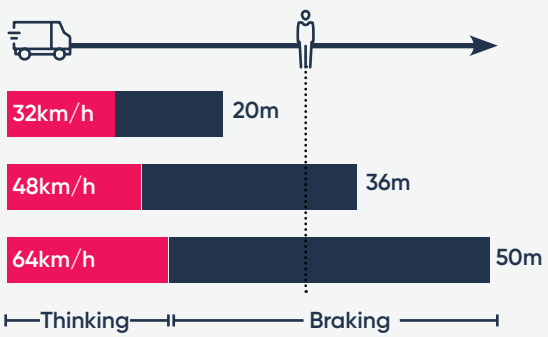
1. Crashes at higher speeds are more forceful and thus more likely to be fatal



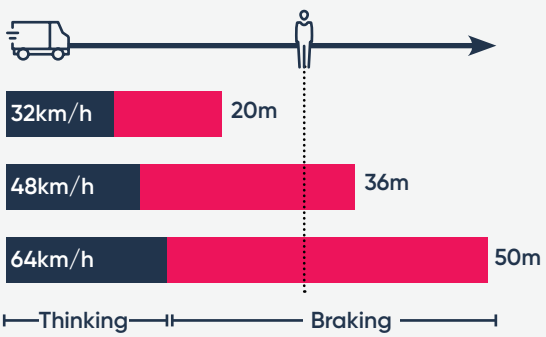
2. Drivers travelling at higher speeds have a narrower field of vision



3. Drivers travelling at higher speeds travel further before they can react



4. Vehicles travelling at higher speeds have longer braking distances



Speed – the facts

Speed is the biggest single factor involved in road deaths, contributing to around 40 per cent of fatalities each year in NSW[21] and is an aggravating factor in the severity of all crashes.[22]

People tend to treat a signposted speed limit as a target, rather than driving to conditions.

Low level speeding is widespread in NSW, due largely to drivers' overly optimistic assessment of their driving ability.[23]

Small changes in speed can have large benefits so any reductions are better than nothing at all. Reducing urban speeds by 5km/h is likely to reduce urban casualty crashes by 26%.

The effect of reducing speed limits on travel time is commonly overestimated.

Speed limits are determined by Transport for NSW and until recently, few options were available. Given the multiple demands on our available road space and cost and challenges in retrofitting of separated cycling facilities, reducing speeds to a level permitting safer interaction of riders and motorised traffic will be a critical tool in our repertoire of potential treatments.

The functional road hierarchy in Newcastle categorises streets as arterial, sub-arterial, collector and local roads. Each category has a typical volume and speed profile. Local roads are the neighbourhood streets, providing access to our residences and ideally have traffic volumes that do not exceed 2000 vehicles per day. They are not meant to be 'rat runs'. If operating as intended, many of our local roads could potentially be enhanced to become 'bicycle boulevards'. These are streets with low speeds and low motorised traffic volume, which are designed to give priority to bicycle travel. Kerb extensions, road humps, chicanes and partial closures are some of the elements that can be used to achieve a self-enforcing or self-explaining street, in which desired low speeds are reflected in operating speeds.

Our plan for safe and connected cycling

Goal

By 2030, City of Newcastle will have a safe, connected cycling network of principal routes and low stress streets. Riding and walking will be the natural choices for short trips, for all members of our community.

Key themes

To achieve this goal, the Cycling Plan is structured around four key themes for safer and connected cycling in the Newcastle LGA:

1. Improve safety and comfort
2. Connect and improve the network
3. Support people to ride
4. Facilitate active transport in centres

We will realise Newcastle's potential and our community's aspiration for more people to ride, more often, by:

- Building a safe and connected bike network
- Addressing community perceptions and needs for cycling to be safe
- Encouraging and enabling people to choose their bikes for short trips

Clyde Street Crossing

1. Improve safety and comfort

Objective 1:

Design and implement new cycle routes that are separated from motorised traffic or achieve a low speed, low traffic volume environment.

Where possible, we will allow dedicated space for both cyclists and pedestrians.

People who ride are of all ages and abilities. We need to design and build cycling infrastructure and facilities and manage our streets so that all feel safe and comfortable using them, but pay special attention to those with less confidence, experience and skills. Whether facilities are shared between pedestrians and cyclists, separated off-road or measures are implemented to effect a low speed, low traffic environment, will be worked through on a case by case basis.

Unless otherwise signed, footpaths throughout the city are able to be used by riders under 16. An adult rider supervising a rider under 16 may also ride with the young rider on the footpath, as can young people aged 16 or 17, when accompanied by a child under 16 and a supervising adult. A rider carrying a passenger under 10 on their bike or in a trailer, may also ride on the footpath.

Our facilities are required to cater for an increasing diversity of mobility devices. We are seeing a much greater range of bicycles in use, including cargo bikes, e-bikes and tandems, some of which have a significantly higher operating space than traditional bikes. Apart from the need to 'future proof' new infrastructure to cater for increased use, providing sufficient passing room to pedestrians and other cyclists suggests that:

New footpaths should be a minimum of 1.5 metres.
Shared paths should be a minimum of 3 metres.
Cycle lanes should be minimum of 1.5 metres, with buffers of a metre to motorised traffic.

Most of our roads are not wide enough to accommodate all the desired infrastructure and streetscape elements. Hard decisions will need to be made about how the available road width is to be allocated among road user groups and functions.

Actions

1.1 Design and implement cycle routes in accordance with the Safe System approach. Cycling facilities will be physically separated from motorised traffic and/ or speeds reduced to 30km/h.[24] Where possible, separated dedicated space for pedestrians and cyclists will be provided.
1.2 Provide training for CN staff in the Safe System approach.
1.3 Undertake trials of limited access streets and areas.
1.4 Advocate to the NSW Government for lower speed limits.
1.5 Consistent with actions in the Newcastle Transport Strategy, review the functional road hierarchy, define street types and corresponding user hierarchies, indicative road space allocation and treatments for walking and riding.
1.6 Consistent with the Newcastle Transport Strategy, develop and implement a program of local area traffic management studies and study methodology, to deter through traffic and ensure needs of vulnerable roads users are addressed and prioritised.
1.7 Develop a bicycle toolkit and suite of standard drawings for various treatments (e.g. for continuous path treatments, driveways, marking of logos) in conjunction with Transport for NSW and Lake Macquarie City Council.

2. Connect and improve the network

Objective 2:

Establish a bike network that provides safe, convenient connections between our centres, key attractors and homes.

We will implement a principal bike network, designed in accordance with the Safe System approach, supplemented by key connectors, scenic routes and low speed, low volume local traffic areas.

Most cyclists who responded to our survey currently cycle for recreation. To increase cycling for transport, that is, for utilitarian trips such as commuting to work, education, shopping or business trips, it needs to be a safe, convenient option. Although Newcastle has some excellent cycling facilities, the network is not connected. One unsafe crossing on a route may be sufficient deterrent to prevent its use by less confident riders.

Through various iterations of bike planning in Newcastle, from the Newcastle Area Bike Plan in 1981, the Newcastle Lake Macquarie Bike Plan 1996 and more recent work, the intention has been to nominate a series of routes to connect residential streets to popular destinations. In the early plans, regional routes nominated to connect sub-regional and regional activity centres were generally based on a 5km grid and were aimed at commuting and training cyclists. The 'local' routes, intended for a wider range of users, connected the regional and sub-regional routes to the local precinct level. The principles for network planning, those of coherence, directness, safety, attractiveness and comfort, remain valid. However, the interpretation of those principles has evolved, in line with recognition that cycling is a form of transport with significant potential to replace motorised transport and of its role in place-making.

The UK's Department for Transport Local Transport Note 1/20, Cycle Infrastructure Design,[25] describes the principles of network planning in the following terms:

Coherent – Cycle networks should be planned and designed to allow people to reach their day to day destinations easily, along routes that connect, are simple to navigate and are of a consistently high quality.

Direct – Cycle routes should be at least as direct – and preferably more direct, than those available for private motor vehicles.

Safe – Not only must cycle infrastructure be safe, it should be perceived to be safe so that more people feel able to cycle.

Comfortable – Comfortable conditions for cycling require routes with good quality, well-maintained smooth surfaces, adequate width for the volume of users, minimal stopping and starting and avoiding steep gradients.

Attractive – Cycle infrastructure should help to deliver public spaces that are well designed and finished in attractive materials and be places that people want to spend time using.

If routes and treatments are such as to address concerns of the less confident and experienced riders, the 'interested but concerned' group - potential for significant change in travel habits is highest. More people will ride for everyday journeys if the right infrastructure is provided.

Revisiting the four types – Four types of current and potential cyclists?

The work by Roger Geller,[26] bicycle coordinator for the City of Portland, Oregon, is often quoted in descriptions of the types of riders for whom cycling facilities need to cater. With respect to their attitude towards cycling for transportation, he identified, based on years of experience and a variety of data, that there are four types:

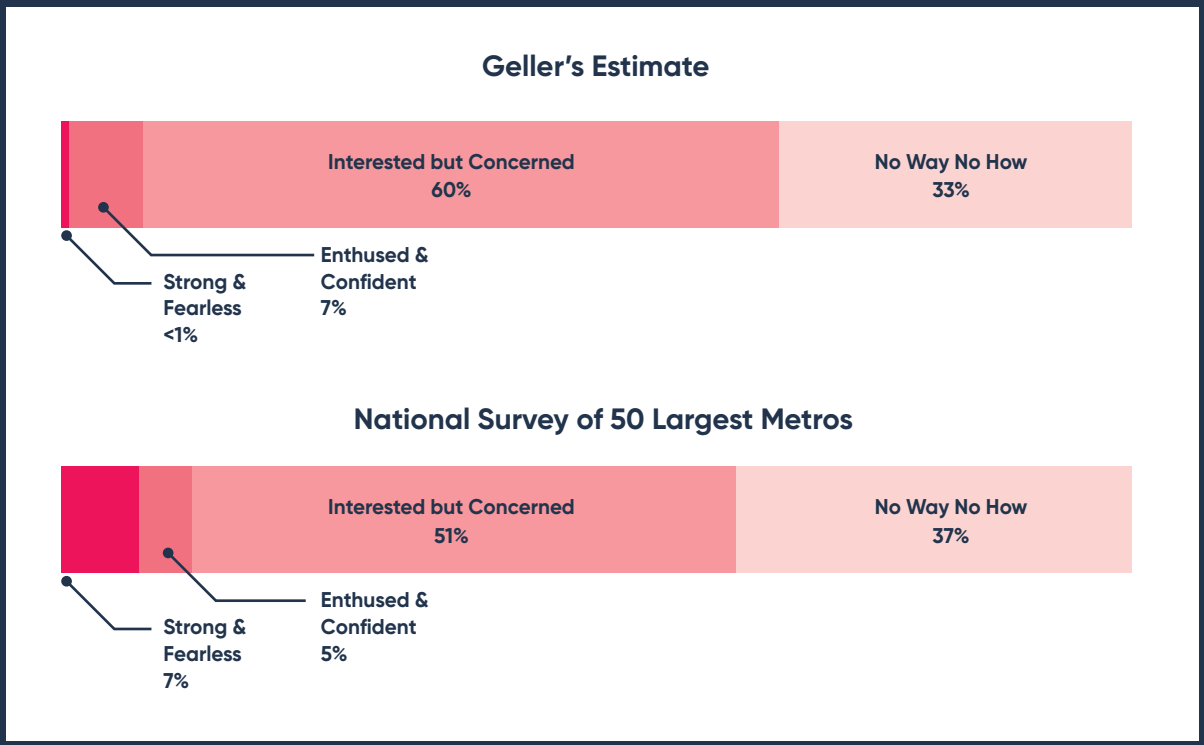
- Strong and fearless – will ride under virtually any conditions and take a 'strong part of their identity' from riding a bike
- Enthused and confident – are comfortable riding on roads with cars but prefer dedicated facilities
- The interested but concerned – are curious about riding but are afraid to do so and so do not ride regularly
- No way no how – will not ride a bike, for reasons of topography, inability or complete lack of interest.

The categorisation was intended to cover all adults, irrespective of their current cycling behaviour. He estimated that approximately 60% of the adults in Portland were in the 'interested but concerned' category. This group would like to ride more but are afraid to ride.

A random phone survey conducted by Dill and McNeil[27] in Portland in 2011 found the distribution was remarkably close to Geller's estimate, with 60% of adults in the city and 56% in the region in the 'interested but concerned' category. In a later 2015 study of 50 metropolitan areas in the US, Dill and McNeil[28] again found a similar distribution to their earlier findings in Portland.

Exploring motivating factors, barriers, and the appeal of various bicycle facility types for each typology, they found:

- There were people who do not currently ride for transportation in all four categories
- A correlation between riding to school as a child and level of comfort cycling as an adult
- The interested but concerned adults represent the largest potential market for increasing cycling for transportation
- That general concern about the amount of traffic and traffic speeds appears to be preventing 'interested but concerned' from riding either for transport or recreation.



The existing network is primarily comprised of shared paths and on road routes, with marked lanes or with bike logos. All shared paths, whether within the road reserve (on a street) or through operational or community land, are bidirectional facilities. Physically separated[29] on road routes are proposed, however, to date, the only instances are on John Parade, Merewether between Berner Street and Watkins Street, one-way, and a temporary bidirectional facility on Honeysuckle Drive between Steel Street and Worth Place.

The majority of works in recent years have involved construction of shared paths. While shared paths will remain as a possible treatment for proposed routes, riders and pedestrian alike have indicated preference for separation. Investigation of treatments for proposed routes will consider reclaiming of road space from cars, for riders and pedestrians, through traffic calming, speed management, narrowing travel lanes, limiting through movements and the like. Drivers must slow down and, in some cases, give up road space for the provision of dedicated cycling facilities.

The Greater Newcastle Future Transport Plan[30] proposes a regional bike network to support travel by bike across the region. Lake Macquarie City Council and CN have collaborated in defining a draft principal bicycle network across the LGAs, to connect key destinations (such urban centres, major parks and recreation areas). This will be further refined in conjunction with Transport for NSW. In Newcastle, it is envisaged that all nominated regional routes and key connectors between them will be part of the principal bike network.

Maps at Appendix 1 indicate existing routes, proposed new routes and major upgrades. The majority of routes require feasibility studies to determine final alignments and treatments. Options will be assessed having regard to the network planning principles described previously, and other relevant considerations, such as proximity to pollution sources, impacts, and costs and complexity of implementation. It is intended that the network maps be updated regularly, as studies are completed and works implemented.

The proposed network is ambitious. Works will be staged and may not be fully completed to the desired standard within the life of this Plan. In our prioritisation and staging, we will consider potential for low cost, readily-implemented measures that will improve safety and connectivity in the short term, with concurrent investigation and progression of long term solutions.

We will prioritise routes and projects that:
Support uptake in cycling
Address key gaps and/or safety issues
Align with objectives of grant programs
Offer benefits to multiple user groups
Align with major drainage or road projects
Align with major public domain, local centre and/or local area traffic management works
Support a mix of planning, design and delivery of projects of varying scales

Regional Routes

R1 – (NSW Coastline Cycleway)Swansea to Newcastle City (via Fernleigh Track) and Newcastle City to Fern Bay

The R1 route is part of the NSW Coastline Cycleway. It extends from the Lake Macquarie LGA, through Newcastle on the Fernleigh Track through Adamstown, Broadmeadow, Hamilton East to Newcastle. The route continues from Stockton through to Fern Bay. Most of the route north and east of Adamstown is on road. Improvements to sections are required. Bike boulevard treatment has been proposed for the section on Corlette Street.

R2 – Fernleigh Track to Richmond Vale (via Charlestown)

This route, most of which is outside the Newcastle LGA, will connect the north-western part of the Greater Newcastle Metropolitan Area (Minmi and Richmond Vale) with Charlestown, one of Lake Macquarie's strategic centres. Refer to Lake Macquarie's Walking, Cycling and Better Streets Strategy.

R3 – Belmont to Morisset

This route traverses much of the eastern, northern and western perimeter of Lake Macquarie. Refer to Lake Macquarie's Walking, Cycling and Better Streets Strategy.

R4 – Mayfield to Warners Bay

This route provides a direct and convenient connection between Lake Macquarie and Newcastle. In the Newcastle LGA, it largely comprises what was known as the North-South cycleway. It is off road on a former colliery railway from Kirkdale Drive in Lake Macquarie to St James Road in New Lambton near the Adamstown railway level crossing, then primarily on quiet streets and shared paths through to Mayfield. Improvements to several sections are required.

R5 – Newcastle City Centre to Speers Point

In Lake Macquarie, this route follows Winding Creek to Cockle Creek Station before running adjacent to Lake Road to reach the former Speers Point to Wallsend tram line. From Wallsend, the route is mainly off road on former tram routes through to Broadmeadow, then primarily via a shared path to Selma Street, Newcastle West. The proposed route from Newcastle West to the City Centre will be undertaken through implementation of the adopted West End Stage 2 Streetscape Plan.

R6 – Newcastle City Centre to University (Callaghan) and Richmond Vale Rail Trail (Minmi Junction)

From the City Centre, the route is on the Throsby foreshore, crossing Hannell Street at traffic signals before continuing off road through to Islington Park. From Maitland Road at Hubbard Street, the route is primarily on road to Waratah West (Queen Street) then primarily off road through the University to the intersection of Minmi Road and Cameron Street, Wallsend. The route continues on shared paths on Minmi Road and Maryland Drive. From the intersection with Ajax Avenue, the route is partly on road and partly shared paths, to Minmi Junction.

R7 – Morisset Peninsula to Cooranbong

Refer to Lake Macquarie's Walking, Cycling and Better Streets Strategy.

R8 – University (Callaghan) to Maitland

This route is primarily on the alignment of the Hunter Water pipeline corridor between Shortland and Tarro. Design for the route north of Shortland has been undertaken in conjunction with the Richmond Vale Rail Trail project. Further investigations are required to determine the alignment from near Tuxford Park through the University (Callaghan) and for connections into the Maitland LGA network.

R9 – Northlakes Way (Glendale to West Wallsend, Cameron Park)

Refer to Lake Macquarie's Walking, Cycling and Better Streets Strategy.

R10 – Warners Bay to Redhead Beach

Refer to Lake Macquarie's Walking, Cycling and Better Streets Strategy.

Actions

2.1 Upgrade, expand and connect cycling facilities (in accordance with the Safe System approach).

2.2 Undertake feasibility studies to determine route alignments for key gaps in the network and sections requiring significant upgrade.

2.3 Improve safety and access throughout the local government area by:

- upgrading stormwater grates to be bike safe
- phasing out bicycle shoulder lanes
- removing/replacing end treatments (bollards) with safer designs
- installing bicycle ramps
- responding to requests to trim vegetation.

CycleSafe Network

The CycleSafe Network is a community-led proposal to create a system of safe, easy-to-follow cycle routes connecting destinations across Newcastle and Lake Macquarie. It includes approximately 90km of existing paths and 160km of new routes concentrated in areas where the most people live, with connecting links to outlying suburbs. The CycleSafe Network is based on a system of nodes, which are familiar, easily identified locations, connected by links. The CycleSafe routes are strategically located to enable the majority of the region's residents to be within a few hundred metres (a one minute ride) of family safe cycleways.

The CycleSafe Network, initially proposed in 2013, built on work undertaken by City of Newcastle, Lake Macquarie City Council and Transport for NSW (Roads and Maritime Services). It incorporated the key existing and planned cycleways required to create a continuous, connected network.

Frustrated with piece by piece delivery of infrastructure as time and funding permitted, the proponents of the CycleSafe network saw the sale of Newcastle Port as a unique opportunity for the NSW Government to invest in a community asset that would deliver widespread benefits for current and future generations. The proposal was to plan and deliver the CycleSafe Network as a single integrated transport infrastructure project, over a five to eight year timeframe.

The CycleSafe Network is supported by Transport for NSW, NRMA, University of Newcastle, Heart Foundation, BicycleNSW, the Tom Farrell Institute and the Newcastle Cycleways Movement. It is incorporated into the Greater Newcastle Future Transport Plan as the basis for the regional bike network.

As previous mapping by City of Newcastle informed the CycleSafe Network proposal, it has in turn informed the proposed network map for Newcastle.

3. Support people to ride

Objective 3:

Understand and address the challenges and enablers of more riding in Newcastle.

We will raise community awareness of the benefits of riding and provide information about cycling in Newcastle and safe routes. Our network of safe routes will be supported by clear wayfinding and convenient parking and facilities.

Research[31] indicates that a combination of 'hard' and 'soft' measures is required to increase participation in cycling. CN's engagement, outcomes of the National Cycling Participation Survey, and reports such as Research into Barriers to Cycling in NSW[32] indicate similar barriers and enablers to cycling participation. Collectively, these sources indicate that there is ongoing need to:

- Provide information about cycling in Newcastle
- Promote the benefits of cycling
- Inform people about safe routes

While cycling conditions and infrastructure issues could be considered location specific (notwithstanding common themes throughout NSW), there is a commonality of factors, environmental, social and personal, that influence a person's choice to travel by bike.

Newcastle does not have to 'reinvent the wheel' in relation to behaviour change programs and initiatives. City of Sydney, for example, has a well-developed behaviour change program based on research, surveys, pilot projects and international best practice. Much of the information and resources are publicly available. While some customisation may be warranted for application to Newcastle, for the most part, similar initiatives can be adopted, with a high degree of confidence that they will be effective.

There are still marked differences in cycling participation between men and women. Anecdotally, we are seeing an increase in the numbers of older women riding, those that are rediscovering the bike after years of not riding. CN will ensure that cycling is perceived as an activity for everyone, young and old, male and female and address unfounded negative perceptions of cyclists that are held by some members of the community.

Results of the National Cycling Participation Survey,[33] also reflected in those for the Newcastle LGA, indicate that cycling participation is highest for children and drops off sharply in late adolescence and early adulthood. Several factors are likely contributing to this decrease. Concerns about traffic, crossing points and lack of safe routes to desired destinations work against choice of active travel to school. Participation in organised sport (as opposed to recreational riding), perceptions about the 'coolness' factor of riding and, although there is some evidence that suggests attitudes and trends are changing, the societal status placed on owning a car and securing a driver's licence have some bearing on decreased participation in these age groups. Having safe infrastructure and environments is key, however, normalising cycling and encouraging young riders to keep on riding is also important.

Bike parking

Bike parking that is conveniently located and secure supports more riding, especially in densely populated urban areas such as in the City Centre and adjacent areas. Across the city, different types of bike parking are installed through several different processes or programs. Parking as part of new development is addressed through assessment of development applications and the provisions of the Newcastle Development Control Plan, and may comprise a mixture of public and private facilities, with varying levels of security. Public domain planning addresses the need for additional parking, typically bike hoops or stands, on-street to serve adjacent development. Individuals can also fund bike parking installations in the road reserve through submission of a s138 *(Roads Act 1993)* application.

Transport for NSW is installing more bike parking at stations, wharves and bus interchanges throughout NSW,[34] including free bike racks and bike sheds and lockers, which require pre-registration. The bike sheds accommodate between 20 and 50 bikes and are made available on a first come, first served basis, with entry gained through linking of the individual's Opal card and acceptance of terms and conditions. A similar system of bike sheds at public transport nodes is operated by Bicycle Network[35] for the Victorian Department of Transport, with approximately 100 cages installed throughout Melbourne and regional Victoria. Use of the bike cages is free, and provides 24 hour undercover, secure (to a point) parking.

On-street bike parking, in the form of racks and hoops, is relatively straightforward to deliver. As cycling becomes more prevalent, there will be more need for facilities such as the two bike hubs at University of Newcastle's Callaghan campus and that at NUspace in the City Centre, which has parking for 215 bikes. Consideration will also be required of diversity of parking, to accommodate non-standard cycles.

Signage

In past years, directional signage for cycling was typically installed on short individual routes or extended cycleways. Greater attention is now being paid to the task of signing whole networks to better assist rider navigation and to facilitate a far wider range of local and regional bicycle trips. Providing wayfinding signage increases the visibility of routes for those riding and the wider community, and can assist in guiding local people to destinations along the cycle network.

Actions

3.1 Complete an audit of bike parking in the public domain and proactively provide bike parking at local centres and other attractors.

3.2 Install coherent and consistent bicycle wayfinding signage and incorporate maintenance of signage in the City Wide Maintenance Procedure.

3.3 Include consideration of wayfinding signage, lighting, drinking fountains, rest areas, bike parking and the like in the project scope for local centres and cycleway projects.

3.4 Provide opportunities for people to build skills and capabilities, with targeted initiatives for specific, under-represented groups.

3.5 Provide information about our cycling infrastructure, through website updates, publication of project information and hardcopy and online publication of cycling maps.

3.6 Initiate and support events that encourage bike riding, such as National Ride2Work Day, NSW Bike Week, Biketober, local discovery rides.

3.7 Encourage mutual consideration, safe and respectful behaviour by road and path users.

Newcastle 'On Your Bike' Campaign

From 2016, City of Newcastle, with part funding from Transport for NSW, implemented a promotion campaign to get more people riding. Components of the 'On Your Bike' campaign included billboard advertisements, television commercials encouraging participation and communicating benefits, social media, bus advertising, bike workshops, a website, maps and social media.

4. Facilitate active transport in centres

Objective 4:

Prioritise space for walking and riding in our City Centre, local and neighbourhood centres so as to encourage mode shift to walking and cycling for short trips.

We recognise that many people cycle for recreation but have not made the transition to cycling for transport, that is, for trips to work and education, to the shops – basically, trips to meet everyday needs. We need to make it easy and convenient to access local and neighbourhood centres by bike.

In Newcastle, our highest trip purposes are for shopping and social/recreation trips. These tend to be the trips for which we have some control over when we travel and are shorter than the average. Providing better access for walking and riding in and to centres will encourage mode shift for short trips.

We are preparing a series of public domain plans covering the City Centre, which will address community aspirations for a walking and cycling-friendly city centre that encourages mode shift to active transport. Public domain plan precincts are shown below.

Actions

4.1 Deliver a fine-grained cycling network in the Newcastle City Centre that meets 'Safe System' criteria.

4.2 Work to better understand the demands on our centres and how people access them, to inform the prioritisation of space.

4.3 Review our processes and objectives for local centres' projects, to incorporate specific objectives for walking and cycling access.

LEGEND

PUBLIC DOMAIN PLAN PRECINCT

CITY CENTRE

PROPOSED BUILDING/ BLOCK DEVELOPMENT

Supporting initiatives

In addition to the objectives and actions in this Plan, there is range of supporting initiatives that will influence outcomes and offer synergies.

At a broad level, decisions made in land use planning and in development control influence the ease with which non-motorised modes can satisfy user needs. The location of trip attractors such as schools, shops and employment, their density and mix, in relation to where people live, affects the length of day to day trips and so how much the car is used to get around.

Similarly, the way that parking is managed impacts our public domain and our travel patterns. While there is ready access to free or low-cost parking, there is little incentive to change travel behaviour to use of more sustainable transport modes. On-street car parking reduces the capacity of roads to be used for other purposes and, as indicated in previous sections of this Plan, needs to be balanced with other aspirations for the street.

Increased participation in cycling is a common aim of many organisations and interest groups. CN recognises that the objectives and actions of this Plan will be enabled by strengthening partnerships. Ongoing communication with adjacent councils, particularly Lake Macquarie City Council, will ensure good connectivity of routes and consistency in route treatments.

City of Newcastle will:

Engage with other organisations that are supporting people to ride in Newcastle, such as the Heart Foundation, Newcastle Cycleways Movement and Love to Ride

In accordance with our Local Strategic Planning Statement Implementation Plan, review and update development control provisions for movement networks, car parking and active transport to facilitate use of active transport in Catalyst Areas, Strategic Centres, Urban Renewal Corridors and Housing Release Areas.

Tweed Rides

Implementation

The objectives and actions outlined in this Plan will be translated into specific, time-based actions and will be subject to exhibition and adoption through the annual budget process.

The majority of our proposed cycle connections will involve redesign of our street space – whether adjustment of a kerb line, widening of a path, narrowing of a travel lane, or other measures. The backbone of our cycling network – the established routes such as the Fernleigh Track, Jesmond cycleway, and the north-south Mayfield to Warners Bay (R4) route were constructed as shared paths on former tram lines that remained in public ownership. Being outside of the road reserve, constraints were fewer than the majority of current projects. Design and implementation were generally less problematic. Community engagement was minimal, as there was no formal requirement for exhibition of proposals unless changes to traffic conditions were involved.

Our expectations and aspirations have changed. Where early bike plans were targeted to existing commuter cyclists and occasional recreational riders, the motivation now is to make riding a convenient, preferred transport option for the majority of the community. A fine-grained, safe network of low volume, low traffic routes and separated infrastructure is needed.

Feasibility studies will be undertaken for investigation of potential route alignments and treatments. They may be undertaken for a defined area, with nominated points of connection to existing routes, or for node to node links. A clear objective, at this point, should be the consideration of treatments that deliver on community preferences and the Safe System approach for physical separation from motorised traffic. Once broad opportunities and constraints are identified, options and strategic costs determined, we will undertake engagement to inform a decision on a preferred option. If these steps are followed upfront, design and implementation should progress more smoothly. We also need to be very aware of future proofing and be open to innovation.

Each year, we will include projects spanning investigation, design and construction phases. Having 'designs on the shelf' will increase opportunities to secure grant funding for delivery. We will also attempt to cover different project scales, so that we get some quick wins, in addition to progressing more complex projects. Small scale projects, including bollard removal/ replacement and renewal of line marking, will be undertaken through operational budgets.

All project-based actions (infrastructure and non-infrastructure) are entered and tracked in the Project Portfolio Management (PPM) module; CN's framework for identification, approval, prioritisation, delivery and monitoring of projects. Projects that deliver a common service to the community or business are grouped in programs, which are in turn grouped in portfolios. The majority of projects that involve new cycling infrastructure form part of the Cycleways Program, under the Transport Portfolio.[36] Some non-infrastructure related projects are also included.

The Cycleways Program currently covers:

Feasibility studies, to determine preferred route(s) and treatments for key links
Concept design, detailed design and construction of cycleways
Education and promotion activities
Activities and projects related to program management, such as installation of bicycle counters and data collection

Improvements to cycling infrastructure and environment are also made through projects undertaken as part of other programs. Renewal or upgrade of existing cycling infrastructure is addressed under the Roads Program. Several key routes have been identified for upgrade in the life of this Plan. The centrepiece of the Coastal Revitalisation Program is construction of the Bathers Way, a 6km shared pathway linking Nobbys Beach to Merewether Beach. New cycling infrastructure in the Newcastle City Centre is being addressed under the Hunter Street Revitalisation Program, with cycleway design undertaken as a component of public domain planning.

Various traffic calming projects and crossing treatments under the Local Area Traffic Management Program and Pedestrian Access and Mobility Plan Program will improve the cycling environment throughout the LGA. For example, planned completion of traffic signals at the intersection of Park Avenue and Glebe Road Adamstown will allow safe crossing of Glebe Road on the R1 regional cycling route. Undertaking a local area traffic management study, with a focus on the access needs of vulnerable road users, will identify treatments for limiting through traffic and reducing speeds on certain streets – streets that could then be nominated as bicycle boulevards.

Designs for our cycling infrastructure are undertaken with reference to Austroads guides, NSW Bicycle Guidelines and Australian standards. Not all situations are covered by these, particularly when it comes to fitting infrastructure in a constrained environment and balancing competing objectives or trialling new, innovative approaches. We will expand our range of standard drawings, to provide more guidance on a starting point for different treatments in various situations. These will be developed in concert with staff from Lake Macquarie City Council, with the aim of developing seamless transitions between contiguous LGAs.

Trials

Where practicable, we will trial treatments and proposals to test and build the case for permanent changes. This is a rapidly changing space, lent impetus by responses to the COVID-19 pandemic. Any trials involving changes to speed limits will be done in conjunction with, and subject to approval from Transport for NSW.

Scenic Drive, Merewether Heights

Queens Wharf

CN has a long-established shared path on the foreshore of the harbour, extending west from Merewether Street, through the Honeysuckle area on the southern side of Throsby Creek to Islington Park. East of Merewether Street to Nobbys Road, the foreshore promenade is not designated as a shared path and constitutes an obvious missing link in an otherwise continuous waterfront cycling route from Merewether Beach to Islington Park. Notwithstanding its lack of designation, the area is highly utilised by riders of all ages and abilities.

Several factors culminate to make this area prone to conflicts between users:

- **Narrow width of the promenade**
- **Outdoor dining**
- **Obstacles and impediments such as level changes**
- **Multiple service entries**
- **Placement of bins**

Investigation of a permanent solution to address the missing link and provide ample room for active transport has been initiated as part of the Foreshore Park Masterplan project. The Masterplan will recommend options for future uses and management of the park and foreshore precinct, in line with current and future community needs and expectations.

Community engagement is underway and will build on earlier engagement undertaken by CN as part of the development of the Plan of Management (PoM) in 2015. The adopted PoM identifies the need for improvements to pedestrian and cycle access and better activation of underutilised spaces.

CN was successful in securing funding under the Streets as Shared Spaces program to trial a cycleway detour that will address known conflict issues at Queens Wharf and test a proposed permanent solution, mooted in preliminary stages of master planning for the foreshore. Measures include:

- **A three-metre-wide shared path connection at the western end of the promenade to connect to the Wharf Road footway and cycleway**
- **Relocation of the bus stop and loading zone**
- **Reallocation of the road space to a bidirectional cycleway adjacent to the footway, with a barrier separating it from the east-bound travel lane**
- **Shared path connection from the promenade to the eastern end of the bidirectional cycleway**

The works were completed in early 2021 and are currently being evaluated.

Measuring progress

No single measure tells the full story on cycling in Newcastle. Several methods have limitations, whether in sample size, frequency of data collection or subject. To garner a comprehensive picture of who is cycling in Newcastle, where, and why, a range of qualitative and quantitative measures are proposed. We will supplement information from well-established sources such as the ABS Census, Household Travel Survey and Centre for Road Safety statistics with CN commissioned surveys, counters on bike routes and CN engagement.

Our targets are that by 2030 we will:

Increase the proportion of residents who ride a bike in a typical week from 16% to 30%
Double the mode share for journeys to work to 4%

We will ascertain if and how well we are making progress on achieving our desired outcomes through a range of indicators covering:

Overall participation
Diversity in participation
Safety
Attitudes

Open, transparent reporting on progress and scheduled works is needed. Annual reports, covering budget adopted and expended, project status, activities undertaken and issues, will be prepared. Network maps will be made available on the web, with indicative prioritisation, and updated regularly to reflect implemented works.

Cycling workshops

Measure/Indicator	Baseline/Latest available data	Data source	Frequency
Participation – mode share			
Proportion of journeys to work by bike by residents	1.9% (2016 Census)	ABS Census	5 years
Proportion of all trips made by cycling		Transport for NSW Household Travel Survey	
Proportion of cycling for the purpose of transport		National Cycling Participation Survey - Newcastle	Annual
Proportion of short trips (<5km) made by riding		Transport for NSW Household Travel Survey – specific request	
Proportion of residents who rode in the last week	16% (2020)	National Cycling Participation Survey - Newcastle	Annual
Volume and time of use on principal routes	TBD	Bicycle counters	
Participation – diversity			
Proportion of women who ride to work		ABS Census	5 years
Proportion of women who cycled in the last week	11.1% (2020)	National Cycling Participation Survey - Newcastle	Annual
Proportion of children (0-9 and 10-17) who rode in the last week		National Cycling Participation Survey - Newcastle	Annual
Proportion of young adults aged 18 to 29 who rode in the last week		National Cycling Participation Survey - Newcastle	Annual
Proportion of residents aged 50+ who rode in the last week		National Cycling Participation Survey - Newcastle	Annual
Safety and comfort			
Reported casualty crashes over a five year period		Transport for NSW – Centre for Road Safety	Annual
Hospital admissions related to cycling accidents in the LGA			
Proportion of riders who feel comfortable or very comfortable riding in Newcastle		National Cycling Participation Survey - Newcastle	Annual
Attitudes			
Proportion of responses from frequent cyclists in agreement that cycling conditions have become better in the last two years		City of Newcastle Engagement	Biennially
Proportion of responses in agreement with the statement 'Drivers are courteous towards cyclists'.		City of Newcastle Engagement	Biennially
Proportion of responses in agreement with the statement 'Cyclists and pedestrians are courteous to each other on shared paths'		City of Newcastle Engagement	Biennially

References

1 Institute for Sensible Transport, 2019, Understanding the spatial relationship between cycling propensity and car dependence, TfNSW Cycling Infrastructure Investment Program

2 Statistical Areas Level 3 (SA3) are geographical areas built from whole Statistical Areas Level 2 (SA2). SA3s are designed to provide a regional breakdown of Australia. They generally have a population of between 30,000 and 130,000 people. In regional areas, SA3s represent the area serviced by regional cities that have a population over 20,000 people. In the major cities, SA3s represent the area serviced by a major transport and commercial hub. They often closely align to large urban Local Government Areas. The Newcastle SA3 is similar to Newcastle LGA.

3 Data sourced from Transport for NSW.

4 Transport for NSW, 2018, Greater Newcastle Future Transport Plan, p. 29

5 Household Travel Survey (HTS) – Data by LGA, https://www.transport.nsw.gov.au/data-and-research/passenger-travel/surveys/household-travel-survey-hts/household-travel-survey-1, accessed 18 September 2020.

6 Australian Bureaus of Statistics, Census of Population and Housing, 2016. Compiled and presented by .id the population experts, https://profile.id.com.au/newcastle/travel-to-work, accessed 18 September 2020.

7 Munro, C., 2020, National Cycling Participation Survey 2020 - City of Newcastle

8 Survey undertaken between 16 April and 14 May 2020. Survey was primarily quantitative in format but provided opportunity for qualitative feedback. There were 3,104 survey visits, 2,383 survey completions (57% male, 41% female).

9 Frequent cyclists – cycle daily, more than once a week, weekly, every couple of weeks and monthly.

10 Government Architect NSW and Transport for NSW, 2020, Practitioners' Guide to Movement and Place, p. 3

11 Refer to https://healthystreets.com/ and https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets. The Healthy Streets Approach is 'a system of policies and strategies to deliver a healthier, more inclusive city where people choose to walk, cycle and use public transport' (p. 7, *Healthy Streets Explained*, accessed from https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets, 13 September 2020).

12 Austroads, 2018, Towards Safe System Infrastructure, A Compendium of Current Knowledge, p. 24

13 Government Architect NSW and Transport for NSW, Practitioner's Guide to Movement and Place, Implementing Movement and Place in NSW, p. 9.

14 Ibid p. 9

15 Government Architect, 2019, Better Placed – Aligning Movement and Place, p. 6

17 Austroads, 2018, Towards Safe System Infrastructure, A Compendium of Current Knowledge

16 Reproduced from https://www.roadsafety.gov.au/nrss/safe-system, accessed 26 June 2020.

18 'Exploring the application of the Safe System Approach to cycling', Shaw et al. (2012) indicated that, to that point, application of the SSA had focused on motor vehicles and drivers, and that there is 'little information regarding the impact of infrastructure, vehicle, speed or behavioural factors, and their interactions, on cyclists'.

19 Austroads, 2020, Integrating Safe System with Movement and Place for Vulnerable Road Users

20 Salt Lake City: Department of City and Metropolitan Planning, University of Utah, School of Public Health and Community Development, Maseno University, 2012, '*Pedestrian Safety Review: Risk Factors and Countermeasures*', quoted in https://globaldesigningcities.org/publication/global-street-design-guide/design-controls/design-speed/, accessed 15 September 2020.

21 https://roadsafety.transport.nsw.gov.au/speeding/speedlimits/index.html, accessed 26 July 2020.

22 RTA, 2011, Speeding – Did you know? Fact Sheet 4 of 6, RTA/Pub. 11.310, http://www.rms.nsw.gov.au/saferroadsnsw/speeding_and_crashes.pdf

23 Ibid.

24 Subject to approval by Transport for NSW.

25 Department for Transport, 2020, Cycle Infrastructure Design, Local Transport Note 1/20, p. 8

26 Geller, 2005, 2009, Four Types of Cyclists, https://www.portlandoregon.gov/transportation/article/264746, accessed 20 September 2020

27 Dill, Jennifer and McNeil, Nathan, 2012, 'Four Types of Cyclists? Testing a Typology to Better Understand Bicycling Behavior and Potential', http://web.pdx.edu/~jdill/Types_of_Cyclists_PSUWorkingPaper.pdf

28 Dill, Jennifer and McNeil, Nathan, 2016, 'Revisiting the Four Types of Cyclists: Findings from a National Survey'

29 Various terminology is used to describe bike treatment that are within the road carriageway but physically separated from motorised traffic. Treatments may allow for one-way or two-way bicycle traffic. Protected lanes, protected cycleway and separated lane or cycleway are some of the terms used.

30 Transport for NSW, 2018, Greater Newcastle Future Transport Plan, p. 64

31 The report Walking and Cycling Literature Review (Krizek et al, 2009) presents the findings of an extensive literature review, to assist in understanding barriers to walking and cycling as well as infrastructure and policy supports for non-motorised transportation. The report reinforces the message that increasing participation in cycling requires a range of strategies: *'[coordinated] implementation of multi-faceted and mutually reinforcing policies and programs is needed in order to create successful pedestrian and cycling environments'* (Krizek et al, 2009, p. 37).

32 AMR Interactive, 2009, Research into Barriers to Cycling in NSW Final Report, Transport for NSW

33 Munro, C. 2019 Australian Cycling Participation – Results of the 2019 National Cycling Participation Survey, Austroads Publication no. AP-C91-19, https://austroads.com.au/publications/active-travel/ap-c91-19/media/AP-C91-19_National-Cycling-Participation-Survey-2019-AUS.pdf, accessed 22 June 2020

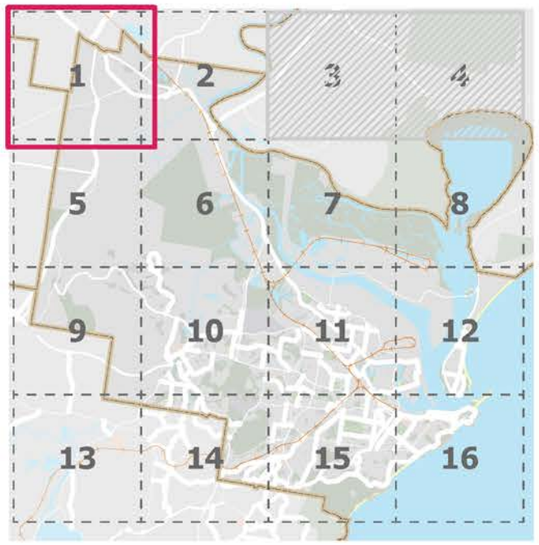
34 Refer to https://transportnsw.info/travel-info/ways-to-get-around/walking-cycling/cycling. Site accessed 17 August 2020. As at that date, no stations in the Newcastle LGA were listed as having a bike shed or locker.

35 Refer to https://www.bicyclenetwork.com.au/our-services/parkiteer/locations/. Site accessed 17 August 2020.

36 The Transport Portfolio covers four programs, namely Cycleways, Local Area Traffic Management (LATM), Parking Infrastructure and Pedestrian Access and Mobility Plan (PAMP).

Appendix 1 – Network Maps

Newcastle Cycling Plan 2021-2030



Scale: 1:14,000 at A2

Cycleways

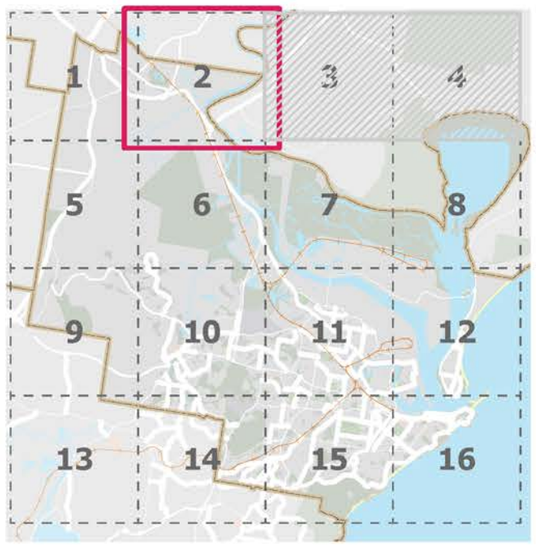
- Existing Separated On-road
- Existing Off-road
- Existing On-road
- Proposed New Works
- Proposed Upgrade
- Cycle routes by others
- Regional Cycleway Route
- Cycleway Destination Node
- Kids Bicycle Circuit
- Velodrome
- Hospital
- Hazard
- Steep Area
- Patrolled Beach
- Primary School
- Railway Stations
- Accessible Stations
- Light Rail Stations
- Ferry Terminal
- Bike Hire
- Railway
- Memorial Walk
- Land ownership by others
- Study Area
- Contours 10m
- Contours 2m

Note: Alignments for proposed new works and upgrades are subject to investigation, consultation and design.

City of Newcastle

MAP 1

Newcastle Cycling Plan 2021-2030



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Metres

Scale: 1:14,000 at A2

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City of Newcastle

MAITLAND

WOODBERRY

TARRO

Beresfield Station

Tarro

Tarro Station

Tarro Public School

RVRT Hexham Junction

Hexham Station

Weingartner Park

Pasadena Crescent Park

Woodberry Rd

Nilands La

Oakfield Rd

Homebush Dr

Kingstown Rd

Green Hills Ave

Dalwood St

Greenwood Ave

Frewin Ave

Michael Hill Ave

Lawson Ave

Redbill Dr

Ibis Pde

Curlew Cres

Addison St

Delprat Ave

Greville St

Irving St

Landor St

Ruskin St

Tennyson St

Allendale St

Christie Rd

Aldwick Cl

Northern Ave

Southern Ave

Woodlands Cl

Kilcoy Dr

Kennington Dr

Martin Dr

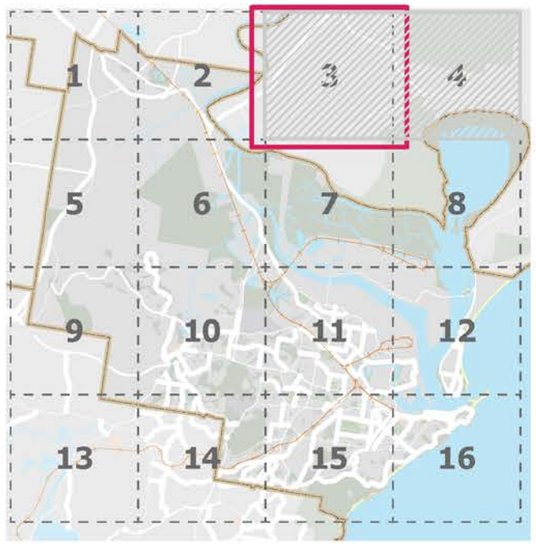
Old Punt Rd

Laverick Ave

MAP 2

N

Newcastle Cycling Plan 2021-2030



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Metres

Scale: 1:14,000 at A2

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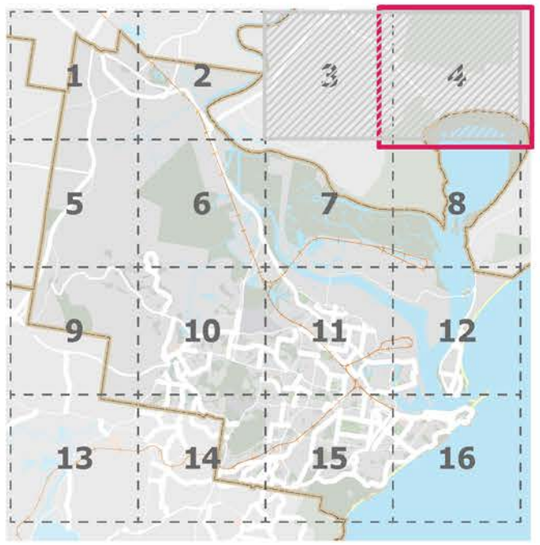
City of Newcastle

MAP 3

N

Newcastle Cycling Plan 2021-2030



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Metres

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- Land ownership by others
- Study Area
- Contours 10m
- Contours 2m

Note: Alignments for proposed new works and upgrades are subject to investigation, consultation and design.

City of Newcastle

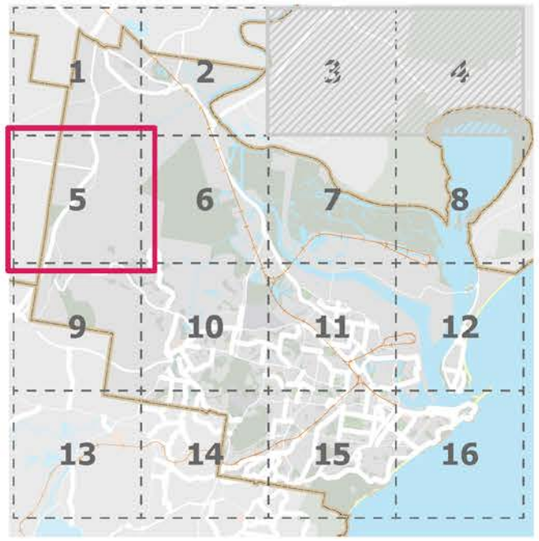
Barrie Cl

MAP 4

N

Path: R:\20201013_Cycleway_Strategy_2020\Cycleway_Strategy_2020_Maps\Cycleway_Strategy_2020_Maps_v3_CouncilReport.aprx

Newcastle Cycling Plan 2021-2030



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Metres

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- Contours 2m

Note: Alignments for proposed new works and upgrades are subject to investigation, consultation and design.

City of Newcastle

BLACK HILL

CESSNOCK

LENAGHAN

FLETCHER

Black Hill Rd

Walter Pde

Cahill Cl

Phoenix Rd

Forsythe Pde

Lenaghans Dr

Richmond Vale Rail Trail (RVRT)

Pambalong Nature Reserve

Cedar Hill Dr

Jacobs La

Dog Hole Rd

Cockrington Rd

Lenaghan Dr

Richmond Vale Rail Trail

RVRT Doghole Carpark

RVRT Minmi Junction

RVRT (Fletcher link)

RVRT (Minmi link)

R6

Kurraka Oval

Kurraka Dr

Northview St

Arbour Ave

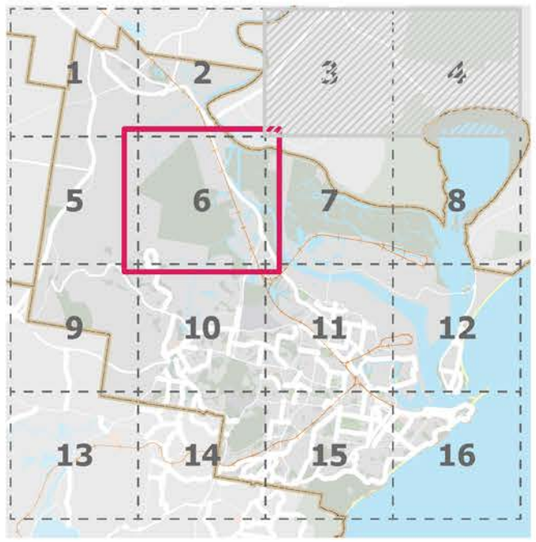
Bishop Tyrell Anglican College

Tumpoaba Reserve Callan

MAP 5

N

Newcastle Cycling Plan 2021-2030



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Metres

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- Contours 10m
- Contours 2m

Note: Alignments for proposed new works and upgrades are subject to investigation, consultation and design.

City of Newcastle

RVRT Hexham Junction
Hexham Station
Gallaghan St
Hexham Park
Williams Rd
HEXHAM
Hexham Swamp Nature Reserve
Sparke St
Maitland Rd
RVRT (Shortland to Tarro Link)
Tumpoaba Reserve Callan
Kyamba Cres
Callan Ave
Timbabah Pl
Jirra Way
Nerangim Cr
R6
Wabakal Dr
SANDGATE
Sandgate Station
Long Cres
Mort St
Hunter Wetlands Centre
New England Hwy
Inner City Bypass

MAP 6

N

Newcastle Cycling Plan 2021-2030

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Metres

Scale: 1:14,000 at A2

Cycleways

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- Contours 2m

Note: Alignments for proposed new works and upgrades are subject to investigation, consultation and design.

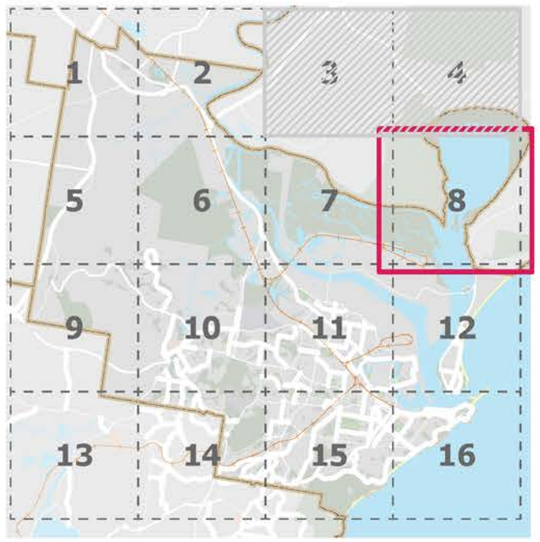
City of Newcastle

School Dr
Tomago Rd
Millers Rd
Ramsar Rd
Maitland Rd
SANDGATE
Sandgate Station
Ferry Rd
Rural Dr
Maitland Road Reserve
KOORAGANG

MAP 7

N

Newcastle Cycling Plan 2021-2030



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Note: Alignments for proposed new works and upgrades are subject to investigation, consultation and design.

City of Newcastle

Fullerton Cove

Kooragang Nature Reserve

Hunter River North A

PORT STEPHENS

FERN BAY

Nelson Bay Rd

Seaside Blvd

Diuris St

Jabiru Dr

Plover St

Rushland Dr

Dune Dr

R1

MAP 8

N

Path: K:\2020\2018_Cycleway_Strategy_2020\Cycleway_Strategy_2020_Maps\Cycleway_Strategy_2020_Maps_v3_CouncilReport.aprx

Newcastle Cycling Plan 2021-2030

250 125 0 250 500 750 1,000

Metres

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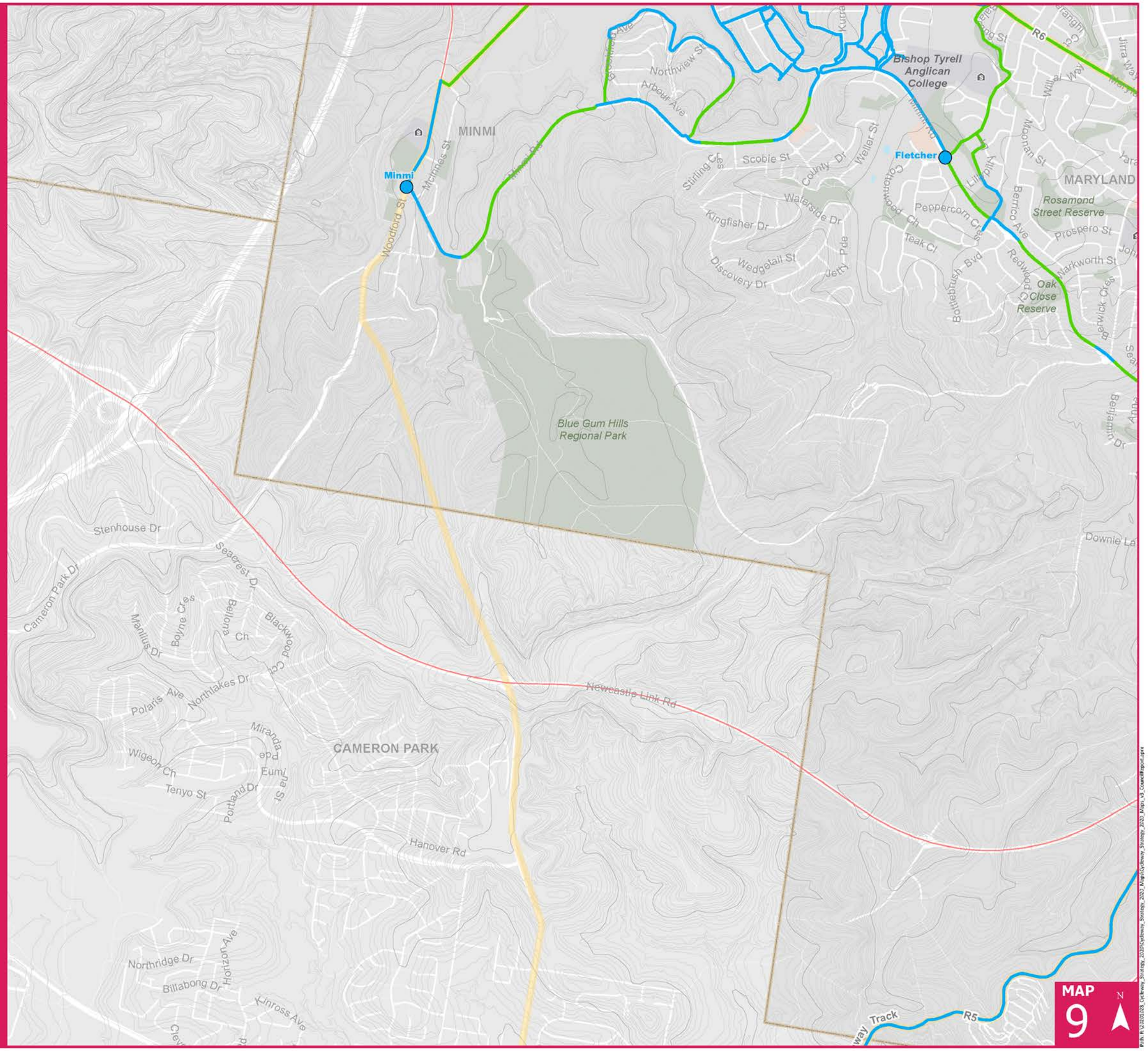
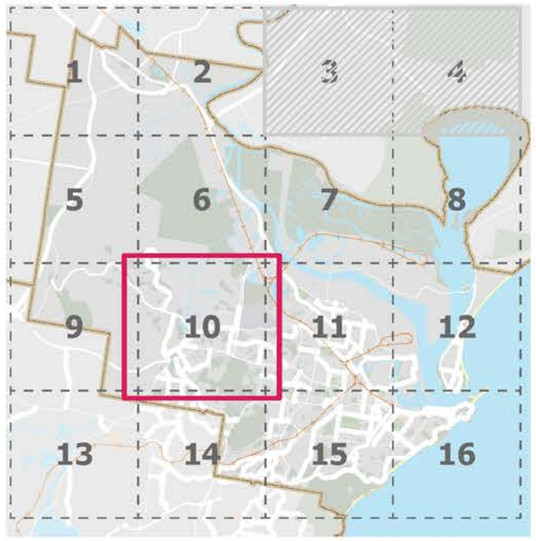
City of Newcastle



Newcastle Cycling Plan 2021-2030



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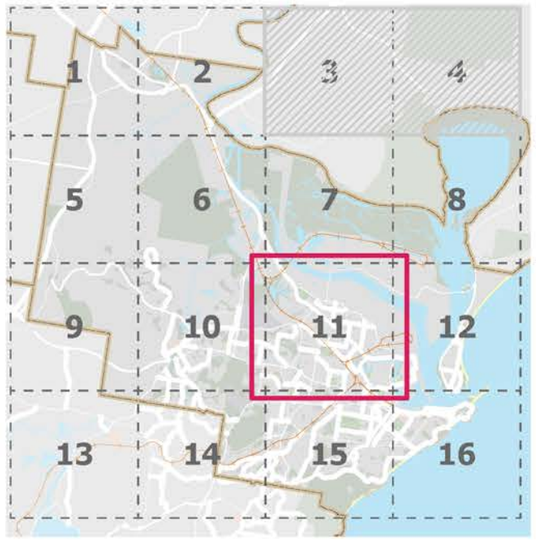
City of Newcastle

MAP 10

Newcastle Cycling Plan 2021-2030



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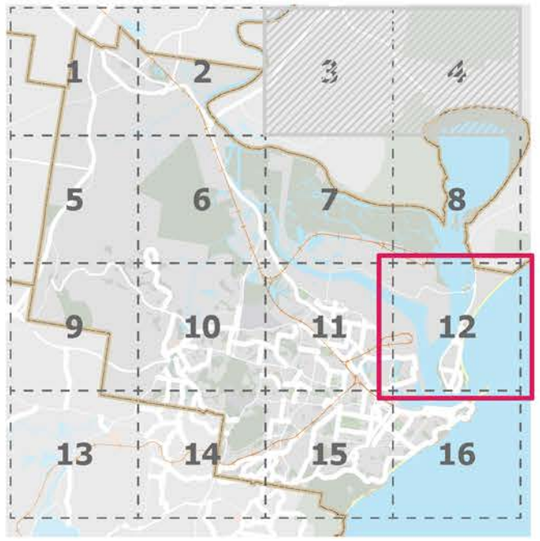
Note: Alignments for proposed new works and upgrades are subject to investigation, consultation and design.

City of Newcastle

Newcastle Cycling Plan 2021-2030



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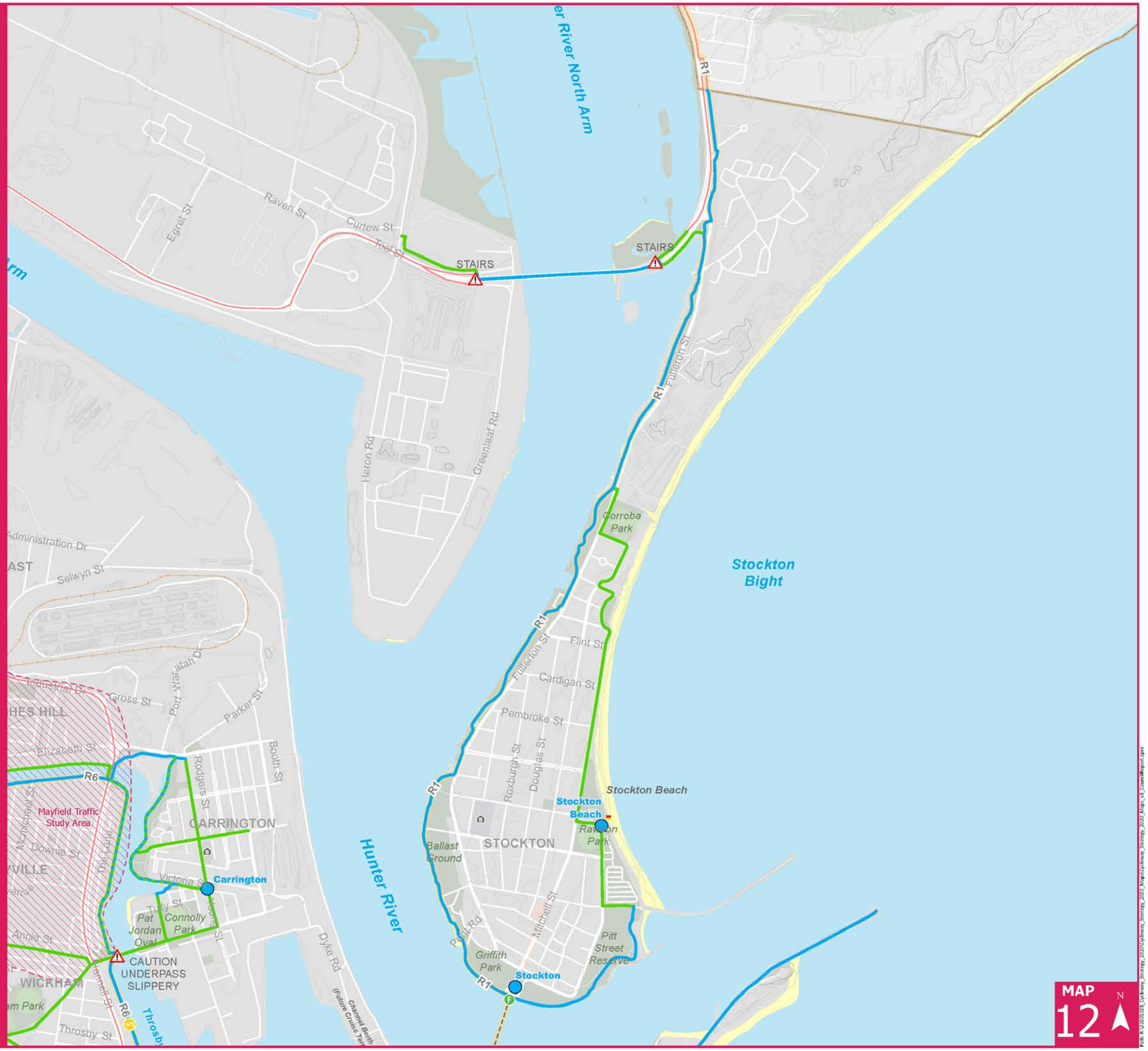
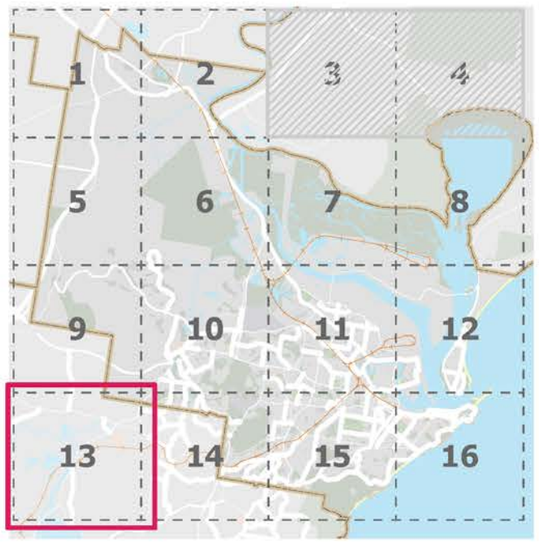
City of Newcastle



MAP 12

Newcastle Cycling Plan 2021-2030



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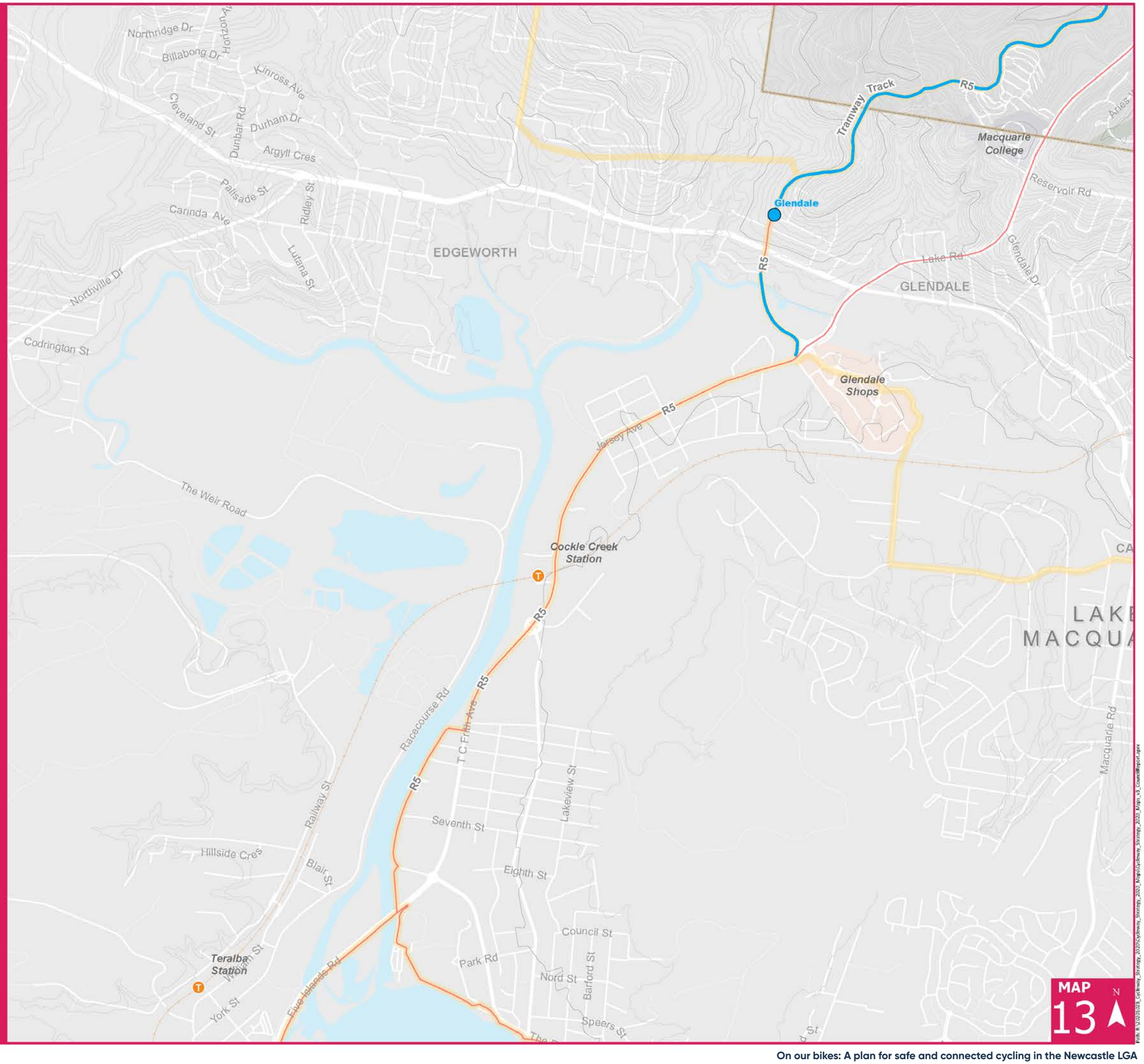
City of Newcastle



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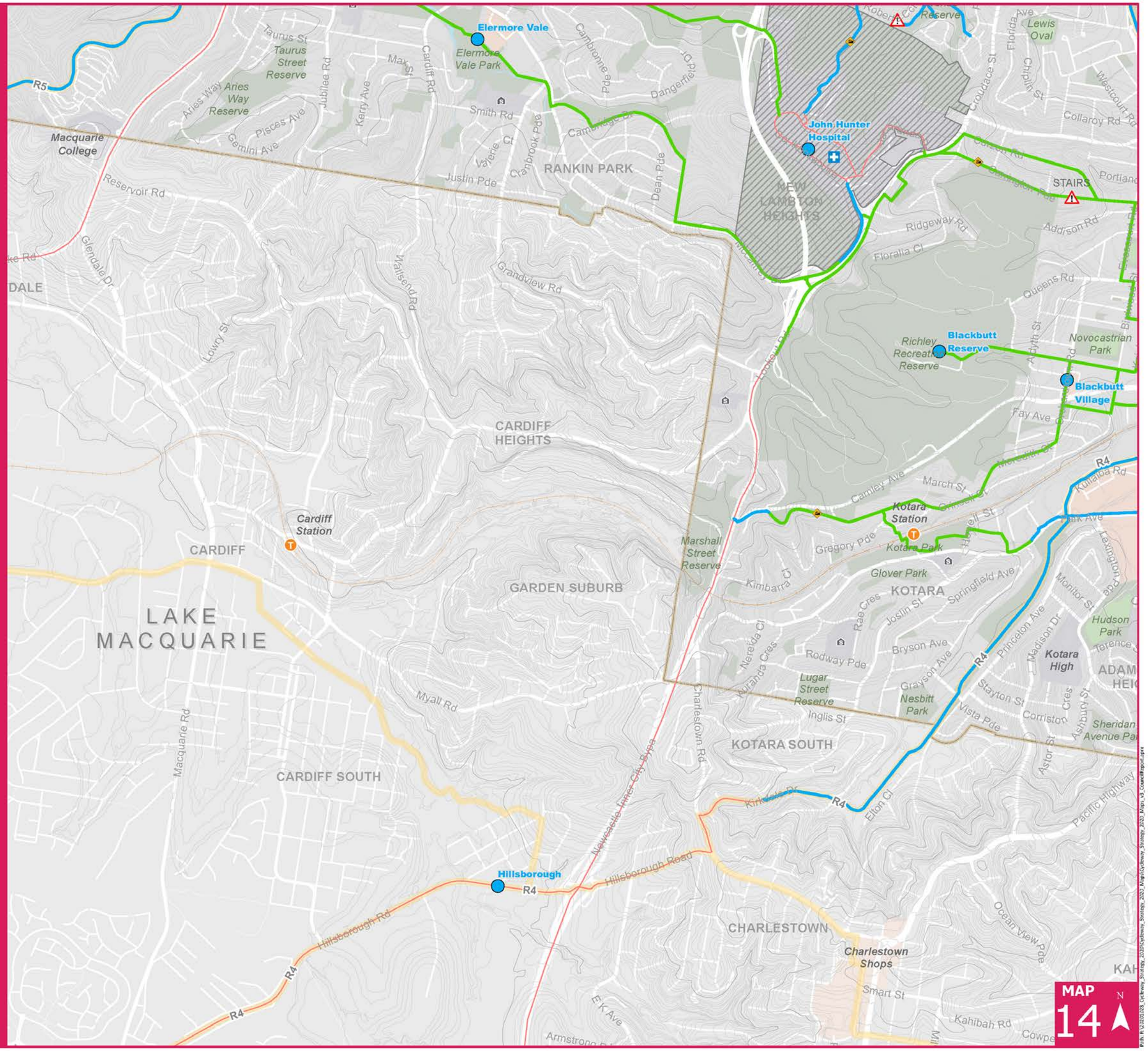
City of Newcastle



Newcastle Cycling Plan 2021-2030

250 125 0 250 500 750 1,000

Metres

Scale: 1:14,000 at A2

Cycleways

- Existing Separated On-road
- Existing Off-road
- Existing On-road
- Proposed New Works
- Proposed Upgrade
- Cycle routes by others
- Regional Cycleway Route
- Cycleway Destination Node
- Kids Bicycle Circuit
- Velodrome
- Hospital
- Hazard
- Steep Area
- Patrolled Beach
- Primary School
- Railway Stations
- Accessible Stations
- Light Rail Stations
- Ferry Terminal
- Bike Hire
- Railway
- Memorial Walk
- Land ownership by others
- Study Area
- Contours 10m
- Contours 2m

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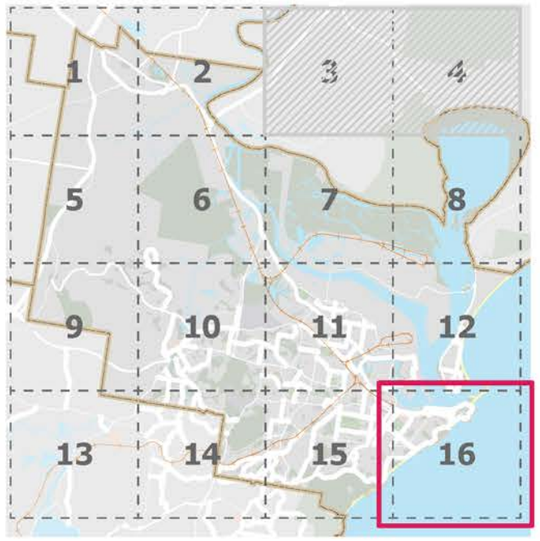
City of Newcastle

Newcastle Cycling Plan 2021-2030



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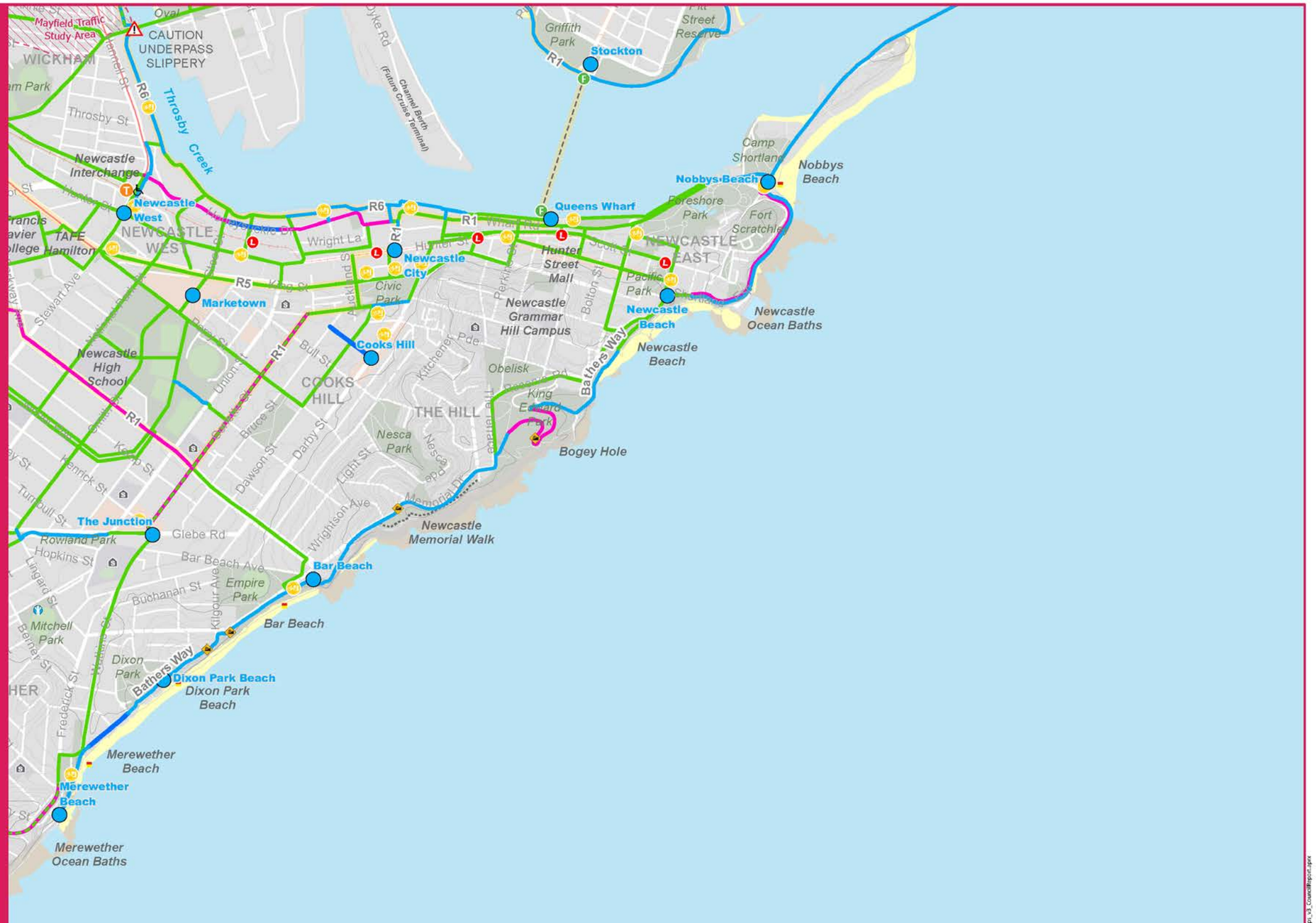

MAP 16

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