NORTH SYDNEY BIKE PLAN

2025 – 2045

We respectfully acknowledge the Traditional Custodians of the land and waters of North Sydney local government area (LGA), the Cammeraygal people.

We recognise the Cammeraygal people as the Traditional Owners of the area known today as North Sydney.

We acknowledge that the alienation of Cammeraygal Country followed the first local land grant in 1794 which occurred without consultation, treaty or compensation.

Western archaeological evidence shows that Aboriginal people lived in the North Sydney area at least 5,800 years ago, and likely for thousands more. That evidence is precious. We seek to preserve it and through that to better understand Cammeraygal connection to Country.

After North Sydney Council was formed in 1890 through the merging of three boroughs, the word Cammeraygal was included on its coat of arms. Today it holds a central position in the Council's logo as a reminder of the long and ongoing Indigenous heritage of this place.

In recent years the spelling of Cammeraygal has varied to include Gammeraigal and Gai-maragal as our community has sought to reflect and honour the heritage of First Nations people in a more culturally appropriate manner.

We also acknowledge the Traditional Custodians and their Ancestors of the lands and waters across Australia where we conduct our business. The Institute for Sensible Transport acknowledges the people of the Wurundjeri Woi Wurrung language group of the eastern Kulin Nation on whose unceded lands we work.

Prepared by

Institute for Sensible Transport Pty Ltd
North Sydney Council

Joint funded by


ZURICH
Australian Business
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CONTENTS

EXECUTIVE SUMMARY

This Bike Plan serves as a blueprint to provide the community with safe, comfortable cycling options.

VISION

A connected LGA where safe, active and sustainable travel is preferred.

WHAT WE HEARD

This Bike Plan has been developed with the involvement of multiple community and professional stakeholders. We've consulted with North Sydney residents and businesses, adjoining councils and various NSW government departments. The major themes we heard are captured in the figure below.

Key themes from stakeholders to improve cycling opportunities

MAJOR CHALLENGES AND SUMMARY OF KEY ACTIONS

The figure below offers a synthesis of the major challenges to cycling in North Sydney and the key actions this Bike Plan recommendations to overcome them.

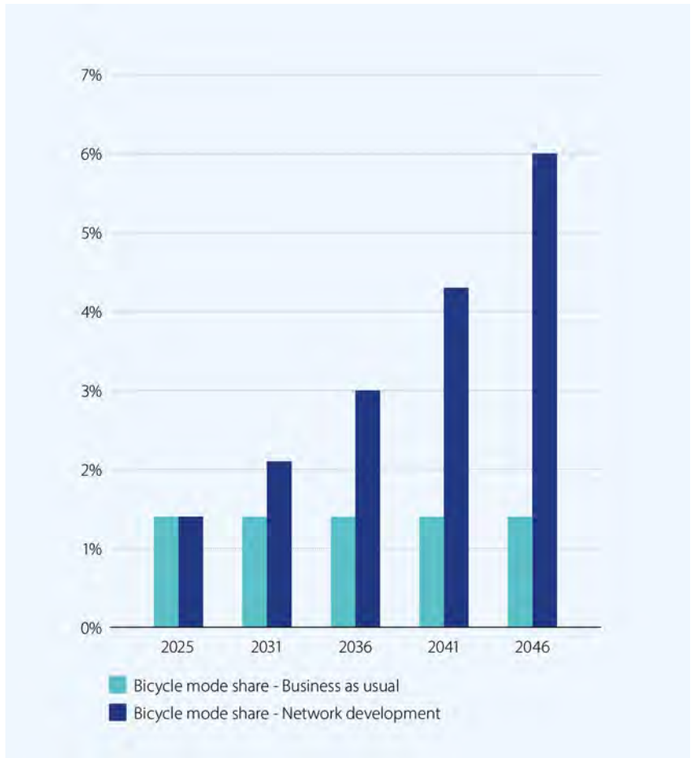
Major challenges	Key actions			
Lack of safe connectivity on major roads	Create protected bike lanes on major roads	Cycling friendly intersection upgrades	Safer connections to adjoining LGAs	Improve cycling connections to major destinations
Traffic and speeds on local streets	Implement safer speed limits	Apply modal filters to reduce rat running	Link quietways with cycling routes on major roads	
Poor cycling consideration at intersecions and crossings	Create more opportunities to cross busy streets safely			
Movement and Place	Enhance and create 'place' in infrastructure delivery to align with the M&P framework			
Wayfinding	Develop and implement a wayfinding guide	Use time and distance directional signage	Apply best practice wayfinding principles to the wayfinding system	
Limited integration with public transport	Connect communitites with transport hubs via high quality infrastructure	Provide easy to use, secure bike parking at railway stations and ferry wharves	Advocate for shared micromobility programs to include dedicated hubs at railway stations	
Parking	Review North Sydney Development Control Plan to ensure adequate bike facilities in new developments	Develop a consistent approach to the provision of on-street bike parking serving shopping streets and other key destinations		
Hills	Maximise cycling infrastructure on streets that run along ridgelines	Promote e-bike use	Advocate to the State government for an e-bike program	Create an e-bike friendly businesses program to enable charging at cafes etc for customers
Cultural/social barriers	Work with other governments to raise awareness of the benefits of cycling for transport	Work with schools to encorage students to ride, following the development of safer cycling connections	Ensure Council leads by example	
Monitoring and evaluation	Develop a temporary bike counter program for collecting data before new infrastructure is considered	Conduct satisfaction and mode shift surveys for council cycling programs		

Synthesis of major challenges and key actions

HOW WE GET AROUND NOW AND TARGETS FOR THE FUTURE

Cycling levels have remained at low levels in North Sydney for the last two decades, despite a range of local and State commitments to boost bike riding participation. Some 1.4% of trips are currently made by bike. The implementation of the actions included in this Bike Plan is expected to result in a fourfold growth in cycling, to 6%, as highlighted in the graph below. This will result in an additional 234 million kilometres of cycling between now and 2046.

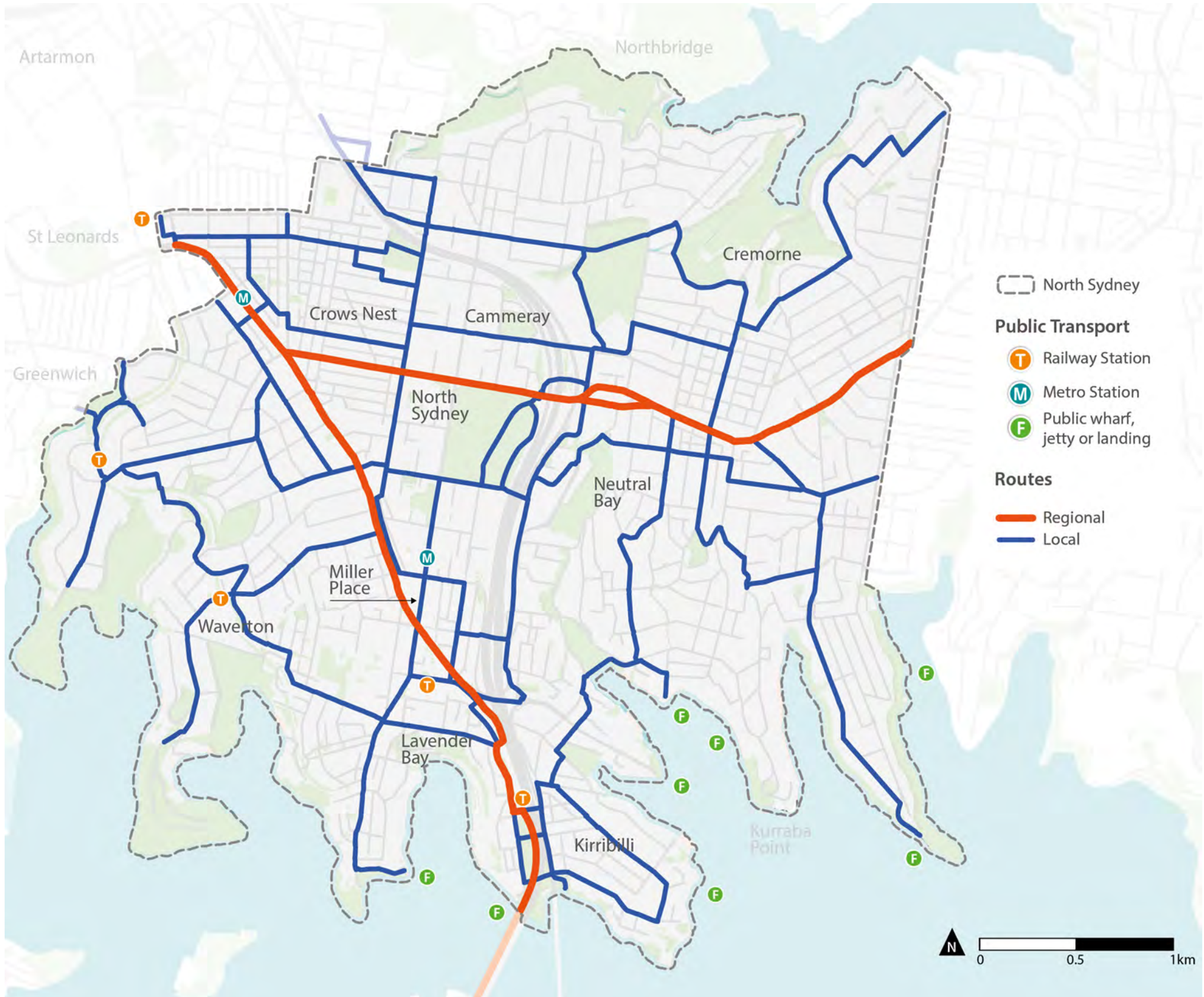
The implementation of the actions in this Bike Plan is expected to result in a fourfold growth in cycling, to 6%



Cycling mode share – Business as usual vs future network

OUR FUTURE CYCLING NETWORK

The proposed North Sydney cycling network is shown in the map below. This has been developed as a result of the site assessment, stakeholder consultation and the need to give every member of our community the freedom to choose cycling as a safe and convenient option. More information on the composition of each route can be found in Section 5.



Future cycling network

1. INTRODUCTION

Cycling is a healthy, affordable and climate friendly mode of transport. North Sydney Council recognise that more must be done to make cycling a safe and attractive choice. As North Sydney's population continues to grow and the need to reduce emissions becomes more urgent, making cycling available to all becomes more important than ever.

1.1 BENEFITS OF CYCLING

There are a number of well recognised benefits associated with greater cycling participation in North Sydney. These have been illustrated in Figure 1.

Transport is the fastest growing source of emissions and is expected to be the single largest source by 2030. Transport is responsible for 18.5% of emissions from North Sydney residents,[1] and this proportion is expected to increase as the electricity network becomes more reliant on renewables.

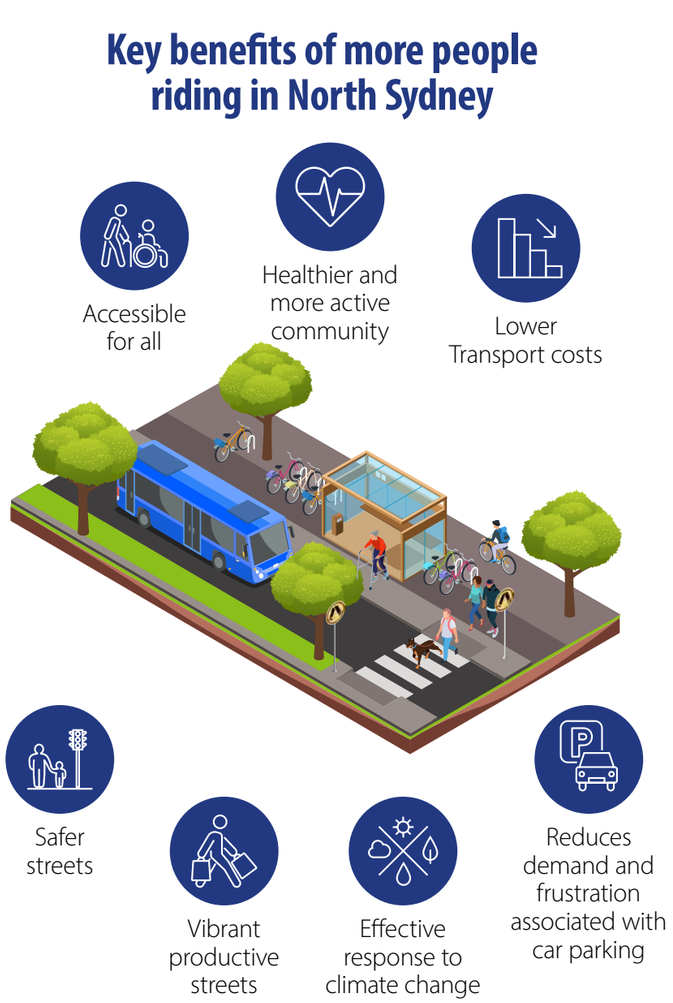


Figure 1 *Key benefits of increasing cycling opportunities in North Sydney*

1 https://www.northsydney.nsw.gov.au/downloads/file/144/environmental-sustainability-future-directions

Ten years ago, Council developed the Integrated Cycling Strategy (2014). In this time, some progress has been made to deliver programs and infrastructure maximising people's access to a safe and attractive cycling network.

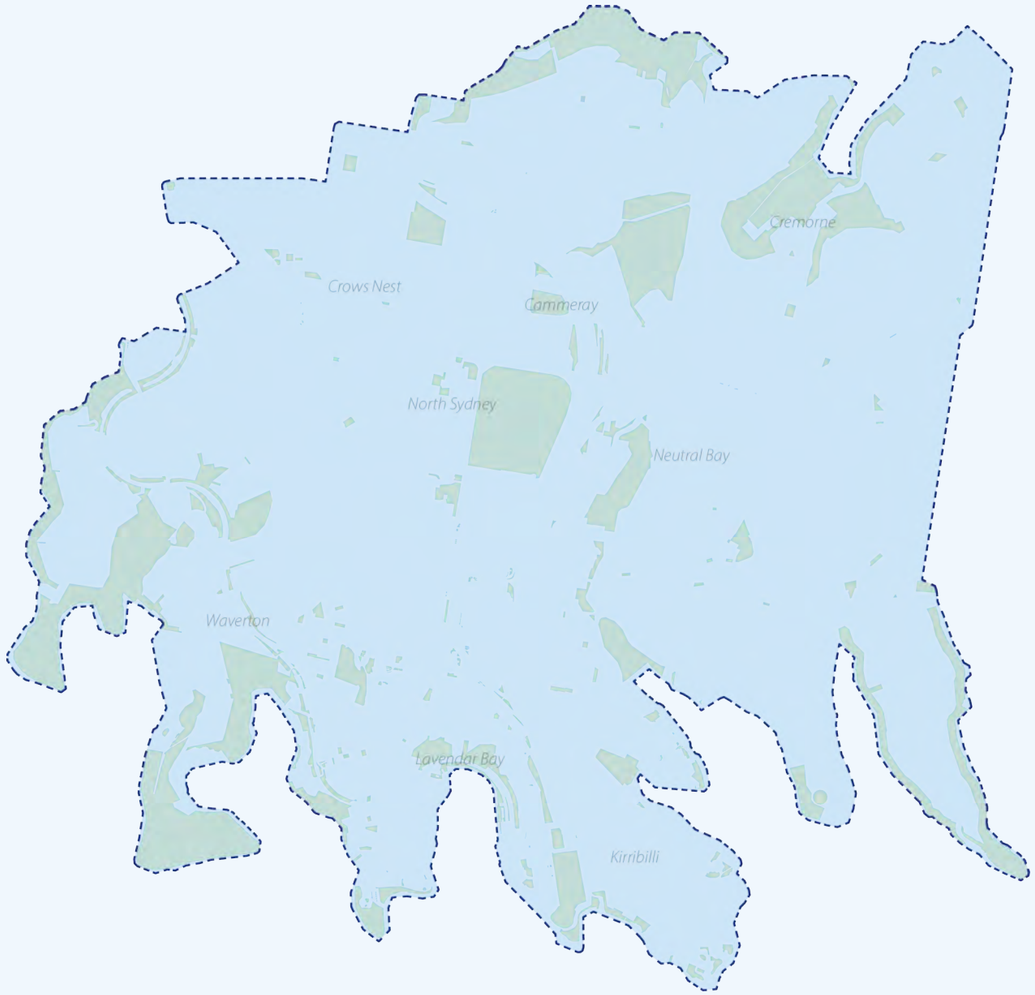


Figure 2 *Recent wins*

Ridge Street Cycleway
Photo source North Sydney Council

Young Street – Sutherland Street Cycleway
Photo source North Sydney Council

West Street Stage 1 and 2
Photo source North Sydney Council

Bicycle Repair and Tune
Photo source North Sydney Council

1.2 CAPITALISING ON PEOPLE'S INTEREST IN CYCLING

Research from Transport for NSW indicate that some 70% of the population are interested in cycling. As shown in Figure 3, almost half (48%) are described as 'interested but concerned'. These riders require safer conditions before they feel comfortable to ride. The key objective of this Bike Plan is to capitalise on community interest in cycling by creating a diverse network of cycling infrastructure that connects people to where they need to go and meets their requirements for safety and comfort.

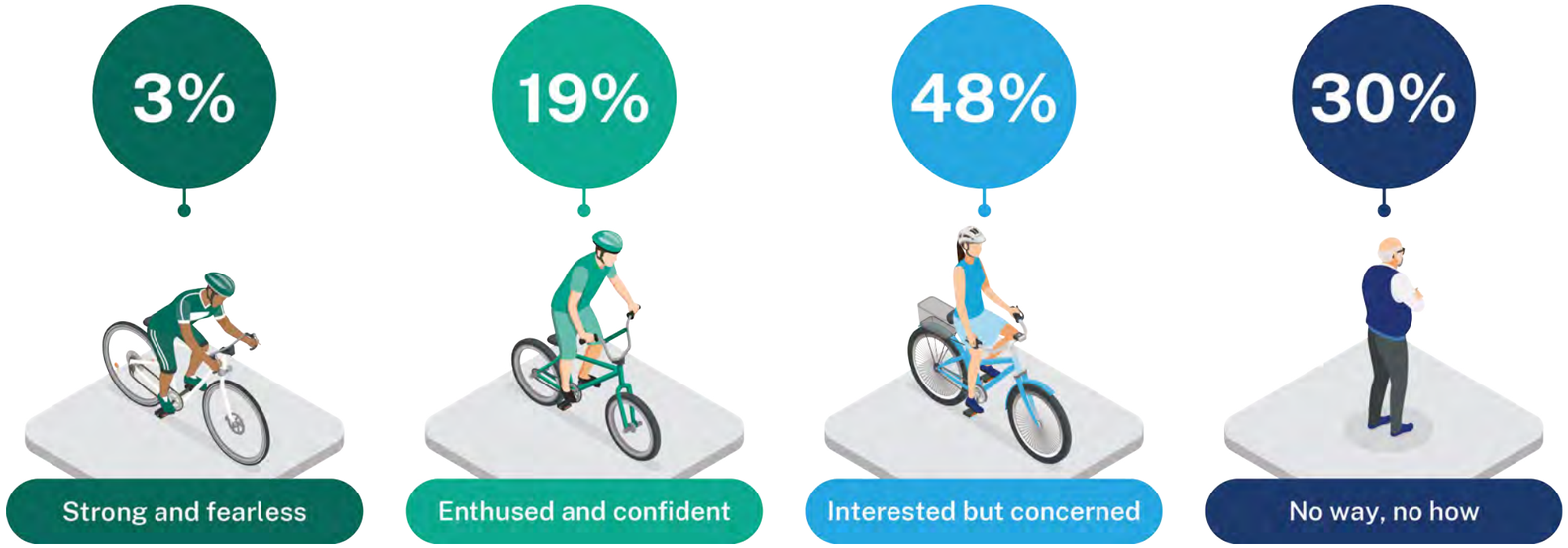


Figure 3 *Understanding the market*

Source: *Transport for NSW Strategic Cycling Corridors*

1.3 ROAD USER SPACE ALLOCATION

North Sydney's transport network is heavily congested, with competing demands for space across different modes of transport. The overwhelming majority of the road network in North Sydney is dominated by motor vehicles. This has a number of negative consequences for our community; air and noise pollution, road safety risk, limited transport choice, and congestion. To assist in making consistent, transparent decisions that work to support our vision and principles, a transport mode framework has been developed (Figure 4). This framework is informed by the NSW Road User Space Allocation Policy. We will also be guided by the NSW Movement and Place framework which recognises that streets have two functions, as a movement corridor which people travel along, and as a place which people visit. These frameworks will enable us to make clearer, more consistent decisions about the allocation of road space, and ensure alignment with our wider strategic goals.

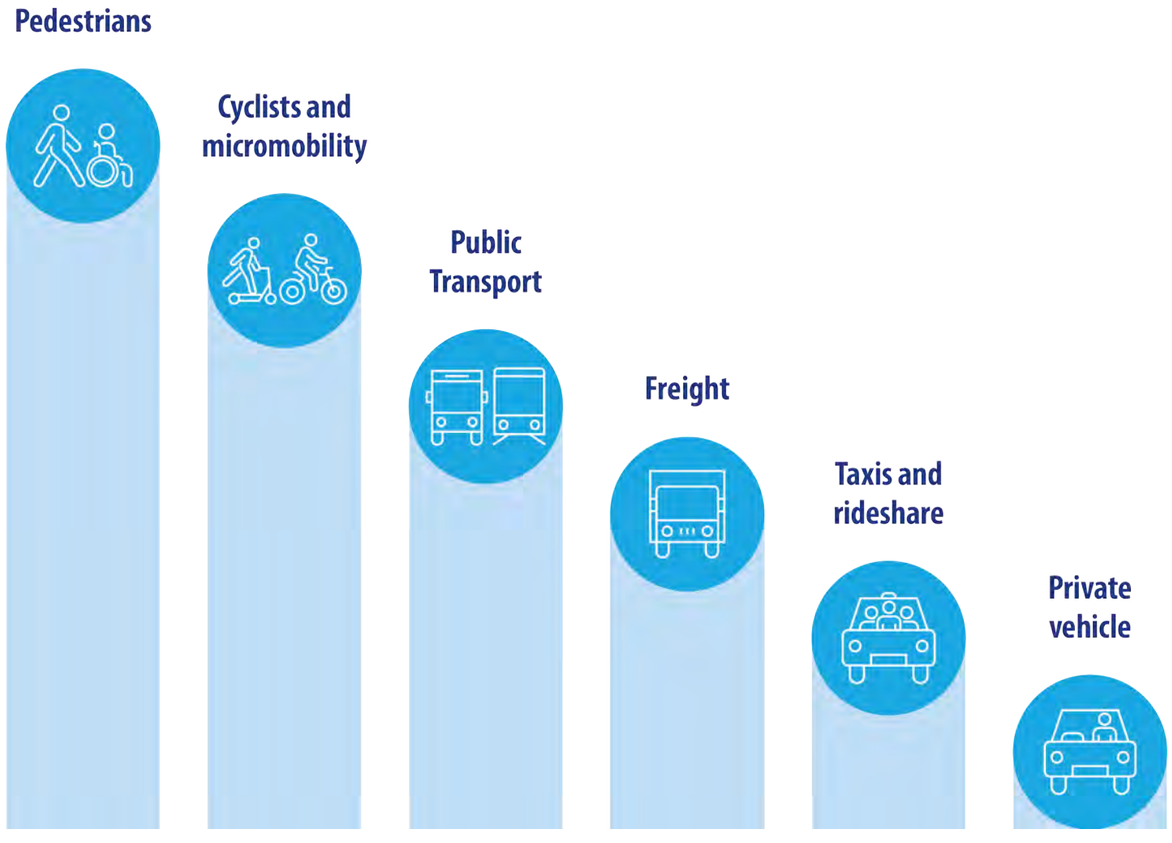


Figure 4 *Road User Space Allocation framework*

2. STRATEGIC CONTEXT

The North Sydney Bike Action Plan plays a crucial role in achieving the strategic outcome of the North Sydney Integrated Transport Strategy. The Integrated Transport Strategy details how Council, the community, businesses and other stakeholders will work together over the next 10 years to build:

A connected LGA where safe, active and sustainable travel is preferred.

The Integrated Transport Strategy inform the vision and goals articulated in the *North Sydney Community Strategic Plan (CSP)*. The *Integrated Transport Strategy* is part of a suite of informing strategies (see Figure 5) that articulate North Sydney's needs and priorities over the next ten years.

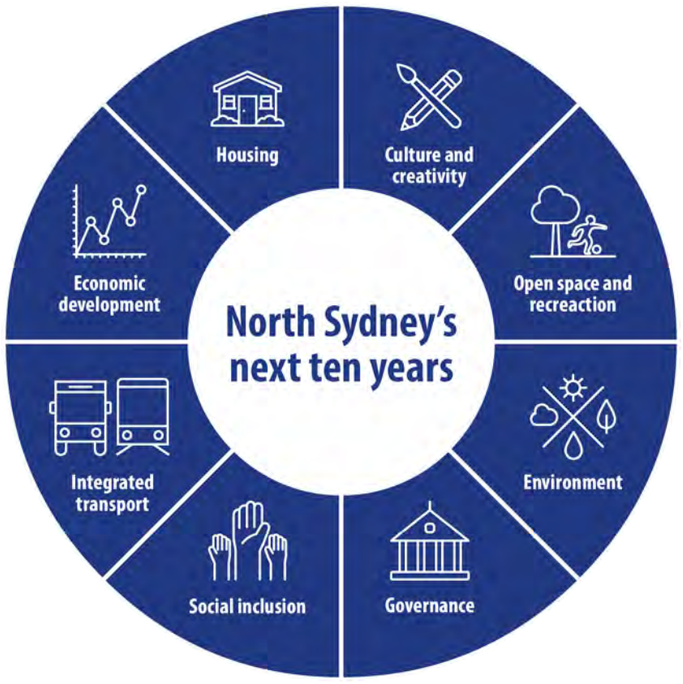


Figure 5 *Suite of eight strategies that inform the vision and goals articulated in North Sydney Council's*

2.1 BIKE ACTION PLAN

The North Sydney Bike Action Plan sits under the Integrated Transport Strategy (see Figure 6) and identifies specific infrastructure and actions needed to achieve the strategic outcome.

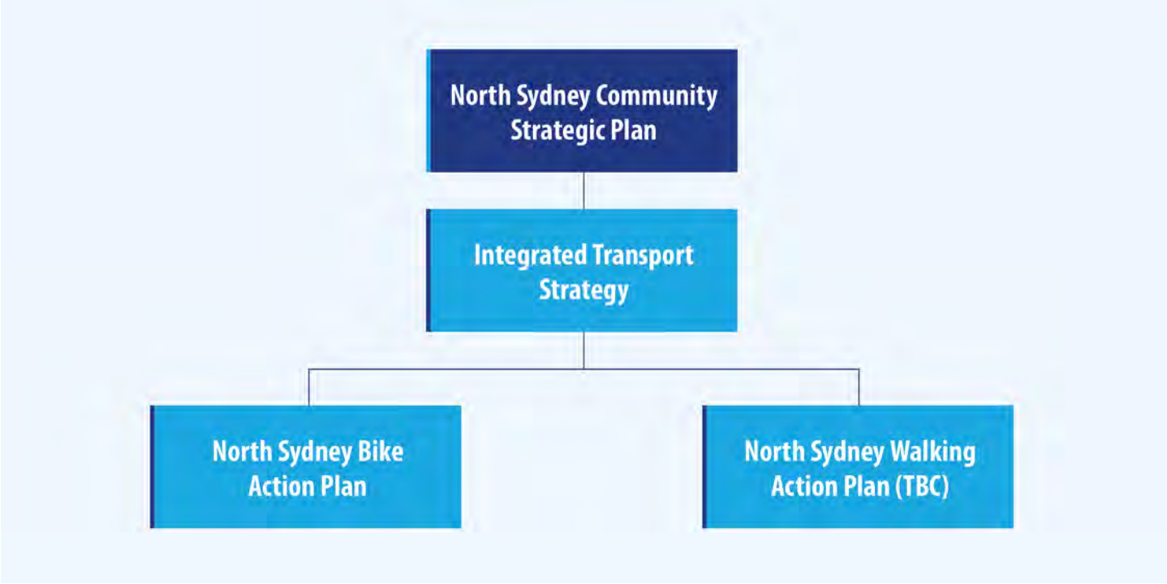


Figure 6 *The Bike Action Plan is a supporting plan to deliver the North Sydney Integrated Transport Strategy outcome*

2.2 GUIDING PRINCIPLES

The Integrated Transport Strategy guiding principles are intended to support Council's outcome for cycling in North Sydney. Our four guiding principles are:

Sustainability:
Fostering a healthier environment by promoting transportation solutions that minimize reliance on private vehicles

Health Promotion:
Supporting active travel options, such as walking and cycling, to enhance community wellbeing

Inclusion:
Designing transportation systems that address the diverse needs of the community

Safety:
Enhancing road safety through infrastructure upgrades and community education

2.3 STRATEGIC OBJECTIVES

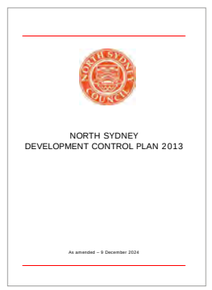
The strategic objectives build on the guiding principles by providing Council with more quantifiable, measurable targets. These allow us to measure progress and re-calibrate if necessary to achieve our shared vision. The Bike Action Plan objectives have been developed from the Integrated Transport Strategy and other informing strategies

- Increase cycling mode share to 3% by 2034/35, which is automatically collected in the NSW State Government Household Travel Survey.
- Increase the number of households that do not own a car to 25% by 2031 from a 2021 baseline of 19%.
- Reduce the number of fatal and serious road accidents on all local streets to 3 crashes by 2033 (five-year average up to 2033) from a baseline of 9 (five-year average up to 2023).
- Reduce community greenhouse gas emissions by 65% by 2035 from a 2018 baseline of 973,984 tonnes tCO2e*
- Double the proportion of students who cycle to schools in North Sydney.

2.4 LOCAL AND STATE POLICIES AND PLANS

2.4.1 Local context

The overarching theme that emerged from the synthesis of North Sydney's strategic and policy position is that cycling helps to support a more sustainable, safer and vibrant future. Cycling is among the top 10 priorities identified to support community aspirations for the future of North Sydney.



Cycling is among the top 10 priorities identified to support community aspirations for the future of North Sydney.

2.4.2 State context

A wide range of State government documents, created over decades, supports the development of a more cycle friendly transport system. The State Government's Active Transport Strategy (2022) commits to double cycling within 20 years. This North Sydney Bike Plan helps to support the State government's target. Specifically, it aligns with the State government's commitment to:

- Develop continuous and connected cycling networks.
- Enhance safety and comfort for walking and cycling.
- Improve options for children's independent mobility to and from school.
- Integrate active and public transport for multimodal journeys.
- Promote a shift to walking and cycling through the development of improved infrastructure.
- Embrace emerging technologies like e-bikes and micro mobility devices.

The Eastern Harbour City Strategic Cycleway Corridors Program identifies four strategic connections in the North Sydney LGA (see Figure 8). The Sydney CBD to Chatswood is an immediate opportunity to connect important gaps in the network.

Figure 7 *NSW Government Active Transport Strategy*

Figure 8 *North Sydney Bike Action Plan aligns to the Eastern Harbour City Strategic Cycleway Corridors program*

3. COMMUNITY & STAKEHOLDER CONSULTATION

The development of this Bike Plan included a series of engagement activities, with residents, workers, and visitors to North Sydney. The consultation also included workshops with professional stakeholders, such as Transport for NSW, adjoining local governments, the education sector and community groups.

3.1 SUMMARY OF ENGAGEMENT ACTIVITIES

Engagement activities undertaken as part of this project included:

- Workshops, with a range of different stakeholders
- An online survey, to provide a better understanding of what is required to maximise people's ability to choose cycling as a transport option
- An online mapping platform to allow community members to pinpoint areas they'd like to see improved
- Pop up sessions with members of the community.

Hundreds of individual items of feedback were received, from a diverse group of professional and community stakeholders. These have been used in the development of the proposed network.

3.2 WHAT WE HEARD

3.2.1 Workshops

The three workshops held as part of this project offered a very clear indication of what stakeholders would like to see in order to give people the freedom to choose cycling. A synthesis of the key themes to emerge from the workshops is provided in Figure 9.

The key message from workshop participants was to take a more ambitious approach to the development of the cycling network.

Overall, some 78% of online survey respondents identified a need for more protection from cars and trucks.

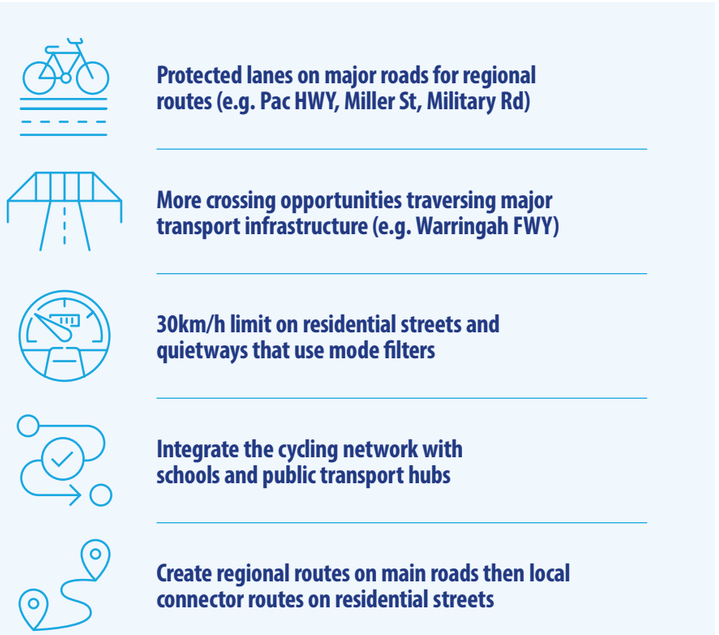


Figure 9 *Key workshop findings - a summary*

3.2.2 One-on-one interviews

Several long-form, one-on-one interviews were conducted with members of the public. These interviews built a deeper understanding of how people make transport choices in North Sydney.

Key themes to emerge from this in-depth discussions are summarised in Figure 10.

Figure 10 *Key themes from in depth interviews*

3.2.3 Online survey and mapping

A need for a safer cycling network and more protection from traffic was the most common request from the community. Both the online survey and the digital mapping platform asked the community about their key concerns riding in North Sydney and what is required to make cycling a more attractive choice. A majority of comments called for:

- More bicycle infrastructure, especially on major roads like Pacific Highway and Military Road.
- Safer residential streets, with lower speed limits and traffic calming measures.
- More continuous cycling infrastructure, to stop bike lanes ending abruptly.

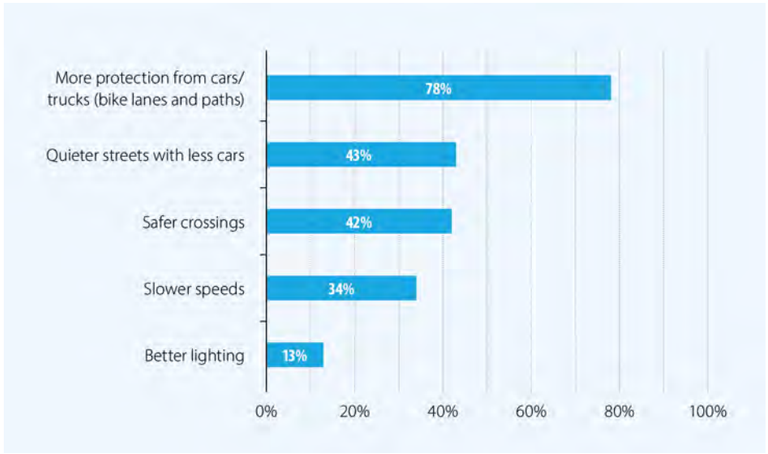


Figure 11 *What the community want to make cycling safer and more convenient*

More protection from traffic was the most common request from the community.

4. NOW AND FUTURE TARGETS

This section offers a brief snapshot of how people in North Sydney get around. As we move towards a safer, more sustainable transport system, this section also highlights future targets for cycling.

4.1 HOW WE GET AROUND NOW – ALL PURPOSE TRIPS

The NSW Household Travel Survey records all trips by all purposes across NSW. The mode share of all trips by North Sydney residents is shown in Figure 12. The Household Travel Survey does not separately report cycling, but this has been estimated, using other travel survey data and ABS Census data as benchmarks. Pre-COVID-19 data is also presented as it is more representative.

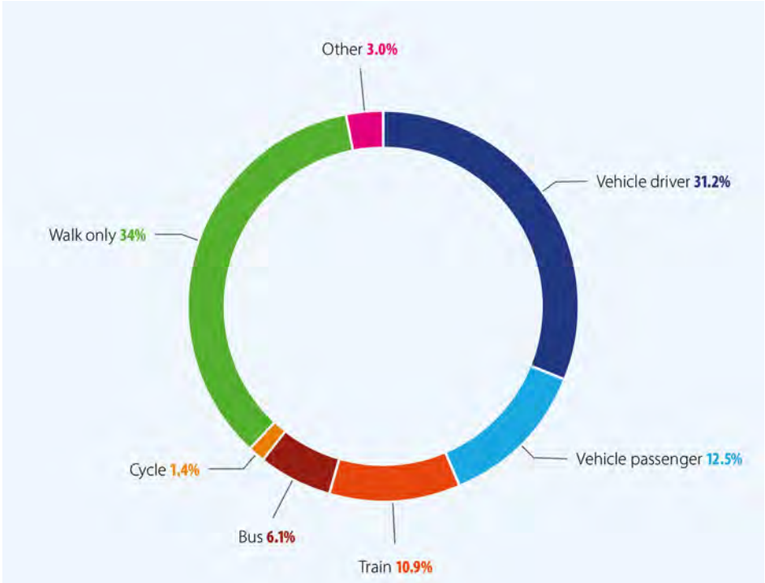


Figure 12 *Mode share of all trips by all purposes by North Sydney residents*
Source: *NSW Household Travel Survey*

In 2021, 40% of all trips to work were under 5km.

4.2 HOW WE TRAVEL TO WORK

The data reviewed for this Bike Plan highlights the significant, unrealised potential for cycling in North Sydney. Figure 13 provides a snapshot of how our residents have travelled to work at each Census since 2011.

North Sydney women ride at half the level of men, due to safety concerns riding in traffic.

4.2.1 Cycling levels are low in North Sydney, but could be much higher

Only 1.6% of North Sydney residents reported cycling as their method of travel to work in the last Census. This has remained stagnant for at least the last 13 years. While this is double the rate of Greater Sydney, we know that many short distance car trips could be converted to cycling if the network was safer and more convenient. This would help reduce congestion, low emissions and transport costs, as well as enhance our health and liveability. Importantly, women's participation in cycling is half that of men. We know that women are more sensitive to the riding environment. When having to ride on unprotected streets with motor vehicle traffic, women are less inclined to cycle.[2]

4.2.2 Car use has increased

A comparison of Census data from 2016 and 2021 reveals that despite our policy position to reduce car use, the proportion of people that used a car for their commute increased from 40% in 2016 to 58% in 2021. While COVID- 19 undoubtedly contributed to this, more will need to be done to arrest the growth in car use.

4.2.3 Walking is an important mode of travel for the North Sydney community

Walking is an important mode of transport for North Sydney residents. Over the last decade, between 14 – 16% of our residents walked to work, one of the highest rates in NSW.

Figure 13 *Journey to work mode share, North Sydney and Greater Sydney*
Source: *ABS Census 2021*

2 https://www.monash.edu/news/articles/what-do-women-want-to-ride-a-bike-without-fear-of-injury-and-harassment

4.2.4 Our trips are often short enough to cycle

While only 1.6% of North Sydney residents cycle to work, we know many of our car trips are short enough for cycling. Indeed, over one third (42%) of all trips to work were less than 5km.

The high number of short distance car trips in North Sydney offers an indication of the potential for growing the number of cycling trips in North Sydney.

For trips to work under 5km, only 1.8% of North Sydney residents cycle and around 43.1% drive or as a passenger.

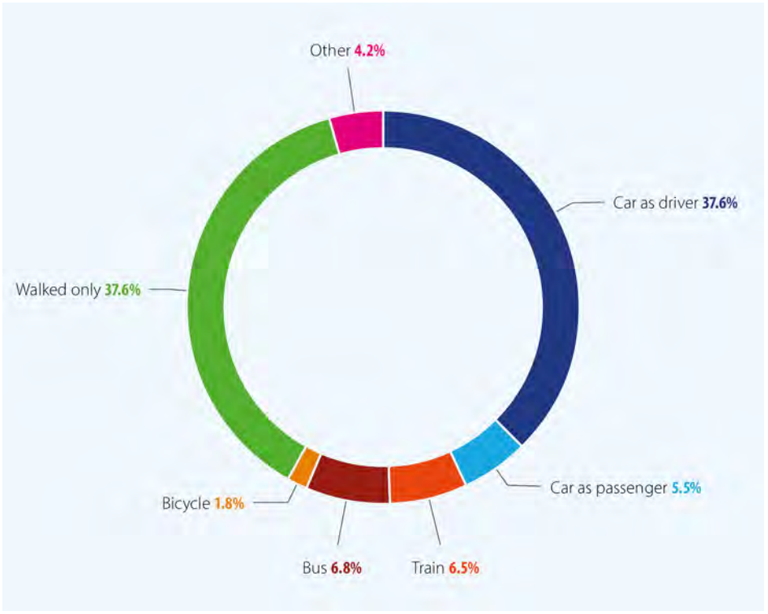


Figure 14 *Mode share for work trips under 5km*
Source: *ABS Census 2021*

4.2.5 North Sydney is an important commercial destination

North Sydney is not just a home for our 70,000 plus residents, it is also one of the key employment hubs in the Greater Sydney region. The main employment spine is located around the Pacific Highway corridor stretching from Milsons Point north to St Leonards and Crows Nest. A secondary cluster of employment is around the Military Road corridor. As highlighted in Section 5, this Bike Plan proposes major upgrades to the quality of cycling infrastructure in these areas, helping more people get to work safely and sustainability.

Cycling can play a role in strengthening North Sydney's role as a key employment hub.

More than 1 in 4 North Sydney residents work locally within the municipality.

4.3 NORTH SYDNEY'S CURRENT CYCLING NETWORK

Our cycling network is fragmented and the community consultation conducted as part of the development of this Bike Plan made it clear that much more needs to be done to make cycling a compelling choice. The survey of the North Sydney cycling network found that only 32% is protected with the rest offering minimal levels of comfort. Indeed some 42% of the network consisted of nothing more than painted bike symbols on the road, shared with motor vehicle traffic.

Figure 15 provides a snapshot of the existing cycling network. This highlights that North Sydney's cycling network is fragmented and falls below the minimum standards most people require to feel safe. As shown in Table 1, a large proportion of the network fails to adequately demarcate separate space for people on bikes.

Table 1 *Existing cycling network by infrastructure type*

LEVEL OF PROTECTION	CURRENT TYPOLOGY	LENGTH (M)	PERCENT
Protected	Separated bike path	**2,400**	**10%**
	Separated bi-directional cycleway	**1,559**	**6%**
	Shared path	**3,941**	**16%**
Semi-protected	Painted cycle lanes	**520**	**2%**
	Painted cycle lane contra / Bicycle symbol painted in travel lane	**761**	**3%**
	Painted cycle lane uphill / Bicycle symbol in travel lane downhill	**3,095**	**13%**
Unprotected	Shared zone	**131**	**1%**
	Bicycle symbol in travel lanes	**10,245**	**42%**
	Wide kerbside lanes (Bicycle symbol painted in parking lanes)	**1,462**	**6%**
TOTAL		**24,114**	**100%**

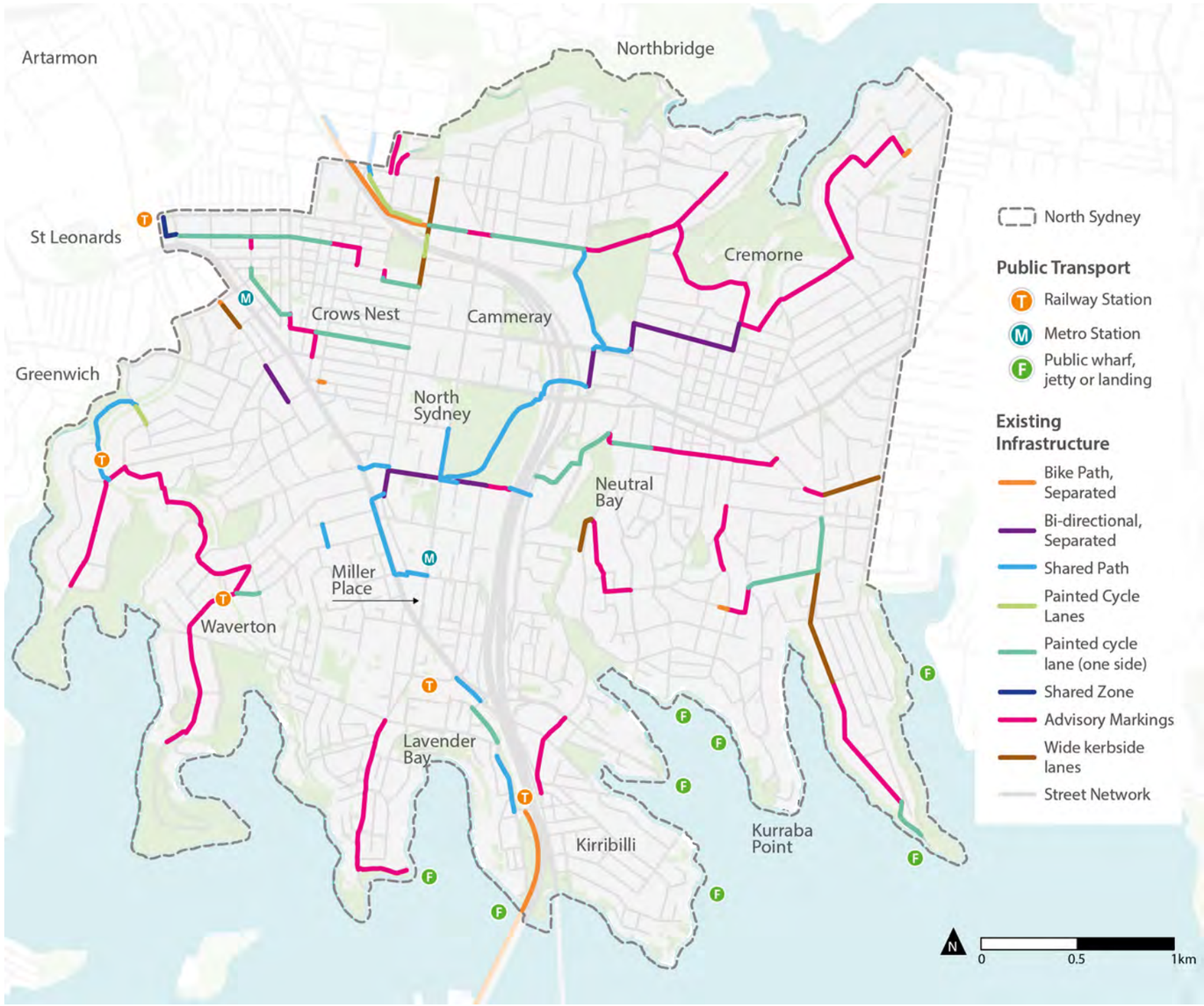


Figure 15 *Existing North Sydney cycling network*

North Sydney's cycling network consists of almost 25km of routes, but only 32% offers the level of protection most people in our community require to feel safe.

4.3.1 Where the potential for cycling is highest

The Background Report provided an analysis of demographic features that can help predict latent demand for cycling. The result of this analysis is shown in Figure 16. When this Propensity Index is overlayed with the actual cycling network in North Sydney, it is clear we could be doing better at tapping into the potential we know exists to grow cycling. The future cycling network described in Section 5 focuses on maximising this potential by creating more cycling opportunities that connect all areas of North Sydney, with a focus on the areas that will lead to the strongest uplift in cycling participation.

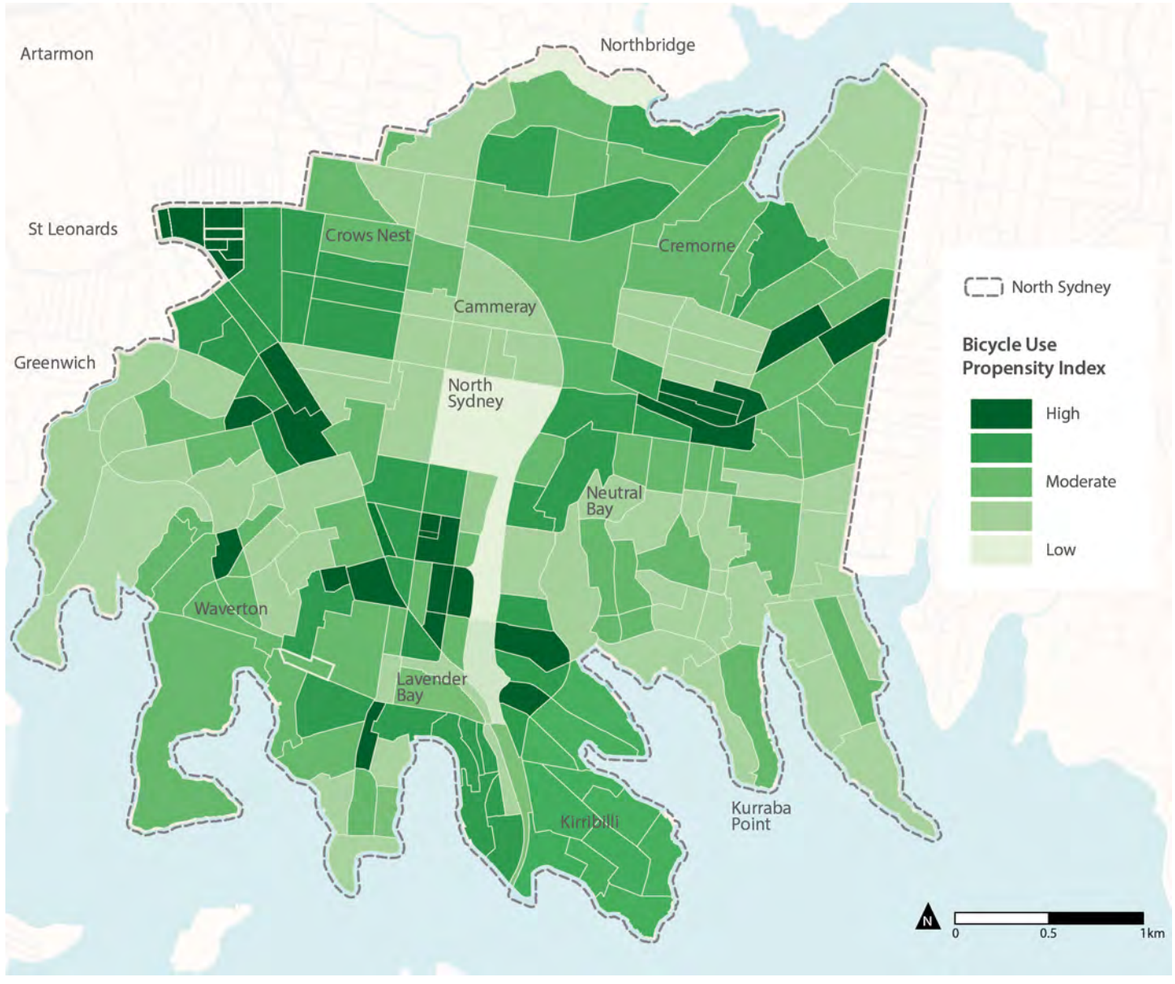


Figure 16 *Bike Use Propensity Index, 2021, North Sydney*

4.4 MODE SHARE TARGETS

This Bike Plan sets a mode share target of 6% by 2045, which is four-fold increase in cycling on current levels. This mode share target reflects a realistic opportunity to increase cycling activity, which is supported by the cost benefit analysis modeling. The mode share target is consistent with mode share targets of surrounding LGAs. The mode share targets for this Bike Plan are shown in Figure 17; comparing what can be expected under a business as usual approach with the forecast mode share once the infrastructure included in this Bike Plan is built. These target years are aligned to ABS Census years and provides us with a practical way to monitor our progress.

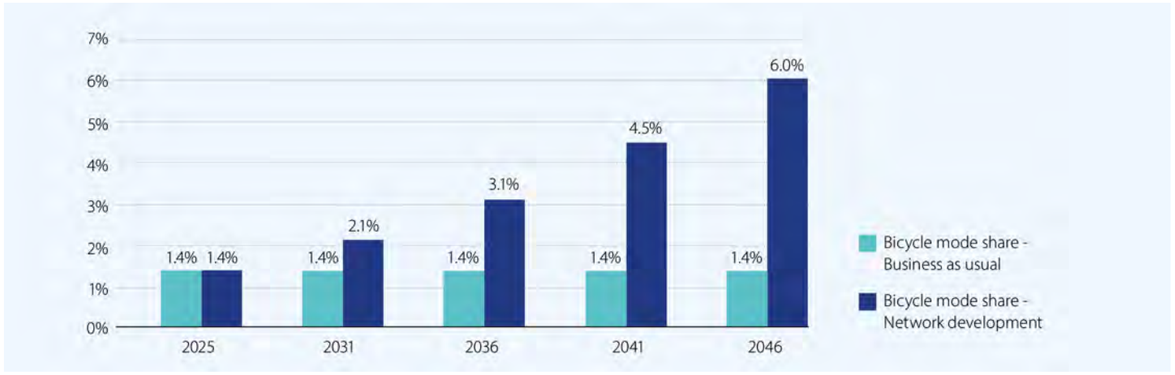


Figure 17 *Mode share targets for cycling*

4.5 FORECAST GROWTH IN CYCLING TRIPS

There are currently around 4,500 trips by bicycle in North Sydney each day, accounting for approximately 7.4 million cycling kilometres each year (with an average trip distance of 4.5km). Without further development of the cycling network, the cycling mode share is not expected to grow. Accounting for population growth, North Sydney could expect around 5,000 trips by bicycle each day by 2045, with a total of 8.3 million cycling kilometres travelled. The implementation of this Bike Plan will support more people to cycle. This is expected to generate an additional 17,000 trips by bicycle per day in 2045, for a total of 22,000 daily trips by bicycle, and over 36 million cycling kilometres each year. The estimated number of cycling trips per day is shown in Figure 18. More detailed discussion on modelling is provided in Section 7.

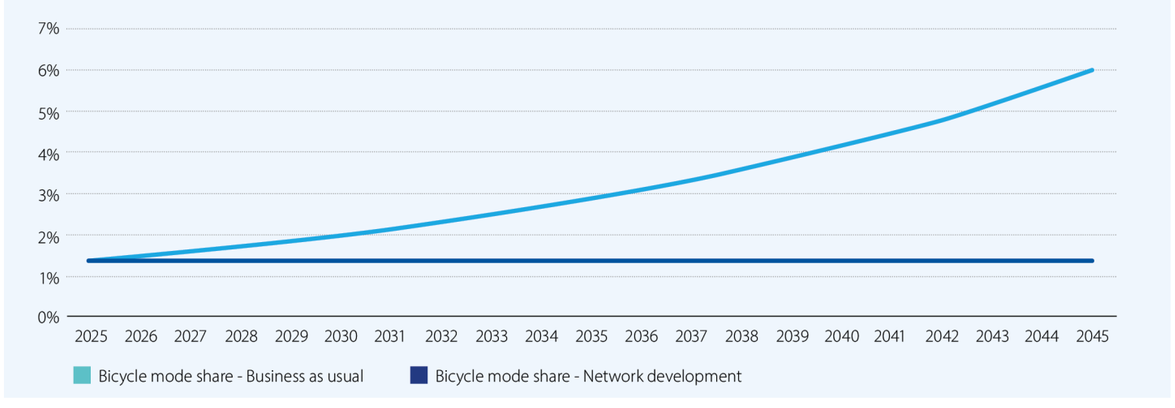


Figure 18 *Estimated cycling trips per day*

5. FUTURE CYCLING NETWORK

The future cycling network reflects the strong interest from the community for better cycling conditions. We have heard that people want all streets to be safe to cycle. We have developed a network in which all residential streets offer safe cycling, and people can travel between suburbs and regions on protected routes.

5.1 REGIONAL AND LOCAL ROUTES, AND BIKE FRIENDLY NEIGHBOURHOODS

Three different route types have been used in the development of North Sydney's future cycling network, see Figure 19. These are highlighted below and broadly consistent with the NSW Cycleway Design Toolbox.

- **Regional routes** - connecting key destinations across the Sydney region. These connections are critically important given the function North Sydney plays as a connection to the City of Sydney, from other parts of the Greater Sydney region. These have been termed Cycling Super Highways as they offer the quickest, most direct, and most convenient routes for cycling between regions of Sydney and align with the NSW Strategic Cycleway Corridors.
- **Local routes** - connecting neighbourhoods to adjoining neighbourhoods. These broaden the network to enable people to travel from to adjoining neighbourhoods, for shopping, work etc.
- **Neighbourhood routes** – a clear message from the consultation was the need for every street to be ridable. Neighbourhood routes include the introduction of safer speed limits and traffic calming measures designed to minimise through traffic of local, residential streets. These are critically important because without neighbourhood connections, people cannot travel door to door safely.

Table 2 highlights the regional routes. These are located on State managed roads and will require support from the State government for their implementation. These regional connections align with the State government's Strategic Cycleways Corridors Program.[3]

Table 2 *Regional Routes*

ROUTE	DESTINATIONS	LENGTH (KM)	NOTES
Sydney Harbour Bridge	Sydney CBD to North Sydney	**2.4**	Committed project.
Cycling Super Highway 1	Sydney Harbour Bridge to Crows Nest	**2.4**	Protected cycleways along Pacific Hwy
Cycling Super Highway 2	Crows Nest to Mosman and Northern Beaches	**3.3**	Protected cycleways along Falcon St and Miliary Rd

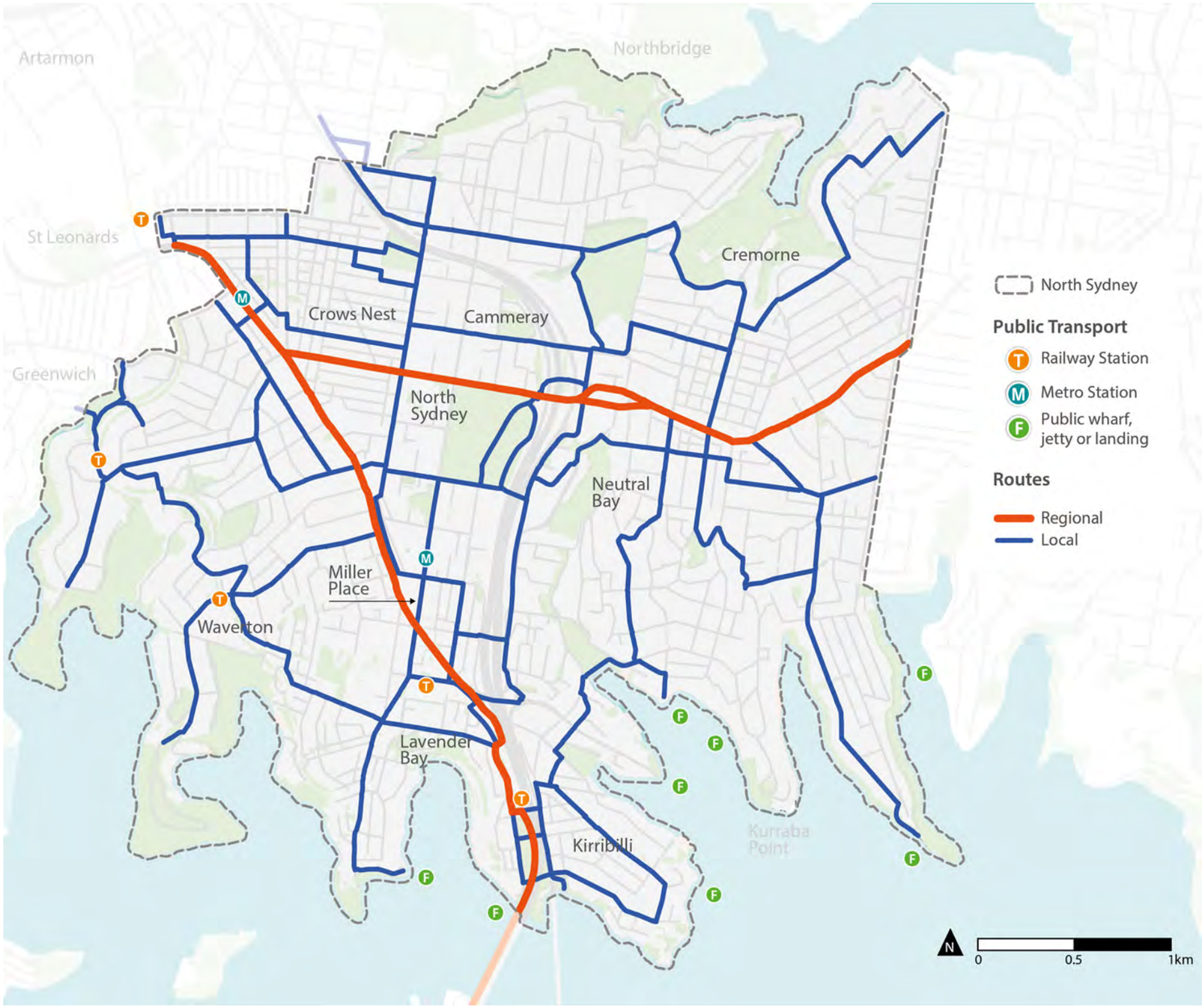


Figure 19 *Proposed regional and local routes in North Sydney*

3 https://www.transport.nsw.gov.au/system/files/media/documents/2022/April_2022_Strategic_Cycleway_Corridors_Eastern_Harbour_City_Overview.pdf

5.2 NETWORK MAPS

The cycling routes proposed in this Bike Plan are illustrated in Figure 20. This is followed by Figure 21, which shows the types of infrastructure that makes up the future cycling network.

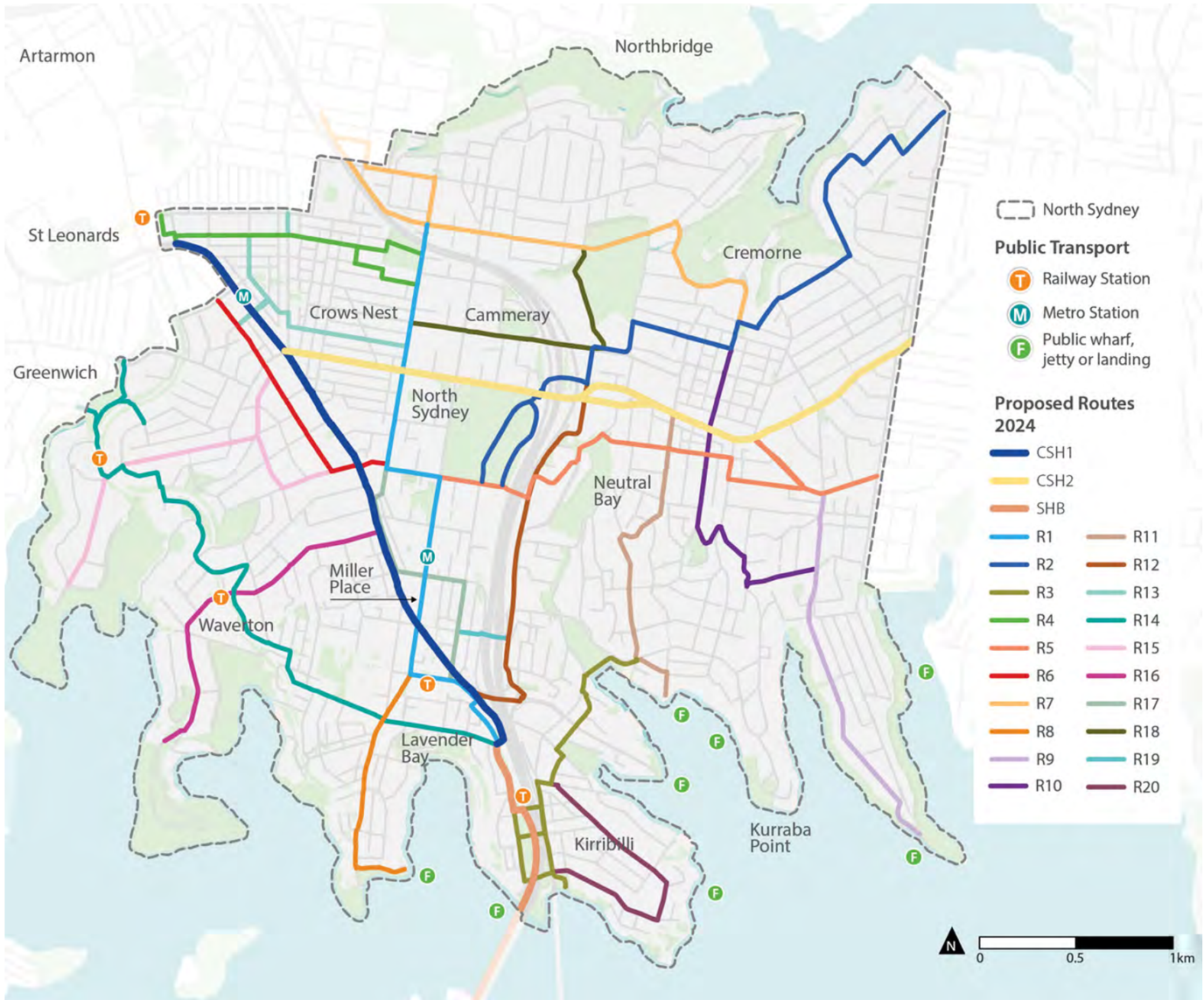


Figure 20 *Future cycling network, North Sydney*

5.2.1 Local routes

Table 3 identifies the local routes that connect neighbourhoods in the North Sydney LGA. These routes can be seen in more detail in the route maps, shown in Figure 20.

Table 3 *Local Routes*

ROUTE	DESTINATIONS	LENGTH (KM)	NOTES
R1	Sydney Harbour Bridge to Cammeray	3.3	*via Miller St North Sydney*
R2	North Sydney to Mosman	3.7	*via Cremorne*
R3	Sydney Harbour Bridge to Neutral Bay	2.0	
R4	Crows Nest to St Leonards	1.2	
R5	North Sydney to Mosman	2.6	*via Neutral Bay*
R6	Sinclair Street Cycleway	1.2	
R7	Cremorne to Naremburn	2.6	
R8	North Sydney to Blues Point	1.2	
R9	Cremorne to Cremorne Point	1.7	
R10	Neutral Bay to Cremorne	1.7	
R11	Neutral Bay to Neutral Bay Wharf	1.5	
R12	Warringah Freeway Cycleway	1.7	*North Sydney to Military Rd*
R13	Crows Nest Metro Cycleway	1.1	*Burlington St and Clarke St*
R14	North Sydney to Lane Cove	3.6	
R15	Wollstonecraft to Crows Nest	1.9	
R16	Coal Loader to Pacific Highway	1.6	
R17	North Sydney Local	1.3	*Walker St alternative to Miller St*
R18	Ernst Street to Cammeray	1.3	*Part of Warringah Fwy upgrade*
R19	Mount Street Cycleway	0.2	
R20	Kirribilli Loop	1.4	
TOTAL		36.8	

5.3 BICYCLE INFRASTRUCTURE TYPOLOGIES

EXAMPLE INFRASTRUCTURE	TYPOLOGY	DESCRIPTION	CURRENT NETWORK LENGTH (KM)	NEW NETWORK (KM)
	**Advisory markings**	Advisory markings are painted bicycle symbols used to indicate or advise road users of the potential presence of cyclists, and of the location where cyclists may be expected to ride.	**2**	**0**
	**Painted cycle lane (one side)**	A painted cycle lane consists of a designated space for bicycle riders on one side of the road, delineated by painted line markings. It provides visual separation from motor vehicle traffic.	**2.3**	**1.4**
	**Painted cycle lane (both sides)**	A painted cycle lane on both sides of the road consists of designated spaces for bicycle riders, separated by painted line markings. These lanes are provided for cyclists travelling in each direction.	**2.4**	**2.3**
	**Painted cycle lane (buffered)**	Buffered painted cycle lanes are enhanced painted lanes with additional buffer zones on the sides of the bike lane. These buffers provide extra space between cyclists and motor vehicles or parked cars.	**0.6**	**0.6**
	**Protected cycle lane (bi-directional)**	A protected bi-directional cycle lane is a physically separated facility that allows bicycle riders to travel in both directions on one side of the road. Physical barriers ensure rider safety from traffic.	**11.9**	**10.1**
	**Protected cycle lane (one-way pairs)**	Protected cycle lanes (one-way pairs) are physically separated lanes provided for cyclists, one on each side of the road, to accommodate one-way travel in the direction of adjacent motor traffic. Physical barriers ensure rider safety from traffic.	**7.1**	**7.1**
	**Protected cycle lane (off-road)**	Protected off-road cycle lanes are fully separated facilities for bicycle riders located away from the road carriageway. These paths ensure a safe and uninterrupted cycling experience, free from motor vehicles.	**2.2**	**0**
	**Shared path**	A shared path is a facility that accommodates two-way bicycle and pedestrian movements along either the footpath or an offroad environment without delineation.	**5.4**	**2**
	**Quietway**	A Quietway is a high-quality mixed traffic treatment where bicycle riders travel in a mixed traffic environment with motorised traffic and are typically 30km/hr or less.	**14.5**	**14.5**
	**Shared zone**	A shared zone is a mixed traffic environment with pedestrians, bicycles and motorised traffic. Shared zones have speed limits of 10km/hr.	**0.4**	**0.2**
		SUBJECT TO FURTHER DESIGN WORK	**0.5**	**0.6**
		TOTAL	**49.2**	**38.8**

Figure 21 shows the application of suitable typologies for the routes include in this Bike Plan. They have been informed by the designs included in the NSW Cycleway Design Toolbox. This Bike Plan prioritises the routes into three delivery phases. More information on this process and outcome can be found in Section 5.4.

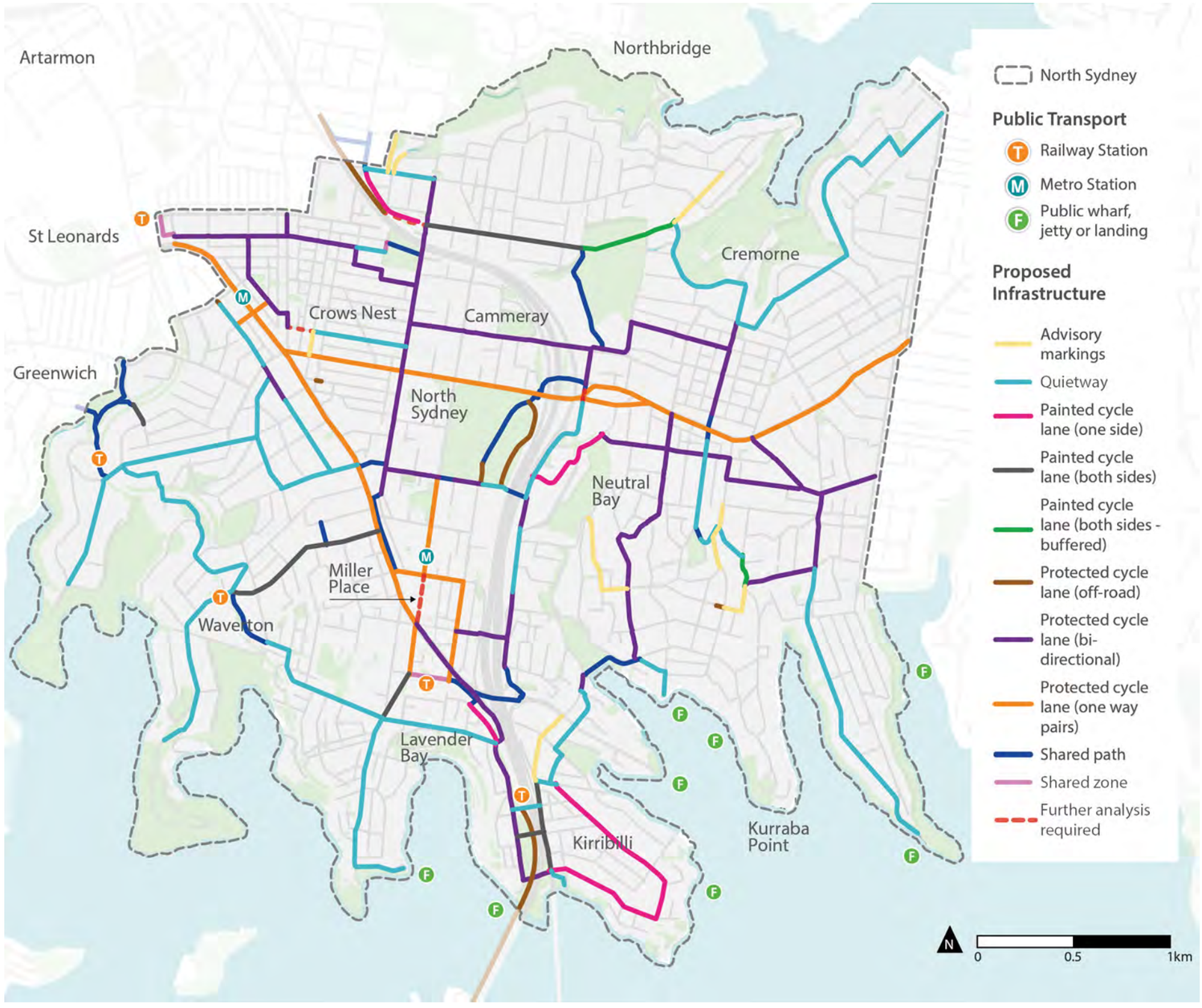


Figure 21 *Proposed typologies, future cycling network*

5.3.1 St Leonards Park

The St Leonards Park cycling connection is a significant enhancement proposed in alignment with the park's vision for accessibility and safety. The St Leonards Park Masterplan aims to implement a separated cycleway along the park's eastern edge, adjacent to the Warringah Freeway. This long-term initiative would reduce pedestrian-cyclist conflicts and streamline movement through the area.

However, an interim solution for a separated footpath within the park itself could be implemented in the short term. This measure is designed to manage current safety challenges, prioritising pedestrian and cyclist separation while minimising the impact on open space usability. Such an approach aligns with the Masterplan's guiding principles, which emphasise balancing active and passive recreation, maintaining visual and historical integrity, and ensuring that all upgrades are sensitive to the park's rich heritage and recreational value.

5.3.2 Miller Place

Miller Place is envisioned as a transformative public plaza in the North Sydney CBD, contributing to the vibrant and pedestrian-friendly environment outlined in the North Sydney CBD Public Domain Strategy. The long-term plan, a priority for North Sydney Council, aims to close Miller Street between Berry Street and the Pacific Highway. This significant reconfiguration will create a civic, retail, and social hub seamlessly integrating the Victoria Cross Metro Station and North Sydney Train Station.

While final designs are under development, interim solutions such as pop-up infrastructure could be implemented to support a safe cyclist connection. This temporary measure addresses connectivity challenges by providing a practical and easily removable solution until the Pacific Highway Cycleway is constructed. This approach maintains flexibility, ensuring that interim measures do not hinder the eventual realisation of Miller Place.

5.3.3 Cycling Super Highways

Two Cycling Super Highways are proposed, from the Sydney Harbour Bridge to Crows Nest along the Pacific Highway, and to Mosman and Northern Beaches along Falcon Street and Military Road. These are key regional connections which will connect residents of North Sydney and neighbouring LGAs with North Sydney and Sydney.

These are long-term initiatives to be implemented in collaboration with the State Government. The best case design would be for protected cycle lanes (one way pairs) on each side of the road, and dedicated bus lanes.

5.4 PRIORITISATION – SUMMARY OF APPROACH

A multi-criteria framework was used to prioritise routes in this Bike Plan. The following six factors have been included in the framework:

Network cohesion
Role the route has in connecting to the broader network.

Strategic value
Strategic importance of destinations the route links to.

Cycling growth
Potential for future cycling activity to be supported by development of the route.

Safety
The degree to which the infrastructure reduces the risk of collision or injury.

Complexity
The technical and political ease with which the route can be implemented.

Cost
The capital cost of delivery: with high cost scoring 1 and low cost scoring 3.

For each factor, a score of 1 to 3 was applied, with 3 being the best score. Each factor is relative, meaning that while a 1 is a lower score, this is only in relation to the other routes being prioritised.

5.4.1 Results

The prioritisation of the local routes as part of this Bike Plan is shown in Table 5. We have used this prioritisation framework to determine when routes should be implemented, as shown in Table 4. We have used the framework to guide a staged delivery across 20 years, with a roughly even length of infrastructure per phase. This means that sometimes we will deliver a route with a lower prioritisation score earlier, as it is cheaper to deliver and supports even development of the network

Table 4 *Network implementation across phases*

PHASE	LENGTH (KM)	COST ESTIMATE
1 (2025 – 2031)	12.9	$31 million
2 (2032 – 2038)	12.5	$30 million
3 (2039 – 2045)	13.3	$22 million

Cycling Super Highways are of high priority and are not included, but we will advocate to the State government for their completion as a priority.

Table 5 *Prioritisation of local routes*

ROUTE	DESTINATIONS	NETWORK COHESION	STRATEGIC VALUE	CYCLING GROWTH	SAFETY	COMPLEXITY	COST	COMBINED SCORE	PHASE	ESTIMATED COST
R1	Sydney Harbour Bridge to Cammeray via North Sydney	3	3	3	3	1	2	15	1	$18 million
R2	North Sydney to Mosman	3	2	1	2	3	3	14	1	$200,000
R3	Sydney Harbour Bridge to Neutral Bay	3	3	3	3	1	2	15	2	$5 million
R4	Crows Nest to St Leonards	3	3	2	2	3	2	15	1	$2.5 million*
R5	North Sydney to Mosman via Neutral Bay	3	3	3	3	2	2	16	1	$8.5 million*
R6	Sinclair Street Cycleway	2	3	2	1	3	3	14	2	$100,000
R7	Cremorne to Naremburn	2	2	1	1	2	2	10	3	$2.5 million
R8	North Sydney to Blues Point	2	2	2	2	2	3	13	2	$150,000
R9	Cremorne to Cremorne Point	2	2	2	2	2	2	12	3	$3 million
R10	Neutral Bay to Cremorne	2	3	2	2	3	2	14	2	$6 million
R11	Neutral Bay to Neutral Bay Wharf	3	3	3	3	1	1	14	3	$11 million
R12	Warringah Freeway Cycleway	3	3	1	2	1	2	12	3	$5 million
R13	Crows Nest Metro Cycleway	3	3	2	3	2	2	15	2	$7.5 million
R14	North Sydney to Lane Cove	3	2	1	1	2	3	12	2	$1 million
R15	Wollstonecraft to Crows Nest	1	1	1	1	3	3	10	3	$250,000
R16	Coal Loader to Pacific Highway	1	2	1	1	3	3	11	3	$200,000
R17	North Sydney Local	3	3	3	3	2	1	15	2	$9 million
R18	Ernst Street to Cammeray	3	3	2	3	3	2	16	1	$1.5 million*
R19	Mount Street	3	3	3	3	2	2	16	2	$500,000*
R20	Kirribilli Loop	1	1	1	1	2	3	9	3	$100,000

*Note: * denotes routes to be built with lower cost infrastructure treatments.*

5.4.2 Future network map – prioritisation

The delivery phases of the network are shown in Figure 22. This shows phase one, two and three routes to be delivered by Council. The Cycling Super Highways, which are also shown, will require State support for their implementation, which we see as a key priority of the Bike Plan.

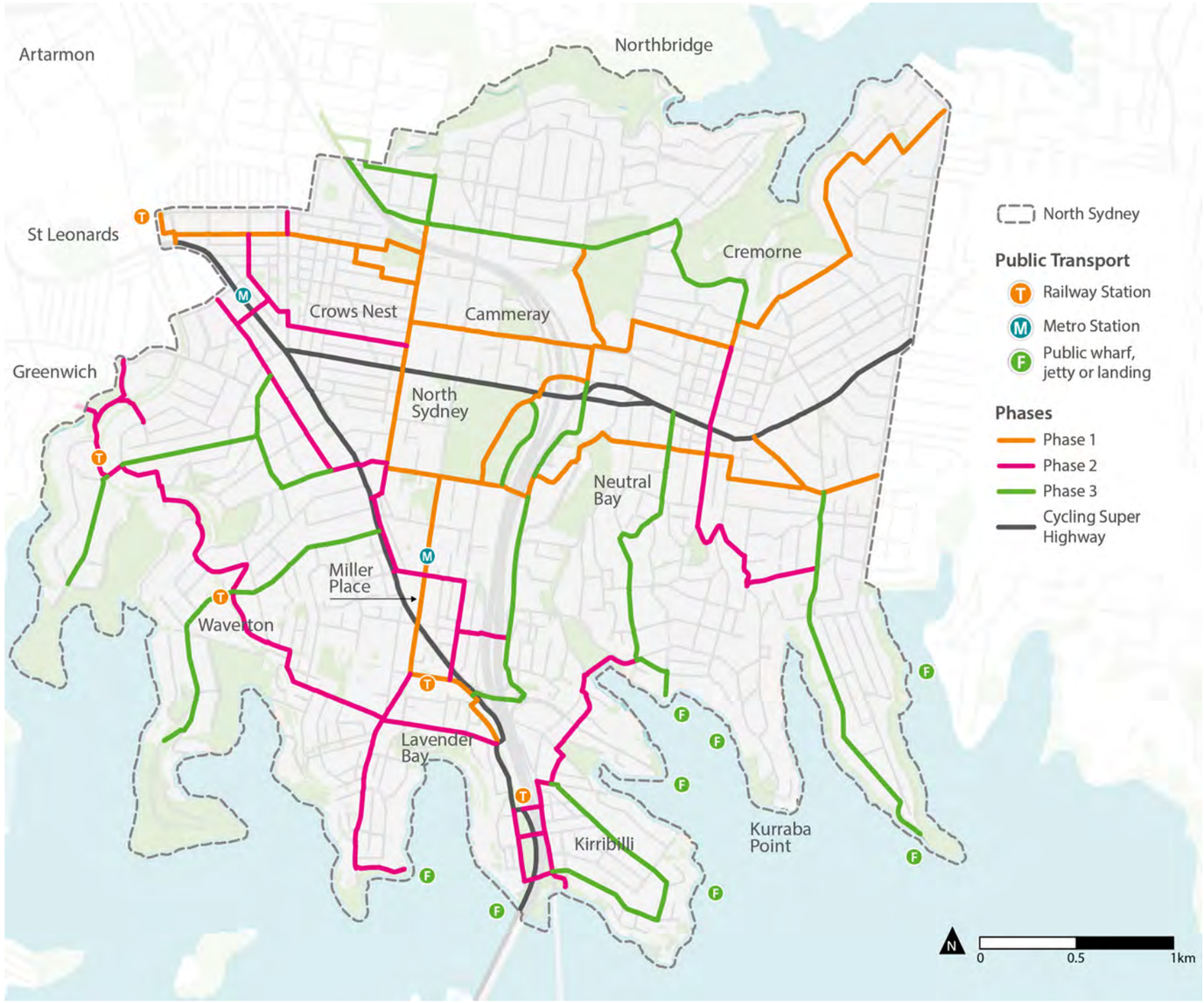


Figure 22 *Delivery phases of the North Sydney Bike Plan network*

6. ACTIONS AND IMPLEMENTATION PLAN

This section describes the actions forming the core of this Bike Plan. We highlight the major challenges for growing cycling safety and participation, and link actions to these challenges.

6.1 LINKING MAJOR CHALLENGES WITH ACTIONS

Through the development of this Bike Plan, a number of important challenges were identified that prevent more people in our community from incorporating cycling to their travel patterns. These challenges have been identified in Figure 23. A set of interlinked actions are proposed to overcome these barriers and help more people have the freedom to ride.

Major challenges	Key actions			
Lack of safe connectivity on major roads	Create protected bike lanes on major roads	Cycling friendly intersection upgrades	Safer connections to adjoining LGAs	Improve cycling connections to major destinations
Traffic and speeds on local streets	Implement safer speed limits	Apply modal filters to reduce rat running	Link quietways with cycling routes on major roads	
Poor cycling consideration at intersecions and crossings	Create more opportunities to cross busy streets safely			
Movement and Place	Enhance and create 'place' in infrastructure delivery to align with the M&P framework			
Wayfinding	Develop and implement a wayfinding guide	Use time and distance directional signage	Apply best practice wayfinding principles to the wayfinding system	
Limited integration with public transport	Connect communitites with transport hubs via high quality infrastructure	Provide easy to use, secure bike parking at railway stations and ferry wharves	Advocate for shared micromobility programs to include dedicated hubs at railway stations	
Parking	Review North Sydney Development Control Plan to ensure adequate bike facilities in new developments	Develop a consistent approach to the provision of on-street bike parking serving shopping streets and other key destinations		
Hills	Maximise cycling infrastructure on streets that run along ridgelines	Promote e-bike use	Advocate to the State government for an e-bike program	Create an e-bike friendly businesses program to enable charging at cafes etc for customers
Cultural/social barriers	Work with other governments to raise awareness of the benefits of cycling for transport	Work with schools to encorage students to ride, following the development of safer cycling connections	Ensure Council leads by example	
Monitoring and evaluation	Develop a temporary bike counter program for collecting data before new infrastructure is considered	Conduct satisfaction and mode shift surveys for council cycling programs		

Figure 23 *Major challenges and key actions*

6.2 ACTIONS

Actions included in this Bike Plan have been broadly categorised as either policy and behaviour change, or the infrastructure identified in the future cycling network. Table 6 identifies the policy and behaviour change actions Council will deliver.

These actions have been developed to align with the Integrated Transport Strategy actions to ensure they deliver the objectives identified in section 2.3 Strategic Objectives.

SMART Actions

The actions included in our Bike Plan have been developed using the SMART approach. That is, they are:

S
SPECIFIC
Clearly defined with precise outcomes and expected results.

M
MEASURABLE
Can be tracked to show progress and confirm completion.

A
ACHIEVABLE
Realistic and possible to accomplish with effort and resources.

R
RELEVANT
Makes sense in relation to needs and larger goals.

T
TIME-BOUND
Has a deadline to maintain focus and progress.

6.2.1 Policy and behaviour change

Table 6 offers a set of policy and behaviour change actions North Sydney will undertake to achieve the vision of this Bike Plan.

Table 6 *Policy and behaviour change actions*

ACTION	NAME	DESCRIPTION	ITS ACTION ALIGNMENT	TIMEFRAME	SERVICE UNITS
A1	Integrate cycling into Council place making approach	Review the North Sydney Council Placemaking Policy and North Sydney CBD Public Domain Strategy, to ensure that: • The Movements and Place framework and North Sydney Bike Action Plan is integrated • Active transport is considered in the development and access to place.	Service	Short	Strategic Planning, Traffic and Transport Operations.
A2	Integrate cycling into Council event policies	Review the North Sydney Council Public Event Policy and Sustainable Public Events Policy, to ensure that cycling is encouraged and promoted as a mode of transport to and from Council events.	Service	Short	Arts Library and Events, Customer and Communications
A3	Wayfinding	Develop a wayfinding guide and implement wayfinding signage across the LGA to increase awareness of safe, convenient and accessible walking and cycling routes between key destinations.	1.4	Short	Traffic and Transport Operations, Strategic Planning
A4	Infrastructure design and consultation	Complete concept designs and undertake consultation on 5% of cycling infrastructure identified in the North Sydney Bike Plan prioritised network plan each year, ready for grant applications.	1.7	Ongoing	Traffic and Transport Operations
A5	Advocate for super-highways	Advocate to TfNSW for the implementation of the cycling super-highways on Military Road, Pacific Highway & Falcon Street.	1.9, 4.4	Ongoing	Traffic and Transport Operations
A6	Advocate for cycling improvements associated with the Warringah Freeway upgrade	Advocate to TfNSW for the implementation of the Active Transport Network Review: North Sydney and Surrounds, as identified in the Western Harbour Tunnel and Warringah Freeway Upgrade Conditions of Approval.	4.3	Ongoing	Traffic and Transport Operations
A7	Provide safer speed limits for our Community	Council will initiate discussion with TfNSW regarding a lowering of the speed limit on our local streets, to 30km/h, consistent with the State government's Safe Systems approach to meeting the NSW targets for road safety.	4.5	Short	Traffic and Transport Operations
A8	Support transport choices of everyone	To ensure that we support transport choice in North Sydney, we will apply the Mode Hierarchy (see Figure 19) and the Transport for NSW Movement and Place Framework in road space allocation and transport investment decisions.	4.5	Ongoing	Traffic and Transport Operations
A9	Maintaining our active travel network	Ensure the replacement of any bicycle line marking or symbol that are disturbed when road works that involve the removal and replacement of road surface on a designated bike riding route occur.	Service	Ongoing	Public Presentation, Asset Management, Capital Projects and Asset Management
A10	Building active travel into road renewal and our streetscapes	Council will work to ensure that any changes to the road network results in improved bike riding outcomes so that every street is a cycling street. This means that whenever: • A road is resurfaced, bicycle infrastructure is included as part of new lane marking, unless impractical to do so from a safety or road width perspective. • A road treatment project is planned, cycling infrastructure is integrated unless impractical to do so.	Service	Ongoing	Traffic and Transport Operations, Asset Management, Public Presentation, Capital Projects and Asset Management

ACTION	NAME	DESCRIPTION	ITS ACTION ALIGNMENT	TIMEFRAME	SERVICE UNITS
A11	**Build active transport into our new developments**	New developments provide an opportunity to build active transport into the social and physical fabric, from day one. The following land use mechanisms are recommended to strengthen North Sydney's land use controls: • North Sydney Local Environmental Plan (LEP) – Include an aim of encouraging walking and cycling • Development Control Plans (DCPs) – Include design principles to facilitate and encourage cycling as a primary mode of transport in all new developments. – Review car parking space maximums for new developments within areas identified as Strategic Precincts within North Sydney Council DCPs. – Bicycle parking rates to be updated as part of a review of the North Sydney Development Control Plan. At a minimum this should include a maximum of 20% of bike parking can be vertical (on a wall), with at least 80% horizontal (on the ground) and ensuring bike parking areas are convenient to the user and consideration for theft minimisation (e.g., secured area, well lit, passive surveillance). – Review street design within new developments to ensure design speeds of 30km/h, unless physically separated cycling infrastructure is provided. – Ensure active transport infrastructure in new developments should connect with existing and planned infrastructure, as set out in this Bike Plan. – Green Travel Plans to be required for all commercial developments with a floor space over 600m2; industrial developments over 1,000m2, and all residential developments with 20 dwellings or greater. – Where full separation between pedestrians and cyclists is not feasible, shared paths with a minimum width of 4m to be provided in new public spaces, parks and reserves.	**2.2**	**Short to Medium**	Development Services
A12	**Review Local Infrastructure Contribution Plan 2020 to ensure cycling is adequately funded**	The Local Infrastructure Contributions Plan 2020 (LICP) should be reviewed to ensure appropriate contributions are made to deliver the North Sydney Bike Action Plan network. See section 6.2.2 Funding Options for details on the LICP.	**Services, 2.2**	**Short**	Development Services
A13	**Deliver and fund programs**	Deliver programs, workshops and events to encourage cycling by teaching practical skills like bike maintenance, riding skills, and offering guided tours as well as promoting behaviour change events such as Ride to Work Day, Ride to School Day and NSW Bike Week. Consideration will be given to engaging groups with lower participation rates, such as older adults, young people, and women.	**1.10**	**Ongoing**	Traffic and Transport Operations, Arts Library and Events, Customer and Communications
A14	**Providing bike parking opportunities in public spaces**	Convenient and safe bike parking is an essential requirement for high levels of active transport use in North Sydney. These actions will provide a consistent approach to the provision of bike parking in public places. Council will install: • A minimum of four bike parking hoops every 100m of either side of the street in our existing high pedestrian activity areas (e.g., shopping strips). • A minimum of four bike parking hoops outside community facilities. These will be located with the convenience of the user and the security of the bicycle in mind. • A minimum of four bike parking hoops at ferry wharves without stairs (providing sufficient space) with the convenience of the user and the security of the bicycle in mind. • Bicycle parking hoops provided at playgrounds and other key destinations.	**1.8**	**Ongoing**	Traffic and Transport Operations, Asset Management, Capital Projects and Asset Management
A15	**Support riding to and from school**	Develop and deliver a travel behaviour shift program that encourages schools to implement projects and programs that promote active and sustainable transport choices.	**2.1**	**Short**	Traffic and Transport Operations
A16	**Become a community leader in active travel**	Increasing the number of North Sydney Council staff that regularly ride a bike will help us become a leader in active transport participation. Council will: • Provide a range of bicycle types for staff to use for a variety of purposes (including cargo bikes and e-assist bicycles, where necessary). These will be provided at workplaces, as an alternative to the motor vehicle fleet for short trips. • Develop an introduction to 'Cycling at Work' as part of the staff induction program. • Promote bike riding facilities and activities through existing internal communications – including profiling of staff who have taken up bike riding, covering their personal experiences. • Council will develop and implement Green Travel Plans for all Council buildings and sites	**Service**	**Ongoing**	Public Presentation, People and Culture, Customer and Communications, Traffic and Transport Operations

ACTION	NAME	DESCRIPTION	ITS ACTION ALIGNMENT	TIMEFRAME	SERVICE UNITS
A17	**Provide safer speed limits for our community**	Develop and implement a 'Safer Streets' program to improve safety through infrastructure and lower speed limits (10 km/h, 30 km/h, 40 km/h).	**4.1**	**Long**	Traffic and Transport Operations
A18	**Adaptive reuse of Council assets**	Investigate adaptive use of Council owned car spaces that encourages a shift towards cycling. This may include (but not be limited to) potential reuse for micromobility freight services or end of trip facilities.	**3.9**	**Short**	Traffic and Transport Operations
A19	**Monitoring and evaluation**	Council will review this Bike Plan every five years to monitor implementation progress and emerging trends. Monitoring and evaluation will also undertaken mean such as: • Implement a bike counter and vehicle speed evaluation program for construction of the bike network. Bike counts and speed surveys should be conducted before cycleway construction for baseline data, immediately after construction and an 18-month following up. • Incorporate cycling satisfaction questions into the Community Satisfaction Survey to monitor satisfaction with cycling over time. • Conduct follow up surveys with cycling program participants to assess the shift in travel patterns toward cycling. • Conduct satisfaction surveys with participants in Council funded cycling programs and workshops. More information on Monitoring and evaluation can be found in Section 8 (Appendix 1)	**Service**	**Medium**	Traffic and Transport Operations
A20	**Share services**	Advocate for approaches to bike share that reduce clutter on the streets and promote higher usage rates, such as physical or geofenced docking stations.	**3.5**	**Short**	Traffic and Transport Operations
A21	**Green Travel Plan Guidance**	Council will develop a guidance for developing Green Travel Plans for developers, businesses and the community.	**Service**	**Medium**	Strategic Planning, Traffic and Transport Operations

6.2.2 Funding Options

The following identifies some of the current funding opportunities of relevance to cycling:

Local Infrastructure Contribution Plan 2020

The Local Infrastructure Contributions Plan 2020 (LICP) details how the Council will collect contributions from developments that place additional demand on our infrastructure and facilities. Sections 7.11 and 7.12 of the Environmental Planning & Assessment Act 1979 (EP&A Act) empower councils and other consent authorities to mandate land or monetary contributions from developments to support the delivery, expansion, or enhancement of local infrastructure. The LICP 2020 should be reviewed to ensure appropriate contributions are made to deliver the North Sydney Bike Action Plan network, as per action A12.

NSW State and Federal Government Grants

Costs related to the construction of the North Sydney Bike Action Plan network and actions exceed the capacity of Council existing budget. The NSW State and Federal Government offer the following grants for design and construction projects:

- Get NSW Active: This NSW Government program currently has $60M in grant funding for local councils for walking and cycling infrastructure. See https://www.transport.nsw.gov.au/projects/programs/get-nsw-active.
- Australian government Active Transport Fund. This fund includes $100M for walking and cycling projects around Australia. More information at https://minister.infrastructure.gov.au/c-king/media-release/national-activetransport-fund .
- Road Safety Funding and Federal Black Spot funding.

7. COST BENEFIT ANALYSIS

A cost benefit analysis of the network has been undertaken to understand the value for money in delivering the North Sydney cycling network. This analysis modelled potential ridership increases brought about by increased provision of cycling infrastructure over the life of this Bike Plan. The result of this analysis reveals that this Bike Plan will deliver at least $1.4 back for every dollar spent.

7.1 TRAVEL ACTIVITY IN NORTH SYDNEY

The NSW Household Travel Survey[4] is conducted regularly, collecting data about how people travel across NSW. Travel data for North Sydney is collected in the survey. However, bicycle use is not reported separately, but rather combined into an 'other' category. This 'other' category has been disaggregated by benchmarking against the ABS Census and household travel surveys. This reveals a reasonably stable ratio of walking to cycling. Mode share assumptions from this disaggregation are shown in Table 7. This analysis reveals an estimated current cycling mode share for all trips of 1.4%.

Table 7 *Mode share assumptions from HTS*

DISAGGREGATED HOUSEHOLD TRAVEL SURVEY	MODE - DISAGGREGATED
31.2%	Vehicle driver
12.5%	Vehicle passenger
10.9%	Train
6.1%	Bus
2.1%	Ferry
0.1%	Light rail
1.4%	Cycle
0.8%	Other
34.9%	Walk only

Note that the 2022-23 had a significant increase in car use and reduction in public transport. This is likely a carryover effect from COVID-19 restrictions. As the long-term effect of these changes to travel habits are not well understood, the pre-COVID-19 cycling assumptions are used.

7.2 MODELLING CYCLING MODE SHARE

Current and future cycling mode share has been estimated based on the provision of cycling infrastructure. The Australian Transport Assessment and Planning Guidelines M4 Active travel — Background report[5] shows that there is a demonstrable link between the percentage of the road network which has infrastructure and bicycle activity. An elasticity of 0.35 has been determined based on analysis of 24 medium sized US cities.

The total length of existing cycling infrastructure, by typology, has been calculated for North Sydney. This was then weighted against the confidence factors of each typology based on the City of Melbourne's Near- Market Research report[6]. From this, the percentage of North Sydney's roads which have infrastructure provision was then calculated. Weighting infrastructure by confidence factor decreased the effect of low-quality infrastructure, such as bicycle symbols without any other treatment.

Applying the elasticity reveals a modelled cycling mode share of 1.31%, based on current infrastructure provision. This is only 0.07% lower than what is estimated from the NSW Household Travel Survey (see above). This was taken as the baseline cycling mode share.

The total length of proposed cycling infrastructure, by typology, has been calculated for North Sydney. Again, this was weighted by confidence factors, and the Australian Transport Assessment and Planning Guidelines M4 Active travel elasticity applied. This revealed a potential future mode share of 6%, a mode shift of 4.7%.

7.3 PROJECTING CYCLING ACTIVITY

The NSW Household Travel Survey shows the total number of trips, which reveals that there has been an average of 4.3 trips per person across the last three survey periods. This has been used to project the total number of trips per day from North Sydney residents into the future, based on population projections from the 2022 NSW Common Planning Assumption Projections[7].

Based on the modelling above, the cycling mode share was projected to increase as the network develops, from 1.4% in 2025 to 6% by 2045. This was projected for each year, and then applied to the projected number of trips by North Sydney residents. A business as usual scenario, with no increase in mode share was also projected. The projected number of daily cycle trips, under a business as usual baseline scenario and network delivery scenario are shown in Figure 24.

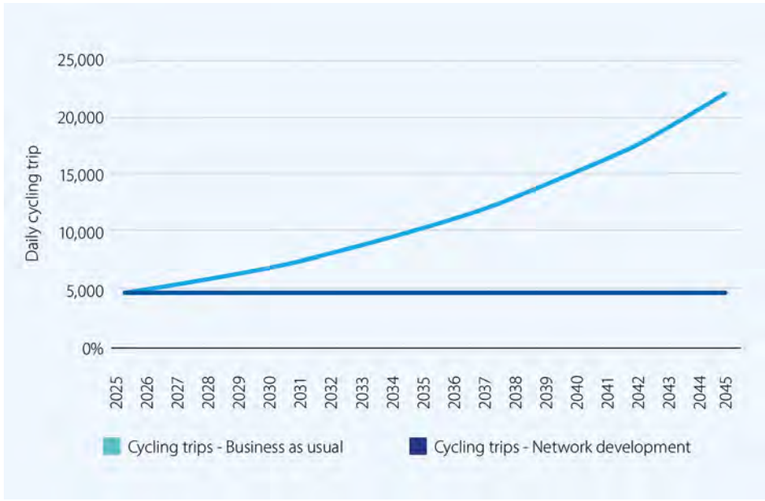


Figure 24 *Projected daily cycle trips, 2025-2045*

There are projected to be 56 million additional cycling trips in North Sydney between 2025 and 2045 as a result of implementing this Bike Plan.

4 https://www.transport.nsw.gov.au/data-and-research/data-and-insights/surveys/household-travel-survey-hts
5 https://www.atap.gov.au/sites/default/files/documents/ATAP%20-%20N34.%20M4%20Active%20travel%20-%20FINAL%20for%20publication%20-%20BACKGROUND%20-%202023-08-07.pdf
6 https://asdfresearch.com.au/wp-content/uploads/2017/10/Bicycle_User_Confidence_Study_-_Nearmarket_Research_Analysis_Report.pdf
7 https://www.planning.nsw.gov.au/research-and-demography/population-projections/explore-the-data

7.4 ESTIMATING COSTS AND BENEFITS

This Bike Plan contains 38.8km of infrastructure improvements, with an estimated total construction cost of $157 million, as shown in Table 8. Regional routes, which run on State Government roads are estimated to cost $74 million, while local routes on Council roads are estimated to cost $83 million. The cost is due to high construction costs for protected cycling infrastructure. These costs would be spread over the life of the Bike Plan.

Table 8 *Estimated bicycle network construction costs (2024 AUD)*

PROPOSED CHANGE	COST PER KM	TOTAL KM INSTALLED	TOTAL COST
Advisory markings	$10,000	0.0	$0
Painted cycle lane (one side)	$50,000	1.4	$69,492
Painted cycle lane (both sides)	$100,000	2.3	$226,989
Painted cycle lane (both sides - buffered)	$120,000	0.6	$70,040
Quietway	$120,000	14.5	$1,738,241
Shared path	$1,000,000	2.0	$1,986,064
Protected cycle lane (bi-directional)	$9,000,000	10.1	$68,277,454
Protected cycle lane (one way pairs)	$12,000,000	7.1	$85,017,135
Protected cycle lane (off-road)	$1,000,000	0.0	$0
Shared zone	$100,000	0.2	$23,789
Subject to further design work	Unknown	0.6	Unknown
TOTAL		**38.8**	**$157,409,205**

Benefits are expected to accrue from the additional cycling activity. This is calculated on a per km basis, for each year, based on an average cycling trip distance of 4.5km. Queensland Department of Transport and Main Roads[8] estimated per km benefits of cycling are used, and are shown in Table 9. These benefits flow to individuals who use the infrastructure, society, and governments. All figures have been adjusted for inflation to 2024 AUD. A figure of total benefit per km cycled in North Sydney has been calculated by weighting the journey ambiance by the proportion of the network which is separated and non-separated. This equates to $1.22 (in 2024 AUD) per km cycled.

Table 9 *Benefits per km cycled*

BENEFIT	BENEFIT PER KILOMETRE CYCLED (2016/17)	BENEFIT PER KILOMETRE CYCLED (INFLATION ADJUSTED TO 2024 AUD)
Health	$0.67	$0.84
Decongestion	$0.27	$0.34
Savings in car user costs	$0.25	$0.31
Journey ambience (separated infrastructure)	$0.14	$0.18
Journey ambience (non-separated infrastructure)	$0.11	$0.14
Infrastructure provision	$0.04	$0.05
Air pollution reduction	$0.02	$0.03
Parking cost savings	$0.02	$0.03
Greenhouse gas reduction	$0.01	$0.01
Noise reduction	$0.01	$0.01
Bicycle injury costs	-$0.44	-$0.55
TOTAL PER KM TRAVELLED IN NORTH SYDNEY	**$0.98**	**$1.22**

Source: *Queensland Department of Transport and Main Roads[8]*

Note: *Prices are adjusted for inflation based on ABS Consumer Price Index, Australia, 640101 – June Quarter 2024[9]*

A cost-benefit analysis was undertaken using the NSW Treasury CBA Tool[10]. Costs of the network were spread evenly over the twenty years from 2025 to 2045 and benefits from 2025 to 2045 were input. The results, assuming a 5% discount rate, are shown in Table 10. The North Sydney Bike Plan has a BCR of 1.4, with a net present value of $35.3 million.

Table 10 *North Sydney Bike Plan Cost Benefit Analysis*

	UNDISCOUNTED	PRESENT VALUE
Costs	$157,409,205	$100,907,182
Benefits	$271,757,376	$136,236,324
Net Present Value		$35,329,142
Benefit to Cost Ratio		1.4

Note: *Calculated with NSW Treasury CBA Tool[7]*

The North Sydney Bike Plan has a BCR of 1.4, with a net present value of $35.3 million.

A sensitivity analysis based on infrastructure cost is provided in Table 11. This compares the high-cost build which is typical of North Sydney in recent years with a lower cost full build, and a tactical low-cost build. Medium cost would minimise landscaping and avoid changes to kerb and channelling, and drainage. Tactical low-cost would use light infrastructure, glued and bolted to the road surface, to provide physical separation. All three options provide the same level of protection to those cycling, and therefore have the same projected cycling use and benefits.

Table 11 *Sensitivity CBA based on different infrastructure costings*

	HIGH-COST BUILD*	MEDIUM-COST BUILD	TACTICAL LOW-COST BUILD
Present Value Costs	$100,907,182	$54,320,800	$29,891,428
Present Value Benefits	$136,236,324	$136,236,324	$136,236,324
Net Present Value	$35,329,142	$81,915,524	$106,344,895
Benefit to Cost Ratio	1.4	2.5	4.6

Note: ** High-cost build includes four routes to be built with pop-up infrastructure.*

The benefits calculated for this Bike Plan have only included estimated cycling activity for North Sydney residents. In reality, much of the new cycling generated from the provision of improved cycling infrastructure will come from people that do not reside in North Sydney. In effect, this BCR is likely to be a significant underestimate of the benefits associated with this Bike Plan, relative to costs. Further, the BCR would be significantly improved through the use of lower cost forms of separated cycling infrastructure.

8 https://www.tmr.qld.gov.au/Travel-and-transport/Cycling/Cycling-investment-in-Queensland/Economic-value-of-benefits-per-kilometre-cycled
9 https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/jun-quarter-2024
10 https://www.treasury.nsw.gov.au/finance-resource/guidelines-cost-benefit-analysis

8. MONITORING AND EVALUATION

Monitoring and evaluation are critical components of this Bike Plan. It allows Council to track how well we are meeting our goals and objectives and allows us to adjust our approach where necessary. The framework is designed to monitor and evaluate the success of the North Sydney Bike Plan as a whole, as well as individual projects.

The overall outcome that Council is seeking to achieve is identified in the Integrated Transport Strategy, shaping the community's vision and goals for the next decade. The evaluation and monitoring framework is outlined below and in Figure 25.

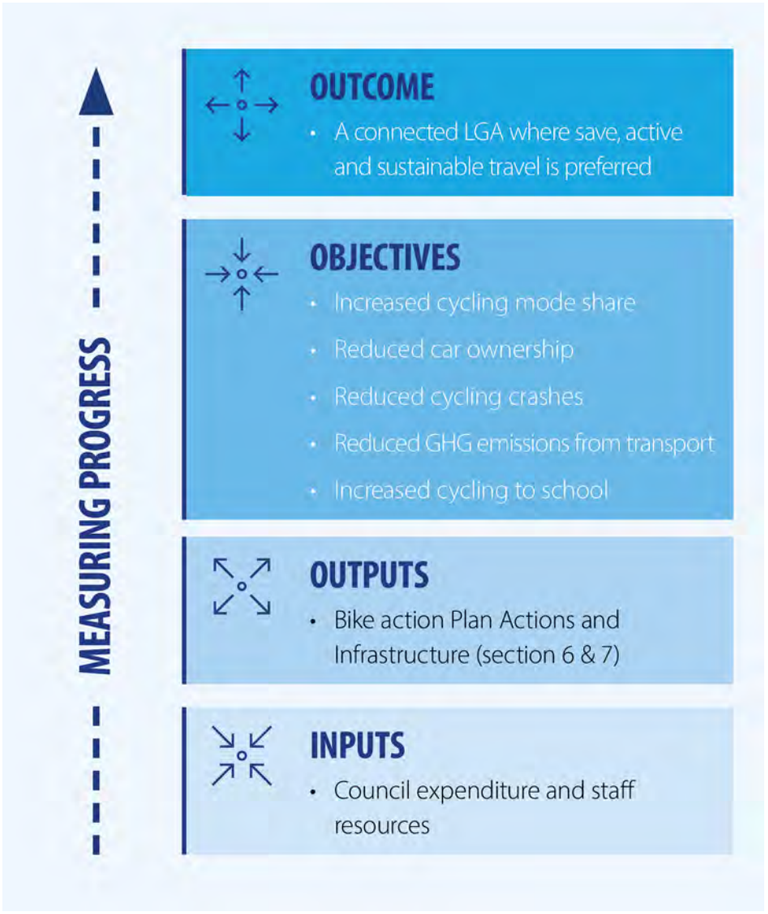


Figure 25 *Framework connecting the Councils inputs, outputs, objectives and outcome*

8.1 MEASURING PROGRESS

Data must be collected in order to measure progress towards the transport objectives and ultimate outcome. Data should come from multiple sources, including North Sydney Council's own collection. A list of data sources and types are offered below. Table 12 connects the strategic objectives and related data.

Table 12 *Data required to measure the progress of the North Sydney Bike Action Plan objectives*

OBJECTIVES	MEASURE
Increase cycling mode share to 3% by 2034/35, which is automatically collected in the NSW State Government Household Travel Survey.	TfNSW – Household Travel Survey (note that North Sydney is currently not included for data collection) • Number of trips (all purpose) by bicycle (note that this data is not currently included) • Percentage of trips (all purpose) by bicycle (note that this data is not currently included)
Increase the number of households that do not own a car to 25% by 2031 from a 2021 baseline of 19%**	Australian Bureau of Statistics – Census
Reduce the number of fatal and serious road accidents on all local streets to 3 crashes by 2033 (five-year average up to 2033) from a baseline of 9 (five-year average up to 2023).	NSW Centre for Road Safety – Crash Statistics • Number of crashes involving pedal cyclists in North Sydney Council • Number of pedal cyclist injuries in North Sydney Council • Number of pedal cyclist fatalities in North Sydney Council
Reduce community greenhouse gas emissions by 65% by 2035 from a 2018 baseline of 973,984 tonnes CO2-e.	Carbon inventory accounting using the Global Protocol for Community-Scale Greenhouse Gas Inventories 1.1 compliant methods.
Double the proportion of students who cycle to schools in North Sydney.	As part of the school travel behaviour shift (action A15), collect data on school travel patterns to monitor progress towards this objective.

APPENDIX A

List of Figures

List of Tables

NORTH SYDNEY BIKE PLAN

2025 – 2045