

RANDWICK CITY COUNCIL

Active Transport Strategy Draft Analysis

06 November 2023

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1. Active Transport Strategy - analysis

1.1. Introduction

This Active Transport Strategy (the Strategy) presents the vision and plan for walking and cycling in Randwick City Council (Council) over the next 15 years. Identified as an action in the 2020 Integrated Transport Strategy, this Active Transport Strategy and accompanying walking and cycling implementation plans provide a clear pathway to providing sustainable transport as the preferred choice of travel for our residents, workers and visitors.

It is Council's vision to increase active transport mode share from 26% to 35%; to reduce road network casualties by 50% between 2018 and 2031; and to reduce the proportion of private vehicle journeys from 58% currently to 45% by 2031.

Our Strategy prioritises pedestrians first, followed by people riding bicycles, using public transport, service vehicles, shared mobility and private motor vehicles. It provides recommendations for how Council can improve the full range of active transport options for the community, as well as supporting recreational walking and cycling. It includes 23 strategic approaches that Council can initiate progressively over the next decade, in partnership with the community and state government agencies. Combined, all of these actions will make it easier, safer and more enjoyable for everyone to walk, linger and cycle in our LGA.

Randwick's Integrated Transport Strategy identifies as a key outcome to achieve "a transport network where sustainable transport options are the preferred choice for people", with a target of increasing the active transport mode share. It identifies 18 strategic approaches to deliver this, including the need for an Active Transport Plan to inform updated bicycle routes and walking paths (actions 1.1, 1.2 and 1.4) and a number of allied measures.

This Active Transport Strategy responds to the recommendations in the Integrated Transport Plan and further refines the steps needed to increase active transport mode share. This Strategy is accompanied by a Walking and Cycling Plan, which identifies the actions that we need to take, in partnership with our community and the state government, to achieve this Strategy. This document is structured as follows:

- Active Transport Strategy – summary
- Active Transport Strategy – analysis
- Walking and Cycling Plan: which outlines how Council will deliver on the Strategy

1.1.1. What do we mean by walking and cycling for transport?

Active transport refers to walking and cycling for transport purposes, to get from A to B. This can include walking to the bus stop or tram, walking to the local shops or school, or riding a bike to work. This Strategy is mostly about transport; however it does not preclude us from considering walking and cycling for recreation and enjoyment.

In this strategy we use the following terms:

- | | |
|------------------------|--|
| Walking | includes people moving on the footpath: walking on their feet; using mobility devices, wheelchairs, canes, walkers and motorised scooters; pushing prams and other carrying devices including for deliveries; and using unpowered kick scooters, skateboards and rollerblades. It does not include people riding bicycles. We note that children under 16 and their guardians are allowed to ride on the footpath and the environment should accommodate them. |
| People who walk | describes anyone in our community who walks for transport (to get from A to B) or recreation and people who may not consider themselves walkers (such as someone walking to catch a bus). We use walkers rather than 'pedestrians', unless the context dictates otherwise (such as 'pedestrian crossing'). |
| Cycling | <ul style="list-style-type: none">includes people riding a bicycle, tricycle, e-bike or cargo bike; as well as using any form of legal micromobility (e-bikes and potentially e-scooters if they are made legal in the future). |
| People who ride | <ul style="list-style-type: none">describes anyone in our community who rides a bicycle or micromobility device for transport (to get from A to B) or recreation. We also use the term people on bikes, bike riders or bicycle riders; however we do not use the term 'cyclist' as this is often associated with sports cyclists. |



The Coastal Walk attracts thousands of people to walk to, from, and along our coast and beaches

This Strategy responds directly to our community's aspirations to live active, healthy lives. We need a proactive strategy and action plan to guide decision-making and make progress to becoming a more walkable and rideable community.

"Our community members make many journeys to and from home, work or school, shopping based trips, and leisure-based trips. ... The provision of better and safer active transport facilities (walking / bike riding ...) encourages people to make alternate choices about how they move around, from day to day, in the council area."

Randwick Integrated Transport Strategy, p3

The extent to which our environment enables people to walk or ride a bike are the sum of factors within the built environment that make it convenient, comfortable and safe to walk or ride."¹

Places that are more walkable tend to be more compact, mixed-use environments with a range of shops and destinations that enable people to meet all or most of their daily needs without needing to drive.

Walkability is about creating inclusive places. A third of our residents cannot drive (children, elderly and people living with a disability) and 16 per cent of households do not have a car.² In addition, many of our residents and workers prefer not to drive for every trip.

Making our suburbs and town centres more walkable and rideable ensures that everyone can participate in society and go about their daily lives with independence and autonomy.

1.2. Our community and local places

Our LGA, nestled along a breath-taking coastline, houses around 135,000 residents and this is projected to increase to 180,000 by 2040. We are also a notably young demographic, with people in the 25-35 age bracket constituting 18.3% of our population compared to 15.5% in Greater Sydney. This reflects the strong draw of the university campus which hosts 60,000 students and is one of the largest universities in Australia. On the other hand, we house fewer children and seniors in comparison to the broader Sydney region.

The health care sector stands out as the dominant industry in Randwick, accounting for 13.8% of jobs, who service our three major hospitals and related health care specialist services. Adjacent to our healthcare campus is the University of New South Wales campus which supports a range of nearby businesses and creates a vibrant buzz of people walking to and within the campus.

We also support regional tourism, with people travelling from across the Council, interstate and overseas to enjoy our beaches, coastal walks and Centennial Park.

From a commercial perspective, Randwick and Maroubra Junction are classified as strategic centres, housing the Randwick Health and Education Precinct, university, and major retail and healthcare facilities. These hubs are slated for robust job growth, with Maroubra Junction and Randwick expecting a surge by 15% and 40% respectively between 2016 and 2036.³

Other attractions include major beach destinations at Coogee, Maroubra, Clovelly and Little Bay. Hubs like Coogee, Kingsford and Kensington and Matraville complement our strategic centres, and are further supplemented by neighbourhood centres and corner shops which provide for many of our community's daily needs locally.

¹ Greater Sydney Commission (2020). The Pulse of Greater Sydney 2020. Performance Indicator 3 (PI 3): Walkable Places. <https://greatercities.au/pulse-of-greater-sydney-2020/pi-3-walkable-places>

² ABS 2021, <https://abs.gov.au/census/find-census-data/quickstats/2021/LGA16550>

³ Greater Sydney Commission (2018) Eastern City District Plan. <https://greatercities.au/strategic-planning/city-plans/eastern>

In addition to our 29 kilometres of coastline, the Centennial Parklands, Heffron Park, La Perouse and 1,100 hectares of parks provide open space for recreational strolls, sport games, jogging and bike rides. A map of our LGA and its key centres is provided at Figure 2.1

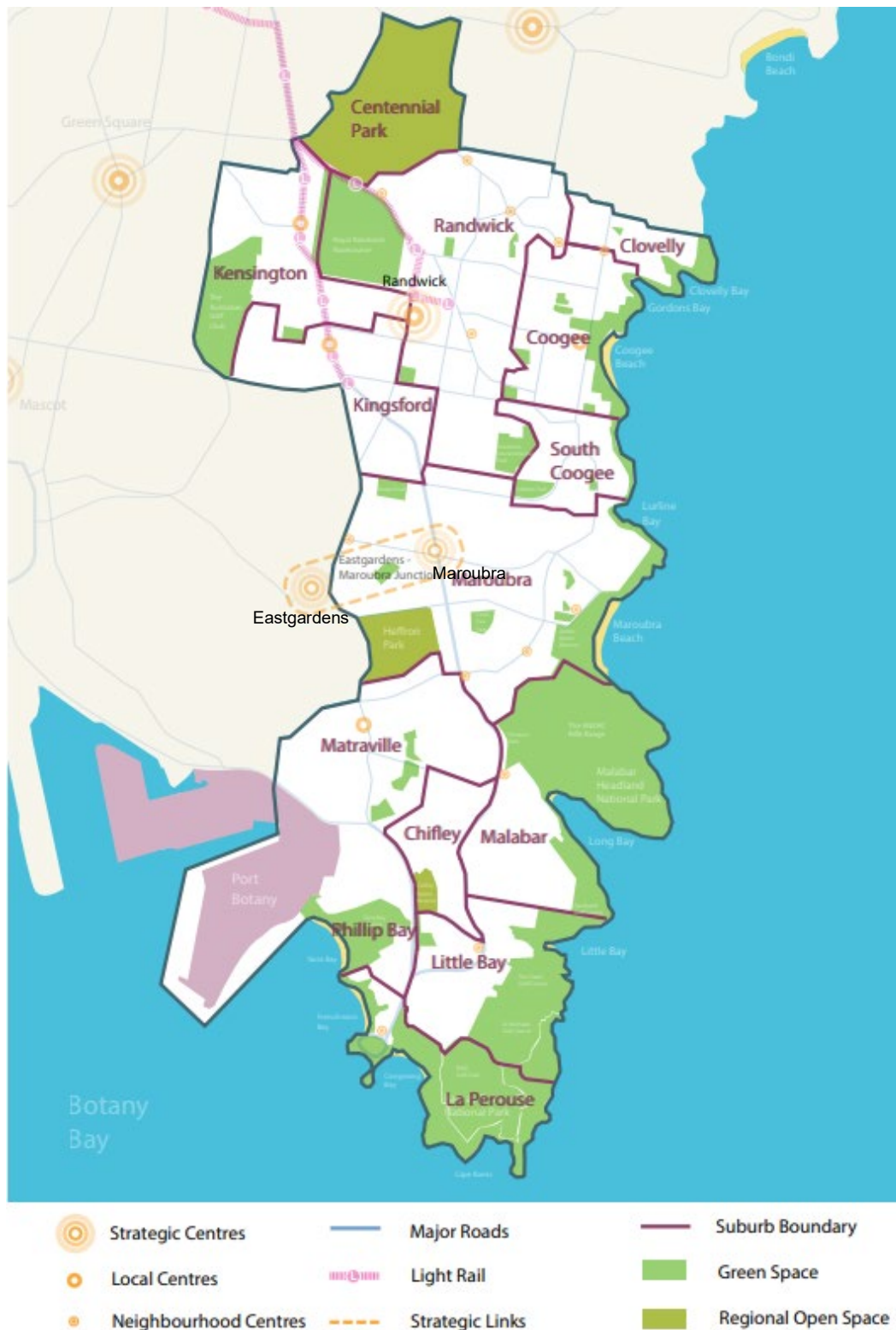


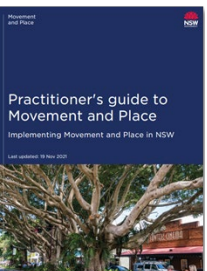
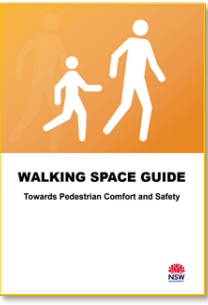
Figure 2.1 Map of Randwick Local Government Area (LGA)

1.3. Strategic context

This Strategy has been developed in alignment with the broader state and local planning framework for NSW. Relevant NSW Government strategies that provide the strategic context for active transport that applies to Randwick LGA are summarised below:

Future Transport Strategy (2022)	Active Transport Strategy (2022)	South East Sydney Transport Strategy (2020)	Randwick Place Strategy (2018)
			
Sets the high-level strategic direction to enable walking and cycling for short trips, and public transport as part of the 30-minute city concept.	Guides the planning, investment and priority actions for walking and cycling in NSW.	Provides the blueprint to transform the way people travel to, within and through South Easy Sydney to 2056.	Establishes a vision for Randwick Collaboration Area. Commits to walking and cycling connections and vibrant centres of activity including night-time economy.

To support delivery of these strategies, the NSW Government has published a suite of strategic frameworks and guidelines for walking and place outcomes, including the following:

Movement and Place Practitioners Guide	Cycleway Design Toolbox	Walking Space Guide	Road User Space Allocation Policy
			
Provides guidance to implement Movement and Place to achieve successful streets which balance movement and place functions	Guidance on how to plan and design suitable infrastructure for cycling and micromobility	Recommendations and tools to ensure adequate walking footpath space is provided on streets. This is particularly relevant for busy locations such as strategic centres, town centres and tourism locations	Requires that road space is balanced between different users with pedestrians and bicycle riders considered first

In addition, the **Network Planning in Precincts Guide** provides a network approach to land use integration in precincts to encourage multi-modal transport outcomes including better walking, cycling and public transport access.

NSW Speed Zoning Standard introduces 20kmh and 30kmh zones aimed at fostering safe and vibrant communities while reducing the risk and severity of pedestrian and bicycle rider crashes.

1.3.1. Randwick City Council Plans

Randwick Vision 2040 Local Strategic Planning Statement (2020)

Outlines our future vision for planning across the LGA and sets the direction for housing, jobs, infrastructure and open space with short-, medium- and long-term actions.

Includes these priorities:

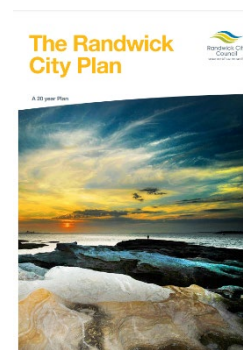
- greater access and opportunities for walking and cycling
- plan for and support strong connections to support a 30-minute Council
- develop an integrated approach to more sustainable transport
- align planned growth with infrastructure delivery.



Randwick Council Plan (2018)

Our 20-year strategic plan that identifies the community vision and long-term goals. Prepared by Council through engagement and collaboration with the local community.

Outcome 9 is to achieve Integrated and accessible transport, with a range of transport choices to enable effective movement to, from and around Randwick. The directions to achieve this commit to providing a safe, connected network of walking and cycleways.



Integrated Transport Strategy (2020) & Study (2021)

Identifies the key principles for our transport for safety, sustainability, inclusivity, collaboration, healthy and balanced.

The following targets are articulated in the Community Strategic Plan and reiterated in the Integrated Transport Strategy:

- increase the active transport mode share to 35% by 2031, from a 26% baseline
- reduce the proportion of private vehicle trips from the 2018-19 baseline of 58% to 45% by 2031
- achieve a 50% reduction in casualties on the road network from a 2018 baseline of 269 incidents by 2031.



In addition, the Strategy aligns with objectives from Council's Environment Strategy (2022), Open Space and Recreation Strategy (2021) and the Randwick Disability Inclusion Action Plan (2022-2026).

2. Walking in Randwick

2.1. Who walks and why?

Walking is a fundamental human activity, with 92% of people in Sydney walking at least once a week for 10 minutes, many doing so even more frequently.⁴ It is the essential component of many journeys, and nearly every bus or light rail journey requires at least some amount of walking.

This universal mode of travel transcends socio-economic barriers, age, and other divisions. Whether for transport, recreation, or social purposes, walking is accessible and versatile. It is the spontaneous detour to grab a coffee, the unplanned stop at a local store, or a moment to chat with a neighbour.

When we discuss walking, it's essential to adopt an inclusive approach. It's not only about those who can walk unaided but also about individuals who rely on wheelchairs, canes, or other mobility devices. An inclusive approach caters for people pushing a pram, and those who need to take breaks due to their physical health or to walk more slowly. It also means ensuring that in areas of high activity, like on shopping streets and around schools, people can comfortably get past each other, in groups. Every person's needs are unique, and our pathways and infrastructure should cater to everyone in our community where possible.



Our streets need to accommodate prams with wide paths, kerb ramps and safe crossings. Clovelly Road.

⁴ CWANZ “National Walking and Cycling Participation Survey, 2023 – New South Wales”, available at <https://www.cwanz.com.au/wp-content/uploads/2023/08/NWCPS-NSW-2023.pdf>

2.1.1. Walking speed

As illustrated in Figure 3.1 a person sitting or relaxing in a public space is stationary; a person with mobility issues may walk slowly at 3 kilometres per hour; while a fast walker can travel up to 6 kilometres per hour.

A slow bike rider may be comfortable at 10 kilometres per hour; while an e-bike can travel at up to 25 kilometres per hour with electric assistance.

A holistic approach caters for people of all ages and abilities with suitably wide footpaths, share paths, cycleways, quiet streets, with frequent opportunities to cross streets easily.

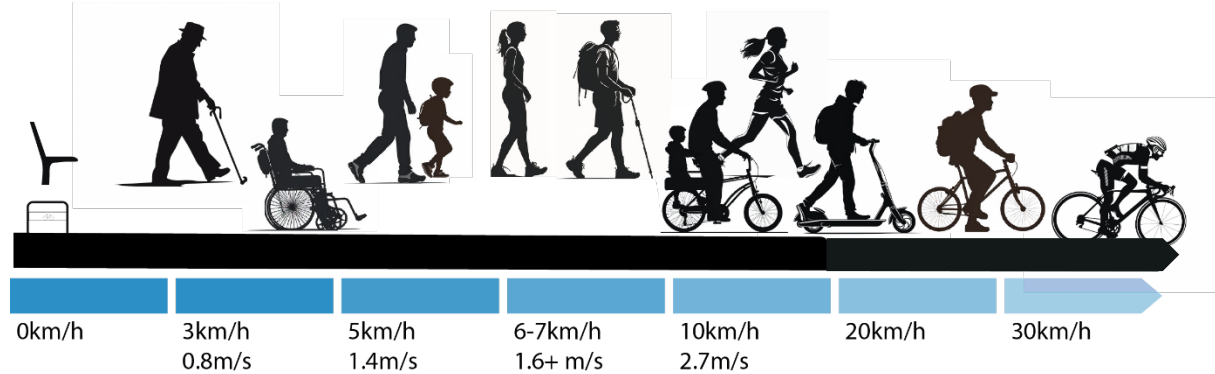


Figure 3.1 The difference between infrastructure required and speeds of a range of active transport users

All residents should also have access to daily living needs within 15-minutes' walk or ride as part of a healthy and liveable community, and to reduce their carbon footprint of everyday travel.



Many walking trips involve multiple stops and purposes - in this case walking the dog and shopping. Coogee Bay Road.

2.1.2. Motivations for walking

Around three out of four people in Sydney say they walk for recreation and exercise.

When walking for transport purposes, people walk to the following destinations:

- shopping (65%)
- personal business (50%)
- visiting cafes / restaurants (40%)
- commute to work (28%)
- to access public transport (28%)
- escort others, such as walking kids to school (22%).⁵

The high proportion of social activities shows that enjoying your walk and the places you go to are a key motivator for walking. Therefore, making walking fun and enjoyable are key to supporting more walking in Randwick. Figure 3.2 illustrates factors that motivate people to walk.

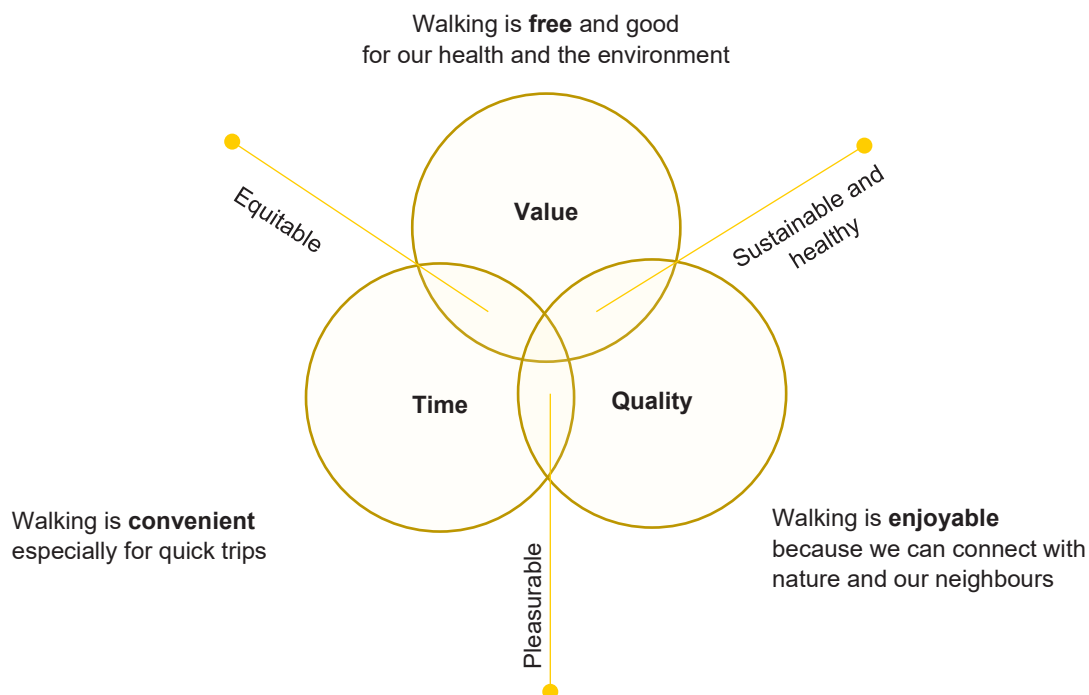


Figure 3.2 Motivations for walking



Adding elements of play or art make walking fun, like these steps at Gordons Bay or play equipment at McKeon St.

⁵ CWANZ <https://www.cwanz.com.au/wp-content/uploads/2023/08/NWCPS-NSW-2023.pdf>. Fig 2.3

2.2. What makes places walkable and rideable?

2.2.1. Compact, mixed use environment

Places that are walkable and rideable have three essential ingredients.⁶ The most important is to have some medium density living rather than all single dwellings on their own plots. This might be semi-detached or terrace housing, or three to six storey apartment buildings. In places with less than 30% single dwellings, there is much more walking activity.

Then there needs to be a mix of places that provide for daily needs such as shops, cafes and parks. These not only provide things to see and do, they also provide jobs in commercial and retail space, schools, gyms and so on.

And the third key ingredient is to have regular intersections and crossings so people do not have to walk long distances to cross the street or get from A to B.

If we combine these with regular and reliable public transport, trees and shade, and healthy, balanced street environments, we will get a lot more people out walking and cycling in our LGA.

Figure 3.7 shows that the areas around Coogee, Clovelly, Maroubra Junction and the suburb of Randwick have relatively high density of housing and jobs, which makes them more walkable. These areas are also well served by public transport. However, there are areas where there are mostly single homes on large lots with limited access to local shops, like Little Bay, Lurline Bay, and parts of Port Phillip, Kensington and Matraville. These might benefit from additional local shops, and through-site links that reduce the walking distance.

The following sections describe additional factors that make places walkable.



McKeon St Plaza, Maroubra was first trialled as a pop-up activation and is now permanent. Having places to visit and enjoy increases the amount that people walk in our area.

⁶ What if we can make cities car-free? | WSP <https://www.wsp.com/en-au/insights/what-if-we-can-make-cities-car-free>

2.2.2. Healthy, balanced and complete streets

Studies have shown that the way our neighbourhoods are designed can have a big impact on walking and wellbeing. The NSW Healthy Built Environment Checklist considers how connected the streets are, the amenities available, potential conflicts with vehicles, having convenient local places to go, green spaces, and good transportation networks. It also considers how many destinations are nearby, the mix of different uses in the area, the distance to public transport stops, and how easy it is to walk around the neighbourhood.

Similarly, the Healthy Streets scoring system looks at how our streets can encourage people to walk and cycle, such as places to stop and rest, shade and shelter, easy to cross, things to see and do, and people feel safe and relaxed.⁷

The NSW Government has established 36 built environment indicators to measure how well the built environment performs. These cover things like how easy it is to choose different transport options, nearby facilities, plenty of green and blue spaces, safe and comfortable streets, and ensuring streets are designed at a human scale with a unique character.⁸ The NSW Movement and Place Framework seeks to make improvements that benefit all aspects of the built environment which avoids making one aspect of the built environment better at the cost of another aspect.

Complete Streets uses the principle of walkable neighbourhoods which it describes as “mixing land uses and taking advantage of compact design... activated by smart street design that makes walking not only practical but safe and convenient to enjoy”.

Taken together, all of these approaches identify similar key ingredients of a street that are required to support better outcomes for liveability and health, illustrated in Figure 3.3.

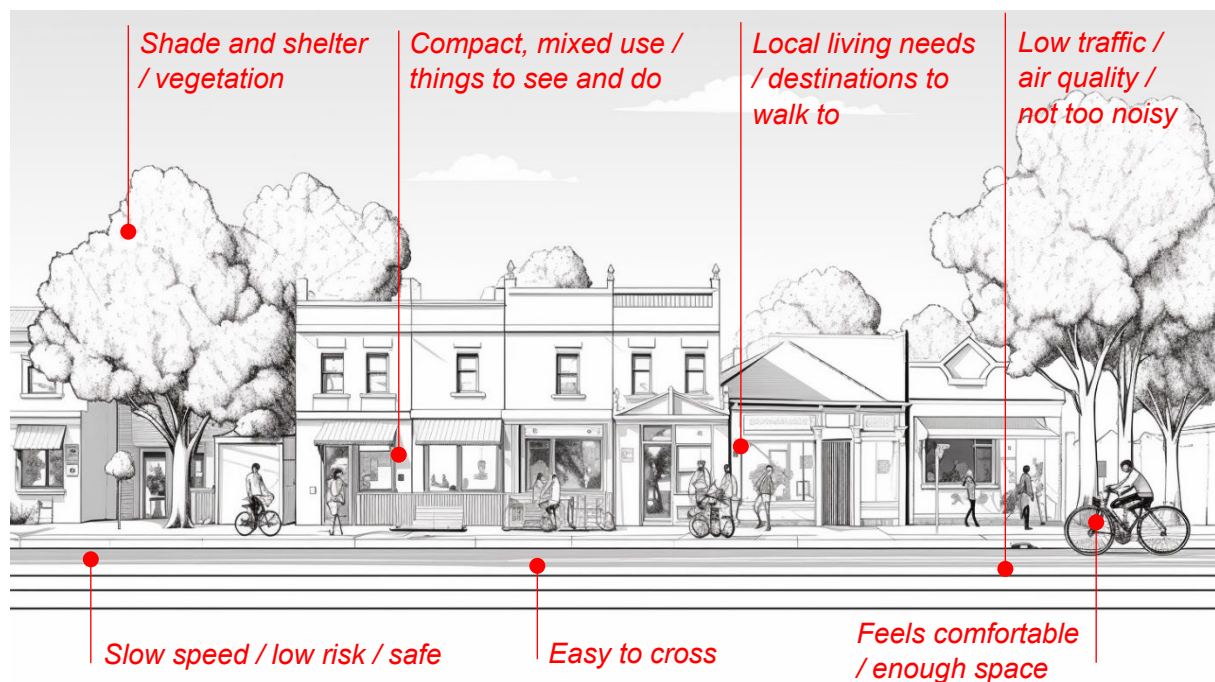


Figure 3.3 Attributes of a street that supports walking and biking

⁷ <https://www.healthystreets.com/>

⁸ <https://www.movementandplace.nsw.gov.au/place-and-network/built-environment-indicators>

2.2.3. Sufficient space and time

It is important to have enough physical space on the footpath to walk or ride comfortably, and that it does not take too long to cross the street.

For walking, sufficient space means providing footpaths on both sides of the road, and that footpaths are wide enough. On busy shopping streets or along the beachfront, for example, groups of people pass each other frequently, and walking is uncomfortable if they have to take turns or walk in single file. Guidance on this is provided in the NSW Walking Space Guide.

Walking and cycling can share the path where volumes of both are low, and if the shared path is a minimum of 3 metres wide, preferably 4 metres wide.

Where there is not a shared path or separated cycleway, it may be possible to cycle on the road if traffic speeds are less than 30km/h and there are less than 50 vehicles per hour (2000 a day). If a road exceeds this, then most people will not feel comfortable riding in traffic and separated cycleways are preferred. Guidance on this is in the NSW Cycleway Design Toolbox.

Providing sufficient time means reducing crossing delay at intersections, either by giving pedestrians priority where there are no signals (such as a zebra crossing) or by reducing the wait time at traffic signals, ideally to 30 – 45 seconds.



This section of footpath at the northern end of Maroubra Beach is crowded with people walking and jogging, and narrows at this point so that people often have to move out of each other's way to pass. It has been identified to be widened.

2.3. Barriers to walking

2.3.1. Road safety

While NSW has an ambition for Vision Zero to mitigate road trauma, the decline in fatalities and serious injuries for the most 'vulnerable road users' such as people walking and riding, including children and the elderly, has not kept pace with the improvements in safety for drivers.

One fifth of road fatalities on NSW roads in 2022 were pedestrians and bike riders⁹.

Using a safe system approach, we can target users' exposure to risk (for example, minimising conflict on busy roads), the likelihood of a crash (for example, by cars being able to stop in time), and the likely severity of the crash. Therefore, a safe walking and biking environment begins with good separated facilities (reduced exposure), slower speeds (reduced likelihood and risk) and lots of safe crossing opportunities for people to cross the road safely and easily.

Many local governments around Australia have introduced 40km/h limits for their whole council area and some have even set residential streets and pedestrian areas at 30 km/h. This leads to major improvements in safety for all road users, at relatively low cost.



When Australia decided to make the default speed limit in cities 50 km/h, the number of crashes where people were injured went down by 23 percent. When school zones were introduced there was a further 24 per cent reduction in crashes. Setting these speed limits did not increase overall travel time for drivers.

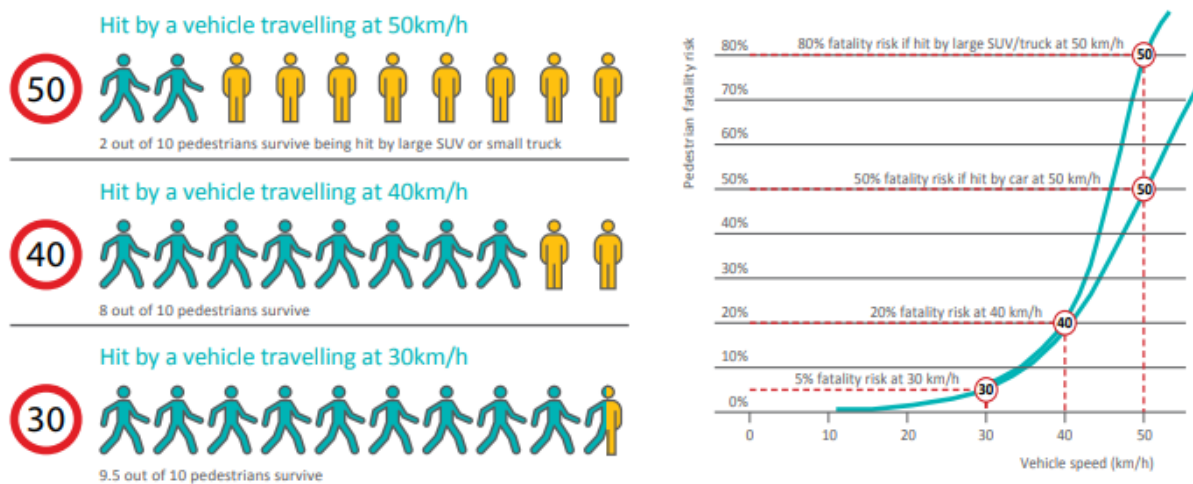


Figure 3.4 Chance of survival of an adult hit by a vehicle
Source: Waverley's People, Movement and Places, p.18

⁹ NSW Road Toll Progress Report 2022

2.3.2. Perceptions of security

Inclusivity and safety are key considerations in planning and designing successful places and routes for walking and cycling in particular. Some people in our community may choose not to walk or cycle because public space does not feel comfortable for them – either at night or at all time. This may include:

- Mobility-challenged people who lose confidence due to risk (for example: previous experience where footpath condition, lack of tactile treatments etc has impacted their journey)
- The 59% of women, 56% of LGBTIQ+ people, 36% non-binary people and 31% of men who feel 'not so safe' after dark (of which 42% of women and 17% of men feel unsafe outside most or all the time after dark)¹⁰
- People who have been harassed in public space who avoid that area thereafter¹⁰
- The 48% of people who might be interested in riding a bike but are concerned that they do not feel comfortable sharing the road with fast or heavy traffic.

There are various design principles which should be considered when designing the cycling network. These include things such as:

- Having lots of activity around, like cafes, playgrounds, exercise groups and so on
- Providing adequate lighting particularly along busy walking and cycling routes
- Pathway design and markings to help people distinguish between shapes, colours, people and items in the area
- Passive surveillance where a space can be viewed by others with buildings and landscaping well planned and designed.



Having lots of people around makes people feel safer and more socially connected. Having cafes, shops and playgrounds helps boost numbers of people out and about.

¹⁰ Safer Cities Survey Report, Transport for NSW, 2022, section 2, p12 and p11 available at https://www.transport.nsw.gov.au/system/files/media/documents/2023/Safer-Cities_Survey-Report_0.pdf

2.3.3. Personal barriers to walking

There are a number of personal barriers for some people in our community that make walking more difficult for them. We can ensure that our infrastructure tries to cater to their needs as best as possible.

Infrastructure

Some people require enhanced infrastructure to support their mobility, including pram ramps and more signal time at signalised pedestrian crossings because they need to walk more slowly than most. This includes providing places to rest.

About 12% of females and 6.8% of males experience osteoarthritis¹¹ while many others suffer lung and heart conditions. They are likely find sustained walking uncomfortable, especially on hills, and require regular places to stop and rest.

Accompanying others

Younger children need to be accompanied to walk safely and navigate, and this may impact on the travel choices of their parent or guardian. For example, a walk trip to school may depend on parents. Very young children often walk very slowly as they explore the world around them!



Having level access and ramps enables people with prams, shopping carts and mobility aids like wheelchairs to walk.

¹¹ <https://www.aihw.gov.au/reports/chronic-musculoskeletal-conditions/musculoskeletal-conditions/contents/arthritis>

Distance

One factor affecting the maximum acceptable walking distance is the duration of the visit, as illustrated in Figure 3.5.

Short turnaround trips (where you stay for less than 30 minutes) like dropping children at school or visiting a shop are most comfortable about 100 to 200 metres from home.

About 90% of people will find walking 250 metres an acceptable distance for a non-food shop, vs 80% for a grocery shop¹². Some people will walk longer, with over half of walkers finding distances up to 400 metres (5 minutes) comfortable for grocery shops, and up to 500 metres (6 minutes) for non-food shopping.

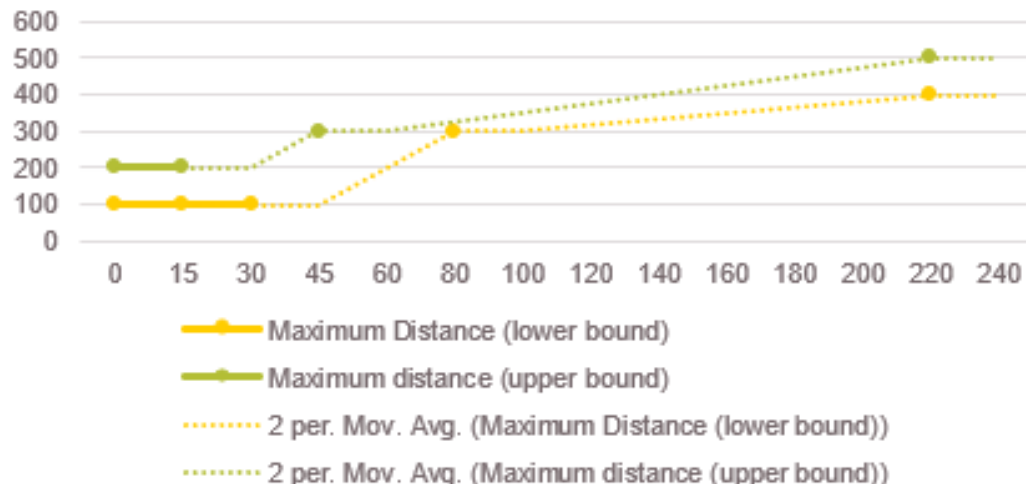


Figure 3.5 Maximum walking distance depending on duration of visit, adapted from CROW¹³

Hilliness

The hilliness of an area slows walk speeds, and people may not feel as motivated to walk as often or as far. The travel speeds for walking and cycling assume a flat walk or cycle, not accounting for slope.

- We typically assume 1.2m/s (for calculating crossing time) or 1.33m/s (for walking, generally, in rules-of-thumb such as 5 minutes' walk per 400m).
- On sloping ground, however, the recommendation is to add 10 minutes for every 100m ascent per 1km walked. This equates to a 5.8-minute walk on a 1:20 slope (vs 5 minutes on flat ground), a similar pace to the 1.2m/s crossing speed.
- On stairs,¹⁴ walking speed drops to between 0.5m/s (for an older person on steeper stairs) to 0.75m/s (for a younger person on shallower stairs), and ~0.6m/s across most cohorts, which is roughly half the speed (or less) than on flat ground.
- For example, Coogee Bay Road from the beach to Belmore Road is around 1.4km and on flat ground would be around 17.5 minutes' walk (at 1.33m/s), but in practice is closer to 20 minutes due to the slope.

¹² CROW, ob cit, Fig 6.5/5 page 212

¹³ Recommendations for traffic provisions in built-up areas, 1998, CROW, NL, Figure 6.5/4, page 211

¹⁴ An Explicit Study on Walking Speeds of Pedestrians on Stairs, Fujiyama and Tyler, Centre for Transport Studies, UCL London (2004), available at: https://discovery.ucl.ac.uk/id/eprint/1243/1/2004_21.pdf

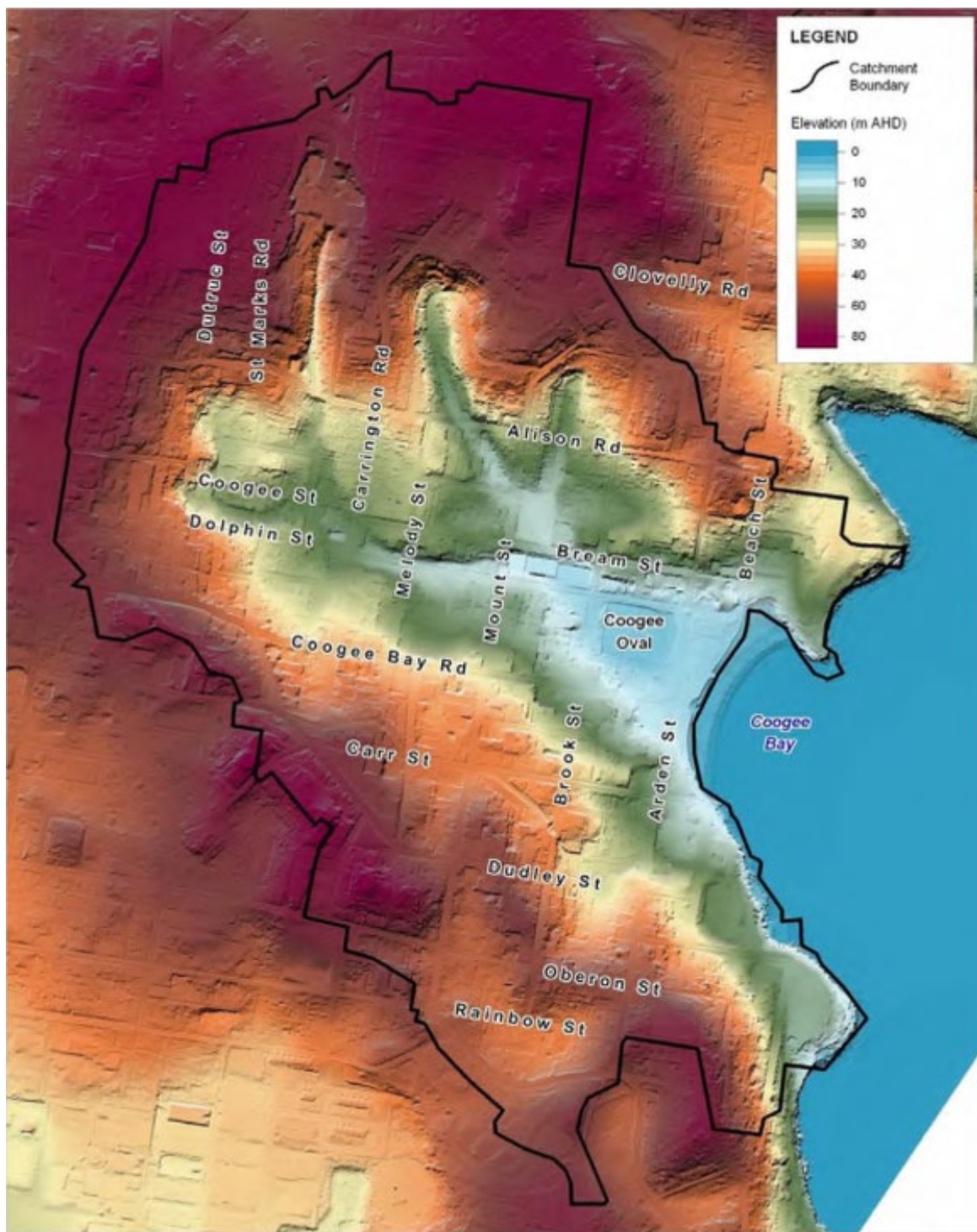


Figure 3.6 Topography of Coogee Bay Catchment¹⁵

¹⁵ Water catchment analysis by BMT WBM



Beach Street in Coogee is so steep that it has several sets of stairs

Age

Older people (and toddlers) often walk more slowly than others, and this should be taken into account when we time traffic signals and calculate travel times, for example:

- Younger people walk at 0.72 m/s to 1.01 m/s
- A typical 1.2m/s to 1.33m/s is used as a broad population assumption (for example crossing timing, '5 minute walk' catchments)
- Older people average 0.95m/s for men, and 0.92m/s for women respectively^{16 17},
- As a result, we propose catering for movement at or above 0.8m/s.

Around the Randwick Hospital precinct are many older or mobility impaired people walking



¹⁶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6600869/>

¹⁷ How fast does the Grim Reaper walk? Receiver operating characteristics curve analysis in healthy men aged 70 and over, Stanaway et al, BMJ 2011, available at <https://pubmed.ncbi.nlm.nih.gov/22174324>

2.4. Spatial analysis of walking

2.4.1. What makes Randwick town centre walkable?

A study by Transport for NSW on walking to strategic centres included an analysis of Randwick town centre, and compared it with 78 other strategic centres in Greater Sydney and regional NSW. It found that every day in Randwick town centre, people walk a total of 26,000 kilometres (per square kilometre). This is comparable with Macquarie Park, Bankstown and Burwood, but only half as much walking as Bondi Junction which has the highest walking after the Sydney CBD.

The study found that Randwick town centre is moderately walkable compared to other strategic centres in Greater Sydney, and had about as much walking as predicted based on its street layout and other key walkability factors. Bankstown, Kogarah and Chatswood had very similar scores to Randwick.

It found that the fundamental positive factors for walkability are already present in the local environment in Randwick town centre, and meets the predicted level of walking based on its current urban typology.

Specifically, the key factors impacting walkability in Randwick town centre are:

- Structural factors:
 - Block sizes, crossing opportunities, housing and employment density mixed into the residential area increase walking by **4%** in Randwick town centre.
 - There are only two key corridors of severance identified, including Anzac Parade, which significantly reduce walking even when all other walkability factors are high.
- Adaptable factors (such as tree canopy and public transport services) reduce walking by **8%** in Randwick town centre – however this was prior to the light rail and so this may have improved since it began operating. Centres such as Randwick, Kogarah, Hurstville, Burwood and St Leonards have reasonably strong structural walking factors but are lacking in ‘adaptable’ factors, such as trees, traffic speed and public transport services. These are centres that are likely to see strong walking growth in response to an increase in some of these ‘adaptable’ factors.
- Demographic factors are reducing walking by **1.4%**.

Based on this assessment, Randwick town centre is performing relatively well, and there were no clear recommendations based on the analysis for major changes.

However, this applies only to a small area. Other parts of our LGA, particularly to the south, are not as well connected for walking. Therefore, it’s worth looking at how we can make the other centres in Randwick LGA more like Randwick town centre. The Walking and Cycling Action Plan outlines the key steps we can take to achieve this.

2.4.2. Density

Figure 3.7 shows the combined density of homes, jobs and schools in Randwick LGA. It shows that most are concentrated to the northern end around Coogee and Clovelly, as well as Maroubra Junction. These largely correspond to the strategic centres in the District Plan of 'Randwick Health and Education' and 'Eastgardens-Maroubra Junction'. A third strategic centre is located at Port Botany and has a high employment density, but lower residential density.

Where the density is highest (darker blue) it reaches around 12,000 people per square kilometre and there is likely to be more walking. Areas of lower density (grey) are either mostly single dwelling homes which are less walkable, or open space such as parks or golf courses.

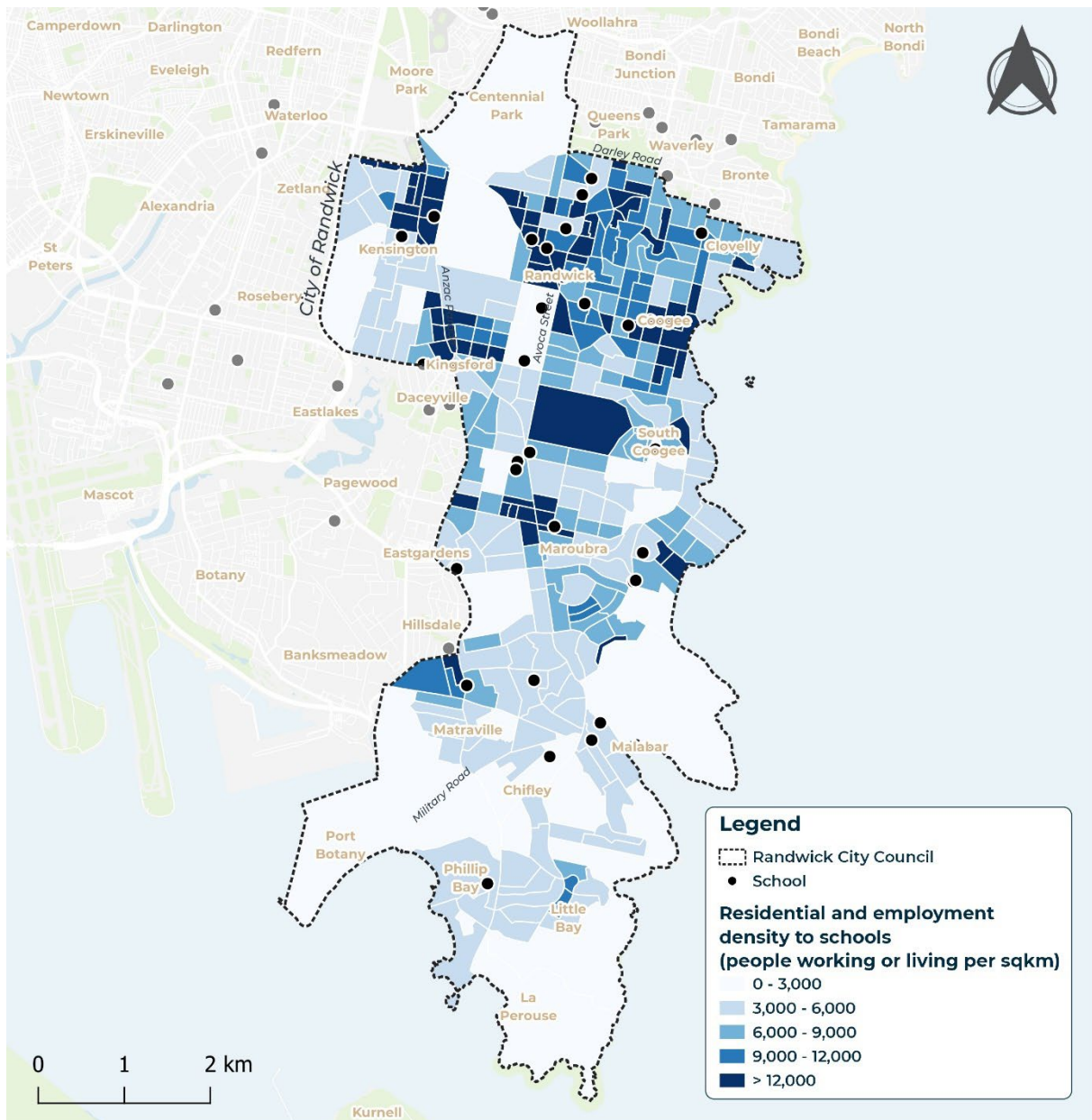


Figure 3.7 Randwick LGA schools and residential + employment density to schools

Figure 3.8 shows the areas that are both higher density and near a strategic centre (purple). This highlights the centres of Randwick Health and Education precinct, Eastgardens-Maroubra Junction, and Bondi Junction. Note that some of these straddle council boundaries.

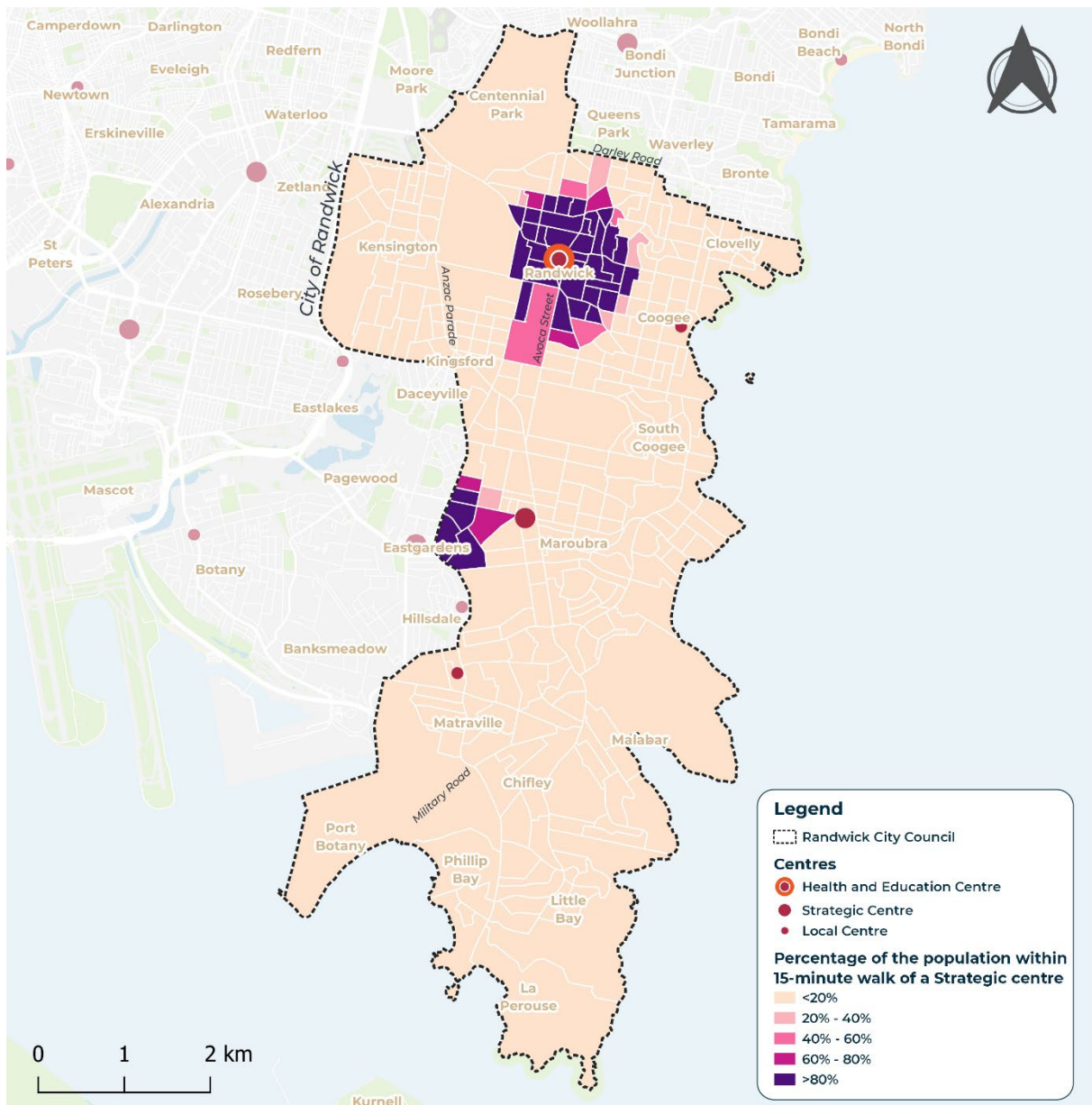


Figure 3.8 Randwick LGA schools, density and proximity to centres

(Randwick Health and Education Precinct and Eastgardens-Maroubra Junction with centre point located at East Gardens shopping centre)

2.4.3. Centres within walking distance

Figure 3.9 illustrates the 400 metre and 800 metre walking catchments to centres in our LGA, including local and neighbourhood centres. It follows the street network but does not take into account topography, crossings or pleasantness of the streets for walking.

Our LGA has three strategic centres and 33 neighbourhood and local centres. Residents in the northern part of our LGA can easily walk to local centres, although there are some gaps around the racecourse and the University of New South Wales campus.

In the middle of our LGA there is a significant gap around the Barracks and Sustainability Hub which could present an opportunity for a new local centre in future.

In the south, coverage is reasonably consistent through residential areas, other than a gap in coverage between Matraville and Malabar. This could be improved by two small centres along the Menin Road / Wassell Street axis (a small 'M&M General Store' on Wassell Street currently serves as a one-stop-shop to the south, and zoning could expand this offering). A small centre around the Knowles / Menin / Flinders Street junction could serve the northern portion of this gap. Opportunities for new local centres are required to be explored further through an understanding of economic, land use and flooding studies.

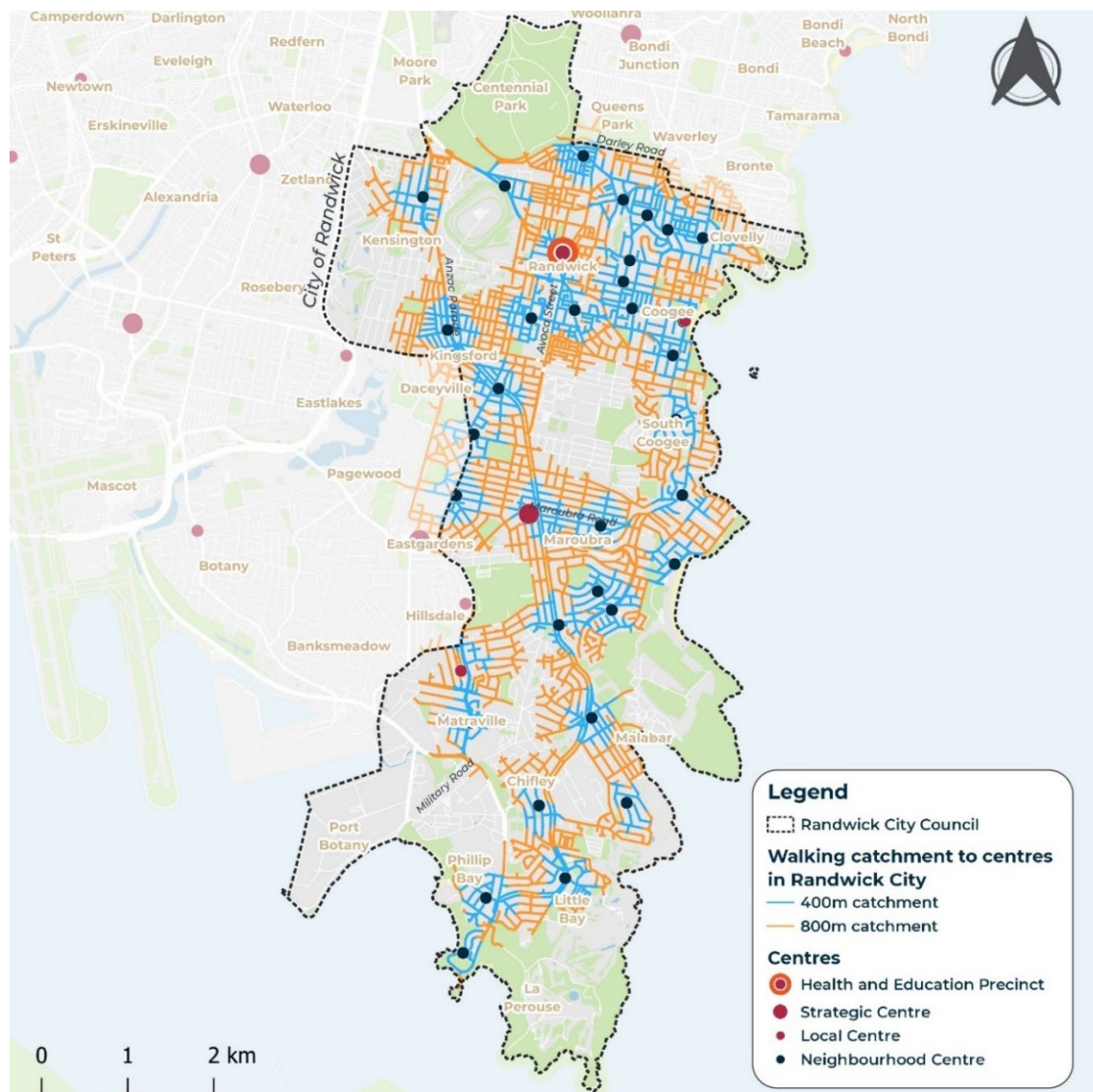


Figure 3.9 400m and 800m catchment to centres in Randwick LGA

Industrial areas

Walkable access to services could also complement workers in industrial precincts around Port Botany. There may be potential for the introduction of temporary uses that align with working hours at sporting events at Bunnerong Road and Frost Avenue in the Port Botany industrial / Chifley Sports Reserve area. For workers and recreational visitors – a crossing would need to be provided across Bunnerong Road. Likewise, a small centre in the vicinity of Australia Avenue and McCauley Street may serve workers in Matraville industrial area as well as residents around Purcell Park.

2.4.4. Road safety

Road crashes involving pedestrians tend to be concentrated around the busier centres identified in Figure 3.10, with a major cluster on the intersection of Moverley Rd and Anzac Parade. Other clusters are along Anzac Parade, Clovelly Road, Frenchmans Road, Maroubra Road and Bunnerong Road.

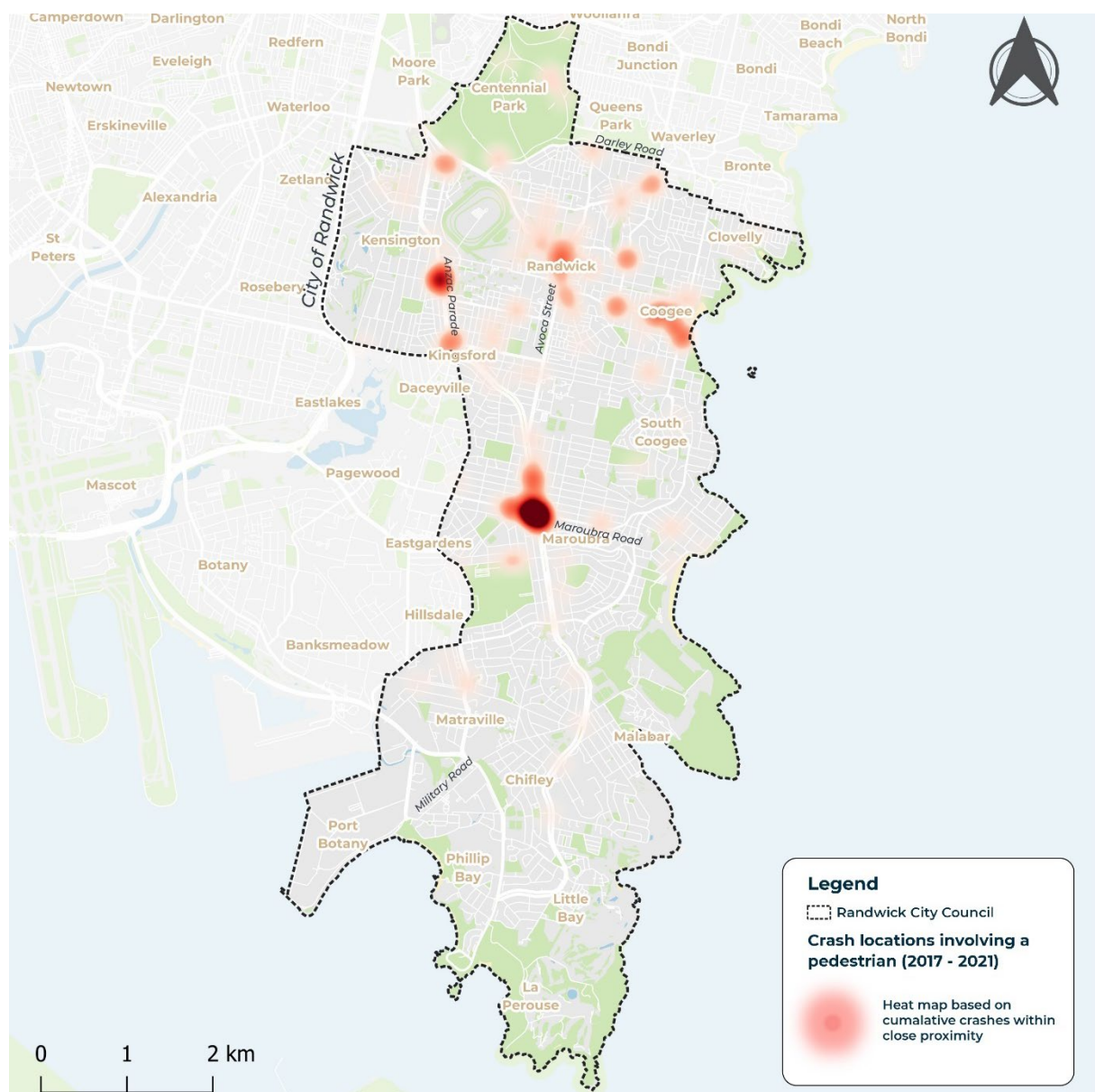


Figure 3.10 Location of pedestrian casualties in Randwick (2017 – 2021)

2.4.5. Green Grid

The Sydney Green Grid outlines a network of high quality green space connecting key destinations such as town centres, public transport hubs and major residential areas. The Green Grid for the Central District identifies the green routes outlined in Table 3-1 and Figure 3.11 that need to be enhanced and linked across our LGA. Our Walking and Cycling Action Plan takes into account these Green Grid which have been considered in identifying walking and cycling routes for Randwick City.

Table 3-1 Sydney green Grid routes in Randwick LGA

Ref	Description	Dominant Grid Layer
2	The Great Coastal Walk: South Head to La Perouse	Recreational
3	Anzac Parade: Moore Park to La Perouse	Transport
19	Eastern Beach Suburb Street Green Links	Recreational
21	Freight Rail Lines Chullora to Port Botany	Transport
23	Fitzgerald Avenue and Heffron Park Open Space, Botany	Recreational
26	Joseph Banks Reserve and Foreshore Drive	Hydrological
34	Randwick Barracks and Environmental Park to Coast Link	Ecological
40	East-West Coastal Green Links: Mascot to Maroubra	Recreational



Figure 3.11 Sydney Green Grid – Central District (2017) routes in Randwick

2.4.6. Fine-grained walking network

Having a fine-grained walking network (otherwise known as permeability) is one of the key factors that makes a place walkable. This is measured more readily by looking at the density of intersections on our streets.

In particular, having more than 45 intersections per square kilometre significantly increases the walkability of a place. As shown in Figure 3.12, most neighbourhoods across our LGA meet this threshold, which means they have the right structural settings to make them highly walkable.

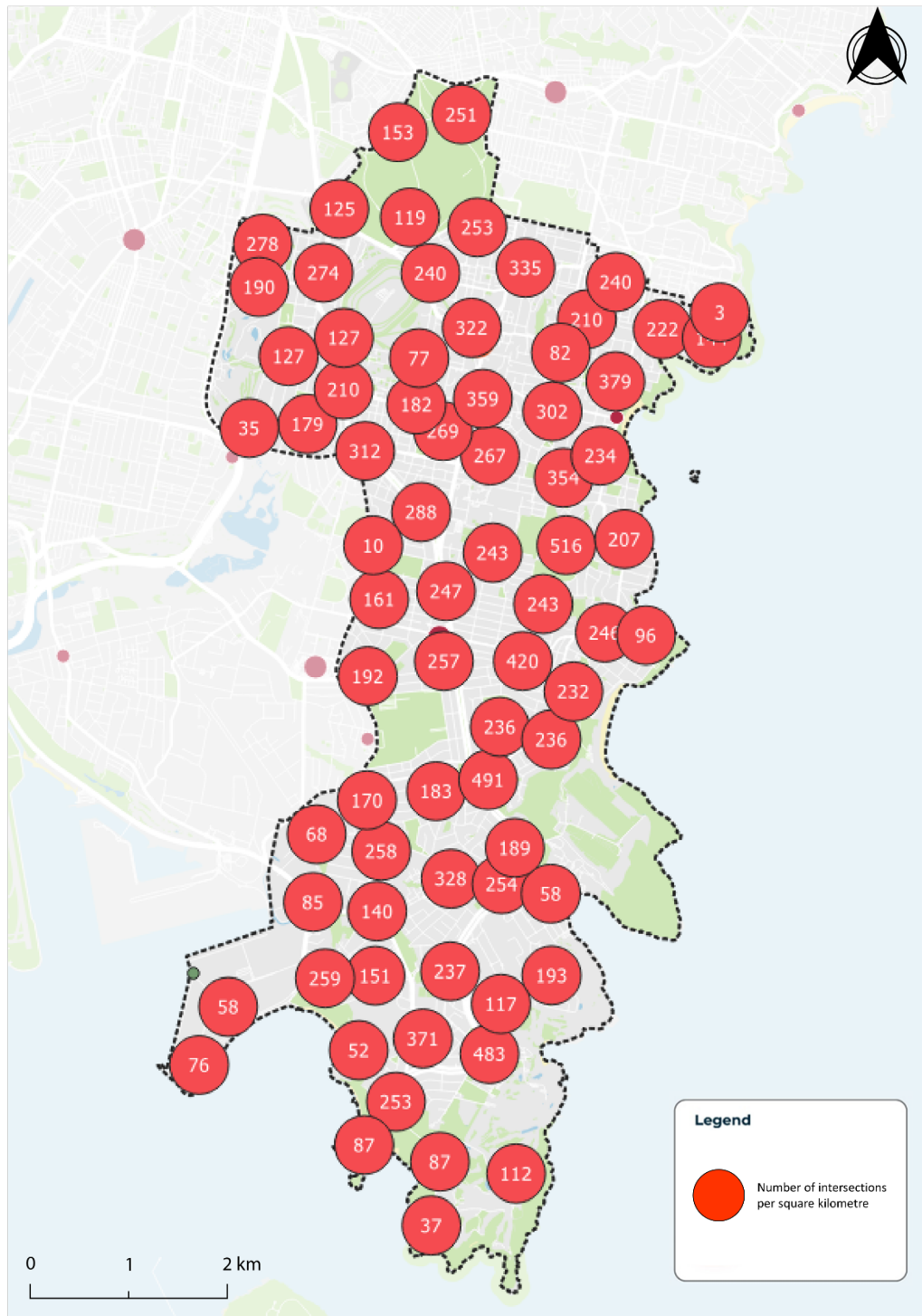


Figure 3.12 Intersection density in Randwick

2.5. What we heard through consultation

Our community values the health and wellbeing benefits of walking, with the majority (86%) of people interested in walking more often.

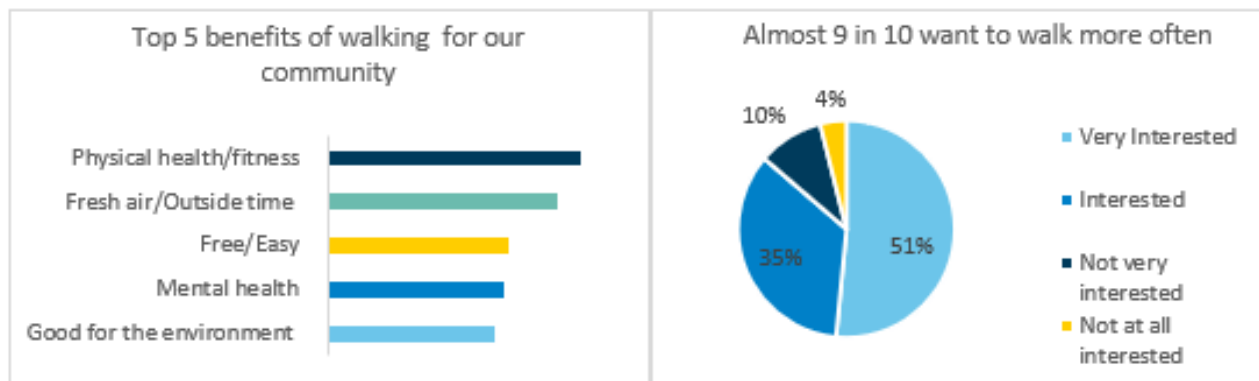


Figure 3.13 What we heard from you¹⁸

We heard that the biggest enablers to walk more often are:

1. Wider and better-quality footpaths
2. More pedestrian areas
3. Clean, tidy and pleasant streets
4. Priority for people crossing at intersections
5. Facilities such as water bubblers, seating, shade and toilets.

The main walking issues identified were:

1. Concerns about pedestrian safety on streets and at intersections
2. Accessibility and the quality of infrastructure, including narrow footpaths and uneven surfaces
3. Concerns about driver behaviour including speeding.

The top 3 ideas for improving walking in Randwick were:

1. Infrastructure changes and upgrades to improve pedestrian safety
2. Introduction of new public space
3. Reallocating road space to alternative uses.

¹⁸ Active Transport Strategy Community Engagement Findings 2023

3. Riding in Randwick

3.1. Who rides and why?

15% of people living in Greater Sydney ride a bicycle each week and 24% ride at least once a month.¹⁹

Riding a bike is very popular for younger children, however by the time they become teenagers, they ride less often. This is particularly the case for teenage girls. 35-40% of children under 18 in Sydney ride a bike weekly. By the time they are adults only 10% ride a bike at least once a week.¹⁹

In line with broader NSW trends, cycling in Randwick has been gradually increasing and is expected to continue to do so. This is evident through the High Street cycleway cycle count which has increased by 51% over the last year and 92% over the past 5 years.

Of the people who ride bikes in our LGA, around a third say they ride to work, school or university, and 21 per cent ride to visit parks and beaches.



Coogee Beach

3.1.1. Physical barriers to riding

Barriers to riding are factors which deter people from cycling more often, or prevent them from riding at all.

Our community told us what their concerns are and what we could do to make it easier to ride. Figure 4.1 shows that nearly all of our respondents feel unsafe riding in traffic, even when there is a bike logo painted. They also said that cycleways make them feel safer, but do not always connect to where they need to go.

¹⁹ CWANZ National Walking and Cycling Participation Survey NSW 2023

Figure 4.2 shows that nearly everyone surveyed said providing bicycle paths, which are physically separated from cars, would encourage them to ride more. More careful drivers and having an electric bike would also encourage them to ride.

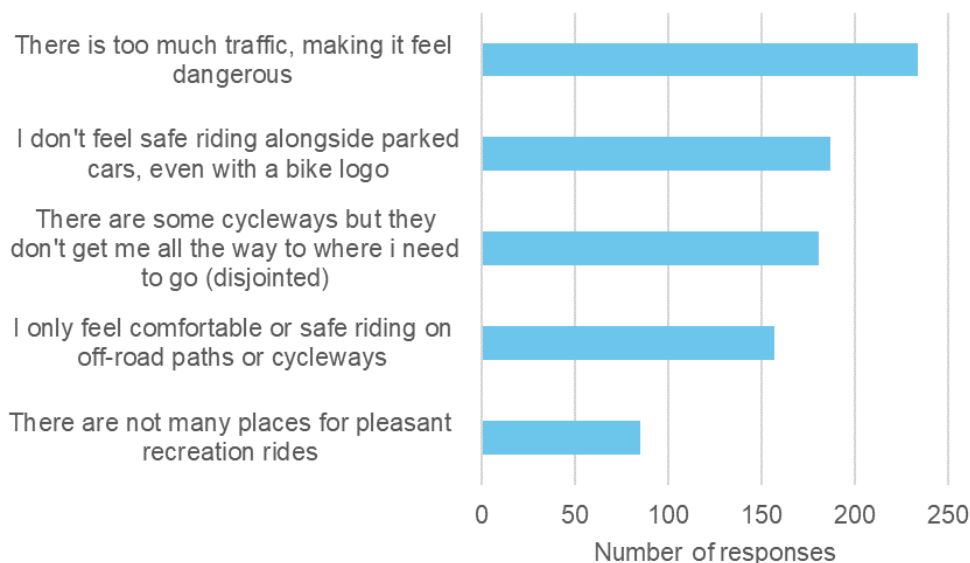


Figure 4.1 Top five barriers to riding in Randwick²⁰

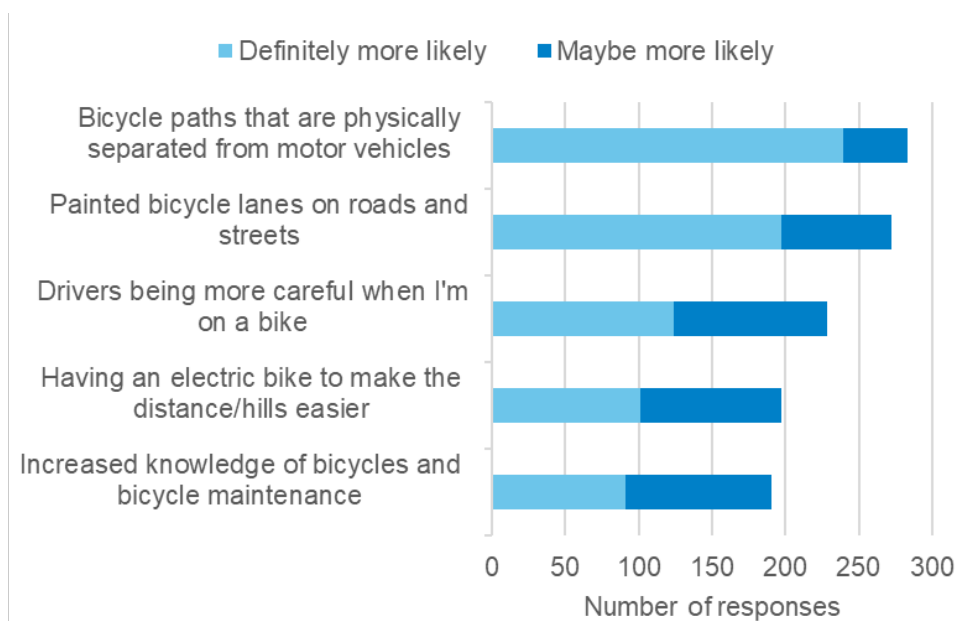


Figure 4.2 Top five ways to get more people riding in Randwick²⁰

3.1.2. Comfort

More than half (56%) of people riding in Randwick do not feel comfortable cycling with traffic, which can be related to cycling on road, reflecting a stress level 3 or 4 (see Figure 4.3.²⁰ Traffic stress is a function of the speed and volume of motor vehicles on the road, and the level of separation of bike riders from the traffic, as illustrated in Figure 4.3

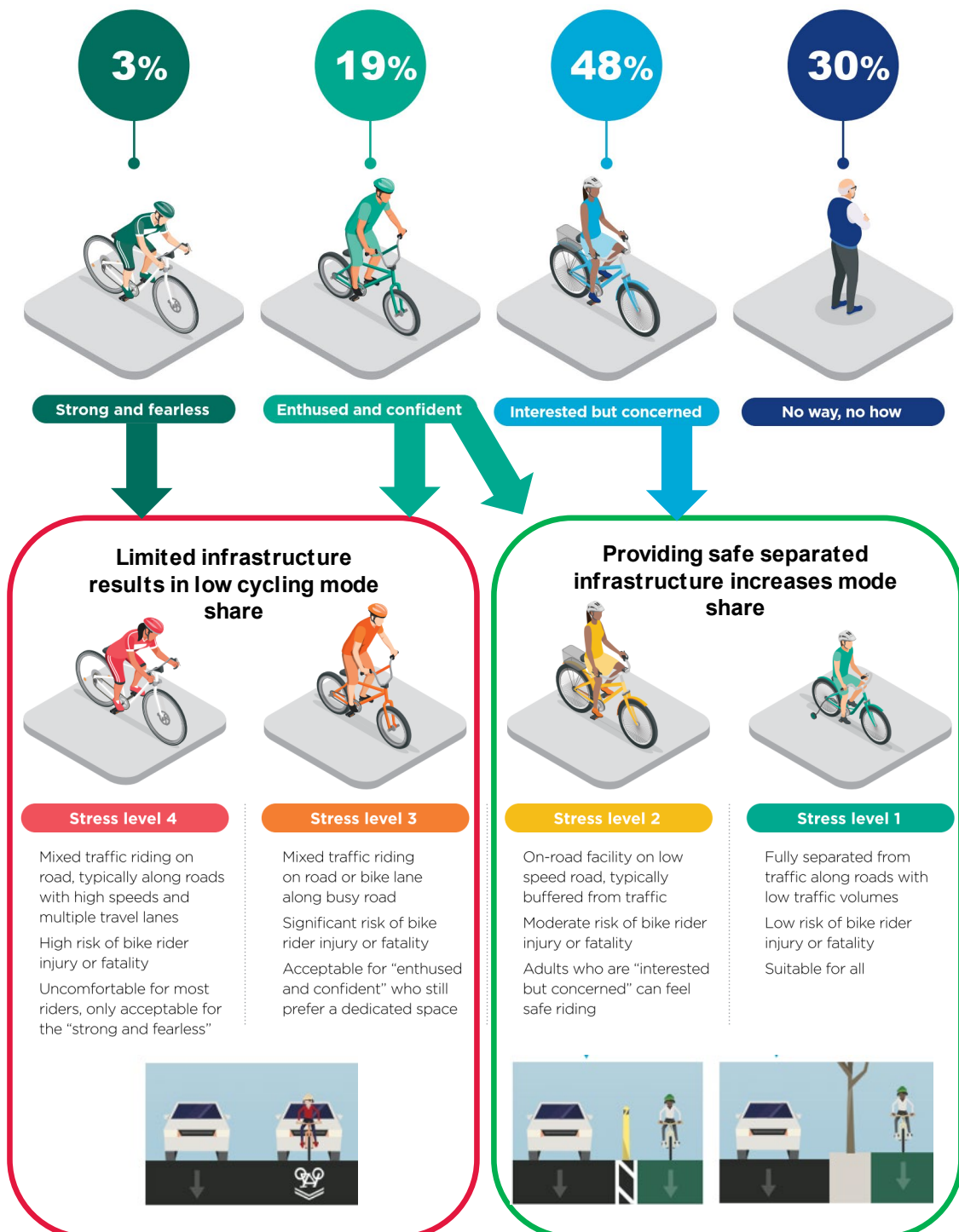


Figure 4.3 Top: Proportion of adults by rider experience. Bottom: Level of traffic stress.

Source: NSW Cycleway Design Toolbox (2022)

²⁰ Phase 1 Community engagement findings, Randwick Active Transport Strategy 2023

If the conditions for rider comfort are not met, then only a small portion of riders (referred to as “strong and fearless” riders) are likely to ride. If a comfortable riding environment is provided then all levels of bike riders may ride on the road for some trips, which could be up to 70% of the population.

The NSW Cycleway Design Toolbox (2022) (Toolbox) provides guidance on the types of cycling infrastructure that are suitable for less confident riders. It refers to the Level of Traffic Stress which is the extent to which a bicycle rider feels comfortable or confident riding with motor vehicle traffic. The Toolbox recommends that, in order to significantly shift towards more cycling participation by those who are concerned about safety, it is vital that riders who are cautious of riding feel safe and confident by providing the appropriate cycling infrastructure to reduce their level of traffic stress to 1 or 2 (separated from traffic) rather than levels 3 or 4 (mixed with traffic).



Winter pedal park, Clovelly, where the car park is closed in winter for children to learn biking skills

3.2. Existing cycling network

Our existing cycling network Figure 4.4 comprises various types of cycling infrastructure including separated bicycle lanes, shared paths, and bicycle-only, mixed traffic, quiet way treatments.

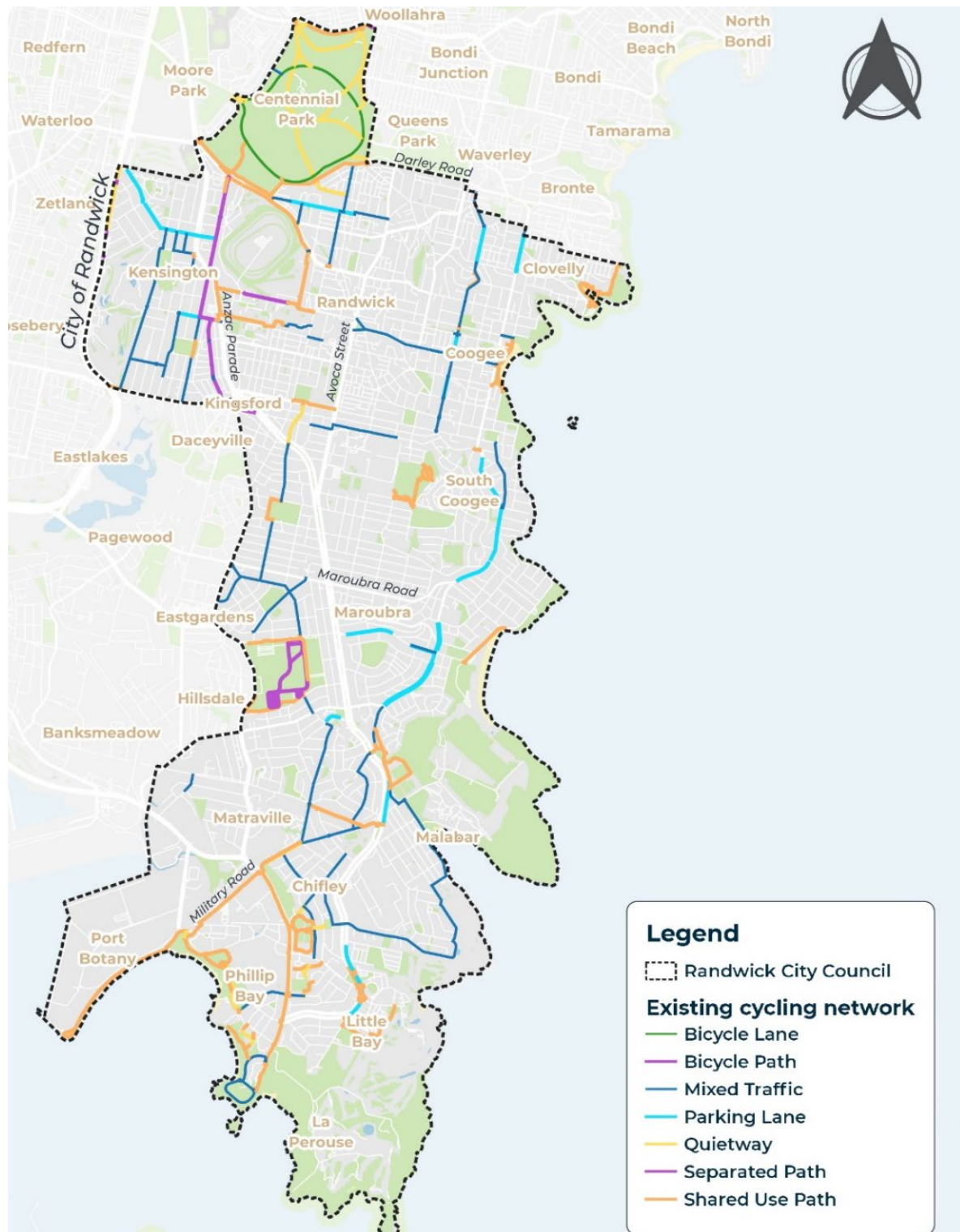


Figure 4.4 Existing cycling network

There are clearly gaps across our LGA where we need to continue to provide direct and safe access to major and local destinations. In addition, the quality of existing infrastructure may not always be current best practice, which hinders further uptake of cycling amongst the broader community.

3.3. Spatial analysis of cycling

3.3.1. Accessibility to key places

Figure 4.5 and Figure 4.6 map the 5-minute, 10-minute and 15-minute cycling catchments to the strategic centres of Randwick town centre and Maroubra Junction respectively. These maps show that at least half our LGA (and some beyond our LGA) can access a strategic centre within a 15-minute bike ride. However, the La Perouse and Philip Bay areas do not have 15-minute bike access to either centre or to Eastgardens. These assume an average cycling speed of 20km per hour along the existing streets, taking slope into account. However, it does not consider whether it feels comfortable or safe to ride on that street.

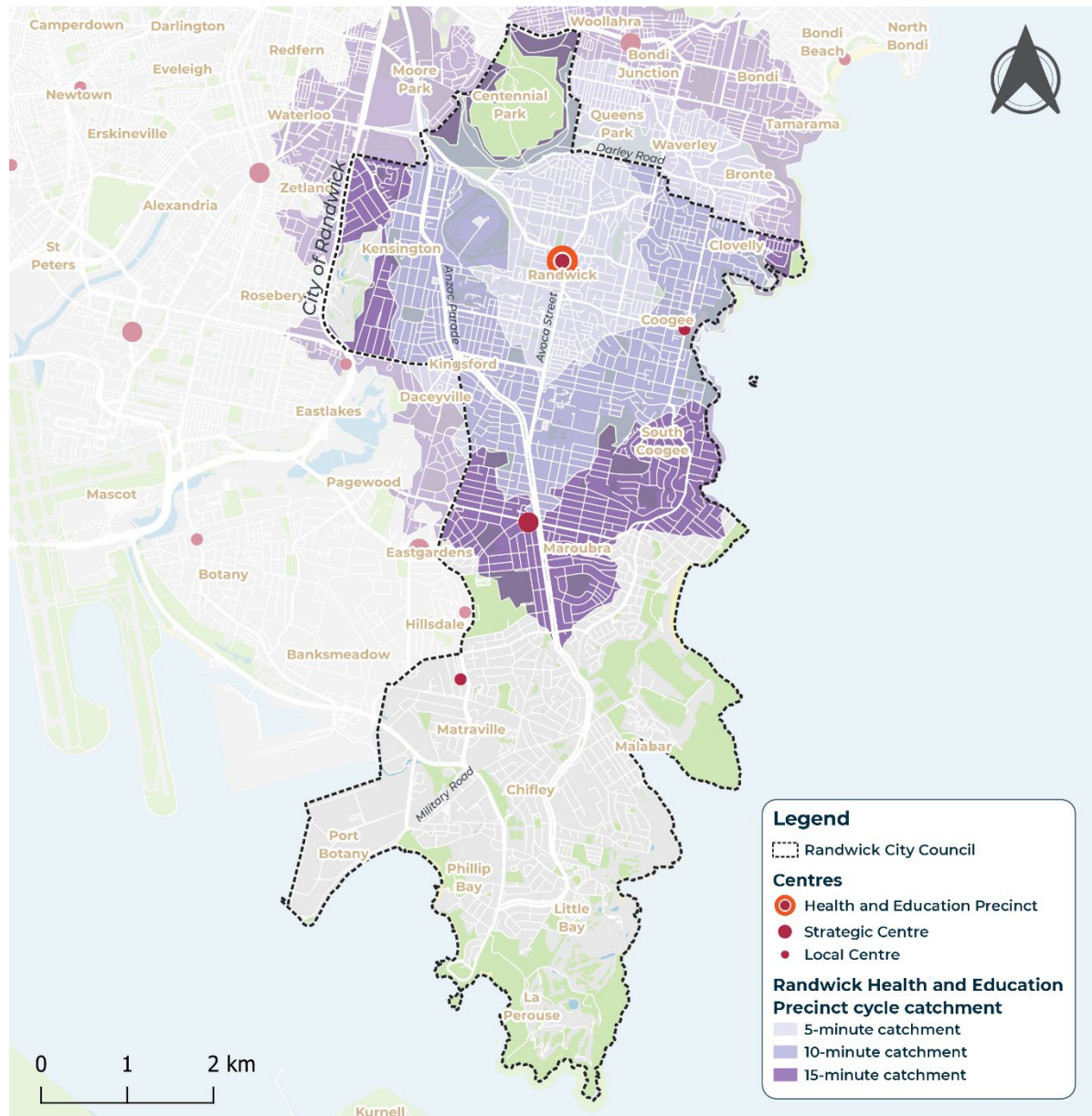


Figure 4.5 Randwick Health and Education Precinct 5, 10 and 15-minute cycling catchments

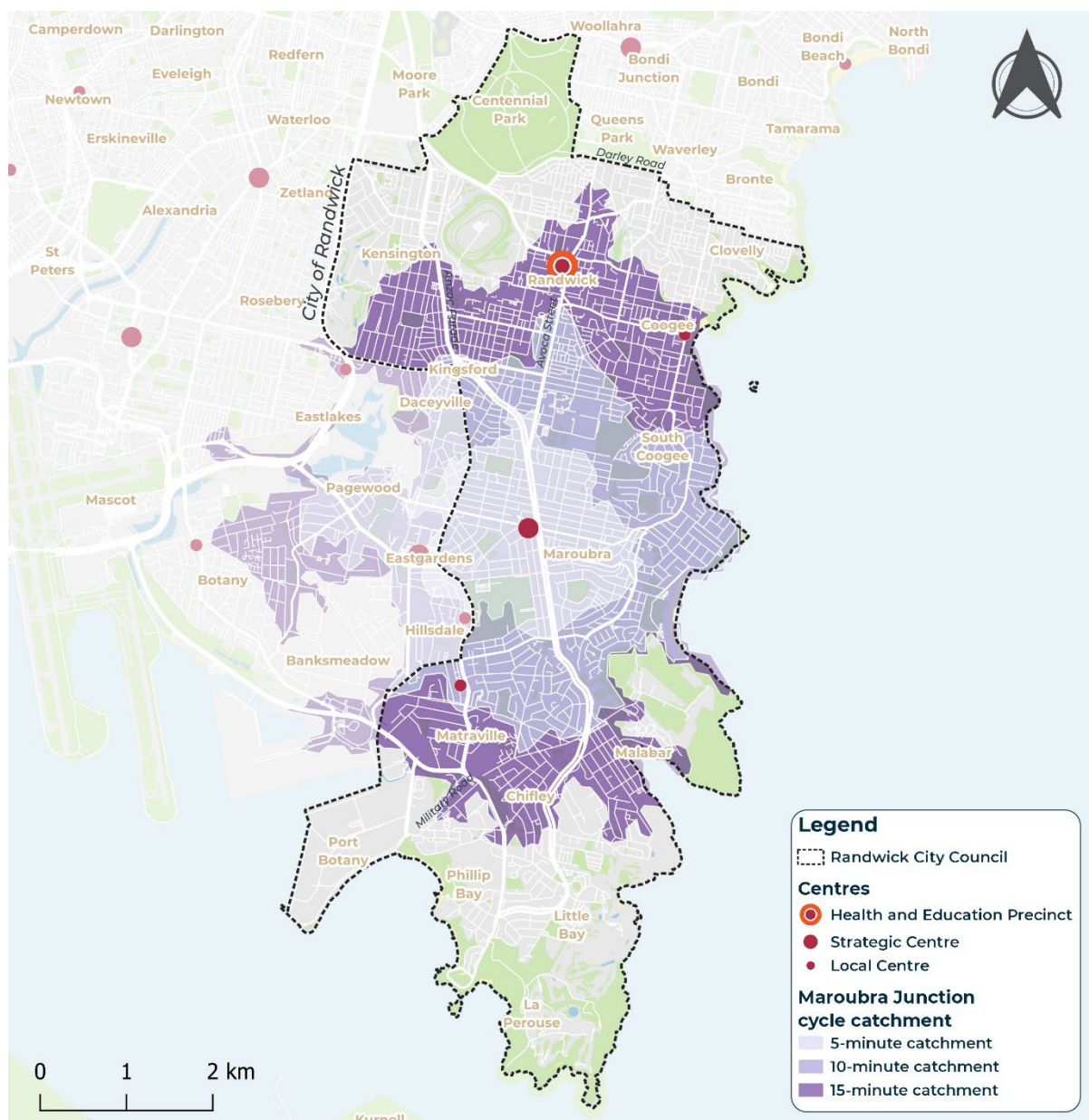


Figure 4.6 Maroubra Junction 5, 10 and 15-minute cycling catchments

Table 4-1 tabulates the numbers of residents and jobs now and by 2041 that are located within the catchments mapped in Figure 4.5 and Figure 4.6. That is, how many people will live and work within the 5-minute, 10-minute and 15-minute cycling catchments of Randwick town centre and Maroubra Junction.

With our current population of 134,000 residents, around two thirds (89,000 people) can access Randwick Health and Education Precinct within a 10-minute bike ride. This increases to 88% (119,000 people) when we look at a 15-minute bike ride. This will increase slightly by 2041 with more population.

Approximately 40% of residents (56,000 people) can access Maroubra Junction within 10 minutes by bike, doubling to 80% (109,000 people) with a 15-minute ride.

Likewise, around 40,000 to 50,000 jobs can be reached within a 15-minute bike ride of these two centres. If we can successfully shift, say 20% of these commuting trips to bike riding it will have a very significant reduction on local traffic congestion.

Table 4-1 Number of residents and jobs within the 5, 10 and 15-minute cycling catchments

Access to strategic centre by bicycle		Number of residents		Number of jobs	
		2021	2041	2021	2041
Randwick Health and Education Precinct	5-minutes	31,000	34,000	22,000	26,000
	10-minutes	89,000	97,000	40,000	45,000
	15-minutes	119,000	131,000	45,000	50,000
Maroubra Junction	5-minutes	23,000	24,000	5,000	6,000
	10-minutes	56,000	60,000	13,000	15,000
	15-minutes	109,000	110,000	42,000	48,000

3.3.2. Road safety

Identifying locations with a history of crashes involving bike riders is crucial for the safety and liveability of the Randwick Council.

Between 2017 and 2021, 235 crashes involving a bike rider occurred within our LGA.²¹ The highest proportion of crashes occurred in Centennial Park and the suburbs of Randwick and Maroubra. Figure 4.7 locates these crashes in a heat map, clustering high crash locations.

Anzac Parade had a high number of crash locations especially at the intersections with Fitzgerald Avenue, Maroubra Road, Forrest Street and Bilga Crescent.

Centennial Park also experienced a significant number of crashes due to the high number of bike riders in this location. The crash rate is particularly high at the entrance and exit points along Darley Road.

Other locations with a notable number of crashes include Avoca Street and High Street (adjacent to Randwick Health and Education Precinct) and Marine Parade (adjacent to Maroubra Beach).



There are higher numbers of crashes involving pedestrians and bike-riders on Anzac Parade

²¹ NSW Crash Data 2017 – 2021, TfNSW. [Available here.](#)

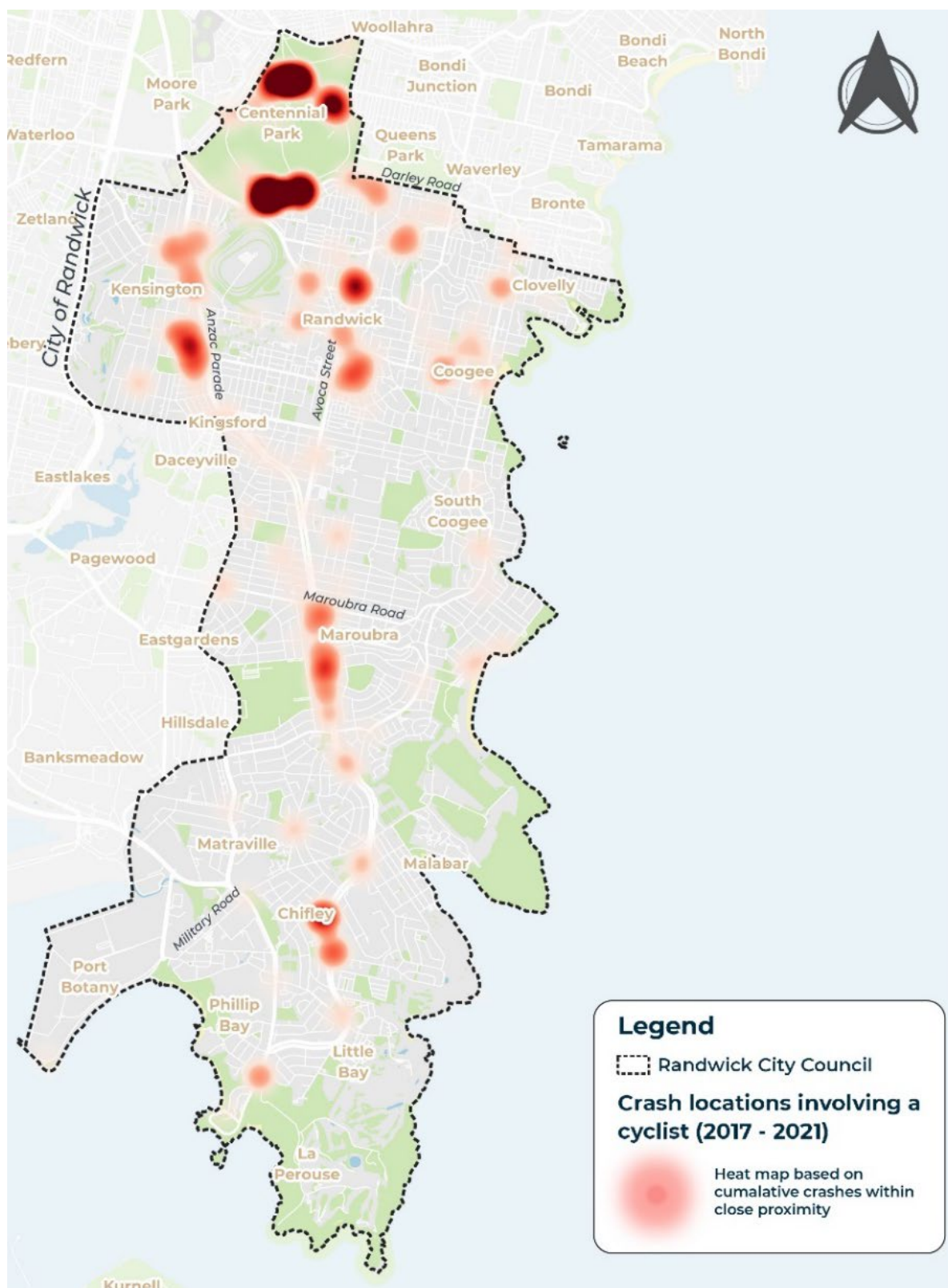


Figure 4.7 Crash locations involving a bicycle rider between 2017 – 2021

3.3.3. Share bikes

Shared micromobility (such as e-bikes and potentially e-scooters in the future) are regularly used by people in our community and present an opportunity to increase bike riding in our LGA with the right settings.

Shared e-bikes are provided by private operators and currently operate in the northern portion of the Randwick LGA. Data provided by Lime on e-bike trips is shown in Figure 4.8.

Popular routes like Coogee Bay Road, Beach Street and Carrington Road are serving 5-20 trips per day.²² This is despite a limited-service area, variable availability of bikes, and the fact that some of these streets have limited or no safe cycling facilities.

People using share bikes may be less experienced than people who ride bikes regularly. Inexperienced riders are more inclined to use the footpath if they do not feel safe sharing the street with motor vehicles. However, most riders will choose a safe on-road route if it is more comfortable and direct.²³

This highlights that installing safe cycling infrastructure makes it more comfortable and safer for people walking.

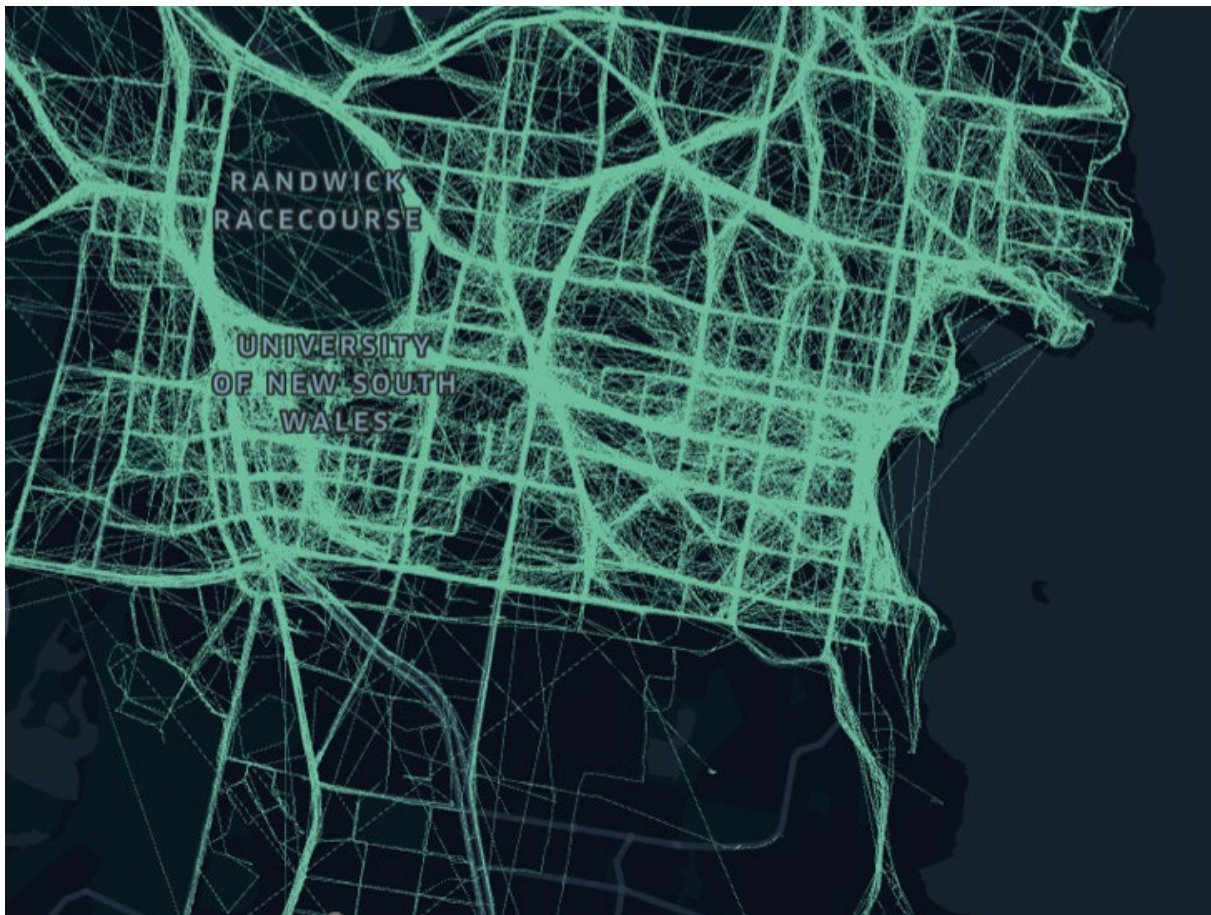


Figure 4.8 Where people ride shared e-bikes in our LGA

Source: Lime

²² RideReport open data portal, Quarter 2 trips 2023. Available [here](#).

²³ Analysis of Pavement Riding on Shared e-Scooters in Nottingham, Superpedestrian, 2023. [Nottingham+Pavement+Riding+Report_23+August.pdf \(squarespace.com\)](#)

3.4. What we heard through consultation

Our community is most interested in taking more recreational and exercise trips by bicycle, followed by local trips to the shops, cafes and restaurants. Most people already own a bike and use it sometimes (7 out of 10) while 10% of the community are interested in riding but do not currently own a bike.

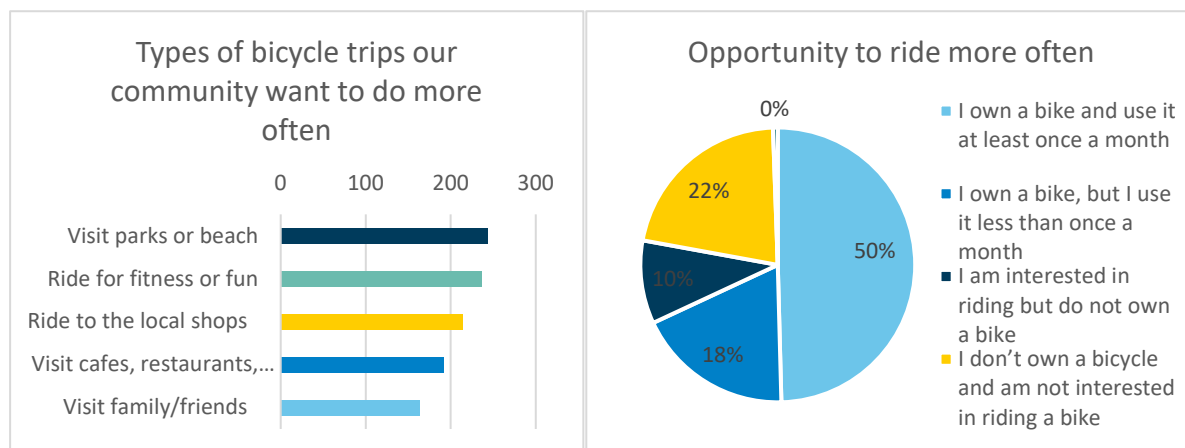


Figure 4.9 What we heard through consultation²⁴

Issues and opportunities relating to cycling were the most frequently identified during consultation with more than 300 issues and opportunities identified on the interactive map.

We heard that the biggest enablers to ride more often are:

1. New cycleways which provide separation from motor vehicles
2. Improving connectivity and continuity of cycle routes
3. Making our motor traffic on our streets slower and safer to encourage more people to ride bikes.

The main issues which discourage more people from riding bikes were:

1. Intersection safety and access issues
2. A lack of dedicated cycling infrastructure connecting people to their destination
3. Poor connectivity to existing safe routes and detours away from direct routes

To develop the Walking and Cycling Plan, we've engaged with BIKEast, Safe Streets to School and held a workshop with neighbouring councils to align the priorities in our Walking and Cycling Plan. This engagement will ensure that our future projects will respond to the needs of our community, improve cycling infrastructure throughout our Council area and provide safe connections to destinations beyond our boundaries.

²⁴ Active Transport Strategy Community Engagement Findings 2023

4. Active travel to schools

4.1. Enabling children to walk, ride and scoot to school

There are 15 public schools within Randwick LGA, comprising 11 primary schools and four secondary high schools. Our community includes around 9,750 primary school students and 7,800 secondary school students.²⁵

Across NSW 15% of primary school children walk, scoot or bike to school, while 14% of high school students do, which is less than half the rates in the 1970s.²⁶

Only 18% of girls and 28% of boys in NSW meet the daily physical activity recommendation of 60 minutes of physical activity each day.²⁷ As children get older and attend high school they exercise even less. Only 1 in 10 adolescents (12%) meet the recommended daily exercise. Further, the trend is heading the wrong way with a significant decrease in physical activity among adolescents in the last decade.

As a result of this lack of physical activity, a quarter of children in NSW aged 5-14 years old are overweight or obese.²⁸



School crossing guard at Francis St, Randwick

Travel to school is a key factor influencing this trend, but also offers a key opportunity.

²⁵ ABS Census 2021

²⁶ Garrard, "Walking, riding or driving to school: what influences parents' decision making?", 2016 – accessed at: https://www.dit.sa.gov.au/__data/assets/pdf_file/0004/513508/Walking_riding_or_driving_to_school-_what_influences_parents_decision_making-Literature_Review_.pdf on 28 August 2023

²⁷ NSW School Physical Activity and Nutrition Survey, NSW Health, 2017
<https://www.health.nsw.gov.au/heal/Publications/spans-2015-summary-report.PDF>

²⁸ <https://www.aihw.gov.au/reports/children-youth/australias-children/contents/health/overweight-obesity>

We want our children in Randwick to have the opportunity to grow up independent and healthy. To achieve this, all children should have the opportunity to choose to safely walk, ride or catch public transport to school. Schools Infrastructure NSW considers that a reasonable walking and cycling catchment for primary school students is within 1.6 km for primary school students and 1.9 km for secondary students from their home.

Over 5,500 students enrolled at public primary schools in Randwick live within 800 metres of the school gate (around 58% of our primary school population) and 85% live within 2 kilometres. This means that most primary school children could walk or ride to school with the right conditions.

Around 700 high school students (9%) live within 800 metres of their school, and 3,350 (43%) live within 2 kilometres of their school.

With an integrated program of behaviour change and infrastructure investment, Randwick has the potential for high rates of active transport to school. To do this, our streets need to support safe, direct, and comfortable walking, cycling and scooting journeys for children.

An added bonus of getting more children, teachers and parents choosing not to drive to school is that localised traffic congestion will likely decrease – we've all seen this phenomenon on school holidays, so we can imagine what this would be like during school term as well.



Bike mechanic at Clovelly Public School

A number of schools in NSW and interstate have undertaken successful programs to increase walking and cycling to school.

Merri-bek City Council in Victoria has been delivering a program of innovative behaviour change initiatives with their Ride and Stride program²⁹. The program includes:

- Open Streets trials which opens local streets at drop-off and pick-up times so that car traffic is restricted. 63% of students walked, rode or scooted to school during the trials with 93% of parents and residents wanting to see Open Streets at their school more often.
- Free e-cargo bike trials for families. 47 parents received a free 4-week trial of whom 72% were women. 55% of participating families previously drove their kids to school with 67% of participants planning to keep riding to school. 80% of participants are now confident to ride with children. The City of Sydney has also delivered free e-bike trials to get more people riding bikes.

4.2. What we heard through consultation

We asked our community what would make walking and cycling easier and safer for children, parents/guardians and teachers to get to school. The findings are presented in Figure 5.1. It shows that wider footpaths and more crossings are crucial for improving journeys to school. This is closely followed by speed restrictions and careful driving.

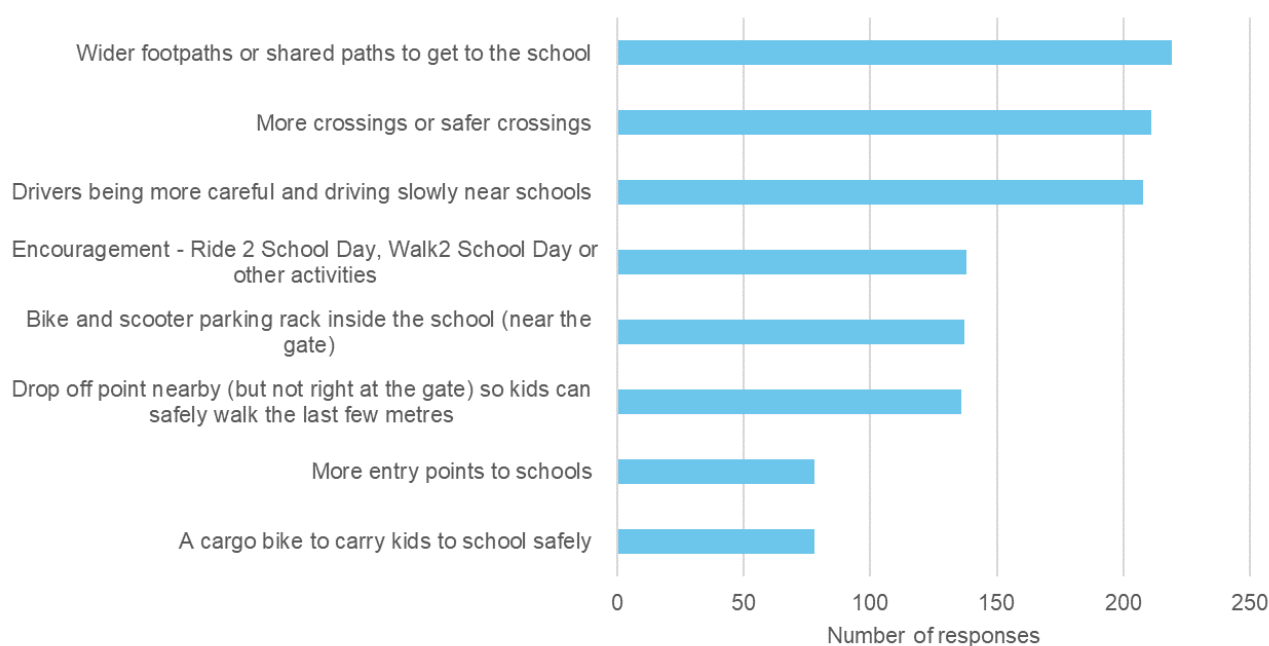


Figure 5.1 What would make it easier and safer to get to school in Randwick

²⁹ Ride and Stride Outcomes Report, Merri-bek Council Council, 2022. https://merri-bek.vic.gov.au/globalassets/website-merri-bek/areas/living-merri-bek/environment/ride_stride_2022_outcomes_report_fa-web.pdf



Clovelly Public School families with cargo bikes for taking children to school

