

General Manager
Waverley Council
PO Box 9
BONDI JUNCTION
NSW 1355

10th September 2021

Dear Waverley Council,

RE: Waverley Bicycle Strategy and Action Plan

Thank you for the opportunity to contribute to the development of the new Waverley Bicycle Strategy and Action Plan. Bicycle NSW has been the peak bicycle advocacy group now in NSW for over forty-five years, and has over 30 affiliated local Bicycle User Groups.

Our mission is to make cycling better for everyone in NSW, and we support improvements to the pedestrian environment and advocate for new cycling routes that incorporate dedicated paths within the road environment and in green corridors, providing connections to jobs, schools and services for daily transport and recreation trips. Cycling provides a healthy, congestion-reducing, low-carbon form of travel that is quiet, efficient and attractive for all ages with the correct infrastructure design

Waverley has the highest levels of bike riding in Australia accounting for nearly 5% of all trips, double the Sydney averageⁱ. The high density urban form means that the average trip distance is short, at just 2.2 km per trip, and easy to cover on a bike. 3.1% of journeys to work in the Waverley LGA are by bicycle, with some suburbs having a higher mode share for work trips - for example Tamarama 5.9%, Bronte 4.8% and Bondi 3.7%. There is scope to further increase bicycle use and capitalise on the growing popularity of dockless share bikes, e-bikes and cargo bikes. **Delivering more safe infrastructure to support cycling must be a priority for Waverley Council.**

We have reviewed the 2013 Bike Plan, alongside other relevant strategies that relate to transport in Waverley, to better understand the possible opportunities for improving the active transport network. These include:

Transport for NSW Future Transport 2056 Planⁱⁱ, which commits to providing a regional cycle network in Greater Sydney, known as the Principal Bicycle Network (PBN). A coordinated delivery of bike lanes across Greater Sydney will ensure that routes across council boundaries align and create the most direct path of travel.

Greater Sydney Region Plan, A Metropolis of Three Cities (2018)ⁱⁱⁱ which contains 10 directions to create a city where all residents live within 30 minutes of a metropolitan or strategic centre. Increased liveability will be delivered by focusing on walkability, with a network of green corridors for active transport. The plan locates Waverley in the Eastern Harbour City and identifies Bondi Junction as a strategic centre.

Eastern City District Plan (2018)^{iv} includes Waverley and set outs how integrated land use and transport planning can help achieve the 30-minute city through increasing development density near public transit corridors in Planning Priority E10. The need for better accessibility, connectivity and amenity for pedestrian

and cyclists is also emphasised in Planning Priorities E4, E17, E18 and E19. In addition to the strategic centre at Bondi Junction, local centres are identified at Bondi Beach and Rose Bay North.

Sydney Green Grid^v, developed by the NSW Government Architect in 2017 and reflected in the district and region plans, proposes an interconnecting network of open spaces that support walking and cycling. The Principal Bicycle Network will integrate the Sydney Green Grid to create important links between activity centres and support active recreation. The Waverley area is covered by the Central District documents which highlight key Green Grid opportunities to link Bondi Beach with Rose Bay and Bondi Junction (Figure 1).



Figure 1:
Extract from the Green Grid showing project opportunities
in the Waverley area
(Source: Tyrrell Studio / NSW Government Architect)

Priority project opportunities:

2. The Great Coast Walk, South Head to La Perouse
19. Eastern Beach Suburb Street Green Links
42. East West Coastal Green Links: Hyde Park to Bronte
45. Bondi Beach to Rose Bay Green Link
46. Bondi Junction to Bondi Beach Green Link

Waverley Community Strategic Plan 2018-2029^{vi} sets out the community's vision for the future of the area under 11 themes. *Theme 6: Transport, Pedestrians and Parking* includes strategies to encourage people to walk, cycle, use public transport and reduce the reliance on privately-owned cars. Targets are established to increase the proportion of trips undertaken on foot, bike or public transport from 51% in 2016 to 63% in 2031. Very significantly, there is **a commitment to provide 15km of separated cycleways by 2029** (from a baseline of 0km in 2017) and to increase residents' satisfaction with the cycling network from a low 25% to a respectable 75%.

Waverley Local Strategic Planning Statement 2020-2036^{vii} has a vision that *"Waverley will contribute to the Eastern City District with vibrant and sustainable places that provide opportunities for a prosperous and diverse local economy, a protected and celebrated stunning natural environment and a rich cultural heritage"*. Planning Priority 1 is to "deliver public and active transport projects to achieve the 30-minute city". Key

moves focus on improving transport connections from Bondi Junction to Bondi Beach, Rose Bay and the health and education precinct at Randwick. It is recognised that Bondi Road and Bronte Road, both 'Vibrant Streets' under the Movement and Place Framework, need a significant modal shift away from car use to create space for bus priority lanes and cycleways, while maintaining pedestrian amenity. In addition, a 40km/h speed limit will be applied throughout the LGA. Most importantly for people riding bikes, **a pledge is made to deliver the Principal Bicycle Network within the medium term (5-10 years)**. The map in Figure 2 shows Tier 1 and Tier 2 routes under TfNSW responsibility as well as key Waverley Council routes. Fully segregated cycleways are proposed where marked on the map.

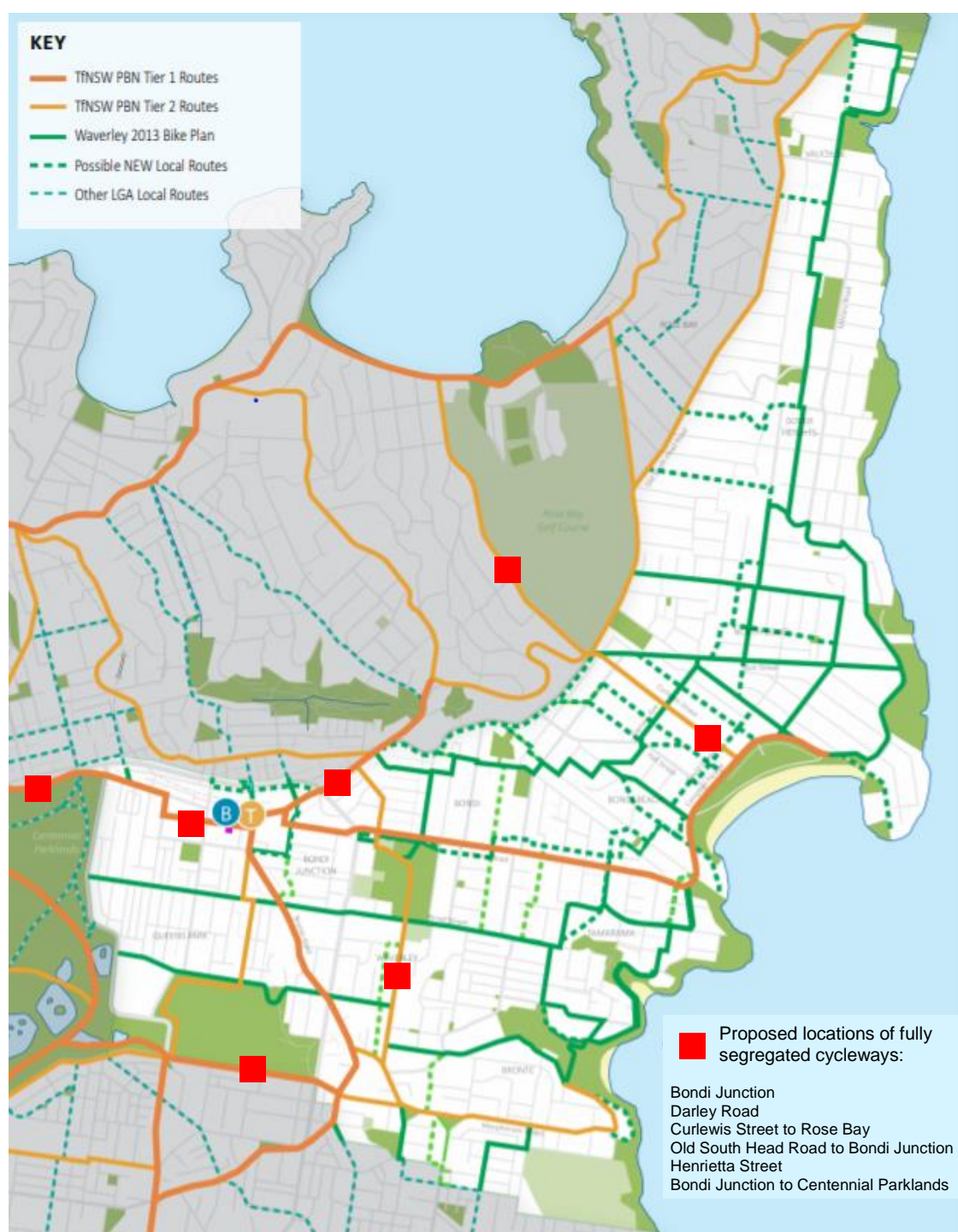


Figure 2: The potential Principal Bicycle Network as presented in the 2020 LSPS (Source: Waverley Council)

Waverley's People, Movement and Places (PMP) 2017^{viii}, the adopted integrated transport plan, establishes a clear transport hierarchy (Figure 3) that puts people first by prioritising pedestrians and cyclists, followed by public transport and shared mobility with private vehicles to be considered last. The plan encourages active and public transport, and supports better places and local planning. The PMP has already influenced Waverley's development controls with a zero minimum car parking rate, and a reduced maximum car parking rate.

The PMP outlines 12 Signature Projects where Council can focus funding, advocacy and delivery to create the 30-minute city for residents, workers and visitors. When Waverley Council asked the community to nominate the highest priority transport projects, separated safe cycleways was selected by a large margin – nearly twice as much as any other initiative^{ix}. As a result, a key Signature Project is the provision of safe cycling infrastructure. It is recognised that the network designed for the Waverley Bike Plan 2013 needs a very ambitious expansion to achieve the community's request for more separated cycle infrastructure.

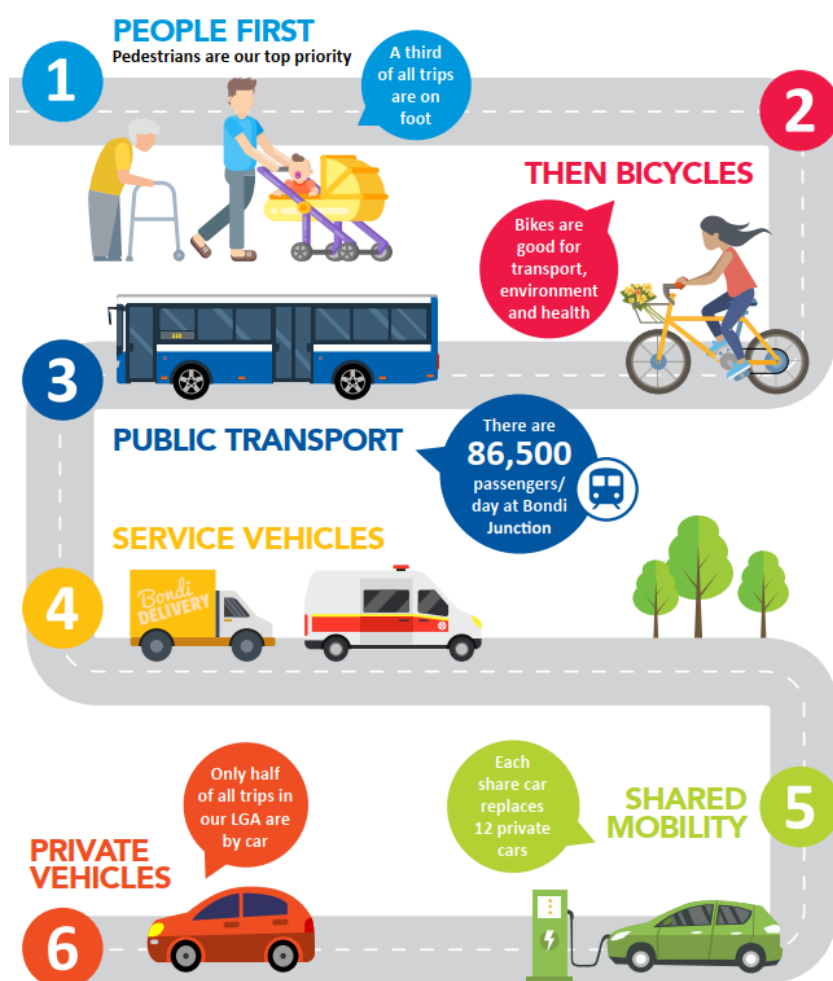


Figure 3: Waverley's adopted transport hierarchy, developed for the People, Movement and Places integrated transport strategy 2017. (Source: Waverley Council)

Waverley Bike Plan 2013^x outlines an implementation plan for 6 priority routes and a number of secondary routes. These are shown in Figure 4. Many of the routes already existed in 2013 and have significant amounts of bicycle infrastructure which has been delivered since 1999. However, the treatments are mostly mixed traffic and shoulder lane, which are not safe or comfortable for the majority of people who would like to cycle. The only segregated cycleway planned is along Spring Street and Oxford Street in Bondi Junction – this was completed in 2021. The Bike Plan includes strategies for signage, bike parking and community education and promotion.

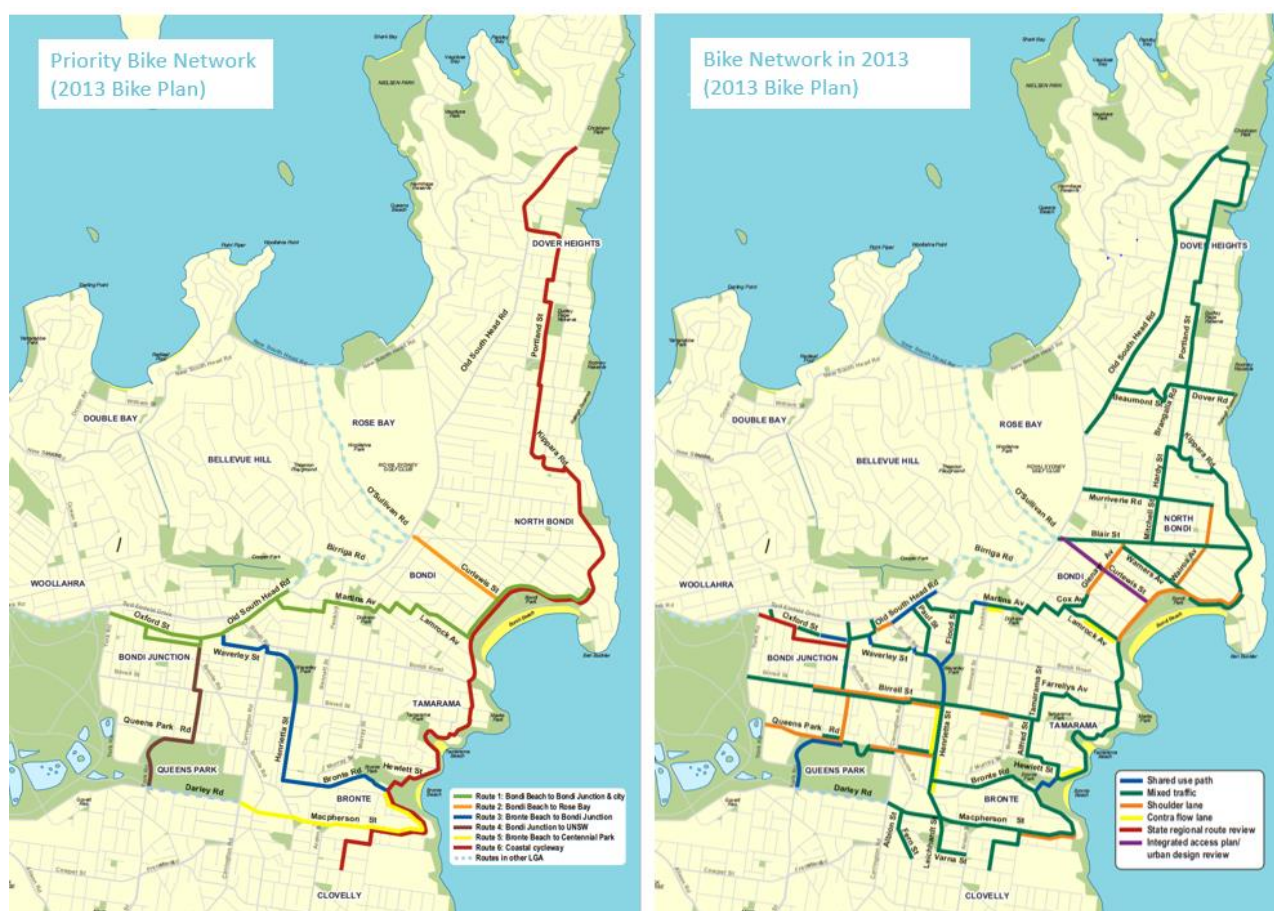


Figure 4: The priority routes described in the Waverley Bike Plan 2013 and the network at the time. (Source: Waverley Council)

Concerns:

Cycling in Waverley was initially planned through the 1982 Inner Sydney Bike Plan. Waverley Council subsequently prepared Bike Plans in 1989, 1999 and 2013^{xi}. However, despite a plethora of different plans and policies over the last 3 decades, the cycling network in Waverley in 2021 is **very minimal and fragmented**. Cycling has the potential to solve so many of the city's problems with regard to congestion, health, equity, pollution and noise and it is very frustrating that the movement and parking of private cars is still prioritised over active transport.

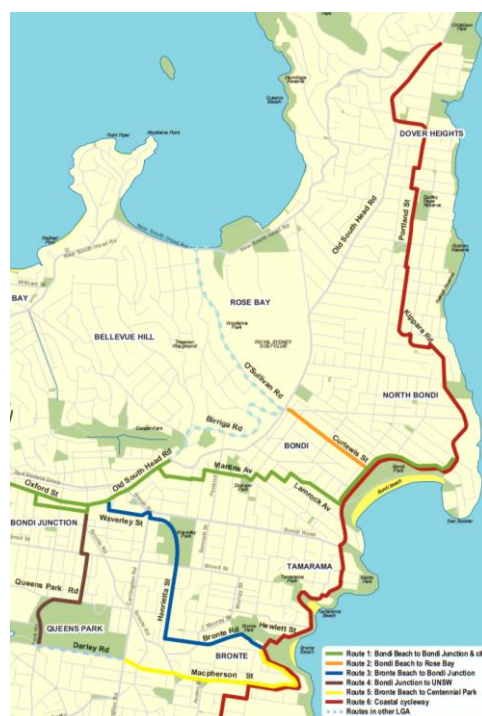
The 6 priority routes are a confusing mix of on-road lanes, shared paths and shoulder lanes. There is an over-reliance on shared paths for off-road routes. These are not suitable for all locations, and may lead to future conflict between people walking and cycling, particularly as population increases. Best practice bike planning has changed, and the updated Plan needs to reflect those changes.

The Bondi Junction cycleway is a good first step in process of creating continuous separated cycleways from along priority routes. However, its delivery has been very slow and there is much work to do to create the network of safe infrastructure that is promised in the CSP and the LSPS.

The Principal Bicycle Network has been developed since the Waverley Bike Plan 2013 was adopted. Although the 2020 LSPS largely reflects Transport for NSW's proposed network (shown in Figure 5), the 6 priority routes in the 2013 Bike Plan do not include key cycleways along Old South Head Road, Bondi Road and Birrell Road.



Figure 5: Proposed Principal Bicycle Network (PBN) for Waverley compared with the 2013 Waverley priority network.
(Source: Transport for NSW / Waverley Council)



It is very important to understand exactly where residents and visitors currently ride in the area. Bicycle NSW has obtained heatmaps (Figure 6) showing where customers of Lime share bikes travelled in July 2021. The thicker the red line, the higher the number of cyclists on the route. The maps show the desire lines of cyclists who wish to reach destinations in the most efficient way, whether there is official cycling infrastructure in place or not.

The inset maps (Figure 7) shows the proposed PBN, the existing bike network and the 2013 Bike Plan priority routes, allowing us to compare the planned network with the trips actually made by cyclists. Although the network reflects some of the route preferred by Lime bike users, it is clear that:

- Bondi Road is very important but is only currently shown on the PBN
- Birrell Road is well-used but doesn't feature as one of Waverley's priority routes
- The zig-zag route between Bondi Junction and Bondi Beach shown on all maps and listed as Priority Route 1 is not popular with people using Lime bikes.

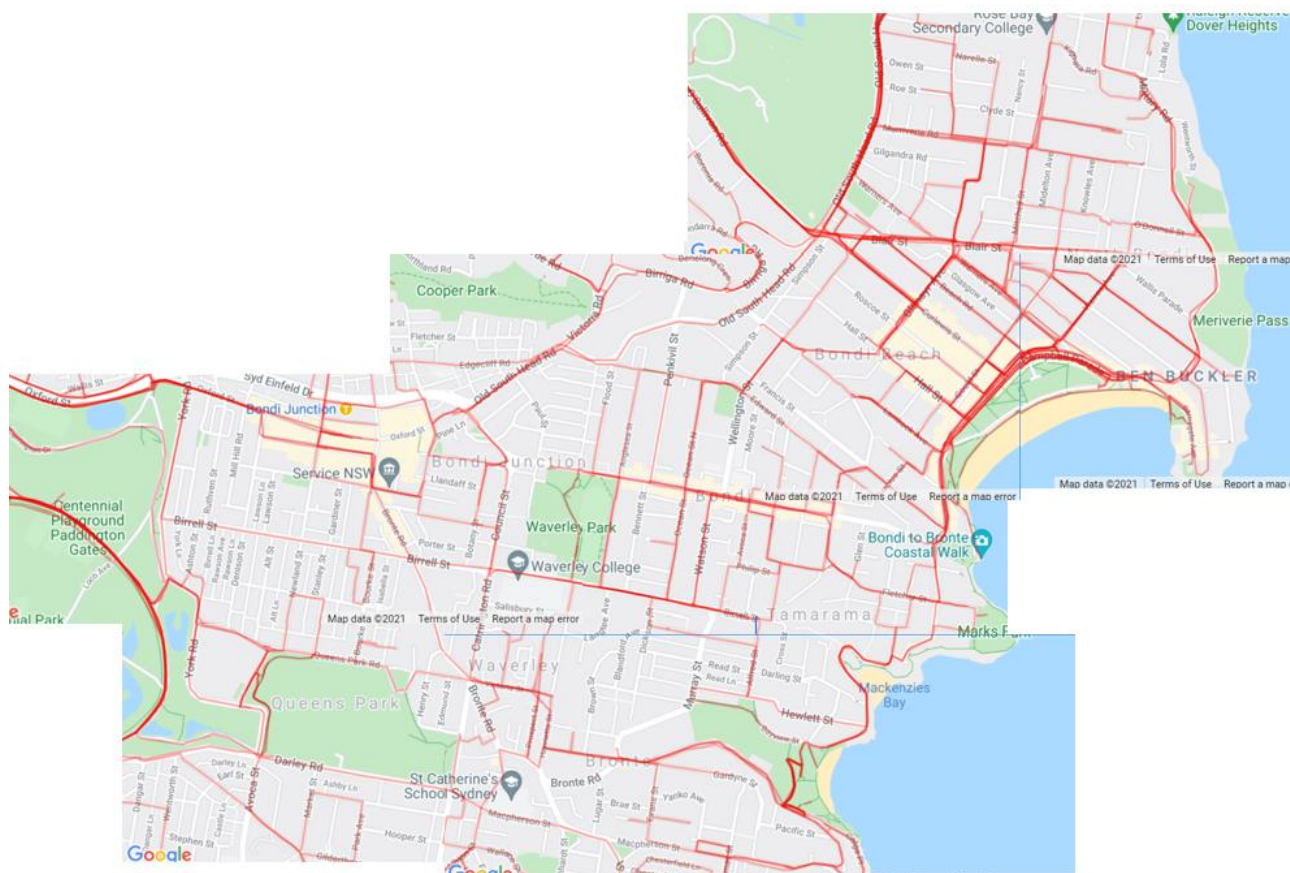


Figure 6: Heatmaps for Lime share bike users during July 2021 (Source: Lime Bikes)



Figure 7: Extracts from the Waverley's priority network, existing network and PBN for comparison. (Source: Waverley Council / Transport for NSW)

Food delivery company Deliveroo has confirmed that the key routes for riders are Bondi Road, Bronte Road, Old South Head Road and Campbell Parade. Hall St and Glenayr Ave heavily used due to the concentration of restaurants and Penkivil Road is a popular link up to Bondi Road.

The discrepancy between actual and proposed routes is concerning. Food delivery drivers use the main roads where restaurants are. **Relegating cycling routes to back streets is not an appropriate way to build modal share.**

Bike-based workers have become increasingly important during the COVID-19 pandemic. They enable people to buy food, and restaurants and businesses to continue operating, in spite of lockdowns or the need to isolate following COVID tests. Each journey taken by bike reduces the pressure on road-space and

doesn't add to the parking congestion in business or residential areas. Uber Eats launched in Australia in 2016, and since then has signed up 30,000 restaurants. According to the report^{xii} Uber Eats commissioned Accenture to undertake, Australians are spending 210% more on food delivery than before March 2020 and the sector continues to grow. Sadly, the injuries and deaths of workers in the growing food delivery sector are a stark reminder of the consequences of the failure to invest in safe cycle infrastructure.

Recommendations:

One of the three guiding policy themes at Bicycle NSW is 'Build it for Everyone'^{xiii} and we advocate for safe connected infrastructure that is suitable for riders from 8 to 80 years of age to use independently. It is clear that **a sustained effort** will be required by Waverley Council and Transport for NSW to develop an adequate network of cycling routes that will allow **all** residents to consider trips by bicycle, reducing noise, pollution and congestion and increasing health and well-being.

In 2016, Waverley had 72,100 residents. The population is forecast to grow by around 8,000 people to 80,100 by 2031, an increase of 11%^{xiv}. Although Waverley has a relatively low modal share for private car trips and modest car ownership compared to the rest of Sydney (Figure 8), it is essential to maintain downward pressure on these figures to create space for active and public transport infrastructure and prevent worsening congestion as the population increases.

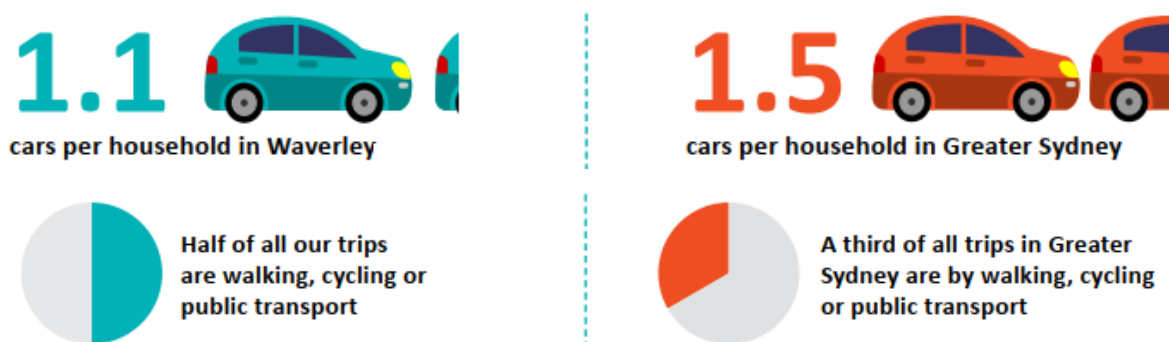


Figure 8: Extracts from the People, Movement and Places integrated transport strategy 2017. (Source: Waverley Council)

The Waverley's People, Movement and Places transport strategy is a great start but Waverley needs to act now to bring the projects to fruition. We urge Waverley to double down on work to complete and enhance the network before the return of international tourists and recommend keeping the following front and centre:

1. Deliver the active transport network as soon as possible

There has never been a better time to build for bike riding and active transport, as evidenced in the new Transport for NSW policies that require State projects to prioritize road space for active transport:

- Providing for Walking and Cycling in Transport Projects Policy CP21001^{xv}
- Road User Space Allocation Policy CP21000^{xvi}

As discussed, NSW Government has committed to provide a regional cycle network in Greater Sydney, as outlined in the Future Transport 2056 Plan^{xvii}. The Principle Bike Network (PBN) is being finalised by Transport for NSW and will align with the Green Grid priorities.

Order of Road User Space Considerations



Figure 9:
Diagram expressing Transport for NSW's
road user priority.
(Source: Transport for NSW)

It is critical to progress the delivery of safe, separated routes between key centres:

- Bondi Junction to Bondi Beach

Make improvements to the existing routes to incorporate the streets shown on the heatmaps to be preferred by people riding bikes. In the longer term, plan to introduce a separated cycle path along Bondi Road, recognising the importance of this corridor for local cycling.

- Bondi Beach to Rose Bay via Curlewis St and O'Sullivan's Road

The long-planned separated cycle paths to Rose Bay are essential to improve access to the ferries and reduce pressure from residents and visitors on the Bondi Road buses.

- Queens Park to Bronte

The Darley Road cycle path is now under construction. A safe route along the MacPherson St corridor must be delivered to connect to Bronte and the beach.

- Bondi Junction to Randwick

Work with Randwick Council to investigate routes along Avoca Street and Carrington Road, linking with the paths through and around Queens park.

- Birrell Road between Centennial Park and Bondi

Birrell Road is a well-used and significant corridor that connect several schools. It is part of the PBN but it is not shown as a priority route in the 2013 Bike Plan. Birrell Road needs to be incorporated in the new Bike Strategy.

Essential smaller projects include:

- Completing the missing link from the new Bondi Junction cycle path on Oxford Street from St James Road to York Road.
- Upgrade the paths through Waverley Park to optimise connections with Henrietta Street, Flood Street and Bondi Junction.

To expedite the delivery of these key links, Bicycle NSW suggests that Waverley Council **trials pop-up infrastructure**. Moveable lane barriers can be used to quickly create stretches of protected bike lane, with counters to monitor use. If sufficient patronage is demonstrated, the Council will have a mandate to retain the lanes. City of Sydney and Transport for NSW have demonstrated there is demand for safe cycling using the pop-up lanes established as a COVID-19 response and the lanes will now be made permanent.

Waverley must initiate brave discussions with Transport for NSW about reallocating road space from private cars to reflect the priorities set out in the Road User Space Allocation Policy and Council's own transport hierarchy. Roads such as Bondi Road, Bronte Road and Old South Head Road can then be re-imagined for the future with a focus on active and public transport. Any increase in inconvenience to car drivers created by reducing road space for driving and parking private vehicles will incentivise the mode-shift that Transport for NSW and Waverley Council seek, benefitting local residents with quieter streets, and less pollution, noise and through-traffic.

2. Future proof the active transport network

The status quo of walking and cycling activity in the Waverley area is likely to change rapidly. The density of walkers will increase when new housing and retail is delivered as proposed. An upswing in travel by bikes has occurred recently due to Covid, individual reactions to climate change, a surge in local delivery services and the growing popularity of e-bikes. In addition, State policies to address climate change and urban liveability will add to pressures on councils to secure a much bigger travel share for walking and cycling. It is important to future proof the cycle network by allowing for increased demand at the outset. Paths should be wide and separated from pedestrians and vehicles where possible.

It is important to refer to the new Cycleway Design Toolbox^{xviii} to ensure that the paths are constructed to current best practice.

3. Provide segregated infrastructure rather than shared paths in most locations

Our preferred infrastructure is always completely separated paths that cater for all riders of all ages and abilities. According to the best practice 'cycling segmentation' model, developed in Portland USA to identify the type and needs of existing and potential bike riders^{xix}, such cycle paths will allow 70% of local residents to consider journeys by bike (Figure 10).



Figure 10:
Four general categories of
comfort levels for cycling as
transportation.
Source: North Sydney Council

The provision of properly segregated infrastructure on key commuter routes with space to accommodate future demand must be a key policy position of Waverley Council. Shared paths are not suitable for areas with high pedestrian and cycling activity and will not lead to an acceptable level of amenity and safety for either walkers or riders with conflict occurring between different users. Door zone bike lanes, bike stencils on the road and dangerous intersections will continue to deter the 48%^{xx} of people who are 'interested but

concerned', from making the switch to cycling, and parents will still feel driving their children to school and activities is the only way to keep them safe from being hit by cars.

4. Make every street a cycle street

In 2016 BIKEast prepared the case for *Safe-street Neighbourhoods*^{xxi}. This strategic document has since been endorsed by Bicycle NSW and outlines ideas to slow traffic and provide a convenient network of cycling routes that complement and connect the priority separated network on key corridors. It is an urban design-based approach to tame the behavior of motorists and make local streets safe for everyone to share and enjoy. Specific design initiatives include:

- Make all vulnerable users safe by introducing 30km/h speed zoning for local residential streets and local high streets
- Implement numerous other initiatives that slow traffic - through infrastructure adaptations such as street narrowing or closing off some streets (while retaining filtered permeability for people walking or riding bikes)
- Primarily serve residential needs while maintaining essential vehicular access
- Further improve amenity through adaptations that serve people's use and enjoyment
- Make 'every street a cycle street' for a connected neighbourhood and city
- Re-planning and re-landscaping land currently covered in bitumen - making more liveable neighbourhoods.

5. Reduce speed limits to 30km/h on local streets with on-road cycle routes

30km/h has been shown as an optimal speed limit to allow people driving and cycling to share the road safely^{xxii} and is becoming a standard speed limit in many parts of the world. All single lane roads in Spain have been under a 30km/h limit since May 2021 and 30% of UK residents live in 20mph areas^{xxiii}.

Waverley is currently introducing a 40km/h limit across the LGA. This is not low enough and Waverley should adopt a goal of 30km/h on local streets to prepare for future changes in government policy. Bicycle NSW supports the use of trials and pop-ups to introduce 30 km/h zones to the community. Low-cost physical interventions such as extended curbs, narrowed lanes, new landscaping and filtered permeability will slow vehicles and may reduce the need for separate bicycle infrastructure.

Lower speed limits are an important building block for Vision Zero, an approach to road safety that was launched in Sweden in 1994 with the simple premise that no loss of life is acceptable. The Vision Zero approach has been highly successful and has spread to many other countries. The key policies include prioritizing low urban speed limits, pedestrian zones, physical separation between bicycle and car traffic, data-based traffic enforcement and behaviour-change education^{xxiv}.

6. Maintain a focus on the important details of the cycle network

It is the **detailed design** of cycle routes, end of trip facilities and wayfinding that will encourage the uptake of cycling and reduce dependence on private vehicles.

It is essential to ensure that popular daily destinations such as shopping centres, restaurant and café strips, schools and stations are easy to reach by bicycle for all residents of all ages and abilities. In particular, connections with all education facilities along the routes must be incorporated. The maps in Figure 11 show that the cluster of schools around Birrell Road and Bronte Road will not be served by the current Waverley priority routes, emphasising that these roads must be incorporated into the safe cycling network. Cycling

infrastructure needs to be safe and continuous to increase the mode share of cycling and reduce congestion associated with school journeys.

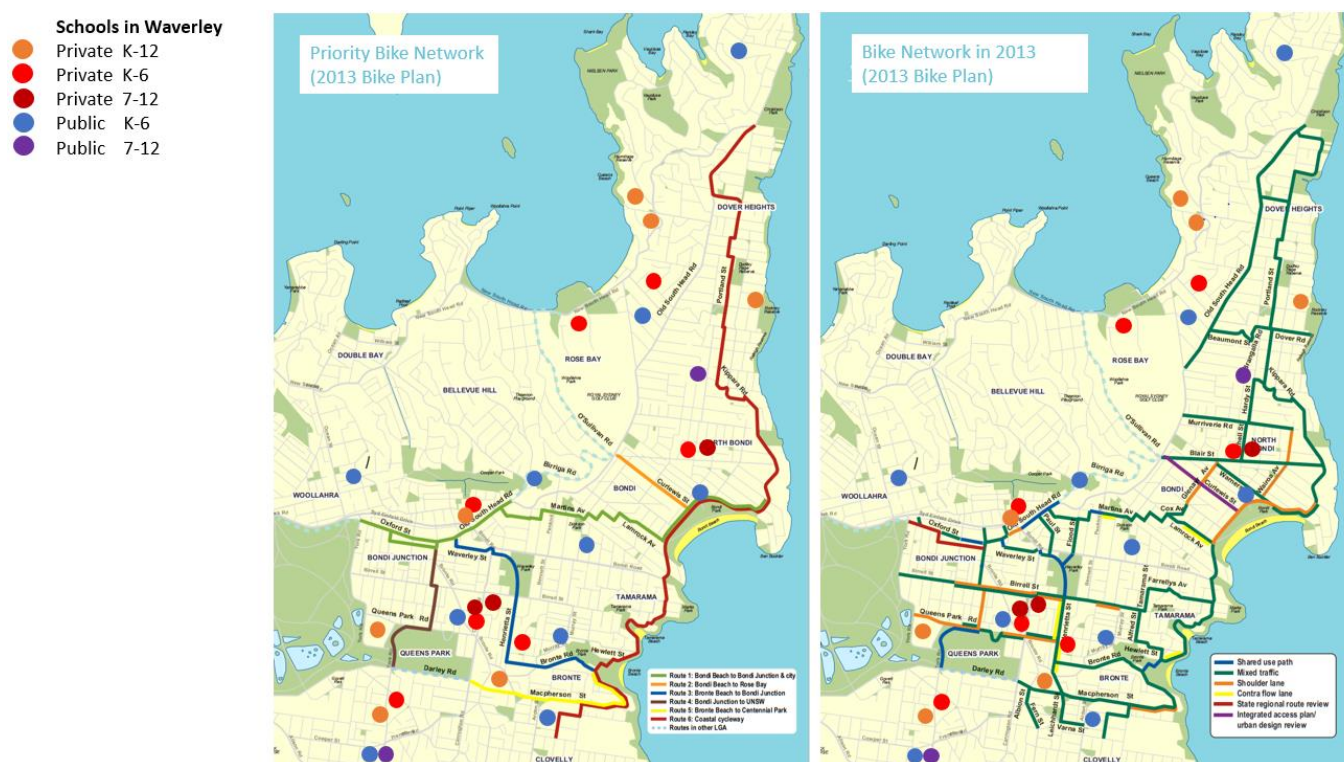


Figure 11: Location of schools in relation to the existing cycling network. (Source: Waverley Council / Bicycle NSW)

Integration of the routes with train stations and bus stops is essential to ensure easy access by bike and foot. All public transport journeys start and finish with a walk or cycle. By providing high-quality, safe conditions for walking to the station, residents will be encouraged to use mass transit. If safe cycling is facilitated, the catchment for the train station increases, breaking down the first/last mile barrier which can inhibit take-up of public transport.

Parking and other end of trip facilities should be provided at journey end locations to further support riders and encourage participation. Wayfinding supports visitors to vibrant centres by clearly articulating and communicating the most efficient and safest route. Signage style for wayfinding should be consistent throughout Waverley and should reflect the diversity of the local community.

Conclusion:

Bicycle NSW supports an inspirational vision for allocating road space and integrating transport modes based on desired future outcomes. Once built, safe infrastructure to support walking and cycling will benefit everyone in the community, reducing congestion and pollution, while improving public health and providing more equitable access to employment, services and public transport.

Cycle paths offer the greatest mode-shift potential when riders are able to complete a whole journey safely. The City of Parramatta and City of Sydney have demonstrated that building safe, well-connected cycleways works to induce mode-shift to active transport.

We look forward to working with Waverley to progress the delivery of bicycle infrastructure in the area.

Yours faithfully,

Sarah Bickford

Bike Planner
Bicycle NSW

ⁱ Waverley's People, Movement and Places, 2017.

https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0006/160584/People,_Movement_and_Places.pdf

ⁱⁱ NSW Government, Future Transport 2056 [Online 1/4/2020] <https://future.transport.nsw.gov.au/plans/future-transport-strategy/future-transport-greater-sydney>, Points 3-5

ⁱⁱⁱ Greater Sydney Commission, A Metropolis of Three Cities, 2018. <https://www.greater.sydney/metropolis-of-three-cities>

^{iv} Greater Sydney Commission, Eastern City District Plan, 2018. <https://www.greater.sydney/eastern-city-district-plan>

^v Sydney Green Grid, Central District. Tyrrell Studio, 2017.

<https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/plans/sydney-green-grid-plan-4-central-district-2017.pdf>

^{vi} Waverley Council, Community Strategic Plan, 2018-2029.

https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0004/162355/Community_Strategic_Plan_2018-2029.pdf

^{vii} Waverley LSPS 2020-2036. 2020, March.

https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0006/176397/Waverley_Local_Strategic_Planning_Statement.pdf

^{viii} Waverley's People, Movement and Places, 2017.

https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0006/160584/People,_Movement_and_Places.pdf

^{ix} Waverley LSPS 2020-2036. 2020, March.

https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0006/176397/Waverley_Local_Strategic_Planning_Statement.pdf

^x Waverley Bike Plan 2013.

https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0006/64950/Waverley_bike_plan_2013_PRESS.pdf

^{xi} Waverley Bike Plan 2013.

https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0006/64950/Waverley_bike_plan_2013_PRESS.pdf

^{xii} Accenture Strategy, Making Delivery Work for Everyone, March 2021, [online as at 20/5/2021]

<https://ubernewsroomapi.10upcdn.com/wp-content/uploads/2021/04/Accenture-Making-delivery-work-for-everyone-1-1.pdf>

^{xiii} Bicycle NSW, Policy Framework. [Online as at 19/7/2021] <https://bicyclensw.org.au/our-policy/>

^{xiv} Waverley Council, Community Strategic Plan, 2018-2029.

https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0004/162355/Community_Strategic_Plan_2018-2029.pdf

^{xv} NSW Government, Providing for Walking and Cycling in Transport Projects Policy CP21001, [Online as at 19/2/2021]

www.transport.nsw.gov.au/system/files/media/documents/2021/providing-for-walking-and-cycling-in-transport-projects-policy.pdf

^{xvi} NSW Government, Road User Space Allocation Policy CP21000, [Online as at 19/2/2021]

www.transport.nsw.gov.au/system/files/media/documents/2021/road-user-space-allocation-policy.pdf

^{xvii} NSW Government, Future Transport 2056 [Online 1/4/2020] <https://future.transport.nsw.gov.au/plans/future-transport-strategy/future-transport-greater-sydney>, Points 3-5

^{xviii} Cycleway Design Toolbox: designing for cycling and micromobility. Transport for NSW.

<https://www.transport.nsw.gov.au/system/files/media/documents/2021/Cycleway-Design-Toolbox-Web.pdf>

^{xix} Roger Geller. (2009). Four types of cyclists. Portland Bureau of Transportation.

<https://www.portlandoregon.gov/transportation/article/264746>

^{xx} 70% of people when surveyed said they would ride more if they felt safe, NSW Government, Sydney's Cycling Future (2013) [Online as at 24/2/2021] <https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/sydneys-cycling-future-web.pdf>

^{xxi} BIKEast. (2016). Safe Street Neighbourhoods. http://www.bikeeast.org.au/wp-content/uploads/2017/02/BIKEast_201610_Safe-street-Neighbourhoods_Appendix-A.pdf

^{xxii} City of Yarra - 30km/h speed limit: pre-trial final report, 2017. <https://thanksfor30.com.au/sites/default/files/2018-08/City-of-Yarra-Pre-Trial-Report-Aug-2017-FINAL%5B1%5D.pdf>

^{xxiii} O'Sullivan, F. (2020, November). Why Europe is slowing down. Bloomberg CityLab.

<https://www.bloomberg.com/news/articles/2020-11-18/speed-limits-are-dropping-in-europe-and-the-u-k>

^{xxiv} Vision Zero Network. (2015, April 13). European Cities Lead the Way Toward Vision Zero.

<https://visionzeronetwork.org/european-cities-lead-the-way-toward-vision-zero/>