Waverley Bike Plan 2013





Contents

Executive Summary 2
1. Introduction 3
1.1 Strategic Context 3
1.2 Goal 4
1.3 Strategies 4
1.4 Cycling in Waverley 5
2. Bike Network 7
2.1 Bike planning in Waverley 7
2.2 Priority Routes 10
Route 1: Bondi Beach to Bondi Junction to CBD Routes 10
Route 2: Bondi Beach to Rose Bay 10
Route 3: Bondi Junction to Bronte Beach 10
Route 4: Bondi Junction to UNSW/Randwick via Queens Park 10
Route 5: Bronte Beach to Centennial Park 11
Route 6: Coastal Cycleway 11
2.3 Secondary Routes 11
3. Wayfinding and signage 12
4. Bicycle Parking 15
5. Encouragement and Promotion 17
6. Description of infrastructure treatments 18
6.1 Shared Use Paths (SUP) 22
7. Implementation plan 24

Executive Summary

The Waverley Bike Plan 2013 has been developed to increase the number and proportion of trips made by bicycle. This would reduce traffic congestion and parking pressure in Waverley while helping to improve amenity and community health. Cycling for transport and recreation is already popular in Waverley; however, women are significantly underrepresented in the statistics as are inexperienced bike riders for whom a lack of separation from traffic is a deterrent to cycling. This plan especially targets these groups.

The Plan builds on the main existing routes as outlined in the 1999 Bike Plan. It proposes upgrading the six priority routes and provides clear directional signage along these routes. Increased separation is proposed on selected routes which will promote using bikes for short trips. Bicycle lanes are no longer recommended adjacent to parked cars.

Two-way bicycle paths separated from pedestrians and traffic are proposed for the State Regional route from Bondi Junction CBD to York Rd subject to community consultation and support from stakeholders. This route links Waverley to Centennial Park and the Sydney CBD. Three of the priority routes are already largely complete and just require upgrades in sections. The sixth priority route, Coastal Cycleway, is a recreational route for bike riders comfortable riding in traffic and will involve directional signage, markings and local treatments for improved connectivity.

The Plan supports the on-going roll out of bike parking at all local destinations, including Bondi Junction CBD, the Bondi Junction Transport Interchange, local villages, beaches and parks. Locations for new bike parking will be informed by demand and consist of standalone U-bar hoops and rings attached to existing poles. Secure bike parking such as bicycle compounds or cages with racks will be investigated at key destinations in Bondi Junction.

The Plan supports Waverley Council's sustainable transport programs, with a greater emphasis on safety on shared use paths, including a Code of Conduct for path users and bike safety campaigns. These build on existing Council activities in Oxford St Mall and are supported by Council cycle skills and bike maintenance workshops, the distribution of local cycling maps and special events such as Ride2Work Day and Bike Week,

Waverley Council will encourage and enable young people to ride bikes safely and courteously for transport and recreation. We will build on the high levels of primary school age bike usage, continuing this as they age through secondary school and young adulthood. This will be addressed by encouraging and enabling bike safety and proficiency workshops and through developing safe access to schools.

1. Introduction

The Waverley Local Government Area (LGA) is a coastal area with high residential density in close proximity to parks, beaches and the Sydney CBD. Despite the presence of hills and traffic, there is significant bicycle usage by residents, workers and visitors.

This Bike Plan builds on the 1999 Bike Plan and outlines the actions Waverley Council can take to markedly increase bike usage in Waverley for recreation, commuting and short trips. Since 1999, as bicycle usage has increased, best practice bike planning has changed. This updated Plan reflects those changes.

This Bike Plan is the result of a 2012 review of Waverley's bike planning and infrastructure which identified clear strategies to increase cycling participation, particularly by women and more inexperienced riders.

1.1 Strategic Context

The 2013 Waverley Bike Plan supports the *Waverley Together* 3 (*WT3*) community plan, the *Environmental Action Plan* 3 (*EAP3*) and the Waverley Transport Vision.

The plan addresses key Council strategic directions, including:

- WT3 sustainable living direction L7 '*People frequently walk and ride their bikes, particularly for local trips*' and its associated strategy '*Create safe and accessible pedestrian and cycle links into, out of and within Waverley*' and
- WT3 sustainable environment direction E1 '*Waverley's community contributes to the reduction of greenhouse gas emissions*' and its associated strategy '*increase the efficiency of car use through increased passengers, car pooling, car sharing, fuel efficiency and reducing trips.*'
- EAP3 targets that '*40% of total distance travelled is by public transport, walking or cycling*' and that '*average daily kilometres travelled by Waverley residents by private car declines by 15% on 2006 levels by 2020.*'

The plan addresses the Waverley Transport Vision as defined articulated in the Waverley Transport Plan. This is a vision for Waverley where:

- people regularly use public transport, particularly for trips to work and our beaches
- roads and intersections are safer and less congested
- parking both on street and off street is equitably accessed and effectively managed
- people frequently walk and ride their bikes, particularly for local trips
- all pedestrian routes are high quality, safe and accessible
- public transport, cycling and pedestrian alternatives are improved and encouraged
- our bike network and facilities are safe and connected
- all stakeholder needs for improvement to transport effectiveness and usefulness are appropriately planned and delivered

This plan also addresses the State Government Target to double the proportion of local (under 5km) and regional (under 10km) journeys using a bicycle by 2016.

1.2 Goal

The goal of the Waverley Bike Plan is to:

Significantly increase the number of trips made by bicycle so as to reduce traffic congestion and parking pressure in Waverley while improving the health and amenity of our area.

This bicycle plan will deliver cycling infrastructure and programs to achieve this goal.

1.3 Strategies

The strategies of this bike plan that will support this goal include:

- Providing safe, separated cycling facilities for all ages and abilities, linking desirable, bikeable destinations.
- Deliver an intuitive, easy-to use network with straightforward legible wayfinding.
- Ensure every street is a cycling street.
- Leverage existing infrastructure funding sources and collaborate with adjacent councils to partner for State and Commonwealth cycling project funding.
- Provide and monitor bicycle parking at bikeable destinations.
- Develop and deliver bicycle encouragement and safety programs address gaps in current bicycle participation.
- Issue regular positive communications to promote cycling for short trips.
- Incorporate cycling in internal and cross-departmental Waverley projects.
- Monitor and evaluate the plan regularly to inform the implementation of new bicycle infrastructure and promote success.

1.4 Cycling in Waverley

Who is cycling in Waverley

A survey of cycling participation in May 2012 showed that 13.7% of Waverley residents rode a bike in the past 7 days (excluding 2-9 year olds). Distribution of these residents by age are categorised as follows:

- 14% are 10–17 year olds;
- 16% are 18–29 year olds;
- 55% are 30–49 year olds; and
- 15% are aged 50 and over.

According to Australian road rules, 2–11 year olds are permitted to ride on the footpath throughout the LGA. However, those aged 12 or over must ride on the road or a marked bike path such as a shared use path. It is for this reason that Council has excluded the 2–9 year old age group from our data analysis and why the focus of the Waverley Bike Plan is on cyclists aged 12 and over.

Due to limitations in the national cycling participation survey we have continued to include cyclists aged 10 and 11 in our data analysis. We understand that this will have a slight impact on the cycling statistics presented in this plan but will in no way alter the objectives of this plan that result from using these figures.

Low cycling rates among women

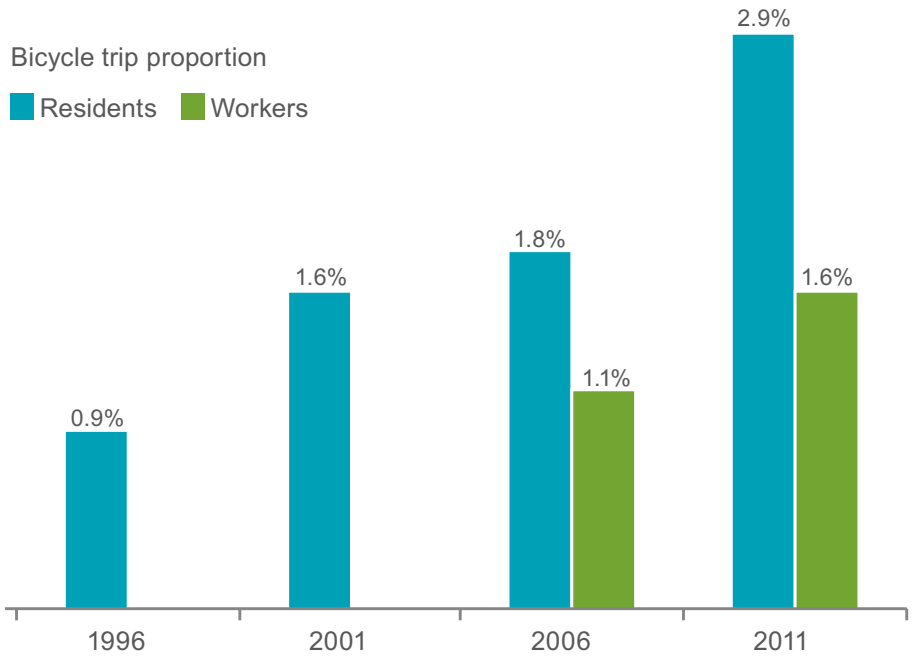
The national survey also shows that participation by women in cycling throughout the Waverley LGA is much lower than for men. Of Waverley cyclists in the 18 - 29 age group, 15% are male whereas 2% are female. Similarly in the 30–49 age group, 38% are male and 16% are female.

More people are commuting by bike

Bikes are increasingly being used to travel to work. Data from four censuses in August between 1996 and 2011 show that while only 87 residents used a bike for at least part of their journey to work in 1996, by 2011 that count had increased to 838. As a proportion of the residents travelling to work, this represented a three-fold increase from a base of 1% to 3%.

The number of people working in Waverley using a bike to travel to work has increased at a slower rate, from 101 in 1996 to 249 in 2011, representing 1.6% of the workers travelling to work on that day in 2011. See Figure 1 for detail.

Figure 1: Cycling to work mode share

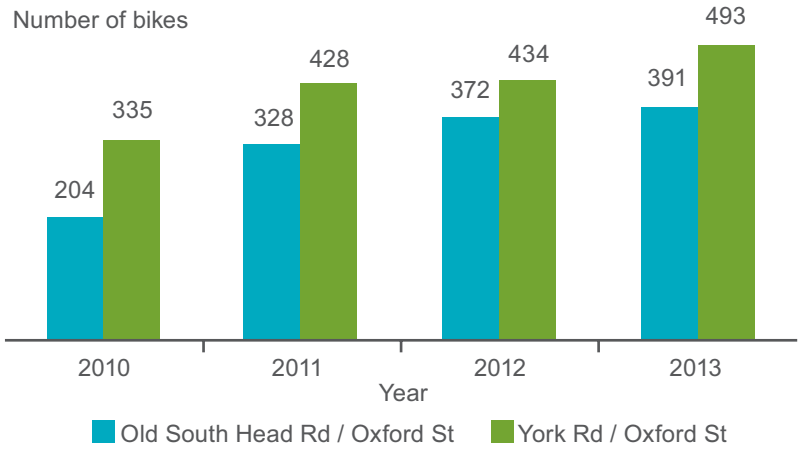


Source: ABS Census JTW, 1996, 2001, 2006, 2011

Oxford St is most popular route

The route through Bondi Junction CBD from Old South Head Road along Oxford St to York Road is the most popular route through Bondi Junction. Bike counts taken on the first Tuesday in March for 2010, 2011, 2012 and 2013 between 7am and 9am show an increase from 335 to 493 bike riders at the York Rd intersection and from 204 to 391 riders at Old South Head Rd. See Figure 2 for detail.

Figure 2: Oxford Street bike counts



Source: Super Tuesday 2010, 2011; Waverley Council counts 2012, 2013

Implications for Bicycle Strategy

An increasing number of residents of Waverley are riding their bikes. This is for recreation, fitness, commuting to work and other utility journeys. Increasing bike usage is despite the sometimes difficult terrain and lack of separated cycling facilities. Some reasons for this increasing demand are:

- The close proximity of Waverley residents to Bondi Junction and the Sydney CBD meaning that these short journeys can be efficiently done by bicycle.
- In a dense urban environment with limited parking and high traffic congestion, using a bike for transport is an attractive transport choice.
- In addition to the transport benefits riding a bike can keep you fit and healthy.

2. Bike Network

2.1 Bike planning in Waverley

Cycling in Waverley Council was initially planned through the 1982 Inner Sydney Bike Plan. Waverley Council Bike Plans were subsequently prepared in 1989 and 1999.

The 1999 Waverley Bike Plan was reviewed by GTA Consultants in 2012. This review identified that there was enormous potential for increased cycling for short to medium transport journeys and that the key strategy to achieve this was through separation of cycling facilities from motor vehicles and, wherever possible, from pedestrians.

Every street in the Waverley LGA is considered a cycling street but this Plan outlines an implementation plan for priority routes and secondary routes. Many of these routes already exist and have significant amounts of bicycle infrastructure which has been delivered since 1999.

Figures 3 and 4 show the priority and secondary routes in Waverley. A description of the priority routes is provided in Section 2.4 and proposed treatments in Tables 3 and 4 of Section 7.

Figure 3: Waverley Bicycle Network Map



Figure 4: Waverley Priority Bicycle Routes



2.2 Priority Routes

Route 1: Bondi Beach to Bondi Junction to CBD Routes

The Bondi Beach to Bondi Junction and Sydney CBD route is Waverley's highest priority route. Key sections of this route are to be improved to provide separation from high speed, high volume motor vehicles with minimal impact on traffic flow and parking.

A key focus of this route is the section from Bondi Junction to York Rd LGA boundary section. This route is proposed along Spring St, Denison St and Oxford St. Transport for NSW (TfNSW) has identified a bicycle route from Bondi Junction to Sydney CBD as a priority for upgrade. Upgrades proposed for the State bicycle route already include a planned shared use path along the Oxford St boundary of Centennial Park between Paddington Gates and York Rd. This Waverley Council section between York Rd and Bondi Junction CBD would be supported through State funding. Options proposed include a two-way bicycle path. This will be designed in conjunction with TfNSW and Roads and Maritime Services(RMS). Proposals in the Waverley Council Complete Streets project provide the starting point for this investigation. Developed proposals for this route will be subject to community consultation.

The primary route from Bondi Junction to Bondi Beach follows the existing route as outlined in the 1999 Bike Plan. Objectives of this plan include improved legibility and comprehension for bike riders and providing greater safety overall, particularly on the existing shared use paths where cyclists share footpaths with pedestrians.

There is an alternative route from Bondi Beach to Bondi Junction that uses Birriga Rd in the Woollahra Local Government Area (LGA) as well as sections of Route 2. The Birriga Rd route connects to the north side of Old South Head Rd at Victoria Rd. Improving the connectivity and safety of the shared use path (SUP) on the north side of Old South Head Rd will enhance its use and thereby balance loads between the SUPs on the north and south sides of Old South Head Rd. In this way, bikes are much more likely to travel in the direction of the morning and afternoon peak time traffic, leading to an increased percentage of single direction use and improved pedestrian safety.

Route 2: Bondi Beach to Rose Bay

This is a new priority route along Curlewis St, between Bondi Beach and Rose Bay Ferry Wharf in Woollahra LGA. It also provides an alternative connection from Bondi Beach to Bondi Junction via Birriga Rd.

Curlewis St offers a direct and relatively low trafficked route from North Bondi Beach for those requiring access to Woollahra or Bondi Junction. It also provides a direct connection to the commercial end of Curlewis. There is potential for this to be achieved through a two-way bicycle path or through a mixed traffic environment which should be considered as part of an urban revitalisation project including review of transport access. This Bike Plan recommends that an analysis of options and community consultation occur to determine the best treatment option for this route.

Route 3: Bondi Junction to Bronte Beach

This is an existing route which connects Bondi Junction to Bronte Beach. It provides a safe connection for riders going to Clovelly via the Randwick Council bike network. The route through Waverley park and Henrietta St is largely complete, subject to proposed changes that include the intersection of Henrietta St and Salisbury St. Treatment is still required for the Waverley St / Bondi Rd / Council Rd intersection and for the connection to Bondi Junction via Waverley St Mall, which will be delivered under this bike plan.

Route 4: Bondi Junction to UNSW/Randwick via Queens Park

This is an existing route linking Bondi Junction to the University of NSW (UNSW) and Randwick, as well as providing access to local trip generators including Centennial Park and Queens Park. This route uses existing bicycle infrastructure such as shoulder lanes on Bourke St and Queens Park Rd and extends the off road shared use path through Queens Park. The current priority is to fully signpost this route and collaborate with Randwick Council to complete a safe link to UNSW.

Route 5: Bronte Beach to Centennial Park

This east-west route, which connects these two trip generators, is suitable for more experienced cyclists as it requires mixed traffic use of Bronte Rd, utilises the existing shoulder lanes on Macpherson St and involves a hill climb from Bronte Beach. The current priority is to fully signpost this route and conduct further investigations with Randwick Council and Centennial Parklands to identify the best route that runs adjacent to or through Queens Park.

Route 6: Coastal Cycleway

The Waverley Coastal Cycleway is a recreational route for more experienced cyclists that follows the coastline and forms part of a future continuous coastal route from Sydney Harbour to Botany Bay. The current priority is to signpost an on-road route and implement safety improvements.

2.3 Secondary Routes

Details of secondary routes are identified on the Network Map and their implementation plan is included in Table 4. These routes provide links to priority routes, connections to trip generators and cross-LGA linkages. The majority of secondary routes are marked with mixed traffic stencils.



3. Wayfinding and signage

Wayfinding and directional signage will help users negotiate the bicycle network easily and efficiently. Directional signage will be installed as a priority action of this Plan.

Waverley Council will develop a signage plan to provide guidance on the installation of signs to enable safe and efficient travel by bicycle for a diverse range of trips within Waverley LGA and the surrounding regional network. The signage strategy will be based on the destination signage map in Figure 5.

Figure 5: Waverly Destination Signage Map



Figure 6 is an example of Directional Signage that will be rolled out in the Waverley LGA:

Figure 6: Directional Signage example

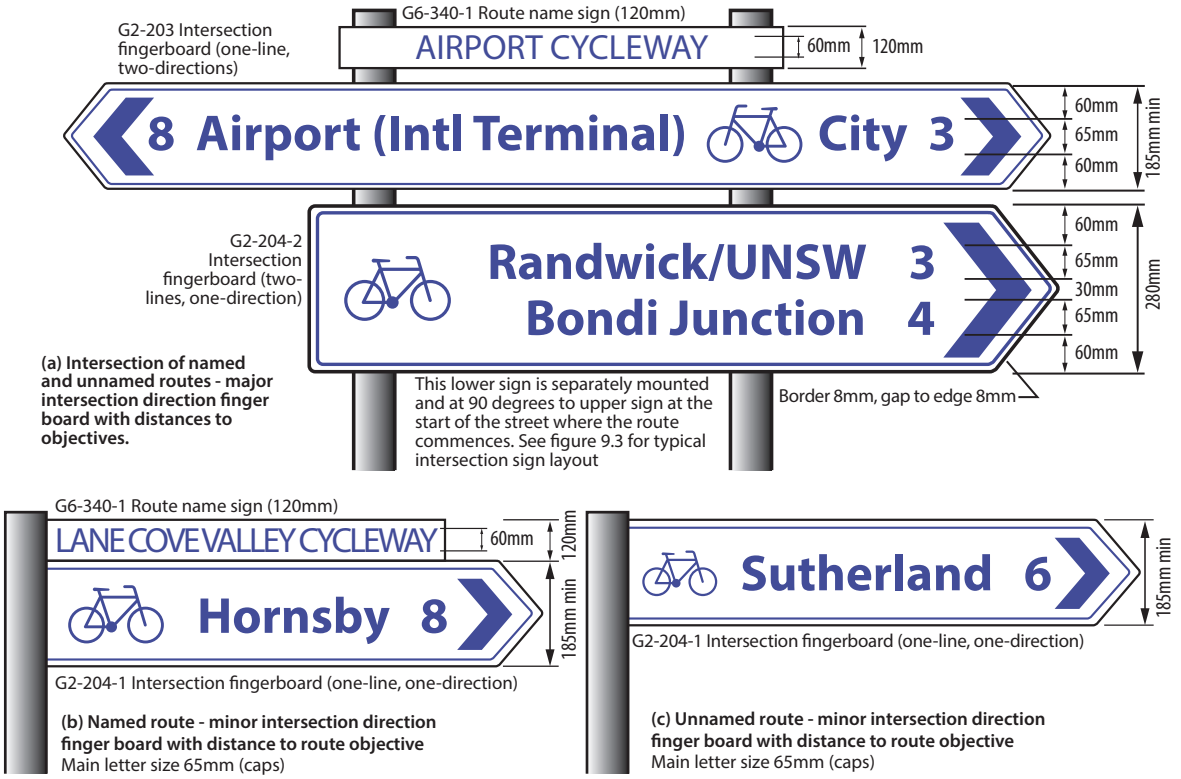
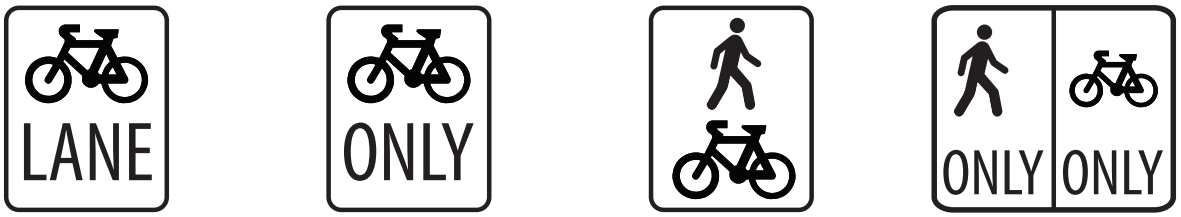


Figure 7 illustrates the type of signage that will be installed, as per the regulatory requirements for cycling infrastructure.

Figure 7: Regulatory Signage example



R7-1-4
Bicycle lane

R8-1
Bicycle path

R8-2
Shared path

R8-3
Separated path

Behavioural signage

The NSW Bicycle Guidelines provides guidance on behavioural signage which includes a set of four advisory signs. These signs are shown in Figure 8. These signs can be installed on existing poles in a street setting, or can be grouped on small posts or larger boards when used in parks as shown in Figure 9.

Figure 8: Illustration of type of behavioural signage recommended by RMS

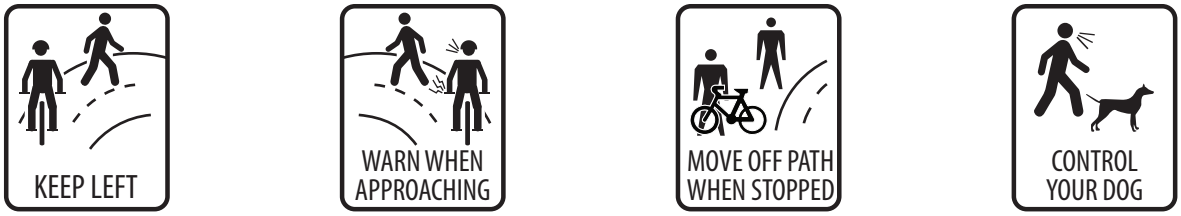
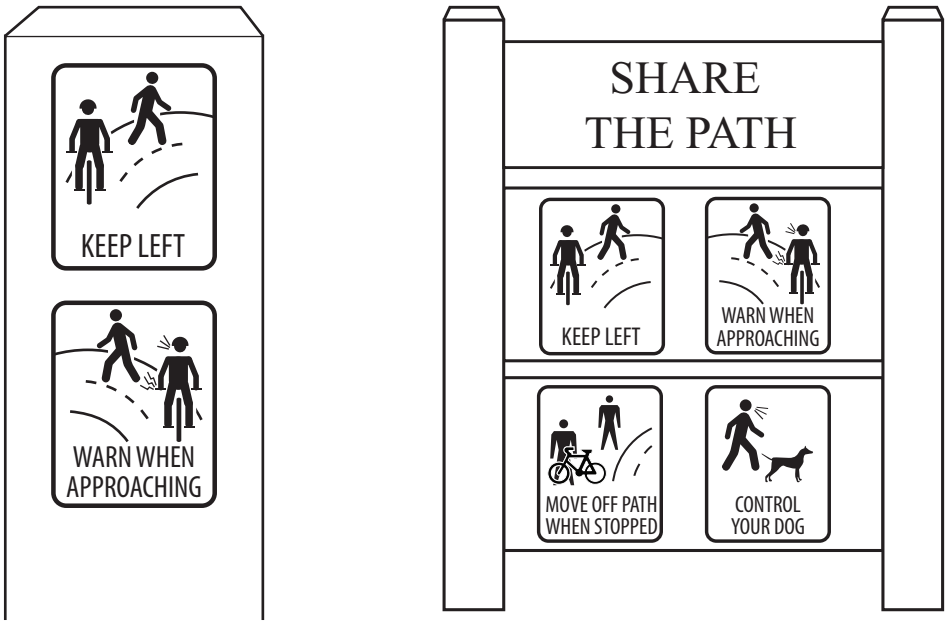


Figure 9: Examples of arrangement of behavioural signs to suit different situations.



Behavioural markings for Slow Zones has been recently trialled on kerbside pavement in Sydney. This could be used in selected locations to reinforce identify of shared path and improve behaviour

Figure 10: Example of kerbside pavement markings used in Sydney trials



4. Bicycle Parking

The provision of bicycle parking encourages cycling to local facilities and destinations. Bicycle parking should be provided in accordance with Australian Standard, Parking Facilities, Part 3: Bicycle Parking (AS 2890.3.1993)

Through the development process, Waverley Council works to ensure that bike parking is included in all new residential developments and high quality end of trip facilities are included in larger developments.

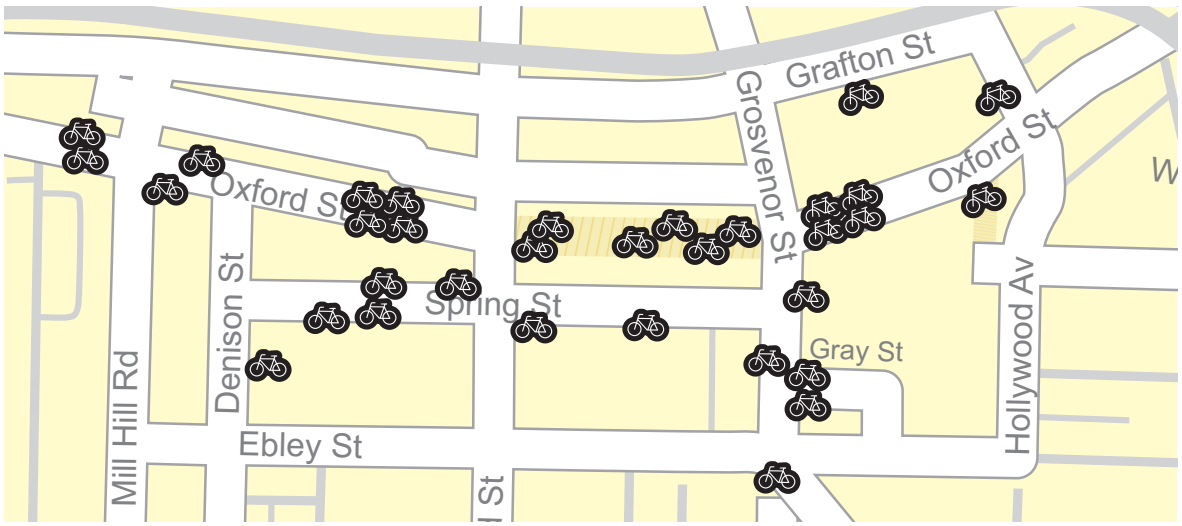
Waverley Council is regularly increasing the number and availability of on-street bike racks in the Waverley LGA. Council currently specifies U-Racks and rings as illustrated in Figure 11 to provide secure bike parking options. Bike parking has been provided at trip destinations such as Bondi Junction CBD, Bondi Road, Glenyar Rd, Hall St strip shopping centres, Bondi and Bronte Beaches and parks such as Waverley Park. Further parking is being rolled out as needs are identified and this Plan includes an annual budget allocation for increasing and upgrading bike parking. Requests for additional parking should be submitted to council via the Waverley Council website.

Figure 11: Bike Parking example



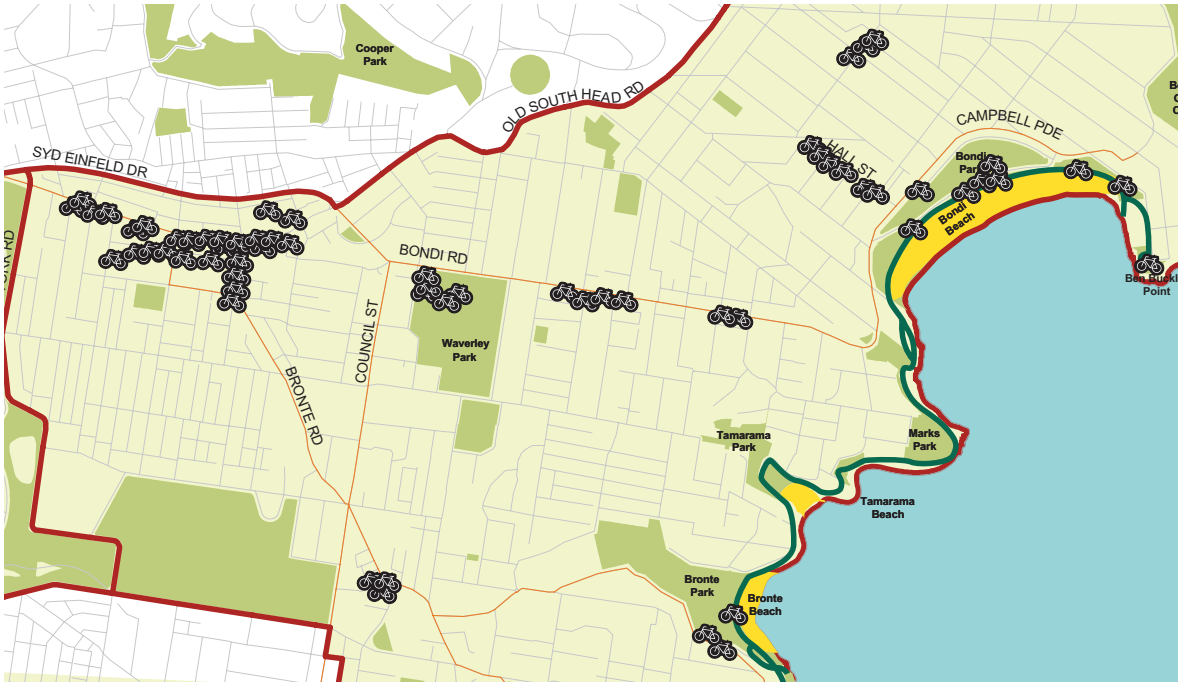
Bicycle parking is currently installed in the Bondi Junction CBD as shown in Figure 12.

Figure 12: Bondi Junction CBD bike parking locations



Bicycle parking is currently installed throughout the Waverley LGA as shown in Figure 13.

Figure 13: Waverley LGA bike parking locations



Waverley Council is planning to establish a bike parking compound at the Bondi Junction Interchange to cater for and encourage further use of the bicycle for short trips.

5. Encouragement and Promotion

Waverley Council encourages and promotes the use of the bicycle for transport through:

- production and distribution of local bicycle map brochure *Cycling in Waverley and Woollahra*
- regularly running educational cycle skills and bike maintenance workshops
- collaboration with local businesses and neighbouring councils
- work with schools to support and encourage active travel
- promoting bike proficiency workshops and safe travel to schools celebrating special cycle events such as Ride2Work Day, Bike Week and Ride2School Day
- developing Code of Conduct for shared use path users
- running shared use path behaviour campaign
- running Bike Safety events at shared use paths and shared zones such as Oxford St Mall.
- running share the road safely campaign
- targeting women in cycling promotional events

6. Description of infrastructure treatments

Table 1 describes and illustrates the various types of infrastructure treatments that will be used in implementing the Waverley Bike Plan.

Table 1: Type of infrastructure treatment

Shared use paths (in or not in the road reserve)

Shared use paths (SUP) can be located adjacent to a roadway or through a reserve. They are used by both cyclists and pedestrians, with linemarking and/or signage designating their legal status as a Shared use path and helping to encourage safe use by both user groups. Pedestrians have the right of way.



Example: Waverley Park, Bondi Junction

One-way pair bicycle paths (in the road reserve)

One-way bicycle paths are exclusive bicycle paths that provide for one-way bicycle traffic on each side of the road and are completely separate from parked cars, motor vehicle traffic and pedestrians. They are located in the road reserve but off carriageway in the road related area. They can also be located in parks and reserves, similar to shared use paths.



Example: Odense, Denmark

Two-way separated bicycle paths (in or not in the road reserve)

Two-way cycleways are exclusive Bicycle Paths that are completely separate from parked cars, motor vehicle traffic and pedestrians. They provide bi-directional travel on one side of the street off carriageway and in the road related area. They can also be located in parks and reserves.



Example: College Street, Sydney

Bicycle Lanes

Bicycle Lanes are on-road, one-way facilities which designate road space exclusively for cycling. The lanes must be legally signposted with bicycle lane signs. In built-up areas, bike-lanes often run adjacent to parked cars, a buffer zone is incorporated to reduce the hazard when drivers open their car doors. To increase driver awareness, there are usually bicycle pavement stencils and sometimes green coloured pavement.



Example: William Street , Sydney

Bus lanes

Bus lanes are legal instruments to control the use of a traffic lane by buses, taxis, hire cars, motor cycles and bicycles. Lanes may be time limited to say either or both AM and PM peak periods on weekdays or they may operate 24/7. To provide for a comfortable cycling environment that allows buses and bicycles to pass each other, widths in excess of 4.0m are preferred. Bus lanes are typically marked with red coloured pavement. On cycling routes, bicycle pavement markings may be used to emphasise the presence of cyclists.



Example: Oxford Street west of Taylor Square, City of Sydney

Contra-flow bicycle lanes

Contra-flow bicycle lanes are on-road lanes that are signed and marked to allow cycling in the opposite direction of an otherwise one-way street. Lanes are typically fitted with green paint to emphasise the presence of cyclists travelling in the opposite direction.



Example: Martins Ave, Henrietta Street, Lamrock Ave Bondi

Head Start Storage Areas or 'bike boxes'

Bicycle boxes are line-marked bicycle storage facilities provided at intersections. These facilities are used at signalised intersections, usually in conjunction with a signal for cyclists via a bicycle lantern. The 'bike box' allows a cyclist to wait for a traffic signal to change from the start of the travel lane. When the signal changes, cyclists have a head start to prepare to ride from a stopped position.



Example: Curlewis Street and Glenayr Ave, Bondi

Shared Road Shoulders

Road Shoulders are one-way facilities which are shared between parked cars and cyclists. To encourage good parking discipline, it is recommended to add a supplementary broken line, but there is no formal buffer zone to guard from potential hazards by opening car doors. To increase driver awareness, there are usually bicycle pavement stencils and sometimes green coloured pavement.



Example: Victoria Street

Mixed-traffic

Roads which are linemarked and/or signed for mixed use by motor vehicles and bicycles. Mixed-traffic facilities are suitable for roads with low traffic volumes and speeds, such as quiet residential streets.



Example: Dalley Street, Bondi Junction

Hybrid shared road shoulders & mixed-traffic

Road shoulder treatments are used in the uphill direction (upper right circle) where the area is shared by parked vehicles and cyclists. In a downhill direction roads are linemarked and/ or signed for mixed use by motor vehicles and bicycles (lower left circle).

Given the constrained road width and topography of Waverley LGA, such directional treatments are appropriate.



Example: Mount Street, Coogee

Shared zones

Shared zones are special mixed-traffic environments. Zones are legally controlled by signs and markings that restrict the speed limit to 10km/h, restrict parking to marked spaces and afford priority to pedestrians. Typically the road environment is designed with special pavements, speed controls and landscaping, with little or distinguishable footpaths.



Example: Wells Street, Redfern, City of Sydney

Right Turn Lane

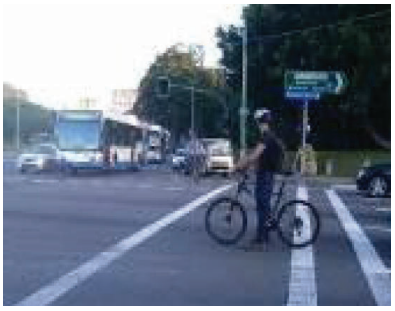
The turn lane assists cyclists making a right turn. Physical separation reduces the likelihood of a vehicle incursion into the bicycle turn lane. Cyclists make the turn from the protected lane when there is a gap in the traffic.



Example: Bronte Road

General traffic

No specific provisions are made for cyclists. Although most streets are suitable for cycling others are unsafe due to high traffic volumes and speeds. Where an alternate route is not feasible / easily accessible, cyclists will bicycle on streets with no infrastructure.



Example: Anzac Parade and Allison Road, Randwick

Roundabouts

Separate facilities for cyclists are not recommended at roundabouts, unless they are off road. Cyclists are safer to ride with traffic at roundabouts, rather than a left hand curved lane. Pavement marking at entrance and though a roundabout should indicate where to ride. Where there is a bike lane prior to the roundabout, merge pavement marking should be installed at least 50 metres prior to the roundabout. Watch for cyclists signage.



Example: Blair St and Mitchell St roundabout

Source: Waverley Council Bike Plan Review, GTA Consultants

6.1 Shared Use Paths (SUP)

Shared use paths are the most common off-road provision for cyclists in Australia. In principle, they are suitable for most kinds of path users provided they are properly designed, constructed and maintained. Shared use paths are, by definition, used by both pedestrians and cyclists and conflicts can arise from this shared use. NSW and Australian evidence supports the view that the actual risk of an accident and resultant injury due to a pedestrian and cyclist colliding is low. Nevertheless perception of risk is quite high and for the frail and elderly the fear of conflict can itself result in an accident. The actual risk also increases as the volume of both pedestrians and cyclists increases, although this can be ameliorated where most pedestrian and cyclists movements are in the same direction, such as when pedestrians in the morning are walking towards a train station and the evening away from a train station.

Shared use paths are considered only where there is no practical safe and direct alternative This Bike Plan proposes a number of strategies to address the potential for pedestrian / cyclist conflict:

1. Infrastructure
2. Code of Conduct for shared use path users
3. Shared use path behaviour campaign
4. Bike Safety Events
5. Enforcement.

Infrastructure

Shared use paths to be widened to Austroads standard where appropriate, pavement standardised with shared use path markings and legislated and behavioural signage installed. Examples of legislated and behavioural signage is shown in Chapter 3, Wayfinding and Signage. This aims to improve the behaviour of cyclists as well as demonstrate to pedestrians that cyclists are able to ride in some locations.

Code of Conduct for shared use path users

Develop a code of conduct for use of all Waverley shared use paths and shared zones. The code of conduct will focus on slow cycling, giving space to other path users and use of bells. The code of conduct will also clarify the multi-purpose use of these paths for pedestrians and encourage respectful behaviour by all path users.

Shared use path behaviour campaign

Council to actively promote improved behaviour on shared use paths with safety events on shared use paths, brochures, posters, input into local media, working with bike groups, bike shops and community groups.

Bike Safety Events

On site events are already held in Oxford St Mall to increase compliance with speed limit and improve behaviour. These are to be upgraded to include compliance with code of conduct and extended to other shared use path locations in the Waverley LGA.

Enforcement

NSW Police have the sole legislative responsibility to enforce traffic regulations such as dangerous cycling and ensuring adequate safety equipment on bikes and cyclists. Council will continue to work with NSW Police to target shared use paths where regular problems are identified. Enforcement will be done to support the proposed education and behaviour programs performed by Council staff.

Table 2: Proposed shared use path (SUP) and shared zone locations and infrastructure treatment

No.	Location	Priority Route	Existing and Proposed Infrastructure Treatment
1	Oxford St Mall	1	Existing signed shared zone.
2	Old South Head Road (Bondi Rd to Victoria Rd)	1	Existing SUP on the south side of Old South Head Rd to be upgraded with new pavement markings and regulatory signage. Work with Woollahra Council to install kerb ramps across the exit of Syd Einfeld Drive at Old South Head Rd so that there is access to the SUP on the north side of Old South Head Road. Behavioural signage to be installed in problem areas.
3	Waverley St Mall	3	Existing unsigned shared zone. New shared zone signage will be installed.
4	Waverley Park	3	Existing marked and signposted SUP to be upgraded as required. Behaviour signage required.
5	Queens Park	4	Existing marked and signposted SUP through Queens Park and along Queens Park Rd to be extended to Bourke St.
6	Bronte Park	6	Pathway to be marked and signposted as SUP. Behaviour signage required.
7	Martins Lane	1	Existing marked and signposted SUP to be upgraded as required.
8	Council St (Dalley St to Waverley St)	3	Existing connection to be marked and signposted as SUP.

7. Implementation plan

The following sections detail the proposed infrastructure treatments to implement and improve the routes identified in the Network Map. Table 3 lists the treatments for priority routes and Table 4 those for the secondary routes.

The total cost of these treatments is estimated at $4,996,117. It is envisaged that these routes would be implemented over a 5-year timeframe, with a large proportion of the funding obtained from external sources. This would be complemented by a regular annual council budget for implementation of the Bike Plan. Waverley Council envisages that a proportion of priority Route 1 could be funded under NSW state priority bike plan funding.

Waverley Council would also seek other external funding opportunities in conjunction with Woollahra and Randwick Councils to implement the Coastal Cycleway.

The first priority will be to roll out destination and regulatory signage for all of the priority routes.

Table 3: Priority route treatment

Route Description	Section	Treatment	Indicative cost
		All priority routes to have directional signage installed. It is expected that this will involve at least 1 sign in each direction at around 100m, but varies considerably depending on the route.	$8,000 - $19,000/ km
ROUTE 1 – BONDI BEACH TO CITY VIA BONDI JUNCTION AND MARTINS AVE (3.63KM)			
This is a key route linking Bondi Beach to Bondi Junction and then to the City. This is an existing route. Works proposed aim to significantly improve safety and connectivity through Bondi Junction and usability across the entire route. The section from Spring St to Oxford St / York St has been costed using a two-way bicycle path. Additional design and surveying is required to confirm feasibility and detailed costs.	Entire route	Directional signage and stenciling along entire route at intervals <200m as per signage plan	$35,000
*There is an alternative to this route from North Bondi via Birriga Rd which reconnects at Old South Head Rd at Bon Accord Ave.	Campbell Pde	Stenciling to allow SUP at Campbell Pde and allow hook turn to Lamrock Ave	$3,200
	Lamrock Ave	As existing, contraflow bike lane	
	Cox Ave, Barracluff Ave	Mixed traffic stencils	$5,600
	Francis St	Mixed traffic stencils	$1,400
	Wellington St	Mixed traffic stencils and uphill shoulder bike lane	$1,700
	Edward and Wellington	Hook turn for cyclists	$4,150
	Martins Ave (Simpson St to Ocean St)	Two way bicycle access with traffic calming measures to reduce vehicular speed	$9,600
	Martins Ave (Ocean St to Penkivil)	Two way bicycle access with traffic calming measures (eg. Shared zone) to reduce vehicular speed	$13,500
	Watkins St	Mixed traffic stencils in middle of travel lane	$450
	Flood St and Watkins St	Turning box and stencilling	$1,300

Route Description	Section	Treatment	Indicative cost
	Flood St and Bon Accord Ave	Turning arrow stencil	$250
	Bon Accord Ave	Mixed traffic bike stencils moved from parking lane to travel lane	$2,800
	OSHR (Bon Accord to Bondi Rd) south side	Shared user path stenciling and bicycle behaviour signage	$27,000
	OSHR (Bon Accord to Bondi Rd) south side	Rationalisation and removal of poles and footpath hazards	$4,000
	OSHR and Paul St	Raised threshold for pedestrians and bikes at crossing	$18,000
	OSHR east of Bondi Rd (north side) *note in Woollahra LGA	New bike ramp to allow bikes access to shared user path at intersection	$2,500
	OSHR/Bondi Rd/Oxford St intersection	Intersection upgrade with bike and pedestrian lanterns on both east to west crossing legs	$66,246
	Oxford St (Bondi Rd to Adelaide St)	1.4m (minimum) bike shoulder lane adjacent to gutter. Leveling and aligbnment of footpath.	$15,700
	Adelaide St / Oxford St intersection	Installation of bicycle box (westbound) at intersection / signalised intersection improvements	$12,000
	Oxford St (Adelaide St to Grosvenor St)	Mixed traffic stencils and 30km/h speed limit	$7,000
	Oxford St (Adelaide St to Grosvenor St)	Bicycles excepted signs installed to permit bike use x 4	$1,000
	Oxford St and Bronte Rd intersection	Installation of bike lanterns to legalise bicycle use	$30,000
	Oxford St Mall ramps	Ramps to be regraded to allow eases of bike movement in the centre of the Mall (both east and west ends of Mall)	$1,500

Route Description	Section	Treatment	Indicative cost
	Oxford St (Newland St to York Rd)	Mixed traffic stencils (work to be done as an interim action until two-way bicycle paths are installed)	$13,000
	Oxford St (between Newlands St and Denison St)	Mixed traffic stencils	$2,800
	Bronte Rd (between Spring and Oxford St)	Mixed traffic stencils (note this work is part of the BJ to UNSW route)	
	Spring St East	Two-way bicycle path as outlined in 'Complete Streets' detail	$475,000
	Newland St and Spring St	Intersection upgrade including installation of bicycle lanterns	$65,000
	Spring St west	Two-way bicycle path	$280,000
	Denison St (between Spring St and Oxford St	Two-way bicycle path on eastern side of road and intersection improvements	$110,000
	Oxford St (between Denison St and Nelson St)	Two-way bicycle path on southern side of Oxford St	$1,650,000
	Oxford St (Nelson St to York Rd)	Shared user path on southern side of road. Requires redesign of current configuration and realignment of bus stop adjacent to bus depot	$90,000
	York Rd / Oxford St intersection	Install bicycle lanterns on southern leg of intersection	$30,000
	Oxford St (York Rd to Centennial Park gates) *note this is outside of the Waverley LGA	Shared user path, concrete and stenciling. Requires realignment of bus stop and possible kerb and gutter changes	$145,000
		Raised intersection thresholds x 6	$195,000
			$3,319,696

Route Description	Section	Treatment	Indicative cost
ROUTE 2 – BONDI BEACH TO ROSE BAY (3.03km*)			
This route links Bondi Beach to the Rose Bay ferry wharf via O'Sullivan Rd. While a two-way bicycle path has potential this is subject to a full feasibility analysis including examination of alternative treatment options and community consultation. Any plans should also be consistent with further urban design work for the commercial end of Curlewis St. This route also connects to Birriga Rd for cyclists riding to Bondi Junction. **only 840m in Waverley LGA*	Entire route at intersections and intervals <200m	Directional signage and stenciling along entire route at intervals <200m	$24,000
	Curlewis St between Campbell Pde and Old South Head Rd	Conduct detailed feasibility analsyis and community consultation for preferred treatment on Curlewis St between Campbell Pde and OSHR. Two-way bicycle path, mixed traffic 40km/h zone, or shoulder lanes to be considered as treatments	$55,000
	Birriga/OSHR/O'Sullivan	Intersection upgrade to allow bike movement between O'Sullivan to Curlewis; Curlewis St and Birriga Rd.	$182,000
			$261,000
ROUTE 3 – BRONTE BEACH TO BONDI JUNCTION (3.04KM)			
This is an existing route which connects Bondi Junction to Bronte Beach. It also provides a safe route for riders going to Clovelly via the Randwick Council network.	Entire route at intersections and intervals <200m	Directional signage and stenciling along entire route at intervals <200m as per signage plan	$21,500
	Bronte Rd	Mixed traffic stencils	$1,700
	Gipps St	Mixed traffic stencils	$750
	Waverley St	Mixed traffic stencils marked in travel lane. Existing requires remarking	$2,000
	Henrietta St	Contraflow bike lane have croassable concrete median installed to provide additional separation	$42,000

Route Description	Section	Treatment	Indicative cost
	Henrietta St and Salisbury St	Traffic calming installed to improve bike safety	$2,000
	Council St between Dalley St and Bondi Rd	Shared use path stencils on existing footpath. Widen SUP and kerb access to Dalley St	$240
	Bondi Rd and Council St	Intersection upgrade at Council and Bondi Rd to facilitate right hand bike turn	$60,000
	Waverley St (Bondi Rd to Botany St)	Marked westbound shoulder lane	$1,000
	Waverley St (Westfield exit)	Traffic calming/cut outs installed to improve bike / pedestrian safety	$14,000
	Waverley St Mall	Install signage for shared use path	$1,600
	Waverley St Mall and Oxford St	Install ramp	$1,500
			$148,290

ROUTE 4 – BONDI JUNCTION TO UNSW VIA QUEENS PARK (1.64KM)

This is an existing route linking Bondi Junction to UNSW/Randwick. Works proposed aim to improve the route and rectify issues. This route provides a safe alternative to high traffic volume streets (eg. Bronte Rd and Frenchmans Rd)	Bronte Rd (between Grosvenor and Ebley St)	Mixed traffic stencils	$2,000
	Entire route	Directional signage (some already existing) and directional stencils	$7,000
	Brisbane St	Mixed traffic stencils	$4,000
	Intersection Bronte Rd and Ebley St	Bike lanterns or right hand turning bay installed subject to consultation with RMS	$40,000
	Bourke Rd	Reinsitate line marking	$10,000
	Queens Park	Extension of SUP from Bourke St to link to existing path	$55,000
			$118,000

Route Description	Section	Treatment	Indicative cost
ROUTE 5 – BRONTE BEACH TO CENTENNIAL PARK (2.08KM)			
This route is a popular commuter route and connects Bronte to Centennial Park (and the City) via Macpherson St. It is currently partially complete.	Entire route	Directional signage and stenciling along entire route at intervals <200m as per signage plan Some existing)	$17,000
	Bronte cutting	Shared zone signage . *No cost as to be completed as part of Bronte Cutting upgrade.*	
	Bronte Rd (Bronte Beach to Macpherson St)	Mixed traffic stencils	$2,300
	Macpherson St (from Cutting to east of St Thomas St)	Widen existing up hill bike lane	$4,300
	Macpherson St (St Thomas St to Arden St)	Shoulder lanes	Existing
	Macpherson St (Arden St to Leichhardt St)	Mixed traffic stencils and marked village slow speed zone eg texture changes	$6,400
	Macpherson St (Leichhardt to Carrington Rd)	Mixed traffic stencils	$15,990
	Darley Rd / Carrington Rd intersection	Upgrade signalised intersection	$68,000
	Darley Rd (between York Rd and Macpherson St) *in Randwick Council LGA	Liaise with Randwick Council/Centnnial Parklands on options for this section including uphill shoulder lane or off road shared use path in Queens Park.	uncosted
	Upgrade of Darley Rd / York Rd intersection and entry to CP gates	Liaise with Randwick Council/Centnnial Parklands/RMS on options for this.	uncosted
			$113,990

Route Description	Section	Treatment	Indicative cost
ROUTE 6 – COASTAL CYCLEWAY (9.9KM)			
A hilly route suited to competent riders. This is currently a popular recreational route with great views, etc. Council does not propose major bike infrastructure but does seek to sign this and improve some intersections. This route is identified to link with the Randwick and Woollahra Coastal routes.		Directional signage along whole of route at decision points and intersections	$112,000
*Due to the topography of this route it is suited to experienced riders. Signage can be installed initially before any traffic changes or bike specific tratement occurs.		Mixed traffic stencils and cycles lanes marked at intersections (detailed as below)	$462,800
	Military Rd, Peel St, Lancaster Rd	Mixed traffic stencils and cycles lanes marked at intersections	
	Portland St, Wallangra Rd	Mixed traffic stencils and cycles lanes marked at intersections	
	Military Rd	Mixed stencils with green cycle lanes marked at intersections	
	Campbell Pde (North Bondi to Lamrock Ave)	As existing, mixed traffic and shoulder lanes	
	Campbell Pde (Lamrock Ave to Sandridge St)	Mixed traffic. Green lane marked at intersection of Notts Ave (southbound) and Francis St (southbound)	
	Sandridge St, Alexander St	Mixed traffic stencils with green lanes marked at intersections	
	Gaerloch Ave and Dellview St	Install centre lines	
	Marine Dr	Remove double yellow lines with broken centre line on Marine Dr to allow passing of cyclists.	$3,700
	Bronte Marine Dr and Hewlett St	Adjust traffic island and install give way sign to allow northbound contraflow lane	$25,000
	Bronte Marine Dr (Hewlett St to Bayview St)	Install northbound contraflow lane	$29,000

Route Description	Section	Treatment	Indicative cost
	Bronte Park	Bike give way to pedestrian signage and shared use path signage in north south crossing of Bronte Park	$6,800
	Bronte Rd (Bronte Beach to Macpherson St)	Mixed traffic stencils *completed as part of Bronte to Centennial Park route	
	St Thomas St, Chesterfield Pde, Maroo St	Mixed traffic stencils	$2,800
			$642,100
	Total		**$4,603,076**

(excludes maintenance and design)

***Note: costings for upgrades to signalised intersections are based on best available figures but are subject to significant change.**

Table 4: Secondary route treatment

Route Description	Section	Treatment	Indicative cost
A – BONDI TO VAUCLUSE/WATSONS BAY (2.6KM)			
Important regional link that provides a link between Watsons Bay to priority routes. This route is shared with Woollahra Council.	Old South Head Rd (north of Newcastle St)	Mixed traffic stencils and directional signage on Old South Head Rd north of Newcastle St *Note: Woollahra Council planning off road path on the western side of OSHR between Newcastle St and Birriga Rd. This will connect to Coastal Cycleway at Diamond Bay.	$56,960
B– DOVER HEIGHTS (RODNEY RESERVE) TO ROSE BAY EAST WEST LINK (1.14KM)			
Link from Rose Bay shopping village to Dover Heights. Links with WC Bike route.	Beaumont St Bangalla St Dover Rd	Mixed traffic stencils	$15,960
C – BONDI BEACH TO NORTH BONDI SCHOOLS (1.31KM)			
This route intersects with existing routes to link Bondi Beach Public School and Rose Bay Secondary to the bike network	Warners Ave	Mixed traffic stencils	$7,560
	Mitchell St	Mixed traffic stencils	$15,680
	Hardy St	Mixed traffic stencils	$7,000
	Nancy St (Rose Bay Secondary link)	Mixed traffic stencils	$6,500
D – NORTH BONDI TO OSHR CONNECTION (1.1KM)			
	Murriverie Rd	Mixed traffic stencils	$4,200
E – NORTH BONDI TO BELLEVUE HILL (1.5KM)			
Link from North Bondi to priority routes	Blair St	(existing) mixed traffic with painted lane marking at intersections	existing
F – NORTH BONDI TO BONDI BEACH (0.4KM)			
Connection to Bondi Beach priority routes	Wairoa Ave	(existing) shoulder lanes with painted lane marking at intersections	existing
	Wairoa Ave (Blair St to Muriverrie Rd)	Mixed traffic lanes	$3,200

Route Description	Section	Treatment	Indicative cost
G – NORTH BONDI TO SOUTH BONDI (0.5KM)			
Provides connection to Bondi Beach village centres and Bondi to BJ priority routes	Glenayr Ave	(existing) marked shoulder bike lanes	existing
H – BONDI JUNCTION TO DOUBLE BAY (0.3KM)			
Connects to Woollahra Council connection to Double Bay	Grosvenor St	Mixed traffic stencils	$4,480
	Adelaide St	Mixed traffic stencils	$3,640
I – BONDI JUNCTION TO PADDINGTON (0.11KM)			
Existing route to Paddington and Woollahra. Provides alternative route to the city via Five Ways	Nelson St to Syd Einfeld Overpass	Shared use path signage	$1,400
		Mixed traffic stencils	$2,520
		Liaise with RMS regarding advanced stop box at intersection (on Nelson St)	
J – BONDI BEACH ROUTE LINK TO WAVERLEY PARK (0.5KM)			
	Flood St	Mixed traffic. Shoulder lane leading up to intersection. Stopping box in southbound centre lane, ramp	$12,400
	Reservoir Path	Existing path	
	Waverley Park	Shared use path stencils on pathways	$3,200
K – ROSE BAY TO WAVERLEY LINK (0.64KM)			
	Paul St	Mixed traffic along Paul St	$15,680
	Paul St / Bondi Rd	Install ramp and install bike lanterns at Bondi Rd singnalised crossing	$34,000

Route Description	Section	Treatment	Indicative cost
	Paul St / OSHR	Island upgrade for turning at OSHR and Paul St	$1,100
L – VICTORIA RD TO BON ACCORD AVE (0.1KM)			
This provides a short 'missing' link between Woollahra and Waverley priority routes where there are existing shared use paths.	OSHR (between Victoria Rd and Bon Accord Ave)	Upgrade ramp at Victoria Rd and OLSHR	$2,500
		Install shared use path behavioural signage	
		Widen footpath on south side OSHR from Victoria Rd to Bon Accord Ave and install shared use path signage / stencils	$43,000
M – NORTH SOUTH LINK VIA BONDI RD (0.85KM)			
Provides a direct connection between Birrell St and Martins Ave	Ocean St	Mixed traffic stencils	$23,800
N – TAMARAMA TO CENTENNIAL PARK (3.74KM)			
This completes a partially existing route to connect Tamarama Beach to Centennial Park.	Birrell St (between York Rd and Newland St)	Mixed traffic stencils, adjust lin marking	$14,560
	Birrell St (between Bronte Rd and Newland St)	Upgrade existing bicycle shoulder lanes	$13,580
	Birrell St (between Bronte Rd to Carrington Rd)	Shoulder bike lane on uphill sections and mixed traffic on downhill sections and lanes painted at intersections. Requires slight adjustment of centre line.	$4,200
	Birrell St (between Carrington Rd and Tamarama St	Mixed traffic stencils	$30,800
	Birrell St (between Carrington Rd and Tamarama St	Green lane markings at intersections X 6	$6,240
	Tamarama St, Farellys Ave	Mixed traffic stencils	$5,600

Route Description	Section	Treatment	Indicative cost
	Fletcher St (between Farellys Ave and Sandridge St)	Mixed traffic stencils	$13,440
O – BRONTE TO BONDI BEACH VIA BONDI RD (0.8KM)			
Hewlett St and Alfred St		Mixed traffic stencils with green lanes marked at intersections	$21,840
P – FERN ST TO MACPHERSON ST (0.2KM)			
*note this route is shared with RCC	Albion St (between Macpherson and Fern St)	Mixed traffic stencils with lanes painted at intersections	$3,080
Q – MACPHERSON ST TO CLOVELLY BEACH (1.1KM)			
This completes the treatment to provide the Clovelly Beach to Bondi Junction connection.	Directional signage	Liaise with RCC on implementation	$4,500
	Leichhardt St and Varna St	Mixed traffc stencils linking Clovelly to BJ route	$7,420
	Bronte Rd (between Leichhardt St and Henrietta St)	Mixed traffc stencils linking Clovelly to BJ route	Existing
R – BRONTE BEACH TO QUEENS PARK VIA CHARING CROSS (0.9KM)			
This route intersects with the Bondi Junction to UNSW route along Queens Park Rd	Existing route along Victoria Rd and Queens Park Rd	Shoulder lanes	Existing
	Carrington/Bronte/Victoria St	Install stopping box at intersection	$3,000
	Queens Park Rd	Mixed traffic stencils	Existing
	Total		**$393,040**
			Excludes maintenance and design

