City of Ryde

RYDE BICYCLE ACTION PLAN

2022 – 2030

Footbridge, North Ryde.

ACKNOWLEDGMENTS

Publication and contact details

For more information on the Bicycle Action Plan 2022 – 2030 at the City of Ryde go to **www.ryde.nsw.gov.au/bicyclestrategy** or contact
City of Ryde Customer Service Centre 1 Pope Street, Ryde NSW 2112.
Phone (02) 9952 8222 or email cityofryde@ryde.nsw.gov.au.

Copyright Notice

CONTENTS

1 INTRODUCTION

1 INTRODUCTION

1.1 Purpose

This Action Plan sets out the infrastructure strategy to progress the 2022 bicycle plan to meet the needs of current and future planned communities living and working in Ryde Council.

This involves setting out the recommended bicycle treatment types and facilities; and offering a strategy to deliver new infrastructure and upgrades across the local government area. The delivery of projects is subject to funding availability.

1.2 Bicycle Plan 2014

The current bicycle plan dated 2014 is illustrated in Figure 2. This network is comprised of Regional Routes, Local Routes and Local Links.

The regional network comprises twelve regional routes (RR) led and funded by Council, and a principal bicycle network (PBN) which is partially funded by Transport for NSW. Together the regional network aims to provide high-quality connections to cities, strategic centres, and key local centres.

Macquarie Park is the only strategic centre located in the Council area. The regional network connects to and expands from Macquarie Park across the Ryde Local Government Area.

The Local Route Network (LR) provides connectivity from the main regional routes to key local centres and places. To extend this network beyond the municipal boundaries requires a coordinating effort and funding with neighbouring Councils.

The Local Links (LL) are short connections which form the first or last half kilometre to a destination. The prime purpose of these links is to maximise coherence and access to bicycle routes. Links also form alternative or parallel routes which increase network density and expand the choice of routes available to people cycling.

Shared user path, Pittwater Road.

1 INTRODUCTION

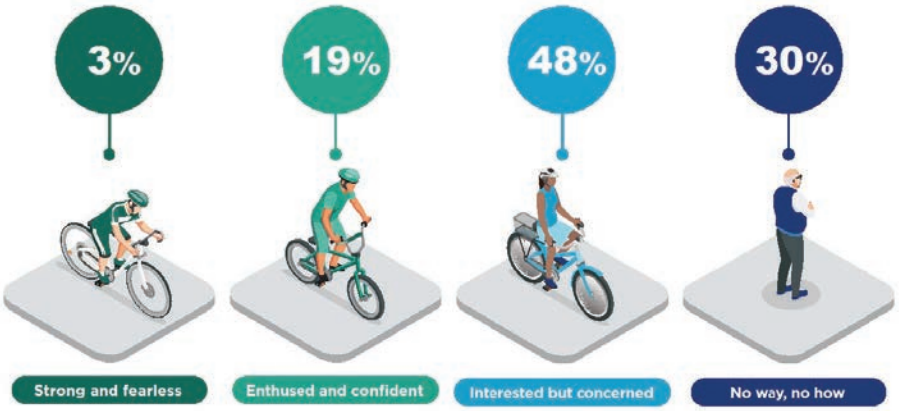
1.3 Bicycle Plan 2022

The bicycle strategy proposes to upgrade and expand the 2014 bicycle network. The overarching goal is to plan and deliver a bicycle network which causes low levels of traffic stress to the rider.

The theory of change assumes a low stress environment will improve the perception of cycling safety. If more people perceived the bicycle network as safe, more people will choose to ride, causing a change in transport choice.

Today, the bicycle network presents a relatively high level of bicycle stress with most of the bicycle network offering a traffic stress level of 3. People observed riding tend to fall into the Strong and Fearless and Enthused and Confident rider types which represent 22 percent of the population (see Figure 1).

The key population targeted to start riding, or to ride more is the interested but concerned who represent an additional 48 percent of the population. Subsequently the 2022 Bicycle Strategy and Action Plan suggests bicycle treatment types which offer low traffic stress environments (stress level 1 and stress level 2).



(Figure 1)
The four types of bicycle riders.
Source: TfNSW Bicycle Design Toolbox, 2020.

The 2022 Bicycle Plan builds on the previous plan by:

- Expanding the regional route network with high quality Centre-to-Centre routes to connect all towns and villages in the City of Ryde (see Figure 4)
- Increasing access to bicycle routes with new local links
- Improving the perception of safety by upgrading links and intersections to achieve a traffic stress level 1 or level 2 environment
- Planning an easy-to-understand bicycle network with a cohesive wayfinding system.

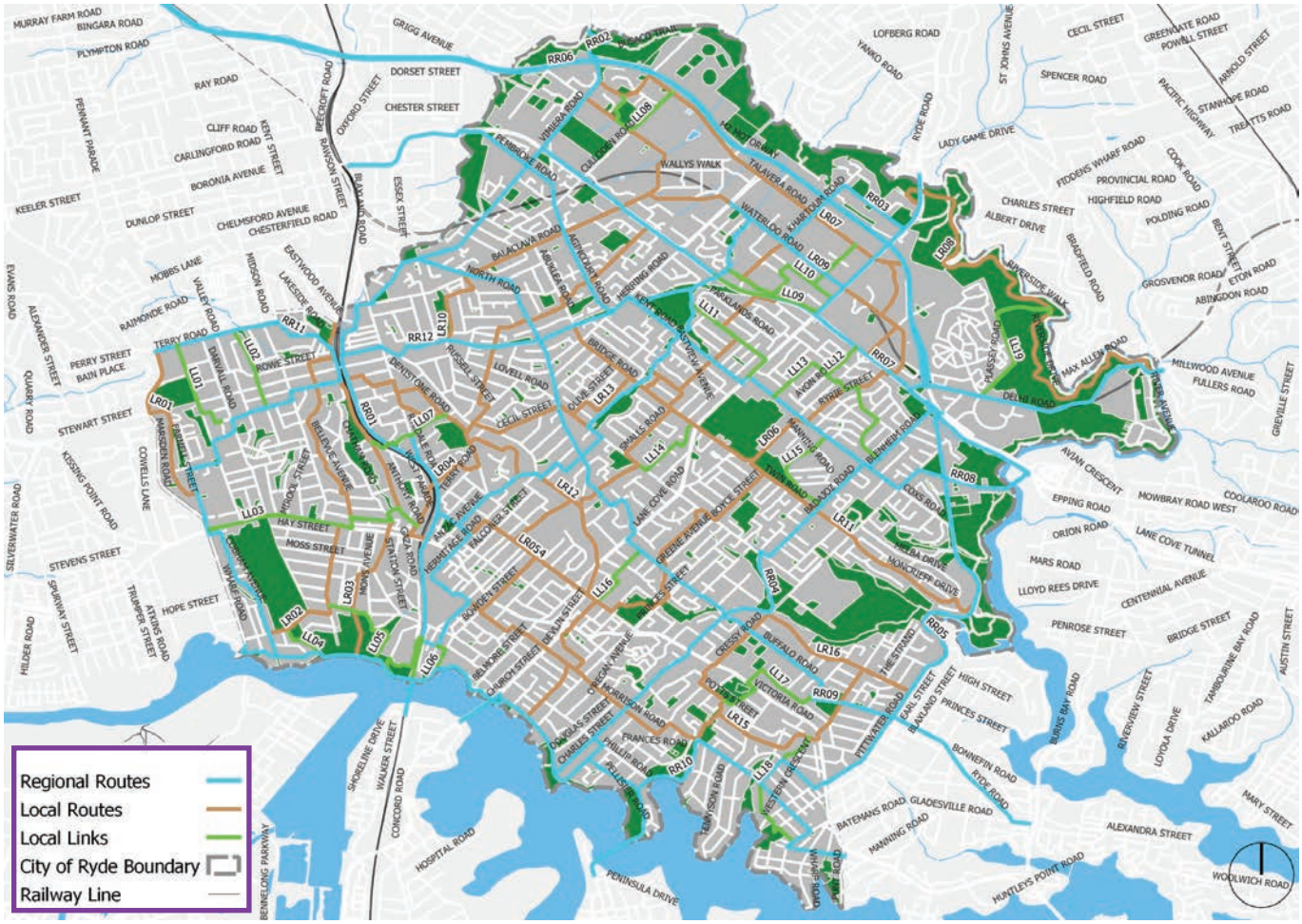
The overall 2022 bicycle network plan is illustrated in Figure 2.

1 INTRODUCTION

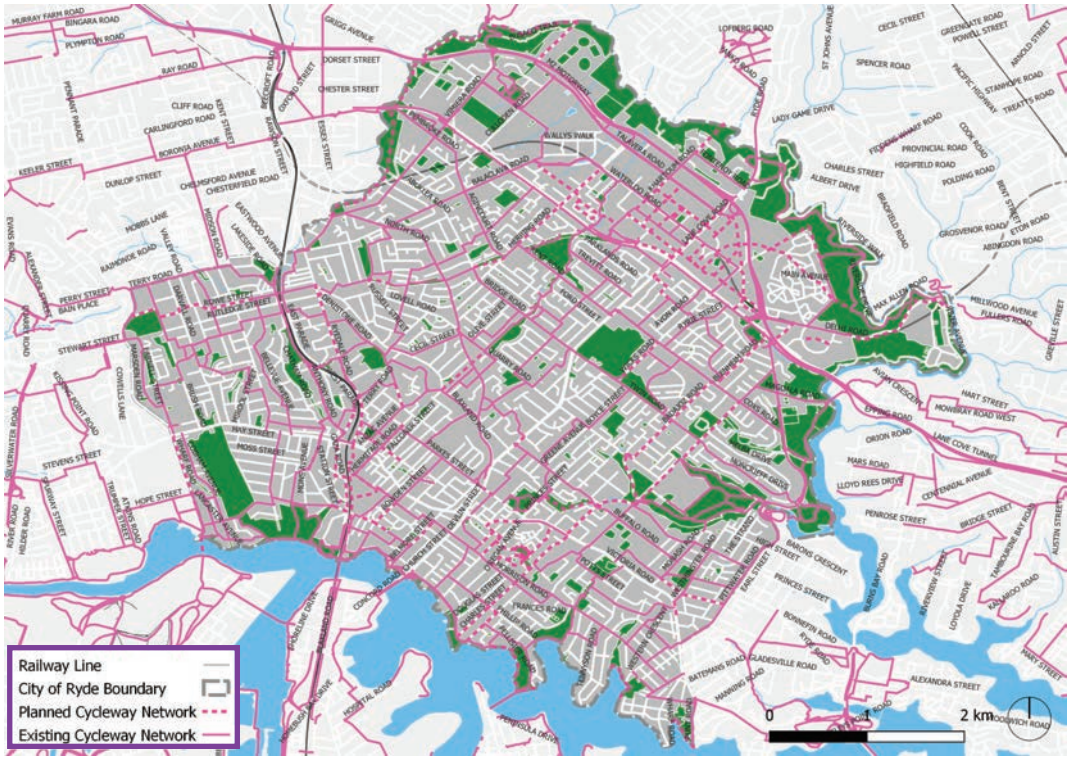
1.4 Report structure

The action plan is structured as follows:

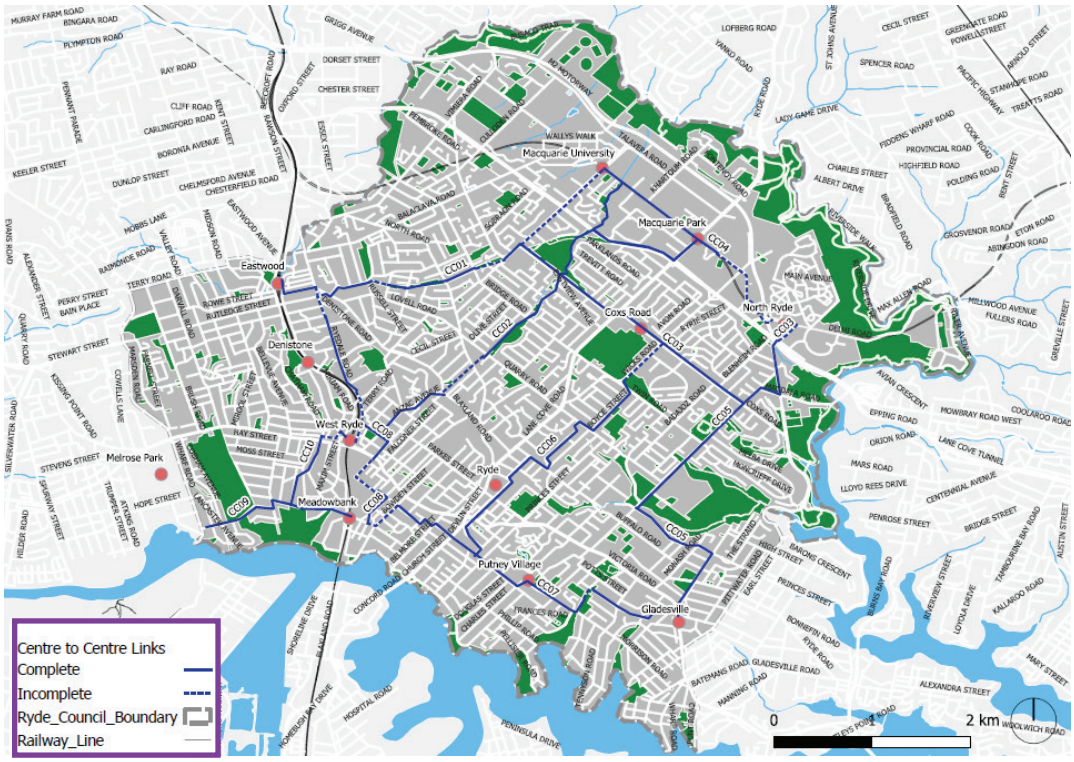
- Section 1 – Introduces the purpose of the action plan
- Section 2 – Provides a suite of suitable bicycle treatment types for low traffic stress environments
- Section 3 – Presents a preliminary prioritisation framework for further consideration including quick wins
- Section 4 – Discusses suggested infrastructure works for the prioritised sections of the bicycle network (on-road, off-road and green links)
- Section 5 – Details other street elements which support rider comfort, access, and inclusion such as street lighting and end of trip facilities
- Section 6 – Concludes the action plan with a list of indicators to measure and monitor progress.



(Figure 2)
2014 Bicycle Plan: Local and Regional Routes.
Source: City of Ryde, Bicycle Plan, 2014.



(Figure 3)
Bicycle Plan 2022.
Source: City of Ryde, Bicycle Plan, 2014.



(Figure 4)
Figure 4 The Centre-to-Centre Network – An extension to the regional routes.
Source: CrossleyTP, 2021.

2 FACILITY TYPES

2 FACILITY TYPES

This section describes the recommended mid-block facility types which will deliver the low levels of traffic stress requires to attract the interested but concerned bicycle rider types to ride, and ride more often.

General cross-sections are provided to enable council to select the appropriate facility type according to the available width of the road.

4.1 Overview

This section identifies the types of bicycle facilities which best fit within the existing range of road widths located in Ryde local government area.

The proposed facility types aim to:

- Offer low traffic stress options to attract the interested but concerned population
- Minimise loss of street parking to facilitate implementation.

Table 1 provides a summary of treatment types proposed. Each treatment type is described in detail in Section 2.2 to Section 2.4.

(Table 1)
Index of bicycle treatment types.

Facility Type	Treatment Type	Road pavement width required	Traffic Stress Level	Cross-Section Reference
Bicycle Boulevards (mixed traffic)	Bicycle Friendly Street	Up to 9.7 m	2	Figure 5
	Quietway / Quiet Street	9.8m to 11.0 m	2-3	Figure 7
Separated (on-road)	One-way cycleways (without parking)	Minimum 9.0 m	1	Figure 9
	One-way cycleways (with single parking)	Minimum 11.0 m	1	Figure 10
	One-way cycleways (with double parking)	Minimum 13.0 m	1	Figure 11
	Two-way cycleways (without parking)	Minimum 8.6m	1	Figure 12
	Two-way cycleways (with single parking)	Minimum 10.6m	1	Figure 13
	Two-way cycleways (with double parking)	Minimum 12.6 m	1	Figure 14
Separated (off-road)	Shared user path	2.0m – 4.0m (footpath width)	1	Figure 15

2 FACILITY TYPES

2.2 Bicycle Boulevards

A bicycle boulevard is a street with low traffic volumes and speeds. It offers an enhanced mixed-traffic environment where signs, pavement markings and traffic calming measures are implemented to create a safe and convenient environment.

This treatment type targets narrow roads where there is insufficient space to provide a separate bicycle facility.

The objective is to design the street to give bicycle riders priority by positioning the cyclist in the centre of the traffic lane, known as the primary position.

This requires the effective width of traffic lanes to be no more than 3.2m wide. The exception are streets where a local bus service operates. For these streets, traffic lane should increase to 3.5m wide (maximum) which will facilitate bus movements whilst maintaining the primary position for cyclists.

There are two treatment types contained in this category – Bicycle friendly Streets and Quiet Streets.

2.2.1 Bicycle Friendly Streets

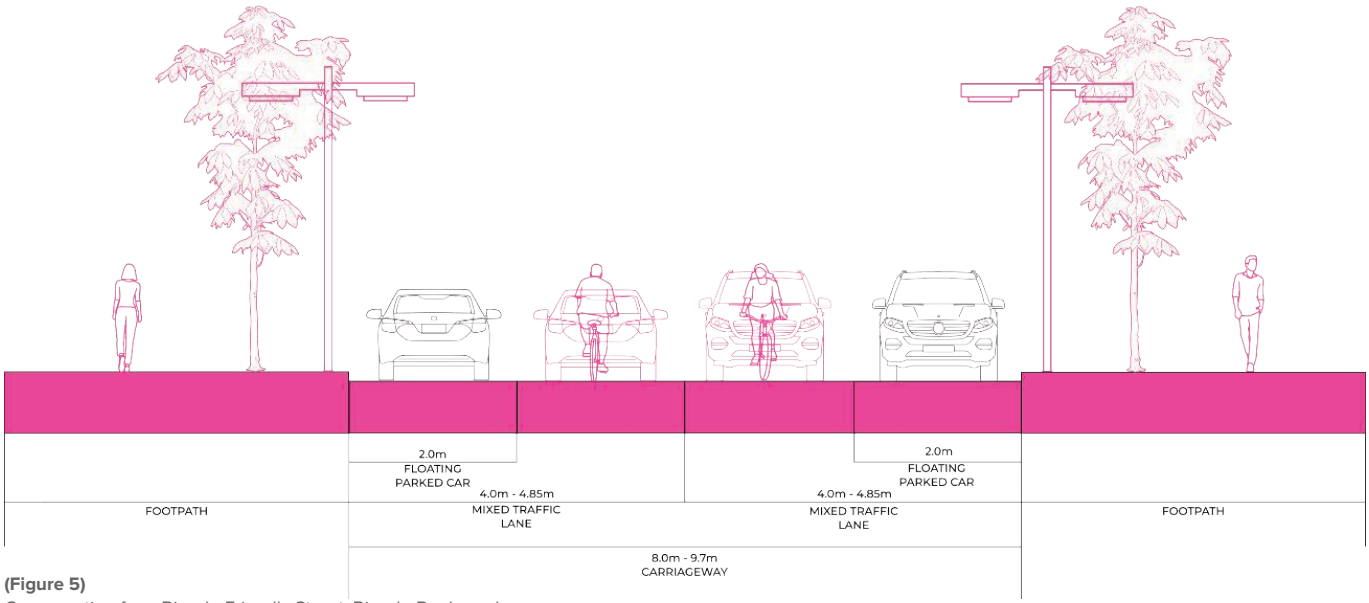
A bicycle friendly street is a narrow road ideally measuring less than 9-metres with an absence of road centre lines.

The width of the street means it is too narrow for street parking to occur continuously on both sides of the road.

Street parking activity floats between one side and the other.

The narrow road environment and presence of street parking can make it difficult for cars travelling in opposite directions to pass, this acts as a traffic calming measure.

This type of environment can encourage drivers to reduce their speed to less than 40km/h without the need for vertical traffic calming measures.



(Figure 5)
Cross section for a Bicycle Friendly Street, Bicycle Boulevard.
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).

Safety and comfort are enhanced by the implementation of signs and pavement markings.

The pavement markings:

- Identify the bicycle boulevard
- Enhance the visibility of cyclists
- Guide the positioning of cyclists into the centre of the traffic lanes
- Prioritise cyclists across intersections.

An example pavement treatment is a bicycle symbol and set of sharrows overlaid onto a green tarmac patch.

These should be applied at close intervals near the centre of the travel lane.

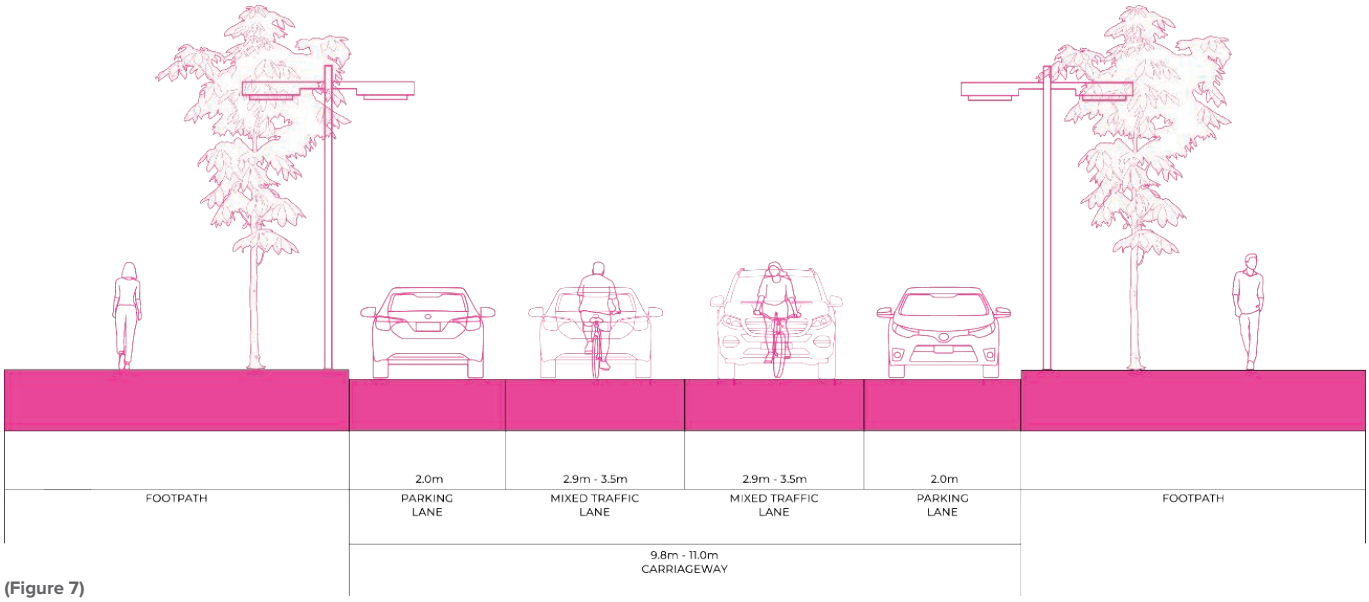
(Figure 6)
Sharrow pavement marking.

2.2.1 Quietway or Quiet Street

A Quietway or Quiet Street is a low volume and low speed road with designating parking bays.

This street is typically around 10-metres wide with traffic lanes measuring 2.9m – 3.2m.

Local Streets which form bus routes, the lane width should be increased to a maximum of 3.5m to facilitate bus movement.



(Figure 7)
7 Cross section for a Quietway, Bicycle Boulevard.
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).

2 FACILITY TYPES

Like Bicycle Friendly Streets, the width of the traffic lane is used to encourage cyclists to take the primary position in the centre of the lane.

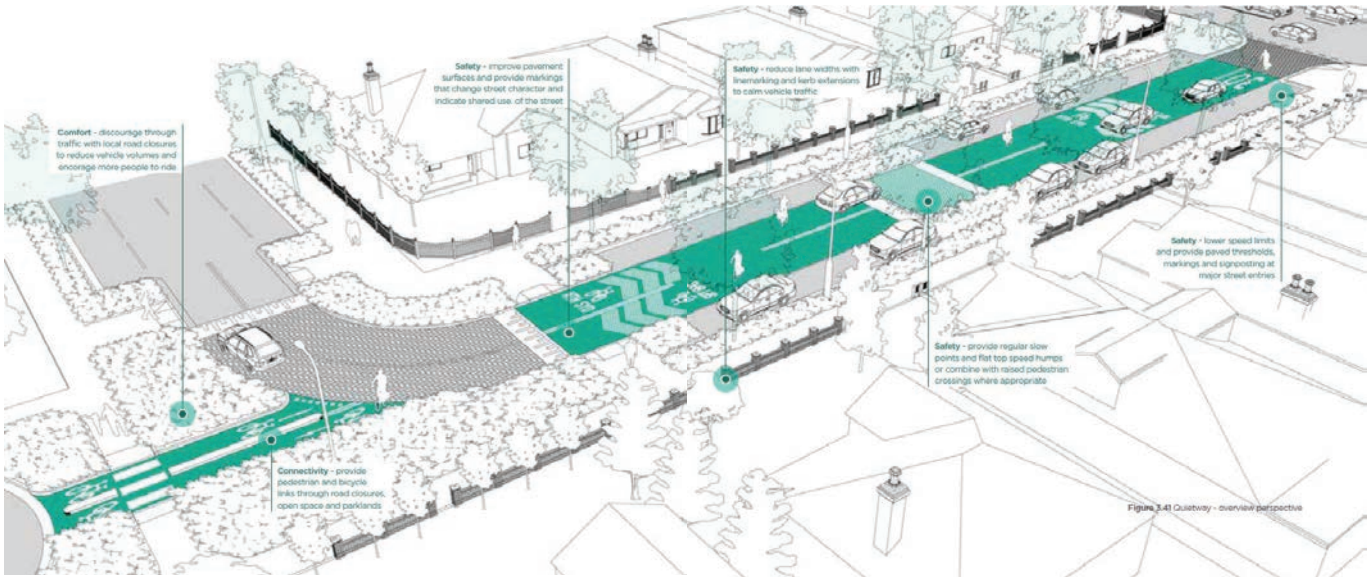
The occurrence of street parking along Quietways does not help to calm traffic as opposing cars can easily pass one another.

This means traffic speeds are generally higher and additional measures are required to enhance safety and comfort as shown in Figure 8.

Where street parking demand is low, there are opportunities to enhance soft landscaping by allocating lengths of street parking bays for low level planting or street trees.

The greening of a route presents an opportunity to rebrand the facility type for example, a 'Greenway' or 'Green Street'.

Alternatively, where parking demand is low, or off-road parking is provided, consideration could be given to the complete or partial removal of street parking and provision of protected bicycle lanes as shown in Figure 9 and Figure 10.



(Figure 8)
A Quietway is an enhanced mixed-traffic environment with volume and speed control measures.
Source: TfNSW Cycleway Design Toolbox (2020).

2.3 Separated (on-road) facilities

Separated on-road bicycle facilities can be incorporated into local streets and roads which measure more than 11-metres wide.

Physically separated bicycle facilities are recommended with a minimum buffer of 0.4m between people cycling and passing cars or parked cars. Physical separation excludes visually separated facilities[1].

The treatment types for on-road separated facilities include:

- One-way cycleways (uni-directional)
- Two-way cycleways (bi-directional)
- Parking protected cycleways (variation of above).

One-way cycleways are preferred. They are safer and easier to transition from one facility type to another, and across intersections.

When selecting the width of the cycleway consideration should be given to:

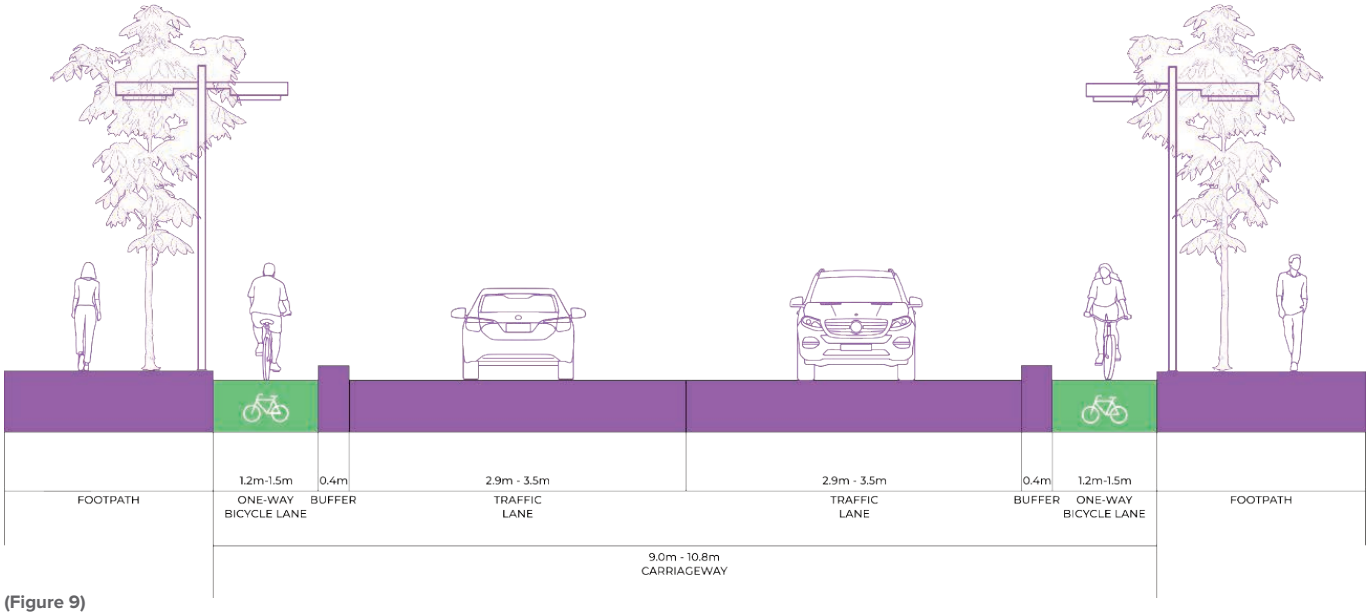
- Maximising space for cyclists
- Providing access into and along the cycleway for street sweeping
- Adjusting the width of traffic lanes to encourage appropriate traffic speeds or
- Adjusting the width of the buffer to reflect the volume and speed of traffic
- Provision of street lighting along the route and at intersections.

[1] Examples of visually separated on-road facilities include road shoulder lanes and bicycle symbols in parking bays.

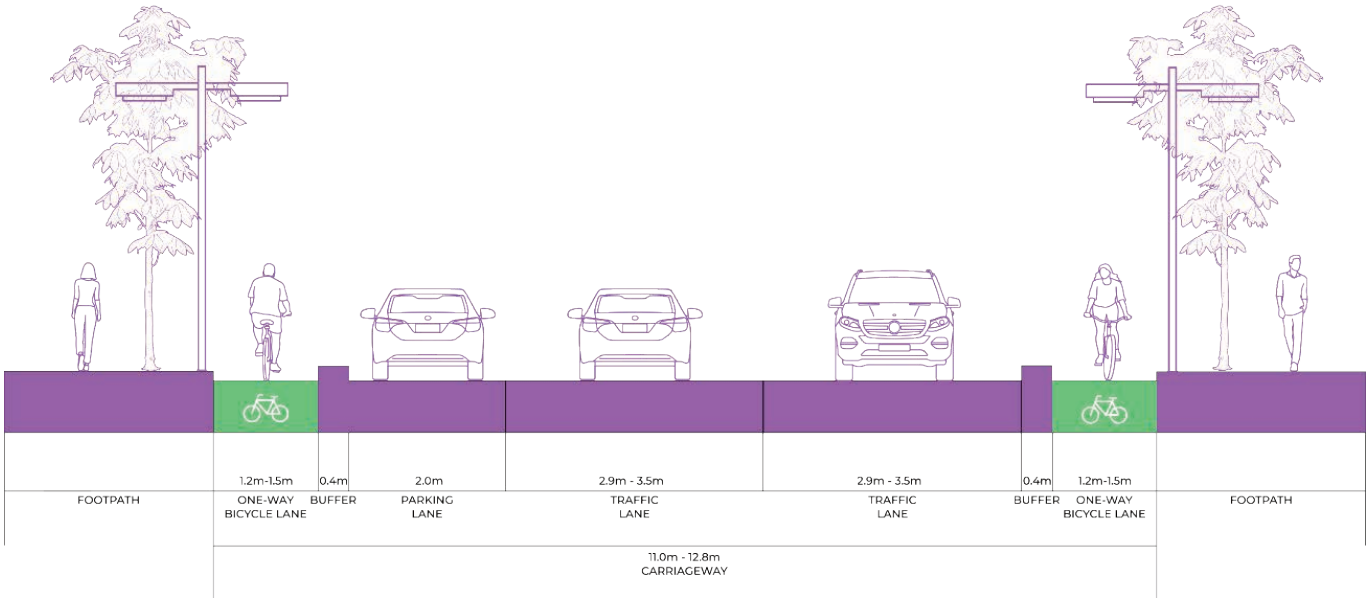
2.3.1 One-way Cycleways

There are a variety of one-way protected cycleway designs.
To select the most appropriate layout, consideration should be given to:

- Available road width
- Demand for parking, loading and turnover of spaces
- Speed and volume of traffic.

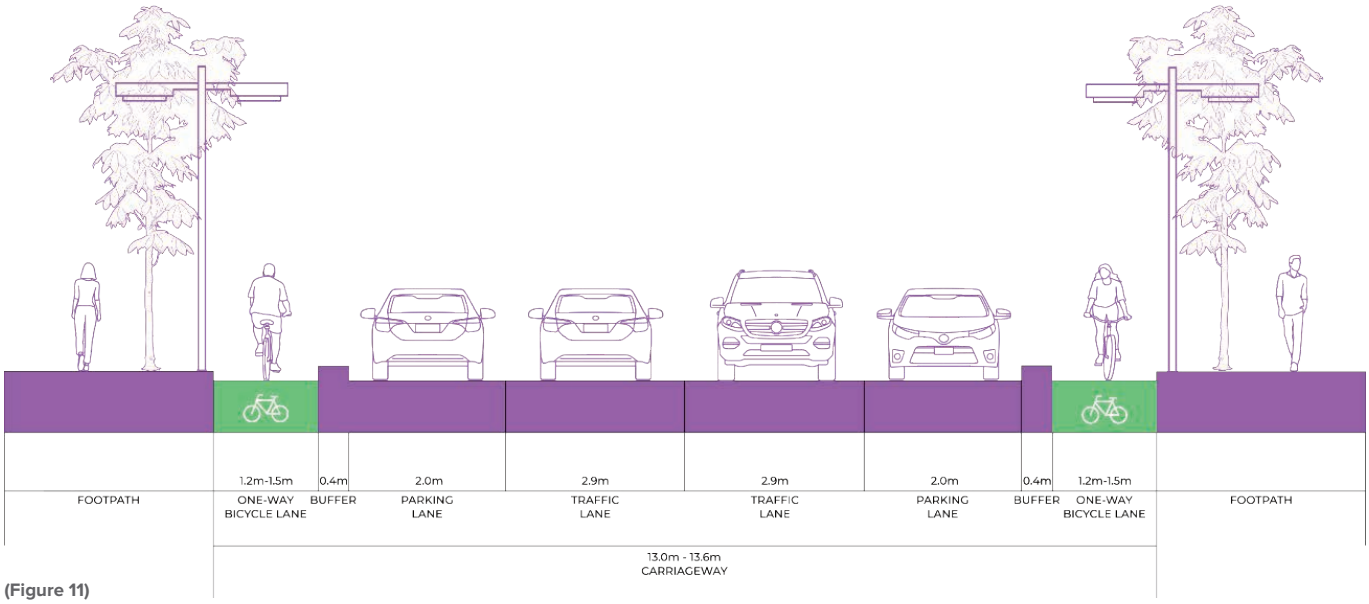


(Figure 9)
One-way cycleway without parking (min 9-metres).
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).



(Figure 10)
One-way cycleway with parking on one-side (min 11-metres).
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).

2 FACILITY TYPES



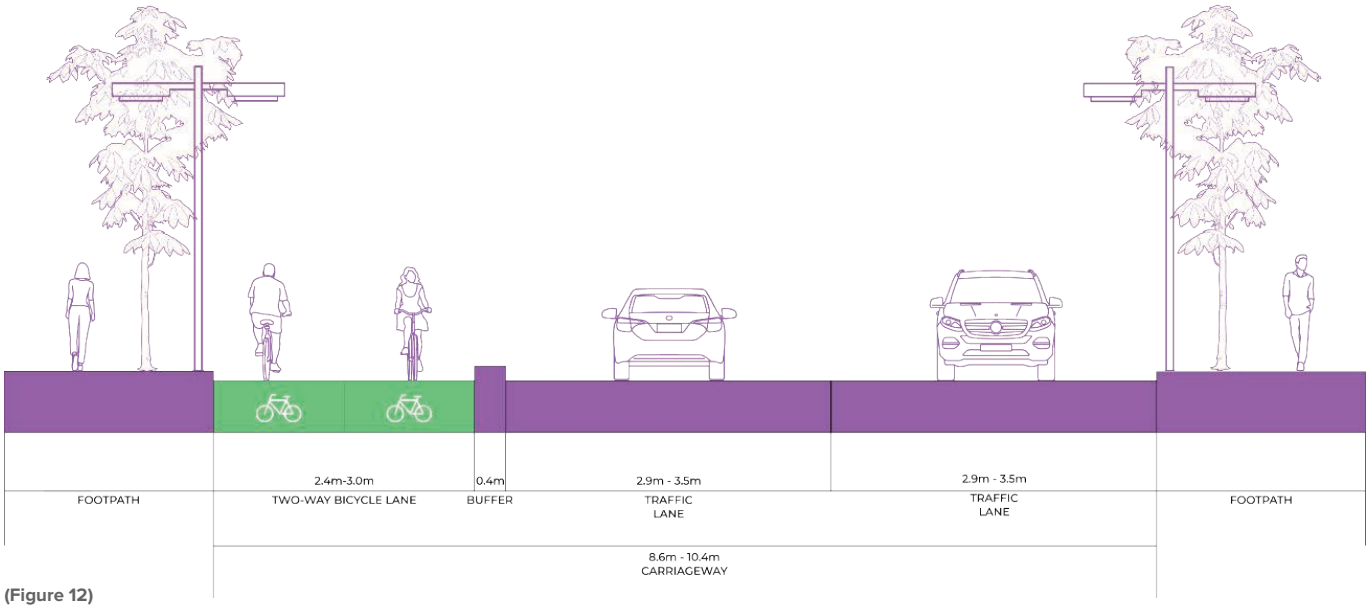
(Figure 11)
One-way parking protected cycleway (min 13-metres).
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).

2.3.2 Two-way Cycleways

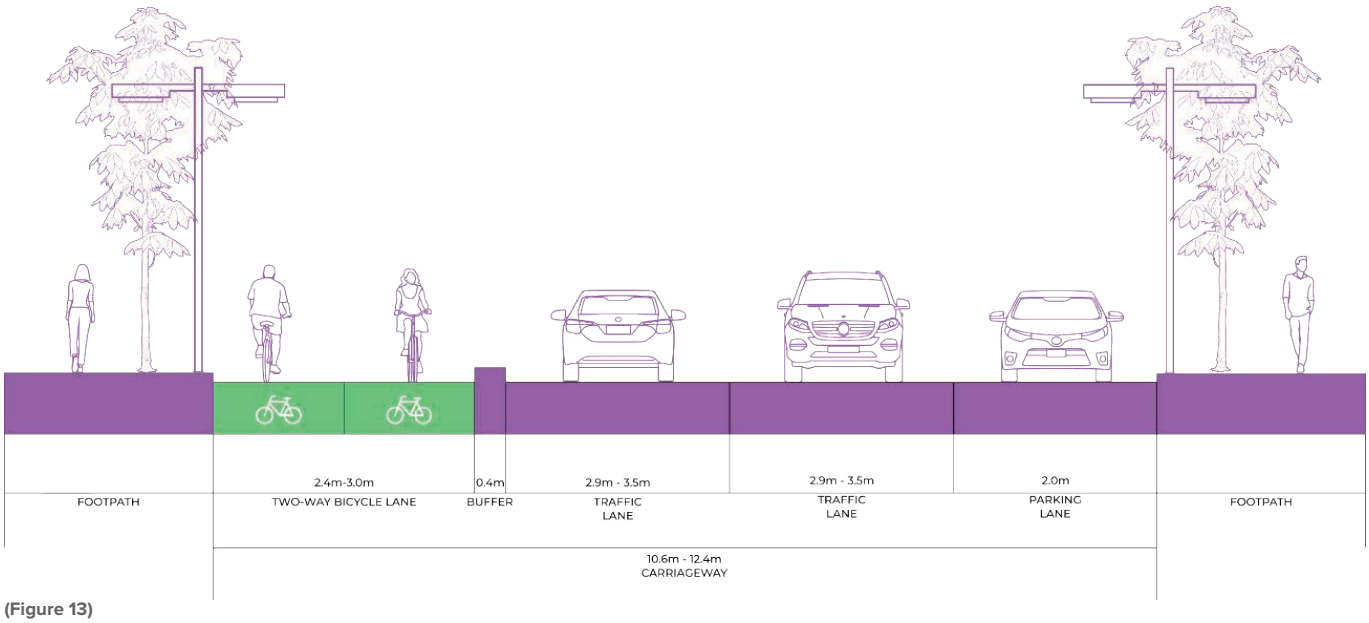
Like the one-way cycleways, the two-way cycleways can be configured with or without street parking.

The removal of street parking enables the implementation of bidirectional cycleways on streets as narrow as 8.6 metres. Road width requirements for parking provided:

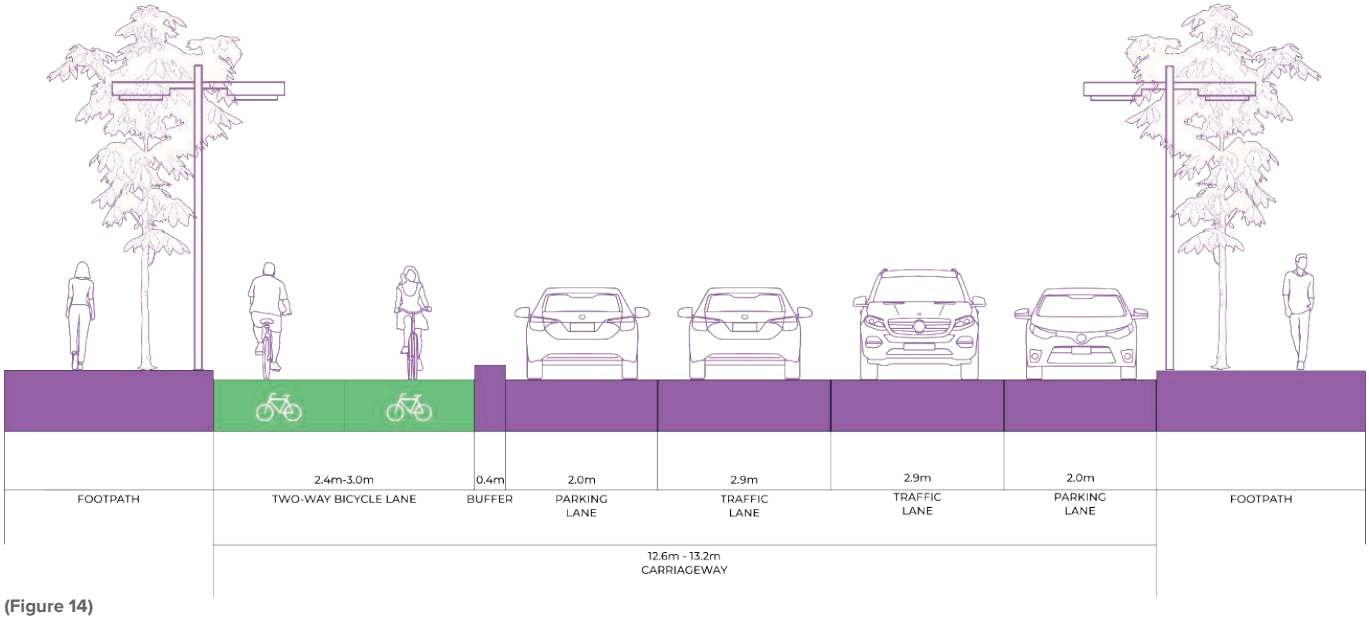
- Continuously on one-side (min. 10.6 metres)
- Floating parking similar to Bicycle Friendly Streets (min. 10.8 metres)
- Continuously on both sides of the street (min 12.6 metres) or
- Using mountable kerbs on the offside to reduce the width of the parking bay by around 1.0 metre.



(Figure 12)
Two-way cycleway without street parking (min 8.6-metres).
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).



(Figure 13)
Two-way cycleway with parking on one side (min 10.6-metres).
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).



(Figure 14)
Two-way cycleway with parking on both sides (min 12.6-metres).
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).

2 FACILITY TYPES

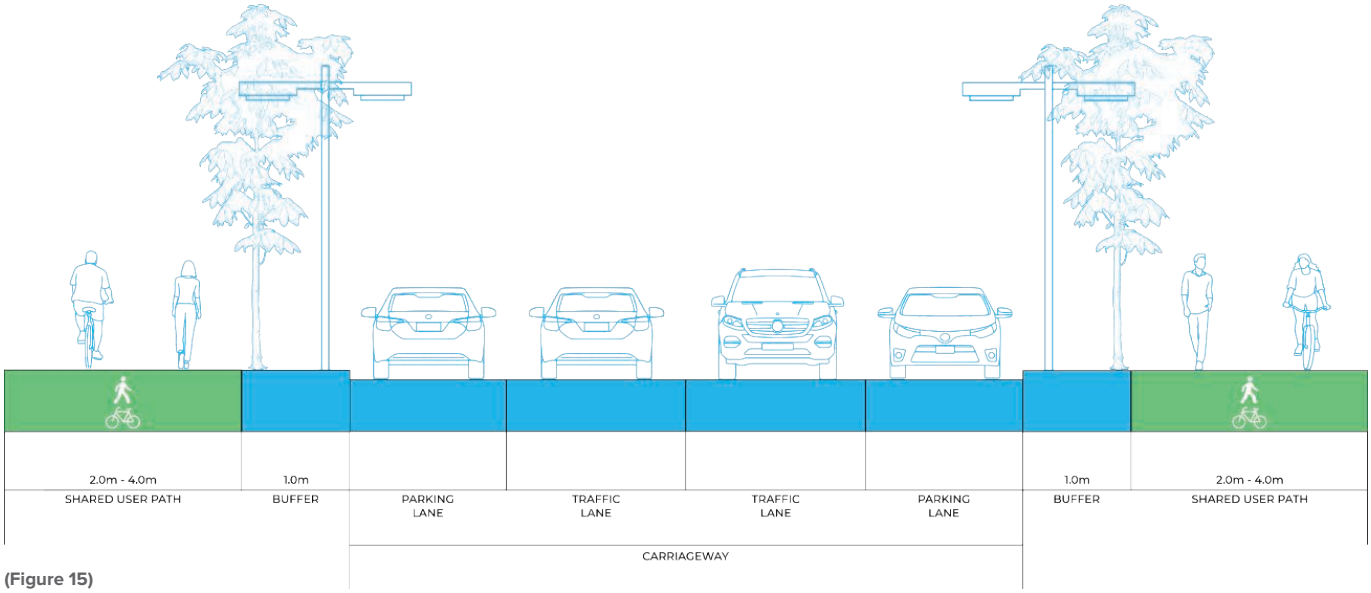
2.4 Separated (off-road) facilities

Off-road facilities are separated from motorised vehicular traffic by a buffer (open space or barrier) either within the road reservation or within an independent right-of-way.

Ideally, bicycles should be separated from pedestrians where significant volume of either mode is present, but where space limitations exist, multi-use paths remain a valuable treatment to support cycling for all ages and abilities.

The level of comfort and convenience is affected by:

- Lack of footway lighting
- Driveways
- Sharp geometries
- Lack of crossing facilities at intersections.



(Figure 15)
A typical shared user path arrangement.
Source: Dimensions taken from Cycling Aspects of Austroads (2017) and TfNSW Cycleway Design Toolbox (2020).

2.5 Intersection Treatments

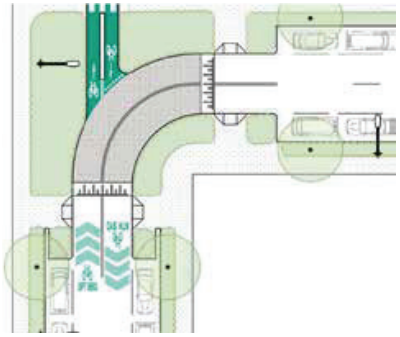
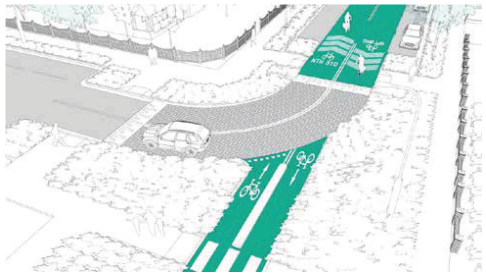
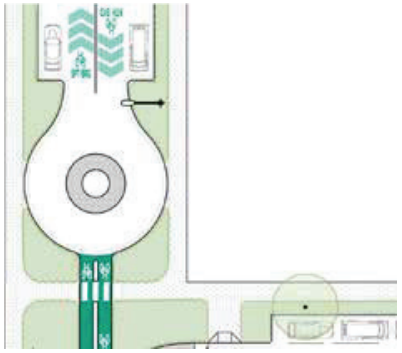
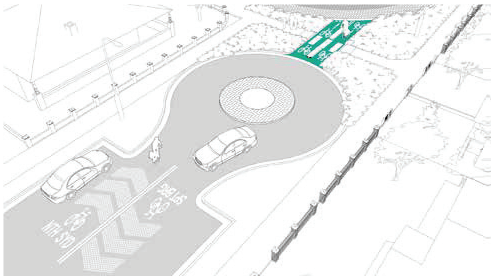
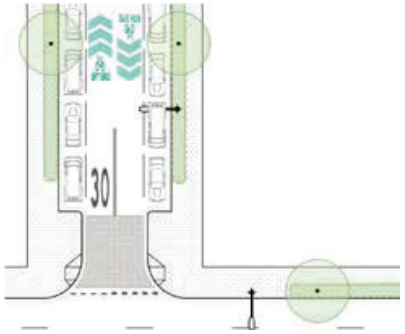
Intersections are where most vehicle and cyclist conflicts occur.
Design treatments should be implemented at intersections to:

- Provide a higher level of safety for people walking and cycling
- Reduce vehicle turning speeds and conflicts
- Increase the visibility of people cycling
- Give priority to people cycling.

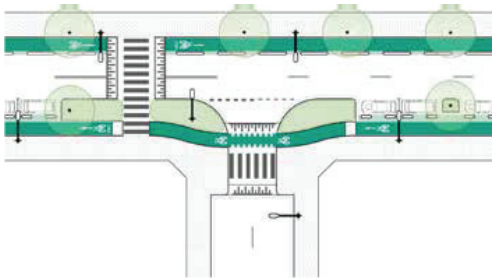
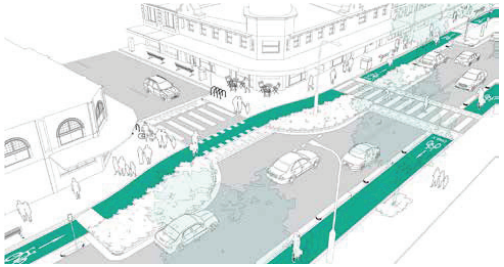
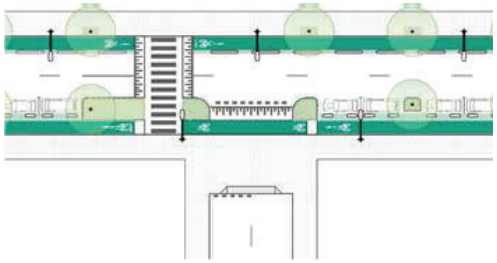
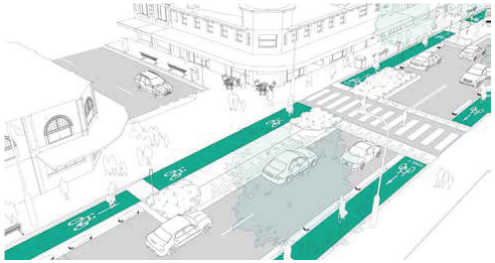
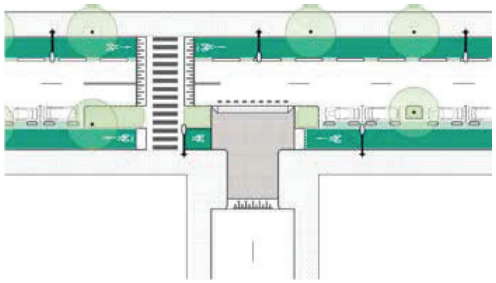
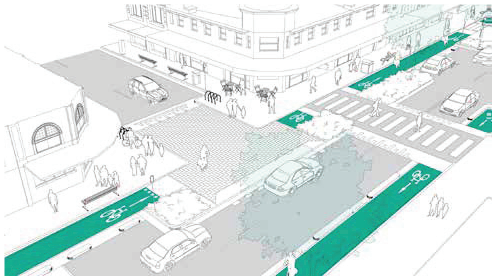
This section describes the types of treatments that are available at intersections, for the cycling facilities that have been identified in Section 2.2 to Section 2.4.

Table 2 details the treatments that are available for bicycle boulevards (Bicycle Friendly Streets and Quietways). Table 3 details the treatments that are available for one-way cycleways. Table 4 details the treatments that are available for two-way cycleways. Table 5 details the treatments that are available for shared user paths.

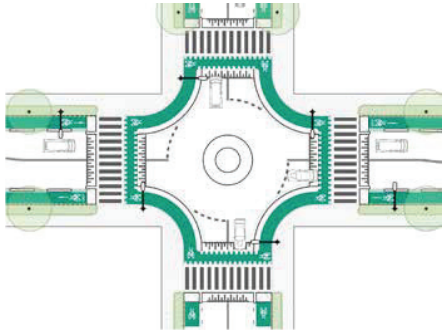
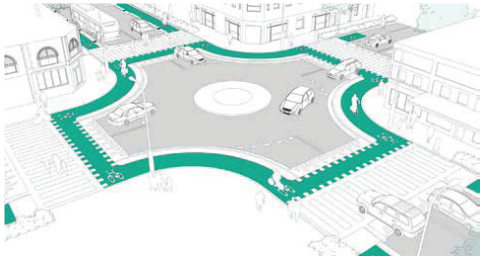
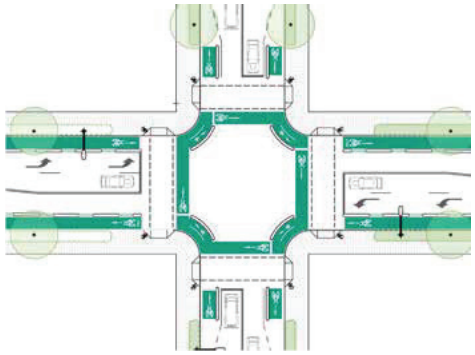
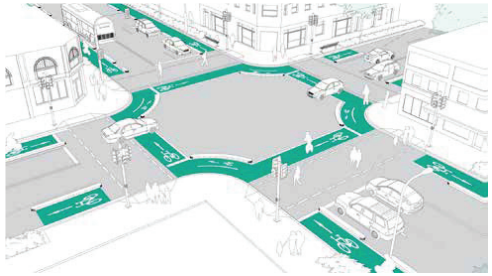
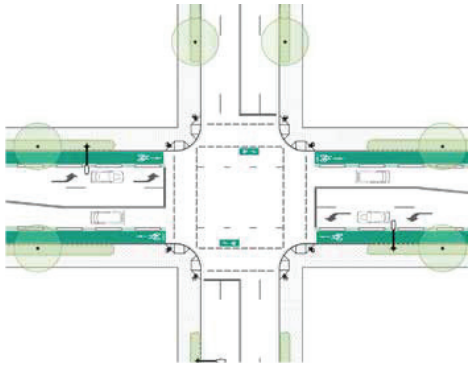
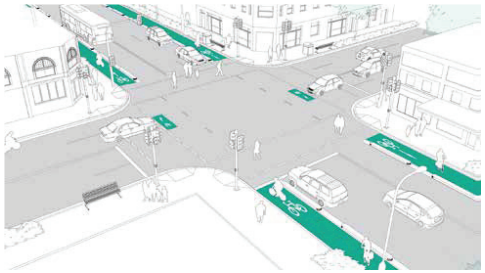
(Table 2)
Intersection treatments for bicycle boulevards (bicycle friendly streets and quietways).
Source: TfNSW Cycleway Design Toolbox (2020).

Intersection Treatment	Plan View	Perspective View	Description	Suitability of Facility Type
Raised intersection			Reduces traffic speed and raises awareness of conflict points Flat top speed humps (i.e. raised road platforms) with gentle ramp gradients at intersections Narrow roadway to reduce speed of motorised traffic Visual cues to road users including changed surface pavement, colour, texture and/or materials	Preferred
Modal filter			Reduces motorised traffic volumes while maintaining connectivity for people walking and cycling Full road closure for motorised traffic Turning loop	Preferred
Entrance and exit points			Provide visual cues to road users to indicate a change in street behaviour and dictate appropriate speed and behaviour Reduces motorised traffic volumes while maintaining connectivity for people walking and cycling Raised intersection treatments with gentle gradients Bicycle insignias and sharrow markings to indicate priority for people cycling Narrow roadway to reduce speed of motorised traffic	Preferred

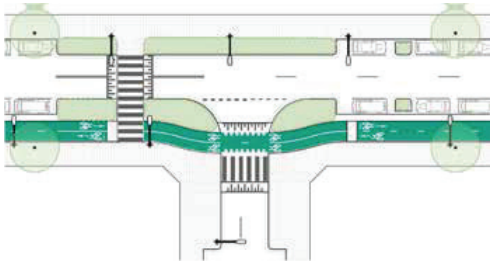
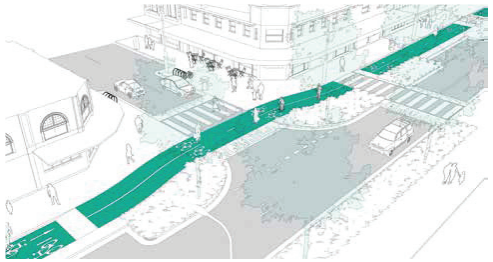
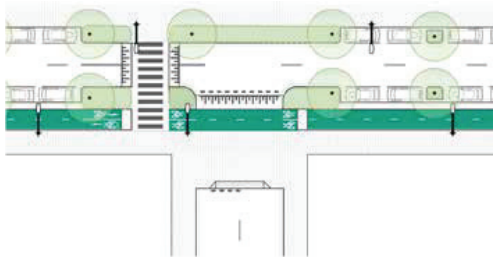
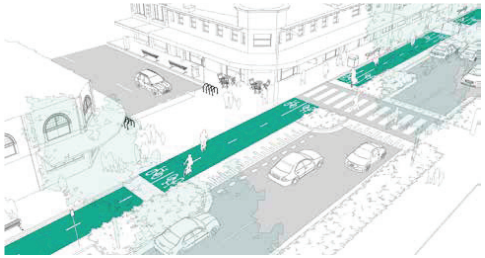
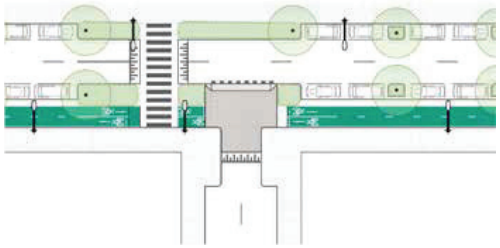
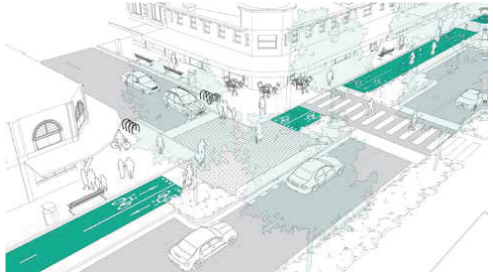
(Table 3)
Intersection treatments for separated (on-road) one-way cycleways.
Source: TfNSW Cycleway Design Toolbox (2020).

Intersection Treatment	Plan View	Perspective View	Description	Suitability of Facility Type
Bent-out intersection			Prioritised pedestrian crossing and bicycle path Raised intersection and clear road markings to indicate that the pedestrians and bicycle riders have priority over turning vehicles Large amount of storage space for vehicles to wait outside of carriageway and bicycle path No high objects (>1.0m) between the bicycle path and the road, to allow for visibility Kerb buildouts to narrow intersection and reduce vehicle turning speeds and increase visibility	Preferred
Raised intersection			Where there is insufficient space for a bend-out this treatment may be considered Prioritised pedestrian crossing and bicycle path Raised intersection and clear road markings to indicate that the pedestrians and bicycle riders have priority over turning vehicles Sufficient storage space for vehicles to wait outside of carriageway and bicycle path No high objects (>1.0m) between the bicycle path and the road, to allow for visibility Kerb buildouts to narrow intersection and reduce vehicle turning speeds and increase visibility	Preferred
Shared environment intersection			Offers lower level of service as riders are not prioritised Vehicles waiting to enter the carriageway could block people cycling Raised intersection and clear road markings No high objects (>1.0m) between the bicycle path and the road, to allow for visibility Narrow side street to reduce speed of motorised traffic Surface treatments and visual cues to indicate the shared environment	Suitable, but not preferred

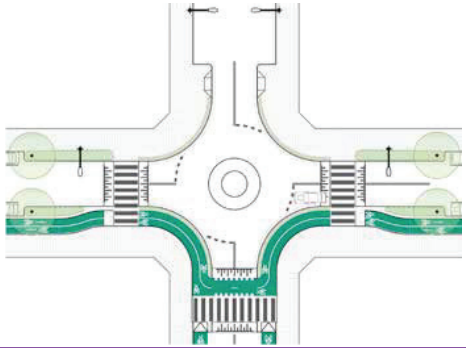
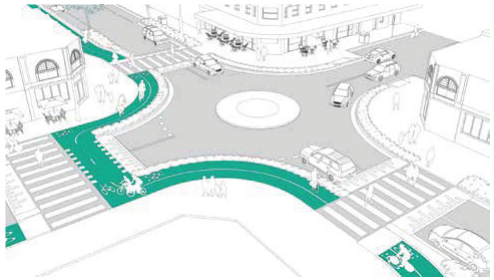
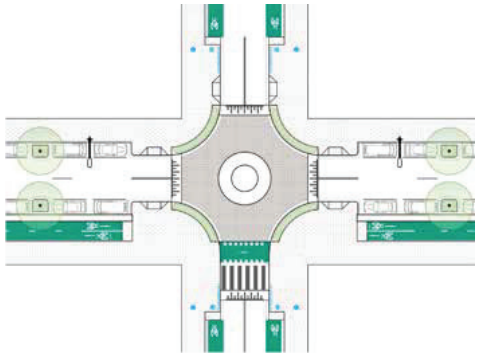
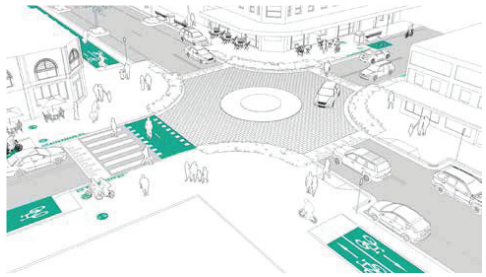
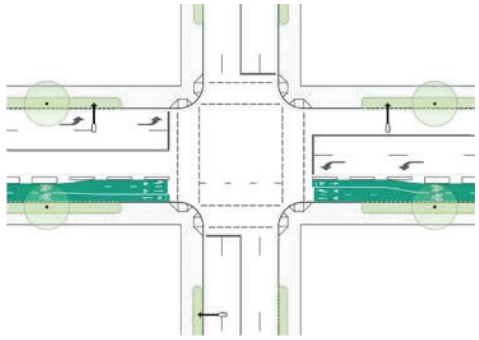
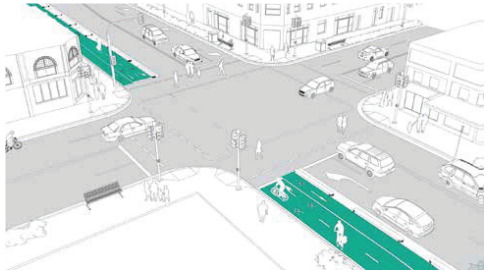
(Table 3 continued)
Intersection treatments for separated (on-road) one-way cycleways.
Source: TfNSW Cycleway Design Toolbox (2020).

Intersection Treatment	Plan View	Perspective View	Description	Suitability of Facility Type
Roundabout			Prioritised pedestrian crossing and bicycle path around the roundabout legs Raised crossing platforms and clear road markings to indicate that the pedestrians and bicycle riders have priority over turning vehicles Narrow roundabout branches to reduce speed of motorised traffic Raised island in the centre for use by wide-turning vehicles (trucks and buses)	Preferred
Protected signalised intersection			Crossing facilities for people walking and cycling on all legs Reduced waiting times for people walking and cycling through adjusted traffic signal controls Signal lead phase and dedicated green time for bicycle movements to remove signal conflicts Automatic loop detectors for bicycles, reducing wait time Buffer areas for right turning riders Barriers to protect riders from turning vehicles	Preferred
Signalised intersection			Crossing facilities for people walking and cycling on all legs Where possible, educed waiting times for people walking and cycling through adjusted traffic signal controls Signal lead phase and dedicated green time for bicycle movements to remove signal conflicts Automatic loop detectors for bicycles, reducing wait time Buffer areas for right turning riders (hook turn waiting area) Only suitable for where right turn bicycle movements are low as turns are not protected	Suitable, but not preferred

(Table 4)
Intersection treatments for separated (on-road) two-way cycleways.
Source: TfNSW Cycleway Design Toolbox (2020).

Intersection Treatment	Plan View	Perspective View	Description	Suitability of Facility Type
Bent-out intersection			Prioritised pedestrian crossing and bicycle path Raised intersection and clear road markings to indicate that the pedestrians and bicycle riders have priority over turning vehicles Large amount of storage space for vehicles to wait outside of carriageway and bicycle path No high objects (>1.0m) between the bicycle path and the road, to allow for visibility Kerb buildouts to narrow intersection and reduce vehicle turning speeds and increase visibility	Preferred
Raised intersection			Where there is insufficient space for a bend-out this treatment may be considered Prioritised pedestrian crossing and bicycle path Raised intersection and clear road markings to indicate that the pedestrians and bicycle riders have priority over turning vehicles Sufficient storage space for vehicles to wait outside of carriageway and bicycle path No high objects (>1.0m) between the bicycle path and the road, to allow for visibility Kerb buildouts to narrow intersection and reduce vehicle turning speeds and increase visibility	Preferred
Shared environment intersection			Offers lower level of service as riders are not prioritised Vehicles waiting to enter the carriageway could block people cycling Raised intersection and clear road markings No high objects (>1.0m) between the bicycle path and the road, to allow for visibility Narrow side street to reduce speed of motorised traffic Surface treatments and visual cues to indicate the shared environment	Suitable, but not preferred

(Table 4 continued)
Intersection treatments for separated (on-road) two-way cycleways.
Source: TfNSW Cycleway Design Toolbox (2020).

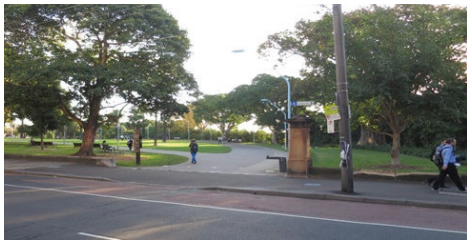
Intersection Treatment	Plan View	Perspective View	Description	Suitability of Facility Type
Roundabout			Prioritised pedestrian crossing and bicycle path around the roundabout legs Raised crossing platforms and clear road markings to indicate that the pedestrians and bicycle riders have priority over turning vehicles Narrow roundabout branches to reduce speed of motorised traffic Raised island in the centre for use by wide-turning vehicles (trucks and buses)	Preferred
Roundabout with Shared Path			Where space does not allow a continuous bicycle path along the roundabout, this treatment may be considered Bicycle path ends before the roundabout and connects to shared path facilities Raised crossing platforms and clear road markings to indicate that the pedestrians and bicycle riders have priority over turning vehicles Narrow roundabout branches to reduce speed of motorised traffic Raised island in the centre for use by wide-turning vehicles (trucks and buses)	Preferred
Signalised intersection			Crossing facilities for people walking and cycling on all legs Where possible, reduced waiting times for people walking and cycling through adjusted traffic signal controls Where possible, signal lead phase and dedicated green time for bicycle movements to remove signal conflicts Automatic loop detectors for bicycles, reducing wait time Separate turning lanes for riders turning and crossing the main road May require amendments to signal phasing if installed at an existing signalised intersection	Preferred

Where an off-road cycleway requires a transition to the road (mixed-traffic environment) or crossing of an intersection, the following treatments may be considered:

(Table 5)

Intersection treatments for separated (off-road) cycleways.

Source: Austroads Guide to Road Design Part 4 and 6A (2021).

Intersection Treatment	Example	Description	Suitability of Facility Type
Simple connection with the road	 Intersection of a shared user path with the road at Prince Alfred Park.  Transition from crossing treatment to on-road separated facility, SCATL, Sutherland.	Cyclists prefer to cycle at consistent, easy-to-regulate speeds. Therefore, in most instances where an off-road path transitions to the road, it is undesirable to use terminal treatments to slow cyclists down. The preferred treatment for this transition is a simple connection/ kerb without the use of other restrictive devices.	Preferred
Terminal treatments before road		Terminal treatments (e.g., bollards, u-rails) that slow cyclists down should only be used where there is a proven safety issue (e.g., history of ride-out incidents, near misses or crashes)	Suitable, but not preferred
Visual and/ or physical warnings to indicate the end of facility		Sufficient visual and/or physical cues (e.g., warning signs, pavement markings) are to be provided to advise cyclists they are approaching the road or the end of a shared path. Cyclists will then be able to slow down to appropriate speed or stop if necessary.	Preferred
Bicycle lanterns		Separate or combined lanterns are to be provided for cyclists and pedestrians whenever there are shared user paths or separated paths on both sides of a crossing.	Preferred

3 ROUTE PRIORITISATION

3 ROUTE PRIORITISATION

A high-level appraisal of the following criteria has formed an initial prioritisation framework for Council to apply:

- Bicycle route hierarchy
- Indicative trip demand
- Quick win opportunities.

3.1 Route hierarchy

The priority is to deliver the regional bicycle network which forms the trunk routes to hang the 'web' of local routes and local links.

3.2 Trip demand

The demand for cycling between two town centres has been estimated using the Census of Population and Housing 2016. The assessment involves calculating the flow of residents originating from one town[2] to another for work purposes.

The city-wide data set provides a first-cut indication of which route has the potential to attract a higher number of cycling trips in the future and offer benefits to the greatest number of residents.

To objectively rank the order of routes for investigation, those with the highest number of people moving between the towns are prioritised as indicated in Table 7.

This assumes that higher flows of commuter trips, indicates a higher latent demand for future cycling trips.

[2] Based on SA3 statistical areas, Journey to Work Data set, 2016.
[3] Route ID, refer to Figure 2 and Figure 4. Where RR is Regional Route, CC is Centre to Centre Route, LR is Local Route and LL is Local Link Green links sourced from City of Ryde Green Links Masterplan, 2021.

(Table 6)
Route hierarchy and priority.

Priority	Route Hierarchy
1	Regional routes (includes PBN + C2C)
2	Local Routes
3	Local Links

(Table 7)
Estimated trip demand between centres.

Rank	Bike routes	Route No.[3]	No. travel to work trips (people)
1	Macquarie Park to Marsfield	CC01 LR07 LR09 LR10 Terry' Creek Green Link	2770
2	Ryde to East Ryde	RR09 CC06	1670
3	Eastwood to Denistone	RR01 RR04 CC08 LR13 LL07	1600
4	Macquarie Park to Ryde	RR03 CC03 CC06 LR05 LR06 Shrimptons Creek Green Link LL09 LL10 LL16	1145
5	Eastwood to Macquarie Park	RR12 CC01 CC04 County Corridor Green Link	1049
6	West Ryde to Meadowbank	RR01 CC08	1042
7	North Ryde to East Ryde	RR04 RR05 CC05	790
8	West Ryde to Macquarie Park	RR03 CC02	728
9	North Ryde to Macquarie Park	RR07 CC04 LR07 LR09 Macquarie Park Fine Grain Network	690
10	Gladesville to East Ryde	RR09 CC07 CC08 LR15	405
11	Gladesville to Ryde	RR09 CC07 CC06	405

3 ROUTE PRIORITISATION

3.3 Quick wins

A quick win is defined as a bicycle facility which can be implemented efficiently in near time.

This typically involves the allocation of existing road or footway space for people cycling with minimum construction. This includes the application of lines, signs, and interim infrastructure such as pre-cast concrete separator kerbs or rubber bumpers which bolt onto the road surface.

3.3.1 Shared User Paths on existing footways

The quickest and cheapest quick win is the implementation of shared user paths along existing footways.

The minimum effective width for a shared-user path is 2.0m. To account for any street furniture present within the existing footpath, a footpath width of 2.5 meters was adopted for the assessment.

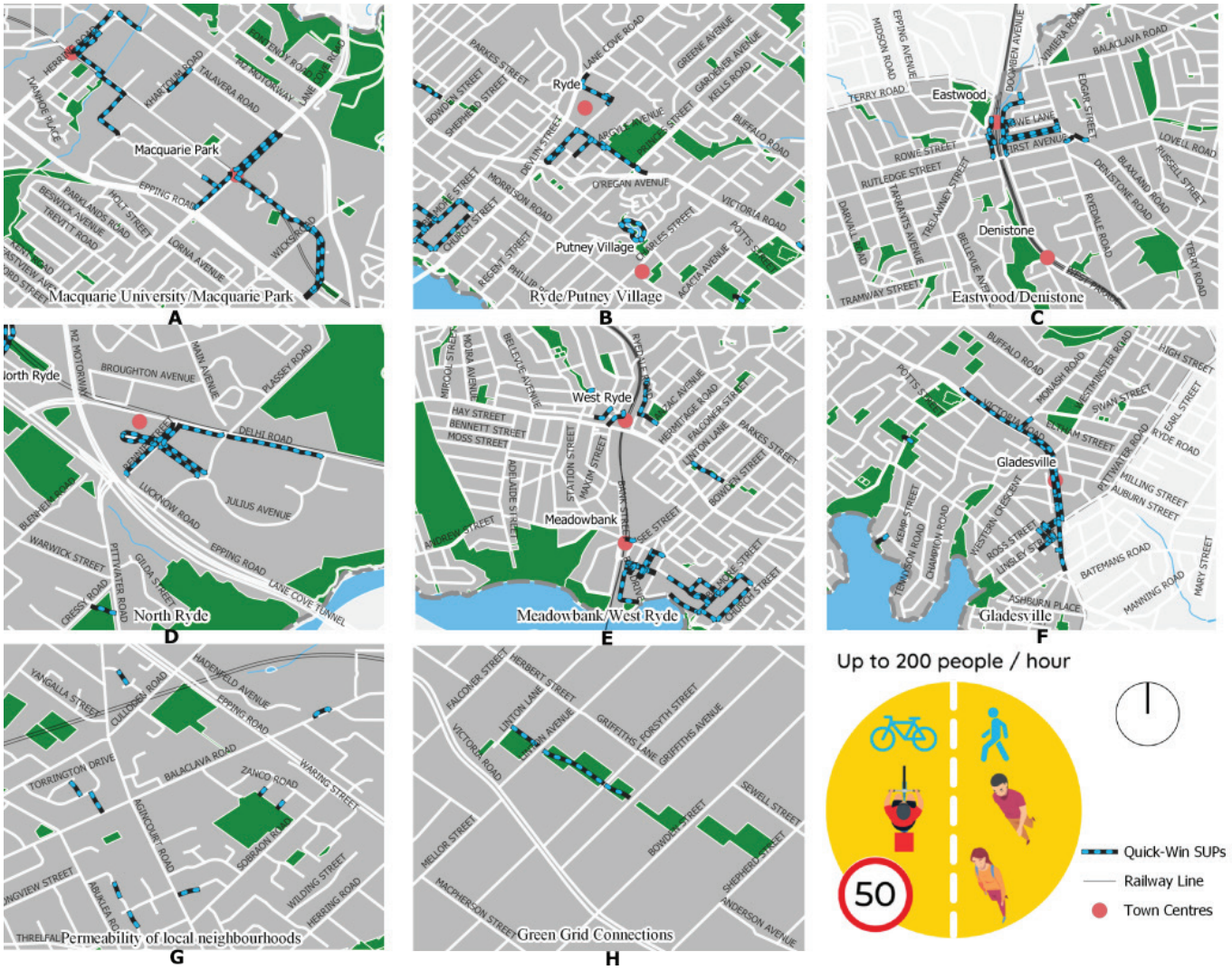
Most existing footways measuring more than 2.5m are provided in and immediately around town centres[4]. The footpaths identified for further investigation are shown in Figure 16 to Figure 17.

As shown in Figure 17, the benefits include improving connectivity to, from and within town centres such as Macquarie Park, Ryde, Eastwood and more (Box A – F). In addition, this strategy leverages existing walkway to improve permeability and reduce block length (Box G); and improves access to open space (Box H).

Prior to installation, investigations should include an assessment of pedestrian demand and potential bicycle demand[5]. Shared user paths are only recommended for footways carrying less than 200 people per hour.

(Figure 16)
Quick wins – Existing footways for shared user path investigations.

[4] Data sources include Footpath Asset Data, 2020 provided by City of Ryde's Assets Department.
[5] Refer to TfNSW Walking Space Guideline and Bicycle Design Toolbox.



(Figure 17)
Quick wins – Opportunities to investigate the installation of shared user paths on existing footways.

3 ROUTE PRIORITISATION

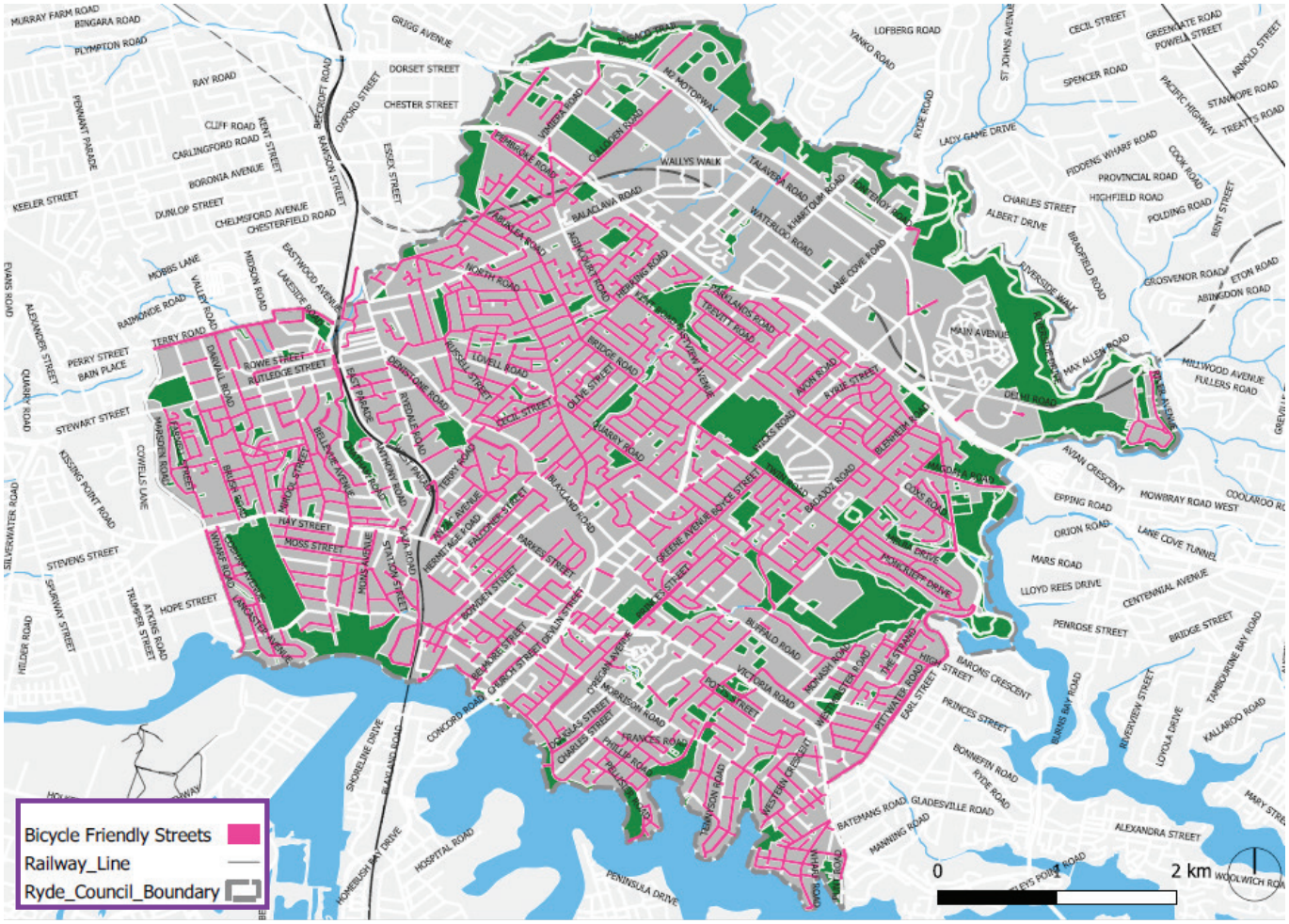
3.3.2 Bicycle Friendly Streets

Bicycle friendly streets are low traffic and low speed roads with enhanced mixed traffic features. The features involve increasing the visibility of people cycling and promoting their priority by placing bicycle symbols and sharrows toward the centre of the road (see Figure 5).

The road width is sufficiently narrow to enforce slow traffic speeds. This negates the requirement for traffic calming measures. Ideally these streets measure 8-metres or less, however, for streets with high levels of parking this can be increased to around 9.5 metres.

The streets which present an opportunity to investigate and implement a bicycle friendly street are illustrated in Figure 18[6].

As shown, majority of local roads measure less than 9.5 metres. This means upgrading to a separated on-road facility is likely to require the removal of street parking.



(Figure 18)
Quick wins – Investigations of existing mixed traffic streets for upgrade to Bicycle Friendly Streets (<9.7m wide).
Source: City of Ryde Road Assets Data, 2021.

[6] Data sources include Roads Asset Data, 2021 provided by City of Ryde's Assets Department, extrapolating streets <9.7m wide.

3.3.3 On-road separated bicycle lanes

This treatment type involves the reallocation of the existing road space and the retention of street parking to provide either a one-way or two-way parking protected bicycle lane.

Streets measuring more than 12.5m can accommodate this bicycle facility and offer a potential quick win to implement a separated bicycle link.

This analysis has also included several streets with 'no stopping' restrictions operating along their full length e.g., Julius Ave. This is based on site visits and does not represent a comprehensive analysis of street parking.

Streets identified for further investigation for quick-win on-road separated bicycle treatments are shown in Figure 19[7] and Table 8.

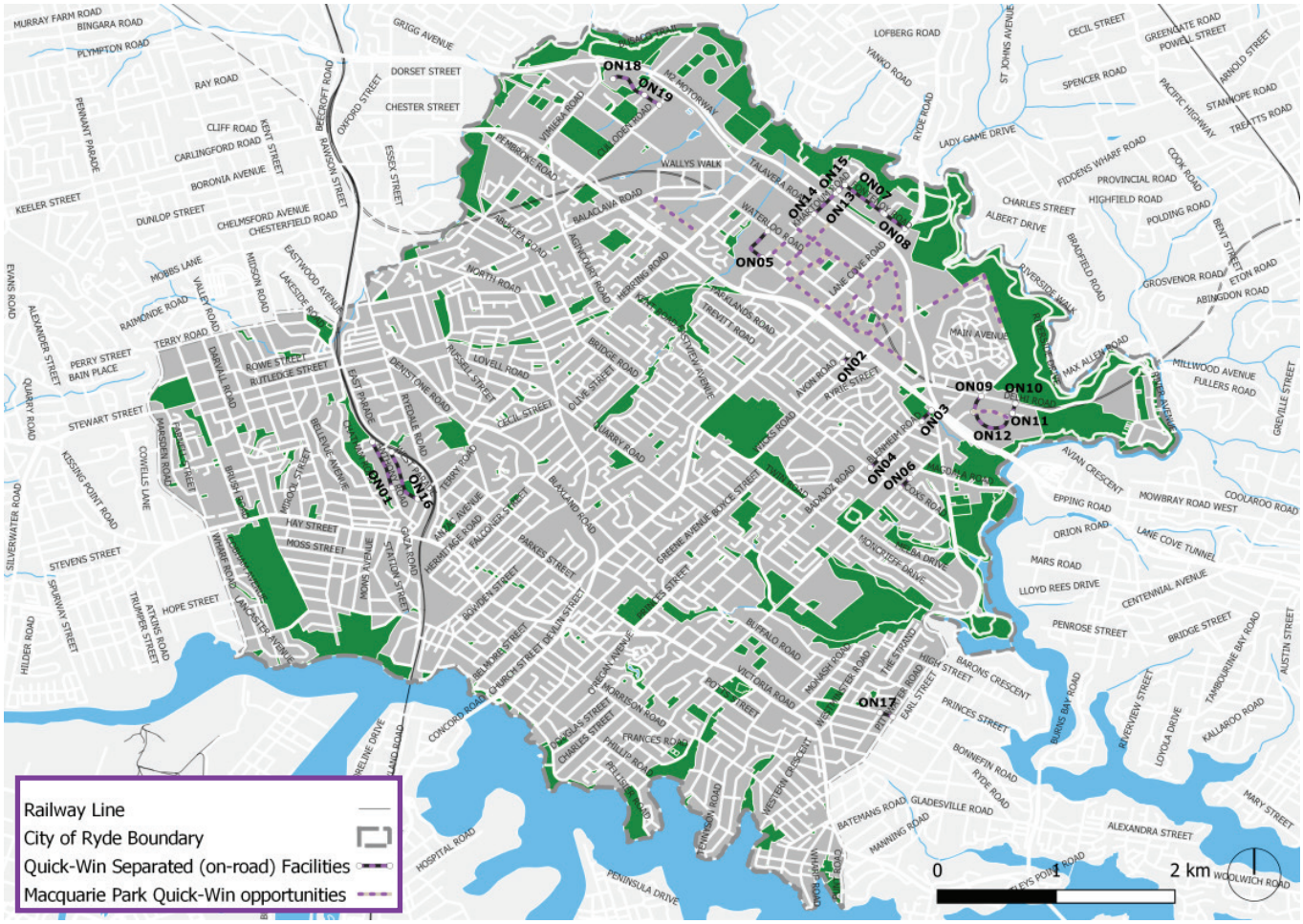
Note, on-road separated facilities should be applied to suitable new roads delivered as part of Macquarie Park fine grain network highlighted in Figure 19[8].

[7] Data sources include Roads Asset Data, 2021 provided by City of Ryde's Assets Department.
[8] Traced from the Macquarie Park Corridor Street Network provided by the Urban Strategy Team.

(Table 8)
Separated on-road bicycle facilities – road lengths for quick win investigations.

ID	Name
ON01	Anthony Road (West Parade – Park Ave)
ON02	Avon Road (Cam Street – Barr Street)
ON03	Blenheim Road (Cul De Sac (N) – Morshead Street)
ON04	Blenheim Road (Cutler Parade – Cox's Road)
ON05	Byfield Street (Waterloo Road – Lyonpark Road)
ON06	Cressy Road (Neil Street – Cox's Road)
ON07	Fontenoy Road (Khartoum Road – Tuckwell Place)
ON08	Fontenoy Road (Tuckwell Place – Lane Cove Road)
ON09	Julius Ave (Delhi Road – Rivett Road)
ON10	Julius Ave (Delhi Road – Richardson Place)
ON11	Julius Ave (Richardson Place – Newbigin Close)
ON12	Julius Ave (Newbigin Close (Rivett Road) – Delhi Road)
ON13	Khartoum Road (Leisure Close – Tasman Place)
ON14	Khartoum Road (Tasman Place – Talavera Road)
ON15	Khartoum Road (Fontenoy Road – Leisure Close)
ON16	Miriam Road (West Parade – Reserve Street)
ON17	Ryde Road (Gerrish Street – Pittwater Road)
ON18	Taranto Road (Cul De Sac (W) – Libya Place)
ON19	Taranto Road (Libya Place – Culloden Road)

3 ROUTE PRIORITISATION



(Figure 19)
Quick wins – Separated on-road facilities for investigation including Macquarie Park Fine Grain Network.

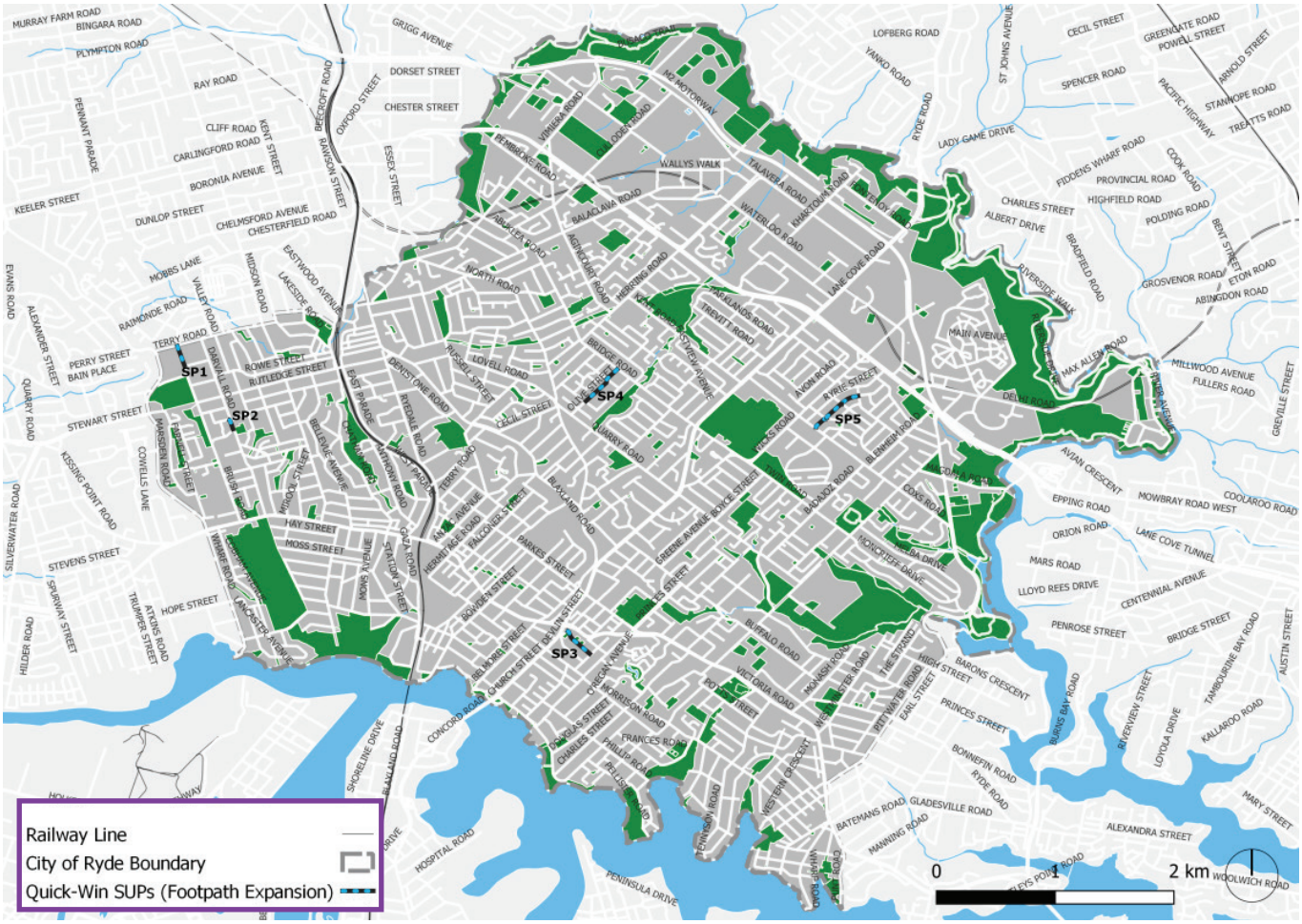
3.3.4 Shared user path on planned new footpath installations

The Asset Management Team has a footpath installation program. The plan presents an opportunity to leverage the new infrastructure to implement additional shared user paths.

The Footpath Expansion Cluster data files were interrogated to identify new footpaths lengths which align to the 2022 bicycle network. Figure 20 shows the location of planned footpaths which should be further investigated for the provision of a shared user path and detailed in Table 9.

(Table 9)
New footway investigations for shared user path installation.
Source: City of Ryde, Footpath Expansion Cluster file, 2021.

Project ID	Project Name	Expected Delivery Year
SP1	Brush Road (Sybil Street – Terry Road)	2022/23
SP2	Darvall Road (Warrawong Street – Rutledge Street)	2024/25
SP3	Eagle Street (Gladstone Ave – Wandoo Reserve)	2022/23
SP4	Olive Street (Ronald Street – Bridge Road)	2024/25
SP5	Truscott Street (Cox's Road – Edmondson Street)	2023/24



(Figure 20)
Quick wins – planned footways to be investigated for shared user paths.

4 CONNECT RYDE

Footbridge at North Ryde.

4 CONNECT RYDE

The aim of this section is to set out a plan to deliver a connected city.

The priority is to complete the:

1. 2014 regional routes
2. Newly assigned Centre-to-Centre routes
3. Upgrade the 2014 regional routes as per the 2022 amendment / initial 2014 recommended treatment
4. Upgrade intersections along the regional routes to provide high visibility of cyclists, improve safety and route legibility.

4.1 Regional Routes – Missing Links

There are twelve (12) regional routes as illustrated in Figure 2 which are led and funded by council.

A comparison of the planned regional routes dated 2014 against the existing network identified several missing links[9]. These missing links also overlap section of the missing principal bicycle network.

The missing links are listed in Table 10 to Table 19.

It is noted, several completed links do not meet the 2014 recommended treatment type. Many planned separated bicycle facilities have been replaced with mixed traffic conditions.

It is recommended that Council enhance these links to a bicycle boulevard, or where road space permits, install a separated on-road or off-road facility.

(Table 10)
RR01 Hornsby to Strathfield Rail Trail – Missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
3	East Parade between First Ave and Denistone Station	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.	
5	Ryedale Road between Florence Ave and Wattle Street	Standard treatment S01. Two-way 'bicycle road' along one side of roadway using a small amount of railway corridor where necessary.	
6	Wattle Street between Ryedale Road and Hermitage Road	Standard treatment S04. 9.0m road - 2x1.5m bicycle lanes, 2x3.0m traffic lanes. Retain existing angle parking beside Anzac Park.	Upgrade from mixed traffic to bicycle boulevard
12	McPherson Street between Mellor Street and See Street	Standard treatment S06B. Bicycle lanes. 11.5m road - 1x2.3m parking lane, 2x1.5m bicycle lanes, 2x3.1m traffic lanes. Parking signage.	Separated on-road
13	Intersection of McPherson Street and See Street	Line mark intersection with bicycle lanes on approaches. Signage.	
14	See and Angas Streets between McPherson Street and Underdale Lane	Standard treatment S05B Bicycle lane and shared lane. 10.0m road - 1x3.7m shared travel lane, 1x2.9m travel lane, 1x1.4m bicycle space, 1x2.0m parking space. Parking signage.	Bicycle boulevard or Separated on-road (reduced parking)
15	Intersection of See and Angas Streets	Line mark intersection with bicycle lanes on approaches. Signage.	
16	Intersection of Angas Street and Underdale Lane	Line mark intersection with bicycle lanes on approaches. Signage.	

[9] Data sources include Ryde Bicycle Strategy 2014 and Cycleways Data provided by City of Ryde's Assets Department, April 2021.

4 CONNECT RYDE

(Table 11)
RR03 Mona Vale to West Ryde – Missing Links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
4	Khartoum Road between Talavera Road and Waterloo Road	3m concrete shared path along western side of road.	
5	Intersection of Khartoum Road and Waterloo Road	Widen kerb ramps, install bicycle lanterns, line marking and signage.	
9	Quarry Road opp SCP in Santa Rosa Park	Refurbish and widen existing refuge to 3 metres.	
13	Heath Street between Quarry Road and North Road	New footpath for walkers. Bicycles on-road. Line marking (C4 parking delineation edge lines and logos).	Upgrade to bicycle boulevard
14	Intersection – Heath Street and North Road	Pedestrian kerb ramps on both sides. Line mark intersection with bicycle lanes on approaches. Signage.	

(Table 12)
RR04 Chatswood to Burwood – missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
1	Delhi Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Excludes any adjustments to structures and escarpment, such as bridge widening at Lane Cove River and rock excavation, all which require detailed investigation.	Missing link between Julius Ave and River Ave. Alternative route via Lane Cove National Pk
3	Blenheim Road and Badajoz Road, from Pittwater Road to Twin Road	Standard treatment S04. 9.0m road – 2x1.5m bicycle lanes, 2x3.0m traffic lanes.	Bicycle boulevard
4	Badajoz Road, from Twin Road to Pidding Road	Standard treatment S01. Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.	Currently mixed traffic. Upgrade to separated on-road.
5	Pidding Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Excludes any adjustments to structures and escarpment, such as bridge widening at Buffalo Creek and retaining walls, all which require detailed investigation.	
6	Robinson Street	Standard treatment S07. Wide or narrow profile.	Bicycle boulevard
8	Providence Road	Standard treatment S07. Wide or narrow profile. Includes ramp southern end.	Bicycle boulevard
9	Charles Street – Victoria Road to Kenneth Street	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments. Add ped/bike crossing on western leg of Victoria road.	
10	Charles Street – Kenneth Street to Morrison Road	Standard treatment S06A. 11.2m road – 1x2.2m parking lane, 2x1.6m bicycle lanes, 2x2.9m traffic lanes.	Separated on-road
11	Charles Street – Morrison Road to Waterview Street	Standard treatment S02. 12.8m road – 2x2.0m parking, 2x1.5m bicycle space, 2x2.9m travel lanes - with or without a centreline. (mixed traffic)	Separated on-road

(Table 13)
RR05 North Ryde to Gladesville – missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
4	Pittwater Road, Jordan Street and Western Street, from High Street to Ross Street	Standard treatment S01. Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.	Bicycle boulevard
5	Western Cr, Ross Street to Gerard Street	Standard treatment S02. 12.8m road – 2x2.0m parking, 2x1.5m bicycle space, 2x2.9m travel lanes - with or without a centreline.	Separated on-road
6	Western Cr, Gerard Street to Morrison Road	Standard treatment S06B. Bicycle lanes. 11.5m road – 1x2.3m parking lane, 2x1.5m bicycle lanes, 2x3.1m traffic lanes. Parking signage.	Separated on-road

(Table 14)
RR07 Epping to Sydney City – missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
5	Pembroke Road between Vimera Road and path to Terrys Creek.	Standard treatment S05C Downhill: 2.9m shared kerbside traffic lane – Uphill: 1x 3.2m motor vehicle lane, 1x1.6m exclusive bicycle lane and 1x2.3m parking lane uphill.	Signs only provided. Upgrade existing mixed traffic to bicycle boulevard.

(Table 15)
RR08 Epping to Lane Cove – missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
2 RR07	Pembroke Road between Vimera Road and path to Terrys Creek.	Overlaps RR08 Segment 5. For details see above.	Upgrade existing mixed traffic
3	Pembroke Road between Vimera Road and Agincourt Road	Standard treatment S05C Downhill: 2.9m shared kerbside traffic lane – Uphill: 1x 3.2m motor vehicle lane, 1x1.6m exclusive bicycle lane and 1x2.3m parking lane uphill.	Upgrade existing mixed traffic
4	Agincourt Road between Pembroke Road and Herring Road	Standard treatment S07. Wide or narrow profile. Mixed traffic.	Bicycle boulevard
5	Herring Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. MT.	Upgrade existing mixed traffic
6	Kent Road	Standard treatment S04. 9.0m road - 2x1.5m bicycle lanes, 2x3.0m traffic lanes. MT.	Upgrade existing mixed traffic
8	Coxs Road – Wicks Road to Kathleen Street pathway link	Standard treatment S01. Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections. (Mixed Traffic).	Upgrade existing mixed traffic
9	Coxs Road – remainder	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.	
10	Cressy Road	Standard treatment S07. Wide or narrow profile.	Bicycle boulevard
11	Magdala Road	Standard treatment S07. Wide or narrow profile.	Bicycle boulevard

4 CONNECT RYDE

(Table 16)
RR09 Epping to Hunters Hill – missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
1	Corunna Road and North Road	Varies - Standard treatment 4, 5A, 5B and 5C. Adopt highest cost, ie 5C. Includes additional contingencies for minor civil and traffic management works.	Upgrade existing mixed traffic
2	Eulo Pd, Wolger Road, Kuppa Road	Standard treatment S07. Wide or narrow profile. (MT and partial completion).	Bicycle boulevard
3	Lane Cove Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Includes signal adjustments at Buffalo road.	

(Table 17)
RR10 Parramatta Valley Cycleway (PVC) – missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
1	Lancaster Ave between Hope Street and Crowley Crescent	Standard treatment S07. Wide or narrow profile. 1 x bicycle symbol observed on full length.	Bicycle boulevard
2	Intersection of Lancaster Ave and Hope Street	Line marking and signage.	Bicycle boulevard
3	Intersection of Lancaster Ave and Parer Street	Signage.	Bicycle boulevard
4	Intersection of Lancaster Ave and Andrew Street	Line marking and signage.	Bicycle boulevard
8	Delange Road, Pellisier Road and Jetty Road between Waterview Street and Morrisons Bay Park	Standard treatment S07. Wide or narrow profile.	Implement bicycle boulevard along Pellisier road and Jetty road and Morrisons Bay Park
10	Morrison Road between Morrison Bay Park and Meriton Street	Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.	Upgrade to separated on-road or bicycle boulevard.
11	Meriton Street and Ashburn Place to Victoria Road	Standard treatment S06A. 11.2m road – 1x2.2m parking lane, 2x1.5m bicycle lanes, 2x3.0m traffic lanes.	Separated on-road

(Table 18)
RR11 Eastwood to Parramatta – missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
1	West Parade between Rowe Street and rail trail start	Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.	
2	Clanalpine Street	Standard treatment S07. Wide or narrow profile.	Bicycle boulevard
3	Shaftsbury Road section and crossing facility	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.	Bicycle boulevard
4	Clanalpine Street, Clan William Street, Read Street Warrawong Street, Brush Road, Hermoyne Street and Winbourne Street	Standard treatment S07. Wide or narrow profile.	Bicycle boulevard
8	Cobham Lane and Cobham Ave	Standard treatment S07. Wide or narrow profile.	Upgrade to bicycle boulevard

(Table 19)
RR12 Parramatta to Macquarie – missing links and upgrades.

Link No.	Description	2014 recommended treatment	2022 Amendment
1	Terry Road between Marsden Road and Hillview Road	In Parramatta City LGA. Part of PCC Regional Route RR03. Planned for Standard treatment S02 bicycle shoulder lanes.	Collaborate with ParraCity LGA to upgrade to separated on-road
4	First Ave, across railway	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. **Includes signal adjustments at East Pd.**	
6	Road reserve from Welby Street to Agincourt Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.	

4.2 Centre to Centre – Missing Links

The Centre-to-Centre Network is an extension of the regional bicycle network. This network seeks to deliver a connected city where people have the choice to ride to, from and between the towns and villages located in the local government area.

The first step is to deliver a fully connected network without any gaps. Figure 22 presents a set of treatment types which are feasible to implement within the existing road environment with minimal impact to street parking.

The goal is to deliver a high quality and low stress bicycle network. This will require further protection between people riding, driving, parking, and loading, as well as separating people walking and riding. The recommended treatment types for the ultimate network are illustrated in Figure 23.

To assist decision-making around how best to reallocate road space, it is recommended council adopts a Healthy Streets approach (refer to section 5.3 – healthy and inclusive streets) to support evidence-led decision making and compromises.

4.3 Route upgrades

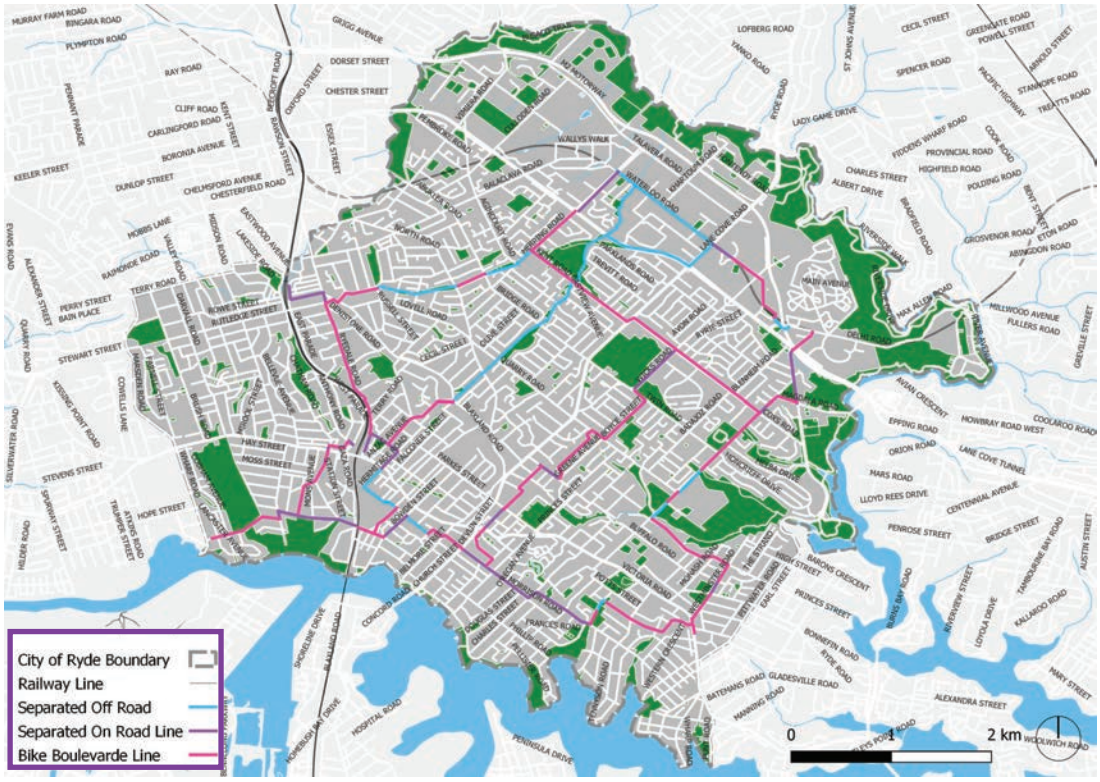
Many of the mixed traffic routes present a traffic stress level of 3.

This is due to cyclists mixing with relatively high volume or high-speed traffic without any protection or separation.

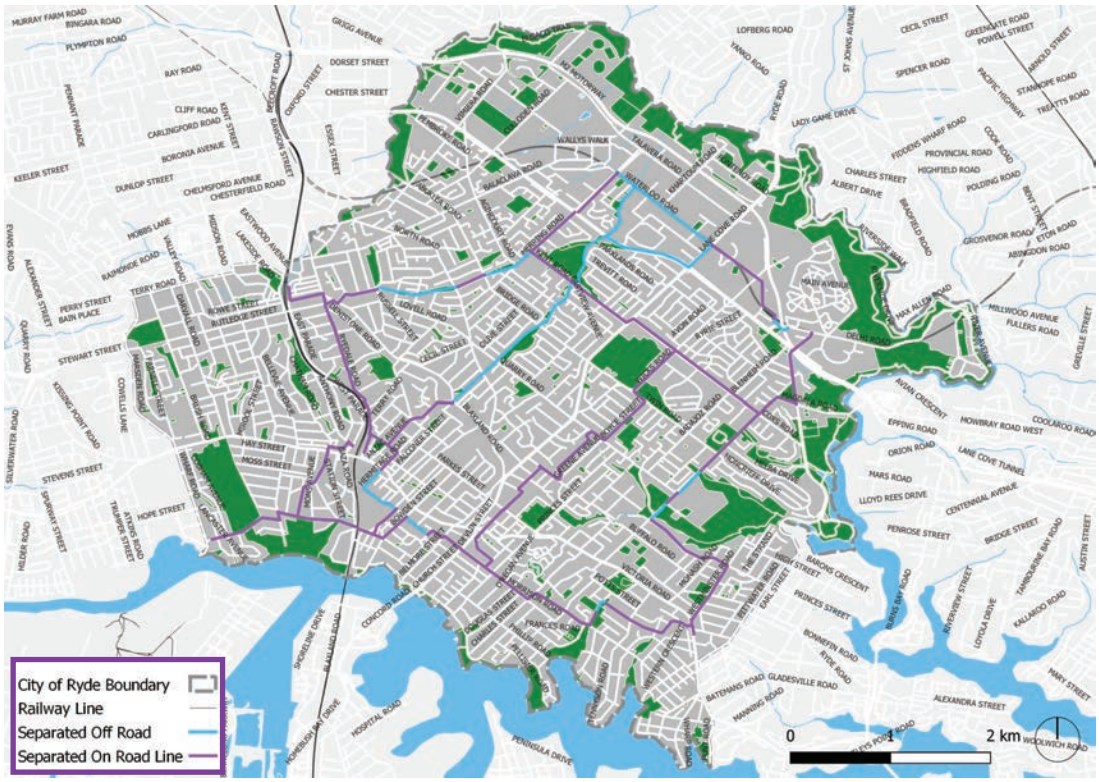
To reduce the levels of traffic stress and offer a safer bicycle route, mixed traffic streets should be investigated and where appropriate enhanced to form bicycle boulevards.

(Figure 21)
Design principles for bicycle boulevards (CrossleyTP, 2021).

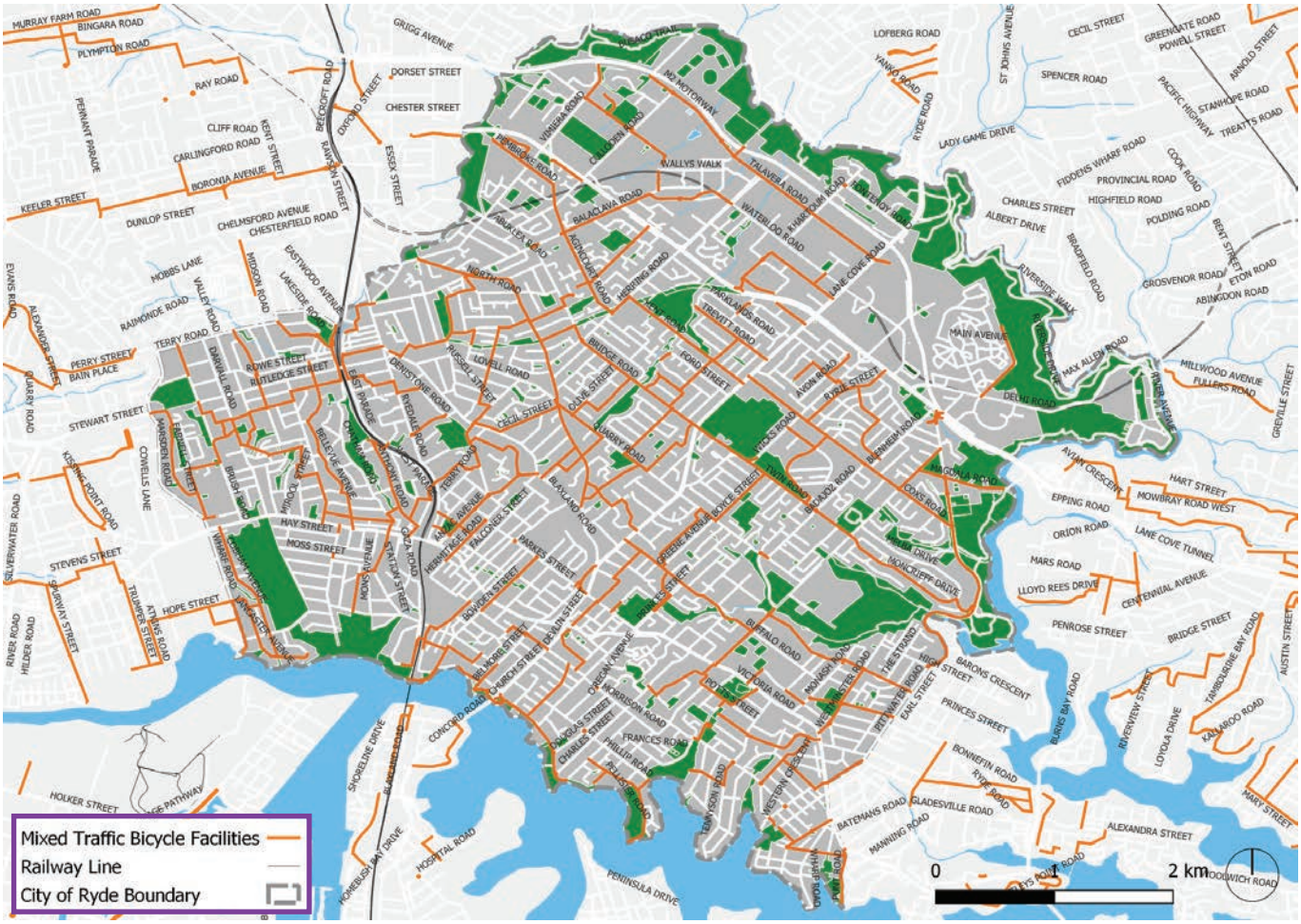
4 | CONNECT RYDE



(Figure 22)
Centre to Centre Network – feasible treatment types and upgrades.



(Figure 23)
Centre to Centre Network – recommended treatment types.



(Figure 24)
Existing mixed traffic streets to be investigated for bicycle boulevards.
Source: Mixed traffic links taken from City of Ryde Cycleways Data, April 2021.

4 CONNECT RYDE

4.4 New local links

In response to population and employment growth, many places across City of Ryde are planned or undergoing land-use change. This has created a need for new local links to provide access to the bicycle network and to the new and emerging places across the city.

The proposed new links (shown in Figure 25) are centred around:

- Macquarie Park and leverage the planned fine grain network
- Putney and the Putney Hill Precinct
- Melrose Park improving accessibility to and from the community facilities and public transport services within the precinct and to neighbouring Meadowbank
- Eastwood, investigating potential bicycle facilities along the County Road Movement Corridor
- Meadowbank including links from the Meadowbank Education and Employment Precincts
- West Ryde including links from the West Ryde Town Centre Masterplan.

(Figure 25)
Proposed new local links.

4.5 Intersection upgrades

The most recent five-year crash record dated 01 January 2015 to 31 December 2020, reported 39 crashes involving cyclists. The most severe crashes occurred at the following seven intersections which are prioritised for immediate investigation.

Location

- Blaxland Road and Princes Street
- Badajoz Road and Twin Road
- Adelaide Street and Moss Street
- Anzac Ave and Herbert Street
- Wattle Street and Hermitage Road
- Frances Road and Mitchell Street
- Quarry Road and Olive Street

Pittwater Road Shared User Path.

5 OTHER SUPPORTING INFRASTRUCTURE

Bike racks, Macquarie Park train station.

5 OTHER SUPPORTING INFRASTRUCTURE

Supporting infrastructure includes:

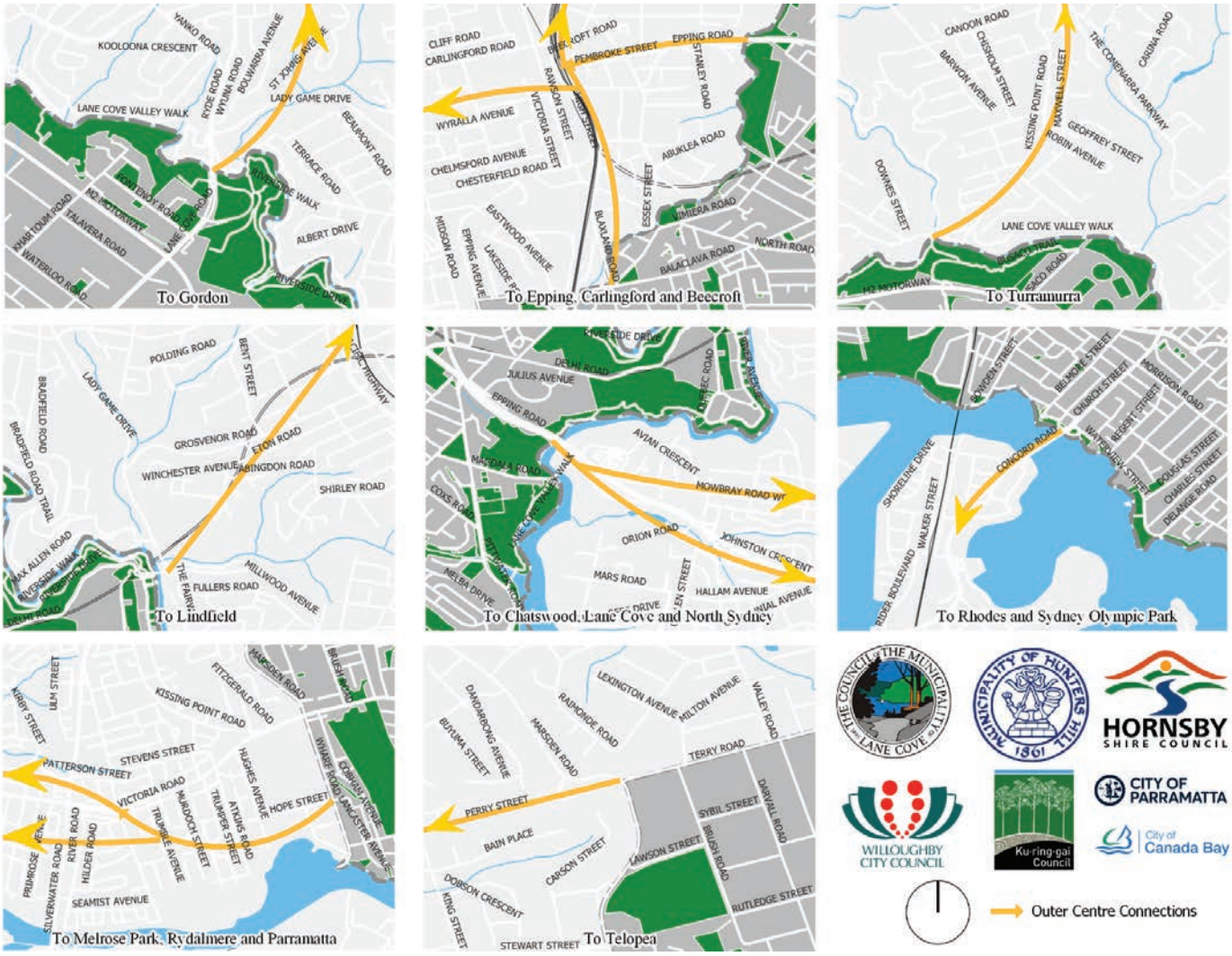
- Cycleways extending beyond the municipal boundaries to connect to nearby towns for work, personal business, and recreation
- The green grid walking and cycling links
- Street lighting provision along off-road bicycle facilities, tracks, and intersections
- Places to stop and rest.

5.1 Extending cycleways beyond the boundary

City of Ryde shares a boundary with Hunters Hill Council, Lane Cove Council, Willoughby City Council, Kur-ring-gai Council, Parramatta City Council and Canada Bay Council via river crossings.

There are a number of opportunities to extend City of Ryde's local bicycle network beyond its boundaries to enhance connectivity to surrounding places. This will require fostering collaborative working relationships with surrounding councils to encourage the continuation of bicycle routes beyond the boundary.

Key opportunities are presented in Figure 26.



(Figure 26)
Opportunities to extend bicycle routes beyond Council's boundary.

5 OTHER SUPPORTING INFRASTRUCTURE

5.2 The Green Grid

The green grid is a planned network of high-quality green spaces that connects communities to nature and recreational open spaces. The network includes tree-lined streets, waterway and bushland corridors, parks and open spaces.

City of Ryde has developed an Open Space Structure Plan and a Green Links Masterplan.

The green corridors and links are primarily planned for recreational purposes (walking, running, and riding). Some of the corridors include off-road shared user paths or separated cycleways and offer safe and attractive routes for people riding to reach work, public transport as well as for recreation.

(Photograph 1)
Morrison Bay Shared User Path.
Source: City of Ryde.

The planned Open Space Structure Plan is shown in Figure 28. Council is currently developing a Green Link Masterplan comprising Terry's Creek, County Corridor and Shrimptons Creek. All three connections align with the 2022 bicycle network offering enhanced connectivity (see 4.1 Regional Routes – Missing Links).

(Figure 27)
City of Ryde Green Grid Masterplan, 2022.
Source: City of Ryde, Social PinPoint.

Additional visionary links such as boardwalks along the coastline and within reserves are proposed for investigation. These are detailed in Table 20 below and illustrated in Figure 28.

(Table 20)
Green grid links for further investigation.

Ref No.	Link Descriptions	Link Benefit	Action	Timescales
1	Busco Trail and Busco Road from Browns Waterhole to Macquarie University	Kur-ring-gai Council has committed investment to upgrade the crossing at Browns Waterhole. This will create a new connection from Macquarie University to South Turramurra.	City of Ryde Environmental Team to Investigate	Short Term (0 – 2 years)
2	Lane Cove Link – Khartoum Road to Rudder Creek Trail	Provides additional connectivity across Lane Cove River offering an alternative route and travel choice between Gordon and Macquarie Park via Rudder Creek Trail.	City of Ryde Environmental Team to Investigate	Medium Term (2 – 5 years)
3	Lane Cove River National Park bushland boardwalk between Plassey Road to Riverside Drive	Traffic free alternative link between North Ryde Metro Station and West Lindfield and Chatswood West (Lindfield Learning village and OH Reid Memorial Park).	City of Ryde Environmental Team to Investigate	Medium Term (2 – 5 years)
4	Walking and Cycling bridge from Wharf Road to Wentworth Point River Walk Path	Recommencement of Parramatta Light Rail Stage 2 presents an opportunity to include a walking and cycling bridge connection to Wentworth Point. This offers growing communities at Melrose Park and Meadowbank new employment and leisure opportunities at Sydney Olympic Park and Rhodes Strategic Centre.	City of Ryde to collaborate with Transport for NSW.	Short – Medium Term (0-5 years)
5	Coastal path from Kendall Bay to Putney Point	Extending Dyson Street walking and cycling track to Putney Point. Connecting playgrounds and parks on a traffic free route. Further extends the coastal path from Archer Creek at Lancaster Ave from 3.4km to 4.2 km length.	City of Ryde Environmental Team to Investigate	Long-term (5-10 years)
6	Glades Bay to Glades Bay Park Path	Connecting green spaces (parks and playgrounds). Forms a ½ KM route along the Parramatta River and a 1.5km loop walk, run, or ride within the park and reserve.	City of Ryde Environmental Team to Investigate	Long-term (5-10 years)
7	Looking Glass Bay Park to Parramatta Regional Park Path	Improves access and inclusion to existing open space. Widening footways and removing obstruction to cyclists also provides access to mobility impaired. Aged care facilities and hospitals immediately adjacent to park increases this population. Provides traffic free access between Henley and Gladesville (alternative is Victoria Road).	City of Ryde Environmental Team to Investigate widening the existing footpath in Looking Glass Bay Park and Bajo Peterson Park to provide access for bikes. Investigate Opportunity to upgrade walking trail through Bedlam Point to accommodate cyclists.	Long-term (5-10 years)

(Figure 28)
Open Space Structure Plan and additional green links for investigation.
Source: City of Ryde Local Strategic Planning Statement, Mar 2020.

5 OTHER SUPPORTING INFRASTRUCTURE

5.3 Inclusive and healthy streets

As the bicycle network is delivered every decision made before the facility is constructed is an opportunity to deliver a better place for people to live, work and improve their health. The Healthy Streets approach developed by Lucy Saunders offers a framework to guide and align decision-making towards this goal[10].

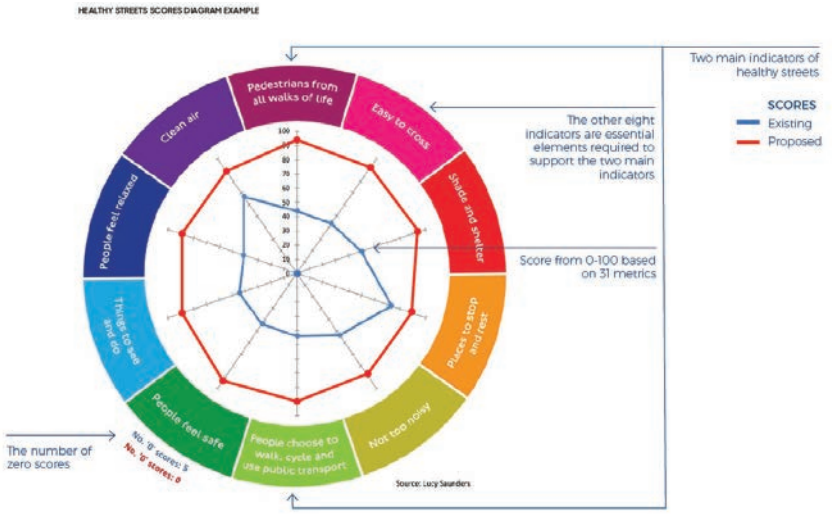
The framework involves objectively quantifying the existing or proposed design elements of a street. The measurement is used to assess how attractive the street is or could be under the proposed design, for walking, cycling, or catching public transport.

The design elements include levels of separation between people walking, riding and traffic as discussed in the prior sections. It also includes other factors such as street lighting, seating, bicycle parking, shade, shelter, and water bubblers.

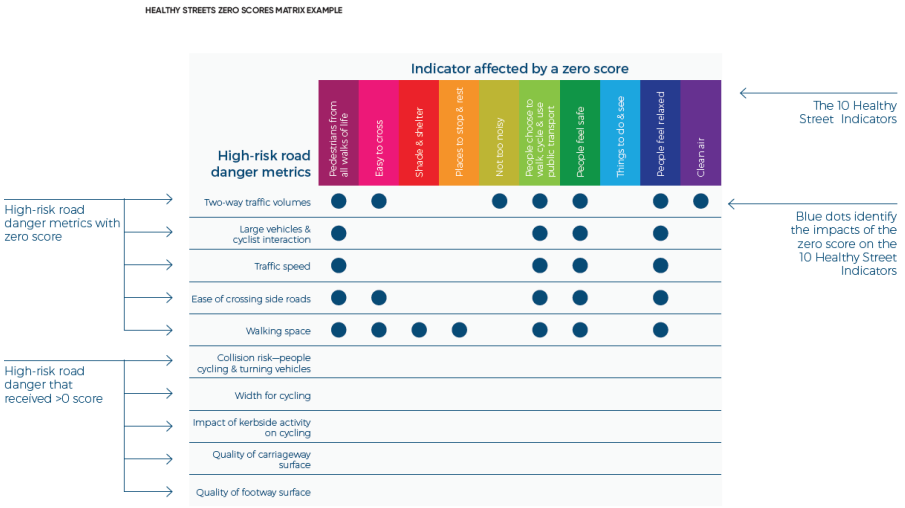
To consider all the elements of a street cohesively and deliver streets which are welcoming for everyone to walk, ride and spend time; it is recommended that Council considers adopting the Healthy Streets Approach in designing and assessing street design options.

This practice also fosters collaboration and will help coordinate the provision of elements which fall outside of the jurisdiction of the traffic and transport team.

Healthy Streets Scores



Zero Scores



(Figure 29)
Healthy Streets Design Tools to support decision making.
Source: CrossleyTP.

[10] Strategic alignment to City of Ryde Social Plan 2019 – 21 "inclusive and connected places"

5 OTHER SUPPORTING INFRASTRUCTURE

5.3.1 Street lighting

Streets are more attractive to walk and ride along when people feel safe and secure. At dawn, dusk and at night, street lighting is important to ensure people walking and riding can see their way ahead and be seen by other people on the street including motorists.

Street lighting also makes people feel more secure and less at risk of anti-social behaviour. This also extends to bicycle parking facilities where people are more likely to feel comfortable leaving their bike at a well-lit facility.

The type of street lighting can also influence ambience and how people feel and experience the street or public space they are walking, riding, or dwelling.

Authorities who contribute to street lighting include Council, Transport for NSW (State Roads) as well as private developers or landowners e.g., shop awnings and privately operated surface car parks.

Council currently has two street lighting programs:

- Street Lighting Roll-Out Program, owned by Asset Management Team
- Green Grid Lighting Plan, owned by Environment / Parks Planning Team

Where possible consideration and priority should be given to:

- Lighting intersections which connect bicycle links and routes
- Positioning streetlights to cast light onto bicycle facilities or where cyclists position themselves within mixed traffic environments
- Provision of lighting along footways comprising shared user paths (streets and green links).
- Provision of street lighting around public transport facilities
- Positioning new bicycle parking facilities in well-lit locations or add lighting as part of installation.

5.3.2 Bicycle parking and water filling stations

Opportunities for people to stop and rest are basic requirements for some people to choose to walk or ride. Travelling actively for both short and long-distances can be challenging for many people in our communities. A place to rest, park a bike and take a drink helps to create inclusive environments as well as being important elements for making streets welcoming places to dwell.

Bicycle parking

Bicycle parking facilities offer a place to store a bicycle for people arriving at their destination, resting, or transitioning between transport modes.

As more bicycle routes are constructed and the number of people participating in riding grows, the need for bicycle parking will increase.

Short-term parking at shops, libraries, markets, and recreational facilities can encourage more people to choose to ride; as well as long-term bicycle parking provided at major public transport hubs, stations, offices, and high-density mixed and residential developments.

Bicycle parking should be installed on public property to offer access to all. This includes streets as well as on government property such as community centres, libraries, health facilities, schools, and parks.

(Photograph 2)
Protected on-road bicycle facility with integrated seating and landscaping, Cel Emidio Piedad Parklet, Brazil.
Source: City of Ryde.

Short-term parking

Short term bicycle parking facilities are installed to accommodate visitors, customers, bicycle delivery riders and others who are expected to stay for less than two-hours.

Bicycle racks are used for short-term bicycle parking. They are relatively low-cost and allow riders to securely lock their bicycle frame and wheels to the rack.

The racks should be:

- Positioned with a clear zone around them to avoid impeding traffic, opening car doors, and people walking on the adjacent footway
- Conveniently located in the immediate vicinity of the destination or attraction
- Placed in a well-lit area in full view of people passing-by
- Directly accessible from the bicycle route e.g., shared user path connection from a bike lane to the racks, or a dropped kerb directly from a bicycle lane to the parking facility. Walking with a bike is less appealing and can be challenging on footways with high pedestrian footfall
- Easily recognisable and ideally signed to increase visibility to approaching bicycle riders.

At locations with limited space on the footway, or where pedestrian footfall is high, racks can be substituted for bicycle loops mounted on multi-functional poles, street lighting columns or posts.

A loop can accommodate one or two bicycles aligned in parallel with the kerb. When provided at frequent intervals, bicycle loops offer a convenient parking option especially along the frontage to retail shops. The loops require less space; however, they do not always provide enough space to comfortably manoeuvre a bicycle.

(Photograph 3)
Sheltered bicycle parking facility at Union Square, New York.
Source: City of Ryde.

At major destinations like town centres, individual bicycle racks on a footway could be insufficient to meet bicycle parking demand. At such locations more formal structures and larger facilities need to be provided.

These corrals of bicycle racks can be provided on the footway such as footway bulb-outs or kerb-extensions. An alternative is to move the bicycle corrals into a protected on-road facility through the conversion of a car parking space (see Photograph 2). This leaves footway space for outdoor dining; bus stops or high flows of pedestrians.

5 OTHER SUPPORTING INFRASTRUCTURE

Long-term parking

Long-term bicycle parking caters for employees, students, residents, commuters, and others expected to park more than two-hours.
Long-stay parking should be a secure and weather protected and ideally located indoors or within the premises of the key destination e.g., a school. Long-stay facility types include bicycle lockers, bicycle stations and valet bicycle parking. These facilities are more expensive to install, however, they can make the difference for a commuter deciding whether to ride to work.

Bicycle lockers provide secure parking for an individual bicycle and are usually found at train stations.

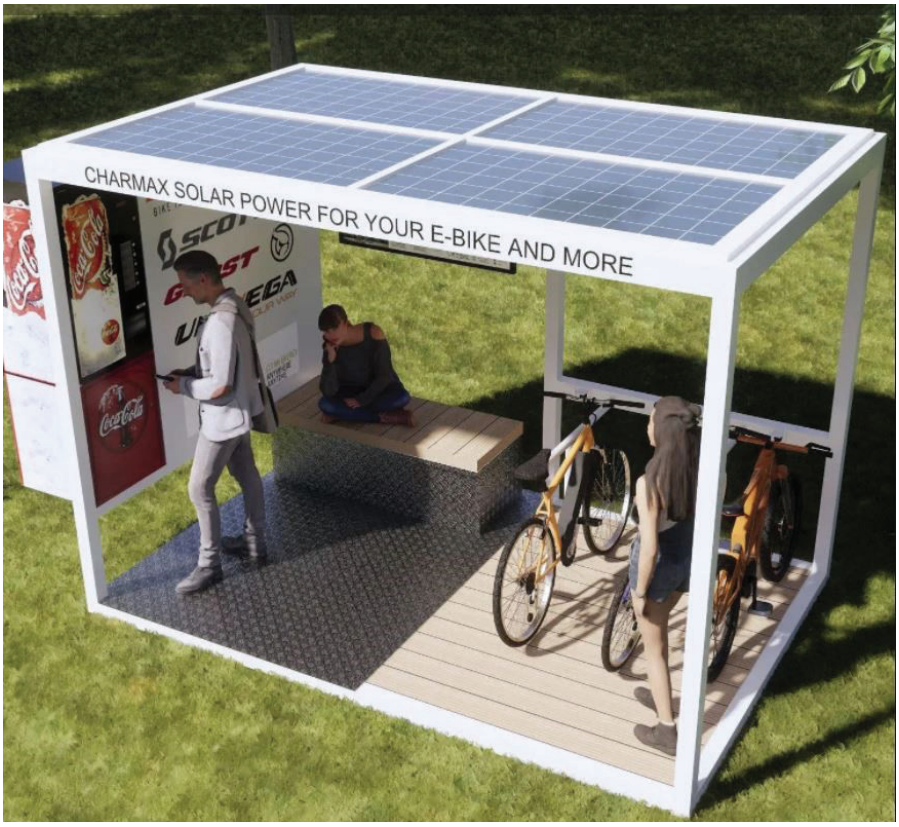
Bicycle stations can offer a one-stop bicycle service centres for bicycle commuters. They include 24-hour secure bicycle parking and may provide amenities such as bicycle repair facilities, bicycle rentals, showers and changing facilities.

A bicycle valet parking facility offers indoor bicycle storage. The rider gives their bicycle to an attendant who tags the bicycle with a number and gives the rider a claim stub. Bicycle locks are not required at this facility.

This type of system is suitable at major sports facilities, arenas, and festivals where large numbers of people gather.

Innovative high-volume long-stay bicycle parking facilities include solar power e-bike parking stations for individual e-bikes or e-bike parking schemes.

(Photograph 4)
A bicycle station serving Central Station, Amsterdam.
Source: Photo by Martín Sarthou on Unsplash.



(Photograph 5)
A concept for a protected solar powered E-bike parking corral, Austria.
Source: City of Ryde.

The location of existing bicycle facilities is shown in Figure 30[11].

The location of proposed new bicycle facilities is also marked on this figure and listed in Table 22[12]. The proposed parking locations require further investigation to assess bicycle parking demand and duration to determine the appropriate facility type, volume, and position. A guide to the type of facility by land-use and duration of stay is summarised in Table 21.

Additionally, it is recommended that bicycle parking is provided at schools as part of a safety and active travel campaign. A good level of engagement with the school is more likely to foster participation in riding to school.

Outside school gates can be a busy and congested pedestrian environment. It is therefore recommended that bicycle parking is located on the school premises. This also means bikes will be secure.

[11] Based on City of Ryde Asset Data Set for Bicycle Parking (existing), 2020.
[12] See City of Ryde Bicycle GIS Data Base Bicycle Parking for detailed locations.

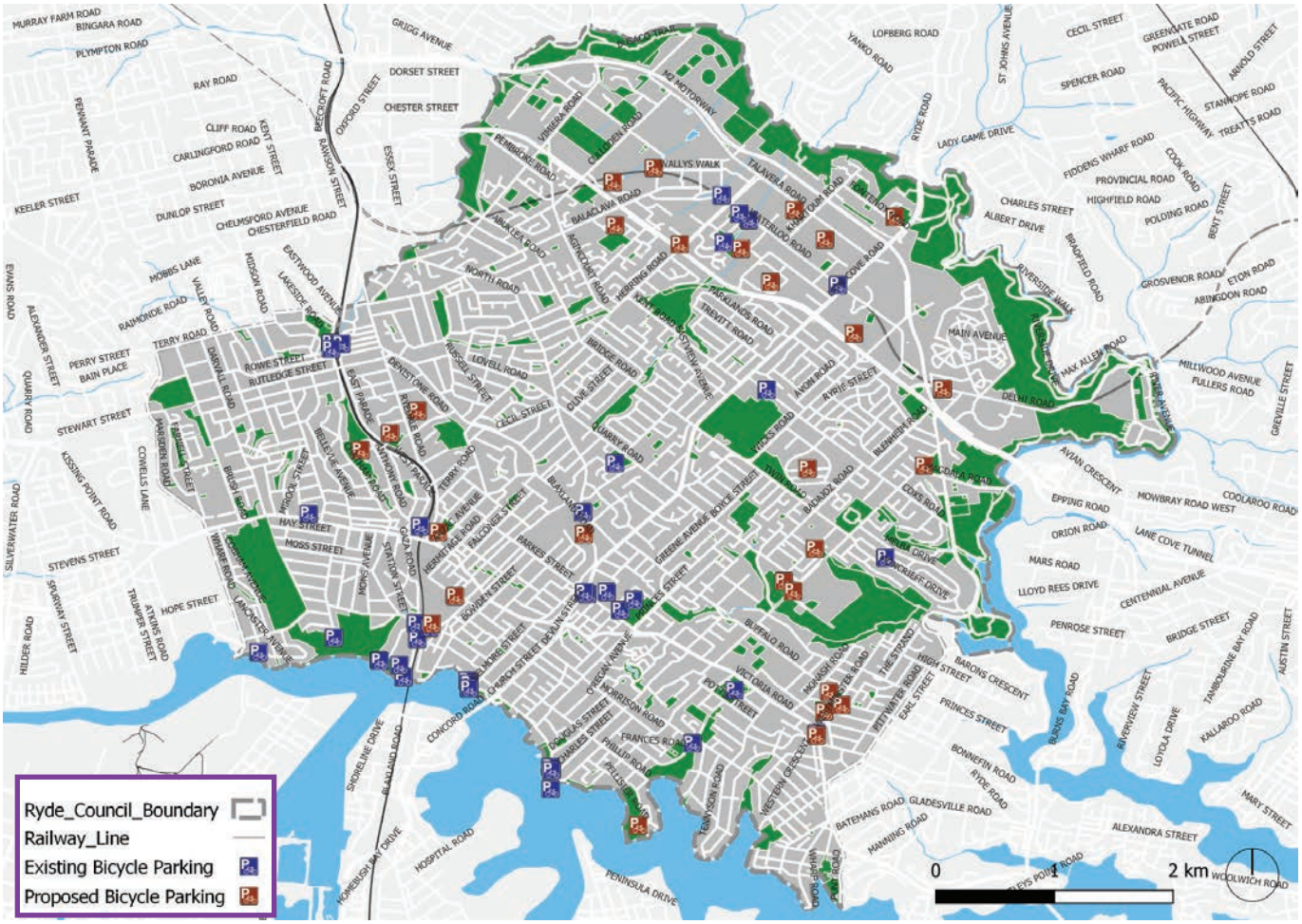
(Table 21)
Types of bicycle parking facilities.

	Short-Stay	Long-Stay
Land-use type	Retail, community facilities, recreational facilities, health (visitor).	Commercial, residential, public transit, education, shopping centre, health (worker).
Rider type	Visitor, Customer.	Worker, Commuter, Resident, Student, Pupil.
Facility type	Racks (low demand) Loops (low demand) Corrals (high demand).	Corrals (low demand) Lockers (low demand) Bicycle Parking Stations (high demand) Bicycle Parking Valet (high demand).

(Table 22)
Location of proposed bicycle parking.

Location	Type
Denistone Station (Both sides)	Long-Stay
North Ryde Park	Short-Stay
West Ryde Station – Eastern Side	Long-Stay
Westminster Park	Short-Stay
Monash Park	Short-Stay
Pidding Park	Short-Stay
Ryde Road – Southern Side – Opposite Westminster Road	Short-Stay
Tyrell Park	Short-Stay
Cressy Road – Southern Side – Opposite Pidding Park	Short-Stay
Tuckwell Park	Short-Stay
Victoria Road – West of Westminster Road (major bus stop)	Long-Stay
Meadowbank TAFE – Northern Entrance	Long-Stay
Meadowbank TAFE – Southern Entrance	Long-Stay
Macquarie Park Business Parks (multiple locations)	Long-Stay
Macquarie University – on-campus at Wally's Walk	Long-Stay
Macquarie University – Western Entrance Walk	Long-Stay
Macquarie Hospital	Long-Stay
Ryde Hospital	Long-Stay
Macquarie Park Village	Long-Stay
Putney Park	Short-Stay
Dunbar Park	Short-Stay

5 OTHER SUPPORTING INFRASTRUCTURE



(Figure 30)
Existing and planned bicycle parking facilities.
Source: City of Ryde Asset Data Base - Bicycle Parking, 2020.

Water filling stations

Access to drinking fountains and water filling stations in high pedestrian areas is beneficial to the environment. They reduce reliance on bottled water helping to reduce plastic waste.

Water filling stations are generally perceived to be cleaner and more hygienic than water fountains or bubblers.

Water filling stations should be situated in high pedestrian traffic areas at pivotal points in a public space where people have the convenience of staying hydrated while engaging in activities.

Locations could include sports and recreation areas, commercial and retail areas, playgrounds, walking and cycling trails, open spaces, and transport hubs.

The location of existing water filling stations and fountains are shown in Figure 31. Suggested locations for additional water filling stations are also mapped for further consideration. This is based on relative levels of pedestrian activity and physical activity.

(Figure 31)
Water filling stations – existing and suggested locations for further investigation.
Source: City of Ryde Asset Data Base – Water Bubblers (Existing), 2020.

5 OTHER SUPPORTING INFRASTRUCTURE

5.2.4 Wayfinding and route promotion

Wayfinding

A key direction is to plan and implement a coherent wayfinding system that encourages people to cycle.

The aim is to provide riders with the confidence to follow a route and navigate intersections using only the information presented on the street. There should be no need to refer to other sources of information to navigate the route e.g., online maps or apps.

It is suggested Council considers developing a network and numbering strategy, or a network and branding strategy for the City of Ryde.

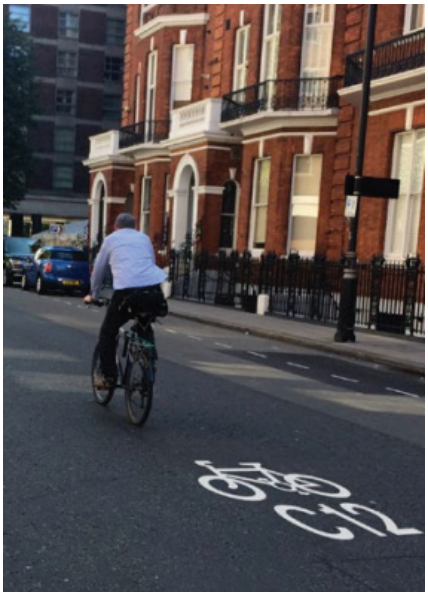
A numbering strategy involves assigning route numbers such as those already developed in the 2014 Plan to signs and road markings.

Alternatively, routes could be branded and include a symbol or colour scheme. An example is MyFig cycleway running along Figueroa Street in Downtown LA.

To encourage smarter travel choices, it is suggested Council considers incorporating wayfinding strategies which extend from train stations to key destinations located in the precinct (one- to two-kilometre catchment).

Suggested stations include:

- Macquarie Park – largest destination and precinct
- Meadowbank Station – precinct is undergoing transformation
- Eastwood Station – key destination for visitors
- West Ryde – opportunity to integrate with master plan.



(Figure 32)
Wayfinding strategies - numbering system in London and branding in Los Angeles.
Source: TfL Cycleways Signing Guidance (2010); The Dirt, American Society of Landscape Architects, (10/2016).

(Table 23)
Smarter Travel Program.

Location	Timescale
Macquarie Park	Short-term (0-2 years)
Meadowbank Station	Short-term (0-2 years)
Eastwood Station	Short-term (1-3 years)
West Ryde Station	Short-term (1-3 years)

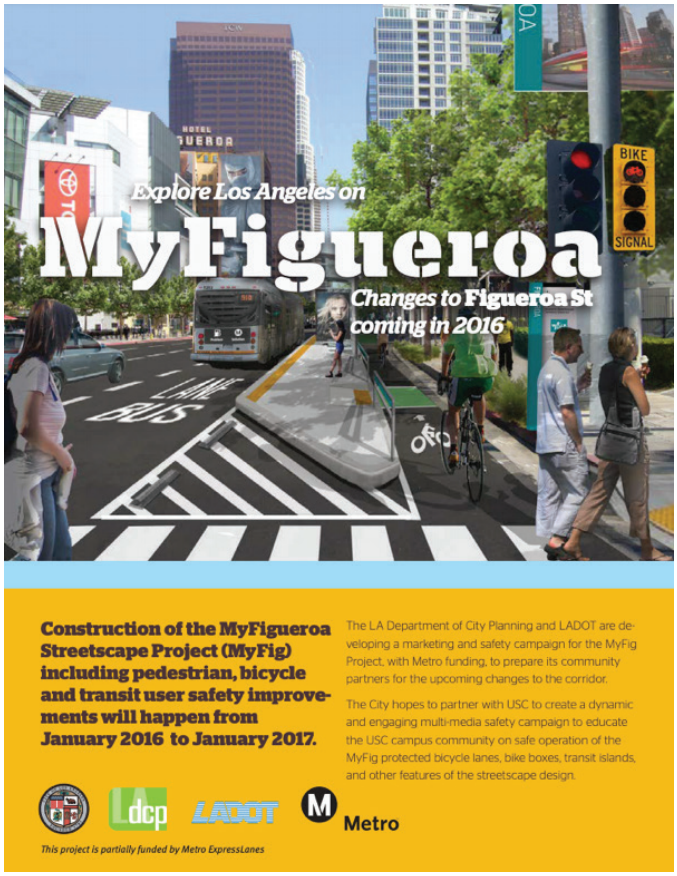
Route promotion

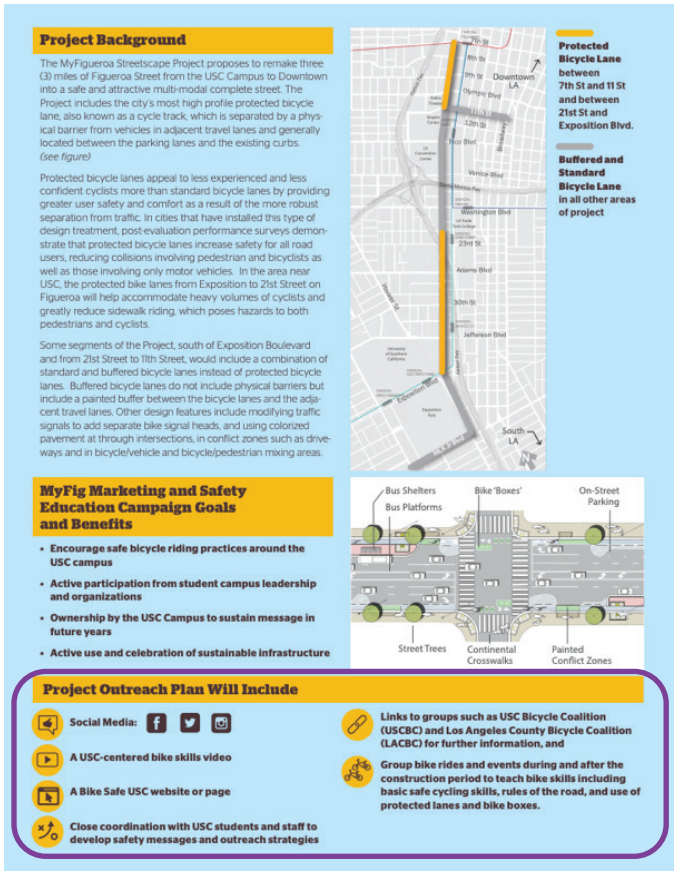
The opening of a new bicycle facility presents an opportunity to engage the community in education and promotional campaigns. The aim of route promotion activities is to:

- Encourage more people to ride,
- Help to build people's confidence to ride
- And to build new stereotypes of who are bicycle riders

The example Community Notification developed as part of the MyFigueroa Project details a community outreach plan including bike skills, group rides and links to social media.

Pittwater Road Shared User Path.





(Figure 32)
Promoting projects by integrating outreach plans.
Source: Bike Safe USC.

6 MEASURING PROGRESS

6 MEASURING PROGRESS

This section presents a suite of indicators to measure success and monitor progress against targets.

Taking measurement will ensure Council Asset Data Base and GIS Bicycle Data Base remain up to date which will support future planning works and record management.

The data will also support Council to build business cases for future investment and to further celebrate and promote success with stakeholders and the community.

A key first step is to quantify the baseline performance and develop targets with key stakeholders.

6.1 Connect Ryde

Proposed Indicator	Proposed Data Source	Baseline Measurement	Proposed Data Frequency
Number of kms of bicycle facilities delivered	City of Ryde Asset Data Base TfNSW Sydney Cycleways Data	To be determined	Annually
Percentage of regional bicycle connections delivered	City of Ryde Asset Data Base TfNSW Sydney Cycleways Data	85 %	Annually
Number of centres which are connected by a stress level 2 route	City of Ryde Asset Data Base	To be determined	Annually
Proportion of households located within 200m of a bicycle facility	City of Ryde Asset Data Base	To be determined	Annually
Number of bicycle parking spots built	City of Ryde Asset Data Base Development Applications	To be determined	Annually
Number of cycling trips made to reach public transport, or continue a public transport journey	Suggested question in City of Ryde Travel Survey or Population and Household Census Data	To be determined	Every 2 years Every 5 years
Number of public transport stations with secure bicycle parking	City of Ryde Asset Data Base	To be determined	Annually
Number of public transport stations with unsecured bicycle parking	City of Ryde Asset Data Base	To be determined	Annually
Percentage of stress level 1 and level 2 bicycle facilities within the bicycle network	City of Ryde Asset Data Base and GIS Data Base TfNSW Sydney Cycleways Data	To be determined	Annually
Level of safety and comfort perceived by customers	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Number of bicycle related crashes in the City of Ryde (council-managed roads)	TfNSW crash database	To be determined	Annually
Number of bicycle related crashes in the City of Ryde (State Roads)	TfNSW crash database	To be determined	Annually
Percentage of cyclists who feel cycling conditions are improving in the city	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Cyclists' satisfaction with the city bike system	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Cyclists' satisfaction with the quantity of bicycle parking facilities (average rating)	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Cyclists' satisfaction with the quality of bicycle parking facilities (average rating)	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Number of workplaces with end-of-trip facilities	Workplace Green Travel Plans Development applications	To be determined	Every 2 years
Number of intersections with bicycle safety features (e.g. bicycle lanterns)	City of Ryde Asset Data Base	To be determined	Annually
Percentage of bicycle routes with a minimum width of 2.5m (desirable minimum width as per Austroads Guidelines)	City of Ryde Asset Data Base	To be determined	Annually

6.2 Ryde Easy

Proposed Indicator	Proposed Data Source	Baseline Measurement	Proposed Data Frequency
Percentage of stress level 1 and level 2 bicycle facilities within the bicycle network	City of Ryde Asset Data Base and GIS Data Base TfNSW Sydney Cycleways Data	To be determined	Annually
Level of safety and comfort perceived by customers	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Number of bicycle related crashes in the City of Ryde (council-managed roads)	TfNSW crash database	To be determined	Annually
Number of bicycle related crashes in the City of Ryde (State Roads)	TfNSW crash database	To be determined	Annually
Percentage of cyclists who feel cycling conditions are improving in the city	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Cyclists' satisfaction with the city bike system	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Cyclists' satisfaction with the quantity of bicycle parking facilities (average rating)	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Cyclists' satisfaction with the quality of bicycle parking facilities (average rating)	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Number of workplaces with end-of-trip facilities	Workplace Green Travel Plans Development applications	To be determined	Every 2 years
Number of intersections with bicycle safety features (e.g. bicycle lanterns)	City of Ryde Asset Data Base	To be determined	Annually
Percentage of bicycle routes with a minimum width of 2.5m (desirable minimum width as per Austroads Guidelines)	City of Ryde Asset Data Base	To be determined	Annually

6 MEASURING PROGRESS

6.3 Ryde More

Proposed Indicator	Proposed Data Source	Baseline Measurement	Proposed Data Frequency
Survey the diversity of riders (gender, age, occupation)	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
How frequently people have cycled in the past year, month, week	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Percentage of children who walk and ride to school, or in a week	School hands-up travel surveys	To be determined	Every 2 years
Usage of bicycle parking facilities and types of bikes present	Count of bicycles at key locations (e.g. town centres) City of Ryde Asset Data Base	To be determined	Every 2 years
Number of people riding before and after the implementation of a new bicycle facility	Spot counts	To be determined	As required
Survey asking for purpose(s) that cyclists have ridden • Recreation or exercise • Transport (commuting, education, public transport, shopping, visit friends/family)	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Number of bikes and e-bikes owned per household	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Survey asking why a person hasn't used a bicycle for recreation/transport (e.g. safety, convenience, nowhere to park, hygiene)	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Number of people using a certain cycleway or shared path	Bicycle counters at key locations or Conduct random spot counts	To be determined	Monthly

6.4 Ryde Ahead

Proposed Indicator	Proposed Data Source	Baseline Measurement	Proposed Data Frequency
Number of people attending cycling events and rides	Survey on entry Count tickets collected at a Bike Parking Valet	To be determined	Annually
City of Ryde employees bike fleet use	Internal records/survey	To be determined	Monthly
Number of events held by City of Ryde or partners to promote bicycle riding or training Satisfaction rating of the event/ training	Internal records/survey	To be determined	Annually
Percentage of people who say their workplace encourages people to ride	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Percentage of people satisfied with cycling communications	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Percentage of people with a positive attitude towards cycling	Suggested question in City of Ryde Travel Survey	To be determined	Every 2 years
Amount of funding secured for cycling improvements	Internal records	To be determined	Annually

Appendix A – Region and Local Route Descriptions

(Table 24)
Region and Local Route Descriptions (City of Ryde, 2014).

Route Number	Route Name	Location
RR01	Hornsby to Strathfield Rail Trail	Via the northern railway corridor between Eastwood and Meadowbank – interim on-road route.
RR02	Turramurra to Eastwood	Via Browns Waterholes shared path, Vimiera Road, Ball Ave, May Street, Railway Parade and East Parade.
RR03	Mona Vale to West Ryde	Via De Burghs Bridge, Fontenoy Road, Khartoum Road, Waterloo Road, Shrimptons Creek Path, Heath Street, Rickard Street, Anzac Ave and Wattle Street.
RR04	Chatswood to Burwood	Via Delhi Road, Epping Road, Blenheim Road, Coxs Road, Badajoz Road, Twin Road, Polding Road, Robinson Street, Providence Road, Charles Street, Delange Street.
RR05	North Ryde to Gladesville	Via Pittwater Road.
RR06	M2 Cycleway	Via M2 Motorway.
RR07	Epping to Sydney City	Via Epping Road.
RR08	Epping to Lane Cove	Via Epping Road, Pembroke Road, Agincourt Road, Herring Road, Kent Road, Coxs Road, Cressy Road and Magdala Road.
RR09	Epping to Hunters Hill	Via Corunna Road, North Road, Eulo Parade, Kuppa Road, Buffalo Road and Ryde Road.
RR10	Parramatta Valley Cycleway (PVC)	Via Wharf Road, Lancaster Ave, Parramatta Valley Cycleway, Waterview Street, Delange Street, Pelliser Road, Jetty Road, Morrison Road, Meriton Street and Ashburn Place.
RR11	Eastwood to Parramatta River	Via West Parade, Clanalpine Street, Shaftesbury Road, Clan William Street, Read Street, Warrawong Street, Brush Road, Hermoyne Street, Winbourne Street, Marsden Road, Wharf Road, Cobham Lane and Cobham Ave.
RR12	Parramatta to Macquarie	Via Terry Road, Hillview Road, Railway underpass, Rowe Street, Blaxland Road, Edgar Street, Welby Street, County Road corridor, Woorang Street, County Road corridor (Kotara Park), Herring Road, Kent Road, ELS Hall Park paths and Shrimptons Creek Path.
LR01	Eastwood Heights to Marsden High	Via Marsden Road, Farnell Street and Winbourne Street.
LR02	Eastwood to Parramatta River	Via Rowe Street, Trelawney Street, Bellevue Ave, Victoria Road, Adelaide Street and Andrew Street.
LR03	Eastwood to PVC via West Ryde	Via West Parade, Railway Corridor, Anthony Road, Betts Street, Chatham Road, Station Street, Rex Street, Federal Road and Meadowbank Memorial Park Paths.
LR04	North Ryde to West Ryde	Via Sobraon Road, Valda Place, Wilga Place, Abuklea Road, Kingsford Ave, North Road, Norma Ave, Grove Street, Boronia Lane, Russell Street, Kings Road, Terry Road, Marlowe Lane, Marlowe Ave, West Parade, pathway along Victoria Road and Ryedale Road.
LR05	North Ryde to Meadowbank	Via Lyonpark Road, Epping Road paths and overbridge, David Ave, Hawkes Pathway, Trevitt Road, Ada Street, Flinders Road, Bridge Road, Smalls Road, Quarry Road, Aeolus Ave, North Road, Blaxland Road, Melville Street, Parkes Street, Bowden Street and MacPherson Street.
LR06	Macquarie Park to Putney	Via new path through Talavera Business Park, Waterloo Road, new path through Wicks Business Park, Epping Road over-bridge, Ryrie Street, Truscott Street, path through Macquarie Hospital grounds, Wicks Road, Boyce Street, Quarry Road, Woodbyne Crescent, Green Ave, Buffalo Road, Crescent Ave, Princess Street, Ryde Park paths, Argyle Ave, Blaxland Road, Church Street, Wandoo Ave, Gladstone Ave, Morrison Road and Regent Street.
LR07	Talavera Road Route	Via Waterloo Park paths and Talavera Road.
LR08	Lane Cove River Road	Via Riverside Drive between Delhi Road and De Burghs bridge at Lane Cove Road in Lane cove National Park.
LR09	Marsfield to Macquarie Park	Via Waterloo Road, Macquarie University Roads (Gymnasium Road, Library Road, Western Road, Macquarie Drive and University Ave), Waterloo Road, and Wicks Road.
LR10	Eastwood to Macquarie University	Via Graham Ave, Millham Ave, North Road and Balaclava Road.
LR11	Marsfield to East Ryde	Via Bridge Road, Wicks Road, Twin Road and Moncrieff Drive.
LR12	Eastwood to Top Ryde	Via Second Ave, Young Parade, Third Ave, Ryedale Road, Fourth Ave, Denistone Road, pathway through Denistone Park, Terry Road, Inkerman Road, Pennant Ave, Anzac Ave and Blaxland Road.

(Table 24 continued)
Region and Local Route Descriptions (City of Ryde, 2014).

Route Number	Route Name	Location
LR13	Denistone to North Ryde	Via Terry Road, Kings Road, Cecil Street, Quarry Road (with link to Shrimptons Creek path), Olive Street, Dougherty Street, Bridge Road and Flinders Road (with link to Shrimptons Creek Path).
LR14	West Ryde to Top Ryde	Via Hermitage Road and Parkes Street.
LR15	West Ryde to Gladesville	Via Bowden Street, Squire Street, Sutherland Ave, Yerong Street, Morrison Road, Bremner Park/Mallee Reserve paths, Warner Street, Osgathorpe Road, Victoria Road and Westminster Road.
LR16	Tennyson to Gladesville	Via Mallee Reserve path, Tyagara Street, Potts Street, Victoria Road, Cressy Road, Higginbotham Road and Thompson Street.
LL01	Brush Road Link	Terry Road to Clan William Street via Brush Road, Denman Street and Clan William Street.
LL02	Tarrants Ave Link	Terry Road to Clan William Street via Tarrants Ave.
LL03	Marsden Road to West Ryde Link	Via Victoria Road shared path, Bellevue Ave, Dickson Ave, Chatham Road, Betts Street and Anthony Road.
LL04	Archer Creek Link	Archer Ck Path, Meadowbank Memorial Park.
LL05	Meadowbank Memorial Park Links	Via Constitution Road, Meadowbank Memorial Park paths and Bank Street.
LL06	Meadowbank Eastern Links	Bay Street (and ramp to Meadowbank Bridge), Bowden Street and Underdale Lane.
LL07	Denistone Station Link	Via West Parade, Gordon Crescent, Symonds Pathway and Florence Ave.
LL08	Culloden Road – Waterloo Park Link	Via Waterloo Park path, Waterloo Road path and Culloden Road path.
LL09	Macquarie Park A Link (Epping Road)	New Street, Coolinga Street, Giffnock Street and path, Lane Cove Road path, Epping Road path to Shrimptons Creek Path.
LL10	Macquarie Park B Link (East-West)	Giffnock Street, Paul Street Hth path, Epping Road Path, connecting path and bridge to Shrimptons Creek Path.
LL11	Shrimptons Creek to Coxs Road Link	Linking Shrimptons Creek path to Lane Cove Road via Trevitt Road.
LL12	Avon Road Link	Avon Road and connecting path to Epping Road
LL13	Coxs Road shops to Blenheim Road shops Link	Via Kathleen Reserve, Kathleen Street, Beatrice Street, Wicks Road and signalised crossing, Collins Street, Ryrie Street, Edmonston Street and Cutler Parade.
LL14	Lavarak Street Link	Quarry Road to Bridge Road (alternative to Lane Cove Road) via Lavarak Street.
LL15	Macquarie Hospital Link	Internal Road through hospital between Cox Road and Twin Road.
LL16	Top Ryde Link	Access to Top Ryde shopping via Tucker Street and Smith Street.
LL17	Ryde Pool Link	Access to Ryde Pool via College Street and Frank Street from the north and via Potts Street, Weaver Street and Victoria Road from the south.
LL18	Gladesville Link	Alternative to Victoria Road via Evan Street, Gerard Street, Western Crescent, Glades Ave, Glades Bay Park path and York Street.
LL19	Macquarie Park Cemetery	Access through Macquarie Park Cemetary between Delhi Road and Riverside Drive.

Appendix B – 2014 Bicycle Network Treatment Types

(Table 25)
Index of treatment types.
Source: City of Ryde Bicycle Plan, 2014.

Ref	Location	Description	Design Details	Application	2022 Amendment
S01	On-road	Separated two-way on-road cycleway	Separated two-way cycleway along one side of roadway. Special bent-out treatments at intersections.	High quality regional routes with large proportion of route separated from traffic.	One-way or two-way cycleway
S02	On-road	Bicycle shoulder lanes	12.8m road – 2x2.0m parking, 2x1.5m bicycle space, 2x2.9m travel lanes – with or without a centreline.	Standard treatment for 12.8m roads.	Two-way cycleway (with double parking)
S03A	Off-road	Shared path	Two-way shared path, 3.0m wide along one side of road.	High quality routes, Epping Road route is a major "State" Regional Route and will need to be 4.0m wide.	
S03B	Off-road	One-way pair of off-road bicycle paths	One-way pair bicycle paths on footpath with bent-in intersection treatments.	Where Treatments 4-6 are not feasible due to parking demand.	
S03C	Off-road	One-way pair shared paths	Shared footpaths, cyclists' one-way direction as indicated by pavement markings and signage. Existing paths used.	Where Treatment 3A is not warranted due to cost, may need to be upgraded to 3B in future.	
S04	On-road	Bicycle Lanes	9.0m road – 2x1.5m bicycle lanes, 2x3.0m traffic lanes.	Full time parking bans required on both sides of the road.	Bicycle boulevard (bicycle friendly street)
S05A	On-road	Bicycle Lanes	10.0m road – 2x1.5m bicycle lanes, 2x3.5m traffic lanes.	Low parking utilisation (<20%). Full time parking bans required on both sides of the road.	Bicycle boulevard (quietway)
S05B	On-road	Bicycle lanes + shared lane	10.0m road – 1x3.7m shared travel lane, 1x2.9m travel lane, 1x1.4m bicycle space, 1x2.0m parking space.	Near flat grade, moderate parking density (up to 40% of kerb length each side). Full time parking ban on one side.	Bicycle boulevard (quietway)
S05C	On-road	Bicycle lanes uphill + mixed traffic downhill	10.0m road – downhill: 2.9m shared kerbside traffic lane – Uphill: 1x 3.2m motor vehicle lane, 1x1.5m exclusive bicycle lane and 1x2.4m parking lane uphill.	Grade over 3%, uphill/ downhill arrangement, parking banned on one side with exclusive bicycle lane in uphill direction only.	Bicycle boulevard (quietway)
S06A	On-road	Bicycle Lanes	11.2m road – 1x2.2m parking lane, 2x1.5m bicycle lanes, 2x3.0m traffic lanes.	Near flat grade, moderate parking density (up to 40% of kerb length each side). Full time parking ban on one side.	One-way cycleway (with single parking) or two-way cycleway (with single parking)
S06B	On-road	Bicycle Lanes	11.5m road – 1x2.3m parking lane, 2x1.5m bicycle lanes, 2x3.1m traffic lanes.	Near flat grade, moderate parking density (up to 40% of kerb length each side). Full time parking ban on one side.	One-way cycleway (with single parking) or two-way cycleway (with single parking)
S07	On-road	Mixed Traffic	Wide or narrow profile.	Local routes only, low traffic speeds (<40km/h), low volumes (<2000 veh/day).	Bicycle boulevard (bicycle friendly street or quietway)

(Table 26)
Regional Routes – Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
RR01	Hornsby to Strathfield Rail Trail	Via the northern railway corridor between Eastwood and Meadowbank – interim on-road route.
1	Vimera Road between Forester Park (path to Essex Street, Epping) and Blaxland Road	Standard treatment S06B. Bicycle lanes. 11.5m road – 1x2.3m parking lane, 2x1.5m bicycle lanes, 2x3.1m traffic lanes. Parking signage.
2	Ball Av, May Street, Railway Pd, East Pd to First Av	Standard treatment S05B. Bicycle lane and shared lane. 10.0m road – 1x3.7m shared travel lane, 1x2.9m travel lane, 1x1.4m bicycle space, 1x2.0m parking space. Parking signage.
3	East Parade between First Avenue and Denistone Station	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
4	Path between Denistone Station and Ryedale Road	Use existing path.
5	Ryedale Road between Florence Avenue and Wattle Street	Standard treatment S01. Two-way 'bicycle road' along one side of roadway using a small amount of railway corridor where necessary.
6	Wattle Street between Ryedale Road and Hermitage Road	Standard treatment S04. 9.0m road – 2x1.5m bicycle lanes, 2x3.0m traffic lanes. Retain existing angle parking beside Anzac Park.
7	Hermitage Road between Wattle Street and Victoria Road	Standard treatment S06B. Bicycle lanes. 11.5m road – 1x2.3m parking lane, 2x1.5m bicycle lanes, 2x3.1m traffic lanes. Parking signage.
8	Intersection of Hermitage Road and Victoria Road	Linemark intersection with bicycle lanes on approaches. Signage.
9	Hermitage Road between Victoria Road and Rhodes Street	Standard treatment S03A. Shared path on western side of street.
10	Rhodes Street between Hermitage Road and Mellor Street	Standard treatment S03A. Shared path on southern side of street. Transition treatment for path termination.
11	Intersection of Rhodes, Mellor and McPherson Streets	Linemark intersection with bicycle lanes on approaches. Signage.
12	McPherson Street between Mellor Street and See Street	Standard treatment S06B. Bicycle lanes. 11.5m road – 1x2.3m parking lane, 2x1.5m bicycle lanes, 2x3.1m traffic lanes. Parking signage.
13	Intersection of McPherson Street and See Street	Linemark intersection with bicycle lanes on approaches. Signage.
14	See and Angas Streets between McPherson Street and Underdale Lane	Standard treatment S05B Bicycle lane and shared lane. 10.0m road – 1x3.7m shared travel lane, 1x2.9m travel lane, 1x1.4m bicycle space, 1x2.0m parking space. Parking signage.
15	Intersection of See and Angas Streets	Linemark intersection with bicycle lanes on approaches. Signage.
16	Intersection of Angas Street and Underdale Lane	Linemark intersection with bicycle lanes on approaches. Signage.
17	Underdale Lane and Railway Road between Angas Street and Meadowbank Bridge shared path	Standard treatment S07 Mixed traffic. Wide or narrow profile. Parking signage.
18	Intersection of Underdale Lane and Railway Road	Linemark intersection with bicycle lanes on approaches. Signage.
RR02	Turramurra to Eastwood	Via Browns Waterholes shared path, Vimiera Road, Ball Avenue, May Street, Railway Parade and East Parade
1	Vimiera Road - Browns Waterhole to Vimera Road at M2	Existing off-road shared path.
2	Vimiera Road between M2 and Forrester Park (path to Essex Street)	Standard treatment S06A. 11.2m road - 1x2.2m parking lane, 2x1.5m bicycle lanes, 2x3.0m traffic lanes (modify existing).
3	Ball Av, May Street, Railway Pd, East Pd to First Av	Segment overlaps RR01 Segment 2. See detail above.

(Table 26 continued)
Regional Routes – Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
RR03	Mona Vale to West Ryde	Via De Burghs Bridge, Fontenoy Road, Khartoum Road, Waterloo Road, Shrimptons Creek Path, Heath Street, Rickard Street, Anzac Avenue and Wattle Street.
1	Fontenoy Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
2	Khartoum Road between Fontenoy Road and Talavera Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
3	Intersection of Khartoum Road and Talavera Road	Widen kerb ramps, install bicycle lanterns, linemarking and signage.
4	Khartoum Road between Talavera Road and Waterloo Road	3m concrete shared path along western side of road.
5	Intersection of Khartoum Road and Waterloo Road	Widen kerb ramps, install bicycle lanterns, linemarking and signage.
6	Waterloo Road between Khartoum Road and Shrimptons Creek Path	3m concrete shared path along northern side of road.
7	Intersection of Waterloo Road and Shrimptons Creek Path	Adjust layout and phasing of traffic signals to include widened crossing point for cyclists and pedestrians. Widen kerb ramps. Install bicycle lamps.
8	Shrimptons Creek path between Waterloo Road and Quarry Road	Use existing path.
9	Quarry Road opp SCP in Santa Rosa Park	Refurbish and widen existing refuge to 3 metres.
10	Quarry Road between Santa Rosa Park and Heath Street	3m concrete shared path along southern side of Quarry Road.
11	Intersection – Quarry Road and Stephen Av	Wide kerb ramps. Give Way linemarking.
12	Intersection – Quarry Road and Heath Street	Kerb extension on western side of Heath Street. Traffic turn restriction – enter only from Quarry Road. Wide kerb ramp. Signage.
13	Heath Street between Quarry Road and North Road	New footpath for walkers. Bicycles on-road. Linemarking (C4 parking delineation edge lines and logos).
14	Intersection – Heath Street and North Road	Pedestrian kerb ramps on both sides. Linemark intersection with bicycle lanes on approaches. Signage.
15	Heath Street between North Road and Heath Lane	Refurbish footpath for walkers. Bicycles on-road. Linemarking (C4 parking delineation edge lines and logos).
16	Intersection – Heath Street and Heath Lane	Mark bicycle lanes up to shared zone to indicate cyclist path (logos, signage). Kerb ramps.
17	Heath Lane between Heath Street and Rickard Street	Create 10km shared zone in lane. Repave street. Retain parking prohibition.
18	Intersection – Heath Lane and Rickard Street	Mark bicycle lanes up to shared zone to indicate cyclist path (logos, signage). Kerb ramps.
19	Rickard Street between Heath Lane and Blaxland Road	New footpath for walkers. Bicycles on-road. Linemarking (C4 parking delineation edge lines and logos)
20	Intersection – Blaxland Road and Rickard Street	Linemark intersection with bicycle lanes on approaches. Signage. Pedestrian kerb ramps.
21	Blaxland Road between Rickard Street and Anzac Av	New 3m concrete shared path to replace existing footpath.
22	Intersection - Blaxland Road and Anzac Ave	New pedestrian signals, wide kerb ramps, major regional bike route signage.
23	Route extension to West Ryde – on-road markings	On-road bicycle lanes on Anzac Av and Herbert Street - full bicycle lane on uphill side and tight mixed traffic lane on downhill side. Parking one side only on corners.
24	Route extension to West Ryde – footpath upgrading	Repair and refurbishment.
25	Route extension to West Ryde – intersection treatments	Bicycle lanes on approaches. Ramps for walkers.

(Table 26 continued)
Regional Routes – Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
RR04	Chatswood to Burwood	Via Delhi Road, Epping Road, Blenheim Road, Coxs Road, Badajoz Road, Twin Road, Polding Road, Robinson Street, Providence Road, Charles Street, Delange Street.
1	Delhi Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Excludes any adjustments to structures and escarpment, such as bridge widening at Lane Cove River and rock excavation, all which require detailed investigation.
2	Blenheim Park	Use existing path.
3	Blenheim Road and Badajoz Road, from Pittwater Road to Twin Road	Standard treatment S04. 9.0m road – 2x1.5m bicycle lanes, 2x3.0m traffic lanes.
4	Badajoz Road, from Twin Road to Pidding Road	Standard treatment S01. Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.
5	Pidding Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Excludes any adjustments to structures and escarpment, such as bridge widening at Buffalo Creek and retaining walls, all which require detailed investigation.
6	Robinson Street	Standard treatment S07. Wide or narrow profile
7	Laurel Park	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road (Seal and widen existing track). Excludes structures. Includes crossing at Buffalo Road.
8	Providence Road	Standard treatment S07. Wide or narrow profile. Includes ramp southern end.
9	Charles Street – Victoria Road to Kenneth Street	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments. Add ped/bike crossing on western leg of Victoria Road
10	Charles Street – Kenneth Street to Morrison Road	Standard treatment S06A. 11.2m road – 1x2.2m parking lane, 2x1.6m bicycle lanes, 2x2.9m traffic lanes.
11	Charles Street – Morrison Road to Waterview Street	Standard treatment S02. 12.8m road – 2x2.0m parking, 2x1.5m bicycle space, 2x2.9m travel lanes – with or without a centreline.
RR05	North Ryde to Gladesville	Via Pittwater Road.
1	Pittwater Road, Epping Road to Blenheim Road	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments. Add ped/bike crossing on western leg of Victoria Road.
2	Pittwater Road, Blenheim Road to Magdala Road	Existing lanes, regulatory signs required.
3	Pittwater Road, Magdala Road to High Street	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Excludes any adjustments to structures and escarpment, such as rock excavation and drainage between Buffalo Ck and High Street, all which require detailed investigation.
4	Pittwater Road, Jordan Street and Western Street, from High Street to Ross Street	Standard treatment S01. Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.
5	Western Cr, Ross Street to Gerard Street	Standard treatment S02. 12.8m road – 2x2.0m parking, 2x1.5m bicycle space, 2x2.9m travel lanes – with or without a centreline.
6	Western Cr, Gerard Street to Morrison Road	Standard treatment S06B. Bicycle lanes. 11.5m road – 1x2.3m parking lane, 2x1.5m bicycle lanes, 2x3.1m traffic lanes. Parking signage.
RR06	M2 Cycleway	Via M2 Motorway
1		Reinstate bicycle shoulder lanes at cost to motorway company and RMS.
RR07	Epping to Sydney City	Via Epping Road.
1	Epping Road, Lane Cove River to Wicks Road	Existing off-road cycleway.

(Table 26 continued)
Regional Routes – Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
2	Epping Road, Wicks Road to Mawarra Road	Standard treatment S03A, widened to 4m. Two-way shared path, 4.0m wide along one side of road.
3	Epping Road, Mawarra Cr to Pembroke Road	New path along Epping Road and through to Mawarra Cr.
4	Epping Road, Mawarra Cr to Pembroke Road	Standard treatment S07. Wide or narrow profile.
5	Pembroke Road between Vimera Road and path to Terrys Creek.	Standard treatment S05C Downhill: 2.9m shared kerbside traffic lane – Uphill: 1x 3.2m motor vehicle lane, 1x1.6m exclusive bicycle lane and 1x2.3m parking lane uphill.
6	Path between Pembroke Road and Terrys Creek	Use existing path.
RR08	Epping to Lane Cove	Via Epping Road, Pembroke Road, Agincourt Road, Herring Road, Kent Road, Coxs Road, Cressy Road and Magdala Road
1	Path between Pembroke Road and Terrys Creek	Overlaps RR08 Segment 6. For details see above.
2	Pembroke Road between Vimera Road and path to Terrys Creek.	Overlaps RR08 Segment 5. For details see above.
3	Pembroke Road between Vimera Road and Agincourt Road	Standard treatment S05C Downhill: 2.9m shared kerbside traffic lane – Uphill: 1x 3.2m motor vehicle lane, 1x1.6m exclusive bicycle lane and 1x2.3m parking lane uphill.
4	Agincourt Road between Pembroke Road and Herring Road	Standard treatment S07. Wide or narrow profile.
5	Herring Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
6	Kent Road	Standard treatment S04. 9.0m road – 2x1.5m bicycle lanes, 2x3.0m traffic lanes.
7	Lane Cove Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Includes signal adjustments at Coxs Road.
8	Coxs Road – Wicks Road to Kathleen Street pathway link	Standard treatment S01. Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.
9	Coxs Road - remainder	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
10	Cressy Road	Standard treatment S07. Wide or narrow profile.
11	Magdala Road	Standard treatment S07. Wide or narrow profile.
12	Lane Cove River Bridge	Replace bridge – further investigation required.
RR09	Epping to Hunters Hill	Via Corunna Road, North Road, Eulo Parade, Kuppa Road, Buffalo Road and Ryde Road
1	Corunna Road and North Road	Varies – Standard treatment 4, 5A, 5B and 5C. Adopt highest cost, ie 5C. Includes additional contingencies for minor civil and traffic management works.
2	Eulo Pd, Wolger Road, Kuppa Road	Standard treatment S07. Wide or narrow profile.
3	Lane Cove Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Includes signal adjustments at Buffalo Road.
4	Buffalo Road, Lane Cove Road to Atchindar Road	Standard treatment S02. 12.8m road – 2x2.0m parking, 2x1.5m bicycle space, 2x2.9m travel lanes – with or without a centreline. Includes additional contingencies for minor civil and traffic management works.
5	Buffalo Road, Atchindar Road to Cressy Road	Standard treatment S06A. 11.2m road – 1x2.2m parking lane, 2x1.6m bicycle lanes, 2x2.9m traffic lanes.
6	Buffalo Road east of Cressy Road, Monash Road, Ryde Road	Standard treatment S02. 12.8m road – 2x2.0m parking, 2x1.5m bicycle space, 2x2.9m travel lanes – with or without a centreline. Includes additional contingencies for minor civil and traffic management works.

(Table 26 continued)
Regional Routes – Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
RR10	Parramatta Valley Cycleway (PVC)	Via Wharf Road, Lancaster Avenue, Parramatta Valley Cycleway, Waterview Street, Delange Street, Pelliser Road, Jetty Road, Morrison Road, Meriton Street and Ashburn Place
1	Lancaster Avenue between Hope Street and Crowley Crescent	Standard treatment S07. Wide or narrow profile.
2	Intersection of Lancaster Avenue and Hope Street	Linemarking and signage.
3	Intersection of Lancaster Avenue and Parer Street	Signage.
4	Intersection of Lancaster Avenue and Andrew Street	Linemarking and signage.
5	Shared path between Lancaster Avenue and Bowden Street	Refurbish path to 3metre standard.
6	Shared path between Bowden Street and Princes Street via Waterview Street	Use existing path and street.
7	Shared path between Princes Street and Delange Road	Two-way shared path, 3.0m wide along one side of road.
8	Delange Road, Pellisier Road and Jetty Road between Waterview Street and Morrisons Bay Park	Standard treatment S07. Wide or narrow profile.
9	Path through Morrison Bay Park to Morrison Road	Refurbish path to 3metre standard.
10	Morrison Road between Morrison Bay Park and Meriton Street	Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.
11	Meriton Street and Ashburn Place to Victoria Road	Standard treatment S06A. 11.2m road – 1x2.2m parking lane, 2x1.5m bicycle lanes, 2x3.0m traffic lanes.
RR11	Eastwood to Parramatta River	Via West Parade, Clanalpine Street, Shaftesbury Road, Clan William Street, Read Street, Warrawong Street, Brush Road, Hermoyne Street, Winbourne Street, Marsden Road, Wharf Road, Cobham Lane and Cobham Avenue.
1	West Parade between Rowe Street and rail trail start	Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.
2	Clanalpine Street	Standard treatment S07. Wide or narrow profile.
3	Shaftsbury Road section and crossing facility	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.
4	Clanalpine Street, Clan William Street, Read Street, Warrawong Street, Brush Road, Hermoyne Street and Winbourne Street	Standard treatment S07. Wide or narrow profile.
5	Marsden Road	Standard treatment S03A. Two-way shared path, 3.0m wide along eastern side of roadway.
6	Victoria Road	Signalised shared path crossing.
7	Wharf Road	Standard treatment S03A along eastern side of street.
8	Cobham Lane and Cobham Avenue	Standard treatment S07. Wide or narrow profile.

(Table 26 continued)
Regional Routes – Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
RR12	Parramatta to Macquarie	Via Terry Road, Hillview Road, Railway underpass, Rowe Street, Blaxland Road, Edgar Street, Welby Street, County Road corridor, Woorang Street, County Road corridor (Kotara Park), Herring Road, Kent Road, ELS Hall Park paths and Shrimptons Creek Path.
1	Terry Road between Marsden Road and Hillview Road	In Parramatta City LGA. Part of PCC Regional Route RR03. Planned for Standard treatment S02 bicycle shoulder lanes.
2	Hillview Road	Standard treatment S05C.
3	West Parade	Standard treatment S02. 12.8m road - 2x2.0m parking, 2x1.5m bicycle space, 2x2.9m travel lanes – with or without a centreline. Update existing facilities.
4	First Ave, across railway	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Includes signal adjustments at East Pd.
5	Rowe Street	Standard treatment S04. 9.0m road – 2x1.5m bicycle lanes, 2x3.0m traffic lanes.
6	Blaxland Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
7	Edgar Street and Welby Street	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
8	Road reserve from Welby Street to Agincourt Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
9	Herring Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
10	Cox Road	Overlaps Segment 6 of RR08. See above for details.
11	ELS Hall Park between Kent Road and Shrimptons Creek Path	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Includes signal adjustments.

(Table 27)
Local Routes - Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
LR01	Eastwood Heights to Marsden High	Via Marsden Road, Farnell Street and Winbourne Street.
1	Marsden Road	Standard treatment S03A. Two-way shared path, 3.0m wide alongside road.
2	Rutledge Street	Standard treatment S07. Wide or narrow profile.
3	Farnell Street	Standard treatment S07. Wide or narrow profile.
4	Winbourne Street	Standard treatment S07. Wide or narrow profile.
LR02	Eastwood to Parramatta River	Via Rowe Street, Trelawney Street, Bellevue Avenue, Victoria Road, Adelaide Street and Andrew Street.
1	Rowe Street, Trelawney Street, Bellevue Avenue, Adelaide Street and Andrew Street	Standard treatment S07. Wide or narrow profile. Includes allowance for minor civil and traffic works.
2	Victoria Road between Bellevue Avenue and Adelaide Street	Standard treatment S03A. Two-way shared path, 3.0m wide on northern side of road. Cyclists lanterns at Victoria Road crossing.
LR03	Eastwood to PVC via West Ryde	Via West Parade, Railway Corridor, Anthony Road, Betts Street, Chatham Road, Station Street, Rex Street, Federal Road and Meadowbank Memorial Park Paths.
1	West Parade between Rowe Street and rail trail entrance	Two-way 'bicycle road' along one side of roadway. Special bent-in treatments at intersections.
2	Rail trail between Chatham Road and Anthony Road	Existing shared path.
2	Anthony Road, Betts Street, Chatham Road, Station Street, Rex Street and Federal Road	Standard treatment S07. Wide or narrow profile.
3	Path through Meadowbank Memorial Park between Federal Road and PVC	Standard treatment S03A. Upgrade existing path to current standard.
LR04	North Ryde to West Ryde	Via Sobraon Road, Valda Place, Wilga Place, Abuklea Road, Kingsford Avenue, North Road, Norma Avenue, Grove Street, Boronia Lane, Russell Street, Kings Road, Terry Road, Marlowe Lane, Marlowe Avenue, West Parade, pathway along Victoria Road and Ryedale Road.
1	Sobraon Road, Valda Place, Wilga Place, Abukela Road, Kingsford Avenue, Norma Avenue, Grove Street, Boronia Lane, Terry Road, Marlow Avenue, West Parade and Ryedale Road	Standard treatment S07. Wide or narrow profile. Includes allowance for minor civil and traffic works. Use existing path beside Victoria Road to access eastern side of station and Ryedale Road.
LR05	North Ryde to Meadowbank	Via Lyonpark Road, Epping Road paths and overbridge, David Avenue, Hawkes Pathway, Trevitt Road, Ada Street, Flinders Road, Bridge Road, Smalls Road, Quarry Road, Aeolus Avenue, North Road, Blaxland Road, Melville Street, Parkes Street, Bowden Street and MacPherson Street.
1	Lyonpark Road, David Avenue, Trevitt Road, Ada Street, Flinders Road, Aeolus Avenue, Melville Street, Parkes Street, Bowden Street and MacPherson Street	Standard treatment S07. Wide or narrow profile. Includes allowance for minor civil and traffic works.
2	Sections of Epping Road (eastern side) shared path and overbridge)	Use existing paths and bridge.
3	Sections of Bridge Road, Quarry Road, and Melville Road	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.
4	Sections of North Road, Blaxland Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Includes adjustments to traffic signals.

(Table 27 continued)
Local Routes - Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
LR06	Macquarie Park to Putney	Via new path through Talavera Business Park, Waterloo Road, new path through Wicks Business Park, Epping Road over-bridge, Ryrie Street, Truscott Street, path through Macquarie Hospital grounds, Wicks Road, Boyce Street, Quarry Road, Woodbyne Crescent, Green Avenue, Buffalo Road, Crescent Avenue, Princess Street, Ryde Park paths, Argyle Avenue, Blaxland Road, Church Street, Wandoo Avenue, Gladstone Avenue, Morrison Road and Regent Street.
1	New streets through Macquarie Park between Lane Cove Road and Epping Road	Refuge crossing in Waterloo Road, Signposting, Intersection linemarking. All other bicycle facilities provided as part of new street development.
2	Ryrie Street, Truscott Street	Standard treatment S07. Wide or narrow profile. Includes allowance for minor civil and traffic works.
3	Hospital grounds (creek corridor), Wicks Road, Twin Road	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
4	Boyce Street, Woodbyne Crescent, Crescent Avenue, Blaxland Road, Church Street, Wandoo Avenue and Regent Street	Standard treatment S07. Wide or narrow profile. Includes allowance for minor civil and traffic works. Includes section of shared footpath along Blaxland Road.
5	Quarry Road and Morrison Road sections	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.
6	Victoria Road crossing	Signal phasing adjustments, new crossing, bike lamps.
LR07	Talavera Road Route	Via Waterloo Park paths and Talavera Road.
1	Path between Vimera Road and Talavera Road (Waterloo Park)	Using existing shared path.
2	Taranto Road intersection	New kerb ramps and approaches.
3	Talavera Road between Waterloo Pk and Culloden Road	Using existing shared path.
4	Talavera Road between Culloden Road and Khartoum Road.	Using existing shared path.
5	Talavera Road between Khartoum Road and Lane cove Road	Using existing shared path.
LR08	Lane Cove River Road	Via Riverside Drive between Delhi Road and De Burghs bridge at Lane Cove Road in Lane cove National Park.
1	Riverside Drive	Use existing facilities. Direction signage.
LR09	Marsfield to Macquarie Park	Via Waterloo Road, Macquarie University roads (Gymnasium Road, Library Road, Western Road, Macquarie Drive and University Avenue), Waterloo Road, and Wicks Road.
1	Waterloo Road between Vimera Road and Gymnasium Road	Using existing shared path.
2	University Avenue, Gymnasium Avenue, Macquarie University	Standard treatment S03A. Two-way shared path on southern side footpath with bent-in intersection treatments. Part of University bicycle Network Masterplan proposals.
3	Waterloo Road and Wicks Road	Standard treatment S03A. Two-way shared path on southern side footpath with bent-in intersection treatments.
LR10	Eastwood to Macquarie University	Via Graham Avenue, Millham Avenue, North Road and Balaclava Road.
1	Graham Avenue, Millham Avenue, Hunts Road	Standard treatment S07. Wide or narrow profile.
2	Balaclava Road	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.

(Table 27 continued)
Local Routes - Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
LR11	Marsfield to East Ryde	Via Bridge Road, Wicks Road, Twin Road and Moncrieff Drive.
1	Bridge Road, Twin Road	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.
2	Moncrieff Drive	Standard treatment S07. Wide or narrow profile.
LR12	Eastwood to Top Ryde	Via Second Avenue, Young Parade, Third Avenue, Ryedale Road, Fourth Avenue, Denistone Road, pathway through Denistone Park, Terry Road, Inkerman Road, Pennant Avenue, Anzac Avenue and Blaxland Road.
1	Second Avenue, Young Parade, Third Avenue, Ryedale Road, Fourth Avenue, Denistone Road, Inkerman Road, Pennant Avenue and Anzac Avenue	Standard treatment S07. Wide or narrow profile.
2	Denistone Park and Terry Road	Standard treatment S03A. Two-way shared path.
3	Blaxland Road to Melville Street	Standard treatment S03A. Two-way shared path, 3.0m wide along northern and southern sides of road.
4	Blaxland Road to Parkes Street	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.
LR13	Denistone to North Ryde	Via Terry Road, Kings Road, Cecil Street, Quarry Road (with link to Shrimptons Creek path), Olive Street, Dougherty Street, Bridge Road and Flinders Road (with link to Shrimptons Creek Path).
1	Cecil Street, Quarry Road, Olive Street, Dougherty Street, Bridge Road and Flinders Road	Standard treatment S07. Wide or narrow profile.
2	Kings Road, Quarry Road and Bridge Road sections	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road.
LR14	West Ryde to Top Ryde	Via Hermitage Road and Parkes Street.
1	Hermitage Road and Parkes Street	Standard treatment S07. Wide or narrow profile. Includes shared footpath signage for Blaxland Road section and bike lamps at signals at Blaxland Road/Park Street.
LR15	West Ryde to Gladesville	Via Bowden Street, Squire Street, Sutherland Avenue, Yerong Street, Morrison Road, Bremner Park/Mallee Reserve paths, Warner Street, Osgathorpe Road, Victoria Road and Westminster Road.
1	Squire Street, Yerong Street, Morrison Road	Standard treatment S07. Wide or narrow profile.
2	Morrison Road, Devlin Street to Tyagara Street	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.
3	Tyagara Street, Warner Street, Osgathorpe Road and Westminster Road	Standard treatment S07. Wide or narrow profile.
4	Victoria Road section	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Includes signal adjustments.
LR16	Tennyson to Gladesville	Via Mallee Reserve path, Tyagara Street, Potts Street, Victoria Road, Cressy Road, Higginbotham Road and Thompson Street.
1	Tyagara Street, Potts Street, Cressy Road, Higginbotham Road and Thompson Street	Standard treatment S07. Wide or narrow profile. Includes signal adjustments at Victoria Road and allowance for civil and traffic works.

(Table 28)
Local Links - Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
LL01	Brush Road Link	Terry Road to Clan William Street via Brush Road, Denman Street and Clan William Street.
1	Brush Road, Terry Road to Lawson Street	Standard treatment S03A. Off-road shared path.
2	Brush Road, Lawson Street to Rutledge Street	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments. Includes on-rd-off-rd transitions.
3	Denman Street and Clan William Street	Standard treatment S07. Wide or narrow profile.
4	Blaxland Road to Parkes Street	Standard treatment S03B. One-way pair bicycle paths on footpath with bent-in intersection treatments.
LL02	Tarrants Avenue Link	Terry Road to Clan William Street via Tarrants Avenue.
1	Tarrants Avenue	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate.
LL03	Marsden Road to West Ryde Link	Via Victoria Road shared path, Bellevue Avenue, Dickson Avenue, Chatham Road, Betts Street and Anthony Road.
1	Victoria Road between Adelaide Street and Marsden Road	Standard treatment S03A along southern side of roadway. Upgrade existing path.
2	Dickson Avenue and Anthony Road	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. (Bellevue Avenue, Chatham Road, Betts Street overlaps Routes LR02 and LR03. See above for details).
LL04	Archer Creek Link	Archer Ck Path, Meadowbank Memorial Park.
1	Archer Ck Path, Meadowbank Memorial Park	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Includes crossing facility at Andrew Street.
LL05	Meadowbank Memorial Park Links	Via Constitution Road, Meadowbank Memorial Park paths and Bank Street.
1	Constitution Road, Meadowbank Memorial Park paths and Bank Street	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate.
LL06	Meadowbank Eastern Links	Bay Street (and ramp to Meadowbank Bridge), Bowden Street and Underdale Lane.
1		Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate.
LL07	Denistone Station Link	Via West Parade, Gordon Crescent, Symonds Pathway and Florence Avenue.
1	West Parade, Gordon Crescent, Symonds Pathway and Florence Avenue	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Part included in LR04.
LL08	Culloden Road – Waterloo Park Link	Via Waterloo Park path, Waterloo Road path and Culloden Road path.
1	Waterloo Park path, Waterloo Road path and Culloden Road path.	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Part included in LR10.
LL09	Macquarie Park A Link (Epping Road)	New street, Coolinga Street, Giffnock Street and path, Lane Cove Road path, Epping Road path to Shrimptons Creek Path
1	New street, Coolinga Street, Giffnock Street and path, Lane Cove Road path, Epping Road path to Shrimptons Creek Path	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Excludes construction of new sections of pathways or roads.
LL10	Macquarie Park B Link (East-West)	Giffnock Street, Paul Street Hth path, Epping Road Path, connecting path and bridge to Shrimptons Creek Path.
1	Giffnock Street, Paul Street Hth path, Epping Road Path, connecting path and bridge to Shrimptons Creek Path	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Excludes construction of new sections of pathways or roads and new structures across Shrimptons Creek.

(Table 28 continued)
Local Links - Midblock Treatment Types.
Source: City of Ryde Bicycle Plan, 2014.

Route Segment ID	Location	Treatment details and recommendations
LL11	Shrimptons Creek to Coxs Road Link	Linking Shrimptons Creek path to Lane Cove Road via Trevitt Road.
1	Trevitt Road and Lane Cove Road path	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Excludes pathway widening along Lane Cove Road.
LL12	Avon Road Link	Avon Road and connecting path to Epping Road.
1	Avon Road and connecting path to Epping Road	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate.
LL13	Coxs Road shops to Blenheim Road shops Link	Via Kathleen Reserve, Kathleen Street, Beatrice Street, Wicks Road and signalised crossing, Collins Street, Ryrie Street, Edmonston Street and Cutler Parade
1	Pathway from shops to Kathleen Reserve, Kathleen Street, Beatrice Street, Wicks Road and signalised crossing, Collins Street, Ryrie Street, Edmonston Street and Cutler Parade	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Includes bicycle lamps at Lane Cove Road and minor civil and traffic works.
LL14	Lavarak Street Link	Quarry Road to Bridge Road (alternative to Lane Cove Road) via Lavarak Street,
1	Lavarak Street	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Includes crossings at Quarry Road and Bridge Road. Excludes path widening along Quarry Road.
LL15	Macquarie Hospital Link	Internal road through hospital between Cox Road and Twin Road.
1	Internal roads through hospital	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate.
LL16	Top Ryde Link	Access to Top Ryde shopping via Tucker Street and Smith Street.
1	Tucker Street and Smith Street	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate.
LL17	Ryde Pool Link	Access to Ryde Pool via College Street and Frank Street from the north and via Potts Street, Weaver Street and Victoria Road from the south.
1	College Street, Frank Street, Potts Street, Weaver Street	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Includes signal adjustments at Victoria Road. Excludes path widening along Victoria Road.
LL18	Gladesville Link	Alternative to Victoria Road via Evan Street, Gerard Street, Western Crescent, Glades Avenue, Glades Bay Park path and York Street.
1	Evan Street, Gerard Street, Western Crescent, Glades Avenue, and York Street	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate.
2	Glades Bay Park	Standard treatment S03A. Two-way shared path, 3.0m wide along one side of road. Includes signal adjustments.
LL19	Macquarie Park Cemetery	Access through Macquarie Park Cemetery between Delhi Road and Riverside Drive.
1	Internal roads through Cemetery	Standard treatment S07. Wide or narrow profile. Includes sections of existing shared path as appropriate. Excludes new paths.

Appendix C – Existing footways for shared user path investigations (quick wins)

(Table 29)
Existing footways for shared user path investigations.

Asset ID	Street Name	From	To	Width (Mm)
0A3A8E82E7F6538	Ethel St	Blaxland Rd	Railway Parade	3.5
1A8C7A1FCA7E6E5	May St	Ball Ave	Railway Parade	2.5
B7539DFEB0F6596	Delhi Rd			4.2
00FE4193C5CF5C9	Angas St	Constitution Rd	Underdale Lane	4
8ECBF8E3AE57F54	Blaxland Rd			3.3
BD3A295D8FEEA0C	Tucker St	Pope St	Blaxland Rd	2.5
17DF3D297F57C25	Rowe St	Blaxland Rd	Railway Parade	3.5
C79014890A10261	Ball Ave	Doomben Ave	May St	2.6
A497F823D75A691	Waterloo Rd	Herring Rd	Byfield St	3
9C1FE2667C15B04	Putney Park	Park	Park	3
C851A12E65BDE72	Porter St	Well St	Junction St	3.3
BEECF88AF48C051	Victoria Rd			3.5
2871EFC53B6A0F7	Railway Parade	May St	Rowe St	3
9DE879F2C8AE071	Boree St	Sobroan Rd	Cul De Sac (W)	3
3FC343F8A2CA792	West Parade	Anthony Rd	Victoria Rd	4
D9F11229013DB73	Byfield St	Waterloo Rd	Lyon Park Rd	4.5
227D187FFD9F9C5	Epping Rd			2.5
C080068DB815A87	Victoria Rd			3.5
8D236A6A76628E0	Charity Creek Cascades	Park	Park	2.6
1CFE48A022AE54E	Nancarrow Ave	Bowden St	Cul De Sac	4
65CACAAA8E812F1	Hamilton Crescent	Belmore St	End	4.5
536BA3D6C5CC2DE	Halifax St	Jarvis Circuit (North)	Epping Rd	3
0C5BF4597280D7C	Belmore St	Constitution Rd	Well St	3
6A31A9B4588CE71	Balaclava Rd	Macquarie University Ent.	Epping Rd	3
314DDC8E6F7BCFD	Victoria Rd			3.5
19FD4396C1F4227	Victoria Rd			3
F061F842CB9B6B8	Herbert St	Anzac Ave	Ryedale Rd	4
5D9DD862C4FC554	Lardelli Park	Park	Park	2.5
1038064EE67A7C0	Belmore St	Constitution Rd	Well St	3
E72C505E822D336	New Link Rd			3
6DC259ADC0AA840	Putney Park	Park	Park	2.5
195D90D8D10E558	Railway Parade	May St	Rowe St	3

Asset ID	Street Name	From	To	Width (Mm)
67D029EE19B88F7	Constitution Rd	Belmore St	Hamilton Crescent	3
46080A256318F53	Network Place			3
0984D864132E6A6	Yamble Reserve	Park	Park	2.5
60A5880FC96172E	Underdale Lane	Railway Rd	Faraday Lane	4
3076110F45D600C	Belmore St	Junction St	Constitution Rd	3
D164B20573B9668	Putney Park	Park	Park	3
0CF00F18CD8A244	Underdale Lane	Faraday Lane	Angas St	4
933BE7DCE8C76FA	Blaxland Rd			3.5
B5B9171CFCB7234	Talavera Rd	Herring Rd	Alma Rd	4.2
4C6D384D4F42F0F	Underdale Lane	Faraday Lane	Angas St	4
896776BEA134B80	Herring Rd	Talavera Rd	Waterloo Rd	3.5
72F3DC40F2CEB66	Railway Rd	Underdale Lane	Cul De Sac (E)	4
56753C7DB0176AC	New Link Rd			2.5
2AB2F5588D8B7EE	Belmore St	Well St	Parsonage St	3
EBF696A516FFB59	Rothesay Ave	Belmore St	Cul De Sac (E)	3.3
7ED40D2FDA69F59	Victoria Rd			3.5
BD1BAA0E7D2F2AD	Junction St	Church St	Belmore St	3.2
2D39C81CC90BF85	Stroud St	Berripa Close	Cul De Sac (E)	3.2
35BBD44A9EC2B93	Angas St	Constitution Rd	Underdale Lane	4
6A8F7945D41B05E	Yamble Reserve	Park	Park	2.7
7B713B6E4F65B97	West Parade	Hillview Rd	Rowe St	4
6D6B0BAB3B22A80	Ethel St	Blaxland Rd	Railway Parade	3.4
286079CA158716F	West Parade	Rowe St	Rutledge St	4
EC7EDC20732B734	Railway Parade	May St	Rowe St	2.5
0727656974027FB	Halifax St	Jarvis Circuit (North)	Epping Rd	3
5CBAABDAB79CD12	Victoria Rd			3.5
16441A25538FFCD	Kaga Place	Wilga Place	Cul De Sac (E)	4
5CABA4A44B4EF26	Jordan St	Victoria Rd	Western Crescent	3.5
D37C40FB6847507	Trim Place	Park	Park	2.8
AEF2AC4F7649681	Devlin St			5

(Table 29 continued)
Existing footways for shared user path investigations.

Asset ID	Street Name	From	To	Width (Mm)
7060255414A1B91	Linsley St	Western Crescent	Coulter St	4
93301826C9C80E2	Delhi Rd			3.2
ED6C68BDA1B3700	Angas St	Underdale Lane	Cul De Sac	4
B529D29FC3A627E	Bremner Park	Park	Park	3.5
E2F43C43BB3B7DF	Hamilton Crescent	Belmore St	End	4.5
F8EA7FE9F5299A3	Well St	Porter St	Belmore St	2.8
C4E3BA66147C062	Constitution Rd	Bowden St	Railway Rd	4
45ECC9C735E3698	Ryedale Rd	Wattle St	Herbert St	4
4471D59007F127D	Waterloo Rd	Lane Cove Rd	Eden Park Drive	3
DE2B8446291C8CF	Herring Rd	Talavera Rd	Waterloo Rd	3.3
8B8B6F1F8292AA5	Linsley St	Coulter St	Orr St	2.5
F4FD26EFF680BCC	Rowe St	Blaxland Rd	Railway Parade	3.5
98DD1B028C5CC38	Hamilton Crescent West	Nancarrow Ave	Constitution Rd	3
58F42E741606686	Pope St	Smith St	Tucker St	2.5
0BCC8B8D2F99E50	Hyundai Drive	Lane Cove Rd	Giffnock Ave	3.5
87F8220B0257090	Victoria Rd			3
99E9C08E52873C5	Halifax St	Jarvis Circuit (North)	Epping Rd	3
7232F0E952D0CBF	Waterloo Park	Park	Park	3.5
A4E73FE1539E52D	East Parade	Rowe St	First Ave	3.8
7907D034B83E518	North Ryde Park	Park	Park	4
12635D9BCAD7A09	Halifax St	Jarvis Circuit (North)	Epping Rd	3
25E1EC2035343D4	Blaxland Rd			3
89BC71EEEA4CAAD	Waterloo Rd	Herring Rd	Byfield St	3.5
1634410B435EAEF	Tennyson Park	Park	Park	2.5
0E63698EEE32740	Pope St	Lane Cove Rd	Smith St	2.5
A29EA48657D7C3C	Rennie St	Dehli Rd	Cul-De-Sac	3
ECEA8A5E06007E9	Linsley St	Western Crescent	Coulter St	2.5
67C58EA7D65BEDE	Underdale Lane	Faraday Lane	Angas St	4
B29E7F08D201F74	Blaxland Rd			3.6
87DC5E4A0387BA0	Angas St	Constitution Rd	Underdale Lane	4
B3E21BB0EB5D2AB	Torrington Drive	Engel Ave	Culloden Rd	4

Asset ID	Street Name	From	To	Width (Mm)
74045AFF289B745	Lardelli Park	Park	Park	7
DCF77050B10040F	Halifax St	Jarvis Circuit (North)	Epping Rd	2.9
4E7F9320C7984EA	Underdale Lane	Faraday Lane	Angas St	4
DD756EF985EB104	Lane Cove Rd			3.7
6F47301DE9AC7D3	Pope St	Smith St	Tucker St	2.5
BDA68ABEEAB07FB	Coulter St	Ross St	Linsley St	2.5
FDFE047D4710B74	First Ave			2.5
0E41A279F95EC83	Blaxland Rd			3.3
BA61EE4574B93F8	Lane Cove Rd			3
2FCA4C7DFE9B5CE	Victoria Rd			3
1681EB108089632	Rennie St	Dehli Rd	Cul-De-Sac	3
5D06202C84107D9	Lane Cove Rd			3.4
444D8F7BE15D82F	Engel Ave	Torrington Drive	Cul De Sac (N)	3
CC04696081A739D	Herbert St	Anzac Ave	Ryedale Rd	3
75863DCAC378256	Jordan St	Victoria Rd	Western Crescent	3.5
96EB8C59DF5FFF4	Rodney St	Wolfe Rd	Cul De Sac (E)	3
538EA705BEB1694	Victoria Rd			3
C1E7944797FFE6A	East Parade	Rowe St	First Ave	3.5
CA67FDFA710003A	Network Place			3
928CCF8C2AB1921	Blaxland Rd			3.3
B3B32B5E087CAC5	Keiley St	Diane St	Cul De Sac (E)	3
ED9D91AC59CBF95	Western Crescent	Jordan St	Ross St	3
14423760EA72CD2	Yamble Reserve	Park	Park	2.5
13850F0136CFD0C	Beverly Crescent	Carmen St	Lucinda Rd	3
199CEDB48B5CC18	Church St	Blaxland Rd	Gowrie St	2.5
4DBF7B51487F13C	Constitution Rd	Railway Rd	Cul De Sac	5
FD46B1EE525B191	Church St	Gowrie St	Victoria Rd	2.5
06AC7A1A54E347C	Ryedale Rd	Terry Rd (Eastwood)	Wattle St	4
E353D5280CA0EB5	Croytoye Place	Cul De Sac (N)	Abuklea Rd	3
1114418A753866E	Betts St	Anthony Rd	Chatham Rd	4
83BD89D95EB35D7	Church St	Gowrie St	Victoria Rd	2.5
586A231FF7D9D29	Katoa Place	Zanco Rd	Cul De Sac (S)	4

(Table 29 continued)
Existing footways for shared user path investigations.

Asset ID	Street Name	From	To	Width (Mm)
5AF15BF9301686D	Kellaway St	Bluett Ave	Cul De Sac (E)	2.5
B30592E4E80F3A7	Yamble Reserve	Park	Park	2.7
A41B78D5989DC44	Bay Drive	Railway Rd	Bowden St	2.5
113796016527BDF	Doig Ave	Gallard St	Richmond St	3.8
EA6B32E28BA9D47	Monash Rd	Victoria Rd	College St	2.8
8849C8A42CC2E86	Underdale Lane	Railway Rd	Faraday Lane	4
137E0863D717096	Edward St	Blaxland Rd	Gowrie St	2.5
E4C1A0F77C87EA3	Waterloo Park	Park	Park	3.5
3E34C591B910396	Faraday Lane	Underdale Lane	South End	3
5106D397BE4A5A4	Charity Creek Cascades	Park	Park	2.6
379E85765B42093	Biara Close	Zanco Rd	Cul De Sac (S)	4
518F3C03AAE90F2	West Parade	Wingate Ave	Hillview Rd	4
A5687949385E5B3	Western Crescent	Jordan St	Ross St	3.5
FD7EB9B683BE9A4	Minga St	Quarry Rd	Cul De Sac (W)	3.5
457CCC44E9A22F6	Victoria Rd			3
98481C127887D97	Anthony Lane	Anthony Rd	Graf Ave	4
54856CB28578778	Faraday Lane	Underdale Lane	South End	3
070281B50A379E2	Waterloo Rd	Lane Cove Rd	Eden Park Drive	2.7
4F5213E7ED3BFA1	Yamble Reserve	Park	Park	5
1485AA780B38F7E	Lane Cove Rd			3.3
FDD2629F4EBD9C5	Blaxland Rd			3.3
5B197B2EF56570E	Victoria Rd			3
E09723A3965634E	West Parade	Hillview Rd	Rowe St	4
45CC7D2EA245262	Charity Creek Cascades	Park	Park	2.6
32A37B1C55318F2	Western Crescent	Linsley St	Jordan St	3
7AA612245391FFE	Epping Rd			2.5
CC30864DE053E33	Victoria Rd			3
9D118BA14675EBF	Karingal Court	Culloden Rd	Cul De Sac (E)	2.5
B681957F1804879	Angas St	Underdale Lane	Cul De Sac	3
3CE9CDDB55A349E	Victoria Rd			3.5
7B26D9042CAD61C	Rennie St	Dehli Rd	Cul-De-Sac	2.5
1D6EC43FA670928	Khartoum Rd	Talavera Rd	Waterloo Rd	2.7

Appendix D – Funding Mechanisms

Table 30 shown below provides an overview of funding streams and programs which are available to support the planning and delivery of Ryde's bicycle network.

(Table 30)
Funding Mechanisms.

Funding Program	Funding Eligibility	Application Date / Process
Transport for NSW Walking and Cycling Program	The Walking and Cycling Program will accept project submissions from local councils and all state Government agencies. The projects under the Walking and Cycling program are categorised into Greater Sydney Cycling, Greater Sydney Walking, Regional and Outer Metropolitan Cycling, Regional and Outer Metropolitan Walking. Under the Greater Sydney Cycling category, eligible projects include the construction of: • Infrastructure projects located on the Co-Designed Bicycle Network Blueprint • Infrastructure projects that link to the Co-Designed Bicycle Network Blueprint or • Infrastructure projects that provide direct access to a school (within 200m of a school access point). The **Co-Designed Bicycle Network Blueprint** was developed in consultation with approximately 140 NSW Government and 33 local government stakeholders between 2018 and 2019. Eligible infrastructure projects include: • On-road and off-road bicycle infrastructure paths, limited to bicycle paths, bicycle lanes, bicycle boulevards and shared paths • Also included are widening or improvements to existing bicycle routes on or accessing the **Co-Designed Bicycle Network Blueprint** where substantial improvements to safety or meeting the cycling movement demand can be achieved • Bike parking facilities are also eligible. Eligible construction projects will be assessed against their Construction Feasibility and **Movement and Place function.**	**2021/22 Walking and Cycling Program** The delay in the State budget in 2020 caused by COVID-19, has impacted the delivery of projects within the coming financial year (2021/22). Therefore in 2021/22, the NSW Government's investment into Active Transport will be Transport for NSW funded and delivered, working closely with Councils. **2022/23 Walking and Cycling Program** Applications for the 2022/23 program will open shortly.
NSW Safer Roads Program	The Safer Roads Program will allow for project submissions which meet the following criteria: • 2 casualty crashes in 5 years (discrete lengths <3km long) • Average of 0.13 casualty crashes/km/year (lengths 3km or longer). The Program is split into several sub-programs, all targeting high severity crash types, locations and/or vulnerable road users. **The criteria for each sub-program is available within project nominations in the Online Portal available to Council.** The sub-programs include: • State black spot • Local government road safety • Fatal crash response • Route safety review. Proactive projects at sites that may not meet the above crash history criteria are still considered but must be supported with an official Road Safety Audit and/or Safe System Assessment report provided by the Project Proponent. The assessment should recommend the treatment proposed in the application funding.	Nominations for the 2022/23 round of the NSW Safer Roads Program have closed. All future nominations for the road safety programs are to be submitted through the Safer Roads Program Management System (Online Portal) which is available to Council.
Australian Government Black Spot Programme	The current criteria for the Australian Government Black Spot Programme in 2022/23 are: • 3 casualty crashes in 5 years (discrete lengths <3km long) • Average of 0.2 casualty crashes/km/yr (lengths 3km or longer). Proactive projects at sites that may not meet the above crash history criteria are still considered but must be supported with an official Road Safety Audit and/or Safe System Assessment report provided by the Project Proponent. The assessment should recommend the treatment proposed in the application funding.	Nominations for the 2022/23 round of the Australian Government Black Spot Programme. All future nominations for the road safety programs are to be submitted through the Safer Roads Program Management System (Online Portal) which is available to Council.

(Table 30 continued)
Funding Mechanisms.

Funding Program	Funding Eligibility	Application Date / Process
Local Government Road Safety Program	Co-funding is available for approved councils to: • Employ a Road Safety Officer (RSO) whose tasks will include applying for road safety project funding • Support road safety projects to address identified road safety issues in the LGA. All councils wishing to join the LGRSP are encouraged to contact their respective TfNSW contacts to express their interest. **All expressions of interest will be carefully considered based on strategic (risk-based) methodology using local road trauma data and ensuring adequate funding is available.** **Road Safety Officer Funding** Funding is available from TfNSW to co-fund a RSO position within council, up to 50 per cent of the cost if the local government area is deemed to be in need of a RSO to address road safety issues. **Road Safety Projects Funding** The LGRSP focus on funding educational and behavioural projects using engagement to address demonstrated local road safety priority issues continues. However, a project developed using the Safe System approach may include activities to support engineering and enforcement activities. Appropriate work under the LGRSP may include data analysis, supporting applications for other road safety grants and programs such as a proposal for a 40km/h high pedestrian activity area, supporting development of council applications for Safer Roads Program funding and supporting local speed enforcement as part of a broader project. Engineering works are not funded under the LGRSP.	Due dates for submission of Action Plans and project funding applications in the LGRSP database can be obtained from the Regional TfNSW office as dates may vary among regions.
Local Roads and Community Infrastructure Program	Funding is available for local road and community infrastructure projects that involve the construction, maintenance and/or improvements to council-owned assets (including natural assets) that are generally accessible to the public. Projects will need to deliver benefits to the community, such as improved accessibility, visual amenity, and safety benefits. Eligible local road projects could include works involving any of the following associated with a road: • Traffic signs; • Traffic control equipment; • Street lighting equipment; • A bridge or tunnel; • A facility off the road used by heavy vehicles in connection with travel on the road (for example, a rest area or weigh station); • Facilities off the road that support the visitor economy; and • Road and sidewalk maintenance, where additional to normal capital works schedules. Eligible community infrastructure projects could include works involving: • Closed Circuit TV (CCTV) • Bicycle and walking paths • Painting or improvements to community facilities; • Repairing and replacing fencing • Improved accessibility of community facilities and areas; • Landscaping improvements, such as tree planting and beautification of roundabouts • Picnic shelters or barbeque facilities at community parks • Playgrounds and skateparks (including all ability playgrounds) • Noise and vibration mitigation measures; and • Off-road car parks (such as those at sporting grounds or parks).	From 1 January 2022, councils will be able to access funding through LRCI Program Phase 3, with projects under the Program to be delivered by 30 June 2023.

(Table 30 continued)
Funding Mechanisms.

Funding Program	Funding Eligibility	Application Date / Process

Smart Places Acceleration Program	Eligible Initiative:
	• Uses or enables use of digital and smart technology in NSW
	• Align with NSW Smart Places Strategy
	• Participates In delivering one or more of the following:
	  • Data Innovation and value creation – Increase data generation (Including IoT) and capture, share and use data across NSW and Its communities.
	  • Capability development programs – Establish projects and Initiatives that Increase smart place capability in the public sector
	  • Communication of insights – Increase sharing and communication of Insights to Improve customer outcomes.
	Smart place deliverables such as networks, communication technology and infrastructure that enables smart places cannot be funded at this stage through the Smart Places Acceleration Fund. These deliverables can be part of the overall project proposal, but the proposal's co-Investment partners must fund them.
	Participates in delivering one or more of the following.
	• Replicability
	• Interoperability
	• Data availability on NSW Government data platforms
	• Support for NSW Government foundation policy (e.g., NSW IoT Policy, Smart Infrastructure Policy, Infrastructure Data Management Framework)
	• Co-delivery partners must Include at least one agency In the General Government sector
	• Provided multi-year reservation or lean business case, Including CFO (or delegate) sign-off.
		There are no set deadlines and intake of initiatives will occur on a rolling basis. There will be an expression of interest process for the intake of initiatives. The department's Smart Places Team will take on concierge role to help connect interested parties.
		Projects that are not selected for funding may be selected for further development with support from program partners. Applicants can lodge multiple expression of interest for different initiative.

Metropolitan Greenspace Program	All councils in the Greater Sydney region and Central Coast are eligible to apply. The types of projects eligible for funding can be either capital works or planning projects. **Eligible capital works projects** • Walking tracks and recreational/bicycle trails • Playground • Bushland and environmental management or restoration • Interpretive signage and educational programs associated with trails and greenspaces • Conservation works guided by appropriate planning and assessment • Park and open-space development and upgrading • Recreation facilities • Soft and hard landscape works. **Eligible planning projects** • Local council open-space strategies • Regional open-space feasibility studies • Master plans or plans of management • Recreation trails planning, feasibility, or master plans (no construction) • Natural/cultural heritage studies, interpretation, archaeological investigation, conservation-management plan, bushland - or vegetation-management plans. Criteria used to assess applications are: • Regional network • Recreation values • Landscape design, planning, and management • Natural heritage • Cultural heritage • Sustainability, special needs, health. Projects that support the NSW Premier's Priority to increase walkable access to quality open, green, and public space in urban areas will be prioritised.	The Metropolitan Greenspace Program is an annual grants program. Applications for the 2020/21 round closed on Friday 14 May 2021.
Your High Street Program	All councils in NSW are eligible to apply for up to $1 million to deliver a project that supports a single high street in their local government area within a year of funding approval. The funding amount may only be requested for elements within a single high street location that council can demonstrate will address the problem and have positive economic impacts for local business and the community.	The Your High Street Program was launched in November 2020. The application process for the 2021/2022 round has closed, with grant funding being awarded in April 2021.

City of Ryde

Lifestyle and opportunity
@ your doorstep