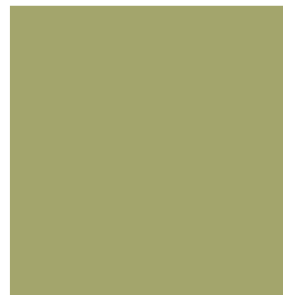


Ballina Shire Council Bike Plan



Draft Plan for Consultation
August - September 2016



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Introduction

The popularity of cycling for recreation is experiencing high growth, and the 2010 'Exercise, Recreation and Sport Survey'¹ has shown that cycling is the fourth most popular physical activity behind walking, aerobics and swimming.

Cycling also plays a role as a viable and accessible transport choice. 'Active transport' (such as cycling) can provide a number of benefits to a community improving the health of individuals and the liveability of the general community, and reducing traffic congestion.

At the core of a successful cycling environment is the integration of land use and transport planning. Planning for cycling (and walking) creates opportunities for people to live in places within easy cycling (walking) distance to urban services and public transport which, in turn, helps to reduce our high dependency on private vehicle - creating healthier communities.

It is also well understood for both Australian and international contexts that the more people cycling in a community, the lower the cycling crash rate becomes. This is most likely due to the increased awareness for cyclists from motorists that appears when cycling is prevalent in society. Therefore, it is not only important to improve the safety for cyclists by improving infrastructure and road user behaviours, but also to encourage more people to cycle more often – further reducing the risk of crashes.

Ballina Shire Council recognises the above trends. It also understands that maintaining and improving the Ballina cycling environment is important to social, economic and environmental sustainability and community amenity. The Council acknowledges that communities want towns and villages to be more liveable while increasing the capacity of transport systems and reducing road congestion. The Ballina Shire Bike Plan has been produced in response to these trends and community aspirations.

The Ballina Shire Bike Plan (after this referred to as 'the Plan') is the primary strategic document that outlines Council's direction and framework to establish a bicycle friendly environment within the Shire over the next 10 years.

The Plan provides a basis for the long term planning for improving the condition of the existing network, and a coordinated approach to delivering future bicycle routes and connections, cycling infrastructure and education in the Ballina Shire. The Plan's vision is to provide for a network of on- and off-road bicycle routes that connect key destinations, and to identify a range of cycling infrastructure requirements (such as cycle lanes and parking), and behavioural incentives (such as education and promotional activities). The Bike Plan is Council's commitment to cycling as both a recreational pastime and as a mode of transport, and to enhance safety around cycling for all shared path users.

The Plan represents what the community wants as identified through the consultation process. It indicates the constraints of the existing network (derived from an extensive audit), and highlights opportunities for improving the network within the context of future planning.

The Bike Plan will also contribute to and enhance Council's broader vision, policies and strategies to achieve sustainable and desired economic growth, lifestyle values, and tourism: elements that continue to make the Shire a place envied and sought after for its natural beauty, and social, economic and community assets.

(Readers footnote: The focus of the Bike Plan is on shared paths and Ballina Shire currently has approximately 39 kilometres of shared paths across its localities, including the regionally significant Coastal Recreational Pathway and Shared Path project. It should be noted that footpaths have not been considered in the development of the Plan. (Under the New South Wales Road Rules, riding a bicycle on a footpath is prohibited unless the rider is under 12 years of age, or is an adult accompanying a rider under 12 years of age.)

¹ Australian Sports Commission, Annual Report 2010

Benefits of cycling

Cycling offers a host of benefits to both the community and individuals. Cycling is a convenient, affordable and a sustainable mode of transport that can be incorporated into one's daily routine. Cycling is a low impact activity that can be enjoyed by people of all ages.

A good quality, connected bicycle network plays an important role in a community's quality of life. It has the potential to encourage one to improve their health, increase social cohesion, promote environmental awareness and appreciation and attract economic opportunities to the Shire.

Physical benefits

The physical benefits of regular exercise such as cycling, include:

- regular physical activity can reduce overweight and obesity rates, and can reduce the risk of cardiovascular disease, Type 2 diabetes and some forms of cancer
- physical activity can improve one's mental wellbeing
- getting children cycling is believed to be the single most effective way to improve physical activity rates and reduce obesity in children²
- physical activity (such as cycling) that is incorporated into one's daily routine, is more likely to be maintained than other recreation activities
- promoting low impact physical activity such as cycling has specific benefits for older adults including improved mobility, flexibility and functional ability, strengthening bones, reduced risk and symptoms of osteoporosis and osteoarthritis and reduced risk of falls.

Social benefits

While it is often difficult to measure the social benefits of physical activity (including cycling), some of the consistent recorded benefits include:

- increasing social cohesion, social/community networks and social capital
- improving family and community connectedness
- enhancing communication, interpersonal, leadership and co-operation skills in children
- creating friendships and building social skills
- improving concentration at school
- reducing other unhealthy behaviours (tobacco smoking, drug use).

Cycling offers specific social benefits to older adults, these include:

- prolonged, independent living
- social inclusion, connecting people to community and the environment.

Environmental benefits

Switching from the motor vehicle to a bicycle can improve the quality of our environment. The benefits from this are further passed on to the individual and the community. Environmental benefits from cycling can include:

- reduced urban traffic congestion
- improved air quality
- reduced traffic noise
- reduced carbon emissions.

Economic benefits

The main area of research into the economic benefits of physical activity (including cycling) often relates to the cost savings associated with participation and the flow-on affects to the public health system.

- The estimated cost of physical inactivity to the Australian economy is \$13.8 billion³
- It is estimated that the costs of operating and maintaining a bicycle are 5% of the total costs of operation and maintaining a motor vehicle⁴
- 1,000 bicycle riders per day will generate discounted benefits of around \$15 million per kilometre over a 30 year period (\$1.43 per km cycled per person).

20% of motor vehicle trips in Australia are less than 5km, a distance the average person can easily cycle

2 Australian Bicycle Council 2011, National Cycling Strategy 2011-2016

3 Medibank Private 2008, The Cost of Physical Inactivity

4 Australian Bicycle Council 2011, National Cycling Strategy 2011-2016

Planning process

Methodology

The development of the Plan has been broken down into five stages. The diagram below shows the sequential development of the strategic framework and detailed analysis of the Ballina Shire's bicycle network. The information gathered and generated throughout this process provides the various outputs required for this Plan. The five stages are:



Figure 1. Methodology used in the development of the Plan



Council's commitment

Council has an in-depth knowledge of its individual communities and can influence positive outcomes through its role as a strategic and land-use planning authority; a provider and manager of facilities and services; a community leader and as an employer at a local level. As the tier of government closest to the local community, Council leadership can complement the role of other government agencies and non-government organisations.

Council's Community Strategic Plan 2013-2023 (CSP), 'Our Community: Our Future' sits above all other Council plans and policies in the planning hierarchy. The CSP identifies the community's priorities and aspirations for the future; to promote a positive lifestyle and improve the amenity for residents and visitors.

Council operations and decisions are guided by four key themes (Directions):

- Connected Community
- Prosperous Economy
- Healthy Environment
- Engaged Leadership.

The Bike Plan is a means to achieving Direction one: Connected Community. The Bike Plan enables the implementation of the following Outcomes:

- CC1 We feel safe
- CC2 We feel connected to the community
- CC3 There are services, facilities and transport options that suit our needs.

It is important that the vision and objectives of this Bike Plan support the desired Outcomes of the CSP.

The Delivery Program and Operational Plan 2013/14 - 2016/17 (combined document) outlines the strategies and actions that Council will implement to achieve the Directions and the Outcomes identified in the CSP.

The following diagram outlines the over-arching strategic framework in which the Bike Plan sits.

Ballina Shire Bike Plan strategic framework

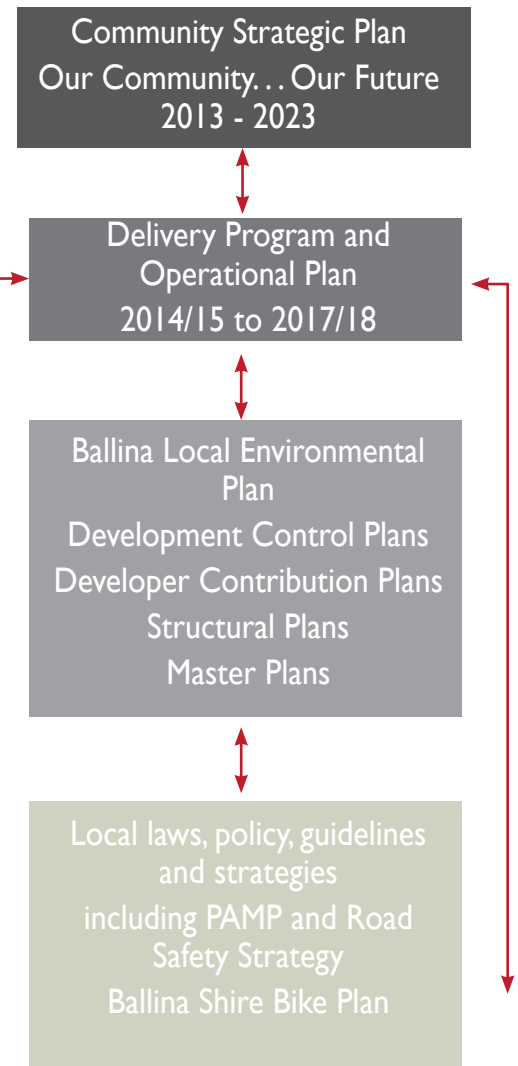


Figure 2. Ballina Shire Bike Plan Strategic Framework

Vision, targets and objectives

Vision

The vision for the Ballina Bike Plan reflects the community's aspirations and Council's corporate vision. The vision developed for the Plan is:

"Ballina Shire is connected by a coherent, safe and attractive cycling network to be enjoyed for recreation and as a viable transport option for short trips."

Our target

The target developed for the Plan is:

To increase the mode share of cycling in the Ballina Shire from 1.5 per cent in 2011, to 5 per cent in 2020

Bike Plan objectives

There are four objectives of the Plan. These objectives guide the Plan's actions, and are set out in the Action Plan:

1. Plan, deliver and maintain a well-connected cycle network
2. Improve safety for cyclists
3. Provide cycling support facilities including signage, line marking, lighting and the provision of end-of-trip facilities
4. Encourage and promote the benefits of cycling.

Strategic document review

A number of key planning documents have informed the development of this Bike Plan. The documents have been divided between strategic and land-use planning, and bicycle planning literature. Each document has been categorised based on its most applicable sphere of influence: State or Regional influence, Local Government Area (LGA) or a specific area within the Shire.

Strategic and land-use planning

Table 1. Strategic document review - strategic land-use planning

State/Regional	Ballina Shire	Area/site-specific
<ul style="list-style-type: none"> <input type="checkbox"/> NSW State Plan 2021 <input type="checkbox"/> NSW Government Far North Coast Regional Strategy 2006 - 2031 <input type="checkbox"/> NSW Government NSW Long Term Transport Master Plan 2012 - Northern Rivers 	<ul style="list-style-type: none"> <input type="checkbox"/> Community Strategic Plan - Our Community...Our Future 2013-2023 <input type="checkbox"/> Delivery Program and Operational Plan 2014/15 - 2017/18 <input type="checkbox"/> Ballina Growth Management Strategy 2012 <input type="checkbox"/> Ballina Shire Contributions Plan 2010 <input type="checkbox"/> People, Place, Prosperity: A framework for a more sustainable Ballina 2025 	<ul style="list-style-type: none"> <input type="checkbox"/> Ballina Shire Open Space Strategy 2008 <input type="checkbox"/> Ballina Shire Community Land Generic Plan of Management - Parks and Reserves (various)

Bicycle planning

Table 2. Strategic document review - bicycle planning

National/State/Regional	Ballina Shire
<ul style="list-style-type: none"> <input type="checkbox"/> Australian National Cycling Strategy 2011-2016 <input type="checkbox"/> Australian Cycling Participation (Results of the 2013 National Cycling Participation Survey) 2011-2016 <input type="checkbox"/> NSW Bike Plan 2010 <input type="checkbox"/> NSW Cycling Safety Action Plan 2014-2016 - Transport for NSW <input type="checkbox"/> Department of Infrastructure and Transport Walking, Riding and Access to Public Transport 2012 <input type="checkbox"/> Northern Rivers Regional Transport Plan - Transport for NSW 2013 <input type="checkbox"/> Cycling Aspects of Austroads Guides 2014 <input type="checkbox"/> Austroads Guide to Traffic Engineering Practice: Part 14 Bicycles <input type="checkbox"/> Austroads A Guide to Road Design: Part 6A Pedestrian and Cyclist Paths <input type="checkbox"/> Austroads Pedestrian-Cyclist Conflict Minimisation on Shared Paths and Footpaths <input type="checkbox"/> NSW Bicycle Guidelines 2005 <input type="checkbox"/> Northern Rivers Local Government Development Design and Construction Manual D9 Cycleway and Pathway Design <input type="checkbox"/> Planning Guidelines for Walking and Cycling <input type="checkbox"/> Walking, Riding and Access to Public Transport 2013 	<ul style="list-style-type: none"> <input type="checkbox"/> Road Safety Strategy 2014/15-2023/24 <input type="checkbox"/> Ballina Shire Pedestrian Access and Mobility Plan 2013 (reviewed)

Ballina Shire Council Road Safety Strategy 2014/15 - 2023/24

The Road Safety Strategy presents Council's commitment to planning a safer road transport system, that accommodates and respects the needs of all road users.

The development of a Bike Plan was a key action of the Road Safety Strategy. Other actions identified in the Road Safety Strategy, that will improve road safety for cyclists, have been incorporated into the Action Tables contained within this Bike Plan.

The Road Safety Strategy focuses on the application of the internationally recognised and endorsed Safe System approach to road safety. The approach acknowledges that humans will always make mistakes, that there will always be crashes; but death and serious injury should not be the price to pay. The Safe System approach argues that for as long as mistakes are likely, all road users need to be protected – and this protection is best provided by four cornerstones: safer roads and roadsides, safer speeds, safer vehicles and safer road users.

An increase in the number of people cycling brings a challenge to improving safety to reduce crashes involving bicycle riders. Adopting a Safe System approach, it is possible to reduce bicycle crash rates and the associated trauma.

Creating a Safe System for cyclists

Safer Roads and Roadsides

- Build a bicycle network that is separated from motor vehicles
- Shared path design to reduce conflict
- Improve visibility on roads with higher speed limits
- Safety at intersections
- Integrating land use planning, urban planning and transport planning
- Delivering a roads and roadsides construction and maintenance program to improve the road network

Safer Speeds

- Implementation of lower speed limits in areas of high pedestrian and cycling activity
- Riding at safer speeds

Safer Vehicles

- Increase visibility through safety features
- Bicycle maintenance
- Use of safety equipment such as accredited helmets
- Safety standards for bicycles

Safer Road Users

- Riding safely on the roads
- Understanding and complying with the road rules
- Safely sharing the roads and paths with other road users
- Road safety education and communications

Road Safety Strategy¹ - what the community said

- consider pedestrian and cyclist safety when designing roundabouts and intersections
- improve roadsides for cyclists, remove debris and fix potholes
- develop a network of well-planned cycleways which are marked and signposted to enable cyclists to commute safely and efficiently to and from towns and villages
- slow traffic and implement traffic calming measures to improve safety for pedestrians and cyclists, especially in towns and villages
- implement an audit of footpaths and shared paths and a regular maintenance regime to sustain the integrity of the paths and to ensure quality resurfacing, repairing and maintenance works
- remove hazards on shared paths including sand, broken glass, other debris and tree roots
- widen shared paths in areas where there are high volumes of pedestrian and bicycle traffic to accommodate all users
- improve signage and line marking on shared paths to reduce conflict between path users

¹ Ballina Shire Council Road Safety Strategy 2014/15 - 2023/24



Pedestrian and Mobility Plan 2013

Council's Pedestrian And Mobility Plan (PAMP) is a joint initiative between Council and Roads and Maritime Services (RMS). This important document provides a coordinated approach to planning pedestrian facilities for the whole community.

The objectives of the PAMP are to improve the coherence, directness, safety, comfort, attractiveness and equity of access of the pedestrian network.

Under the PAMP, a pedestrian network consists of the following elements:

- paths/shared paths
- elevated and underground walkways (underpasses and overpasses)
- stairs
- ramps and kerbs
- crossings and refuges.

Footpaths (or paths) are sealed or unsealed paths intended for use by pedestrians. Footpaths and shared paths provide the means by which pedestrians access the built and natural environment. They enhance individual and community health and wellbeing by:

- improving accessibility for the broader community
- supporting environmental sustainability
- integrating communities
- enhancing real and perceived safety.

Whilst pedestrian-specific planning is outside of the scope of the Bike Plan, the PAMP is an important planning document as it covers the planning and maintenance of shared paths. Through improving elements of the pedestrian network such as pedestrian refuges, underpasses, overpasses, the safety of cyclists can directly be improved.

Central to the PAMP is an annual schedule of works for the pedestrian network. This schedule of works will contribute to the outcomes of the Bike Plan through the expansion of the shared path network. The relevant shared path projects from the PAMP have been included within the Action Tables of this Plan.

Influences on cycling for recreation and transport

Influence of community profile

The Ballina Shire - a snapshot

Total population (2011) 41,335

Age group

0-4 years	5.4%
5-11 years	8.5%
12-17 years	8.0%
18-24 years	6.2%
25-34 years	8.4%
35-49 years	19.4%
50-59 years	15.3%
60-69 years	13.1%
70-84 years	12.1%
85+ years	3.6%

Median age 45

Household composition

Family household	24.0%
Lone household	27.2%

Method of transport to work (one method)

Car (driver or passenger)	70.5%
Walked only	3.9%
Bus	0.6%
Bicycle	1.5%

Other

People without access to a motor vehicle	7.4%
People requiring assistance with daily activities	5.8%

Age is one of the major factors influencing the manner in which a community actively uses its environment and participates in physical activities. Understanding the spatial and demographic variations in communities, such as concentrations of older residents or youth, is fundamental to the planning for the future provision of facilities, including cycling infrastructure.

With an average age of 45 years, residents of Ballina Shire are older in comparison to regional NSW and the State. An ageing community is consistent with state and national population trends.

As a population ages, the demand for passive and informal recreation activities increases, with older people generally seeking quality walking/cycling paths to participate in low impact physical activities.

Approximately 18.6% of the Ballina Shire community is school aged (5 to 19 years old). Of those aged between 5 and 19 years, the highest proportion live in the localities of Cumbalum, Skennars Head, Wollongbar, Lennox Head and Wardell. Assuming the majority of primary school aged children attend their local primary school, there is tremendous scope for increased cycling as a transport option within these localities.

Currently, up to 20% of trips by car within Australia are less than 5km. In 2011, the main method of transport to work by the Ballina Shire community was the private vehicle, accounting for 70.5% of all trips. Ballina, the largest town in the Shire (and Ballina Island) is approximately 2.7km wide and relatively flat, providing an ideal distance and environment to promote and encourage cycling as the preferred method of transport for short trips (5km).

Compared to the rest of the Shire, Ballina Island has a relatively high proportion of residents without access to a motor vehicle (28.3%).

Additionally Ballina Island has a relatively low index of socio-economic disadvantage (SEIFA) which indicates a higher level of disadvantage when compared to the Ballina Shire. The SEIFA index is derived from indicators such as low income, low educational attainment, high unemployment and relatively unskilled occupations.

Improving access to safe and quality walking/cycling paths within areas like Ballina Island can help prevent social isolation, create a greater sense of personal independence and can encourage positive health and wellbeing outcomes.

Population growth

Growth is expected in the Ballina Shire over the next 10 years, with an estimated population of up to 50,000 by 2023 (an increase of almost 9,000)¹.

Council is committed to responding to the anticipated growth and development through:

- the identification of potential release areas via the Local Growth Management Strategy (LGMS) (outlined below)
- a commitment to Council's strategic land release program - based on strategic structure planning, rezoning, master-planning and staged subdivision
- the regular review of its land release program to determine future strategic rezoning priorities, depending on population demands and lot release.

The Ballina Shire LGMS 2012-2031 outlines Council's response to addressing the predicted population growth of the Ballina Shire and aims to set the parameters for future urban development in a responsible and sustainable manner. The LGMS identifies the Ballina Shire as being located within one of the fastest growing regions of Australia, the Far North Coast of New South Wales². The LGMS aims to set the parameters for the future development of the urban areas within the Shire in a responsible and sustainable manner. It seeks to achieve this by ensuring that decisions regarding the development of urban land are founded on sound planning principles and by ensuring that a comprehensive monitoring process relating to supply and demand is maintained².

The development of the LGMS has been guided by the principles of Council's Community Strategic Plan. Elements of the Community Strategic Plan that are relevant to the Bike Plan are outlined below:

- A built environment contributing to health and wellbeing
 - Create built environments and infrastructure that promote social interaction & an active community
- Diverse and balanced use of our land
 - Encourage more passive movement within and between localities
- People attaining health and wellbeing
 - Improve the overall health status of individuals
- Resilient and adaptable communities
 - Build transport infrastructure that is equitable and meets needs
- Responsible and efficient use of resources
 - Encourage less reliance on individual car use.

The LGMS identifies local strategies for addressing growth for each locality. The relevant strategies for each locality are included within the overview of the Ballina Shire's Cycling Environment of this Plan.

The Ballina Shire Contributions Plan (2008) also identifies a number of growth areas, with greenfield sites at Cumbalum, Wollongbar and Lennox Head³. Increased population is also planned for Wardell and through infill development in other established areas.

1 *Our Community: Our Future Community Strategic Plan 2013-2023 Ballina Shire Council*

2 *Ballina Local Growth Management Strategy 2012*

3 *Ballina Shire Contributions Plan 2008*

Participation trends - National, State and Regional

Understanding cycling participation trends at a national, state and regional level provides insight into who is participating, the frequency of participation and reasons why people choose to cycle. This information assists in the future planning of infrastructure and cycling programs.

Results of the 2010 'Exercise, Recreation and Sport Survey' (produced by the Australian Sports Commission) shows that cycling is the 4th most popular physical activity behind walking, aerobics and swimming¹.

Of the NSW residents who participated in the 2013 National Cycling Participation Survey:

- 16% ride a bicycle in a typical week, equating to approximately 1.09 million residents
- more males (20%) than females (12%) ride a bicycle
- a higher proportion of children than adults ride a bicycle².

Trends also show that cycling participation rates across Australia are much higher among young people and then decrease as people get older.

Between 2011 and 2013, cycling participation rates did not change at a state level, however, a statistically significant decrease in participation rates was observed in regional NSW^{2,3}.

The Table below documents this decline in cycling participation in Regional NSW over the previous 12 months.

Table 3. Change in the frequency of participation in cycling over the previous 12 months⁴

Frequency of participation	Regional NSW	Australia
Ride more frequently	14.8%	19.7%
Ride the same	45.3%	51.4%
Ride less frequently	39.9%	28.9%

Consistent with national trends, males in regional NSW are more likely to cycle than females (see figure below).

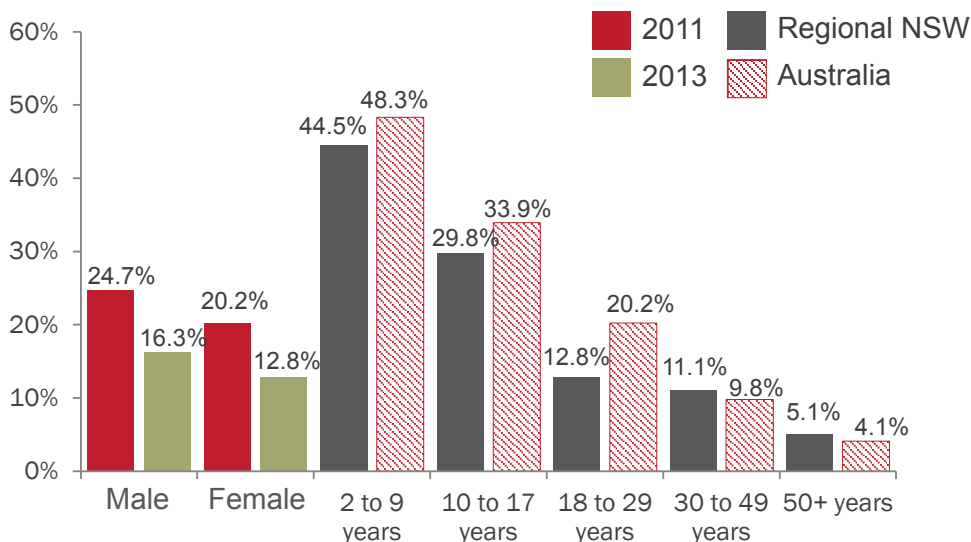


Figure 3. Cycling participation rates in regional NSW between 2011 and 2013

1 Australian Sports Commission, Exercise Recreation And Sport Study, Annual Report 2010

2 2013 National Cycling Participation Survey

3 Anywhere in NSW, excluding the Sydney metropolitan area

4 Austroads 2013, Australian Cycling Participation 2013

Participation barriers

Understanding why people choose not to cycle for recreation or transportation helps Council and other organisations to develop strategies and programs to eliminate and overcome the perceived barriers.

Participation barriers towards cycling can be divided into three types of barriers:

- physical barriers
- practical barriers
- emotional barriers.

Physical barriers

Infrastructure

The lack of, or poorly designed cycling infrastructure is a common participation barrier for cyclists and non-cyclists. As safety is the most significant barrier, well connected quality off-road cycle paths provide recreation and casual riders and families with a 'safe' place to ride, while separating them from the road and motor vehicles.

In already built up areas, it is often too difficult or costly for Councils to provide off-road cycle paths. As an alternative, many designate a section of the road as a 'bike lane'. While bike lanes are seen to assist in alleviating safety concerns on roads, anecdotal evidence suggests that they do not provide the level of security they were designed to. In addition, bike lanes, particularly in Australia, are not considered best practice design in regards to cycling infrastructure and can often create unsafe environments for cyclists¹. Examples include:

- bike lanes often disappear at intersections, particularly at roundabouts posing problems for cyclists and motorists
- complex traffic interchanges, bridges with no hard shoulders and awkward lane changes all pose additional difficulties for cyclists, both in terms of them knowing where to position their bikes on the road, and the threat to their personal safety.

Infrastructure such as night lighting, benches, water bubblers and distances indicators are simple supportive embellishments that can make a ride more comfortable and enjoyable for cyclists.

Time

- many people feel they lack the time to cycle to their destination (most likely work), cool down and shower, especially if they have children.

Weather and seasonal considerations

- in winter, it is often dark in the morning and evenings when people ride between work and home, which can impact upon their decision to ride or not
- the weather can play a large role in people's preference to ride, with hot summers and periods of rain impacting a riders level of comfort and subsequent travel mode preferences.

Practical barriers

Convenience

- the convenience of the private motor vehicle is hard to overlook when choosing between the car or bicycle as the preferred mode of transportation for a trip
- many people feel that the bicycle restricts their ability to change plans/destinations, and carry goods such as groceries
- the car allows people to travel to work in comfort, without having to worry about the climate, wearing a helmet, change of clothes and the availability of showers and other end-of-trip facilities at their destination.

End-of-trip facilities

- lack of end-of-trip facilities, especially private showers and change areas, is a common reason for people, especially women, choosing not to cycle
- however, many new and existing workplaces continue not to have comfortable end-of-trip facilities, such as change rooms, showers, ironing facilities, changing areas, lockers and/or secure bicycle storage areas.

¹ National Cycling Strategy, Australian Bicycle Council 2011-2016

Emotional barriers

Safety

Perceptions around safety are a major barrier to cycling. It is perceived that our roads are too dangerous and unsafe for cyclists:

- visibility - bicycle riders not being seen by a driver at all or in time, or by vehicles not being seen by the bicycle rider at all or in time¹
- vulnerability - many cyclists feel vulnerable on the road and bike lanes often do not provide the level of security they are designed to
 - many motorists do not notice or respect bike lanes
 - cyclists are vulnerable to parked cars opening doors
 - many people are unsure about, or do not understand the rules and regulations regarding cycling on footpaths
- cycling to school - traffic speed, traffic volume, unsafe places to cross the road and the child's lack of hazard perception skills and social dangers such as 'stranger danger', are some of the main concerns
- risk of conflict with vehicles on high speed rural roads speed and poor road conditions
- condition of road shoulders
- cyclist lack of confidence
- conflict between cyclists and motor vehicle drivers
 - often cyclists believe they are forced to disobey road rules to improve their own safety e.g. riding on the footpath, running a red light or breaking early
 - the behaviour of other road users and the distance between themselves and other vehicles
 - cyclists often endure moments of aggression including verbal abuse, items being thrown at them or vehicles edging up to cyclists on purpose

Lack of motivation

- some non-cyclists believe if they lived in a city or somewhere with numerous places of interest (unlike rural towns) they would be more inclined to cycle²

¹ Cycling Safety Action Plan 2014-2016

² Victorian Department of Transport (Walking and Cycling Branch) 2009, *Encouraging Walking and Cycling: Focus Group (Final Report)*

Cycling crash data for the Ballina Shire

- pedal crashes were 2% higher than the five year averages for NSW
- from 2008 to 2012, there were 41 pedal cyclists injured, however no cyclist was killed during this period
- of the cyclists injured, 78% were male riders aged 5 to 16 years accounted for 34% of all cyclist casualties and cyclists aged 30 to 39 years accounted for 22% of the cyclists injured
- male riders aged between 5 to 12 and 30 to 39 years were overrepresented in pedal cyclist crashes
- twelve of the cyclists injured were not wearing a helmet.

Source:

RMS 2014, *Interactive Crash Statistics*

Ballina Shire Council Road Safety Strategy 2014/15 - 2023/24



Participation trends - Ballina Shire

According to the 2011 Census data, over 63% of residents work and live in the area and 27% travel outside of the area to work. Only 1.5% cycle to work. Cars are the predominant mode of transport (70%), walking accounts for 3.9% of trips, motorcycles account for 0.6% of trips and public transport makes up under 1%.

Community consultation outcomes

To gain further insight into participation rates in the Ballina Shire, a survey was undertaken during NSW Bike Week in 2014 to assist in developing the Bike Plan. A total of 101 surveys were completed. A summary of the results is presented below (See Appendix one for the complete survey results). It needs to be noted that the cost of more formal Cycling Participation Surveys prevents Ballina Council from gathering more accurate

Bicycle ownership

Bicycle ownership was high, with 95% of those surveyed owning or having access to a bicycle.

Participation in cycling and frequency

Respondents were asked how often they rode a bike for recreation, sport or fitness, with 23% reporting everyday and a further 42% a few times a week.

Respondents were asked how often they rode a bike for transport/commuting e.g. to work, shops, school etc with 25% a few times a week and a further 19% a few times a month.

School children

Respondents with school aged children reported that 31% rode to school, leaving a significant proportion (69%) taking other means of travel. Of those who do ride to school, 71% reported to doing so daily.

Confidence levels

Respondents were asked how confident they were about riding a bicycle:

- 49% of respondents considered themselves highly skilled and confident riding for recreation or transport
- 43% were more confident to ride for recreation, rather than commuting and 8% were not interested and were concerned about safety.

Preference of cycling environment

Respondents were asked about their preferences relating to cycling environments, with:

- 50% preferring a combination of paths and on-road
- 46% preferring shared paths/bicycle paths only
- 4% with a preference for on-road only.

Safety of cycling environment

Respondents were asked if they felt that cycling in the Ballina Shire is safe:

- 66% felt cycling in the Ballina Shire was either somewhat safe or very safe.
- 33% felt cycling in the Ballina Shire was somewhat unsafe or very unsafe
- 1% were unsure.

Cycling destinations

Survey respondents were asked where they cycle to within the Shire. A quarter listed recreation areas including the beach, park and river. Other destinations listed include:

- organised bicycle rides
- as part of a bicycle club
- roads in the foothills.

Reasons to cycle

In relation to their most popular cycling routes, survey respondents were asked what the purpose of their trip was. An overwhelming proportion of respondents listed Exercise (71%).

Additionally, the 2011 ABS Census data reports that 1.5% of Ballina Shire residents ride their bicycle as a form of transport to work.

Things that make cycling difficult or unsafe

When considering their most popular cycling route, survey respondents were asked what makes cycling the route difficult or unsafe. As shown in the graph below, having to ride on-road and the interface with traffic rated the highest at 30%.

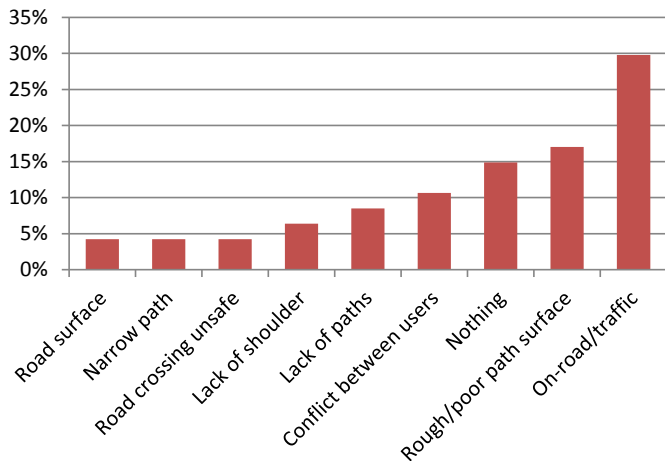


Figure 4. Things that make it difficult or unsafe to cycle

Reasons not to cycle

To gain an understanding of why people within the Ballina Shire choose not to cycle, respondents were asked to identify what discourages them from cycling. Lack of adequate cycle paths was the highest response (16%), followed by weather (12%), lack of end-of-trip facilities (10%), and safety concerns (10%).

Children - to school

Respondents were asked to list the reasons their school aged children do not ride to school. A summary of the responses are as follows:

- The children's school is too far away to ride to (6)
- There is no path to school from where we live (2)
- Safety concerns with the speed of the road
- I am not confident they will be safe
- The road has no shoulder (Bruxner Highway)
- They are too young
- Rural roads are too unsafe (such as Wardell Road).

As an aside, the weight and size of school bags/equipment and need to get from school to other activities in various town locations can make cycling impractical.

Ways to overcome barriers

Respondents that completed the survey were asked to identify what improvements would encourage them to cycle, or to cycle more frequently.

The most common response at a Shire level was 'more designated cycleways/bike lanes' (31%). The other responses included:

- More paths connecting towns - 17%
- Increased provision of shared paths - 10%
- Mutual respect between cyclists and motorists 8%
- Wider road shoulders for cycling - 8%
- Cycling groups/social rides - 6%
- Safe road crossing points - 6%
- Improved path maintenance - 6%
- End of trip facilities - 4%
- Improved signage, education for path users - 4%
- Increased safety for riders - 2%.

Improving cycling experience

Survey respondents were asked how their cycling experience could be improved. The most popular responses are provided below:

- provision of more shared paths - 20%
- provision of wider road verges, better signposting and off-road dirt tracks - 12% each
- divided shared paths and social rides - 8% each.

2013 Bike Week survey responses

Participants in Ballina Shire Council's 2013 Bike Week events were asked two key questions in relation to bicycle safety. The highest responses are as follows:

What bicycle safety improvements would you like to see?

- promotion of shared path etiquette - 17%
- education and awareness programs for cyclists and motorists - 14%
- provision of divided shared paths (line marking) - 13%
- provision of more cycle lanes (on-road) - 9%.

What bicycle safety issues matter to you?

- drivers sharing the road and considering others - 26%
- conflict between cars and bikes - 17%
- beware of cyclist warning signs - 13%
- driver education and awareness - 9%
- educating children about road safety and their responsibilities - 9%.



The Ballina Shire cycling environment: a cycling facility audit

Types of cyclist

For the purposes of this Plan, an audit was conducted of Ballina Shire's cycling environment. This involved a review of existing cycling infrastructure, network connections, and current and future cycling usage and needs. Fundamental to the audit was an analysis of type of cyclists and cycling, and types of bicycle infrastructure. These are explained in the Table below.

Cycling is a type of active transport as well as a physical activity that can be enjoyed and participated in by all ages and abilities. Reason for cycling varies amongst riders. For the purposes of this Bike Plan cyclists have been categorised into nine different types, as summarised in the Table below.

Each group has their own motivations for riding, characteristics and network requirements. Identifying the different types of cyclist allows Council to plan a cycle network and accommodate the needs of various types of cyclists.

Table 4. Types of cyclist¹

Type of cyclist	Rider characteristics	Riding environment
Non-cyclists and potential cyclists	Do not currently ride, however have the potential to ride with effective encouragement	This group would generally begin with off-road shared paths, footpaths (where permitted), very low volume residential streets or learn-to-ride circuits (where available)
Primary school children	Cognitive skills may not be fully developed, little knowledge of road rules, require supervision	Off-road shared path, footpath (where permitted), very low volume residential street or learn-to-ride circuit (where available)
Secondary school children	Skill level varies, developing confidence	Generally use on-road facilities or off-road shared paths where available
Recreation	Experience, age and skills vary greatly	Desire off-road shared paths and quiet streets, avoid heavily trafficked routes, more experienced will prefer to use road system for long journeys
Commuter	Vary in ages and fitness, usually come highly skilled and able to handle a variety of traffic conditions	Some prefer paths or low-stress roads, willing to take longer to get to destination, others want quick trips regardless of traffic conditions, primarily require space to ride and smooth riding surface, speed maintenance
Utility	Ride for specific purpose (i.e. shopping), short length trips, routes unpredictable	Not on highly trafficked roads, needs include comprehensive end-of-trip facilities and low-stress routes
Touring	Long distance journeys, may be heavily equipped, some travelling in groups	Often route is similar to that of other tourists i.e. roads and long distance paths
Sporting	Often in groups, two abreast occupying left lane, needs are similar to commuters	Travel long distances in training on arterials, may include challenging terrain in outer urban or rural areas. Generally do not use off-road routes because of high speed and conflict with other users
Mountain Biking	Recreational riders seeking an off-road adventure	Prefer an off-road facility or a natural setting, generally non-urban areas such as bushland, National Parks and purpose-built facilities. Desire undulating terrain


¹ Austroads 2014, Austroads Guide to Traffic Management - Part 4

Cycling infrastructure



Types of bicycle facilities

There are many different types of bicycle facilities, on- and off-road, that are used or could be incorporated into the Shire's existing cycling environment. While there can be many variations of these types of facilities, the ones most relevant to the cycling environment of Ballina, Lennox Head, Skennars Head, Alstonville, Cumbalum, Wardell and Wollongbar are summarised in the Table below. The descriptions have been adopted from sections 5 and 6 of the NSW Bicycle Guidelines and Austroads - *Part 14*.

Table 5. Types of bicycle facilities¹

Location	Type	Description	Example
Off-road within a road reserve	Mixed traffic	<p>Mixed traffic streets are the most common type of areas where cyclists ride, particularly recreation cyclists. There are no designated bicycle areas and cyclists and motorists share the road. There are two types of mixed traffic environments:</p> <ul style="list-style-type: none"> <input type="checkbox"/> wide cross section roads - provide for comfortable sharing between motor vehicles and cyclists, and <input type="checkbox"/> narrow cross section roads - are generally low speed, low traffic volume roads that do not allow cars to safely pass cyclists 	<p><i>Regatta Avenue, Ballina</i></p> 
	Bicycle lane	<p>Bicycle lanes provide visually separated operating space for the exclusive use of riders on roads. They are used to define bicycle routes where the prevailing road speed and traffic volume requires a degree of separation. Characterised by two unbroken thick white L5 lane lines. Green pavement may be used to increase visibility.</p>	<p><i>Separated bicycle lanes currently do not exist within the Ballina Shire</i></p>
	Bicycle shoulder lane	<p>More flexible than a bicycle lane, bicycle shoulder lanes provide a more visually separated space for riders on roads. Unlike bicycle lanes, they are primarily intended for use in tight situations on local roads within urban areas where there is often a heavy demand for kerb side parking. Bicycle shoulder lanes are also common on high speed roads such as motorways and State Highways. These lanes are characterised by one unbroken thick white L5 lane line defining the road shoulder and a dashed white line separating bicycle traffic from parked cars. Green pavement may be used to increase visibility.</p>	<p><i>Bicycle shoulder lanes currently do not exist within the Ballina Shire</i></p>

¹ NSW Bicycle Guidelines and Austroads - Part 14

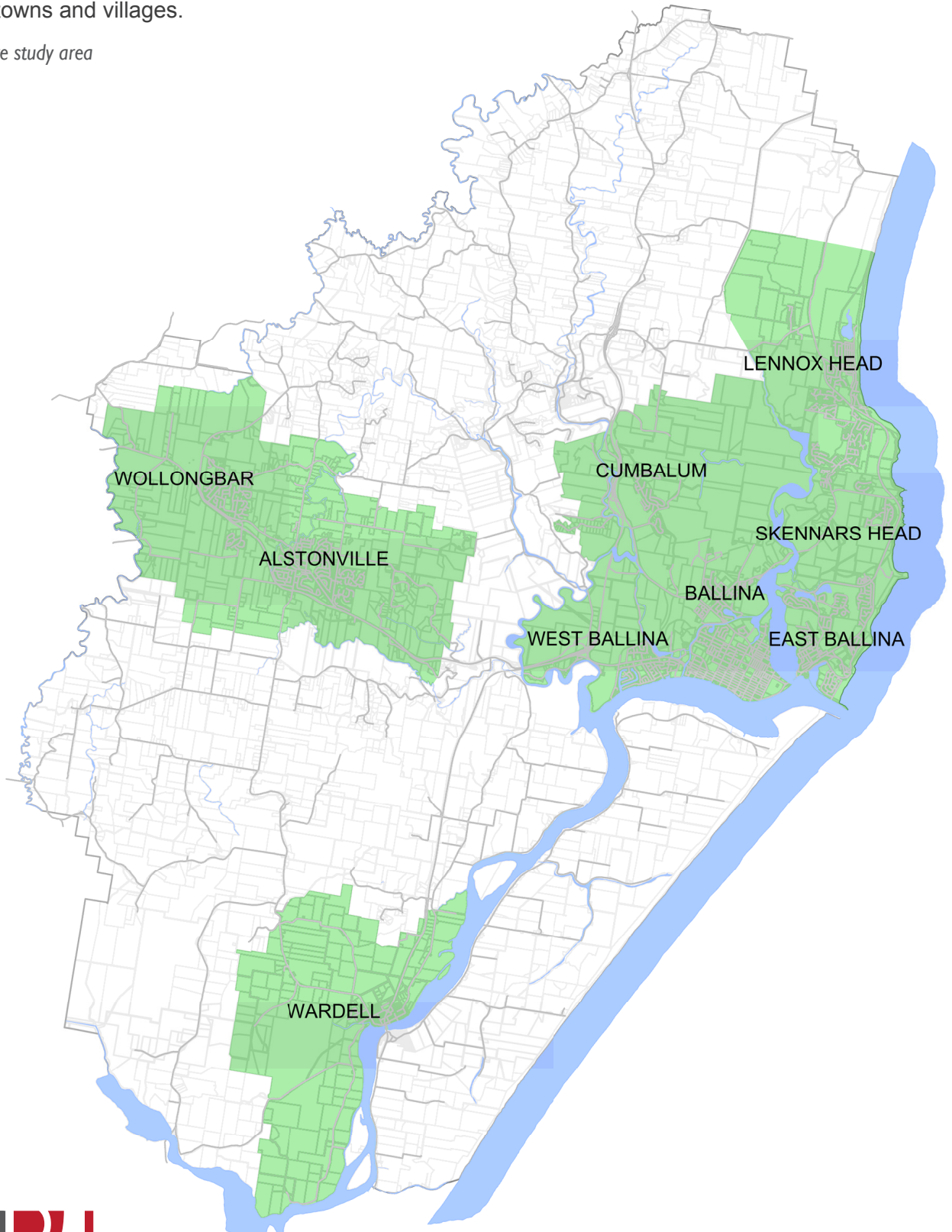
Location	Type	Description	Example
Off-road within a road reserve	One- or two-way off-road bicycle path	Paths are physically separated from the road. They are used as either one-way or two-way paths to define bicycle routes where the prevailing road speed and traffic volume requires physical separation. They require more land than on-road lanes.	<i>There are currently no one- or two-way off-road bicycle paths in the Ballina Shire</i>
	Shared paths	Similar to one-way or two-way off-road bicycle paths, however, the path also provides an off-road corridor for pedestrians. The paths are physically separated from the road. They are used as either one-way or two-way paths to define bicycle and pedestrian routes where the prevailing road speed and traffic volume requires physical separation. They require more land than on-road lanes.	<i>Skennars Head Road</i> 
Off-road outside of a road reserve	Bicycle paths	<p>A separated bicycle path no longer part of the road reserve. Similar to roads, they should be marked with a centreline to separate two-way flows and to permit safe operation of the path.</p> <p>Signage should be erected to regulate the type of users.</p>	<i>There are currently a limited number of separated bicycle paths in the Ballina Shire</i>
	Shared paths	<p>Similar to bicycle paths but the path is shared between pedestrians and cyclists. To ensure safe operation of the path, four key behavioural messages must be consistent along the path to advise and educate pedestrians and riders:</p> <ul style="list-style-type: none"> <input type="checkbox"/> keep left when using the path, <input type="checkbox"/> warn other path users on approach and overtaking, <input type="checkbox"/> move off the path when stopped, and <input type="checkbox"/> walkers to control dogs. 	<i>The Lennox Head Coastal Shared Path</i> 

Overview of the Ballina Shire's cycling environment

Ballina Shire is located within the Northern Rivers Region of NSW. The main townships of the Shire include: Alstonville, Ballina Island, Cumbalum, West Ballina, East Ballina, Lennox Head, Skennars Head, Wardell and Wollongbar.

This section provides an overview of the existing cycling environment and key destinations within Ballina Shire's major towns and villages.

Map 1 Ballina Shire study area



Alstonville's cycling environment

Alstonville is a village comprised of a central commercial area surrounded by low density residential areas. It is compact with a strong village character. The village contains schools, sport and recreational facilities, aged care facilities, as well as a number of government agencies¹.

It is in close proximity to and has a strong relationship with the village of Wollongbar, the Russellton Industrial Estate, the Gap Road Quarry and NSW Department of Primary Industries Agricultural Research Station¹.

The village is effectively 'built-out' to the village footprint identified by Council and the Far North Coast Regional Strategy, and is surrounded by a 'rural buffer', designated by Council to preserve the distinctiveness and separation of Alstonville and Wollongbar¹.

Alstonville has a reasonable footpath network, however this is limited to the commercial centre of town, and footpaths cannot legally be used by riders over 12 years of age. It currently has four shared paths, one of which connects to the village to Wollongbar. The remaining shared paths are smaller sections within the footpath network; Ballina Road, Wardell Road and Tanamera Drive.

The Tanamera Drive shared path provides an off-road link from Teven Road through to Geoff Watt Oval.

Alstonville has a number of rest stops suitable for cyclists:

- Andrew Freeborn Park - shade, seating and water
- Retail precinct (Cnr Main and Daley Streets) - toilets, shade, seating, and water
- Elizabeth Ann Brown Park - shade, seating and water.

Key destinations include:

- Alstonville Primary and High Schools
- St Joseph's Catholic Primary School
- Crawford Park
- Lumley Park
- Geoff Watt Oval
- Alstonville Showground
- Alstonville Swimming Pool
- Main Street retail precinct
- Alstonville Plaza Shopping Centre
- Wollongbar
- Russellton Industrial Estate.

Recommendations

Alstonville currently has no shared paths or cycleways that traverse the village. The existing shared paths are not connected, with little opportunity for cyclists to access key community, education and retail opportunities.

There is little cycle-specific end-of-trip facilities within the village centre.

The cycling environment would be greatly enhanced through the extension of the shared path network, notably through the upgrade of the existing footpath network to shared path standard. A map of the Alstonville Cycling Environment (Map 2, page 37) provides detail on the existing shared paths as well as the recommended future network. This map is provided within Objective One of this report.

Supporting the upgrade of the shared path network is the need for a central bike storage facility within the village. An ideal location would be Andrew Freeborn or Elizabeth Ann Brown Park.

¹ Ballina Local Growth Management Strategy 2012

Ballina Island's cycling environment

Ballina Island is the Shire's primary business and civic centre with a mixture of commercial and residential land uses, surrounded by predominantly low and medium density residential areas. It is a major centre for tourist accommodation, marine and recreation activities and provides a number of major community facilities and services for the Shire¹.

Ballina Island has flat topography, friendly to pedestrian traffic, and an extensive footpath network. There are approximately eight existing shared paths within Ballina Island. Schools, retail and major destinations including sportsgrounds, parkland and foreshore are all connected to the pathway network with limited gaps.

Ballina Island has a number of good rest stops for cyclists, including:

- Meldrum Park - toilets, shade, seating, water and car parking
- Regatta Reserve - shade, seating, water and car parking
- Saunders Park - toilets, shade, seating, water and car parking
- Missingham Park/Kingsford Smith Park - toilets, shade, seating, water and car parking.

Key destinations within Ballina Island include:

- Schools (Ballina High School, Ballina Public School, St Francis Xavier Catholic School)
- Ballina TAFE
- Ballina Fair and Ballina Shopping Centres
- River and Tamar Streets retail precincts
- Missingham and Kingsford Smith Parks
- extensive foreshore areas.

Recommendations

There is a key missing link in the shared path network in the vicinity of River and Owen Streets.

As the main commercial and community service centre of the Shire, there is limited bicycle parking available.

There are some conflict points between pedestrians and cyclists, and between cyclists and vehicles in high traffic areas, including the coastal pathway. Improvements to signage, pavement marking and access barriers would enhance Ballina Island's cycling environment.

Cumalum's cycling environment

Cumalum is a developing village with plans for residential areas, public open space and a village centre, providing a focal point for commercial and community activities¹.

The village also has further land under investigation for residential purposes, referred to as the Cumalum Urban Release Area (CURA)¹. The future development of the CURA has been subject to locality based strategic planning work - the Cumalum Structure Plan (2006)¹.

Cumalum provides cyclists with good access to the existing residential areas, with one shared path that follows the central spine of the village into Ballina via the Ballina Heights Cycleway and the Bicentennial Gardens. The shared path is supported by a growing footpath network in line with the development of the subdivision.

Cumalum is planned to have a school and sports fields in future stages of its development.

Cumalum is currently without any rest stops for cyclists, although the Bicentennial Gardens provide seating, shade, water and car parking.

The key destinations for cyclists include:

- Ballina Bicentennial Gardens
- Ballina town centre.

Recommendations

Extension of the shared path network to provide access to the future site of the proposed school and sports fields would greatly enhance the cycling environment of Cumalum.

Additionally, the provision of basic end-of-trip facilities at the future sports field site would provide an ideal rest stop for cyclists.

¹ Ballina Local Growth Management Strategy 2012

East Ballina's cycling environment

East Ballina reflects the iconic coastal character that defines Ballina as a residential and tourist destination¹. It is strongly influenced by its proximity to the coast and other natural environment and water features¹. It is characterised by predominantly low density residential areas with some medium and high density development adjacent to the coast.

East Ballina has an extensive network of shared paths that provide connections to Skennars Head and Ballina Island, as well as to internal major roads. There are approximately ten existing shared paths, including the Lennox Head Coastal Recreational Path.

A number of good rest stops exist along the pathway network of East Ballina, including:

- Shaws Bay foreshore - bike racks, toilets, shade, seating and water
- Prospect Lake - shade, seating, water and car parking
- Chickiba Park - shade, seating, water and car parking
- Coastal Shared Path - bike racks at beach entrances, shade and some seating.

Key destinations in East Ballina include:

- Chickiba Reserve Sporting Fields
- Ballina Golf Course
- Southern Cross K-12 School
- Lighthouse Hill Reserve
- Links Avenue retail precinct
- Shelly Beach
- Lighthouse Beach and Surf Life Saving Club
- Shaws Bay foreshore
- Shaws Bay and Lake Side Caravan Parks
- North Wall (the breakwall).

Recommendations

East Ballina is well provided for with shared paths. There are a few minor missing links that, once developed, will greatly enhance the cycling environment.

Links Avenue (from Thompson Crescent) to Manly Street requires an upgrade of the existing footpath to shared path standard to complete the missing link.

The on-road section of the Angels Beach Drive shared path provides little separation of cyclists from vehicles, and could be improved through the installation of bollards.

There are issues with sight lines exiting the underpass from The Coast Road at Silver Gull Drive. Cyclists are also faced with the challenge of descending at a steep gradient.

The Lennox Head Coastal Recreational Path currently ends abruptly at The Coast Road without signage. Future stages of the Lennox Head Coastal Recreational Path will connect at this location rectifying this issue.

Pathway signage at Shaws Bay could be improved at the foreshore, notably at the interface between beach users (crossing the path) and cyclists.



Lennox Head's cycling environment

The seaside village of Lennox Head is comprised of the original village, estates along North Creek Road, new release areas including Lennox Meadows and Pacific Pines Estate and several areas nominated for future residential development¹.

Lennox Head has predominately detached residential housing with medium density infill development. It has a number of important coastal and aquatic features including Lake Ainsworth, Lennox Headland, Byron Marine Park and Lennox Surfing Reserve¹.

The village of Lennox Head has five shared paths, and provides the start of the Coastal Recreational Path and recently developed shared paths along North Creek Road and The Coast Road. The Byron Bay Road to North Creek Road shared path is the core of the town's cycling link. There are a few good rest stops along the pathway network, including:

- Lake Ainsworth - toilets, seating, shade, water and car parking
- Lennox Park Reserve and Ross Park - toilets, seating, shade and car parking
- the shopping precinct along Ballina Street - toilets and seating
- Lions Park (at the commencement of the Coastal Recreation Path) - seating, shade, water and car parking.

Key destinations within Lennox Head include:

- Lake Ainsworth
- the beach and extensive coastline
- Lennox Head Public School
- the shopping precinct along Ballina Street
- Pat Morton Lookout, Lennox Headland and the Coastal Recreation Path.

The majority of Lennox Head's open space network is connected to the footpath network, however not by shared paths.

Recommendations

Lennox Head has a number of missing links in the shared path network. Upgrade of the existing footpath at Pacific Parade to shared path standard, Gibbon Street and Hutley Drive are the key projects that will enhance the cycling environment.

There are no bike storage facilities at key destinations including Lake Ainsworth and the commencement of the Coastal Recreational Path

The intersection at Byron Bay Road and the shared path requires 'cyclists must dismount' signage, as cyclists are led into a busy commercial precinct.

There is a lack of directional signage between Bombora Place and The Grove, given the nature of the path within a residential area.

¹ Ballina Local Growth Management Strategy 2012

Skennars Head's cycling environment

Skennars Head is primarily a residential area with close linkages to the nearby communities of Ballina and Lennox Head. Future development will provide for improved transport linkages to Lennox Head and East Ballina¹.

Skennars Head has a good provision of paths for cycling, with four major shared paths including the newly developed Skennars Head Road shared path, and the Coastal Recreational Path.

There are no identified places for cyclists to rest within Skennars Head that provide seating, shade, water or bike locking facilities.

Key destinations within Skennars Head include:

- Sharpes Beach
- Boulder Beach
- Xavier Catholic College and Holy Family Catholic Primary School
- Skennars Head Playing Fields
- Ballina Headlands Holiday Park.

Recommendations

The development of rest facilities within Skennars Head would greatly improve the cycling environment. Sharpes Beach could provide an ideal location for some basic facilities including seating and water.



Wardell's cycling environment

Wardell is a small village characterised by its proximity to the Richmond River and its agricultural activities. The urban environment of Wardell is strongly influenced by the history of the village as an early port, timber/saw milling and agricultural town¹.

The village is serviced by a basic level of community and commercial facilities. Community facilities include a school, churches, wharf and War Memorial Hall. The nearby Sandalwood Van and Leisure Park, which includes a number of permanent residents, has a strong relationship with the village¹.

Wardell has a limited pathway network, with one shared path and a small network of footpaths.

Wardell has two good rest stops:

- Fitzroy Park - toilets, seating, shade, water and car parking.
- Sinclair Street Wharf - seating.

Key destinations in Wardell include:

- Wardell Public School
- Wardell Golf Club
- Wardell Sports Ground
- Sinclair Street Wharf/Boat Ramp/Pontoon
- Fitzroy Park
- Richmond Street Commercial Precinct.

Recommendations

While there are limited shared paths in Wardell, the cycling environment would be enhanced through the installation of bike locking facilities at both Fitzroy Park and Sinclair Street Wharf.

Additionally, the development of a missing link in the footpath at the corner of Wilson and Richmond Streets would provide a safer cycling connection for school children accessing the public school (albeit outside the scope of this project).

West Ballina's cycling environment

West Ballina provides a key entrance to Ballina and the coastal and estuary environments of the Pacific Ocean and the Richmond River. The locality is a hub for recreational boating activities and provides for a range of commercial opportunities¹.

It also provides for a mixture of residential opportunities including manufactured home parks and Ballina Shires only Canal Estate. The West Ballina commercial area is located along River Street (old Pacific Highway).

West Ballina has three shared paths concentrated along River Street and Burns Point Ferry Road. An on-road connection exists amongst Boatharbour Road, Riverside Drive and Quays Drive. There are limited rest stops for cyclists, with little supporting infrastructure provided such as bike locking facilities, seating, water and shade.

Key destinations in West Ballina include:

- Burns Point Ferry
- The Big Prawn
- Bunnings
- Porter Park
- Faulks Reserve
- West Ballina shopping and service precinct
- Hibiscus Gardens Caravan Park
- Emmanuel Anglican College.

River Street is not a desirable environment for cyclists, with high volumes of traffic feeding into the Pacific and Bruxner Highways. There are limited safe crossing points for cyclists.

A number of gaps in the shared pathway exist, including River Street between Bunnings Warehouse and the Hibiscus Gardens Caravan Park

The development of a rest area at the Kalinga Street Rugby Union Ground would greatly enhance the cycling environment for West Ballina.

The existing on-road cycleway (Boat Harbour Road to Burns Point Ferry) could be enhanced through further signage and a route map.

Recommendations

1 Ballina Local Growth Management Strategy 2012



Wollongbar's cycling environment

Wollongbar is predominantly a low density residential area, serviced by limited commercial facilities, recreation and education establishments, other than the Russellton Industrial Estate and neighbourhood scale commercial area. The neighbouring village of Alstonville provides the bulk of local commercial and community facilities for both villages¹.

Wollongbar will be accommodated by a substantial northern expansion of the existing village footprint¹.

There are two shared paths in Wollongbar:

- Wollongbar TAFE to Rifle Range Road
- Wollongbar to Alstonville.

Wollongbar has limited end-of-trip facilities for cyclists, with Hill Park the only site providing toilets, shade, water and seating.

Key destinations include:

- Wollongbar TAFE
- Wollongbar Public School
- Child Care Centre, Community Hall and Hill Park
- Wollongbar Christian Church
- Simpson Avenue Shopping Centre
- Russellton Industrial Estate
- Alstonville.

Recommendations

Wollongbar's cycling environment would be enhanced through the development of additional shared paths, providing cyclists with access to the majority of the village.

Building on the existing end-of-trip facilities at Hill Park, the installation of bike locking facilities is recommended.

¹ Ballina Local Growth Management Strategy 2012

Improving the cycling environment in the Ballina Shire

The outcomes of the Ballina Shire cycling environment audit have shown a range of needs for the Shire network. Four major areas needing improvement have been identified, and these translate into four key objectives for the Plan:

- Objective One - Plan, deliver and maintain a well-connected cycle network
- Objective Two - Improve safety for cyclists
- Objective Three - Provide cycling support facilities including signage, line marking, lighting and the provision of end-of-trip facilities
- Objective Four - Encourage and promote the benefits of cycling.

The objectives are described in more detail within the following sections.

Prioritising actions

In the following sections, cycling needs have been classified according to the stated objectives. Specific actions for achieving the objectives have been sub-divided according to locality or scope of the action.

The successful undertaking of the actions outlined in this Implementation Plan will require strong leadership, appropriate resourcing and a commitment from Council.

Priorities are assigned for each action.

- High - 2016/17 - 2017/18
- Medium - 2018/19 - 2019/20
- Low - 2020/21 - 2022/23
- Ongoing - projects of a continuous nature.

Cost estimates

Relevant cost estimates shown in Objective One are included for each action (where relevant). The following cost estimates are provided to guide Council in future budget preparations. The cost estimates are based on industry standards as at December 2015, and as such should be used as a guide only. Any future works should be costed based on detailed planning and design of specific infrastructure items.

Where an action within the Objectives Action Plan requires further investigation or planning, To Be Determined (TBD) is listed within the cost estimates column.

Funding opportunities

Funding towards the Shire's bicycle network can come from within Council, external funding bodies or a combination of both. Included below is a brief summary of existing and potential funding sources.

Internal funding

There may be areas within Council's existing budget where funds can be sourced to help implement some of the actions within this Plan. Contributions or funds towards the bicycle network may come from projects such as:

- footpath construction program
- open space programs
- major road projects of local roads
- Council road maintenance and upgrade programs
- Section 94 and/or 94A contributions
- PAMP.

State and Federal Government funding programs

Funding is available for a variety of community based and bicycle programs and projects across a range of State and Federal Departments e.g. planning, design and construction of cycling infrastructure, bike network maps, and travel behaviour change programs.

These include:

- Transport for NSW/Roads and Maritime Services
 - NSW Bike Week event funding
- Department of Communities - Sport and Recreation
 - Sport and Recreation Participation Program: provides funding to not-for profit organisations and local Councils for projects designed to increase regular and ongoing participation in sport, recreation or structured physical activity
- Department of Education
- Department of Health
- Department of Resources, Energy and Tourism
 - Tourism Quality Projects: a grant program that offers funds to small scale projects that lift the quality and variety of Australia's tourism experiences
- Regional Development Australia Fund - program open to Council's supporting regional infrastructure investment projects in Australia.

Other

Public/private partnerships - where there are opportunities for private investment in public infrastructure.

Community fund raising - where funds are raised for an identified service or project.

Key Partnerships

A number of stakeholders are pivotal to the successful implementation of the Ballina Shire Bike Plan. These are outlined in the Table below.

Table 6. Key partnerships

Stakeholder	Relationship
Local Government Road Safety Program	The program is a primary avenue for delivering Council's commitment to road safety
Ballina Transport Working Group	To discuss broad transport issues at a Shire level
Bicycle Network	Through the promotion of cycling, including programs and events
Bicycle NSW	Funding and advocacy for cycling
Local public transport providers	To promote good timetabling of services, as well as to lobby to allow bicycles to be carried on board buses
Local bicycle stores	Bicycle stores can promote existing shared path routes to cyclists and encourage safe practices through provision of maps and brochures, and advice on cycling etiquette and behaviours
Local schools	Partner with local schools in the provision of education and awareness campaigns. Schools should be encouraging their students to practice safe practices in regards to cycling to school including the wearing of helmets.
Cyclists and pedestrians	Users of the Shire's footpaths and shared paths are key in the successful delivery of the Bike Plan, through obeying signage and being aware and courteous of other path users
Local media	To communicate positive messages to the community in regards to safe cycling practices and road safety
The community	The general community can play a role in encouraging positive attitudes towards cyclists, as well as generally obeying road rules

Implementation plan

Planning principles

The Plan builds upon the Shire's existing shared path and cycleway network, and addresses the key issues and aspirations identified by the community.

Austrroads is the association of Australasian road transport and traffic agencies, and it aims to improve Australian and New Zealand transport outcomes by providing expert technical input to national road and transport policy development, improving the practices and capability of road agencies promoting operational consistency by road agencies. Austrroads has developed principles that may be used by Council to achieve a direct, safe and comfortable bicycle network in Ballina Shire.

Below are the principles of bicycle network provision as per Section 3.1 of the NSW Bicycle Guidelines (Austrroads Guide to Traffic Engineering Practice, Part 14 - Bicycle and Australian Standard AS1742.9).

Table 7. Principles of bicycle network provision¹

Principle
Coherence
The bicycle network should form a coherent unit by linking key destinations with local residential streets. The network should be continuous and be very clear to the user where the route leads. Intersections should seek to provide a clear path for bicycle riders as well as pedestrians. The quality of the network should also be consistent throughout the length of the route regardless of the path being on- or off-road. Routes should be easy to find from local streets.
Directness
The network should be as direct as safely practicable. Long detours should be avoided, however, this should always be balanced against the problems of topography. Delays due to prolonged crossing times of major barriers should be avoided and the aim of the design of the route should be to ensure that riders are able to maintain a safe, comfortable and consistent operating speed throughout the length of the route.
Safety
A well designed bicycle network improves and enhances the road safety of riders, pedestrians and motorists. Intersections should be designed to explicitly include bicycles as well as other categories of road users. Special intersection designs that include a path for cyclists are an important element of an integrated network. Mid-block treatments need to provide safe and easy major roadway crossings for riders.
Attractiveness
Enjoyable cycling requires attractively designed and located facilities. Bicycle network infrastructure should be fitted into the surrounding environment so that the enjoyment of the experience is enhanced. Clear well-placed signposting should indicate key destinations, while centre lines and edge lines should indicate the transport intent of the off-road sections of routes. Bicycle routes should also feel safe and offer good personal security. The community prefers well-lit pathway and open-to view routes rather than dark and dingy alleyways.
Comfort
The bicycle network needs to be easy to use for all types of riders. A smooth well maintained riding surface is essential both for comfort and operating safety. Depending on the volume of other traffic (motor vehicles or pedestrians), some level of separation is often needed. Clearly marked bicycle facilities that allocate operating space to bicycle users at the most appropriate types of facilities of all but low traffic volume and low speed roads. Effective intersection treatment is a critical factor in providing safe and comfortable crossings of major arterial roads.

¹ Source: Roads and Traffic Authority (RTA) 2005, NSW Bicycle Guidelines



Objective One - Action Plan

Plan, deliver and maintain a well-connected cycle network

Objective One

Plan, deliver and maintain a well-connected cycle network

A holistic approach to cycling requires its integration into urban planning and transport policy. A cycling network should be designed to link destinations and overcome barriers to cycling in a community. Cycling improvements can be integrated into planning for roads by committing to design standards that meet cyclists needs (for example minimum shoulder widths).

Council is committed to the planning, delivery and maintenance of a well-connected cycle network. Through the development of this Plan, a detailed network audit was undertaken as well as the review of relevant Council planning documents to inform future connections, and to ensure planned routes are noted in the Action Tables.

Proposed shared path connections have been determined based upon user demand and their proximity to trip attractors (high demand destinations) such as shopping precincts, schools, community facilities, parks and other open space and recreational activities.

Council's aim is to coordinate bicycle infrastructure that significantly improves connectivity for cyclists and reduces traffic congestion. People-friendly, livable villages are first and foremost accessible places, where mobility is possible for everyone. With increasing traffic congestion in urban areas, it is often faster to get around on a bicycle.

Our priorities

Council's priorities in regards to the planning, delivery and maintenance of a well-connected cycle network are:

- to address the gaps in existing provision
- to develop a list of prioritised missing links that will inform the allocation of future funding and Capital Works
- to improve links within a 5km catchment of towns and villages (to shops, schools etc.) with priority given to bicycle projects that have the biggest impact on encouraging people to ride
- prioritising connections between towns and villages on priority routes identified by the cycling community.

Council's cycling network reporting and maintenance procedure

Council's Footpath & Cycleway Inspections Procedure (2014)¹ sets out the process for assessment and restoration of footpaths and cycleways. The Procedure facilitates the maintenance of Ballina Shire Council's road network and associated assets.

¹ Ballina Shire Council Footpath & Cycleway Inspections Procedure 2014

The procedure outlines the broad steps as follows:

- Civil Services Work Request
- Assess Activity
- Operation
- Restoration
- Paperwork (documentation)¹.

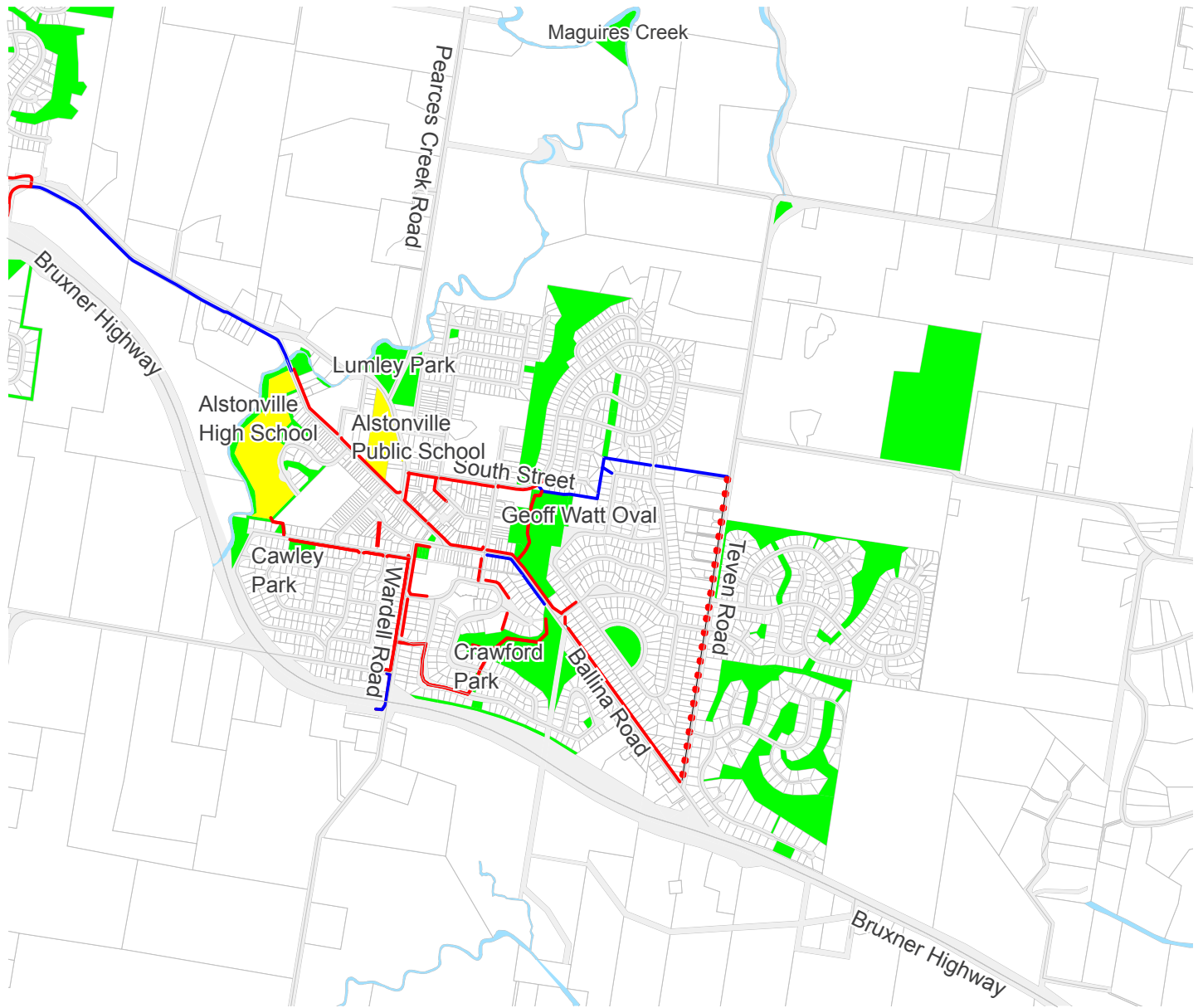
Inter-town connections

There are a number of popular road cycling routes around the Ballina Shire, as well as within the Region. These have been prioritised as follows, and are discussed further within the Action Plan:

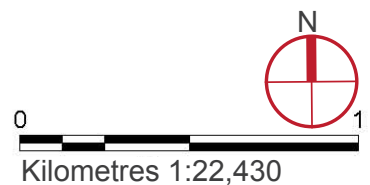
1. Ballina to Lennox Head
2. West Ballina (Burns Point Ferry) to Wardell
3. Ballina to Alstonville
4. Cumbalum to Lennox Head
5. Ballina to Byron Bay
6. Cumbalum to Tintenbar
7. Wardell to Alstonville
8. Wollongbar to Lismore.

Alstonville's cycling environment and identified missing links

Map 2 Alstonville's cycling environment

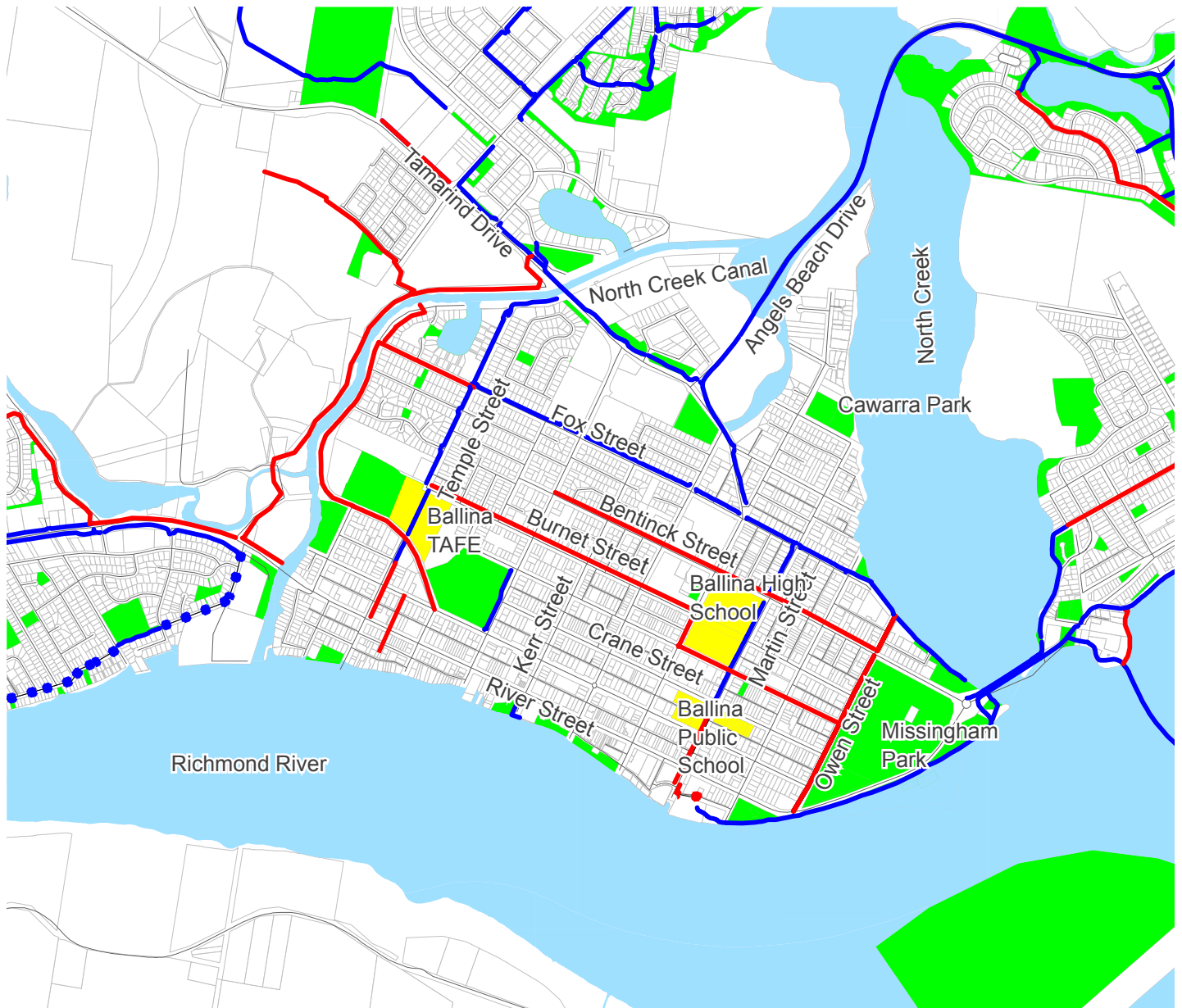


- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway



Ballina Island's cycling environment and identified missing links

Map 3 Ballina Island's cycling environment

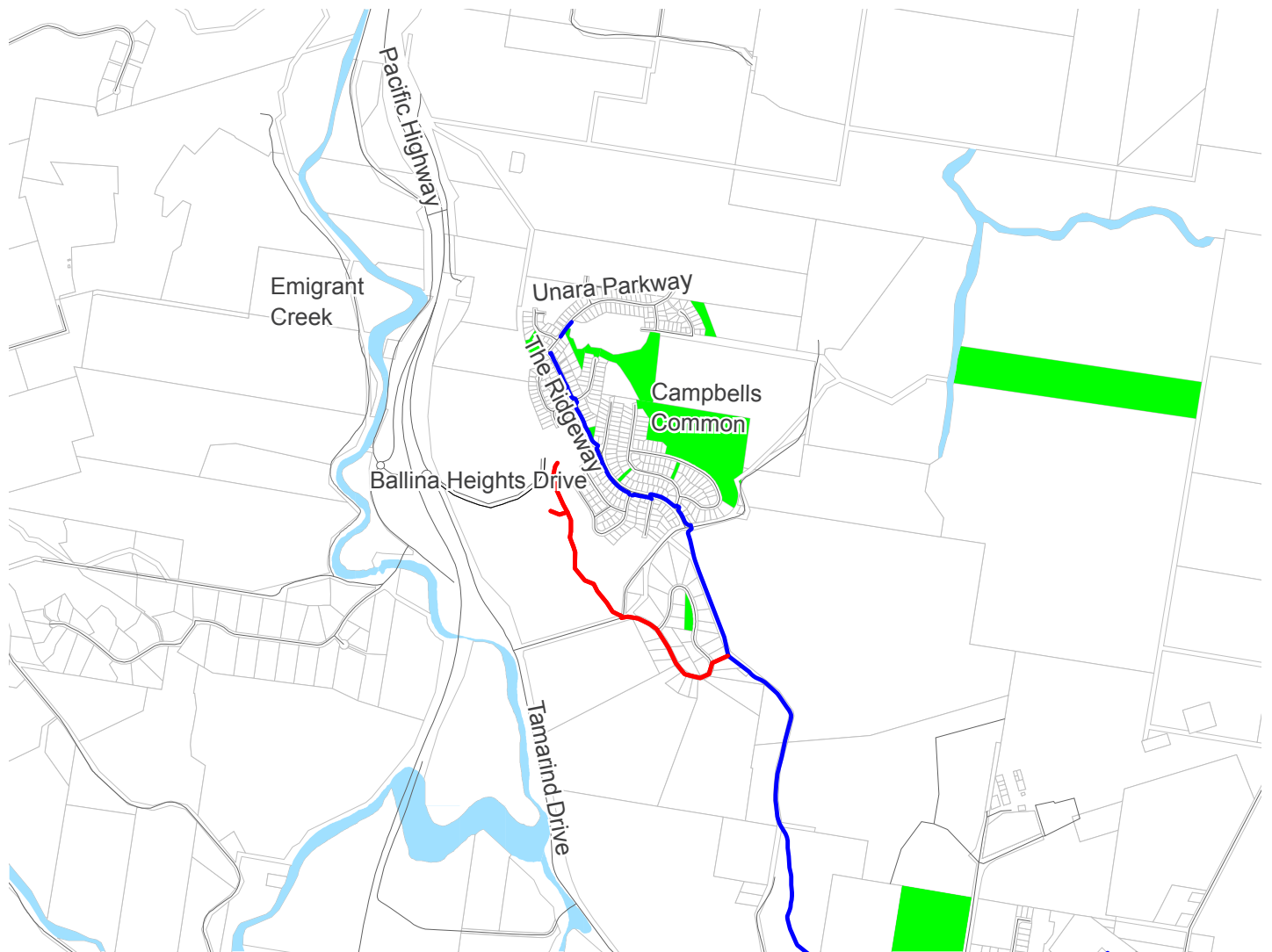


- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway



Cumalum's cycling environment and identified missing links

Map 4 Cumalum's cycling environment

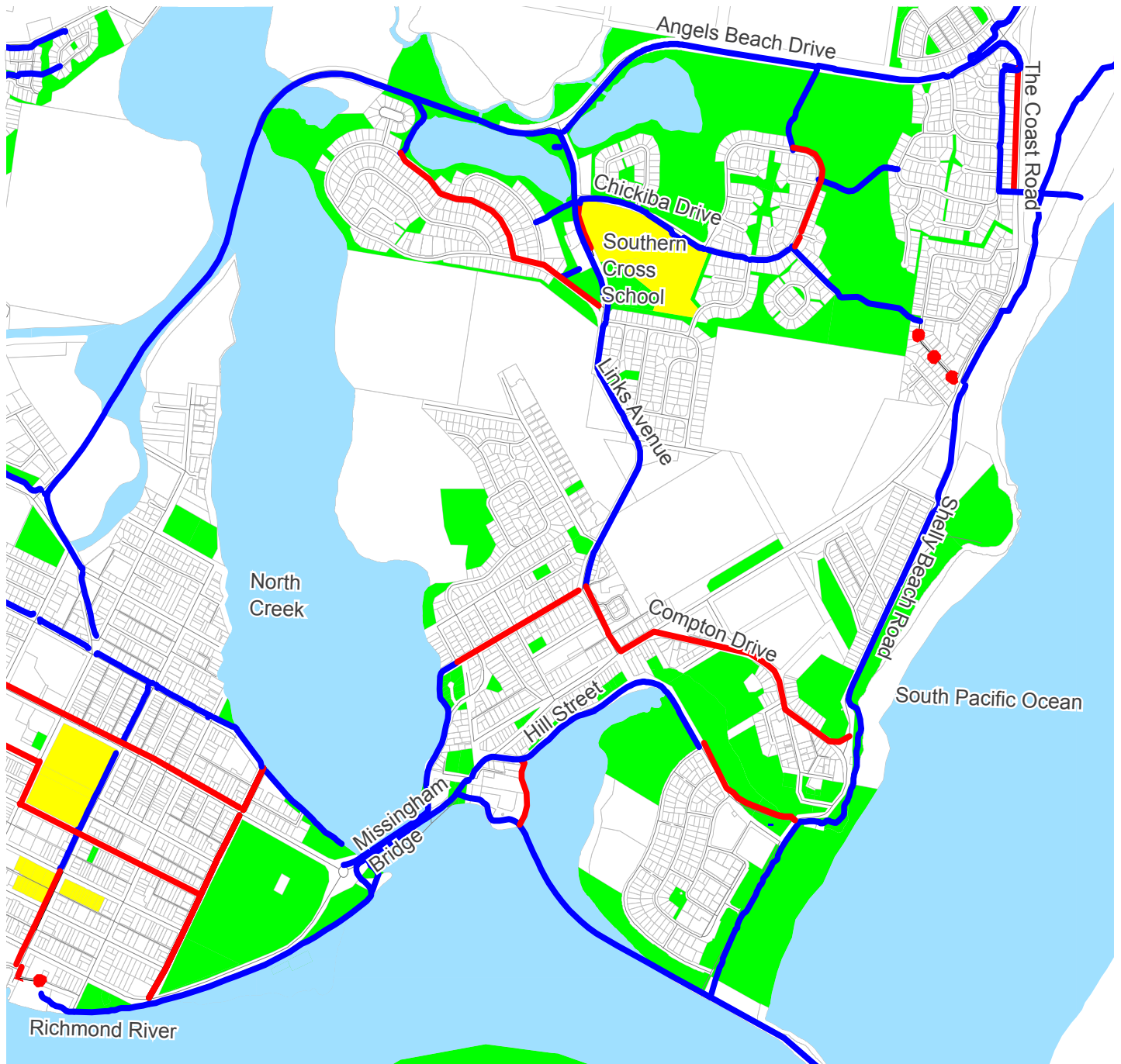


- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway



East Ballina's cycling environment and identified missing links

Map 5 East Ballina's cycling environment

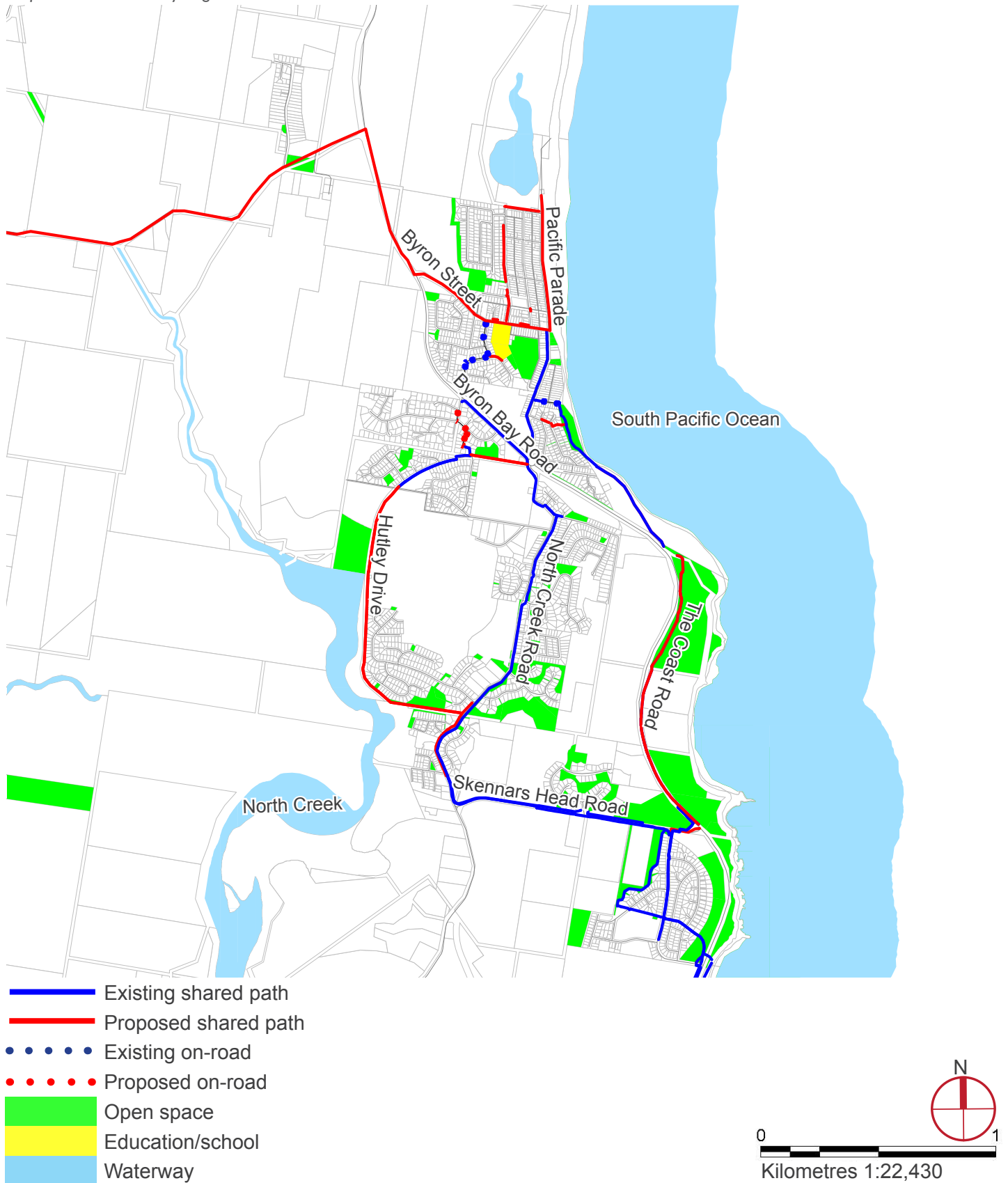


- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway

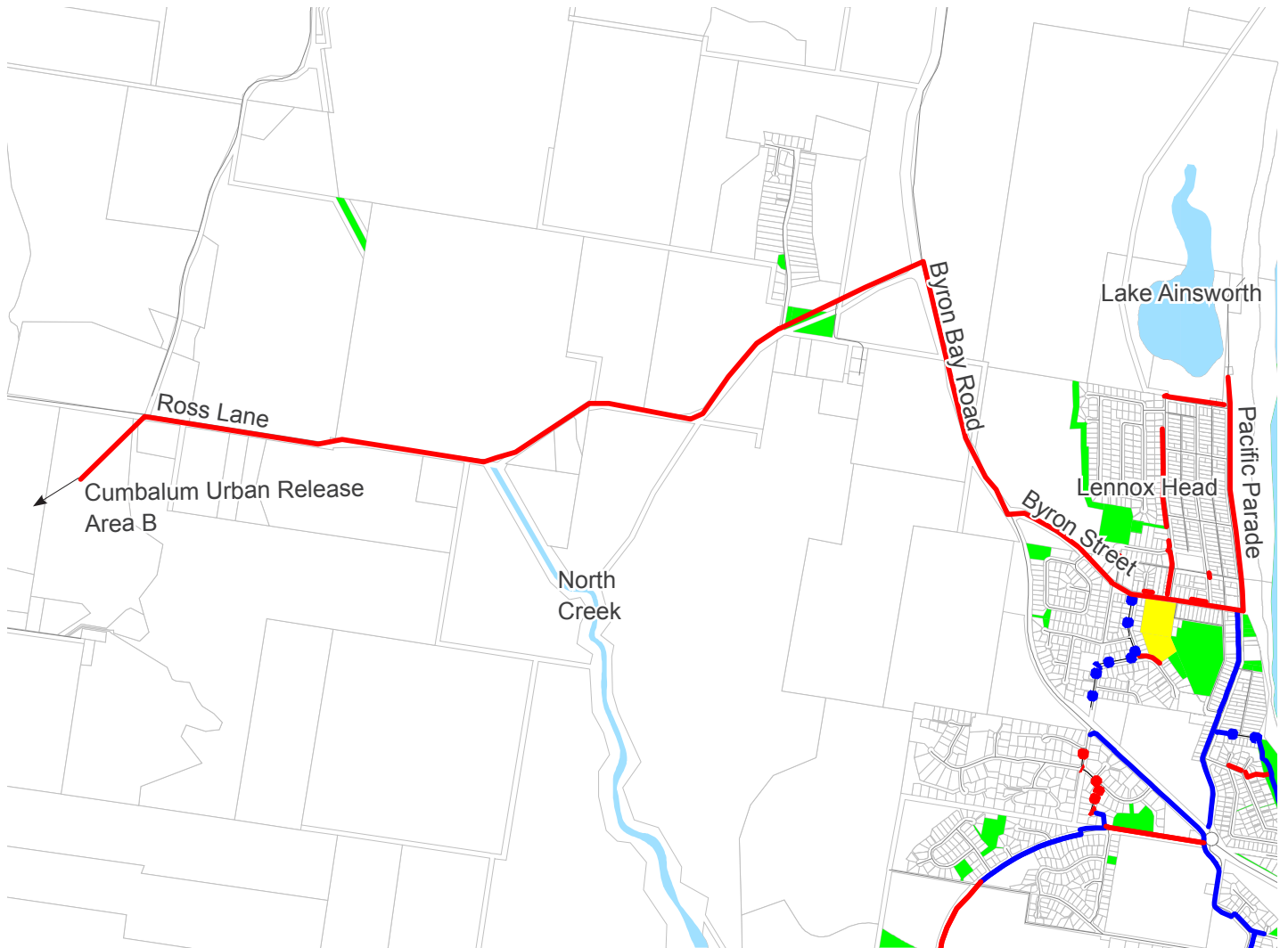


Lennox Head's cycling environment and identified missing links

Map 6 Lennox Head's cycling environment



Map 7 Cumbalum to Lennox Head

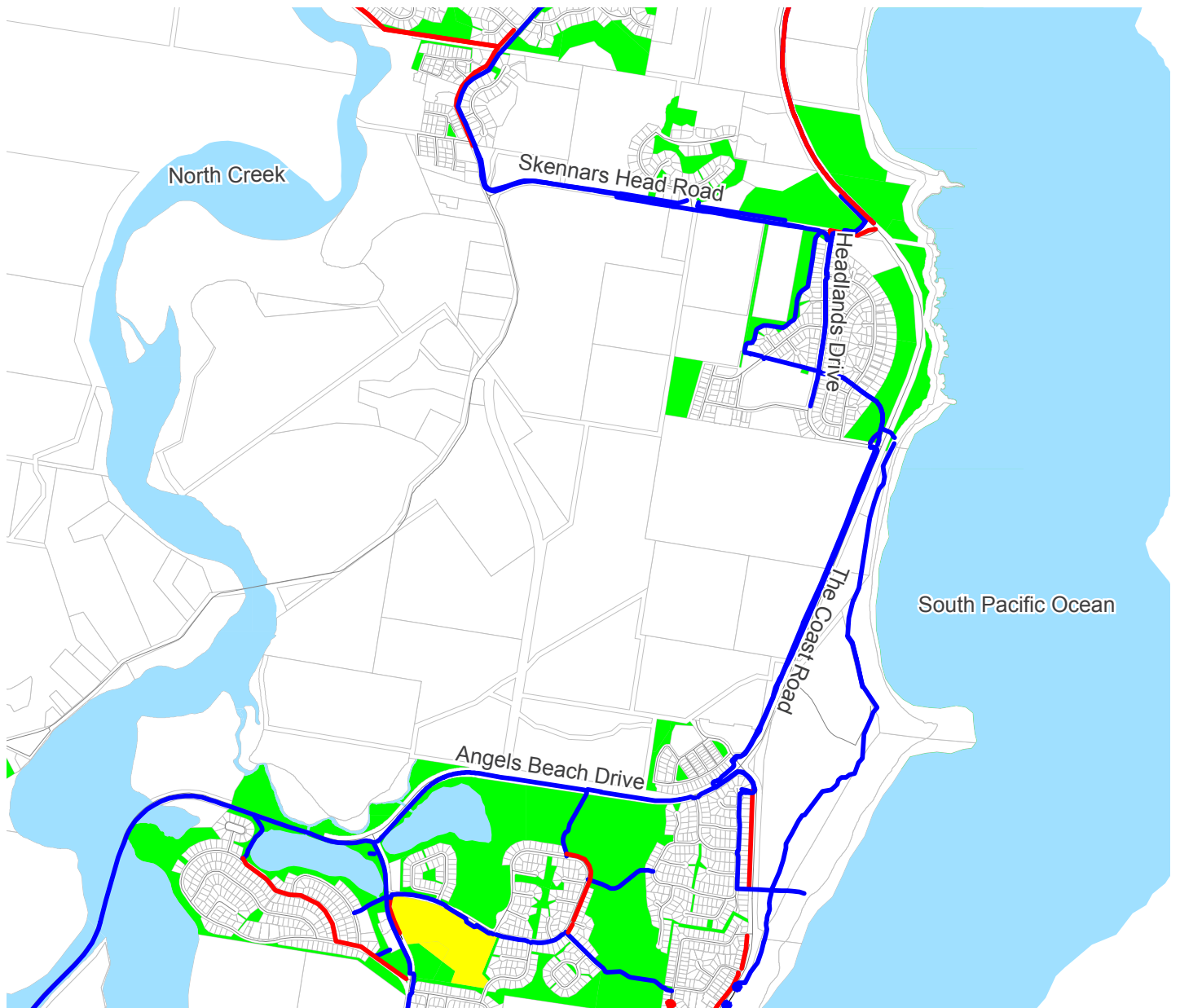


- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway



Skennars Head's cycling environment and identified missing links

Map 8 Skennars Head's cycling environment

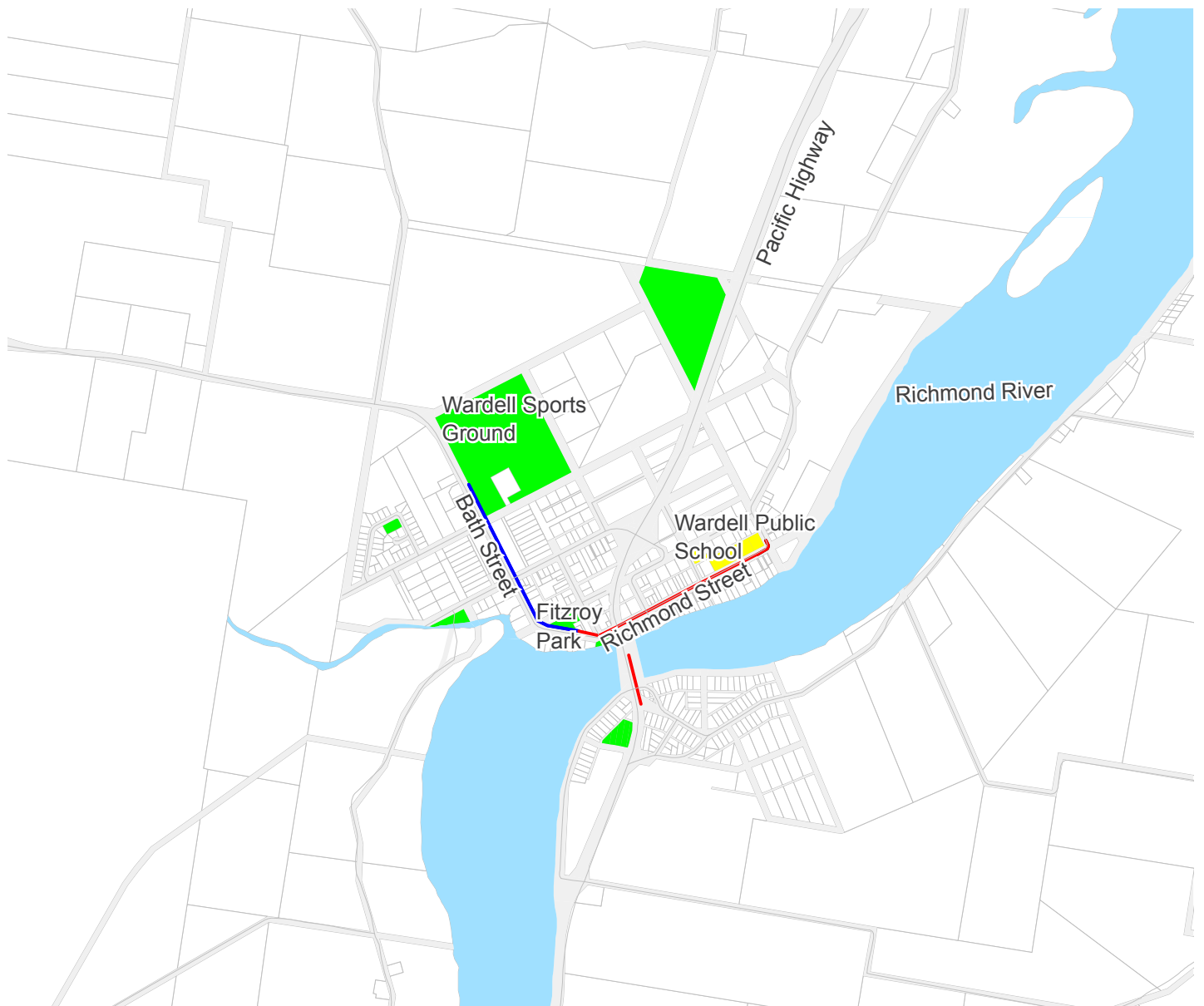


- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway



Wardell's cycling environment and identified missing links

Map 9 Wardell's cycling environment

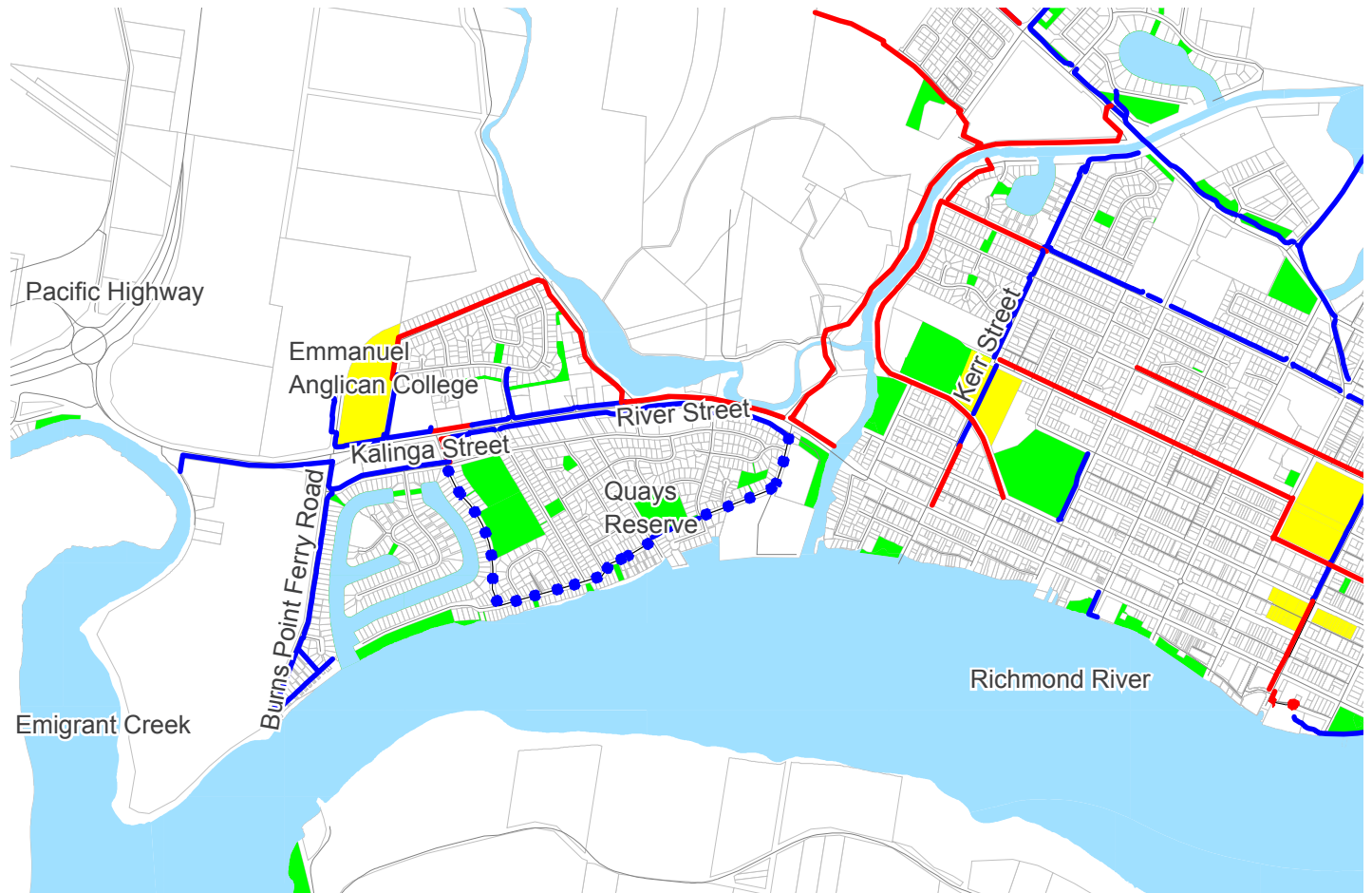


- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway



West Ballina's cycling environment and identified missing links

Map 10 West Ballina's cycling environment

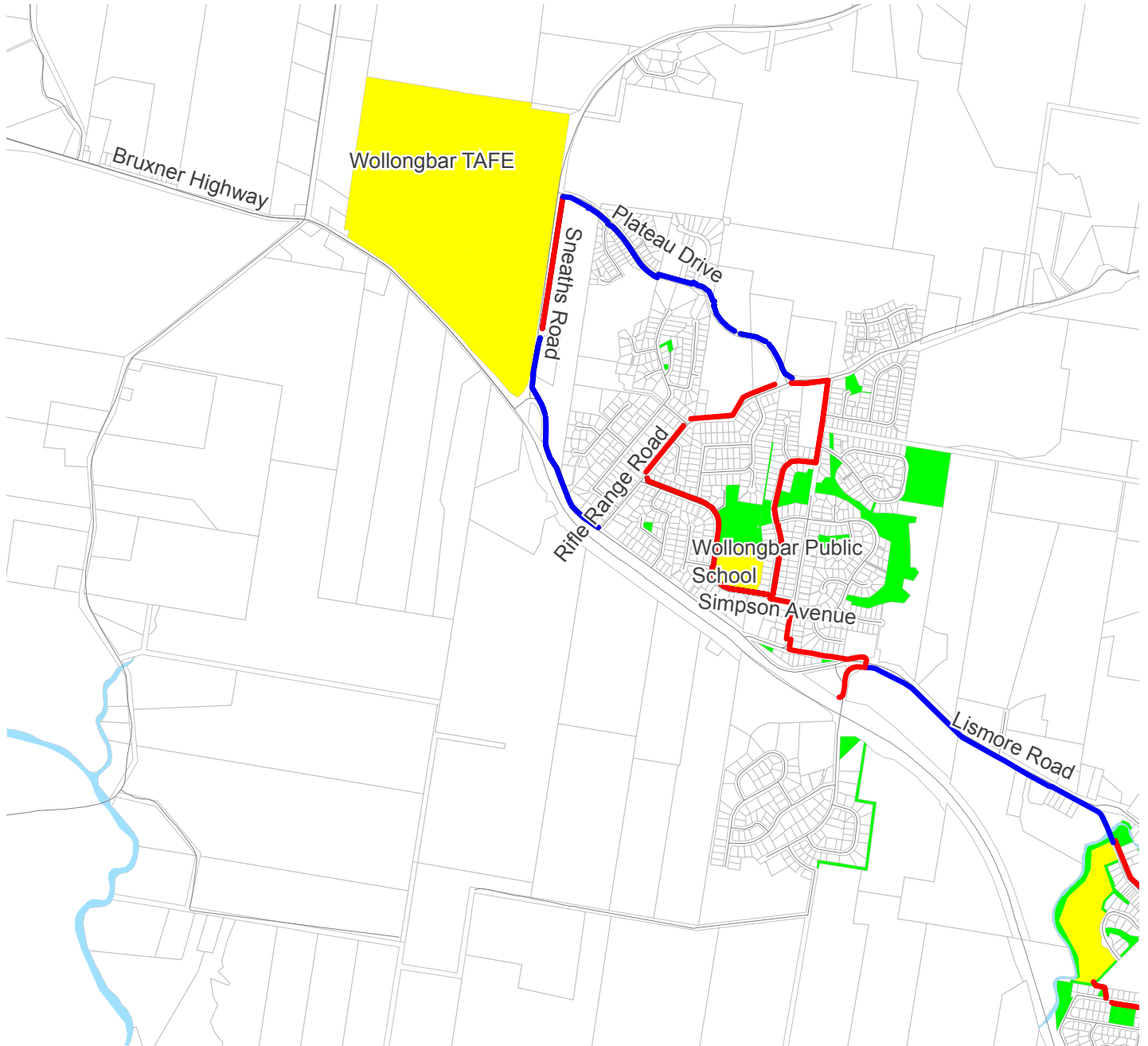


- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway



Wollongbar's cycling environment and identified missing links

Map 11 Wollongbar's cycling environment



- Existing shared path
- Proposed shared path
- Existing on-road
- Proposed on-road
- Open space
- Education/school
- Waterway



Objective One Action Plan - Plan, deliver and maintain a well-connected cycle network

The recommended actions relating to Objective One are outlined in the Table below.

Table 8.Objective One Action Plan

Ref	Item	Details	Priority	Cost
Shire wide				
1.1	Ensure Council's Development Control Plan (DCP) considers the needs of cyclists	Include the need for the provision of bike storage and end-of-trip facilities in new developments	High	N/a
1.2	Ensure the Bike Plan is cross referenced in Council's strategic planning documents	To ensure consistency in implementation of the Bike Plan i.e. tourism plans, the Community Strategic Plan, Aging Strategy etc	High	N/a
1.3	Integrate regional cycling routes into Council planning and promotion	The Coastal Cycleway proposes a continuous 1500km cycleway along the NSW coast from the Victorian border to the Qld border and the Coastal Recreational Path and Shared Path project	High	N/a
1.4	Investigate the enhancement and promotion of the following priority on-road cycling routes: 1. Ballina to Lennox Head 2. West Ballina (Burns Point Ferry) to Wardell 3. Ballina to Alstonville 4. Cumbalum to Lennox Head	Undertake a detailed audit of the road condition for each priority route and enact measures which are targeted at reducing the risk of crashes. These measures could include: <input type="checkbox"/> improving shoulder conditions <input type="checkbox"/> extending existing shoulders <input type="checkbox"/> resurfacing rough sections <input type="checkbox"/> signage (to increase awareness of the possibility on encountering bicycles) <input type="checkbox"/> clearing of roadside vegetation <input type="checkbox"/> road maintenance regimes <input type="checkbox"/> speed management (especially on blind corners)	High	N/a
1.5	Ensure new and upgraded road designs include wider shoulders to accommodate road cyclists	Council designers to utilise shoulder widths and line marking consistent with Australian Standards. Priority is to be given to reconstruction/improvement works on key routes	High	N/a
1.6	Maximise funding to expand Council's cycling infrastructure from the Federal and State Government and other special purpose grants	For example: Safer Roads Program, Black Spot Funding etc.	High	N/a
1.7	Council to develop procedures that consider the needs of cyclists during the construction and/or maintenance of all roads (new or existing)	To ensure the ongoing safety of cyclists, connectivity of key routes and awareness of drivers	High	N/a

Ref	Item	Details	Priority	Cost
1.8	On priority cycling routes, Council maintenance staff to ensure shoulders are patched, vegetation overhang removed and edges maintained in routine maintenance runs	Maintenance of bicycle facilities is to be in accordance with the Footpath and Cycleways Inspection, Evaluation and Maintenance Policy and other Road Maintenance Procedures (an action of the Road Safety Strategy)	High	N/a
1.9	Ensure future plans for town centre improvement align with the Bike Plan	To ensure that traffic calming devices, pedestrian facilities and cycling routes are complementary to the shared path network	High	N/a
1.10	Promote collaboration between government agencies, the bicycle industry, bicycle user groups and other public/private organisations to implement and monitor the plan	Cross-agency awareness of Council's cycling priorities can lead to better implementation and ongoing monitoring of the Bike Plan	Ongoing	N/a
1.11	Council to monitor the demand for on-road cycling routes through the use of online 'Apps' such as Strava	Regular reviewing of online 'Apps' can provide considerable insight into the amount of use of on-road cycling routes	Ongoing	N/a
1.12	Ensure compliance with the Development and Design Manual	To provide a regional approach and uniform development standards via a clear and comprehensive set of requirements for development infrastructure design and construction	Ongoing	N/a
Alstonville				
Shared pathway				
A1.1	New shared path - Main Street Distance 0.289km	Develop the missing link between Perry Street and Maguires Creek. This section is identified in Council's PAMP (2011-2016 Capital Works) as a footpath. Consider its upgrade to a shared path to provide additional functionality	High	\$70,000
A1.2	Upgrade existing South Street footpath to shared path Distance 0.503km	Upgrade the South Street footpath from Tanamera Drive to Bugden Avenue	High	\$60,000
A1.3	New shared path - Bugden Avenue Distance 0.102km	Develop a new shared path on Bugden Avenue between South Street and Main Street	High	\$25,000
A1.4	New shared path - Geoff Watt Oval Distance 0.455	Develop a new shared path from Tanamera Dr to Ballina Rd through Geoff Watt Oval	Medium	\$109,000
A1.5	New shared path - Crawford Park Distance 0.289	Develop a new shared path from Ballina Rd to Wardell Rd via Crawford Park	Medium	\$70,000
A1.6	New shared path - Alstonville High School Distance 0.554	Develop a new shared path to link Wardell Rd to Alstonville High School	Medium	\$133,000



Ref	Item	Details	Priority	Cost
A1.7	New shared path - Main Street Distance 0.987	Develop a new shared path on Main Street from Green Street to Maguires Creek to service the High School and connect to the existing shared path at Maguires Creek	High	\$296,000
A1.8	Upgrade footpath to shared path - Ballina Road Distance 0.808km	Implement an upgrade program for the footpath along Ballina Road and Main Street to shared paths (from Teven Road to Main Street), to enhance connectivity for cyclists and connect to the Alstonville-Wollongbar shared path	High	\$112,000
A1.9	Upgrade footpath to shared path - Commercial Road and South Street Distance Commercial Rd 0.122km, South Street 0.474km	Investigate the upgrade of existing footpath on Commercial Road (between High and South Streets) and South Street to shared paths, to connect to the existing shared path, and enhance cyclist accessibility to Alstonville's centre and Wollongbar	Medium	Commercial Rd \$17,000 South Street \$65,000)
On-road connections				
A1.10	New on-road cycle lane - Teven Road Distance 1.115km	Investigate the development of an on-road cycle lane along Teven Road, from Ballina Road to the existing shared path on Teven Road (easement) to enhance connectivity for cyclists	Medium	Sign \$14,000 linemarking TBD
Associated infrastructure				
A1.11	New bike storage facilities - Main Street	Investigate the installation of bike racks at the town square (Cnr of Main and Daley Streets) to enhance the existing end-of-trip facility	High	\$2,600
A1.12	Shared path signage - Arrowsmith Avenue	Signpost the shared path where it meets the street at Arrowsmith Avenue to increase the paths legibility for cyclists and increase awareness of the path	High	\$900
Ballina Island				
Shared path				
B11.1	New shared path - Owen Street Distance 0.833km	The development of a new shared path at Owen Street will provide north-south connectivity to Ballina Island's foreshore areas, and greatly increase accessibility by cyclists. This section is identified in Council's PAMP (2016-2021 Capital Works) as a footpath, and should be reconsidered as a shared path to enhance its functionality	High	\$250,000
B11.2	New shared path - Burnet Street Distance 0.745km	The development of a new shared path on Burnet Street will provide cyclists with a connection to the existing shared path on Temple Street. It will also provide cyclists with direct access to Ballina Island's school precinct. This section is identified in Council's PAMP as a footpath and should be reconsidered as a shared path (2016-2021 Capital Works)	Medium	\$223,000

Ref	Item	Details	Priority	Cost
B11.3	New shared path - Brunswick Street Distance 0.234km	Develop a new shared path to fill the missing link for cyclists between Canal Rd and River Street	Low	\$70,000
B11.4	New shared path - Canal Road Distance 1.356km	Develop a new shared path along the foreshore on Canal Road from Brunswick Street to Temple Street	Low	\$407,000
B11.5	Upgrade existing footpath to shared path standards - Martin Street Distance 0.2136km	Widen the Martin Street path to shared path standard from Crane Street to Winton Lane as identified in Council's PAMP	Medium	\$30,000
B11.6	New shared path - Canal Drive Distance 0.8km	Develop new shared path from Tamarind Drive to Ferngrove Drive with underpass at Canal Bridge	Low	\$232,000
B11.7	New shared path - Temple Street Distance 1.994km	Develop a new shared path to provide a central east-west connection from Temple Street to Owen Street via Swift Street	Medium	\$600,000
B11.8	Upgrade existing footpath to shared path standards - Martin Street Distance 0.139km	Upgrade existing footpath to shared path standards from Winton Lane to Regatta Avenue as identified in Council's PAMP (2016-2017 Capital Works)	Medium	\$193,000
B11.9	Upgrade existing footpath to shared path standards - Canal Bridge Distance 0.488km	Widen the existing pathway at Canal Bridge to shared path standards	Low	\$145,000
B11.10	Upgrade existing footpath to shared path - Bentinck Street Distance 1.394km	Upgrade the existing footpath to shared path standards on Bentinck Street from Kerr Street to Owen Street	Medium	\$192,000
On-road connections				
B11.11	New on-road path - Regatta Avenue Distance 0.091km	Formalise the on-road connection at Regatta Avenue with stronger pavement marking and clearer directional signage	High	Line marking TBD
Associated infrastructure				
B11.12	Improve path signage and/or pavement markings where footpaths and the shared path interface with the road within the Martin and Cherry Street school zone	To improve the safety of path users at road crossings	High	\$1,400 signage
B11.13	Install bollards along the Coastal Shared Path to prevent vehicles from obstructing the path Distance 6m	The Coastal Shared Path in the vicinity of River Street and Owen Streets	Medium	Bollards TBD



Ref	Item	Details	Priority	Cost
Cumbalum				
Shared path				
C1.1	<p>Develop future shared path connections - Northern Urban Expansion Area</p> <ul style="list-style-type: none"> <input type="checkbox"/> connect Sweeney Drive/ Ridgeway to the proposed school site and Cumbalum Sports Fields <input type="checkbox"/> connect Unara Parkway to the proposed school site and Cumbalum Sports Fields. 	Continue to develop the future connections planned within Cumbalum as part of the Northern Urban Expansion	Medium	TBD
East Ballina				
Shared path				
EB1.1	New shared path - The Coast Road Distance 0.413km	Develop a new shared path along The Coast Road between Pelican Place (easement) and Silver Gull Drive (easement) to provide a connection between the existing shared path (north of Pelican Place easement) and footpath (south of Silver Gull Drive easement)	Medium	\$124,000
EB1.2	New shared path - Chickiba Drive Distance 0.388km	Develop a new shared path at Chickiba Drive to connect the existing shared path from Angels Beach Drive to Tuckeroo Drive. This section of path is included in Council's PAMP (2016-2021 Capital Works)	High	\$116,000
EB1.3	New Shared path - Compton Drive Distance 0.444km	Develop a new shared path along and adjacent to Compton Drive from the existing shared path at Lighthouse Parade to Fenwick Drive, meeting the existing shared path on Compton Drive	Medium	\$133,000
EB1.4	New shared path - Links Avenue Distance 0.796km	Develop a new shared path from the school entrance on Links Avenue to Chickiba Drive (missing links as identified in the PAMP)	High	\$239,000
EB1.5	New shared path - Bonview Street Distance 0.487km	Develop a new shared path on Bonview Street from The Serpentine to connect with the existing shared path on Links Avenue	Medium	\$150,000
EB1.6	New shared path - Eyles Drive Distance 0.916km	Develop a new shared path on Eyles Drive connecting the existing shared path on Links Avenue and North Creek	Medium	\$275,000

Ref	Item	Details	Priority	Cost
EB1.7	New shared path - Short Street Distance 0.981km	Develop a new shared path to connect Links Avenue to Shelly Beach Road from Manly Street, along Short Street and Sulva Street	Medium	\$295,000
EB1.8	New shared path - Compton Drive Distance 0.233km	Develop a new shared path on the west side of Shaws Bay between Compton Drive and training wall. This shared path is identified in Council's PAMP (2016 -2017 Capital Works)	Medium	\$70,000
EB1.9	New shared path - Links Avenue Distance 0.165km	Develop a new shared path to service the Southern Cross K-12 School on Links Avenue from Chickiba Avenue to the schools entrance	Medium	\$50,000
On-road connections				
EB1.10	New on-road connection - Bayview Drive Distance 0.235km	New on-road connection to be sign-posted from the exit of the existing shared path at Barwen Street to the Shelly Beach Road and the start of the existing shared path at The Coast Road underpass. This section will create a connection for cyclists riding from the existing shared path at Chickiba Drive (via Tuckerroo Drive) to the existing shared path adjoining The Coast Road/Shelley Beach Road, and further to Shaws Bay and Ballina Island	Medium	\$30,000
Pathway improvements				
EB1.11	Pavement repair - Tuckerroo Drive shared path	Monitor and repair the asphalt surface of the shared path on the section between Tuckerroo Drive and Bayview Drive	Medium	TBD
Associated infrastructure				
EB1.12	Prospect Lake	Install bike locking facilities such as a bike rack to complement the existing end-of-trip facilities	High	\$2,000
EB1.13	Signage - The Coast Road	Install signage warning of the steep descent and advise of poor sight lines at the underpass	High	\$900
EB1.14	Signage - Shaws Bay foreshore	Install signage at the entrance to the Shaws Bay foreshore to warn cyclists of the busy activity area they are entering, with consideration for signage to slow cyclist speeds prior to entering	High	\$900
EB1.15	Signage - Silver Gull Drive (Angels Beach Drive- Chickiba Drive)	Install shared path signage along Silver Gull Drive	Medium	\$900



Ref	Item	Details	Priority	Cost
Lennox Head				
Shared path				
LH1.1	New shared path - Ross Street Distance 0.237km	New shared path to provide a link from Pacific Parade and the Caravan Park to the proposed Gibbon Street shared path and Byron Street. This shared path is identified in Council's PAMP (2016-2021 Capital Works) and provides an alternate shared path to Pacific Parade, and access to the school and Byron Street	High	\$71,000
LH1.2	New shared path - Gibbon Street Distance <input type="checkbox"/> 0.375km from existing path South of Ian Avenue to Megan Crescent <input type="checkbox"/> 0.209km Megan Crescent to Byron Street	Development of a shared path (if width can be accommodated) to allow access from Ross Street and providing connections from Lake Ainsworth/Caravan Park/Pacific Parade to Byron Street, Megan Crescent Sporting Field and the school.	Medium	\$175,000
LH1.3	New shared path - Allens Parade Distance 0. 168km	Development of shared path along Allens Parade, connecting the Coastal Shared Path with Ballina Street. This connection is identified in Council's PAMP (2011-2016 Capital Works).	High	\$50,000
LH1.4	New shared path - North Creek Road Distance <input type="checkbox"/> 0.1266km from Ridgeview Crescent (easement) to Elevation Drive <input type="checkbox"/> 0.790km from Amber Drive to Montwood Drive <input type="checkbox"/> 0.247km from Montwood Drive to Aspect Drive	Development of a new shared path along North Creek Road linking the existing shared path that concludes at Amber Drive, to the existing footpath at Aspect Drive. The Ridgeview Crescent (easement) to Elevation Drive, and Montwood Drive to Aspect Drive sections are included within Council's PAMP (2011-2016 Capital Works). This link is identified in Council's Coastal Recreational Pathway and shared path project. Upgrade existing footpaths near Aspect and Elevation Drive to shared path standard.	High	\$350,000
LH1.5	New shared path - The Coast Road Distance 2.250km	From Skennars Head Road to The Coast Road to Pat Morton	High	\$1,700,000
LH1.6	New shared path - Hutley Drive Distance 0.385km	Along Hutley Drive from Silkwood Road to North Creek Road	Low	\$150,000
LH1.7	New shared path - Pacific Parade Distance 0.920km	From Lennox Head village to Lake Ainsworth	Low	\$130,000
LH1.8	New shared path - Ross Lane Distance 5.757km	New shared path to connect Lennox Head to the Cumbalum Urban Release Area Precinct B (future open space) via Ross Lane, Byron Bay Road and Byron Street	Low	TBD

Ref	Item	Details	Priority	Cost
LH1.9	New shared path - Hutley Drive Distance 2.592km	New shared path on Hutley Drive between North Creek Road and Hendersons Lane to connect the existing shared paths	Low	\$775,000
On-road connections				
LH1.10	New on-road connection - The Grove to Bombora Place Distance 0.305km	New on-road connection to be sign-posted from the exit of the Byron Bay Road underpass at The Grove to the start of the existing shared path at Bombora Place. This section creates a connection for residents to the northern side of Byron Bay Road, the school, and retail precinct.	Medium	Signage \$900 Linemarking TBD
LH1.11	New on-road path - Banksia Avenue Distance 0.249km	New on-road bicycle connection to link Byron Street with Sunrise Crescent, Greenwood Place and the Byron Bay Road underpass. This connection would provide an extensive opportunity, connecting to the shared path on Byron Bay Road, leading to Skennars Head.	Medium	\$30,000
LH1.12	New on-road path - Greenwood Place and Sunrise Crescent Distance <input type="checkbox"/> 0.876km from Banksia Avenue to School (rear entrance) <input type="checkbox"/> 0.328km from Banksia Avenue to Byron Bay Road underpass	New on-road bicycle connection to link to the proposed Banksia Avenue footpath and the Byron Bay Road underpass. This connection will enhance access to the school and residents on the southern side of Byron Bay Road.	Medium	\$144,000
Pathway improvements				
LH1.13	Upgrade existing footpath to shared path standards	Initiate a program to upgrade existing footpaths to shared path widths in identified areas, including: <input type="checkbox"/> Lennox Head Public School		\$42,000 signage \$2,000
LH1.14	Upgrade existing footpath to shared path standards	Initiate a program to upgrade existing footpaths to shared path widths in identified areas, including: <input type="checkbox"/> Byron Street		\$78,000
Associated infrastructure				
LH1.15	Improve end-of-trip facilities	Install bike racks at Lake Ainsworth to improve the rest stop	High	\$2,000
LH1.16	Lighting and maintenance	Install lighting within the Byron Bay Road underpass and ensure the surface is regularly maintained to ensure its safety and amenity for users	Low	\$10,000



Ref	Item	Details	Priority	Cost
Skennars Head				
Shared path				
SH1.1	Stewart Farm Urban Expansion	Develop a shared path in line with the Stewart Farm Urban Expansion project. Details to be confirmed	Low	TBD
SH1.2	New shared path - Skennars Head Road Distance 0.235km	Develop a new shared path from the Headlands Estate to The Coast Road on Skennars Head Road	Low	\$70,000
Associated infrastructure				
SH1.3	Develop end-of-trip facilities at Sharpes Beach Carpark	Develop an end-of-trip facility at Sharpes Beach where the shared path connects from the Headlands Estate to The Coast Road (beach side of road), including water, seating and bike rack	Medium	TBD
Wardell				
Pathway improvements				
W1.1	Upgrade existing footpath to shared path - Richmond Street Distance 0.7521km	Upgrade the existing footpath to a shared path Wilson Street to Cedar Street	Low	\$104,000
Associated infrastructure				
W1.2	Shared path signage and line marking - Sinclair and Richmond Streets	Improve the safety of path users at the intersection of Sinclair and Richmond Streets through the installation of signage (both shared path and road) to warn path users and motorists	Medium	Signage \$900+ Line marking TBD
West Ballina				
Shared path				
WB1.1	New shared path - River Street Distance 0.687km	Develop the missing section of shared path on River Street between the Hibiscus Gardens Caravan Park and Bunnings Warehouse to provide a continuous link for cyclists. Identified in Council's PAMP (2016-2021 Capital Works)	High	\$206,000
WB1.2	New shared path - Horizon Drive Distance 1.245km	Develop a new shared path on Horizon Drive to provide an alternative link from Emmanuel School to River Street via Horizon Drive and Barlows Road	Medium	\$373,000
WB1.3	New shared path - River Street Distance 0.781km	Develop a new shared path on River Street (north side), from Barlows Road to Fishery Creek Bridge (including the underpass at the bridge)	Medium	\$234,000
WB1.4	Upgrade the Fishery Creek Bridge to shared path standards Distance 0.02km	To meet shared path standards	Low	\$3,000

Ref	Item	Details	Priority	Cost
On-road connections				
WB1.6	Enhance existing on-road cycleway - Boat Harbour Road to Burns Point Ferry	Strengthen the existing on-road cycleway through further signage, including a map of the route to enhance its legibility. Signage and map to include the length of the connection to East Ballina	Medium	Signage \$2,000
Associated infrastructure				
WB1.7	New rest stop - Kalinga Street (Rugby Union Ground)	Investigate the installation of end-of-trip infrastructure at the Kalinga Street Rugby Union Grounds, to provide cyclists with a rest stop including seating, water and bike storage	Medium	\$3,000
Wollongbar				
Shared path				
WO1.1	New shared path - Rubiton Street Distance 0.263km	Develop a section of new shared path at Rubiton Street, to increase accessibility to Hill Park, as well as residents to the Simpson Avenue shopping centre. This link is identified in Council's PAMP (2016-2026 Capital Works) as a footpath	High	\$79,000
WO1.2	New shared path - Rifle Range Road Distance 0.636km	Develop the missing link on Rifle Range Road as a shared path, to enhance connectivity for cyclists	High	\$191,000
WO1.3	New shared path - Simpson Avenue Distance 0.772km	Develop a section of new shared path on Simpson Avenue providing a link between Teven Road, the Public School and the shopping centre	Medium	\$80,000
WO1.4	New shared path - Sneaths Road Distance 0.541km	Develop a section of new shared path on Sneaths Road from Plateau Drive to the existing shared path at the Wollongbar TAFE	Low	\$130,000
Pathway improvements				
WO1.5	Maintenance - Bruxner Highway underpass	Ensure the safety and amenity of cyclists by undertaking regular maintenance of the path surface at the Bruxner Highway underpass, including removal of debris	Ongoing	Operational cost
Associated infrastructure				
WO1.6	Lighting - Bruxner Highway underpass	Improve safety and desirability of the Bruxner Highway underpass (Alstonville-Wollongbar shared path) by installing lighting	High	\$10,000
WO1.7	Bike locking facilities - Hill Park	Install bike racks at Hill Park to enhance the existing end-of-trip facility by providing a secure place for bikes to be locked	Medium	\$2,000
WO1.8	Hand rail repair - Bruxner Highway underpass	Repair the timber handrail at the decent into the Bruxner Highway underpass to maintain user safety	High	\$3,000



Objective Two - Network Safety Improvements

Improve safety for cyclists

Objective Two

Improve safety for cyclists

The results of the community consultation demonstrate that both safety and the perception of safety remains a major barrier to participation for cyclists. It is essential that road safety remains a focus in planning for cyclists.

In regards to improving safety for cyclists, Council's Road Safety Strategy outlines three key priorities:

- improve the safety of vulnerable road users and encourage the uptake of more sustainable travel modes (SRR3)
- develop an implementation plan for improved signage and line marking on the shared path network, with consideration of the NSW Coastline Cycleway signage and in accordance with Australian Standards (SRR3.5)
- deliver footpath, shared path and cycleway maintenance in accordance with the Footpath and Cycleways Inspection, Evaluation and Maintenance Policy and relevant Road Maintenance Procedures (SRR3.6).

A key action from Council's Strategy is to develop this Plan. Additionally, it seeks to improve the safety of cyclists by separating cyclists from traffic (where possible) and the utilisation of lower speed limit schemes (SRR3.2).

The Ballina Road Safety Strategy states: 'We want the Ballina Shire to be a bicycle and pedestrian friendly place, allowing cycling and walking to become more dominant modes of travel. Together the Bike Plan and PAMP will improve path connectivity within the Shire and with neighbouring Local Government Areas while maximising opportunities to separate cyclists and pedestrians from traffic. We will ensure our existing network commitments are strategically coordinated and improvements delivered in a timely manner, including the Coastal Recreational Pathway and Shared Path, the NSW Coastline Cycleway and our existing local network¹'.

'Council's priority in regards to improving safety for cyclists is to promote a safe environment for people who choose to cycle'.

- To promote a safe environment for people who choose to cycle.

A number of things can be done to improve the safety of the cycling environment. These include the physical form of the road network as well as the attitude and behaviour of road users. The physical elements include:

- road design - ensuring that design standards are met that cater for cyclists
- speed limits - setting appropriate limits that encourage a safe environment for all road users
- traffic calming - to slow vehicles down in key locations
- line marking - to delineate the pavement for various road users
- exclusion of heavy vehicles in urban areas - to reduce conflict
- the use of visual cues for vehicles to slow down including green pavement, profiled edge lines, and regulatory signage.

The safety of the road environment can be improved through the attitudes and behaviour of road users through the following:

- road and pathway signage
- education and awareness campaigns including school-based programs and community education programs such as 'Share the Path', 'Share the Road' and 'Go Together' to promote greater respect between road users
- legislation change.

Ultimately, separation of road users is preferred in order to provide an adequate level of safety. But the degree of separation largely depends on a number of factors such as speed, traffic volume of the road, the amount of space available and the nature of the road reserve.

In the separation of road users, shared paths are the most common bicycle facilities in the Ballina Shire. Council will maximise opportunities to separate cyclists from traffic (where possible).

Inter-town connections (as discussed on page 35) are popular routes that are known to both cyclists and motorists. However, consultation identified a number of key issues affecting the safety of cyclists. Issues identified include:

- a lack of respect for cyclists along the highways; many drivers refuse to go around or do not leave enough space when overtaking
- motor vehicles do not slow down when approaching or over taking cyclists
- cyclists sometimes have to ride on the gravel road verge if there is not enough space
- there are no dedicated road cycling routes that are marked, signed and promoted. The routes are normally advertised via word-of-mouth, social media or technological 'apps' such as MapMyRide.

Future opportunities for improved on-road cycling environment

It is not always possible (or feasible) to dedicate on-road bicycle paths. A number of improvements for enhancing the safety of road cyclists include:

- more warning signs to alert motorists of the presence of cyclists
- more billboards that promote a safe passing distance
- directional and distance signage for cyclists
- widening of roads and road shoulders
- provision of dedicated bicycle lanes
- rest stops with end-of-trip facilities
- pamphlets at cycle shops, cafes and tourist information centres that educate cyclists about safety and appropriate behaviour when riding on rural roads.



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Objective Two Action Plan - Network safety improvements

The recommended actions relating to objective two are outlined in the Table below.

Table 9. Objective Two Action Plan

Ref	Item	Details	Priority
Shire wide			
2.1	Ensure that shared paths are designed to minimise conflict between cyclists and pedestrians	Safe design treatment for shared paths and on-road cycleways, focusing on solutions that are cost-effective and that promote cyclist safety and comfort, managing bicycle speeds where needed to minimise conflict	High
2.2	Ensure that the cyclists and cycling needs are incorporated in the development or upgrade of roads	Ensure compliance with the Austroads Guides to Road Design to ensure cyclists are catered for in a safe environment	High
2.3	Support initiatives to reduce speed limits that will allow safer cycling (such as in 40km/h High Pedestrian Activity Areas including urban areas, shopping precincts, central business districts, and transport interchanges)	Adopt a consistent approach to lowering speed limits in areas of high pedestrian and cycling use to improve road safety	High
2.4	Collect, monitor and report on crash data	To examine the pattern of bicycle crashes and their contributing factors	High
2.5	Investigate opportunities to prioritise future Capital Works Programs to address cycling crashes	Budget for the remediation of any identified issues	High
2.6	Maximise grant opportunities	To improve the safety of cyclists and promote safer road use	High
2.7	Maximise partnership opportunities	To promote safer road use with bicycle networks, local bike shops etc.	High
2.8	Deliver a Safer Intersection program, which identifies intersections with a high crash risk for cyclists	As an action in the Road Safety Strategy, improve cyclist safety at identified intersections	Medium
2.9	Develop education campaigns titled 'Share the Path', 'Share the Road' and 'Go Together' to promote greater respect between road users	To raise awareness and promote positive behaviour change among road and path users	Medium
2.10	Promote current Transport for NSW resources and programs that address cycle safety	Resources include the wearing of helmets, the wearing of reflective clothing to increase visibility and the use of other safety devices such as lights, reflectors and working brakes	Medium

Ref	Item	Details	Priority
2.11	Promote knowledge and compliance with current road rules by bicycle riders and motorists. Utilise resources from the Centre for Road Safety and Cycle Safe Communities by the Amy Gillet Foundation	Changes to the NSW road rules require drivers who pass a bicycle rider to allow a distance of at least 1m. The key campaign is to promote the importance of drivers leaving appropriate space around bicycle riders on the road (at least one metre) – ‘Go Together’, ‘A Metre Matters’ and ‘It’s a two-way street’.	Medium
2.12	Acknowledge and support Police enforcement measures to target high risk behaviours such as helmet use	To provide a consistent message and improve the safety of cyclists	Medium
2.13	Investigate procedures for cyclists to report safety, security or maintenance issues to Council and incorporate this with our existing reporting systems, including new technologies such as smart phone applications	To provide Council with real-time data in which to respond and report on	Medium
2.14	Deliver a cycling skills and confidence training program in conjunction with Austcycle, BUGS or other training providers	To improve the confidence of cyclists within the community	Medium



Objective Three - Design Principles

Provide cycling support facilities including signage, line marking, lighting and the provision of end-of-trip facilities

Objective Three

Provide cycling support facilities including signage, line marking, lighting and the provision of end-of-trip facilities

The provision of appropriate supporting facilities are vital to encouraging more people to cycle for both recreation and as a form of active transport. Basic facilities such as shade, lighting, storage and water can improve the safety and comfort of cyclists. Network signage can also improve cycle, pedestrian and driver behaviours, and reduce conflict between users.

The following section provides an overview of best practice for the design and construction of a number of supporting facilities, in order to reduce conflict between road users and improve safety:

- path classification/design
- lighting
- end-of-trip facilities including bicycle parking
- signage.

A comprehensive needs assessment of support facilities was made as part of the audit of existing shared path and cycle network. A summary of this audit and the bicycle parking audit are provided in the following section. Extensive details of the audit are provided in Appendix Three*.

* This appendix is an extensive spreadsheet that is too large for the purpose of community engagement. All relevant information from the audit has been included within this document.

Path classification/design

On-road facilities

On-road facilities provide visually separated operating space for the use of cyclists on roads. They are used to define bicycle routes where the prevailing road speed and traffic volume requires a degree of separation. Exclusive bicycle lanes are generally preferred to shoulder lanes in urban areas, with a higher volume of traffic, while shoulder lanes are preferred in rural areas where there are lower volumes of traffic.

Aside from the speed of motor traffic, designers should also consider the number of cyclists, the volume of large vehicles, the ability to make space available and physical and budgetary constraints when deciding an appropriate lane width. Asphaltic concrete is the preferred surface material for on-road bicycle lanes. Special care should be taken when applying bicycle lanes on concrete roads, particularly older roads, which may contain significant gaps in road jointing¹.

Table 10. Recommended on-road bicycle lane dimensions²

Road posted speed limit (km/hr)	Lane width (m)		
	60	80	100
Desirable	1.5	2.0	2.5
Acceptable range	1.2 - 2.5	1.8 - 2.7	2.0 - 3.0

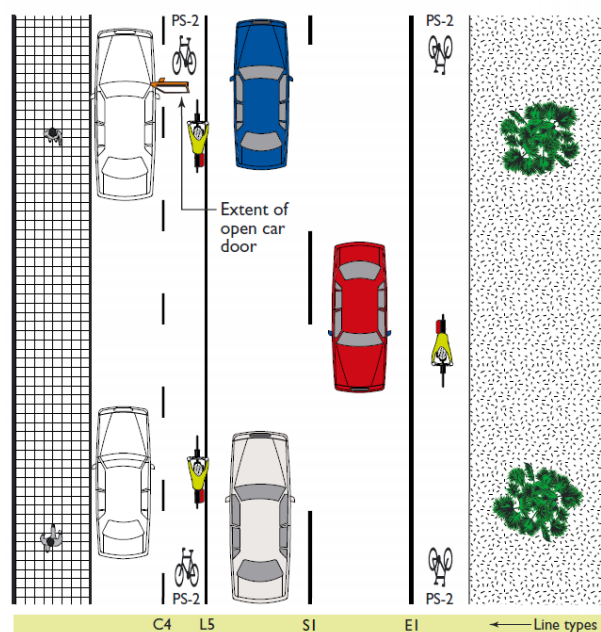
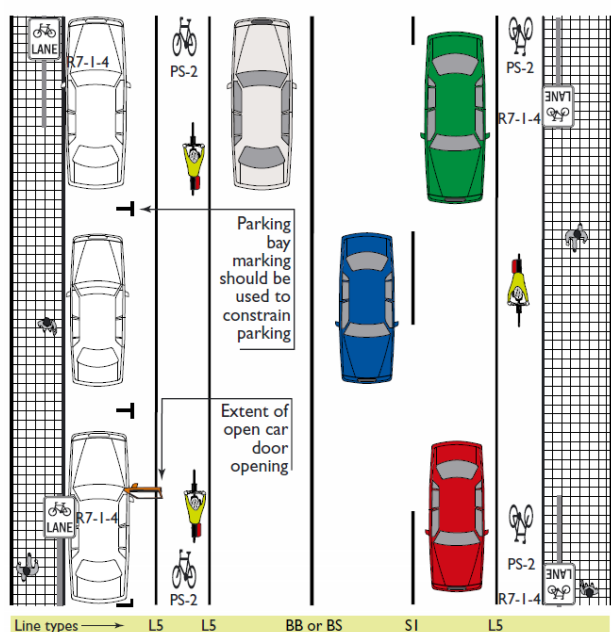
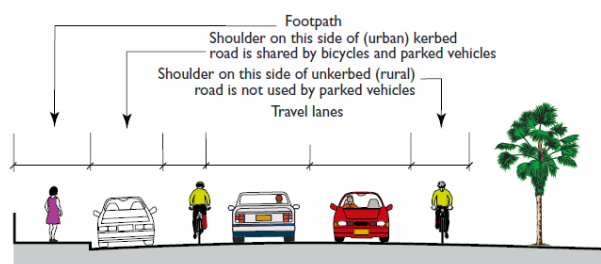
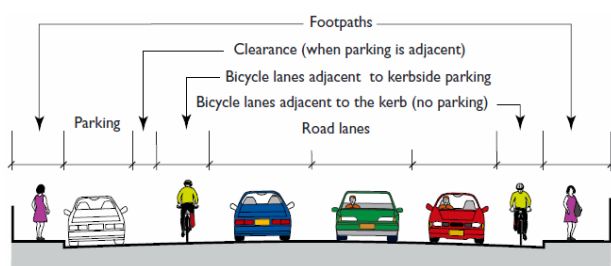


Figure 5. Exclusive bicycle lane (RMS - NSW bicycle guidelines)

Figure 6. Exclusive bicycle lane (RMS - NSW bicycle guidelines)

1 Roads and Maritime Services. (2005). NSW Bicycle Guidelines.
 2 Austroads. (2014). Cycling Aspects of Austroads Guides.

Off-road facilities

Off-road facilities can include shared paths, bicycle paths or separated paths. The most common type of off-road facility in Ballina is and will continue to be shared paths in the foreseeable future. Shared paths can be provided for in a road reserve with physical separation from motor vehicle traffic by a median strip, verge or kerb. They can also be provided outside the road reserve in locations such as parks, drainage easements or reserves.

The recommended shared path dimensions are provided in the Table below. These dimensions can also be applied to exclusive bicycle paths. The preferred treatment for off-road cycling facilities is concrete pavement or asphaltic concrete.

Table 11. Recommended shared path dimensions¹

Path type	Path width (m)		
	Local access path	Commuter path	Recreational path
Desirable	2.5	3.0	3.5
Acceptable range	2.5* - 3.0	2.5* - 4.0	3.0* - 4.0

* A lesser width should only be adopted where cyclist volumes and operational speeds will remain low.

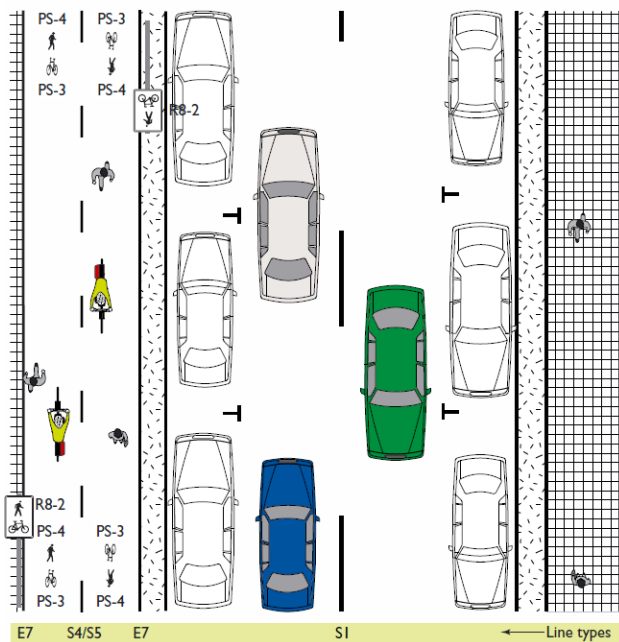
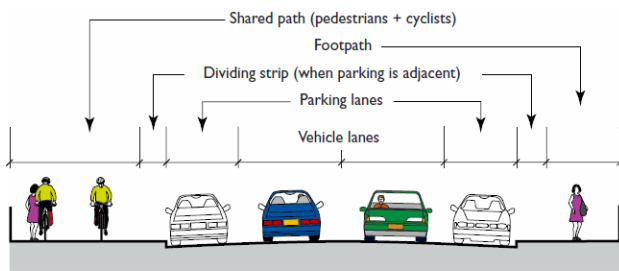


Figure 7. Shared path in a road reserve (RMS - NSW bicycle guidelines)

¹ Austroads. (2014). *Cycling Aspects of Austroads Guides*.

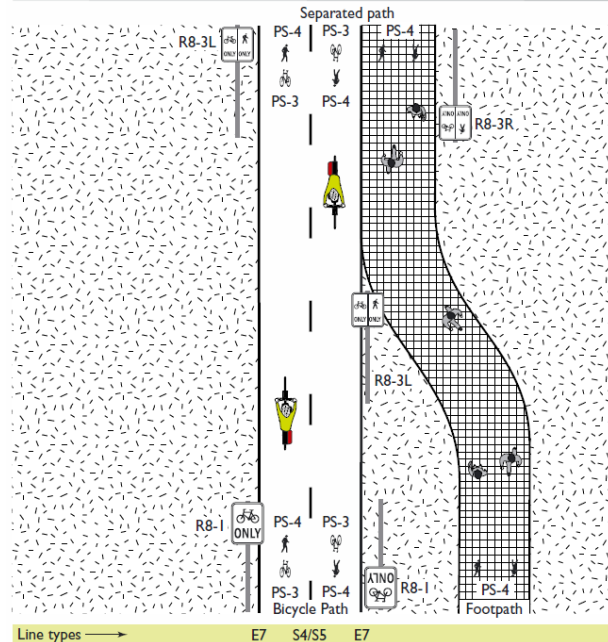
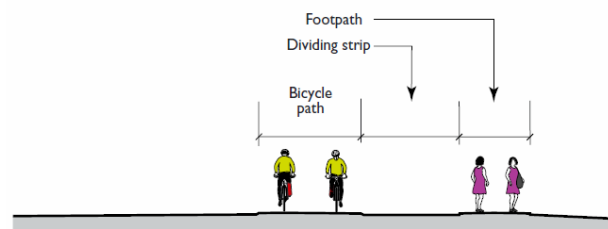


Figure 8. Bicycle path in a non-road reserve (RMS - NSW bicycle guidelines)

Lighting

Lighting should be provided on paths where there are large number of users in periods of darkness. The type of lighting used will depend on a number of factors including the number of users expected on the path, the proximity of residential or other sensitive uses and the presence of wildlife nearby. For all new lighting installations in Ballina, reference should be made to AS 1158.3.1-2005 for design standards¹.



Glow in the dark paths

A new technology is allowing the provision of glow in the dark paths as an alternative to street lights. The paths negate the need for electricity, and are thought to reduce the impact on native fauna. The footpath contains minerals which absorb ultraviolet light during the day so a soft glow is emitted at night. The paths have recently been developed in Gosford and Canberra.



1 AS/NZS 1158.3.1:2005 Lighting for Roads and Public Spaces - Pedestrian Area (Category P) lighting - Performance and Design Requirements

End-of-trip facilities

End-of-trip facilities can include bicycle parking facilities, showers and lockers to store clothing and cycling equipment. Bicycle parking facilities should be provided within 100m of common commuting or recreational destinations. These include schools, shopping centres, bus interchanges, parks and work places. The exact location of parking facilities at each destination is vital and convenience is the most important factor to consider when choosing a location.

Information from Australian Standards for bicycle parking is provided in the Table below on the security levels required in a given scenario. Best practice examples of bicycle parking are also provided in the following images.

Table 12. Bicycle parking facility security levels¹

Security level	Description	Safety features	Typical applications
A	Individual locker with a high security locking mechanism.	Highly visible, publicly accessible, well lit and close to the modal change point.	Transport hubs.
B	A secure room or structure, protected from the weather, containing bicycle parking devices that allow users to lock the bicycle frame and both wheels.	Direct surveillance may be necessary to reduce the level of theft among users (e.g. CCTV). Should be located as close to the entrance/exit as possible and in well lit areas where passive surveillance is likely.	Destination parking (nearby to where a cyclist works, lives or studies), all day parking (workplace, school, university), transport hubs, multi-dwelling developments.
C	Bicycle rails or racks to which both the bicycle frame and wheels can be locked.	Located in well lit areas where passive surveillance is likely. Facilities should be located as close as practicable to the user's destination.	Short term parking only e.g. retail, libraries, gyms, parks.

¹ AS 2890.3:2015 Parking facilities - Bicycle parking

Best practice bicycle parking

Security level A



Figure 9. Individual bicycle lockers

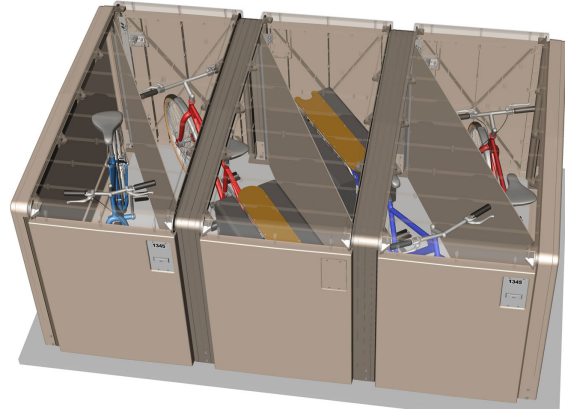


Figure 10. Individual bicycle locker indicative design

Security level B



Figure 11. Secure bicycle parking enclosure with vertical bicycle parking

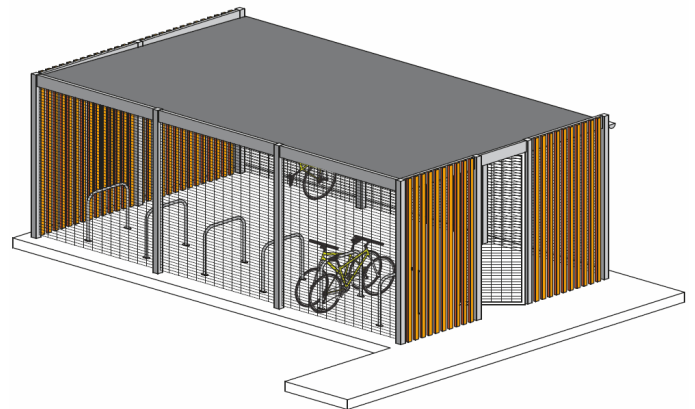


Figure 12. Secure bicycle parking enclosure indicative design

Security level C



Figure 13. Radial vertical bicycle parking










Figure 14. On street bicycle parking

Signage

On-road signs







The following Tables identify the signage types to be utilised within the bicycle network and provides a hierarchy of on-road signs based on the application within the network.

Table 13. On-road signage

Sign name	Sign number	Sign	Application
Regulatory signs			
Bicycle Lane	R7-1-4		To be used at the beginning of an exclusive bicycle lane and at extra locations with spacing of the signs not more than 500m.
AHEAD	R7-2		Optional advance notice of a bicycle lane to be used where required.
END	R7-4		To be used at the end of a bicycle lane.
BICYCLES EXCEPTED	R9-3		To be used in conjunction with other regulatory signs where the use of bicycles is permitted contrary to the regulatory requirement, e.g. NO ENTRY, No Right (or Left) Turn.
Warning/guidance signs			
Bicycle Warning	W6-7		Used to warn motorists of the presence of bicycles on the road where cyclists may be at risk. These can also be supplemented with NEXT x km (W8-17-1) plates or NEXT x m (W8-17-2) plates.
WATCH FOR Bicycles	G9-57		To be used at road narrowings or other squeeze points where bicycles may potentially come into conflict with motor traffic.
ALL BICYCLES	G9-60		To be used at any point where it is required to direct cyclists from the road to a particular route or path.

Off-road signs

Table 14. Off-road signs

Sign name	Sign number	Sign	Application
Regulatory signs			
GIVE WAY	R1-2		To be used on a bicycle path or shared path where they meet a road crossing. A give-way line may also be used to reinforce the need to give way to road traffic. A smaller sign is used on paths than those used on roads (see AS1742.9-2000).
Bicycle path ONLY	R8-1		Used on a path designated to cyclists only.
Shared path	R8-2		To be used to designate a path for pedestrians and cyclists.
Separated path	R8-3		To be used to designate a route where cyclists and pedestrians travel on separate paths.
Warning/guidance signs			
Pedestrian warning	W6-1		To be used where any path is about to cross a path used by the relevant user group, e.g. a pedestrian warning sign would be used on a shared path where it is about to cross a pedestrian footpath.
Bicycle warning	W6-7		
Bicycle/pedestrian warning	W6-9		
ROAD AHEAD	W6-8		Used to inform cyclists travelling along an off-road path that the path is about to cross or end at a road and the presence of the road is not obvious.

Shared path behavioural signage

Shared paths carry the benefits of being able to serve two user groups: pedestrians and cyclists. However, conflicts between these two groups can occur, particularly on high use paths. Behavioural signage is an effective way of managing these conflicts and educating users of paths to be aware of other users.

The Department of Transport and Main Roads in Queensland has developed a suggested hierarchy for the implementation of signage on shared paths, which is provided below.

Table 15. Shared path behavioural signage hierarchy¹

Level	Level of usage	Recommended installation
Level 1	Basic requirement of all shared paths. Low use and few reported conflicts.	Path centre line and pavement symbols. See MUTCD* Part 9 for path line marking recommendations.
Level 2	Moderate path use and number of reported conflicts.	As for Level 1 plus group signs (Figure (e) or (g), right) at key locations and sign columns (Figure (f), right) at min 500m spacings.
Level 3	High path use and number of reported conflicts.	As for Level 2 plus additional single or grouped behavioural signs according to the type and level of reported and observed conflicts.

*Manual of Uniform Traffic Control Devices

It is intended that this hierarchy be implemented from the bottom-up. That is, Level 1 signage should be adopted on the shared path to begin with. Some time after these have been implemented, observations or feedback from users should be sought to ascertain the number of conflicts present. If necessary, Level 2 signage should then be used and Level 3 measures if required thereafter.

¹ Department of Transport and Main Roads (QLD). A guide to signing cycle networks, 2009.



(a) Keep Left sign (G9-259-1)



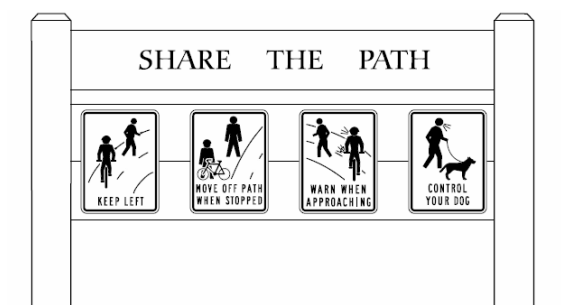
(b) Warn When Approaching sign (G9-259-2)



(c) Move Off Path When Stopped sign (G9-259-3)



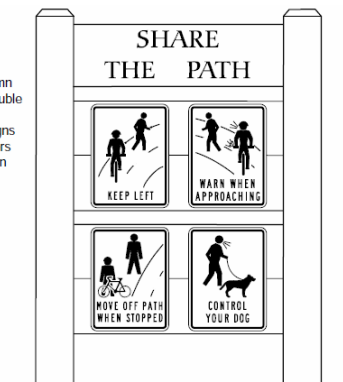
(d) Control Your Dog sign (G9-259-4)



(e) Preferred group sign for path entry or major path access points.



(f) Level 2 sign column


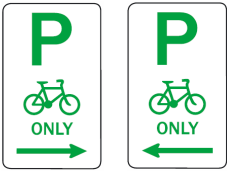



(g) Alternate layout of group sign for where space is limited

Figure 15. Shared path behavioural signage

Other signs

Table 16. Other signs

Sign name	Sign number	Sign	Application
Regulatory signs			
No Bicycles	R6-10-3		To be used at the beginning of a path or road where the use of bicycles is prohibited. Can be combined with the END supplementary plate (R7-4) to indicate the end point of the prohibition.
Bicycle parking	R5-1-5L R5-1-5R		To be used together to indicate where bicycle parking can occur (generally for on-road parking only).
Warning/guidance signs			
Parking Direction Parking Position Parking Position (alternate)	Not available Not available G7-6-1		These bicycle parking signs should be used to guide cyclists to the location and position of bicycle parking.

Directional signage

Bicycle network signage is an important function that improves connectivity and coherence for cyclists. Directional signage for cycling should be totally separate from the road system signage to avoid conflict or confusion. Australian Standard AS1742.9 Manual of Uniform Traffic Control Devices should be used for guidance on directional signage. The Standards provide requirements and recommendations on the colour and reflectorization of signs, legend size, directional indication, layout design and the location of signs.

The NSW Bicycle Guidelines (RMS 2005) also set out desired directional signage for cycling. The system for directional signage should be closed, meaning if a location is displayed on a sign it should be displayed on every sign thereafter until the destination has been reached. Destinations to include on directional signage include:

- cities
- towns
- regional centres
- identifiable precincts
- important recreational destinations (e.g. major parks, beaches).

Reference should be made to the NSW Bicycle Guidelines for more detailed information on the implementation of directional signage. This information includes an appropriate measuring system, the selection of appropriate destinations and visibility of signage.

An extract of the RMS guidelines is provided on the following page displaying recommended examples of signs to be used. One important tool that is not displayed in these examples is the use of a brown coloured sign for directions to tourist facilities or points of tourist interest (a recommendation of the *Australian Standard AS1742.9 Manual of Uniform Traffic Control Devices*).

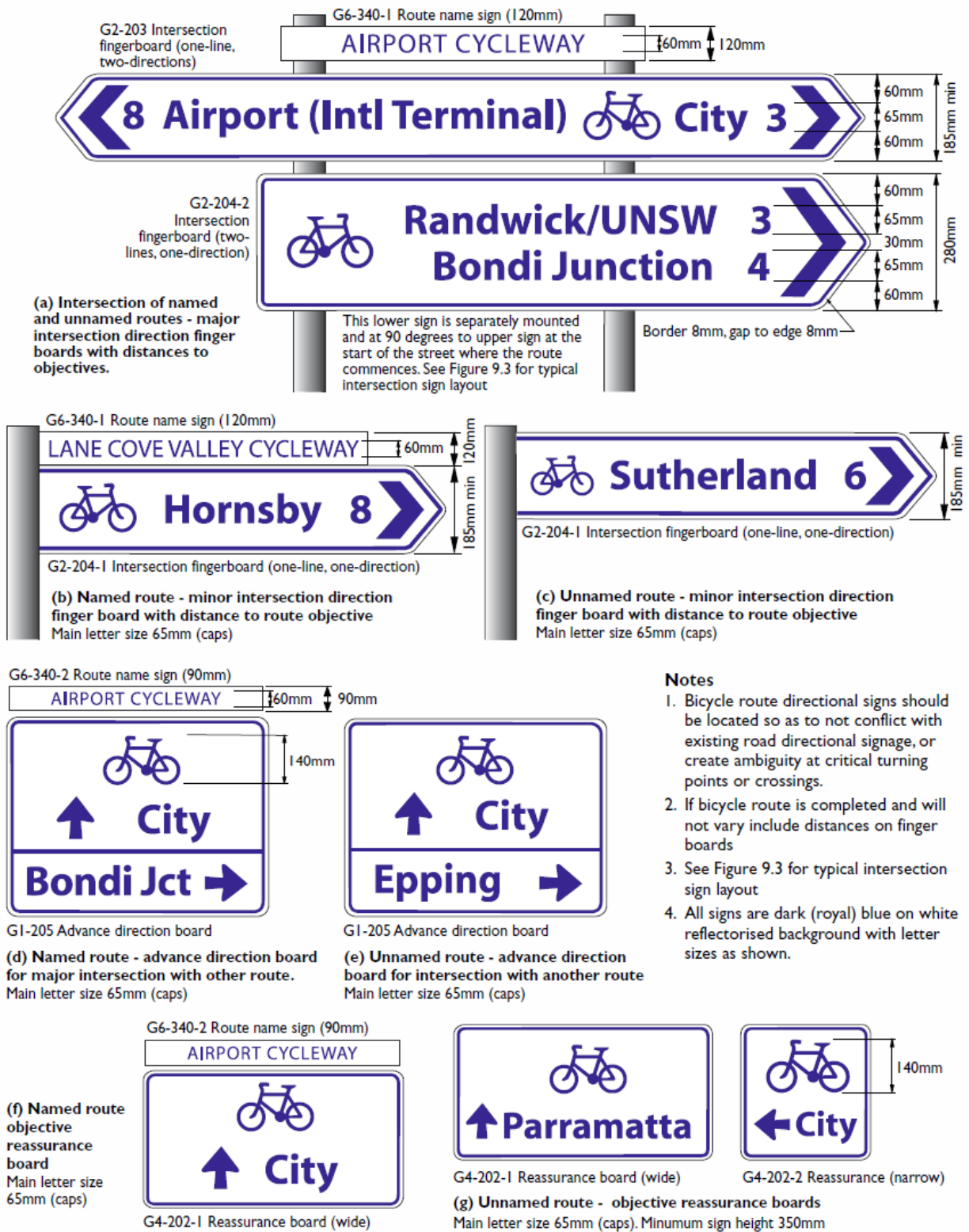


Figure 16. Bicycle network route directional signage (RMS. NSW Bicycle Guidelines, 2005)



Shared path audit

An audit of the Shire's shared paths and cycleways was undertaken to inform the development of this Plan. A summary of the audit is provided below, with the bulk of the detail contained within Appendix Three due to the large amount of data recorded.

Table 17. Shared path audit summary

Path name	Path type	Length	Width
Alstonville			
Alstonville to Wollonbgar	Shared Path	1.457km	2m
Main Street	Shared Path	0.289km	1m
Wardell Road	Shared Path	0.174km	2m
Whipps Avenue	Shared Path	0.829km	2.5m
Ballina Island			
Fox Street	Shared Path	2.271km	2.5m
Kingsford Smith Drive (Coastal Path)	Shared Path	2.391km	2.5m
Martin Street	Shared Path	0.701km	1.2m
Temple Street	Shared Path	1.311km	2.5m
Angels Beach Drive	Shared Path	3.153km	2.5m
Tamarind Drive	Shared Path	1.390km	2.5m
North Creek Road	Shared Path	1.033km	2m
Yellowfin Way	Shared Path	2.807km	2m
Boeing Avenue	Shared Path	0.718km	2m
Cumbalum			
Ballina Heights Cycleway	Shared Path	3.1km	2.5m
East Ballina			
The Serpentine	Shared Path	0.417km	2m
Breakwall Path	Shared Path	1.634km	3m
Compton Drive	Shared Path	1.050km	2.5m
Northwall Cycleway	Shared Path	2.495km	2.5m
Links Avenue	Shared Path	2.988km	2m
Chickiba Drive	Shared Path	0.792km	3m
Tuckeroo Drive	Shared Path	0.551km	3m
Silvergull Drive	Shared Path	0.386km	3m
Angels Beach Drive	Shared Path	3.202km	3m
The Coast Road	Shared Path	1.945km	3m
Lennox Head			
Coastal Shared Path	Shared Path	5.550km	2.5m
North Creek Road	Shared Path	1.083km	1.8-2.5m
Hutley Drive	Shared Path	0.920km	2.8m
Byron Bay Road	Shared Path	0.597km	2m
Ballina Street	Shared Path	0.871km	1.2m
Rutherford Street	On-road Shared Path	0.1257km	-

Path name	Path type	Length	Width
Rutherford Street	Shared Path	0.045km	1.2m
Skennars Head			
The Coast Road	Shared Path	2.020km	3m
Headlands Drive	Shared Path	2.161km	2m
Isabella Drive	Shared Path	1.003km	2m
Skennars Head Road	Shared Path	3.778km	2m
Wardell			
Bath Street	Shared Path	0.76km	2m
West Ballina			
Quays Drive	On-road	1.831km	N/a
River Street (South)	Shared Path	1.268km	2m
River Street (North)	Shared Path	1.464km	2m
Burns Point Ferry Road	Shared Path	1.295km	2m
Emigrant Creek Lane	Shared Path	0.590km	2m
Wollongbar			
Bruxner Highway	Shared Path	0.82km	2m

Bicycle parking audit

An audit of the Shire's bicycle parking was undertaken to determine the distribution, amount and types currently provided. Schools were excluded from the audit as they are private facilities, available only to students. This audit has informed the subsequent recommendations in the Action Plan.

The audit has demonstrated a distinct lack of bicycle parking facilities across the Shire, with facilities limited to individual bike racks. The locations of existing facilities are listed in the Table below.

Table 18. Bicycle parking audit

Location
Alstonville
n/a
Ballina
Industrial estate (Bangalow road)
Ballina Fair Shopping Centre
Ballina Central Shopping Centre
Fripp Oval
Northern Rivers Community Gallery
Ballina Naval and Maritime Museum
Regatta Avenue (Ramada)
Cumbalum
n/a
East Ballina
Shaws Bay foreshore
Shelly Beach
Coastal Shared Path - located at a number of beach entrances
Lennox Head
Town centre
Skennars Head
n/a
Wardell
n/a
West Ballina
n/a
Wollongbar
n/a

Objective Three Action Plan - Provide cycling support facilities including signage, line marking, lighting and the provision of end-of-trip facilities

The recommended actions relating to objective three are outlined in the Table below.

Table 19. Objective Three Action Plan

Ref	Item	Details	Priority
Shire wide			
3.1	Include the provision of bicycle storage within Council's Commercial Development - Development Control Plans (DCP's)	To ensure future commercial developments cater for the needs of cyclists, both employees and customers	High
3.2	Include the provision of mandatory end-of-trip facilities for all new major developments or major additions to development including office buildings, shopping centres, educational institutions, bus interchanges and hospitals	To ensure future developments cater for the needs of cyclists, both employees and customers	High
3.3	Encourage workplaces to provide end-of-trip facilities for their employees	The provision of bike storage, showers, lockers and ironing facilities will greatly enhance the appeal of cycling as a mode of transport to work	High
3.4	Encourage the provision of secure bike parking at schools, TAFE's	To allow students and teachers to cycle to school/TAFE and ensure their bikes are safe	High
3.5	Monitor the need for additional shared path behavioural signage in high use locations including East Ballina (North Wall, Shelly Beach)	To reduce conflict between users	High
3.6	Monitor the demand and investigate the need for a large bike parking facility within Ballina	Once the shared path connection from Lennox Head to Ballina is completed there may be a need to install larger bike parking facilities i.e. a cage	Medium
3.7	Consider locating bike parking facilities at large bus interchanges	To encourage cycling as part of longer journeys. Locations could include Tamar Street bus interchange in Ballina	Medium
3.8	Liaise with local public transport operators to negotiate bike friendly routes/times and facilitate the carrying of bicycles	To allow cyclists to travel continuously between shared paths and other destinations	Medium

Ref	Item	Details	Priority
3.9	Request the RMS for the provision of bicycle crossing signals at the Kerr Street traffic light in Ballina	To allow a safer connection to the shops	Medium
3.10	Ensure the Coastal Recreational Shared Path and cycleway network signage is planned and integrated with other branding and other wayfinding signage	Work with Council's Promotional and Interpretive Signage Taskforce on the implementation of the wayfinding signs for the Coastal Recreational Pathway to ensure consistency across the Shire.	Medium
3.11	Appropriate lighting should be provided along some shared paths. Priority should be given to well-used routes and those serving a non-discretionary and transport role	Lighting should be vandal proof, well-maintained and directed down onto the pathway so that glare and spill is minimized. Consider new technological solutions such as glow in the dark paths in high use environments that may minimise interfere with native fauna	Medium



Objective Four

Encourage and promote the benefits of cycling

Objective four

Encourage and promote the benefits of cycling

Cycling offers a range of social, environmental, physical and economic benefits to both the community and individuals. It is a convenient, affordable and a sustainable mode of transport that can be incorporated into a person's daily routine for recreation and/or as a means of active transport.

A good quality, connected bicycle network plays an important role in a community's quality of life. It has the potential to encourage people to improve their health, increase social cohesion, promote environmental awareness and appreciation, and attract economic opportunities to the Shire. Encouraging people to cycle is an essential component of the Plan.

Whilst there has been a significant amount of investment in cycling related infrastructure in the Ballina Shire, particularly the Coastal Recreational Pathway and Shared Path project, a holistic approach to promoting cycling is needed. This includes cultural and behaviour change strategies to encourage people to use the network and to realise the benefits of the investment.

The following Action Plan identifies actions that will lead to the increase in the number of people cycling for transport, recreation and exercise.

Objective Four Action Plan - Encourage and promote the benefits of cycling

The recommended actions relating to objective four are outlined in the Table below.

Table 20. Objective Four Action Plan

Ref	Item	Details	Priority
Shire wide			
4.1	Develop a series of e-maps of Ballina Shire's cycleways, shared paths and footpaths	In order to promote the existing network to cyclists. This is an action in Council's Road Safety Strategy	High
4.2	Implement a social marketing program to promote the benefits of cycling for people of all ages	Partner with Council's communication team in developing positive messages to regularly provide to the community through social media	High
4.3	Support programs that promote cycling in schools	In order to promote community health and help ease congestion around schools at peak times. i.e. The TfNSW Road Safety Education Program, Active Travel to School initiatives	High
4.4	Promote workplace projects and events with local businesses and organisations	Projects and events to encourage employees to cycle to work e.g. Travel Plans or Ride to Work day	Medium
4.5	Promote employers providing end-of-trip facilities such as the installation of showers and the provision of safe bike parking	To increase the number of people cycling as a regular mode of transport to work	Medium
4.6	Develop marketing strategies that promote cycling and its domestic tourism benefits	In partnership with Council's Tourism Coordinator, determine relevant strategies	Medium
4.7	Support community events that promote local bicycle networks and encourages people to ride for transport	Events include NSW Bike Week, Ride to Work Day, Ride to School Day	Ongoing
4.8	Promote bicycle fleets in workplaces	To encourage cycling as a regular and accessible mode of transport and reduce traffic congestion	Medium
4.9	Promote the Going Places website and the Northern Rivers Transport Guide	To share in resources and ensure that a regional approach is achieved in promoting cycling	Ongoing
4.10	Continue as a member of the Ballina Transport Working Group	To promote local transport options and address transport challenges and opportunities	Ongoing

Monitoring and review of the Plan

The Ballina Shire Bike Plan provides Council, stakeholders and the community with a ten year strategic direction and framework to establish a bicycle friendly environment in the Shire.

Monitoring of the Bike Plan will be a continuous and systematic process. Assessment will consider three major plan aspects: **efficiency** (value for money and outputs achieved), **effectiveness** (the extent to which the Bike Plan achieves its stated objectives), and **appropriateness** (the extent to which the Bike Plan objectives meets community needs).

In accordance with internal reporting mechanisms, progress on the Bike Plan will be reported on a quarterly basis. The quarterly review will be conducted by an internal steering committee comprising the Engineering Works Manager, the Manager Infrastructure Planning, the Development Engineer and the Road Safety Officer.

Opportunities to monitor and review the Bike Plan's implementation and impact include the following:

- An assessment of actions and works completed
- A bi-monthly road safety report presented to the Local Traffic Committee
- Feedback from the community and key stakeholders on infrastructure and non-infrastructure actions
- Reviews of change in cycling trends and behaviours in the Ballina Shire Local Government Area using available data, such as Australian Bureau of Statistics and Council demographic consultant information
- Reviews of Roads and Maritime Services crash data involving cyclists (including any changes in trends and locations), as available and where relevant
- Reviews of available and relevant crowd source data, such as MapMyRide
- An assessment of new projects, priorities, and strategies that may not have been anticipated at the time of writing this plan, but are of importance to be completed. The timing and funding implications of any new projects, priorities and strategies will be reviewed and considered for incorporation into the Bike Plan
- If required, review this Bike Plan to incorporate the effects of changes to the law, traffic code, and regulations.

Ballina Shire Council's Bike Plan provides planning direction over the next 10 years. It will be formally reviewed after five years to consider major changes to planning priorities and any new infrastructure, maintenance and strategic works programs. This major review will next occur in 2021 and will consider the success of actions undertaken during 2016-2021 as measured by the assessment regime.



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