

COFFS HARBOUR CITY COUNCIL



BIKE PLAN 2014-2019

CHCC'S PLAN FOR CYCLING INFRASTRUCTURE AND PROJECTS



Connecting our communities – helping
more people move around easily, safely
and sustainably for health and wellbeing.



www.coffsharbour.nsw.gov.au/bikeplan



The aim of the bike plan is to take a coordinated and strategic approach to the delivery of cycling infrastructure and promotional programs in the Coffs Harbour Local Government Area.

Sections 1 and 2 presents a snapshot of cycling and facilities in Coffs Harbour and presents the results of relevant surveys and data collection.

Section 3 outlines the four objectives of the plan and an action plan for implementation.

DISCLAIMER

Cadastral, topographic and aerial ADS40 information supplied by the NSW Department of Finance and Services and maintained by Coffs Harbour City Council (Copyright © 2014, NSW Department of Finance and Services). Other data displayed may have been supplied by various other agencies under licence.

Maps must not be reproduced in any form, whole or part, without written permission from Coffs Harbour City Council. This Council does not warrant the correctness of this map or information contained thereon.

Council accepts no liability or responsibility in respect to any map and any inaccuracies thereon. Any person relying on this plan shall do so at their own risk.

COPYRIGHT

All maps Copyright © 2014, Coffs Harbour City Council.

Images purchased from GraphicLeftovers.com have a Standard License granting the Coffs harbour City Council, a non-exclusive, non-transferable license to make use of and display the image in a website or print project. A maximum of 10,000 copies incorporating the image may be made.

IMAGE CREDITS

p54. Marino Rocks Greenway: Government of South Australia 2011



CONTENTS

List of Figures	4
List of Tables	5
1. INTRODUCTION	6
Why cycle?	7
Who cycles?	8
Policy Framework	9
2. CYCLING IN COFFS HARBOUR.....	11
Overview.....	12
Current cycling routes & infrastructure.....	14
The cycling community	16
The numbers – Who, what, where and how?	17
3. OBJECTIVES	25
3.1. Plan and deliver a connected cycling network.....	26
Overview.....	26
Opportunities.....	41
Actions	44
3.2 IMPROVE CYCLING SUPPORT FACILITIES.....	50
Overview.....	50
Opportunities.....	55
Actions	59
3.3. MAKE CYCLING SAFER	60
Overview.....	60
Opportunities.....	62
Actions	64
3.4. ENCOURAGE GREATER PARTICIPATION	67
Overview	67
Opportunities	69
Actions	70
APPENDICES	71
Clubs & Resources	72
Plan Details	73
Cycleway Network Detail List.....	74
REFERENCES	87



LIST OF FIGURES

Figure 1	Physical participation rates	8
Figure 2	Four types of cyclists by proportion of population	9
Figure 3	Coffs Harbour City Council Local Government Area.	13
Figure 4	2011 census: method of travel to work: Coffs Harbour region	17
Figure 5	Super Tuesday Bike Counts: 2011-2013 -Busiest Commuter Locations in Coffs Harbour LGA	17
Figure 6	Spring Sunday 2013 - Busiest recreational count spots	18
Figure 7	Total movements through Spring Sunday 2013 count spots over 4 hours	19
Figure 8	Comparison of commuting and recreational data 2013 - Super Tuesday and Spring Sunday – 7-9am.	20
Figure 9	Bicycle crashes in the Coffs Harbour LGA 2008 – 2012	23
Figure 10	Separation of bicycles and motor vehicles according to traffic speed and volume – urban roads	27
Figure 11	The arterial network with strategic connections	30
Figure 12	Cycleway network: Corindi area	31
Figure 13	Cycleway network: Arrawarra area	32
Figure 14	Cycleway network: Woolgoolga area	33
Figure 15	Cycleway network: Sandy Beach area	34
Figure 16	Cycleway network: Moonee Beach area	35
Figure 17	Cycleway network: Coffs Harbour area	36
Figure 18	Cycleway network: Sawtell area	37
Figure 19	Paracycling in hand cycle	39
Figure 20	Bike with trailer	39
Figure 21	Bollard at end of cycleway	39
Figure 22	Extract from the CBD Masterplan 2031	41
Figure 23	The Bike Plan for the City Centre Masterplan	42
Figure 24	Bike Parking Design Principles (from NSW Planning guidelines for walking and cycling)	51
Figure 25	Examples of racks inside a cage	52
Figure 26	Parketeer, Melbourne	53
Figure 27	Direction signs should show the destination, distance and network branding	54
Figure 28	Innovative bike parking solutions	55
Figure 29	Wayfinding	57
Figure 30	Coastline Cycleway artwork	57
Figure 31	Shared path signs	58
Figure 32	Utility bikes in Coffs Harbour	67



LIST OF TABLES

Table 1	Coffs Harbour City Council Community levels of service survey – most popular responses 2013	21
Table 2	Number of bicycle crashes in the Coffs Harbour LGA - 2008 - 2012	22
Table 3	Details the features that are also important to form a good bicycle network	28
Table 4	Guiding principles when designing a cycle network	28
Table 5	Funded capital works	44
Table 6	Funded Design projects	46
Table 7	Project concepts and investigations	48

The background of the entire page is a complex, abstract pattern of thin, light blue lines that intersect and crisscross against a solid black background. Two circular, metallic-looking structures are positioned diagonally, one in the upper-left and one in the lower-right. These structures have a central hole and are surrounded by a ring of small, evenly spaced holes, resembling mechanical components or stylized eyes.

1. INTRODUCTION

WHY CYCLE?

Cycling is now considered an essential part of any modern transport system. Growing bike sales and positive cycling participation statistics across Australia indicate that riding a bike is increasing in popularity - both as a means of transport and for recreation.

The efficient transportation of people and goods is essential if the economic and social needs of society are to be met. While the car is the favoured mode for most trips in urban areas, it has undesirable aspects in relation to traffic congestion, road safety, noise, and air pollution. 'Active' modes of transport which can play a greater role in offsetting these issues include walking, cycling, and public transport and are seen as essential tools in modern urban design to create liveable cities.

Cycling is a clean and efficient mode of transport that is well suited to many of the trips currently made in cars, particularly in urban areas. Increasing the number of people riding a bicycle for transport and recreation has a number of individual and community benefits.

Individual benefits of cycling:

- **Improves health and wellbeing** Regular bicycle riding is a fitness option with all the physical and psychological benefits of exercise
- **Reduces personal and family expenses** Selling one family car and cycling to work can save up to \$800 a month¹
- **Can save time on short trips** Studies in Europe, the United States and Australia comparing the travel time of different transport modes have found that riding is often faster than driving for trips up to five kilometres.²
- **Connects people to their community and environment**
- **Provides people of all ages with a sense of freedom and fun.**

Community Benefits of cycling:

- **Helps reduce urban traffic congestion** Estimated to cost Australia \$20 billion a year by 2020 if we do nothing¹
- **Improves air quality and reduces traffic noise** Air pollution and noise are the two biggest environmental problems affecting health, quality of life and the economy.
- **Reduces the carbon emissions from transport** Currently responsible for 16% of Australia's carbon footprint and increasing²
- **People are healthier and fitter, so reducing the cost to society of inactivity** The net health benefit (adjusted for injury) for each kilometre cycled is 75 cents – about half of the total economic benefits of a typical bikeway project
- **Gives a return on investment of nearly \$4 for every dollar invested (in cycling infrastructure) in economic benefits over 30 years¹**
- **The construction costs of walking and riding infrastructure are relatively inexpensive compared with other modes of transport** One kilometre of motorway/road costs the equivalent of 110 kilometres of bikeway²

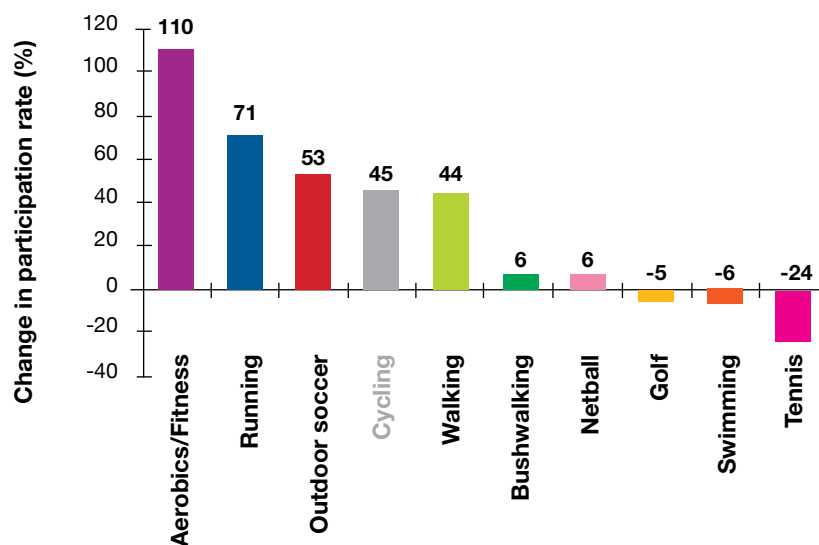
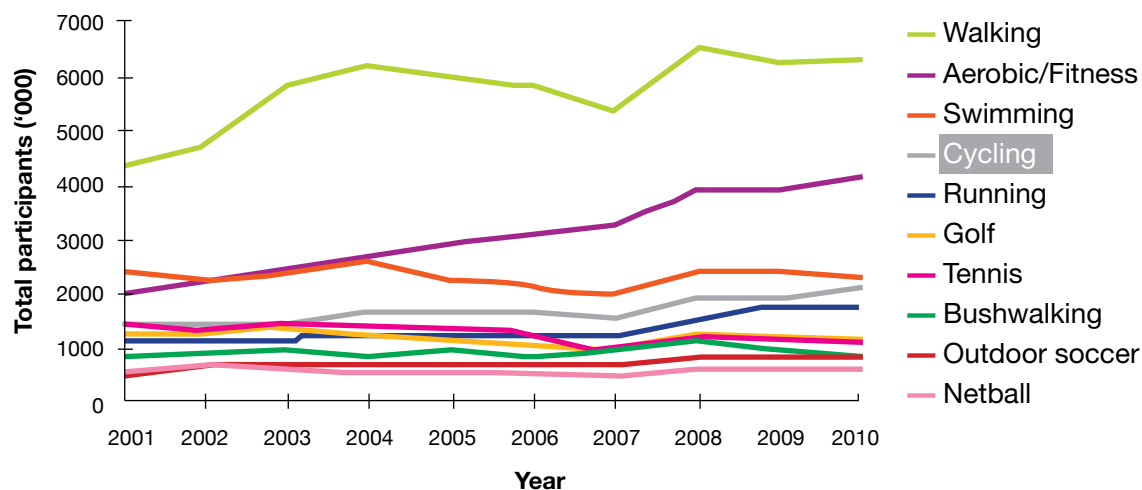
As Australians continue to lead time poor lives, cycling is in a unique position for its ability to integrate physical activity into everyday living. Even those who don't ride benefit from a cleaner environment and a healthier community.

WHO CYCLES?

National figures show that - in line with global trends in comparative countries- more and more people in Australia are riding a bike – for recreation, exercise, sport or transport.³

Cycling now rates as the fourth most popular physical activity undertaken by Australians.

Figure 1⁴ – Physical participation rates



National participation rates for non-organised physical activities are experiencing the biggest growth rate, with cycling again rating in the top four (See Fig.1). The indications are that time constrained people prefer unstructured sporting activities and a greater emphasis on recreation, health and fitness as opposed to competition.¹

The ABS publishes data on the different modes of transport used to get to full-time work or study. In 2011 the national 'modal share' for cycling was 1.6%. While the national figures show mixed results in terms of progress over the past five years, the evidence suggests that cycling is growing in significance as a legitimate mode of transport in particular places, such as on major commuter routes into capital city centres.³

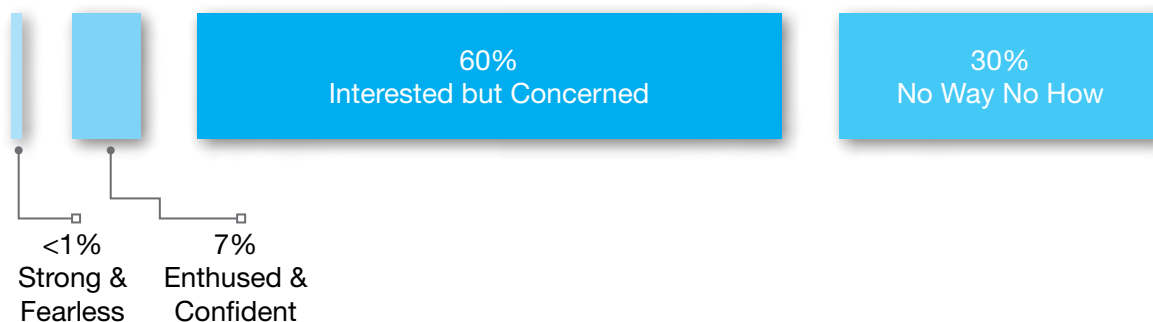
Types of cyclists

To plan for cycling requires recognizing the differences in cycling skills and abilities, providing for and supporting all types of cycling.

A paper on **bicycle rider 'types'** in Portland, Oregon⁵ categorised people into four 'types of cyclists' (Figure 2).

The graph demonstrates that there is a large group of potentially regular cyclists who are "interested but concerned". The task is to mitigate their concerns.

Figure 2 – Four types of Cyclists by proportion of population (Portland, OR)



Austroads⁶ further divides 'cyclists' into the following categories: Non-cyclists/potential cyclists, Primary school students, secondary school students, recreational riders, commuters, utility cyclists, touring cyclists, and those who ride as a sport. Rider abilities and confidence vary considerably within most of these groups.

While Australia does not have a cycling population the size of many of its international counterparts, the success of other countries shows that it is possible to do more to make cycling an easy choice for citizens.

POLICY FRAMEWORK

All levels of Government in Australia recognise the imperative to plan and invest in cycling infrastructure and associated facilities and programs.

The **Australian National Cycling Strategy** 2011 - 2016³ is a strategic document with a vision to double the number of people cycling over the life of the strategy so that individuals and communities can enjoy the benefits of cycling.

The **NSW Bike Plan**⁷ acknowledges that well-planned and integrated bicycle networks can contribute to more accessible, sustainable and connected communities. It sets a 10 year target (2006-2016) to double the use of commuter cycling in NSW with an infrastructure plan to invest at least \$5 million every year for local councils across NSW to complete neighbourhood cycleway networks.

The **NSW Transport Masterplan**⁸ and the **Mid-north Coast Regional Transport Plan 2013**⁹ supports this vision with specific Council funding programs designed to increase rates of cycling.

The **COFFS HARBOUR 2030 Community Strategic Plan**¹⁰ was developed to set a direction for the whole community following comprehensive community consultation. The Plan contains five themes with levels of actions. The most relevant themes and strategies for the Bike Plan are:

Moving Around

“...Many of us walk and cycle from place to place. We are well connected to each other and services”

- Promote increased public transport, pedestrian and **cycle usage** and reduced car usage
- Integrate **cycleway** and footpath networks including linking schools, shops and public transport
- Ensure adequate maintenance and renewal of roads, footpaths and **cycleways**
- Facilitate safe traffic, **bicycle** and pedestrian movement

Looking after our Environment

- Reduce our carbon footprint

Places for Living

- Provide public spaces and facilities that are accessible and safe for all

Looking after our Community

- Promote healthy living
- Develop inclusive community, sporting and recreational events and activities

The Coffs Harbour City Council (CHCC) Bike Plan 2014-2019 aims to provide a strategic and coordinated approach in order to achieve these Vision 2030 outcomes and to support National and State objectives.





2. CYCLING IN COFFS HARBOUR

OVERVIEW

The CHCC Local Government Area (LGA) encompasses 1174 km², stretching approximately 60km from Red Rock and Corindi in the north to Bundagen in the south, and some 25km west past Brooklana and Lowanna.

Located approximately halfway between Sydney and Brisbane, the Coffs Harbour region is valued as a desirable place to live and as a popular holiday destination, with an airport, a marina, and a major railway station.

Coffs Harbour is said to have one of the best climates in Australia. Its subtropical temperatures, cooling sea breezes and mild winters are ideal for year round cycling.

The region is generally characterised by its natural features: beautiful beaches and coastline including the Solitary Islands Marine Park, National Parks, State Forests and parkland.

Coffs Harbour is the place where the mountains of the Great Dividing Range meet the sea. Residential areas form a linear strip along the coast with a number of small rural villages in the valleys of the undulating hinterland such as Coramba, Nana Glen and Karangi, providing some challenges for cyclists but also many quiet rural roads and expansive views.

In the coastal strip there are three main urban areas:

- ① **Coffs Harbour**
- ② **Sawtell, Toormina and East Boambee** approximately 10km to the south
- ③ **Woolgoolga and the Northern Beaches** 10 - 40 km to the north

The current population of 71,000 is predicted to expand to nearly 100,000 by the year 2030 along with an expected increase of almost 20,000 additional dwellings throughout the Coffs Coast sub-region by that time.⁹ If there are no significant changes in choices of transport mode, current trends could result in daily traffic on our roads increasing by an average of 4,000-5,000 private car trips every year

The Pacific Highway provides the key regional connection through the LGA, cutting through several urban areas. From a cycling perspective, the Highway serves as an arterial route, stretching 60km north to south. Upgraded sections of the Highway have a wide shoulder which is an ideal surface for touring and experienced long distance cyclists, however many existing sections are challenging and unsuitable for cyclists due to high traffic volumes, speeds and narrow shoulders. The Highway also forms a significant barrier to east/west local traffic movement, particularly in the central Coffs Harbour urban area. Progressive upgrades of the Pacific Highway are changing the nature of arterial traffic flows through the LGA with positive opportunities for cycling connectivity.

Figure 3 – Coffs Harbour City Council Local Government Area



CURRENT CYCLING ROUTES & INFRASTRUCTURE

The current cycle 'network' in the LGA comprises 59km of 'off-road' shared paths, as well as some sections of on-road bike lanes, and low-traffic on-road sections that form part of signposted routes.

The most popular cycleway in the area is the **Hogbin Drive** shared path. Built in the mid-1980s, it is the main link between the satellite towns of Sawtell and Toormina, and Coffs Harbour. In 2006 the construction of the Northern link road section of North Hogbin Drive, with a separated shared path on one side, created a 10km continuous off-road pathway link from Arthur St in Park Beach to Sawtell Road, Toormina.

The 8 km **Coffs Creek Cycleway** circuit was upgraded in 2011. The \$2 million project was funded as part of the Federal Government's Economic Stimulus Plan and a generous donation from the Hogbin family of Coffs Harbour. The shared path -part sealed, part unsealed- winds in and out of pockets of bushland and mangroves along the banks of Coffs Creek. It links the CBD with some of the city's major tourist and recreational destinations - the Regional Botanic Garden, Pet Porpoise Pool, Jetty Beach and Park Beach, as well as providing a commuter route connection, either to the CBD, or through to the Hogbin Drive cycleway.

Construction of a section of off-road cycleway on the **Pacific Highway** near Stadium Drive in 2014 (funded by the Roads and Maritime Services) will complete 8.5km of continuous off-road shared path along the Pacific Highway south from Combine Street, on the edge of the Coffs Harbour CBD to Lyons Rd, Boambee.

Plans are underway to reseal and line mark a section of the former Pacific Highway route – now named **Pine Creek Way, Bonville** – as it functions as a local road. The new line marking will include two 1.5 – 2m bicycle lanes, providing a low traffic on-road cycling route option linking to the Bellingen Local Government Area. It is frequented by many recreational cyclists and forms part of the annual NAB Coffs Coast Cycle Challenge route.

In the north, the 25km **Sapphire to Woolgoolga upgrade (S2W)** Pacific Highway upgrade, due for completion in 2014, includes a service road with a continuous cycleway - **Solitary Islands Way**. This will provide a significant improvement in cycling connectivity between the coastal villages.

The **Coastline Cycleway** is a NSW Government funded project which aims to form a continuous and safe cycling route between the Queensland and Victorian borders. Its goal is to link together separate coastal communities, and to form a spine to which local cycleways can connect. The completed route will provide significant tourism and economic opportunities.

Since seed funding began in 2003, Coffs Harbour City Council has been successful in obtaining Coastline Cycleway matched funding for several projects. These have gradually increased the connectivity and continuity of the network:

Woolgoolga to Arrawarra cycleway (7km) - \$920,000

Beacon Hill, Howard Street to Camperdown Street link (1.2km) - \$150,000

Wharf Street to High St, Woolgoolga shared path (2.14km) - \$250,000

Diggers Beach Road to Charlesworth Bay Drive study and concept design (660m) - \$14,750

Howard St, Coffs Harbour transition funding - \$57,453

There are a number of other popular, on-road routes frequented by local road and touring cyclists, such as **Bucca T** (Bruxner Park Road, Central Bucca Road and Bucca Road) and **Eastbank Road** between Nana Glen and Coramba. More routes like these are included in the Our Living Coast -Popular Cycling Routes¹² booklet produced in 2011.

Other Council owned cycling facilities owned by council include the **Velodrome and Criterion track** in Toormina, the **BMX track**, also in Toormina, and the **Lions Bike Safety Park** in Bray St.

There are many local State Forest Mountain Bike (MTB) trails which are popular with a growing number of riders. An occupation permit for mountain biking in Pine Creek State Forest is held by Coffs Harbour Cycle Club. The trails at the **Pine Creek Mountain Bike Park** are built and maintained by club volunteers but are open to all visitors and members of the community free of charge.



THE CYCLING COMMUNITY

Coffs Harbour is home to several active cycling clubs and groups, including the **Coffs Harbour Cycling Club** (incorporating road racing, mountain biking, and track racing) **Coffs Harbour Triathlon Club**, **Coffs Harbour BUG** (Bicycle User Group), **Sawtell and District BMX Club**, **Coffs Downhill**, as well as various informal social cycling groups, such as the Saturday morning community ride and the Lycra Free riders.

As a sign of the growing popularity of cycling in the area, the annual **NAB Coffs Coast Cycle Challenge**, organised by Rotary began in 2009 and has become a signature event in Coffs Harbour. The **BCU Triathlon**, first held in 2013, attracts world class triathletes, and the **Woolgoolga Community Triathlon** is an annual festival event. The **Pleasure and Pain Enduro**, an annual mountain bike event held at the Pine Creek Mountain Bike Park, is rated as one of the most popular in Australia. Sawtell BMX club hosts one of the **BMX NSW State Series Events**, and the **RedAss NSW/ACT Downhill State Series** has been hosted at Mt Coramba in previous years.

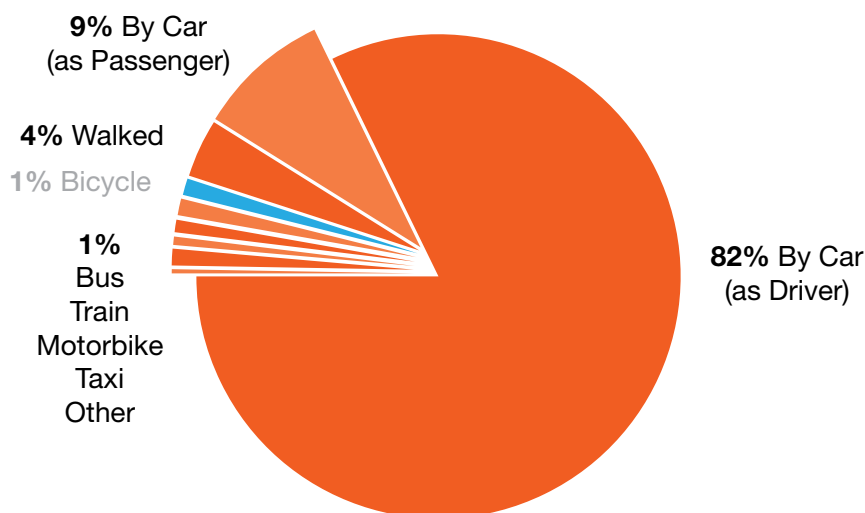
For details of cycling groups and events see **Appendix 1**.

THE NUMBERS – WHO, WHAT, WHERE AND HOW?

Commuter cycling

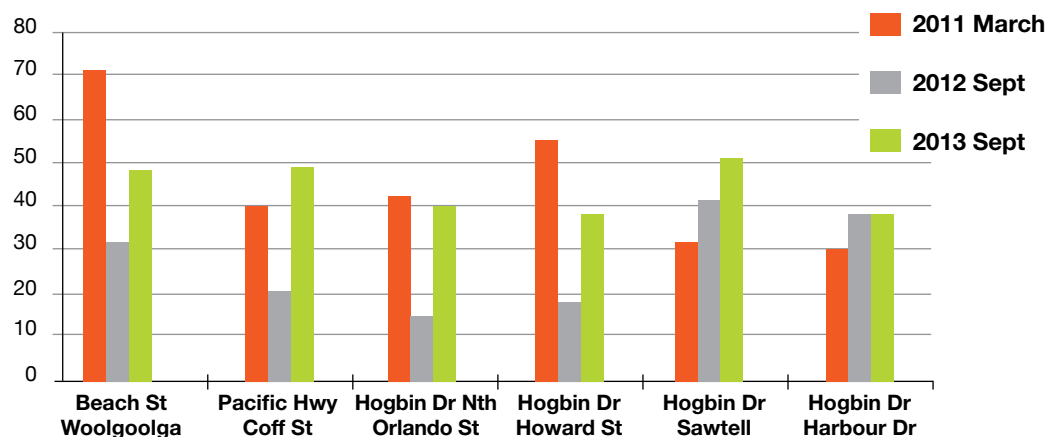
In the 2011 census the modal share for cycling to work in the Coffs Harbour LGA was 1%. This is similar to the NSW benchmark, but below the national figure of 1.6%.¹³

Figure 4 - 2011 Census: Method of travel to work - Coffs Harbour region



CHCC began collecting cycling specific data in 2011 through annual participation in the national **Super Tuesday Bicycle Commuter survey**.¹⁴ Super Tuesday is the country's biggest visual bike count, which takes place in March and in September at over 1200 sites. The count is designed to measure bike commuter flows in the morning peak. Bicycle movements are counted annually over two hours (7-9am) at more than 20 intersections.

Figure 5 - Super Tuesday Bike Counts: 2011-2013
Busiest Commuter Locations in Coffs Harbour LGA



Due to wet weather experienced for the count in March 2012 a second count was commissioned for September 2012. As March is the wettest month of the year in Coffs Harbour, the Super Tuesday count for Coffs Harbour now continues to be conducted in September.

Further years of data are needed to reflect general trends – and figures should also be analysed in respect to local conditions at the time. For example, the weather on Tuesday Sept 4, 2012 was fine; however it had rained the previous day.

The popularity of the Hogbin Drive cycleway indicates that the linking up of key arterial routes into town centres and major trip generators such as the hospital and education establishments will increase the number of commuter cyclists.

Woolgoolga is also clearly a popular place for cycling, possibly reflecting the recent investment in cycling infrastructure, such as the Woolgoolga to Arararra cycle route.

Links to the Coffs Harbour reports from 2011 – 2013 may be found on the [Coffs Harbour City Council website](#).

Recreational Cycling

Council conducted its first recreational bike count - the **Spring Sunday**¹⁵ count - on Sunday 24th November 2013. Bicycle movements were counted over four (4) hours on Sunday morning, (7-9am and 10-12 noon) at 17 sites.

The four highest count sites across the total four hours were all on separated paths or designated routes that connect localities.

The four lowest count sites (West Coffs, Corindi, North Sapphire and Sandy Beach) were in spots with no connections to other localities via separated paths or established bike routes.

Figure 6 - Spring Sunday 2013: Busiest recreation count spots

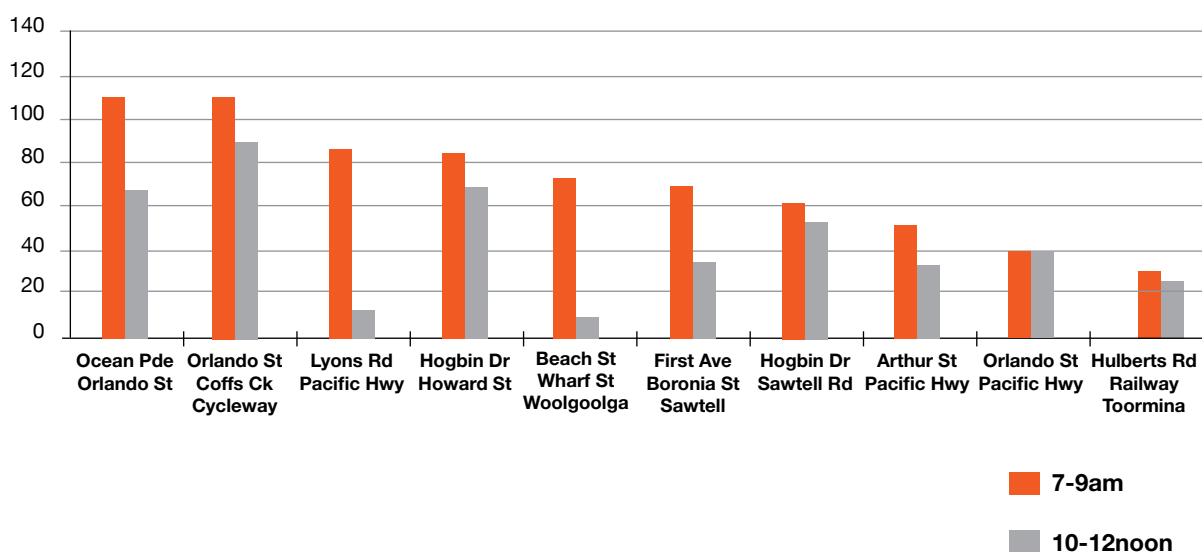




Figure 7 - Total movements through Spring Sunday 2013 count spots over 4 hours



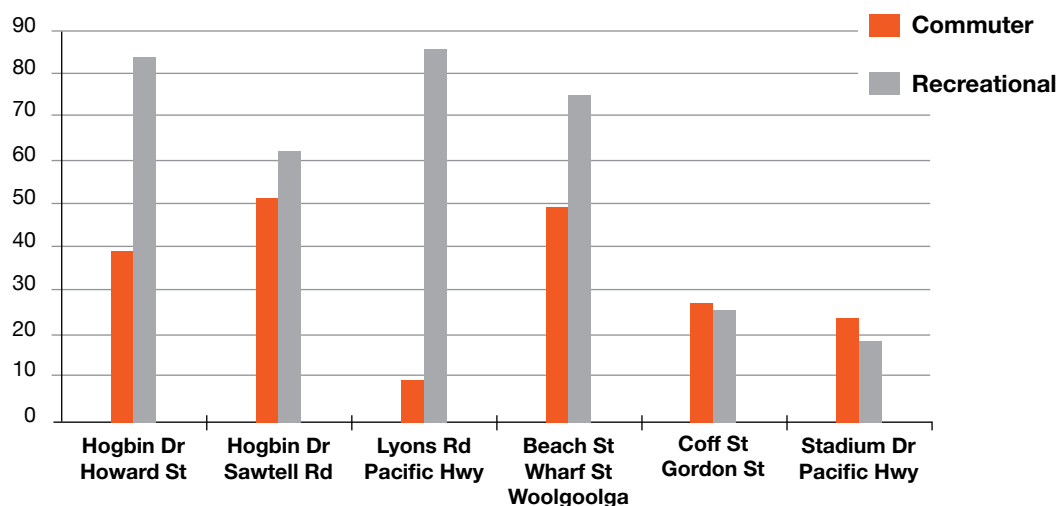
The popularity of the Coffs Creek Cycleway and Ocean Parade path indicates there is a clear community interest in cycling access to our beaches and foreshores.

Hogbin Drive is also a favourite choice of recreational cyclists. Pine Creek Way, whilst not a commuter route choice, is clearly a popular route for Sunday morning cyclists, with Lyons Road being the most commonly used link from the East.

Anecdotally, surveyors noted the popularity of cafes on cycle routes for recreational cyclists in centres such as Woolgoolga and First Avenue, Sawtell.

Comparison of the Super Tuesday and Spring Sunday surveys show that more people are cycling for recreation which has implications for infrastructure planning, tourism and marketing.

Figure 8 - Comparison of commuting and recreational data 2013: Super Tuesday and Spring Sunday - 7-9am



Cycle Tourism

Since 2006 seventy Visitor Profile and Satisfaction survey (VPS)¹⁶ projects have been completed in Australian regional tourist destinations, and data from these projects has been collated to establish the VPS Benchmark Database. (Benchmarks are the average of all (unweighted) VPS destination projects with at least 50 respondents.)

In a first VPS commissioned by CHCC (Coffs Coast Marketing) in January/February 2011, the participation rate for cycling (as an activity participated in during their stay) was 7%. This represented a low participation rate compared to other activities, however it was just above the VPS benchmark of 5%. It is anticipated that the next VPS survey for Coffs Coast may be commissioned in 2016.

Community Feedback

CHCC Community Levels of Service Survey 2012¹⁷

In January 2012, CHCC commissioned Jetty Research to conduct a random telephone survey of 500 adult residents living within the LGA. The survey aimed to assess satisfaction with, and priorities towards different Council-managed facilities and services using a random and statistically valid sample. It was also designed to provide baseline data from which longitudinal (i.e. time-based) comparisons could be made in future years. In the survey 'satisfaction with footpaths and cycleways' was rated at a mean of 3.17 out of 5.00. It was, however, one of the services that fell into the category, or 'quadrant' of higher importance but lower satisfaction. The survey concluded that services in this category

should be reviewed in terms of focus and/or resources to improve community satisfaction. It will be conducted every 2 years and will serve as an indicator of progress towards Vision 2030 objectives.

Bike Plan Online Community Survey ¹⁸

CHCC conducted an online survey during November 2013 to collect qualitative feedback from the community about cycling facilities across the Coffs Harbour LGA.

Respondents were asked to specify:

- Anything that they 'liked' or 'appreciated' about any of the existing cycling facilities.
- 'Missing links' or 'gaps' in the existing 'network'.
- Maintenance/safety upgrade recommendations
- Any signage/navigation recommendations
- Any bike parking facility recommendations
- Water refill stations recommendations
- Anything else

350 people responded to the survey. Total responses varied according to each question category, most of which allowed two nominations.

Table 1 - Coffs Harbour City Council Community Levels of Service Survey: Most popular responses 2013

Viewpoint	Detail	Popular responses
Most liked or appreciated	Hogbin Drive and connection to Sawtell/Toormina	94
	Coffs Creek Cycleway	82
	Safety aspect of having separate paths to ride on	138
Missing Links	Northern Beaches to Coffs	105
	Lyons Rd	47
	Access into the CBD	34
	End of Hogbin Drive to Sawtell	14
Upgrades/safety, Maintenance priorities	Hogbin Drive	103
	Coffs Creek Cycleway	29
	Lyons Rd	28
	Orlando St	23
	Stadium Drive	19
	Improved roundabout transitions	17
	Regular sweeping of debris	45
Signage	Wayfinding signage:	
	Coffs Creek Cycleway	20
	Hogbin Drive	29
	Jetty	26
	CBD	20
	Pacific Highway north and south	20
	Maps	16
Bicycle parking facilities	Signs for visitors	14
	Jetty foreshores or Jetty Strip, Marina	52
	More in the CBD	29
	Sawtell Headland	21
Water refill station	Not necessary	36
	Jetty	43
	Sawtell	30
	Not a priority	42

Crash data¹⁹

Roads and Maritime Services collect crash data of on-road incidents that are reported to Police. There were 67 reported bicycle crashes in the Coffs Harbour Local Government Area from 2008 – 2012. The trend is for an increasing number of crashes each year (an average of 3.7% of total crashes per year.), however this could be attributed to the increasing popularity of cycling over this period of time.

Table 2 - Number of bicycle crashes in the Coffs Harbour LGA: 2008-2012

Anecdotally, Coffs Harbour City Council is also aware of a number of near misses, and other crashes involving pedestrians and non-reported incidents with other vehicles. Almost a third of the reported crashes occurred between 7 and 9 am and almost 70% were on weekdays.

Of the 67 reported crashes, all of them involved an injury – most likely to the cyclist. There were no fatalities. Four (4) riders were not wearing a helmet. 83% involved other vehicles including 37 with cars and car derivatives, eight (8) light trucks as well as four (4) pedestrians.

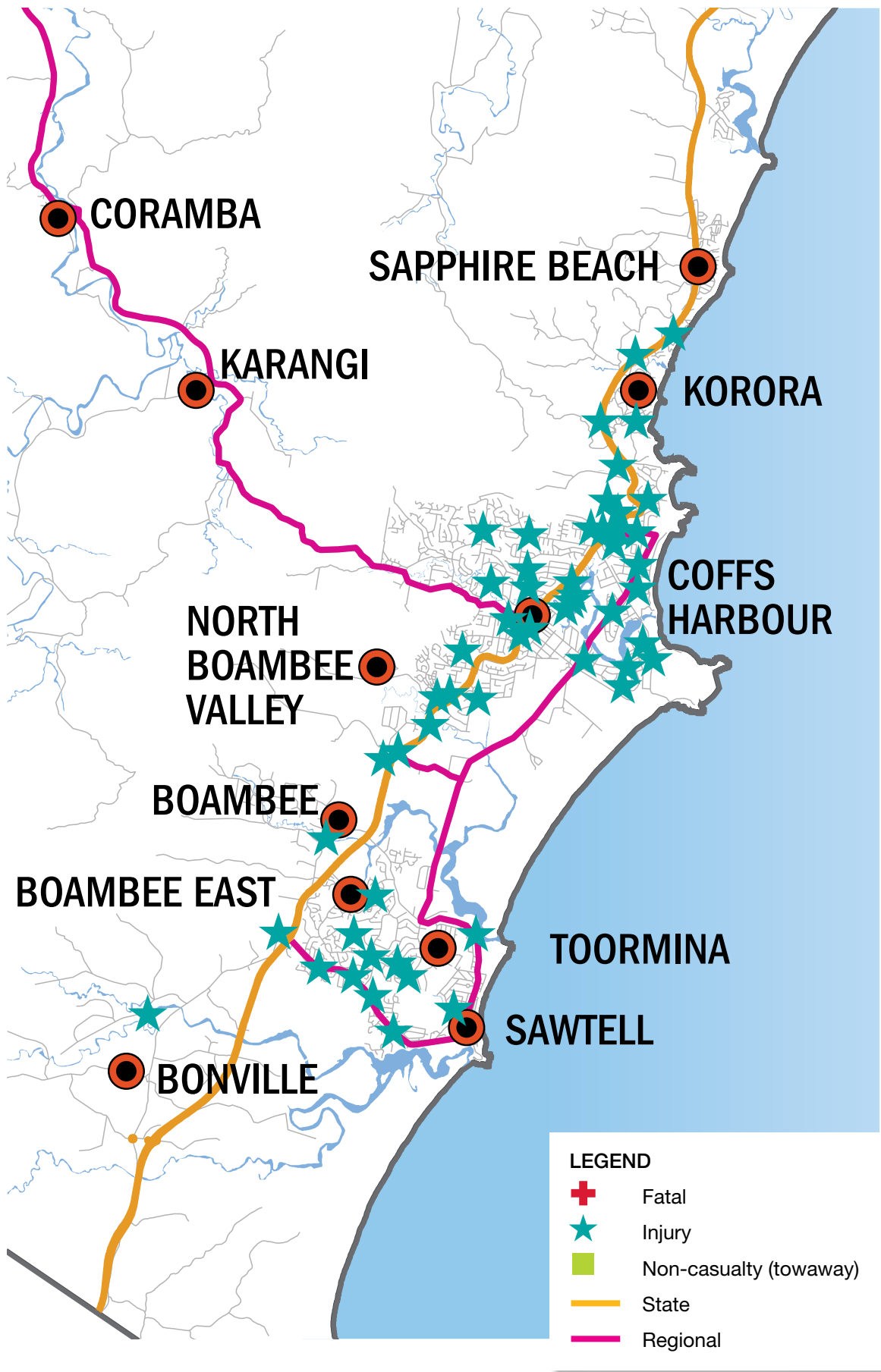


Figure 9 - Bicycle crashes in the Coffs Harbour LGA: 2008-2012

Clusters of crashes

63% of the crashes occurred at intersections. Of the 17 crashes on the Pacific Highway, 8 were on intersections. 3 of these occurred at the Arthur Street / Mastracolas Road roundabout and one 100m East of the roundabout in Arthur Street.

45

of the crashes at intersections involved another vehicle.

5

crashes occurred in Lyons Road – 3 within a kilometre (200m East of Toormina Road to 50m West of Rutland Street)

4

crashes occurred in Park Beach Road. These were all adjacent the entrance to Park Beach Plaza



3. OBJECTIVES

1. Plan and deliver a connected cycling network
2. Improve cycling support facilities
3. Make cycling safer
4. Encourage greater participation

3.1. PLAN AND DELIVER A CONNECTED CYCLING NETWORK

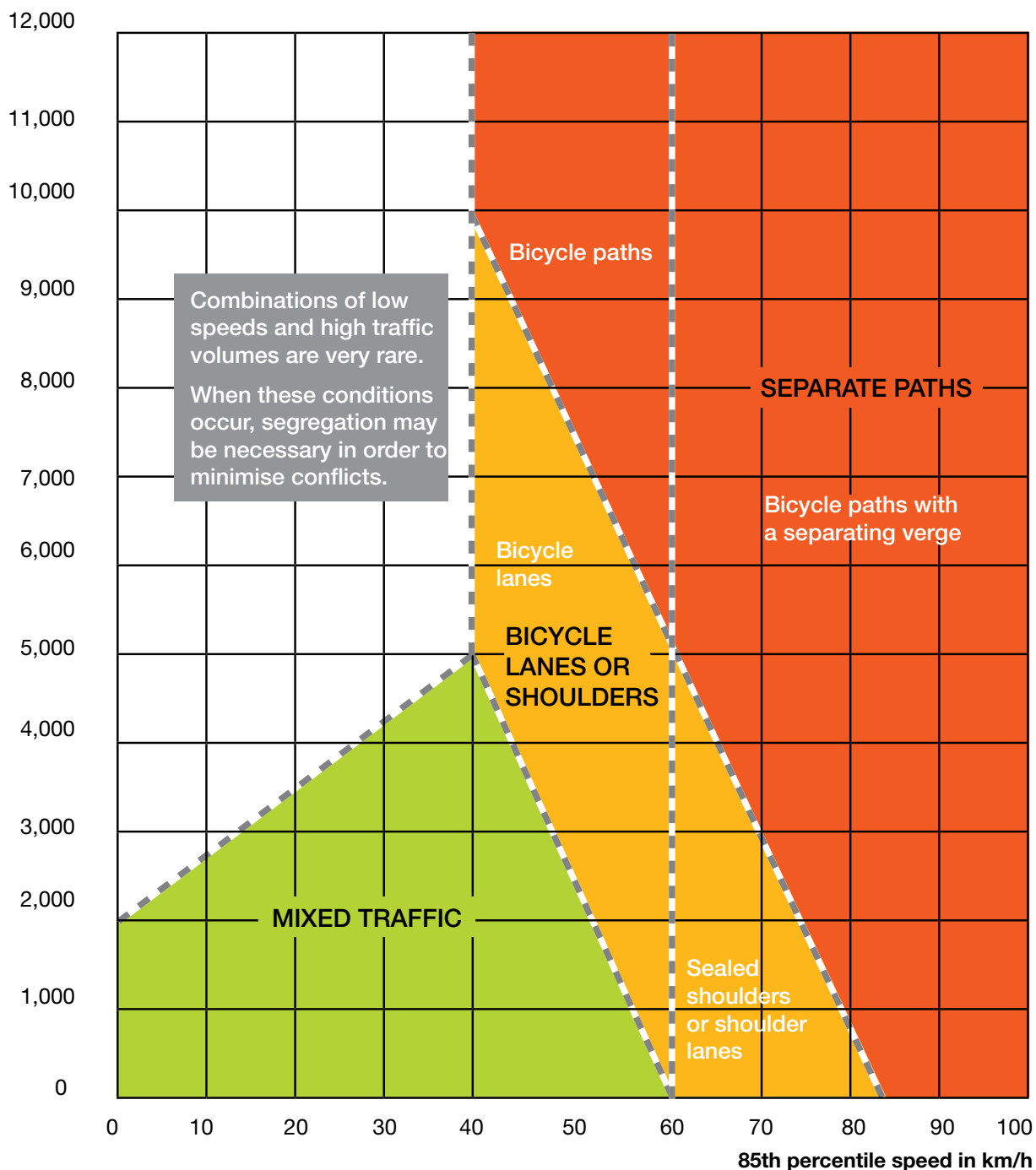
OVERVIEW

Under Australian and NSW road rules²⁰, bicycles are considered to be vehicles. As such riders have a legal right to use all public roads, unless specifically prohibited by signage or markings. Riders may ride on a footpath if they are under 12 years old, or supervising a rider under 12 years old.

The basis of a cycle network is the road network, augmented by special on-road and off-road facilities. A cycle route may range from mixed traffic, on road routes sharing road space, to off-road separated paths. Safety is paramount, but different design treatments can apply to reflect the different functions of cycleways. The degree of separation and protection from other road users depends on the volume and speeds of traffic as illustrated in **Figure 10**.

Figure 10²¹ - Separation of bicycles and motor vehicles according to traffic speed and volume: Urban roads

Volume of motor vehicles (vehicles per day)



Note: This diagram is to be applied to urban roads and is not appropriate for rural or non-urban roads

All components should link into and complement the existing network which should be easily comprehended.

Table 3 provides an example of guidelines for the selection of an appropriate type of bicycle facility. It relates the degree of separation required for cyclists to the speed and volume of general traffic.

Table 3 - Bicycle network functions: Details the features that are also important to form a good bicycle network

Network	Network function	Cyclist operating speed
Regional bicycle network ¹	High-quality, high-priority routes to permit quick, unhindered travel between the major regions of cities, towns or urban areas	25 – 40 km/h
Local bicycle routes	High-quality routes with seamless connections to regional routes. These routes connect the local system to the major regional routes	20 – 30 km/h
Mixed traffic streets (door to door access to all destinations)	Low speed, low volume local access to residential destinations in 'low-stress' shared environments	< 20 km/h

¹ Principal bicycle network in some jurisdictions

Table 4 - Bicycle network features: Guiding principles when designing a cycle network

Route feature	Comments
Safety	Minimal risk of traffic-related injury, low perceived danger, space to ride, minimum conflict with vehicles
Coherence	Infrastructure should form a coherent entity, link major trip origins and destinations, have connectivity, be continuous, signed, consistent in quality, easy to follow, and have route options
Directness	Route should be direct, based on desire lines, have low delay through routes for commuting, avoid detours and have efficient operating speeds
Attractiveness	Lighting, personal safety, aesthetics, integration with surrounding area, access to different activities
Comfort	Smooth skid-resistant riding surface, gentle gradients, avoid complicated manoeuvres, reduced need to stop, minimum obstruction from vehicles

Tables adapted from *Austrroads 2014 Cycling Aspects of Austrroads Guides*, Sydney, Australia

Proposed Coffs Harbour LGA cycle network

The proposed CHCC cycle network builds on the solid base of cycling facilities developed over the last few decades and will apply principles noted above and in the current guidelines.

The Pacific Highway alignment is the primary regional arterial route that forms the spine of network. It follows the key north-south route through the major urban areas of the LGA and caters for cyclists 'on a mission', such as commuters, and touring cyclists, taking the most direct route alignment.

Primary minor arterial roads, such as Hogbin Drive, and Solitary Islands Way, and an ultimately connected Coastline Cycleway route, form the supporting, parallel framework.

Local routes and links form strategic connections with the regional route, connecting the local street systems. These minor arterial, local and scenic routes link locals and visitors to trip generators such as beaches, reserves, shops, schools and sporting facilities.

The map on page 30 shows the arterial network and Coastline Cycleway in the Coffs Harbour Local Government Area.

The following seven maps divide the Local Government Area into sections for more detail showing the existing and proposed network.

These maps may also be viewed in greater detail using the mapping tool (e-view) on Council's website.²²

See Appendix 3 for Cycleway Network Detail list which shows the type of facility, status and other comments.

Figure 11 - The arterial network with strategic connections

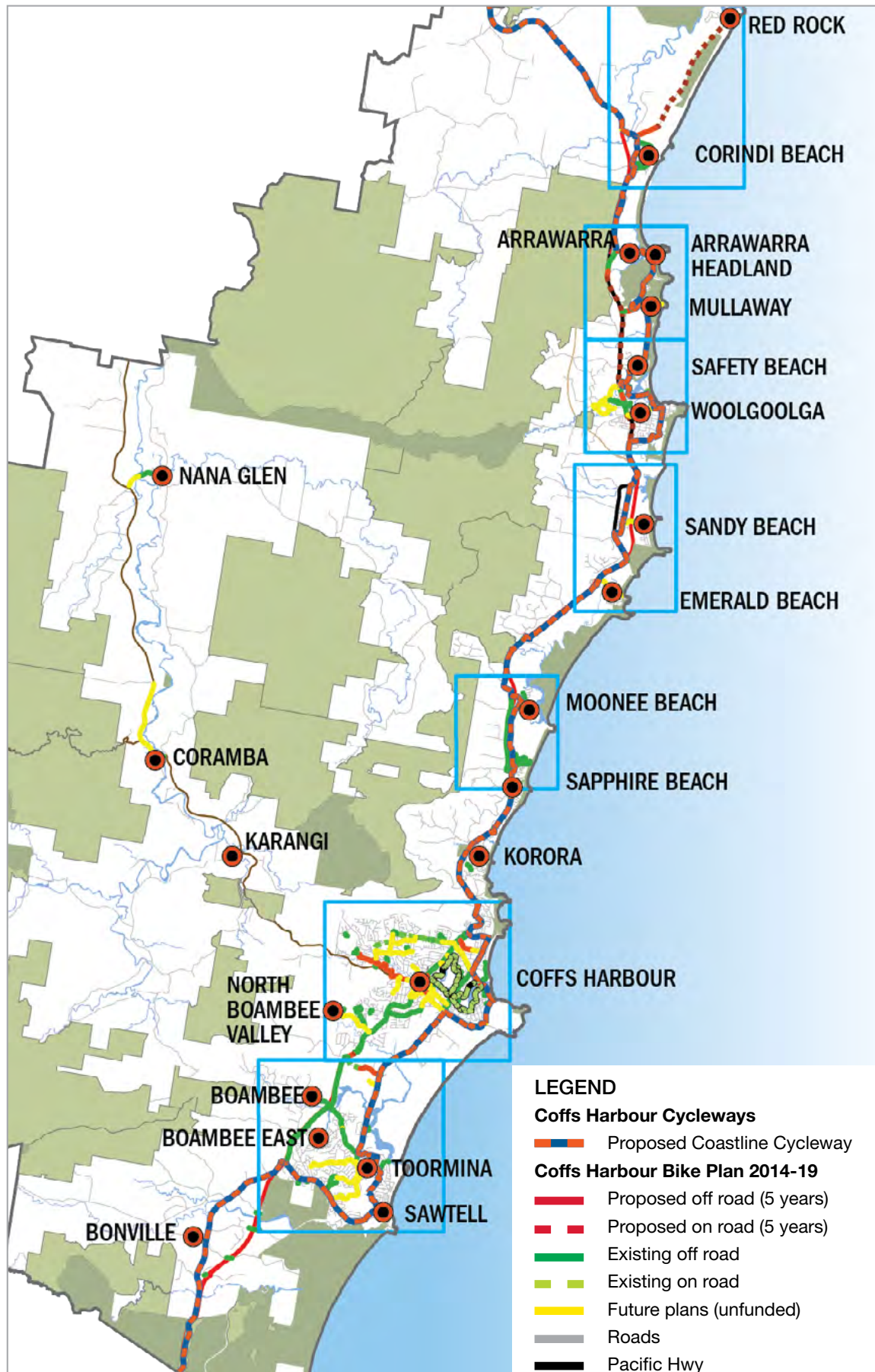




Figure 12 - Cycleway network: Corindi area

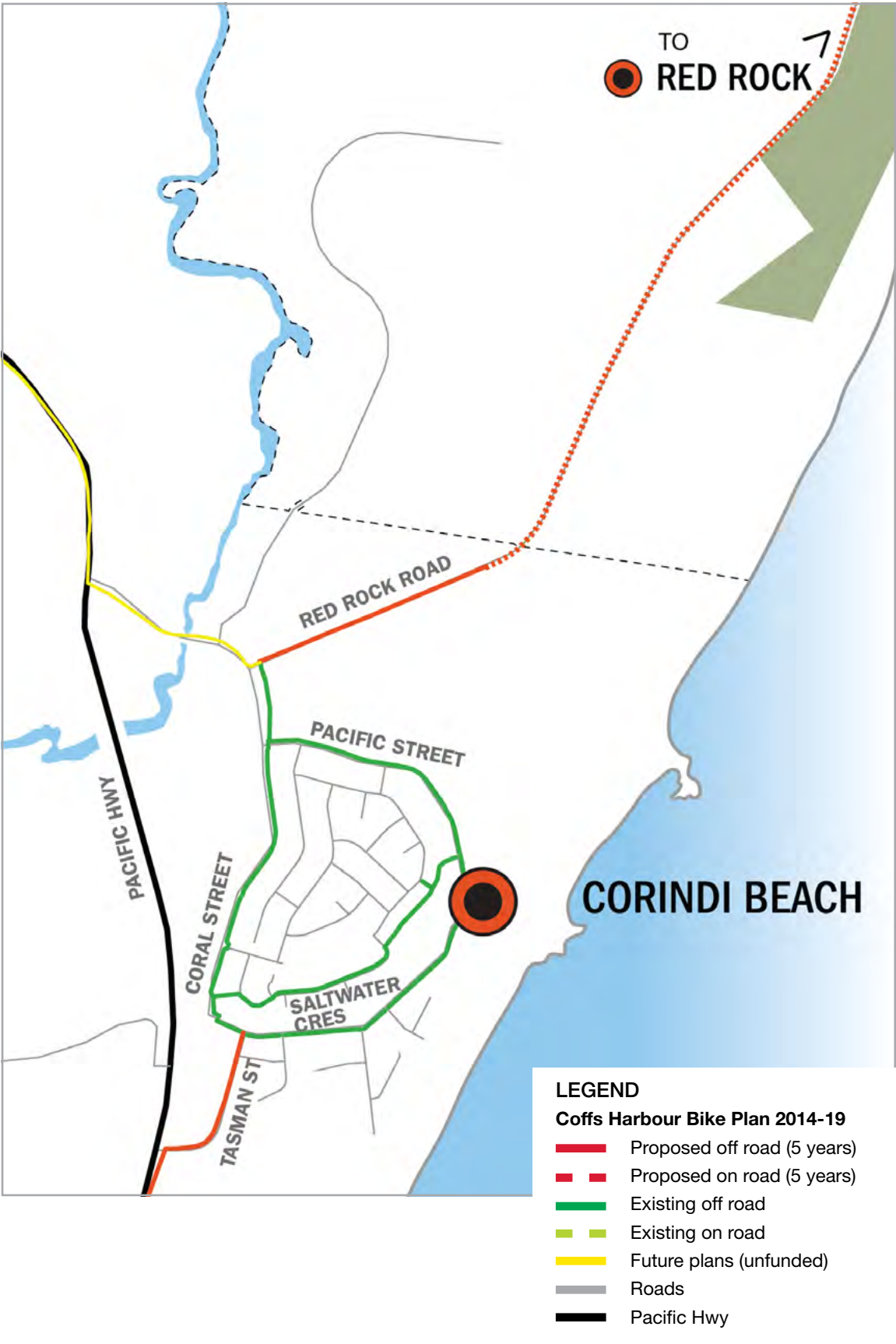


Figure 13 - Cycleway network: Arrawarra area



Figure 14 - Cycleway network: Woolgoolga area



Figure 15 - Cycleway network: Sandy Beach area

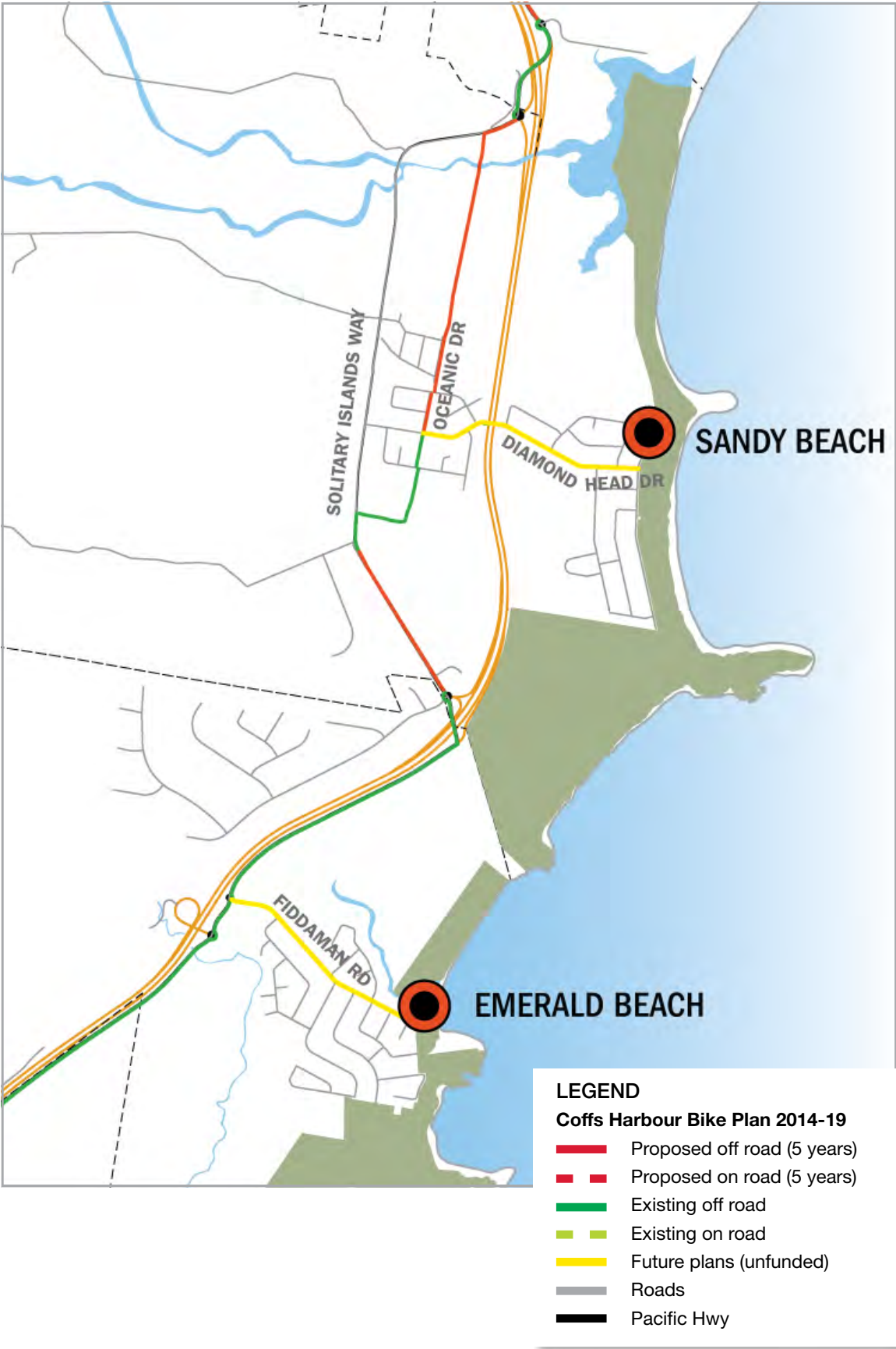


Figure 16 - Cycleway network: Moonee Beach area



Figure 17 - Cycleway network: Coffs Harbour area

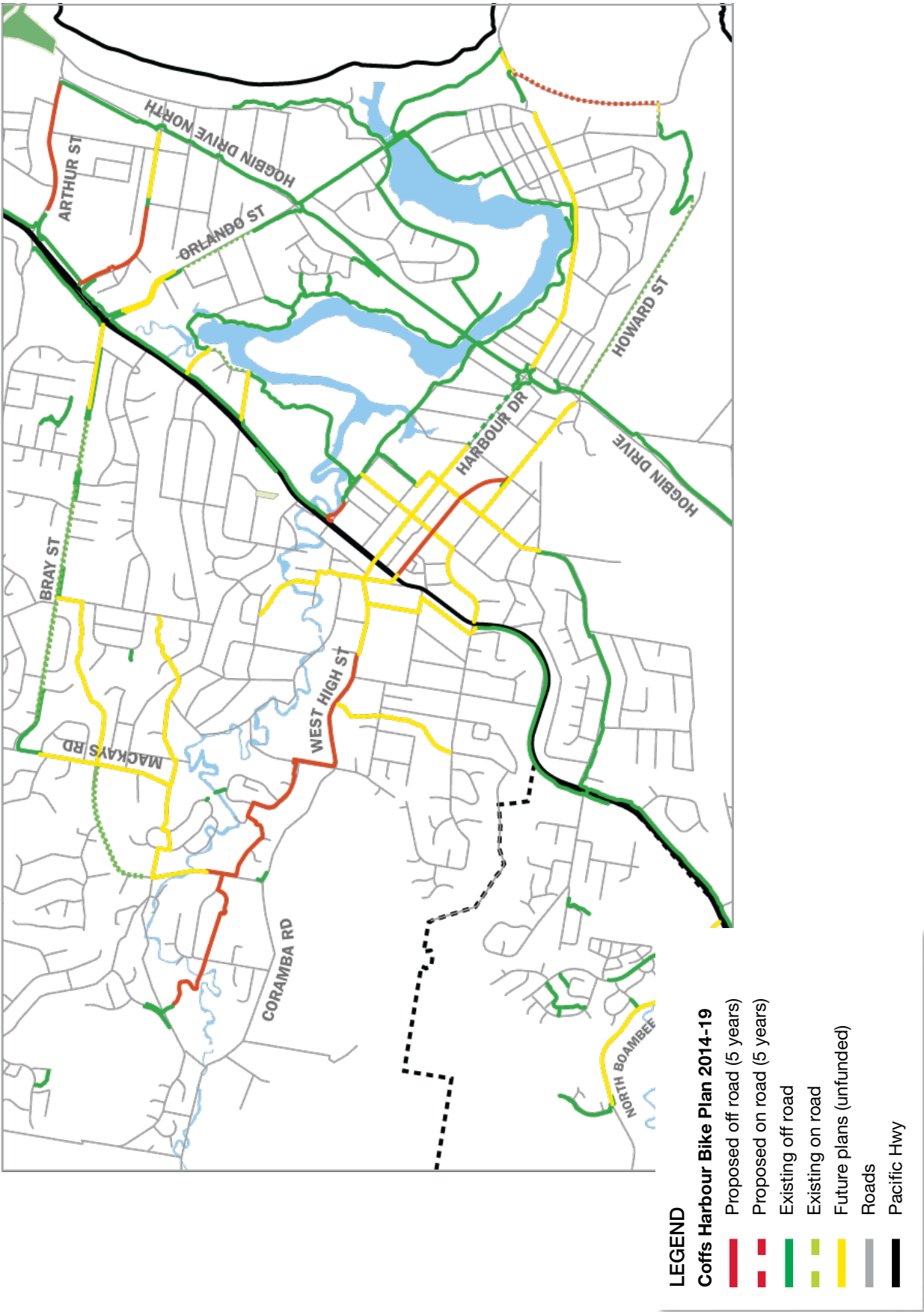
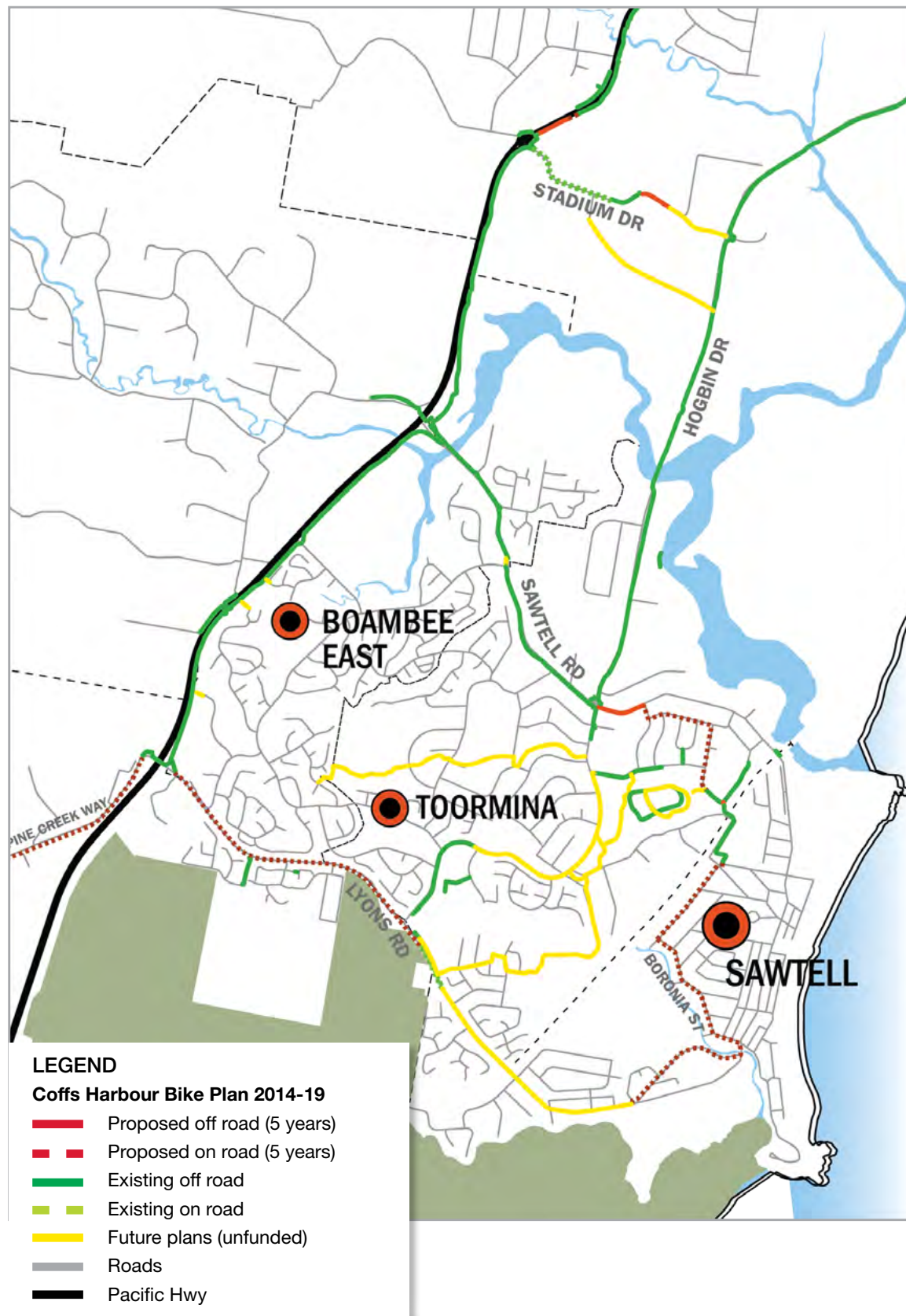


Figure 18 - Cycleway network: Sawtell area



Route concept and design is based on principles such as:

- Provision of cycleways in accordance with the Coffs Harbour Road Network Hierarchy¹¹
- Completion of missing links and high priority connections
- Convenient access into and through residential, commercial and industrial subdivisions, and major developments.
- Prioritisation of safety upgrades such as transitions, surface treatments, major maintenance and repairs with smooth surfaces and connections
- Prioritisation of high bike traffic links and local catchment areas, as well as trip generators such as retail centres, recreation, education, public transport hubs and entertainment facilities
- Cycle connections to the network at frequent intervals, maximising directness of travel for long distance commuter trips and short local trips.
- Use of low traffic volume streets and roads, with traffic calming where appropriate; links between cul-de-sacs, existing laneways and paths on reserves.
- Consultation with bicycle interest groups
- Referral to the Council Bikeplan for all new bicycle infrastructure
- Use of key design principles – coherence, directness, safety, attractiveness, comfort
- End of trip facilities
- Implementation of regulatory, warning and guidance signage on paths.

Austrroads²³ list six basic requirements for all cyclists:

- Space to ride
- A smooth surface, free of debris
- Speed maintenance
- Appropriate sight lines to path surface
- Connectivity
- Information

Planners and designers should refer to the Austrroads guides listed below for more information.

It is important for designers to consider all types of cyclists when designing cycling infrastructure. For example there are now bikes with trailers, handcycles and people in motorised wheelchairs, as well as beginner cyclists who may not steer a straight line and road bike bunches (pelotons).

Cyclists need to be able to maintain momentum with minimal obstacles on the cycleway. Road authorities should avoid terminal barriers except in exceptional circumstances following a risk assessment and with reference to **Austrroads The Guide to Road Design: Part 6a Pedestrian and Cyclists Paths**.

Figure 19 - Paracycling on a hand cycle



Figure 20 - Bike with trailer



Figure 21 - Bollard at end of cycleway³



Consultation with Bicycle NSW and the local Bicycle Users Group (BUG) is essential to ensure suitability of cycling infrastructure for riders:

Bicycle NSW

Bicycle NSW is the peak organisation representing cyclists in NSW. It has 10,000 registered members and potentially represents over two million bicycle owners in NSW. Bicycle NSW is also the umbrella group for numerous BUGs across NSW.

Bicycle User Groups

BUGs and cycling clubs are an important point of external contact for councils on bicycle planning issues.

BUGs are a good source of local walking and cycling expertise and are active participants in council planning processes. Participation extends to development of bikeplans, representation on council traffic committees and submissions on draft planning instruments and development applications. BUGs also organise social rides and participate in community events. All BUG representatives are volunteers.

See Appendix 1: Clubs & Resources page 72

Planning

Guidelines

Austroads publishes the design guidelines for the planning, design and construction of cycling facilities.

In the past, the **Austroads Guide to Traffic Engineering Practice: Part 14 Bicycles** was the guideline document. To ensure bicycle riders were planned for in every road project, Austroads now incorporates bicycle planning and design guidance into multiple guideline documents.

Cycling Aspects of Austroads Guides (2014)⁶ has been developed as a comprehensive overview reference and is available as a free download.

The Guide to Road Design: Part 6a Pedestrian and Cyclist Paths²³ should be used for guidance on the planning, design and construction of paths. This document consolidates information relating to on-road bicycle facilities and provides a summary of key design information for cyclist paths, including the intersection of paths with roads.

Cycleway designers should also refer to the principles and routes concepts outlined in this plan as well as the **Coffs Harbour City Council Road Hierarchy Plan (2008)**¹¹ which gives explicit consideration of pedestrians and cyclists for each category of road under its jurisdiction.

Other references for planners and designers

NSW Bicycle Guidelines²¹

Planning Guidelines for Walking and Cycling NSW⁴²

Disability Discrimination Act²⁴

Walking riding and access to Public Transport²

Note also the “Copenhagenize” bike planning policy which is restricted to four types of cycling infrastructure and does not install bi-directional paths on one side of the road⁴⁹.

See copenhagenize.com

OPPORTUNITIES

Coastline Cycleway grant funding is offered each year to participating regional councils with funding to be matched on a dollar-for-dollar basis. Completing a continuous and branded coastline cycleway route through our LGA will continue to provide a valuable funding source for cycleway projects, whilst fulfilling the objectives of regional and local connectivity.

Pacific Highway upgrades funded by Transport for NSW commit to the provision for associated cycling facilities and offer new opportunities for Council to expand the cycle network for the LGA. Service roads and sections of the old Pacific Highway typically provide low traffic and lower speeds creating improved cycling conditions.

Community feedback during the Sapphire to Woolgoolga upgrade should be applied to the next stage of the Pacific Highway upgrade project to impact the LGA: the Woolgoolga to Ballina upgrade. Cycling facilities to be included in this section upgrade will provide the much needed connection from Corindi to the rest of the northern beaches.

Local catchments and trip generators A large percentage of the population of the LGA lives within 5 kilometres of town centres. With safe cycling infrastructure there is the potential for thousands of people to choose to ride their bike into retail areas, as well as between home and key destinations such as schools, shops, cafes and recreational areas. Almost 70% of all car journeys are less than ten kilometres so for many people cycling could become the natural – and healthier – choice.

Figure 22 - Extract from the CBD Masterplan 2031



The CBD Masterplan notes that if just 10% of existing and new drivers shifted to another mode of transport across the City Centre, it would result in a reduction of approximately 300 parking spaces, and approximately \$4.9 million in carpark infrastructure savings²⁵

Land Use planning Effective planning is essential to improve opportunities for cycling, reduce car use and create healthier neighbourhoods. Development assessment represents the stage at which planning is translated into works and actions and so a key opportunity is the integration of the objectives and actions of the relevant sections of the bike plan into contributions plans. Cycling provision should be included in planning instruments creating a legal obligation for assessment processes to consider cycling.

Cycling infrastructure on new developments should link or contribute to the existing network where applicable. Shared paths are the preferred cycling facility within residential areas constructed to the relevant standards and design principles as outlined previously. Planners are also encouraged to engage with cycling advocates at the planning stage (see Route Concepts and Design Principles Page 38).

The NSW Planning guidelines for walking and cycling 2004⁴² aims to assist land –use planners and related professionals to improve consideration of walking and cycling in their work.

Urban Planning

Cycling facilities will be included in all precinct plans, urban design, and streetscape projects, with priority given to ensuring a connection to the existing cycle network as well as use of best practice in design and construction, and incorporation of Australian standards.

Pedestrian and town centre improvement plans should be aligned to bike plans to ensure that traffic calming devices, pedestrian facilities and cycling routes are complementary.

Current major CHCC precinct projects (at various stages of concept and construction) are the City Centre Masterplan²⁵, Jetty4Shores Project²⁶ and Woolgoolga Town Centre Masterplan²⁷. All of these have opportunities to provide cycle facilities that are integrated with the cycle network.

Figure 23 - The Bike Plan for the City Centre Masterplan



Any **roadwork projects & future roadway planning** should include cycleway provisions and strategic connections to the overall network.

Works programs, such as the installation of new water and sewerage lines, may also provide an opportunity to include cycleways. This infrastructure requires similar topography to cycleways – using easements and flat elevations. For example, part of the Woolgoolga to Arararra cycle route infrastructure was teamed with the Arararra/Mullaway sewerage project including the construction of the bridge over Darkum Creek.

The **Open Space Strategy (2010)**²⁸ highlighted the priorities and benefits of integrating paths through and around reserves, recreational facilities and existing laneways with the cycleway network. There are significant opportunities to improve connections between open spaces by improving the quality of links along drainage corridors as well as improving the quality of the road network and pedestrian and bicycle connections into and between open spaces, as well as within planned future residential areas.

The planning for West Woolgoolga Sports complex and the Toormina Sports Complex are examples of how planning of shared paths into and through these facilities provide strategic cycle network connections for the community, with predicted benefits of increased community usage. The urban areas of West Coffs and Sawtell/Toormina have several reserves and open space corridors which would also form an ideal component of a mixed on-road/off-road cycle route linking communities to schools, shops and the main arterial routes.

The **PAMP (Pedestrian and Mobility Plan)**²⁹ reviewed footpath priorities throughout the LGA and recommended integration with the cycle network, and the installation of shared paths instead of footpaths where appropriate.

Consideration of **off-road cycling** is a genuine opportunity for council as a complement to the on-road and shared path cycling network. Mountain biking ('MTB') is a growing adventure sport appealing to all age groups, including families, women and children. Opportunities in this area include researching the viability of formalising unsealed tracks in open spaces managed by Council and other management authorities as 'off-road' cycle routes, and the investigation of a Coffs MTB park concept on land owned by council on Roberts Hill in West Coffs.





PROPOSED CAPITAL WORKS - ON ROAD AND OFF ROAD				
Location	Project	Funding & Costing	Status	Time Frame
Pacific Highway south	MISSING LINK	Funded.	Complete	June 2014
	Englands Road to Cunninghams Banana Stall	RMS CYCLEWAYS 100%		
Howard Street Coastline Cycleway	Beacon Hill to Hogbin Drive improved transition	Funded. Department of Planning	Shovel ready	3 months
West Coffs	Shephards Lane Loaders Lane to Flintwood Place Stage 1 of West Coffs Cycleway	Environmental levy Section 94	Under construction	3 months
Sandy Beach, Graham Drive south Coastline Cycleway	Link along service road from Solitary Island Way south at Highway intersection to Sandy Beach School.	Sapphire to Woolgoolga (S2W) – RMS funded	Council to design and construct	November 2014
Solitary Islands Way/ Old Bucca Rd approach and crossing	Off-road path approach to intersection and crossing	S2W upgrade cycle facilities – RMS funded.	Council to design and construct	December 2014
Arrawarra Creek crossing – bridges and approach Coastline Cycleway	Off-road path to Solitary Island way	S2W upgrade cycle facilities – RMS funded.	Council to design and construct	December 2014
Pacific Highway Coffs Harbour north Coastline cycleway	Diggers Beach Rd to Highway underpass north of Bay Road – off road cycleway study	CHCC and NSW Department of Planning and Infrastructure	Costed design completed – proposal to extend to underpass for construction	August 2014

PROPOSED CAPITAL WORKS - ON ROAD AND OFF ROAD				
Location	Project	Funding & Costing	Status	Time Frame
Pacific Highway Coffs Harbour north Coastline Cycleway	Diggers Beach Road to James Small Drive	Funded RMS Active Transport Priority Towns Program 100%	Council to design and construct	2014 - 2015
Solitary Islands Way Coastline cycleway	Linemarking along former Pacific Highway between Woolgoolga and Arrawarra to be reviewed to include 3.5m traffic lanes and 1.5 on road cyclelanes; review speed zone	S2Wupgrade cycle facilities – RMS funded	Council to design and install	2015 - 2016

Table 5 - Funded Capital works

PROPOSED CAPITAL WORKS - ON ROAD AND OFF ROAD				
Location	Project & Rationale	Funding & Costing	Status	Time Frame
Sandy Beach north Coastline Cycleway	1300m off road cycleway from Coral Drive / Oceanic Drive across Double Crossing Creek, to Solitary Islands Way north overbridge	Funding: Section 94 contributions RMS cycleway facilities - to be confirmed	Concept design	2015–2016
North Sapphire to Moonee Beach – eastern side Coastline Cycleway	Off road cycleway, to directly link the population areas of North Sapphire and Moonee Beach	S2W upgrade cycle facilities Section 94 contributions S2W/ RMS cycleway facilities – funded	Council to do concept design and costing.	December 2014
Red Rock Rd, Corindi	800m off –road path connecting Corindi Public School to Yarrawarra Aboriginal Cultural Centre. Stage 1 Corindi- Red Rock. Stage 2 Yarrawarra to Red Rock	Section 94 contributions RMS cycleway facilities 2014 -2015 RMS Aboriginal Road Safety Program	Concept design and estimate submitted to RMS for stage 1 Plan to be developed for stage 2	Stage 1 construction 2014–2015 Stage 2 plan 2014–2015 Stage 2 construction – 2015–2016
Lyons Rd, Toormina	450m on off-road shared path; 1300m on-road cycleway; 250m shoulder. This is an arterial route for cyclists from Sawtell to the Pacific Highway and Pine Creek Way	Section 94 contributions RMS cycleway facilities Stage 1 Toormina Road to Rutland	Concept design and estimate submitted to RMS	Stage 1 construction 2014–2015 Stage 2 plan 2014–2015 Stage 2 construction 2015–2016To be confirmed

PROPOSED CAPITAL WORKS - ON ROAD AND OFF ROAD				
Location	Project & Rationale	Funding & Costing	Status	Time Frame
Pacific Highway north Coastline Cycleway	Stage 2 Pacific Highway north missing link: Separated shared path	RMS Active Transport Towns Program	Plans to be developed	2014 – 2015
Pacific Highway north Coastline Cycleway	Stage 2 Pacific Highway north missing link: Separated shared path	RMS Active Transport Towns Program	Application submitted	2016 – 2017 To be confirmed
West Coffs	Shared path from Robin Street to CBD	RMS Active Transport Priority Towns	Application submitted	2015 – 2016 To be confirmed

Table 6 - Funded Design projects



PROJECT DEVELOPMENT 2015–2019			
Location	Project & Rationale	Funding & Costing	Timeframe
City Centre	Map City Centre bike plan connections to the network. Develop priority list of recommended connections	Coffs Harbour City Council	2015–2016
Coramba	Investigate cycleway possibilities to connect Coramba village to sportsground.	Coffs Harbour City Council	2017–2018
Western regional routes	Map connections to Western hinterland villages from Coffs Harbour	Coffs Harbour City Council	2016–2017
Lyons Road to First Avenue Sawtell	Map connection from First Avenue (Boronia St) to Lyons Road (McFadyen)	Coffs Harbour City Council	2017–2018
East Boambee Cycle Links	Map connections from East Boambee to Pacific Highway cycleway and signpost	Coffs Harbour City Council	2017–2018

Table 7 - Project concepts and investigations

For further detail see Appendix 3: Cycleway Detail Connection List

3.2 IMPROVE CYCLING SUPPORT FACILITIES

OVERVIEW

Creating a comfortable and welcoming environment will encourage more people to ride. As well as personal safety, and the ability to navigate within or between locations, the availability of seating, shade, water and toilets; and bicycle parking facilities are significant considerations² and send clear signals that cyclist are welcome in this area.

On-Street facilities may include bicycle parking facilities, water refill stations, pumps, hand/grab rails at crossing as well as lighting.

End of trip facilities include bike storage at work, university or transport hubs as well as racks, lockers, enclosures, clean, functional showers and change rooms.

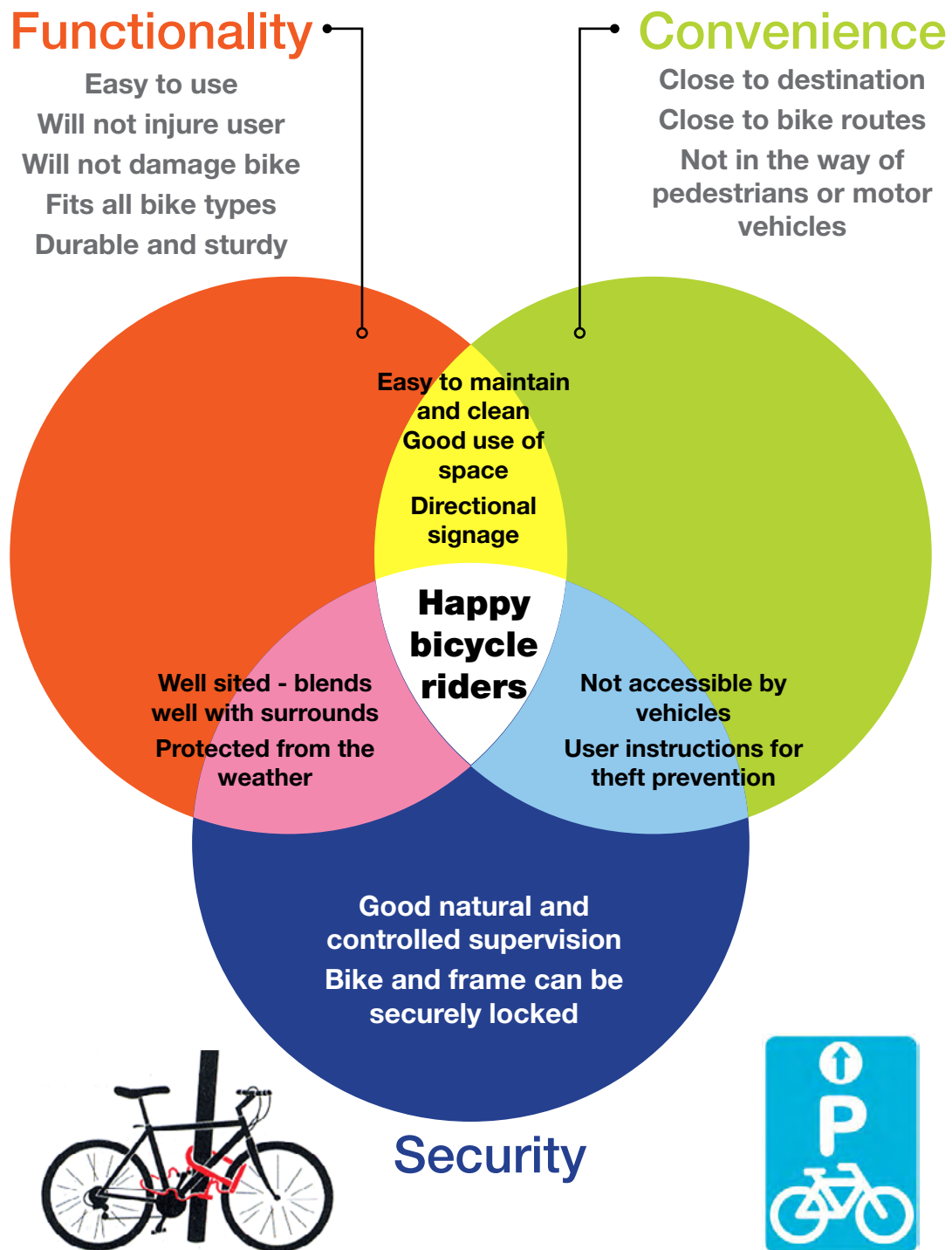
Bike Parking

Good quality **bicycle parking facilities and secure bike parking** encourage people to arrive by bicycle instead of car. Bike racks organise parked bicycles, keep the footpath and public areas free from obstruction, and reduce bicycle theft. From a planning perspective, bike parking assists with the following objectives:

1. Provide for transport needs — of residents, businesses and industries in a manner that promotes sustainability
2. Support economic viability — of residential developments, businesses and industries
3. Reduce car use — particularly for short trips, by improving conditions for walking, cycling and use of passenger transport
4. Encourage bicycle use — by increasing the extent and quality of bicycle parking facilities
5. Provide convenient and safe access to buildings —for all users
6. Minimise conflicts — between people walking, cycling, using passenger transport and driving motor vehicles⁴²

Commercial bike racks need to be easy to use and install, and located where cyclists will most likely use them: close to a cyclist's destination, protected from weather, clearly visible for security and access, and protected from vehicular and pedestrian conflict. Long term parking requires a more secure option such as cages or compounds not more than 100m from the rider's destination.

Figure 24 – Bike Parking Design Principles (from NSW Planning Guidelines for Walking and Cycling⁴²)



Council is responsible for the installation of bike parking in areas within its control: parks, reserves and main street footpaths. There are three types of bike parking:

- All-day parking at trip destinations
- All-day/part-day parking at public transport stations or interchanges
- Short-term parking at shopping centres, offices and other institutions.

Bicycle rack design has evolved noticeably in response to changes in bicycle design and design standards. Cyclists will not use products that do not secure or support their bike frame, and will resort to locking their bikes to trees, posts and railings, or leaning their bikes against buildings and windows. Selection of new bike parking facilities needs to take account of these advances, and of the relevant standards.

Bicycle parking facilities should be designed in accordance with:

- NSW Bicycle Guidelines - 11. Bicycle parking and access to public transport interchanges²¹
- Australian Standard AS2890.3: 1993³⁰
- Austroads Guides⁶

Bike parking provisions are included in component C2.3.2 of Coffs Harbour City Council's Development Control Plan 2013³¹. Council has installed bike racks throughout the LGA. To view their locations, click on this link: <http://www.coffsharbour.nsw.gov.au/places-for-living/Pages/online-mapping-terms-and-conditions.aspx>. Once you have agreed with the Terms and Conditions, select from the side bar drop down list - Council Assets then Bike Racks:

Figure 25 – Examples of bike parking



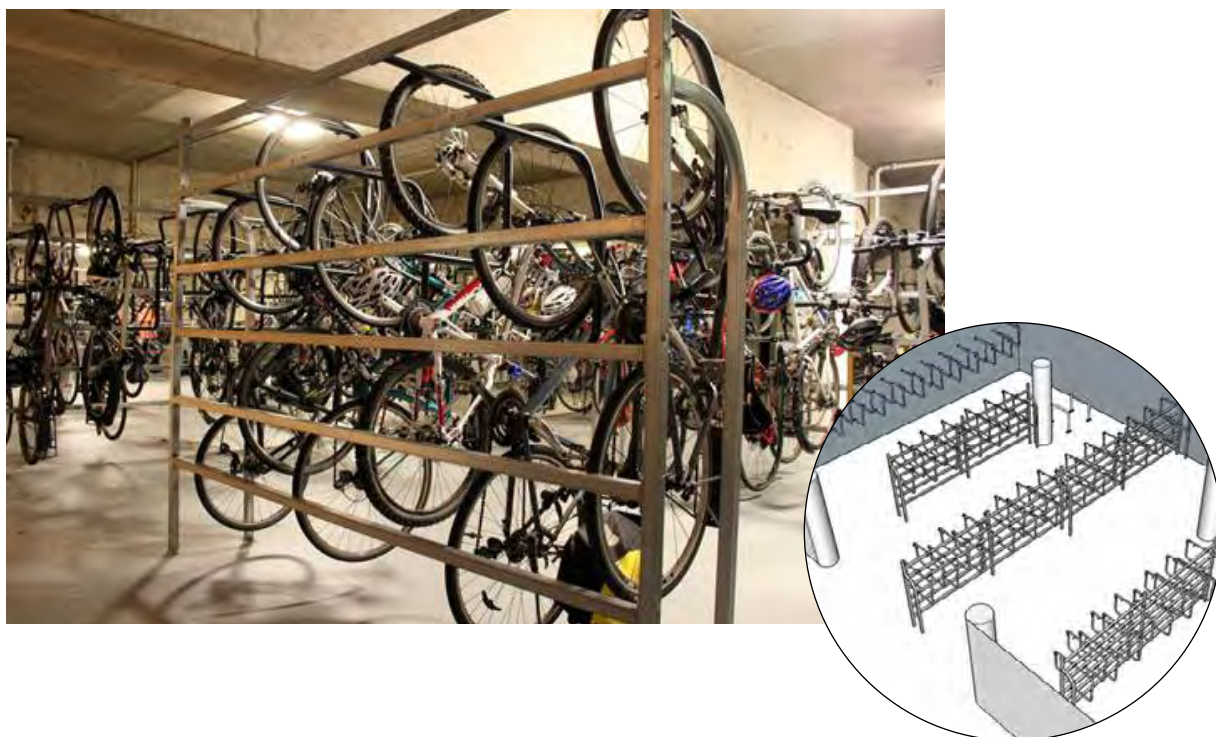
There are also 5 secure bike storage facilities in the Castle Street car park. Regular commuters may apply to Council for a key which gives exclusive use of one of the cages. See the Coffs Harbour City Council website for more details. The use of these cages is to be reviewed as part of the CBD upgrade.

Bicycle Compound

A Bicycle Compound can be as simple as a cage setup in a basement carpark or an Architecturally designed facility that suits the surrounding environment.

Bicycle Network offer a Parkiteer solution in which there is security access with a membership card. Click here for [Parkiteer Facility Information](#).

Figure 26 – Example of racks inside a cage and design layout



Signs

Signs legitimise and assist the many and varied trips which cyclists make daily:

- **Regulatory** signs indicate the legal status of a facility (eg. bike lane signs, shared path signs).
- **Warning and guidance** signs warn all road and path users of identifiable potential hazards (steep descent, slippery when wet, road ahead signs)
- **Directional** signage is used to guide cyclists to their destinations (cycle route direction signs).

The NSW Bicycle Guidelines²¹ and Austroads guides⁶ and Australian Standard AS1744 cover signage requirements and also see City of Sydney Directional Signage Design Guidelines⁴⁵. The guide describes four signing principles:

1. **Conspicuity** – easy to read, unambiguous and placed with enough time to react to the information

2. **Legibility** – clarity, brevity and with specific font size and lettering
3. **Coherence** – a well signed network provides consistency, with indication of functionality of routes built into the design. Popular destinations with distances listed on successive direction signs until the destination is reached. Bike signage should also interface with other signage systems.
4. **Function – safe, efficient** – carefully placed at all decision points along a route and work together as a system. This also includes “design redundancy “ – placement of signs at, or before or following an intersection to ensure that if one sign is removed, there will be enough signage to enable the cyclist to find their destination.

It is important that network signage is planned and integrated with other branding and road / wayfinding signage. An efficient system is important, particularly to avoid large maintenance costs to Council.

Figure 27 – Direction signs should show the destination, distance and network branding



OPPORTUNITIES

Bike Parking

There is some demand within the LGA to install more racks in areas of high usage. A City Centre Masterplan²⁵ strategy is to provide +100 bike racks at locations identified through “observation of ad-hoc parking locations” **and to incorporate end of trip facilities into the bus hub and into new developments in the City Centre core as required over time.**

Bike parking requirements for new developments are addressed through the development assessment process and are detailed in the Development Contributions Plan (DCP). Larger developments provide opportunities for transport access guides and provision of bicycle parking and end-of-trip facilities.

There are many options and innovations in bike parking facilities:

Hoop on Pole

The **Pole Vault** is an option that fits over existing Public Space poles and secure locks tighten in position.

Bike Corral

Conversion of car spaces to bike “corrals” are being introduced in many areas around the world. They can provide an average 10 to 1 customer to parking space ratio, free up congested footpaths and improve visibility at busy intersections⁴⁶.

The **Anaconda** rack system can be fixed in the ground permanently or linked together for temporary events.

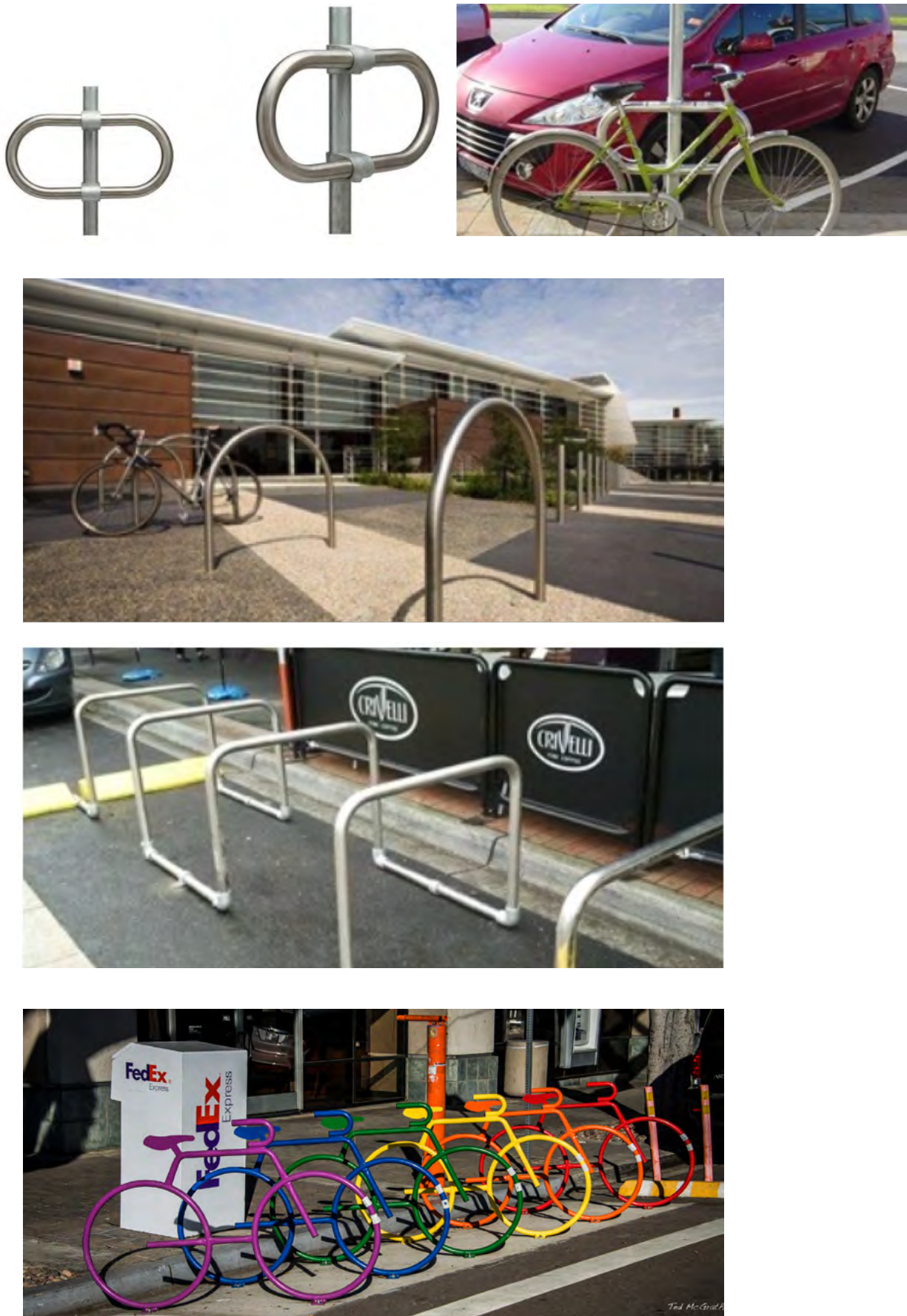
Alternatively a **Row of Arc De Triomphe**s could be installed into the concrete.

Note that racks that allow only one wheel to be locked to the device, or which support the bicycle by one wheel only, do not provide either proper support or security for the bicycle as a whole and do not meet Australian Standards. These should not be used in new instalments and existing non standard racks should be progressively replaced.

Designers should consult Australian Standard 2890.3³⁰

Roads and Maritime Services offer free workshops to assist workplaces develop their knowledge of sustainable transport options and skills to prepare and produce transport access guides for use in their own organisation. Council could lead the way by developing their own Green Travel Plan and then assisting others to do the same³²

Figure 28 – Innovative bike parking solutions



Wayfinding Systems

Figure 29 – Wayfinding



Planning and installation of signs is a critical element of the network plan. They should be included in the plans, designs and costing of all cycling infrastructure plans. Route and directional signage should be consistent throughout the LGA and integrated with other LGA signage and wayfinding projects.

Branding or 'signing', and promoting the **Coastline Cycleway** route, once complete, offers the potential for enormous social and economic benefits to the LGA – as a regional/arterial link, as a local bike route and as a major tourist attraction.

Figure 30 – Coastline Cycleway artwork



Advisory signage options with 'behavioural messages' may have a positive effect on shared facilities and may be installed on high traffic shared paths.

Figure 31 – Shared Path signs



Bicycle Crossing lights

Under NSW road rules it is illegal to ride across signalised crossings unless there are special bicycle lights. The provision of bicycle crossing lights on major cycleway routes is crucial for continuity.

The Pacific Highway cycleway crosses a number of intersections in Coffs Harbour which could be fitted with bicycle crossing lights.

Access to the CBD will be improved with bike crossing lights at important East/West crossings and at major arterial intersections on bike paths such as Pacific Highway / Orlando Street; Pacific Highway/ Park Beach Road and Pacific Highway / Marcia Street, and also as part of the CBD Bike Plan at Harbour Drive/Pacific Highway and Gordon Street intersections.



ACTIONS

ACTIONS - IMPROVING CYCLING SUPPORT FACILITIES			
Action	Who	Time Frame	Funding
BICYCLE PARKING PROJECTS			
Review bike rack standards and applications and prioritise new sites for Council bike parking facilities	Road Safety & Transport Officer (RSTO), Coffs Harbour Bicycle User Committee (CH BUC), local bike groups	2 years	Coffs Harbour City Council (CHCC)
Develop plan to modify bike cages in Castle Street car park to secure multiple bikes	RSTO, CBD Working Group	3 years	CHCC: CBD Masterplan; RMS funding
Implement CBD Masterplan Bike Plan	CBD Working Group	10 years	CHCC: CBD Masterplan
Develop report for converting car spaces for bike parking and gauge public interest	RSTO, bicycle interest groups	2 years	CHCC
Seek funding for more end of trip facilities	RSTO	Annual	RMS Active Transport Cycling Towns: \$5000 per annum
Support installation of end of trip facilities for commercial and other organisations	RSTO, CH BUC	Ongoing	
SIGNAGE AND WAYFINDING PROJECTS			
Improve consistency of regulatory signage on shared paths throughout the LGA	RSTO, Bike volunteers	2 years	RMS Active Transport Cycling Towns, CHCC

3.3. MAKE CYCLING SAFER

OVERVIEW

The current road safety theory framework is called Safe System³³. While the Safe System approach to road safety recognises the need for responsible road user behaviour, it also accepts that human error is inevitable. It therefore aims to create a road transport system that makes allowance for errors and minimises the consequences - in particular, the risk of death or serious injury. By taking a total view of the combined factors involved in road safety, the Safe System approach encourages a better understanding of the interaction between the key elements of the road system: road users, roads and roadsides, vehicles and travel speeds.

1. Safer People

Research shows that people need to feel safe and comfortable when riding a bike. They need to have the appropriate skills and knowledge to ride on the road. Media campaigns can promote safe cycling behaviours as well as the promotion of visible clothing, use of lights, bicycle maintenance and bicycle helmets.

Other road users also need to be aware of bike riders on the road, particularly at intersections, where most of the Coffs Harbour crashes occur. Current road safety programs focus on maintaining a safe distance from bikes and checking for their presence on the road as well as a general respect for other road users in the “Share the Road” campaigns.

Cyclists need to follow the road rules and make sure they are visible on the road. Research has shown that the numbers of bike crashes will rise with the increasing popularity of cycling, but then are reduced when the numbers reach a critical mass. For this reason, road cyclists need to ride defensively and Local Government will assist by installing safe cycleways and linemarking and signage to alert other road users to their presence.

2. Safer Roads

Council is responsible for providing safe infrastructure for bicycles with appropriate separation from other traffic. Cycling will thrive in a low risk traffic environment. The litmus test seems to be the number of women who are riding, as they are more sensitive to safety than men. Cities that install separated paths such as Copenhagen and Amsterdam have high rates of women cycling. 55% of all bike trips in Denmark are made by women compared to 17% in Australia⁴⁷.

The completion of missing links in the network, particularly with separated paths will make riding safer. Design and construction should be best practice and safety audits should be conducted before, during and after construction.

For road cyclists it is important to maintain clear shoulders, reduce squeeze points, and delineate safe paths through roundabouts. With a significant number of injury crashes occurring with other vehicles at intersections Council needs to investigate treatments to raise awareness of the presence of cyclists.

A maintenance schedule will help to reduce crashes by pruning vegetation and removing debris on the cycleways. A priority plan has been developed as part of this plan to fund major repairs on key sections of the network.

The analysis of the bicycle crash data (see page 22) revealed three particular crash zones:

1. Mastracolas Road roundabout
2. Park Beach Road adjacent the entrance to Park Beach Plaza and a section of
3. Lyons Road within 1 kilometre of Toormina Road.

Action will be taken to reduce the crashes in these areas (see page 64)

3. Safer Vehicles

Local Government can play a role by working with bike organisations to promote well maintained, road worthy bikes, use of visibility aids such as reflective clothing and lights, and helmets. Bike events which promote safe cycling may also be supported by Council.

4. Safer Speeds

Cyclists are safer if the speed differential between bikes and other vehicles is reduced. All urban retail centres have now been reduced to 40kph along with school zones. Council will continue to support speed reductions and traffic calming in appropriate high pedestrian and cycling zones. The ability to feel safe and comfortable is a key factor in the decision to ride a bicycle.



OPPORTUNITIES

1. Safer People

Organisations such as Bicycle NSW³⁴ and Austcycle³⁵ provide rider skills training and bike maintenance courses in regional areas. Local cycling organisations and bike shops also have skilled trainers. Council can assist by promoting local and State bike groups and online resources and events.

The Indigenous Mountainbike project is part of the Lifestyle Innovations for Everyone (LIFE) project run by the National Centre for Indigenous Excellence NSW (NCIE, NSW)³⁶. They have a fleet of bicycles which they transport to different centres. Students experience bike trails and learn bike maintenance and riding skills

Bike maintenance and skills are included as part of Council's annual Sustainability Festival. Council also receives NSW Bike Week funding to support schools' bike rides and bike days. A bike mechanic volunteers his services to check the bikes and students learn the basics of bike maintenance which complement the school road safety curriculum.

Organisations such as the NSW Centre for Road Safety and the Amy Gillett Foundation produce education resources for cyclists and drivers.

2. Safer Roads

Council is able to apply for funding from Transport for NSW for Coastline Cycleway and network installation of new infrastructure.

Upgrades to the Pacific Highway offer opportunities to upgrade cycling facilities along the arterial spine of the LGA, with opportunities to apply for additional funding to complete missing links such as the South Coffs Cycleway from Englands Road to the Coffs Harbour Health Campus.

There are many resources available to cycleway designers to access best practice design including courses and websites as well as standard guidelines and overseas examples.

In light of the work conducted on the bikeplan, the asset register and the defect register will be modified and updated.

The plan will present a more informed application for the Roads and Maritime Services cycleway maintenance matched funding scheme and provide a proactive cycleway defect mitigation strategy.

Council will continue to work with bicycle groups to negotiate a whole of community approach to cycleway maintenance such as clean up days, hazard reporting and clearing some types of vegetation on cycleways.

Cycling infrastructure should be included, if relevant, in black spot funding applications. Council is able to apply for National and State schemes to fund road upgrades based on numbers of crashes and their severity.

3. Safer Vehicles

Events promoting active transport and cycling can include a safety component as part of their promotion. For example, the NAB Coffs Coast Cycle Challenge part funded a “Share the Road” brochure for cyclists and drivers promoting mutual respect, road rules, and maintaining a crash avoidance space.

Transport for NSW provide NSW Bike Week funding for Council and bike organisations to promote events linked to safe cycling for a State-wide promoted week in September. Council can support school based bike activities which promote bike maintenance and rider skills, particularly wearing helmets.

4. Safer Speeds

The chances of survival of a bike rider in a crash with another vehicle diminish rapidly at speeds higher than 30kph. The Road Transport (Safety and Traffic Management) Act 1999 empowers the Roads and Maritime Services (RMS) to set the speed limits on New South Wales roads through traffic regulations. The RMS determines the speed limits for all roads and road users based on a standardised set of guidelines and national agreements which aim to regulate the maximum speed of travel under good road and travel conditions.

The community can nominate roads for review by the RMS on the Safer Roads NSW website³⁷. The Council Bicycle Users Committee could also lobby NSW Government to reduce speed limits to 30kph on selected roads in line with European cities.

Council and the community could apply to install 40kph high pedestrian activity zones with traffic calming, broader pedestrian areas and separated cycleways similar to those described in the City Centre Masterplan 2031²⁵.



ACTIONS

ACTIONS - MAKE CYCLING SAFER			
Action	Who	Time Frame	Funding
SAFER PEOPLE			
Support and promote bicycle skills programs – including information online	RSTO, CH BUC, local bike groups	Ongoing	
Facilitate new and inexperienced adult cyclists' contact with local bicycle user groups for group rides, "bike buddies" and "bike bus" programs	RSTO, CH BUC, local bike groups	Ongoing	
Support information and campaigns about key road safety issues affecting cyclists and other road users	RSTO, CH BUC, local bike groups	Ongoing	
Liaise with police to ensure safety campaigns are complemented with effective enforcement	RSTO	Ongoing	
Promote school bicycle road safety and maintenance programs	RSTO, CH BUC, local bike groups	Ongoing	
Support programs to increase safe cycling in transport-disadvantaged indigenous and other groups	RSTO, CH BUC, local bike groups, Transport for NSW, Roads and Maritime Services	Ongoing	
Promote safe cycling as part of the On Ya Bike community breakfast	RSTO, CH BUC etc	Ongoing	CHCC, RMS Grant
SAFER ROADS			
Implement network maintenance priority program based on the Reflect database.	City Services	2014-2019	
Audit network to determine signage requirements for sections nominated as cycle lanes and shared paths	RSTO, CH BUC, local bike groups	2017-2019	CHCC; in-kind support and RMS
Relevant Council staff to attend the Bicycle and Pedestrian Planning and Design training and other related professional development initiatives	Engineering Services	Ongoing	CHCC
Conduct a risk assessment of existing terminal treatments on cycleways and modify where appropriate	RSTO	2015	CHCC
Include bicycle facilities for all road related repairs and upgrades	City Services	Ongoing	
Implement Works Plan	City Services	2014-2019	
Apply for funding for prioritised missing links and crash zones.	City Services	2014-2019	
Report to Traffic Committee on crash mitigation treatments for intersections	City Services	12 months	

ACTIONS - MAKE CYCLING SAFER			
Action	Who	Time Frame	Funding
SAFER ROADS			
Develop clean up cycleway days with volunteer bike groups	RSTO, CH BUC, local bike groups	Ongoing	
Reallocate maintenance funding proportionately to reflect the length of existing shared paths	City Services	2014	
Reconcile bikeplan with asset register	City Services	2014	
SAFER VEHICLES			
Support and promote bicycle maintenance programs as part of bike events in the community and schools	RSTO, CH BUC, local bike groups	Ongoing	CHCC
Council approved bicycle events to promote safe cycling	RSTO, CH BUC, local bike groups	Ongoing	RMS, CHCC
SAFER SPEEDS			
Bicycle groups to lobby NSW Government to lower speeds in residential areas to encourage cycling and walking	RSTO, CH BUC, local bike groups	Ongoing	Bike Groups
Council to liaise with RMS to install and promote 40kph high pedestrian activity zones where applicable	RSTO, CH BUC, local bike groups	Ongoing	RMS, CHCC
Install and promote 40kph high pedestrian activity zones where appropriate	RSTO, RMS	Ongoing	RMS
Improve accessibility for cyclists on local street networks, including use of "bicycle excepted" provision on one way and no entry streets	RSTO, RMS	2017-2019	RMS, CHCC
Council to work with RMS to improve accessibility for cyclists on local street networks, including report on of wider use of 'Bicycles Excepted' provision on One Way and No Entry streets.	Roads and Maritime Services, City Services	Ongoing	CHCC

MAINTENANCE SCHEDULE			
Time	Location	Maintenance required	Cost
2015 - 2016	Hogbin Drive	Concrete repairs	\$35,000
	Hogbin Drive	Plan and installation of Line Marking and Signs	\$5,000
	Arrawarra Headland Road	Asphalt maintenance	\$30,000
	TOTAL		\$70,000
2016 - 2017	Hogbin Drive	Concrete repairs	\$30,000
	Hogbin Drive	Asphalt maintenance	\$30,000
	Network	Line Marking / Signs	\$10,000
	TOTAL		\$70,000
2017 - 2018	Pacific Highway (Coffs Harbour)	Resurface and signage	TBC
	TOTAL		\$TBC

3.4. ENCOURAGE GREATER PARTICIPATION

OVERVIEW

Education, information and promotional activities have been shown to further encourage uptake of cycling where appropriate facilities and infrastructure have been provided. The best results are achieved when planning and infrastructure investments are well supported by education and promotional activities²

Cyclists need access to information that tells them where to ride, a positive perception of cycling, secure end of trip facilities and an understanding of the benefits of cycling.

Past events have shown that people love to ride socially, and can be encouraged to try it with some incentives such as a free breakfast, giveaways, a bike check or a social activity.

There is a growing movement towards “utility” or “transportational” cycling. This involves travelling short and medium distances, often in an urban environment, including commuting, shopping, running errands and social events. Bikes provide more freedom for people without a driver’s licence, who are transport disadvantaged, and poor. Utility cycling includes economic activity such as deliveries which reduces congestion and parking demand.

Figure 32 – Utility bikes in Coffs Harbour



Council has a bike fleet which reduces the number of short car trips and parking in the city centre.

As detailed above, cycling is increasing in popularity as the demand for unstructured physical activity increases. Providing supportive infrastructure will not only increase this healthy, low cost and environmentally friendly recreation, but will also produce an economic return through adventure tourism.

Significant cycling events – such as the **NAB Coffs Coast Cycle Challenge**³⁸, the **BCU Coffs Harbour Triathlon**³⁹ and the **Pain and Pleasure Enduro** event⁴⁰ - are projected to attract thousands of cyclists over the next five years. Events highlight the attractions of cycling in the area and encourage people of all ages to try cycling at different levels

The annual “On Ya Bike” Community breakfast attracts about 150 cyclists to City Square every year. It was originally linked to the NSW Ride to Work day, but has been held in NSW Bike Week for several years.

Council works with schools and Burnside play groups to encourage more children to cycle during the annual NSW Bike Week events. Schools organise rides or bike days encouraging all students to take part. Council and Burnside hold a picnic for all their playgroups at the Bray Street bike track, a safe cycling experience for the under-fives, and an opportunity to promote cycling as a low cost healthy activity.

The popular **Our Living Coast: Popular Cycling Routes**¹² is a valuable promotion tool for cycling in the area. Over 30 000 booklets have been distributed to date and the demand for the booklet is on-going. The cycling routes booklet is also available on the Coffs Harbour City Council website.



OPPORTUNITIES

Events are a great way to promote a positive perception of cycling, reap the economic benefits and also grow the local cycling community. The Tour Down Under in South Australia attracts over 760 000 people and generates \$4.5m for the area. There are many examples of popular mountain bike parks and rail trails which are tourist attractions and engender small business such as cafes and accommodation. The Eurovelo is a network of cycling trails across Europe which is being developed for long distance cycling tourists as well as by local people making daily journeys⁴⁸.

Coffs Coast Marketing nominated mountain biking as one of their seven key targeted niche markets in 2013 to increase the depth of visitors' experiences. It is proposed to develop a series of digital guidebooks for the targeted niche markets as well as targeting traditional tourist magazines and newspapers. The development and maintenance of local mountain bike trails provides new opportunities for adventure holidays.

The **Our Living Coast: Popular Cycling Routes**¹² will be re-badged for its next print run to become part of the digital series.

Cycle tourism is a relatively new and rapidly emerging industry within NSW, a growth fuelled by people seeking healthy nature-based tourism experiences. Once developed, the promotion of the NSW Coastline Cycleway provides a good example of the potential of cycling trails to stimulate economic activity in our region.

With new and emerging technology, much more can be done to provide accurate and current bike route maps to a wider online audience.

It is proposed to hold the 2013 On Ya Bike breakfast as part of the Coffs Harbour Sustainable Living Festival⁴¹, usually held in November, to increase the number of families and recreational riders attending.

Council convenes a Transport Working Group of key stakeholders to promote the use of active transport modes such as walking, cycling and public transport. Green Travel plans can provide incentives and encourage use of active transport modes in workplaces to reduce congestion and greenhouse gas emissions from transport.

ACTIONS

ACTIONS - ENCOURAGE GREATER PARTICIPATION			
Action	Who	Time Frame	Funding
Provide online promotion of local cycling information	RSTO, CH BUC, local bike groups	2015-2016	CHCC
Liaise with bicycle interest groups and event organisers to include promotion of new infrastructure	RSTO, CH BUC, local bike groups, event organisers	Ongoing	CHCC; in kind
Maintain and promote the use of the Council bicycle fleet for short trips	RSTO	Ongoing	CHCC & grants
Host the annual "On Ya Bike" community breakfast	RSTO, Sustainable Planning, CH BUC	Annual	RMS, CHCC, local business sponsors
Organise events for NSW Bike Week	RSTO, CH BUC, local bike groups	Annual	RMS, CHCC
Update the Our Living Coast: Popular Rides booklet to be rebadged as part of the Coffs Coast Marketing digital series of guide books.	RSTO, Coffs Coast Marketing	2017	Tourism grant
Develop the Mountain Bike digital guide	RSTO, Coffs Coast Marketing	TBC	Tourism grant
Promote local bike events and bicycle user groups	RSTO, CH BUC, local bike groups, event organisers	Ongoing	CHCC, CH BUC
Promote the Coastline Cycleway when it is completed in the Coffs Harbour LGA	RSTO, Roads and Maritime Services, Coffs Coast Marketing	2018	RMS, CHCC
Develop Green Travel Plans for Council and other local businesses	Transport Working Group	2013-2017	CHCC
Offer incentives for people to participate in "Ride2Work" day in the city centre	RSTO	Annual	RMS, CHCC, Sponsors
Promote "Ride2School" days	TWG, CH BUC, RSTO	Annual	Bicycle Network Council
Conduct annual commuter and recreational bike counts	RSTO, Bike groups	Annual	RMS, CHCC



APPENDICES

CLUBS & RESOURCES

Local Bicycle Clubs

Coffs Harbour Bicycle Users Group (BUG) www.coffsbug.org.au

Coffs Harbour Cycling Club – Road and MTB racing www.coffsharbourcycleclub.org.au

Coffs Harbour Triathlon Club www.coffstri.com

Sawtell and District BMX Club <http://www.bmxnsw.com.au/sawtell/clubhome.aspx>

Rides and Events

Pleasure and Pain Enduro (MTB) <http://www.coffsharbourcycleclub.org.au/mountain-biking-in-coffs-harbour.html>

Coffs Coast Festival of Cycling www.coffsc Coast Festival of Cycling

NAB Coffs Coast Cycle Challenge www.coffsc Coast Cycle Challenge

BCU Coffs Triathlon www.coffstri.com

Resources

www.bicyclensw.org.au

www.pushon.com.au

www.bicycleinfo.nsw.gov.au

www.rms.nsw.gov.au

www.cyclingpromotion.com.au

www.mapmyride.com

www.coffsharbour.nsw.gov.au/cycling

www.nsw.cycling.org.au



PLAN DETAILS

See separate document Appendix 2 Bike Plan Details



CYCLEWAY NETWORK DETAIL LIST

NORTHERN BEACHES Corindi / Red Rock to Mullaway

Works plans 2014 - 2019

Existing

Future plans (unfunded)

Road / Cycleway	Description	Status / Action	Comments
Pacific Hwy - Dirty Creek Range to Eggins Drive	Pacific Hwy will become secondary road, shoulder each side. Coastline Cycleway	Woolgoolga -Ballina upgrade	Northern LGA connection. Cycle tourism.
Coral St - Old Pacific Hwy to Red Rock Rd	On road cycle lane. Coastline Cycleway		
Coral St - Red Rock Rd to Tasman Street	Existing shared paths. Coastline Cycleway		
Pacific St - Coral St to Coral St	Existing shared paths		Local cycleways including link to Corindi Beach Caravan Park
Red Rock Rd - Coral St to Yarrawarra Centre	800m km off-road concrete	RMS funding application submitted	School. Aboriginal centre. National park. Stage 1 Corindi-Red Rock connection.
Red Rock Rd - Yarrawarra Centre to Red Rock	On road cycle lane		Connecting communities, sporting facilities. Safety. Cycle tourism potential. Investigate funding for upgrade sections.
Tasman St - Pacific St to Pacific Highway	Facility to be confirmed. Coastline Cycleway	Woolgoolga-Ballina upgrade	Missing link to connect Corindi to cycling facilities on Solitary Islands Way
Pacific Highway - Tasman St to Eggins Dr	Facility to be confirmed	Woolgoolga-Ballina upgrade	Connects beach villages: Corindi to Arrawarra
Eggins Dr - Pacific Highway to Arrawarra Beach Rd	Facility to be confirmed	Woolgoolga -Ballina upgrade	Connects beach villages: Corindi to Arrawarra
Old Pacific Hwy/Eggins Drive to Arrawarra Beach Rd	Separate shared path. Coastline Cycleway	Woolgoolga -Ballina upgrade	Connects beach villages: Corindi to Arrawarra
Arrawarra Beach Rd - Arrawarra Rd - First Ave	Bridge over creek and shared path access with future redevelopment. Coastline Cycleway	Developer Contributions	Completes scenic coastline cycleway connection to existing Woolgoolga-Arrawarra cycleway
Eggins Dr - Arrawarra Beach Rd - Arrawarra Rd - Arrawarra Creek	Off road path	Sapphire to Woolgoolga (S2W) cycleway facilities	
Solitary Islands Way - Arrawarra Creek bridge and approaches	Bridge and off-road path approaches	S2W cycleway facilities Council to design and construct	S2W cycleway facility continuity
Solitary Islands Way - Arrawarra Creek to Centenary Dr	New line marking and revised speed limit	S2W cycleway facilities	Modifications to line marking and speed zone subject to RMS/Council handover agreement
Mullaway Drive - Solitary Islands Way to Whitton Place	Separate shared path		Local cycleway
Mullaway Drive - Whitton Place to Arrawarra Rd	Path widening school to Arrawarra Headland Road		Link between arterial cycle route and coastline cycleway. Safer link community to school
Mullaway Dr - Arrawarra Rd to Darkum Rd	On-road cycle lane one side. Coastline Cycleway		Investigate upgrade and providing cycle lane both sides of the road
Arrawarra Rd - Mullaway Drive to Third Ave	On road and off road shared path		Include transition to First Ave and extension to beach

NORTHERN BEACHES Mullaway to Woolgoolga (Hearns Lake)				Works plans 2014 - 2019	Existing	Future plans (unfunded)
Road / Cycleway	Description	Status / Action	Comments			
Mullaway Drive to Beach St, Woolgoolga via Darkum Rd and Safety Beach	Mixture of off-road cycle lane, mixed traffic and shared path. Coastline Cycleway.					
Solitary Islands Way - Centenary Dr to Woolgoolga Sports field and West Woolgoolga	Shared path		Will provide link from West Woolgoolga DCP (Newmans Road) to sportsfields and to High School - includes bridge across Poundyard Creek			
Solitary Islands Way - Dalgety St to Newmans Rd via Strawberry Close	Shared path					
Solitary Islands Way - Centenary Drive to Clarence St roundabout	Shared path east side. Underpass to West					
Clarence St / Beach St - Solitary Islands Way to Carrington St	Facility to be confirmed: Possible widening of existing footpath; some wide footpaths to be signposted	Woolgoolga Masterplan	Pedestrian/cycle facility to link Woolgoolga west side residential area to town centre			
Carrington St to High St via sports fields	Shared path. Coastline Cycleway.		Links Woolgoolga town centre to sporting fields and High Street retirement village			
High St to Solitary Islands Way via South Street, reserve, to Nightingale St and Scarborough St	Shared path. Coastline Cycleway.		Connects sporting fields, communities. Flat topography. Connects Woolgoolga town centre to the south. Sealed path along existing track through reserve, in part following newly constructed sewer line			
Solitary Islands Way - Clarence St roundabout to Hearns Lake Road	Facility to be confirmed. Coastline Cycleway.					

Works plans 2014 - 2019

Existing

Future plans (unfunded)

NORTHERN BEACHES Woolgoolga (Hearns Lake) to Sapphire

Road / Cycleway	Description	Status / Action	Comments
Solitary Islands Way - Hearnes Lake Rd to easement adjacent Double Crossing Creek	Shared path. Coastline Cycleway	S2W cycleway facilities	
Solitary Islands Way to Coral Drive via Oceanic Drive	Off road shared path, bridge over Double Crossing creek. Coastline Cycleway	Part Developer Contributions - remainder of funding to be confirmed	Missing link in S2W cycleway facilities. Connection with Coral Drive off road cycleway through new sub divisions
Coral Drive to Solitary Islands Way via Turpentine Ave reserve	Shared path through reserve to Sandy Beach school crossing. Coastline Cycleway		Will form part of continuous link Coastline Cycleway route + S2W cycle facilities
Solitary Islands Way - Johnsons Road to roundabout (South)	Shared path - East side. Coastline Cycleway	S2W cycleway facilities	Connection from Solitary Island Way separated path to Emerald Beach and Sandy Beach School
Solitary Islands Way - Sandy Beach (south) overbridge to Fiddamans Rd roundabout	3.0m shared path. Coastline Cycleway	S2W cycleway facilities	All S2W roundabouts and bridges have off road shared paths
Solitary Islands Way - Fiddamans Rd roundabout to Coachmans Close	2.0m sep shared path, one side. Coastline Cycleway	S2W cycleway facilities	Delineators and guide posts to be installed
Fiddamans Rd - Solitary Islands Way to Surf St	Facility to be confirmed		Local cycleway - link to Solitary Islands Way
Solitary Islands Way/Bucca Rd approach on south side, and crossing.	Shared path and transition	S2W cycleway facilities	Off road path to address squeeze point where separated path crosses Bucca Rd. Approaches to Solitary Islands Way/Bucca Road intersection
Moonee Beach overbridge	Shared path		
Moonee Beach Rd to Sullivans Rd	Footpath. Coastline Cycleway		Investigate potential widening
Moonee Beach Rd - Sullivans Rd to caravan park	Shared path		Local cycleway
Sullivans Rd to North Solitary Drive, Sapphire	Shared path		
North Sapphire Rd	Shared path		
Solitary Islands Way North Sapphire roundabout	Shared path. Coastline Cycleway	S2W cycleway facilities; part Developer Contributions	Link between communities of Moonee Beach and North Sapphire; North Sapphire DA; some local cycleways existing in North Sapphire

NORTHERN BEACHES Sapphire to Coffs Harbour

Works plans 2014 - 2019

Existing

Future plans (unfunded)

Road / Cycleway	Description	Status / Action	Comments
Coachmans Close - end of S2W to Pacific Highway at Opal Boulevard	Mixed traffic. Coastline Cycleway	S2W cycleway facilities	
Pacific Highway – Opal Boulevard to James Small Dr	Facilities to be confirmed. Coastline Cycleway	Nominated for concept design funding. Concept plan and investigation as extension of Diggers Beach Rd to Charlesworth Bay project	RMS regional route; Route investigation – off road path along Pacific Hwy, Korora School Road, James Small Drive, Pacific Highway to Pacific Bay underpass. Underpass would provide safe east-west crossing
Pacific Highway - James Small Drive south to Korora School Rd		Nominated for concept design funding. Concept plan and investigation as extension of Diggers Beach Rd to Charlesworth Bay project.	Route investigation – off road path along Pacific Hwy, Korora School Road, James Small Drive, Pacific Highway to Pacific Bay underpass. Underpass would provide safe east-west crossing
James Small Dr - Korora School Rd to Pacific Highway			
Pacific Highway - James Small Drive south to Pacific Bay underpass			
Pacific Highway - James Small Dr to Diggers Beach Rd	Shared path. Coastline Cycleway	Coastline cycleway and RMS funding for costed design	Extends off road cycleway connection from Diggers Beach Rd to Pacific Bay and proposed crossing via underpass. Link to Bruxner Park Road - a popular road bike route
Pacific Highway - Diggers Beach Rd to Arthur St	Shared path. Coastline Cycleway		

COFFS HARBOUR Pacific Highway and east side

Works plans 2014 - 2019

Existing

Future plans (unfunded)

Road / Cycleway	Description	Status / Action	Comments
Pacific Highway - Arthur St to Orlando St	Shared path. Coastline Cycleway		
Pacific Highway - Mastracolas Rd to Bray St	Shared path		
Mastracolas Rd to Arthur St via underpass	Shared path		
Arthur St - Park Beach Plaza to North Hogbin Drive	Facility to be confirmed. Coastline Cycleway	Funding to be confirmed	Missing link in Coastline Cycleway scenic route. Connects cycleways, retail, residential, sporting facilities. Aboriginal Road Safety Program
North Hogbin Dr- Arthur St to Orlando St	Shared path. Coastline Cycleway		
North Hogbin Dr - Orlando St to Howard St	Shared path. Coastline Cycleway		
Orlando St, Hogbin Drive to Ocean Parade	Shared path. Coastline Cycleway		
Orlando St – Pacific Hwy to bridge (No.177)	Facility to be confirmed		
Orlando St - bridge (No. 177) to Hogbin Dr	On road cycleway both sides		Transitions to be upgraded
Park Beach Road	Facility to be confirmed	Investigate funding	Access to Park Beach Plaza from Hogbin Drive and Pacific Highway
Pacific Highway - Orlando St to Coff St	Shared path & mixed traffic section (Rose Ave)		
Pacific Highway – Bray St to Beryl St	Facility to be confirmed		Investigate path widening to legitimise demand for cycling route/facility: Existing footpath is used by many cyclists
Ocean Parade to Orlando St via Park Beach Reserve	Shared path		Bowling Club to Jetty Foreshores
Orlando St to Marina Drive	Shared path through Reserve. Coastline Cycleway		Connect Coffs Creek to Jetty Foreshores area
COFFS CREEK CYCLEWAY	Shared path circuit: Sealed on Southern side, unsealed Northern side		
Marina Dr - Park Beach Entrance to Jordan Esplanade	Facility to be confirmed. Coastline Cycleway		Missing link

COFFS HARBOUR Pacific Highway and east side				Works plans 2014 - 2019	Existing	Future plans (unfunded)
Road / Cycleway	Description	Status / Action	Comments			
Marina Dr - Jordan Esplanade to Harbour Dr	Shared path. Coastline Cycleway		Local cycleway			
Jordan Esplanade - Marina Dr to Camperdown St	Facility to be confirmed. Coastline Cycleway		Jetty Foreshores plan including choice of off road and on road cycleways			
Camperdown St - Jordan Esplanade to Beacon Hill cycleway	Shared path on cycleway: Links to be confirmed. Coastline Cycleway		Missing link			
Beacon Hill path	Coastline Cycleway		Camperdown St to Howard St			
Howard St - Beacon Hill path to Hogbin Drive roundabout	Existing on road route. Coastline Cycleway	Shoulder widening: Council to design and construct 2014. Coastline Cycleway funding	Surplus funding from Beacon Hill Cycleway to improve transitions from Hogbin Drive to Howard Street and to Beacon Hill			

WEST COFFS		Works plans 2014 - 2019	Existing	Future plans (unfunded)
Road / Cycleway	Description	Status / Action	Comments	
Shephards Lane – between Loaders Lane to Flintwood PI	Shared path including bridge	Developer Contributions - under construction		
Donn-Patterson Drive: Shephards Lane to Mackays Road	On road cycle lanes both sides			
Mackays Rd - Donn-Patterson Drive to Joyce Street	Shared path through Reserve		Through public reserve behind Kotuku St and Calala Place Connects to public schools in Joyce St	
West High St - Pacific Highway to Gundagai PL	Facility to be confirmed			
West High St to William Sharp Dr via Robin St, Red Cedar Dr, Flintwood PL., Shephards Lane	Facility to be confirmed			
William Sharpe Dr	Shared paths over bridge			
Moonee St to Murray Dr via Korff St and reserve	Facility to be confirmed			
Shephards Lane to Joyce St via Gallipoli Rd	Facility to be confirmed			
Mackays Rd to Joyce St via reserve	Facility to be confirmed			
Donn-Patterson Dr - Blacker Close to Mackays Rd	On road cycle lanes			
Bray St - Mackays Rd to Elm St	On road cycle lanes and shared path			
Bray St - Kurrajong Bridge to Pacific Highway	Facility to be confirmed		Possibility of widening footpath	

SOUTH COFFS Coffs CBD to Sawtell Road

Works plans 2014 - 2019 Existing Future plans (unfunded)

Road / Cycleway	Description	Status / Action	Comments
Pacific Highway - Combine St to Thompsons Rd	Shared path		Check signs
Thompsons Rd – Pacific Highway to Raleigh St	Shared path		
Pacific Highway - Thompsons Rd to Stadium Dr	Shared path		
Hogbin Drive - Howard St to Sawtell Rd	Shared path		
Hogbin Drive	Shared path. Coastline Cycleway		
Hogbin Drive	Pedestrian / cycleway bridge		Link needed to safely connect east side path to school, sporting fields, proposed South Coffs residential development
Hogbin Drive	Underpass at Boambee Creek	Developer contributions: South Coffs DCP	Crossing to link east-side Hogbin Drive path to West side and connection to Hi-tech Drive
Stadium Drive - Pacific Highway to Hogbin Dr	On road cycle lane and shared path	Prepare for funding submission. Safety upgrade.	Link road between Pacific Hwy and Hogbin Drive; Submission to remove squeeze points, improve road crossings and transitions

Works plans 2014 - 2019 Existing Future plans (unfunded)

SAWTELL - TOORMINA - BOAMBEE

Road / Cycleway	Description	Status / Action	Comments
Sawtell Road - Toormina Rd to Pacific Highway	Shared path		Switches from south side to north side at Linden Avenue. Safe crossing transition needed.
Pacific Highway - Stadium Drive to Lyons Rd	Shared path		
Sawtell Rd - Hogbin Dr to Wirabilla Dr	Upgrade to shared path. Coastline Cycleway		Coastline Cycleway route to Sawtell
Sawtell Rd to Hulberts Rd via Wirabilla Dr, Lalaguli Dr, and Werambie St.	Mixed traffic and fire trail. Coastline Cycleway		Line marking to assist way-finding
Hulberts Rd - Fire trail at Werambie St to Sixteenth Ave	Shared path including rail crossing. Coastline Cycleway		Transition to Sixteenth Ave across Seventeenth
Sixteenth Ave - Seventeenth Ave to Boronia St	On-road cycle lane. Coastline Cycleway		
Boronia St - Sixteenth Ave to First Ave	On-road cycle lane. Coastline Cycleway		
Proposed Toormina Sports complex	Shared path		Connecting to sports facilities
Minorie Dr - Werambie St through to velodrome entrance	Shared path		Connects Coastline cycleway route to sporting facilities - extension of existing shared path on Minorie Dr
Wave Close to Hulberts Rd via Hulberts Lane	Shared path		
Minorie Drive - Toormina Rd to Velodrome	Shared path		Connection to velodrome (East) over reserve, down fire trail and over road reserve
Wave Close to Lyons Road via Platts Close, Ocean Spray Cl, Aquamarine Dr, Shelton Close, Walsh Cl	Shared path		Mostly existing shared paths and some on-road mixed traffic - needs signs
Toormina Rd - Sawtell Rd to Toormina Shopping Centre	Shared path		Needs signage
Toormina Rd - Toormina Shopping Centre to Dews Ave	Path widening		1.3km

SAWTELL - TOORMINA - BOAMBEE

Works plans 2014 - 2019

Existing

Future plans (unfunded)

Road / Cycleway	Description	Status / Action	Comments
Toormina Rd – Dews Ave to Lyons Rd	Shared path		
Bayldon Rd	Mixed traffic. Coastline Cycleway		Alternative to Lyons Rd
Lyons Rd - Bayldon Rd to Banool St	Shared path		Missing link
Lyons Rd - Banool St to No. 156	Shared path		
Lyons Rd - No. 156 to No. 14	Facility to be confirmed		Missing link
Lyons Rd - No. 14 to Toormina Rd	On road cycleway both sides		
Lyons Rd – Toormina Rd to Pacific Highway	450m on off-road shared path; 1300m on-road cycleway; 250m shoulder. Coastline Cycleway	RMS funding application submitted and Developer Contributions	Arterial route for cyclists from Sawtell to the Pacific Highway and Pine Creek Way
Pine Creek Way	On road cycle lane. Coastline Cycleway	Pine Creek Way to be narrowed as status is now a local road - on road cycle lane to be included in line marking	

CITY CENTRE and strategic connections				Works plans 2014 - 2019	Existing	Future plans (unfunded)
Road / Cycleway	Description	Status / Action	Comments			
Coff St – Pacific Hwy to Gordon St	Shared path		Section of footpath needs widening alongside Coffs Creek. at Highway intersection; Connects Pacific Hwy cycleway (north) to City Centre			
Coffs Creek Cycleway connection via showground	Shared path		Locked gates over Coffs Creek between sunset and sunrise prevents maximum usage as a commuter connection			
Duke St to Earl St	Shared path		Existing shared path (no signage) along Duke St connects to end of Earl St at Coles			
Earl St to Community Village	Facility to be confirmed					
Brelsford Park	Shared path	Part of Brelsford Park Masterplan	Desire line link from Albany St –Curacoa St. Grand Walkway			
Albany St - Earl St to Hogbin Drive	Facility to be confirmed		Connecting Hogbin Drive cycleway and CBD			
Pacific Highway - Combine Street to City Centre	Facility to be confirmed		Connection needed from end of Pacific Hwy cycleway South shared path to CBD: possible route via Elizabeth Street, across McLean Street via Lyster Street to West High (West Coffs cycleway connection)			
Harbour Drive CBD to Curacoa St	Facility to be confirmed	Investigate on-road cycleway facilities				
Harbour Drive - Curacoa St/Victoria St	On road cycleway both sides. Shared paths at roundabout					
Harbour Drive - Victoria St to Jetty	Facility to be confirmed		Popular road-cycling route.2.5km on-road to Jetty			
Highway Bicycle Light crossings at						
Park Avenue / Moonee Street		Investigate RMS funding for Pacific Highway Bicycle Light crossing project.	Refer to page 58 of Bike Plan			
Harbour Drive / West High Street						
Beryl Street (proposed lights)	Proposed court precinct					
Albany Street / Combine Street	Connect to Pacific Highway cycleway south					

WESTERN RURAL			Works plans 2014 - 2019	Existing	Future plans (unfunded)
Road / Cycleway	Description	Comments			
Coffs Harbour to Coramba	Regional connection - subject to RMS funding	Possible use of existing and proposed pipe or rail infrastructure			
Coramba to Showground/sportsground	Off-road shared path	2.6km link to Coramba from sports facilities			

REFERENCES

- 1 <http://www.austroads.com.au/road-operations/bicycles>
- 2 Australian Government Department for Infrastructure and Transport July 2013 Walking Riding and Access to Public Transport, Canberra Australia
- 3 Austroads Ltd 2010 The Australian National Cycling Strategy 2011-2016
- 4 Hajkowicz, S.A., Cook, H.,Wilhelmseder, L., Boughen, N.,2013. The Future of AustralianSport: Megatrends shaping the sports sector over coming decades. A Consultancy Report for the Australian Sports Commission. CSIRO, Australia
- 5 Roger Geller, Bicycle Coordinator- Portland Office of Transportation- Four Types of Cyclists (link)
- 6 Austroads 2014 Cycling Aspects of Austroads Guides Sydney, Australia
- 7 NSW Government May 2010 New South Wales Bikeplan Sydney, Australia
- 8 Transport for NSW December 2012 NSW Long Term Transport Master Plan Sydney, Australia: <http://www.transport.nsw.gov.au/content/nsw-long-term-transport-master-plan>
- 9 NSW Government – Mid North Coast Regional Transport Plan – December 2013 <http://www.transport.nsw.gov.au/sites/default/files/b2b/publications/mid-north-coast-regional-transport-plan.pdf>
- 10 Coffs Harbour City Council – Coffs Harbour 2030: <http://www.coffsharbour.nsw.gov.au/Coffs-And-Council/our-future/Documents/Reviewed%20Coffs%20Harbour%202030%20Strategic%20Plan.pdf>
- 11 Coffs Harbour City Council – Draft Road Hierarchy Plan – 2008
- 12 Coffs Harbour City Council et al. April 2012 Popular Cycling Routes: Coffs Harbour, Bellingen, Nambucca: <http://www.coffsharbour.nsw.gov.au/cycling>
- 13 <http://www.coffsharbour.nsw.gov.au/Coffs-And-Council/Place-And-People/Pages/the-place-the-people.aspx>
- 14 Super Tuesday: <http://www.coffsharbour.nsw.gov.au/cycling>
bicyclenetwork.com.au/general/better-conditions/982/
- 15 Coffs Harbour City Council Spring Sunday Bike Count - November 2013: <http://www.coffsharbour.nsw.gov.au/moving-around/Documents/Spring%20Sunday%202013%20bike%20count%20report.pdf>
- 16 Australian Government - Dept of Resources, Energy and Tourism - Tourism Research Australia - Coffs Coast Region Visitor Profile and Satisfaction Survey – 2011: <http://www.coffsharbour.nsw.gov.au/cycling>
- 17 Jetty Research Pty Ltd- A survey to measure satisfaction and priorities with regard to Council managed facilities and services in the Coffs Harbour LGA: <http://www.coffsharbour.nsw.gov.au/Coffs-And-Council/Documents/Publications/Customer-Satisfaction-Survey-2012-Report.pdf>

- 18 CHCC Bike Plan Project Online Survey 2013: <http://www.coffsharbour.nsw.gov.au/moving-around/Documents/Bike%20Plan%20online%20survey%202013%20-%20report.pdf>
- 19 Crashlink, Centre for Road Safety, Transport for NSW
- 20 http://www.bicycleinfo.nsw.gov.au/riding_safely/nsw_road_rules.html
- 21 Roads and Traffic Authority – NSW Bicycle Guidelines – 2005
http://www.bicycleinfo.nsw.gov.au/downloads/nswbicycleguidelines_12a_i.pdf
- 22 <http://www.coffsharbour.nsw.gov.au/places-for-living/Pages/maps.aspx>
- 23 Austroads 2009 A Guide to Road Design: Part 6A Pedestrian and Cyclist Paths Sydney Australia
- 24 Government of Australia 1992 Disability Discrimination Act <http://www.ag.gov.au>
- 25 Coffs Harbour City Council 2013 Coffs Harbour City Centre Masterplan 2031 Coffs Harbour, Australia: <http://www.coffsharbour.nsw.gov.au/cbdmasterplan>
- 26 Coffs Harbour City Council 2013 Jetty 4Shores Project and Surrounds Area, Coffs Harbour, Australia: <http://www.coffsharbour.nsw.gov.au/learning-and-prospering/projects/Pages/Jetty-Foreshores-Project.aspx>
- 27 <http://woolgoolgawow.com.au/>
- 28 Coffs Harbour City Council 2010 Open Space Strategy Coffs Harbour Australia: <http://www.coffsharbour.nsw.gov.au/publications>
- 29 Coffs Harbour City Council 2011 Coffs Harbour Pedestrian Access and Mobility Plan Review: PAMP Report Coffs Harbour Australia: <http://www.coffsharbour.nsw.gov.au/moving-around/Pages/pedestrian-hazards.aspx>
- 30 Standards Australia 1993 AS 2890:3: www.saiglobal.com
- 31 Coffs Harbour City Council 2013 Coffs Harbour Development Control Plan (DCP 2013) Coffs Harbour Australia: <http://www.coffsharbour.nsw.gov.au/dcp>
- 32 http://www.rms.nsw.gov.au/hubpages/hub_greentravel.html
<http://www.sustainabletransport.com.au/Documents/D4PBRFlyer2014courses.pdf>
- 33 <http://www.rms.nsw.gov.au/saferroadsnsw/safe-system.pdf>
- 34 <http://bicyclensw.org.au/>
- 35 <http://www.austcycle.com.au/>
- 36 <http://ncie.org.au/news/2534/the-virtuous-cycle-the-ncie's-bike-projects>
- 37 <http://www.saferroadsnsw.com.au/>
- 38 <http://coffscoastcyclechallenge.com/>
- 39 <http://villagesports.com.au/events/bcu-coffs-tri/>
- 40 <http://www.coffscoastfestivalofcycling.com/pleasure-and-pain/>

- 41 <http://www.ourlivingcoast.com.au/events/slf/>
- 42 NSW Planning guidelines for walking and cycling, Dept. Infrastructure, Planning and Natural Resources 2004: <http://www.planning.nsw.gov.au/planning-guidelines-for-walking-and-cycling>
- 43 Queensland Government 2009 A Guide to signing cycle networks Brisbane, Queensland <http://www.tmr.qld.gov.au/Travel-and-transport/Cycling/Bike-user-guide/Technical-information.aspx>
- 44 <http://bikewalktulsa.org/tag/city-of-tulsa/>
- 45 City of Sydney 2010 Cycle Network Directional Signage: http://www.bicycleinfo.nsw.gov.au/downloads/cycle_network_signage_guidelinesv1.pdf
- 46 www.gizmodo.com.au/2014/07/how-more-bike-parking-could-make-cities-better-for-everyone/
- 47 <http://theconversation.com/bikes-as-transport-getting-australian-women-along-for-the-ride-2157>
- 48 www.eurovelo.org/
- 49 www.copenhagenez.com/2013/04/the-copenhagenez-bicycle-planning-guide.html

OTHER LINKS

http://policy.rutgers.edu/faculty/pucher/Pucher_BikeUrbanism_SeattleUW_18June.pdf

Green Building Council Australia: <http://www.gbca.org.au/>

<http://www.sustainabletransport.com.au/Documents/D4PBRFlyer2014courses.pdf>

<http://www.choice.com.au/reviews-and-tests/transport/bikes/bikes-and-cycling/getting-around-on-a-bike.aspx>