Byron Shire Bike Plan

Final

10 December 2019

FOREWORD

Sincere thanks to everyone who got involved in creating our new 10-year Bike Plan for the Byron Shire by completing our online survey and attending design workshops. Your local knowledge and experience of our cycling networks across the Shire has made an invaluable contribution to the quality of this brand new plan.

I commend your efforts because this new plan not only builds on some of the work of our previous Bike Plan - it goes the extra mile in terms of setting out clear objectives, an impressive list of achievable actions and clearly articulates a plan for much-needed and eagerly anticipated future cycling networks for many of our towns and villages.

I also take this opportunity to thank the members of Council's Transport and Infrastructure Advisory Committee (TIAC) for their input and contribution over many months. TIAC members worked with staff to ensure this plan represents the needs of the communities in the Byron Shire. Their views and experience contributed greatly to the project.

Developing this important strategic plan sets us on a path (excuse the pun) to having cycle-friendly towns in our Shire, where the dream of safely and leisurely riding to the beach for the day, to meet friends at the park, to your school or workplace, can become a reality.

When you can choose to ride around town instead of driving your car, it becomes even more exciting because not only are you making choices that are incidentally healthier for you but you're also helping to reduce traffic, congestion and emissions.

Safety is a major concern that has been addressed through this new plan and we will be adopting national and international best practice and technical standards. We know that about 70 percent of people in NSW either ride regularly or would like to ride more if cycling was made easier for them, and I am sure that this applies to us locally. Our goal is to make riding a bike a naturally safe choice of transport for all ages and all abilities.

Transport and Infrastructure Advisory Committee Members:

Councillors:
Cr. Basil Cameron (Chair) – *pictured (front left)*
Cr. Jeannette Martin – *pictured (front right)*
Cr. Simon Richardson – *not pictured*

Community Representatives:
Andi Maclean – *not pictured*
David Michie – *pictured (rear right)*
Graham Hamilton – *not pictured*
Katrina Ross (non-voting) – *pictured (front centre)*
Sapoty Brook – *pictured (rear left)*

Some of the main types of improvements identified as actions in the 10-year Byron Shire Bike Plan include:

- Construction of new off and on-road cycle ways, shared paths and road crossings;
- Upgrade of existing cycling infrastructure;
- Amendment of road design to support safe cycling, and;
- Undertaking of non-infrastructure initiatives to encourage cycling as a fun and healthy transport alternative.

Council is fully committed to realising the dream of interconnected cycle networks in every town and village in this shire. Having a good long-term plan for cycling with a clear set of actions is a game changer because it puts the Byron Shire in the best position for attracting the infrastructure investment from the State Government that we need to become cycling towns in the future.

Byron Shire Acting Mayor, Michael Lyon

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ACWG	Access Consultative Working Group
DCP	Development Control Plan
GIS	Geographical Information System
LEP	Local Environmental Plan
LGA	Local Government Area
NSW	New South Wales
RMS	Roads and Maritime Services
TIAC	Transport and Infrastructure Advisory Committee

1 Introduction

1.1 Background

Cycling is a healthier, cheaper, more enjoyable and environmentally-friendly alternative to private vehicle use. It has the potential to address transport equity issues that arise due to the high costs of car ownership, to improve user and environmental health and wellbeing and also to increase vibrancy and localised economic activity within towns and villages. The provision of a well-planned and integrated bicycle network combined with the implementation of supporting cycling programs provides a strong foundation for increasing both the number of cycling trips and the diversity of users in Byron Shire.

Over the years, Byron Shire Council (Council) has taken steps to develop its cycle network and encourage increases in the uptake of cycling across the local government area (LGA). Central to this was the development and adoption of the *Byron Shire Bike Strategy and Action Plan (Bike Plan)* in 2008. This document confirmed Council's commitment to cycling and outlined strategies and actions to increase cycling in Byron Shire. As the development of a Bike Plan is a New South Wales Government initiative, local governments are better positioned to receive grant funding for applicable projects if they have a Bike Plan that is less than five years old. Therefore, a new Bike Plan is required that builds on the successes of the 2008 plan and, importantly, provides a contemporary approach to bicycle network planning, design and promotion that reflects the current situation and also aligns with the future direction of Byron Shire. This new Bike Plan will help provide a coordinated and strategic approach to the delivery of cycling infrastructure and promotional programs in Byron Shire for the benefit of the community. Collaboration and partnerships between the community, state and local governments, developers and other stakeholders will therefore be critical to ensure the Bike Plan is representative of community needs and aspirations and supports the continual improvement of Byron Shire.

The Bike Plan has been prepared for the entire Byron Shire and considers cycling within the existing larger settlements of Mullumbimby, Byron Bay, Suffolk Park, Bangalow, Ocean Shores, Brunswick Heads, within smaller villages and also in rural locations and between key settlements. The study area is shown in Figure 1.

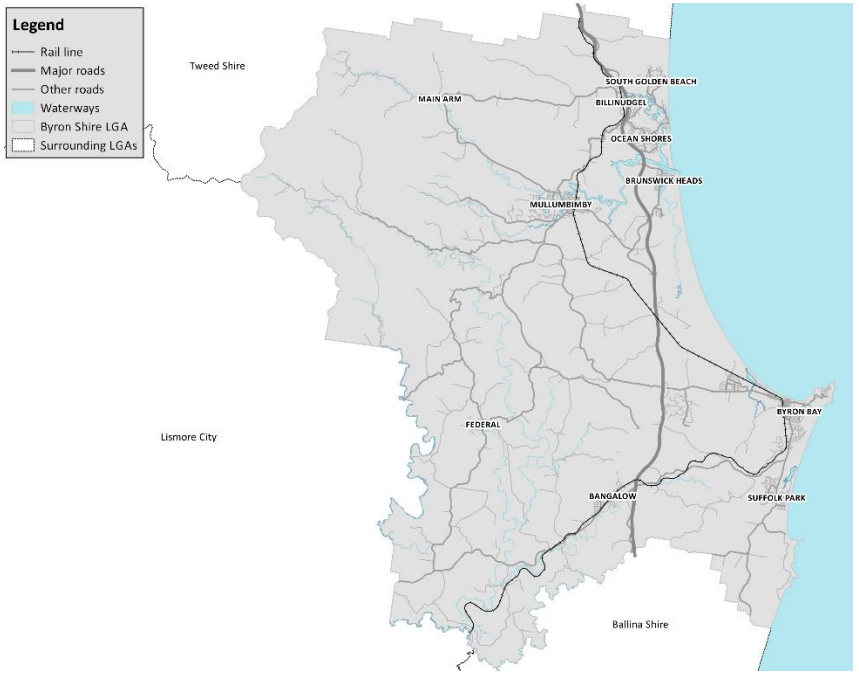

Figure 1: Byron Shire local government area

1.2 Developing the Bike Plan

This Bike Plan has been prepared in line with the *How to Prepare a Bike Plan* document which was released by the NSW Government's Roads and Maritime Services (RMS) in 2012. Due to the importance of the Bike Plan, however, and its ability to directly impact on both residents and visitors to Byron Shire, community consultation was identified as a critical element in developing the Bike Plan. In light of this, the scope of consultation tasks was expanded beyond that outlined in the RMS guideline in order to facilitate genuine community consultation and to provide as many opportunities as possible for the community to inform the Bike Plan and advise how and where Byron Shire's cycle network should evolve in the future.

The community, therefore, essentially formed part of the team assigned to develop the Bike Plan. This team consisted of RMS, relevant teams within Council and Byron Shire's Transport and Infrastructure Advisory Committee (TIAC).

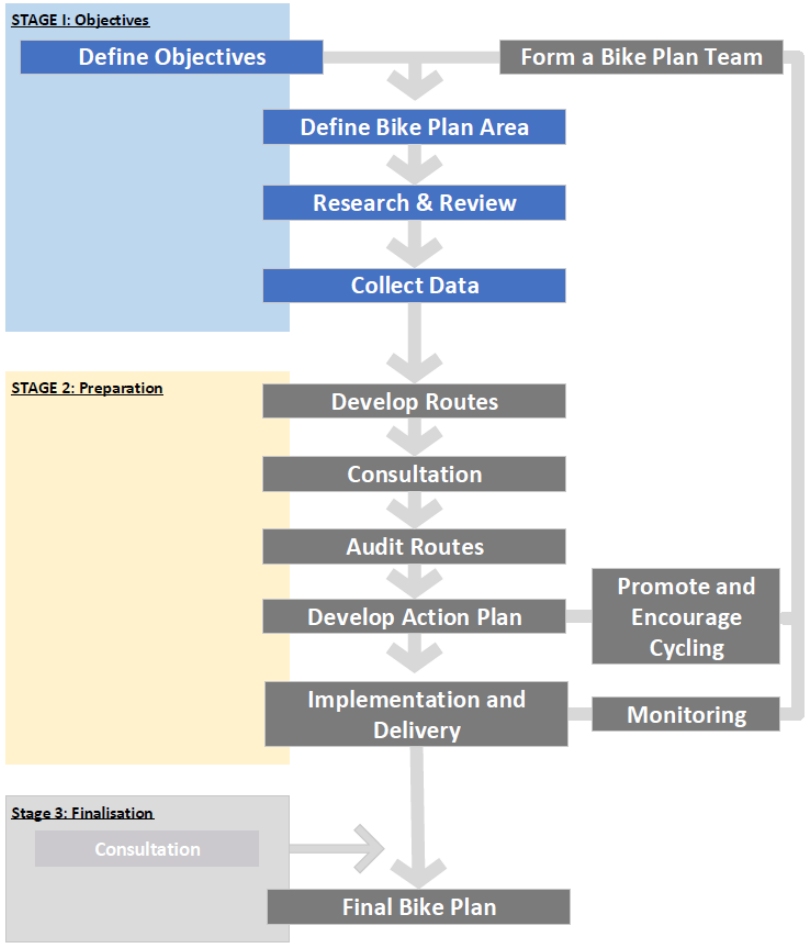

Figure 2: Bike Plan methodology

1.3 Directing the Bike Plan

The ultimate outcome of the Byron Shire Bike Plan is to provide a consolidated, clear and representative plan that can be reliably used to coordinate the delivery of cycling infrastructure and promotional programs in Byron Shire for the benefit of the community and visitors. The following objectives have been developed for this Bike Plan to help work towards this desired outcome:

- To improve access and connectivity for cyclists within and between residential, commercial and recreational areas regardless of age, ability or experience
- To increase the diversity of cyclists and the number and type of cycling trips undertaken
- To adopt a Safe Systems approach in the planning and design of cycling facilities and the relationship with vehicles in order to improve the real or perceived safety of all cyclists, particularly at identified cycle crash clusters
- To plan and design cycle facilities that are informed by national and international best practice and technical standards and that reflect the local context
- To ensure cycle facilities integrate with and support land uses, key natural assets, existing and proposed tourist attractions and other transport modes, where appropriate
- To raise community awareness of the benefits of cycling and the extent of the existing cycle network
- To develop a program of cycle infrastructure and non-infrastructure works that is integrated with other planning and that may attract funding from the NSW State Government to help increase rates of cycling.

1.4 Structure of the Bike Plan

Beyond this first introductory section, the remainder of the Bike Plan is split into the following four sections.

Section 2: Existing cycling environment

This section provides a summary of the existing cycling environment in Byron Shire, including the existing policy context, demographics, land uses, attractors, and cycle and road networks. This section also identifies a range of issues and opportunities which will be used as a basis for developing the future cycle network.

Section 3: Community consultation

This section provides a summary of the findings of the community consultation undertaken to inform the Bike Plan.

Section 4: The future cycle network

This section presents the proposed cycle network for each of the key study areas within Byron Shire as well as the design philosophy and principles that underpinned its development.

Section 5: Action Plan

This section includes reference to the detailed schedule of future works and identifies opportunities to fund, monitor and evaluate the Bike Plan. This section also provides a range of non-infrastructure actions to increase cycling.

2 Existing cycling environment

The existing cycling environment in Byron Shire extends beyond the physical infrastructure that is currently provided to include consideration of all relevant plans and policies as well as town and Shire-wide demographics, current network use, and identified issues and opportunities. These elements, and their relevance to the Shire, are discussed in greater detail throughout this section.

This Bike Plan has been developed to align with and support all relevant plans and policies at all levels of government.

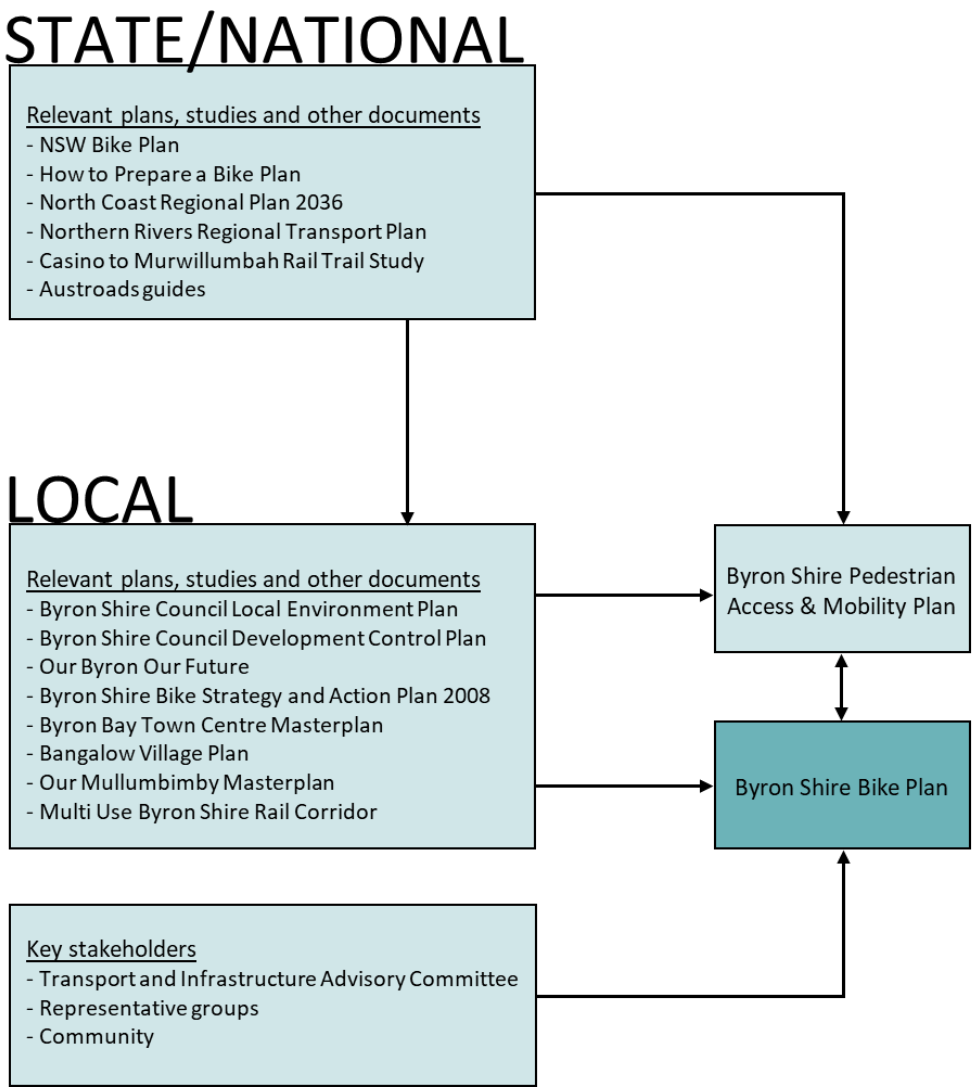

Figure 3: Policy and stakeholder context for developing the Bike Plan

2.1 State policy

NSW Bike Plan

The NSW Bike Plan outlines how the NSW Government will work in partnership with local councils, communities and businesses to grow bicycle riding over a 10-year period. The Plan outlines a number of actions affecting local councils and regional areas and identifies funding sources available to local councils in order to increase cycling.

Some of the key actions from the Bike Plan that affect local councils and, by extension, Byron Shire include:

- Accelerate the delivery of regional and local cycleway networks
- Increase dollar-for-dollar assistance to fund local council bike plan actions that:
    - complete cycle networks in urban areas, making funding conditional (where relevant) on the development of networks that connect across local council boundaries
    - improve wayfinding signage for existing facilities
    - provide facilities in NSW country towns and cities, focusing on improving accessibility for short cycling trips to CBDs, education, shops and regional services
- Help local councils promote their cycle facilities and associated programs by providing seed funding for community cycling events during NSW Bike Week
- Install route signage on all new cycleways that highlights the distance and typical duration of bike travel to key destinations and aligns with existing public transport interchange signage guidelines
- Provide local cycle links to new public transport interchanges through the delivery of major projects
- Provide cycleways as part of all State Road projects in country NSW
- Maintain programs that enable the progressive completion of the NSW Coastline Cycleway, through dollar-for-dollar support for local councils
- Promote cycle access to and through designated NSW National Parks and Crown reserves, including the use of sustainable mountain bike tracks.

In addition, the Plan aims to implement strategies to encourage further bike usage through programs promoting cycling as a more accessible and attractive alternative.

How to Prepare a Bike Plan

The *How to Prepare a Bike Plan* document is a guideline prepared by RMS to assist policy and decision makers to prepare a Bike Plan for local councils or smaller communities.

The guideline outlines a process (refer to Figure 2) to ensure a Bike Plan is properly made and that the approach to achieve its aims is coordinated and strategic. At its core, this includes the development of a set of objectives and associated actions (for example, new cycle paths or educational initiatives) required in order to accomplish them. This ensures that the Bike Plan can be clearly interpreted to key stakeholders such as the community, whilst helping to validate the overall strategy to secure funding.

This document is the key guiding document for the development of the Byron Shire Bike Plan.

North Coast Regional Plan 2036

The North Coast Regional Plan 2036 is the NSW Government's blueprint to guide the development of the region over the next two decades. In support of this, the Plan outlines a vision with goals and actions that reflect community and stakeholder aspirations and that have been geared towards delivering greater prosperity for those who live, work and visit this important region.

Of particular relevance to the Bike Plan, the Plan identifies as an action the desire to facilitate more recreational walking and cycling paths and expand inter-regional and intra-regional walking and cycling links, including the NSW Coastline Cycleway. The Plan also identifies the potential to reuse parts of the Casino to Murwillumbah rail line to support nature-based tourism and recreation, subject to further community consultation and relevant legislative requirements.

Northern Rivers Regional Transport Plan

The Northern Rivers Regional Transport Plan outlines a variety of short, medium and long term actions and projects to support development and change and to

address the unique challenges of the region. The Plan identifies three regional actions and one area-specific project of relevance to the Bike Plan.

These actions are:

- *Support proposals to investigate walking and cycling trails including disused rail lines*

  The NSW Government has outlined their support for an investigation into the feasibility of a walking and cycling trail along the disused sections of the Casino-Murwillumbah rail line to the north-west of Byron Bay. This investigation will be subject to community and business interest in advancing this proposal.

- *Connecting Centres Cycling Program*

  The NSW Government outlined their commitment to working with councils and other stakeholders to identify bicycle network gaps and pinch points in the five kilometre catchments that surround regional towns. The Connecting Centres Cycling Program will help councils to complete local cycle networks to regional centres.

- *Roll out the Cycling Towns Program*

  The Cycling Towns Program focuses bicycle infrastructure provision and encouragement in a small number of regional centres with the aim to rapidly increase rates of cycling in these areas. Programs may include bicycle network construction and bicycle parking facilities, complemented by local government funded encouragement programs, and support for tourist routes and information for visitors. Byron Bay has been identified as a Cycling Town.

- *Improve information about walking and cycling routes and facilities*

  The NSW Government outlined their commitment to promoting the benefits of active transport, improving customer information, and developing guidelines and resources for local government in order to get people walking and cycling more. This will include improved on-line resources (for example, trip planning), other promotion programs and sponsorship of relevant events and community programs.

- *Improve opportunities for walking and cycling*

  The NSW Government outlined their support for the implementation of better facilities for walking and cycling in Byron Bay, including the provision of cycle parking facilities at transport interchanges, centres, schools and hospitals. The State also acknowledged that Byron Shire Council has opportunities to seek support for new links through existing funding mechanisms.

Casino to Murwillumbah Rail Trail Study

In 2012, the NSW Government commissioned the Casino to Murwillumbah Transport Study to explore the feasibility of reintroducing passenger services on the 130km long Casino to Murwillumbah Rail Line. Building on the findings of this report, the NSW Government commissioned the Casino to Murwillumbah Rail Trail Study to examine the feasibility of converting the rail corridor into a trail for walking and cycling.

The study concluded in 2014 that the preliminary cost for the development of a rail trail would be $75.5 million due, in most part, to the significant number of bridges (roughly 160) along the corridor. An economic analysis showed that with a base scenario of 88,320 visitors annually and a net present value of $121.8 million, the rail trail would be financially viable with a benefit cost ratio of 2.54; meaning that for every dollar invested, a return of $2.54 may be possible. This analysis also concluded that to achieve a break-even scenario, the trail would have to receive at least 34,802 visitors annually.

These findings and the study more broadly focused on a largely single use for the corridor. Council is committed to the multi use of the corridor, which could include walking and cycling, as evidenced in the Council-funded Multi Use Byron Shire Rail Corridor study (refer to Section 2.2).

Austroads guides

Austroads is the peak organisation of Australasian road transport and traffic agencies. The organisation undertakes road and transport research, provides input to policy development and publishes guidelines on the design, construction and management of the road network.

The *Cycling Aspects of Austroads Guides* document (third edition, June 2017) presents key information concerning the planning, design and traffic management of cycling facilities. It has consolidated design guidance sourced predominantly from other Austroads guides including the *Guide to Road Design,* the *Guide to Traffic Management,* and the *Guide to Road Safety*.

The *Cycling Aspects of Austroads Guides* includes cross-references with relevant Austroads Guides that provide additional information or important design details for cyclist paths at road intersections, interchanges, or in relation to particular subject areas. This Guide, and the other supporting guidelines, will directly inform the development of the Bike Plan.

2.2 Local policy

Byron Shire Council Local Environmental Plan

The Byron Local Environmental Plan (LEP) is a legal document prepared by Council and approved by the State Government to regulate and guide Council's planning decisions regarding land use and development within Byron Shire. Through land zoning and development controls, the LEP is the main planning tool to shape the future of communities and to ensure local development is done appropriately and in an environmentally sensitive manner.

Byron Shire Council Development Control Plan

The Byron Development Control Plan (DCP) is a document that provides planning and building design guidelines for new development or alterations to existing development. The purpose of the DCP is to specify Council's requirements for quality development and sustainable environmental outcomes on land in the Shire.

The Byron DCP also outlines a range of controls that apply generally to developments. These controls include, but are not limited to, Access and Mobility; Traffic Planning, Vehicle Parking, Circulation and Access; and Providing for Cyclists.

Our Byron Our Future - Our Community Strategic Plan 2028

This document outlines the collective long-term vision for Byron Shire and its residents for the next ten years. The Plan identifies a range of community objectives and supporting strategies that will help achieve this vision and also inform longer-term decision making.

Of relevance to the Bike Plan, the Plan provides an objective to have infrastructure, transport and services that meet community expectations. In support of this particular objective, three strategies were identified. These are to provide a road network which is safe, accessible and maintained to an acceptable level of service; to provide essential services and reliable infrastructure which meet an acceptable community standard; and to support, through partnership, a network of integrated sustainable transport options.

Byron Shire Bike Strategy and Action Plan 2008

In 2008, Council released the Byron Shire Bike Strategy and Action Plan (Bike Plan) to facilitate the expansion of the existing network of bicycle facilities in Byron Shire in a consistent and appropriate manner that meet the needs of different user groups.

The Plan outlined non-infrastructure actions (for example, policy review, educational information) to be implemented as well as a number of infrastructure actions (for example, shared paths, on-road paths, signage) for construction across the Shire. This Plan, including the planned path network, has been reviewed as part of the development of this updated Bike Plan.

Byron Bay Town Centre Masterplan

The Byron Bay Town Centre Masterplan, which was released in 2016, presents a vision and strategy to guide the future form of Byron's Town Centre and to set out realistic actions and projects to achieve that vision. Of the six core strategies outlined in the masterplan, the Access and Movement Strategy is of most relevance to the Bike Plan. This strategy is comprised of four sub-strategies, each of which relate to a different aspect of access and mobility in Byron Bay's town centre. Sub-Strategy 4: A People Prioritised Centre outlines a number of key actions and initiatives to guide pedestrian movement in the town centre. These are:

- Establish a pedestrian prioritised core, with a comprehensive cycle network to create an active, safe and memorable town centre. This could be achieved by increasing footpath widths and crossings and introducing shared and pedestrianised streets where pedestrians and cyclists have priority
- Strengthen Byron Street's role as the town centre's main east to west link, connecting the Arakwal National Park through to Belongil Creek
- Incorporate pedestrian and cycle links along the rail corridor encouraging both pedestrian and cycle movement to neighbouring areas
- Introduce cycle hire facilities at major access points to encourage Park and Ride initiatives

- Establish a continuous foreshore pedestrian walk that links seamlessly to the pedestrian and cycle links along the rail corridor.

Bangalow Village Plan

The Bangalow Village Plan was endorsed by Council in March 2019 as the plan to guide the improvement and development of Bangalow over the next 15 years. The plan outlines residents' aspirations for their village and aims to ensure that Bangalow's heritage, natural environment, village feel and sense of community are preserved and enhanced.

The 'Access and movement' theme, which is one of six in the plan, establishes a vision for Bangalow in which *the different parts of the village are connected by a network of off-road walk/cycle paths through the open space network. These provide walking and riding opportunities for people of all ages and abilities. Pedestrian safety is prioritised*. In practical terms, this includes the provision of new pedestrian and cycle path infrastructure to create a connected network, new recreational paths along Byron Creek and the showgrounds, a new pedestrian and cycle bridge to connect the showgrounds with the sports fields, multi use of the rail corridor, various intersection upgrades to improve safety and convenience, and the provision of a consolidated bus stop on Byron Street close to the public school.

Our Mullumbimby Masterplan

The Our Mullumbimby Masterplan is currently being developed by Council, in conjunction with the community. This plan will guide the development of Mullumbimby, including the cycle network, in the future and will also outline residents' aspirations for the town.

Multi Use Byron Shire Rail Corridor

A study investigating the benefits, costs and impacts of different transport uses in the currently disused rail corridor within Byron Shire was released in June 2019. The study included an assessment of the current state of infrastructure along the rail corridor within Byron Shire, the development of options for its reuse along with an economic feasibility study to determine the relative costs and benefits, and a social impact assessment to determine the social impacts. All six options assessed included active transport elements, though the type of facility and its position in relation to the rail line varied. The study found that a Hi-Rail/Dual Mode Vehicle (Rail with Trail) option that retains the current rail infrastructure would likely provide the highest benefit-cost ratio and the greatest social benefit.

This is of particular importance for the Bike Plan as effective integration between active transport and rail transport has the ability to extend the range of cyclists, provide new destinations and overcome the limitations of providing such facilities over long distances between urban centres and rural areas.

2.3 Riding in Byron Shire

Byron Shire is a unique and picturesque part of the Northern Rivers region. It is located 800 kilometres north of Sydney, 200 kilometres south of Brisbane and is bounded by the Tweed, Lismore and Ballina LGAs. The Shire is currently home to approximately 34,000 people, spread across a number of distinctive towns, villages and rural environments. Despite a comparatively small population, Byron Shire has gained an international reputation with more than two million visitors each year enjoying the beautiful and respected natural environment, the creative and relaxed lifestyle and the friendly and diverse community. Enabling tourists to safely and enjoyably experience the Shire from the saddle of a bike will be important not only for catering for potential increases in tourist numbers in the future but, importantly, for addressing climate change by promoting more environmentally-sustainable methods of transport.

A number of towns and villages in the Shire have been specifically included in this Bike Plan. These locations are listed below and shown in Figure 4.

- Mullumbimby
- Byron Bay
- Suffolk Park
- Bangalow
- Ocean Shores, South Golden Beach, New Brighton and Billinudgel
- Brunswick Heads
- Main Arm and Federal.

The characteristics of each of these localities are discussed in the respective sections below. Although there are also a number of rural locations that contribute positively to the Shire, for the practical purpose of this Bike Plan these areas have not been addressed in great detail.

As can be seen in Figure 4, there is currently very little dedicated cycling infrastructure in rural areas and only some of the more established towns and villages currently have cycle paths connecting one another in order to enable longer distance journeys. On-road cycle lanes on the Pacific Motorway provide a key north-south cycle connection linking some of these towns and villages and also connecting further south into Ballina Shire.

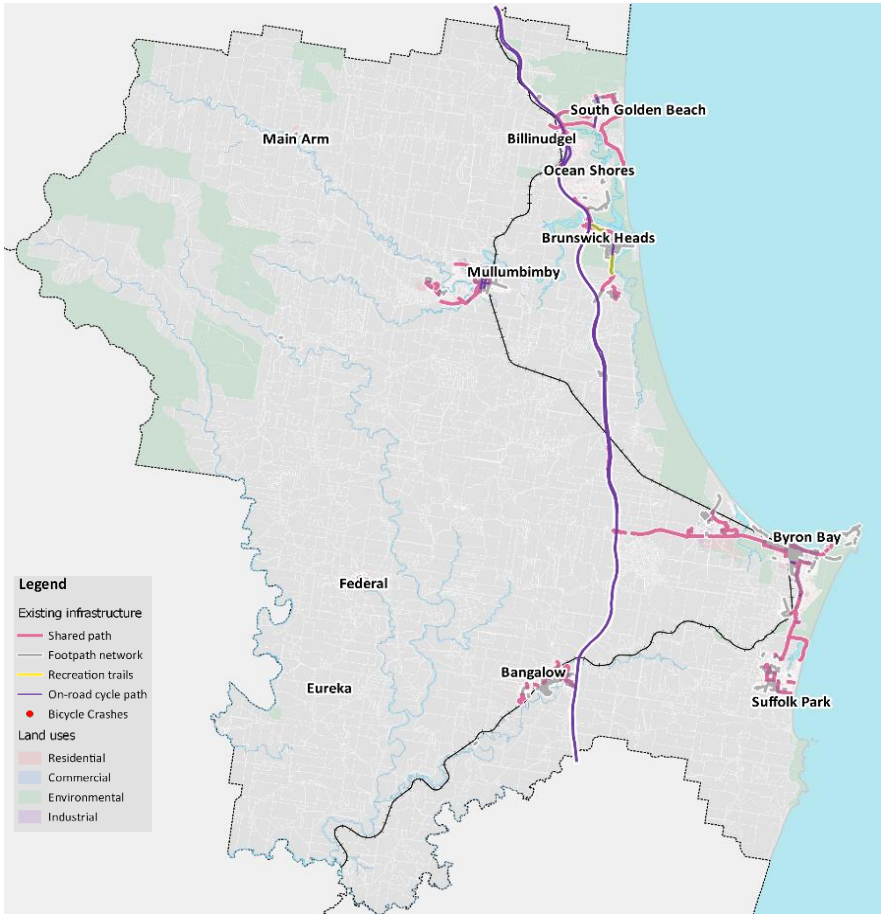

Figure 4: Existing cycle network in Byron Shire

2.4 Riding in Mullumbimby

Mullumbimby is a unique, inclusive and relaxed town that is bisected by the Brunswick River and set against a picturesque mountain backdrop. It is a key centre servicing the needs of both town residents and the surrounding rural areas. The heart of Mullumbimby is its community and its strength, optimism and ability to foster local enterprise and achieve practical solutions to pressing issues.

The Bike Plan study area for Mullumbimby is shown in Figure 5 and a snapshot of key community profile statistics is provided below.

Population

3,596

+274 (8.2%) since 2011
11% of Byron Shire population

Median age

46

Regional NSW.....43
NSW.....38
Australia.....38

Largest age category

45 to 49 years (8.7%)

Regional NSW.....6.4%
NSW.....6.6%
Australia.....6.8%

Proportion of residents aged 14 and under

18.3% (653 people)

Regional NSW.....18.1%
NSW.....18.5%
Australia.....18.7%

Proportion of residents aged 65 and over

19.8% (704 people)

Regional NSW.....19.7%
NSW.....16.3%
Australia.....15.7%

Proportion of residents needing assistance with core activities

6.7%

Regional NSW.....6.3%
NSW.....5.4%
Australia.....5.1%

Most popular industry of employment	Proportion of employed local residents who cycle to work	Proportion of households with no registered motor vehicle
Health Care and Social Assistance (16.8%)	3.3% (46 people)	4.7%
Regional NSW…..14.4%	Regional NSW…….0.6%	Regional NSW…….5.8%
NSW……12.5%	NSW……0.7%	NSW……9.2%
Australia……12.6%	Australia……1.0%	Australia……7.5%

Source: Australian Bureau of Statistics; ProfileID

2.4.1 Existing cycle network

Although not extensive, Mullumbimby's current cycle network provides a good foundation for future expansion. As can be seen in Figure 5, the majority of the core commercial area in the town centre is currently serviced by a network of on-road cycle paths. These paths, however, currently only provide partial connectivity to the existing shared cycle path network and they do not extend further north, south or east into surrounding residential areas.

The existing shared path network currently enables off-road cycle and pedestrian movements between the town centre and residential areas located in the north west and south west of Mullumbimby. The connectivity and convenience of these paths, however, is affected by existing gaps in the network and also by the location of the paths either on one side of the road only or with locations alternating intermittently between both sides of the road.

Outside of these paths, cycle access to the town centre and between residential areas occurs either on-road (often between parked cars and adjacent vehicular traffic), on less trafficked roads where cyclists mix with vehicular traffic or on the existing footpath network.

Outside of the study area, there is currently no provision for longer distance cyclist movements to enable connections to nearby towns, villages and rural communities. This is evident along Mullumbimby Road and Gulgan Road to the east, Coolamon Scenic Drive to the north and south and Main Arm Road to the west. These roads generally are highly trafficked when compared with the rest of the local road network, are narrow, and lack shoulders and dedicated cycle infrastructure.

Between 2012 and 2017, no cyclist related crashes were recorded in the Mullumbimby study area. Notwithstanding, one cyclist crash was recorded in 2017 outside the study area at the intersection of Mullumbimby Road and Gulgan Road.

2.4.2 Issues and opportunities

MULLUMBIMBY – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES

Issues	Opportunities
• High volume of pedestrians and vehicles and regular car parking manoeuvres • High number of tourists unfamiliar with local area • Limited cycle network outside of the town centre	• Compact town centre with residential areas and attractors within close proximity • Established network of on-road cycle paths in the town centre, servicing a number of key attractors • Existing wide streets provide opportunities for more cycle paths • Topography generally conducive to cycle movements for all ages and abilities • Proximity to key attractors and natural assets (for example, rivers and parks) to support recreational cycling

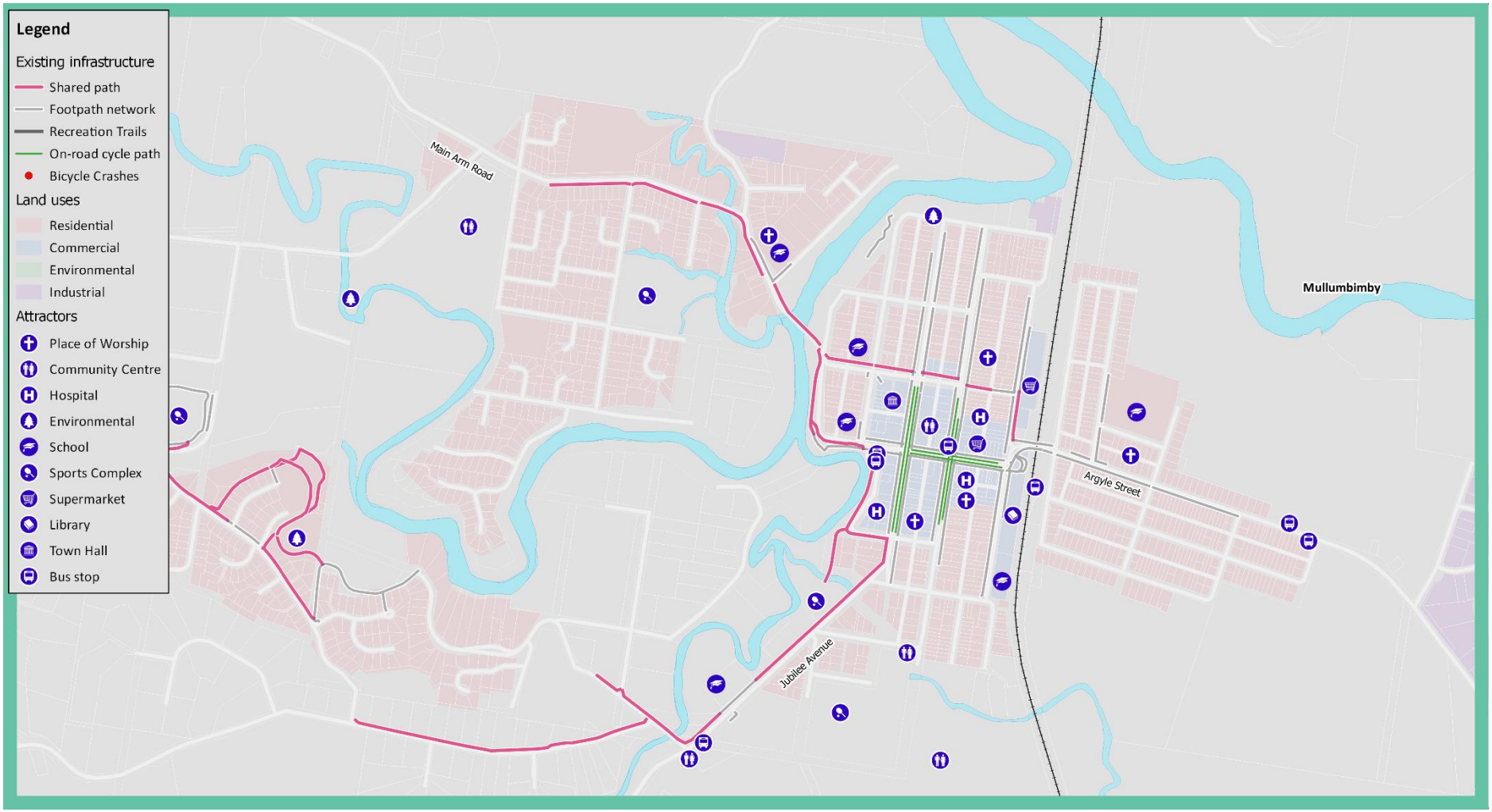

Figure 5: Existing cycle network – Mullumbimby

Figure 6: Existing cycle network – Mullumbimby Town Centre

2.5 Riding in Byron Bay

Byron Bay is an iconic coastal town with a relatively low density urban environment and a compact, walkable commercial centre. Despite being a key destination for both domestic and international visitors, Byron Bay has maintained an engaged and active local community and a respectful relationship with its natural environment.

The Bike Plan study area for Byron Bay includes the town's western, central and southern areas as shown in Figure 9, Figure 10 and Figure 12 respectively. A snapshot of key community profile statistics for Byron Bay, including these three areas, is provided below.

Population

5,521

+401 (7.8%) since 2011
17% of Byron Shire population

Median age

42

Regional NSW.....43
NSW.....38
Australia.....38

Largest age category

25 to 29 year (9.6%)

Regional NSW.....5.5%
NSW.....7.0%
Australia.....7.1%

Proportion of residents aged 14 and under

12.3% (678 people)

Regional NSW.....18.1%
NSW.....18.5%
Australia.....18.7%

Proportion of residents aged 65 and over

17.2% (950 people)

Regional NSW.....19.7%
NSW.....16.3%
Australia.....15.7%

Proportion of residents needing assistance with core activities

4.2%

Regional NSW.....6.3%
NSW.....5.4%
Australia.....5.1%

Most popular industry of employment

Accommodation and Food Services (19.7%)

Regional NSW.....7.9%
NSW.....7.1%
Australia.....6.9%

Proportion of employed local residents who cycle to work

7.3% (172 people)

Regional NSW.....0.6%
NSW.....0.7%
Australia.....1.0%

Proportion of households with no registered motor vehicle

7.4%

Regional NSW.....5.8%
NSW.....9.2%
Australia.....7.5%

Source: Australian Bureau of Statistics; ProfileID

2.5.1 Existing cycle network

The existing cycle network in the western, central and southern areas of Byron Bay is presented in Figure 9, Figure 10 and Figure 12 respectively. These maps provide an indication as to the current extent of the cycle network, the level of connectivity linking typical trip origins (for example, residential areas) and destinations (for example, commercial areas and major attractors), and the relationship with the existing footpath network. These maps also show the location of crashes involving cyclists but this is discussed in greater detail in Section 2.5.2.

The dominant cycle link to the west of Byron Bay (refer to Figure 9) is the existing shared cycle/pedestrian path that connects Myocum Road and the Pacific Motorway in the west to the township of Byron Bay in the east. Although the dominant connection, this path currently has two missing sections that affect the overall connectivity of the network and the safety of users. The location of this path also alternates between the northern and southern side of Ewingsdale Road which increases the need for users to cross the busy two lane, two way road to continue on a dedicated cycle path and/or to access nearby developments and attractors. Beyond this dominant connection, the majority of the existing development to the west of Byron Bay, particularly in the areas zoned industrial, currently has limited access to a connected cycle network.

As can be seen in Figure 10, Byron Bay's town centre currently does not contain any shared or on-road cycle paths. This affects not only the safety of cyclists in town as it requires interactions with vehicles, pedestrians or both, it also limits connectivity and access across Byron Bay. The remainder of central Byron Bay, which includes a significant proportion of the town's residential population, has only limited access to a dedicated and connected cycle network. As a result and as roads in these areas generally carry a reduced number of vehicles at slower speeds, cyclists generally mix with vehicular traffic.

The shared cycle/pedestrian path that connects the southern extent of Byron Bay's town centre to Suffolk Park is the dominant cycle connection in Byron Bay's south (refer to Figure 12). This path provides largely continuous access between residential areas in Byron Bay and Suffolk Park to St Finbarr's Catholic Primary School and Byron Bay High School. Although this forms the main north-south spine of the network, the path is currently only provided on the eastern side of Bangalow Road/Broken Head Road and its condition and width varies significantly over its length. As a result of this alignment, residents to the west are required to cross the busy two lane, two way road to continue on a dedicated cycle path.

2.5.2 Cyclist crash history

There have been a total of 11 recorded crashes involving cyclists in Byron Bay over the five years between 2012 and 2017. As shown in Figure 9, Figure 10 and Figure 12, these crashes have tended to occur along busier roads that provide access to, from and within Byron Bay; namely, Ewingsdale Road, Jonson Road and Bangalow Road.

An analysis of all recorded cyclist crashes in Byron Bay over the last five years suggests that crashes involving cyclists peaked in 2014 in terms of quantity and severity (refer to Figure 7 and Figure 8). There were a number of common reasons for cyclist crashes in Byron Bay, including:

- Poor visibility/lack of awareness between motorists and cyclists, particularly at conflict points such as driveway entries and intersections
- Lack of road space for cyclists leading to pinch points (for example, between parked cars and general vehicular traffic)
- Cyclists use of footpaths
- Lack of adherence to defined road crossing points
- General motorist and cyclist error.

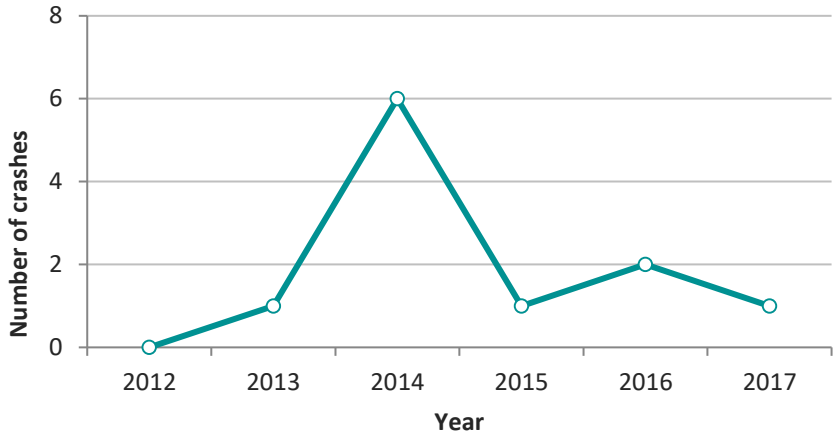

Figure 7: Annual cyclist crashes in Byron Bay (2012-2017)

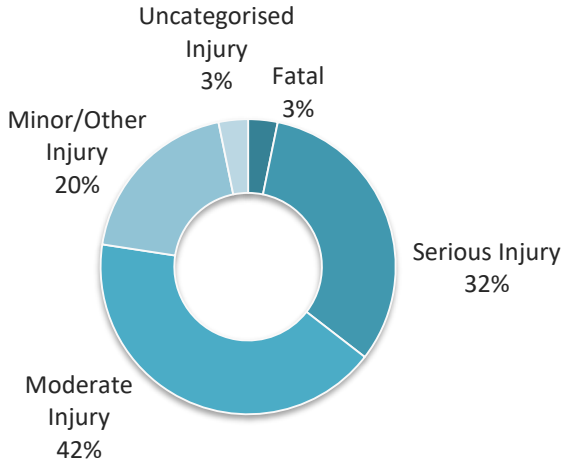

Figure 8: Cyclist crashes by severity in Byron Bay (2012-2017)

2.5.3 Issues and opportunities

BYRON BAY – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES	
Issues	**Opportunities**
• High volume of pedestrians and vehicles and regular car parking manoeuvres • High number of tourists unfamiliar with local area • Some gaps in existing cycle network, especially along key routes and to, from and within residential and industrial areas	• Compact town centre with residential areas within close proximity • Easy navigation and legibility due to street grid design • Cyclists able to use local (residential) road network due to reduced number of vehicles travelling at slower speeds • Topography generally conducive to cycling for all ages and abilities • Proximity to key attractors and natural assets (for example, beaches) to support recreational cycling

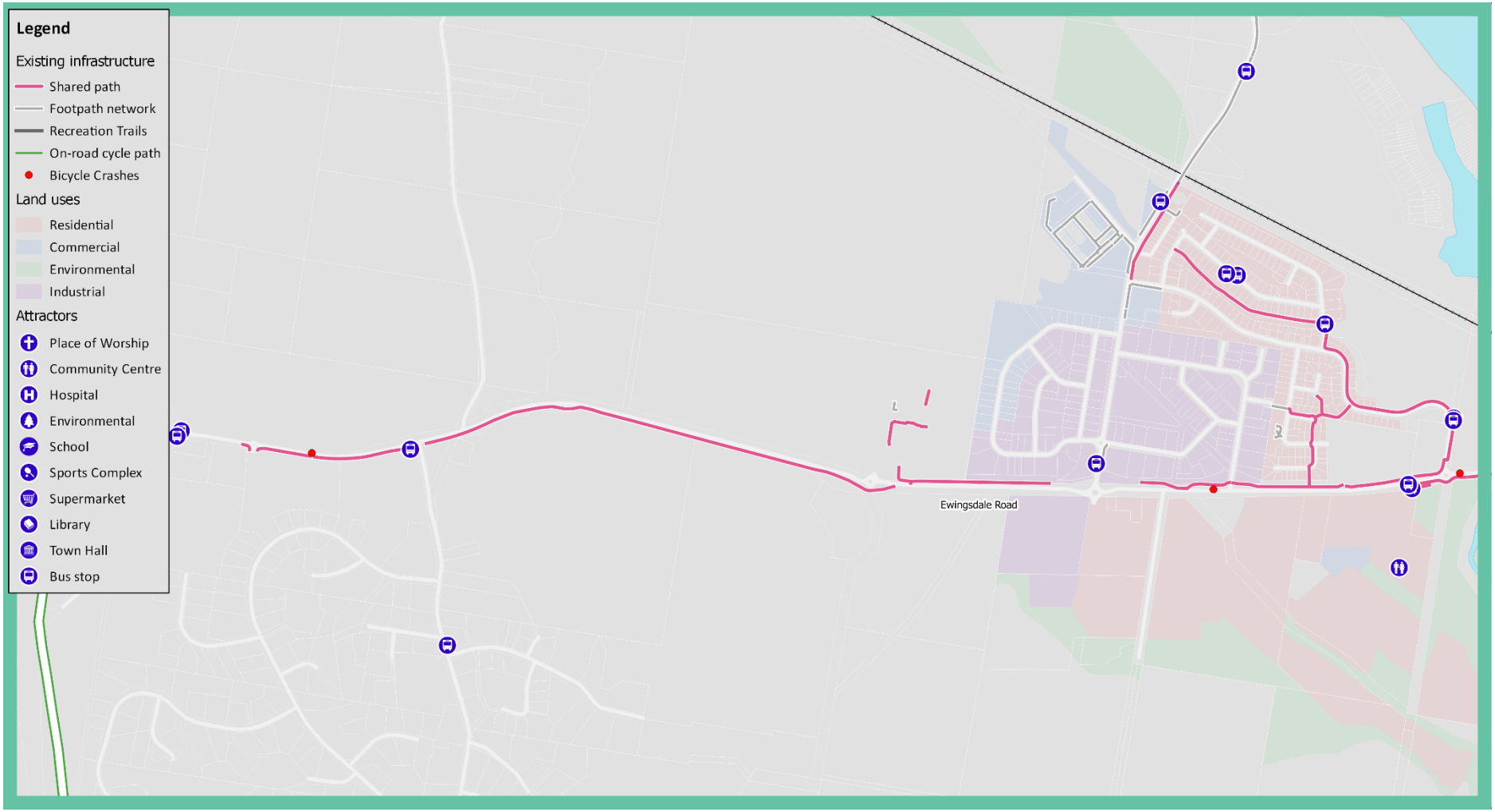

Figure 9: Existing cycle network and cycle crash locations – Byron Bay (West)

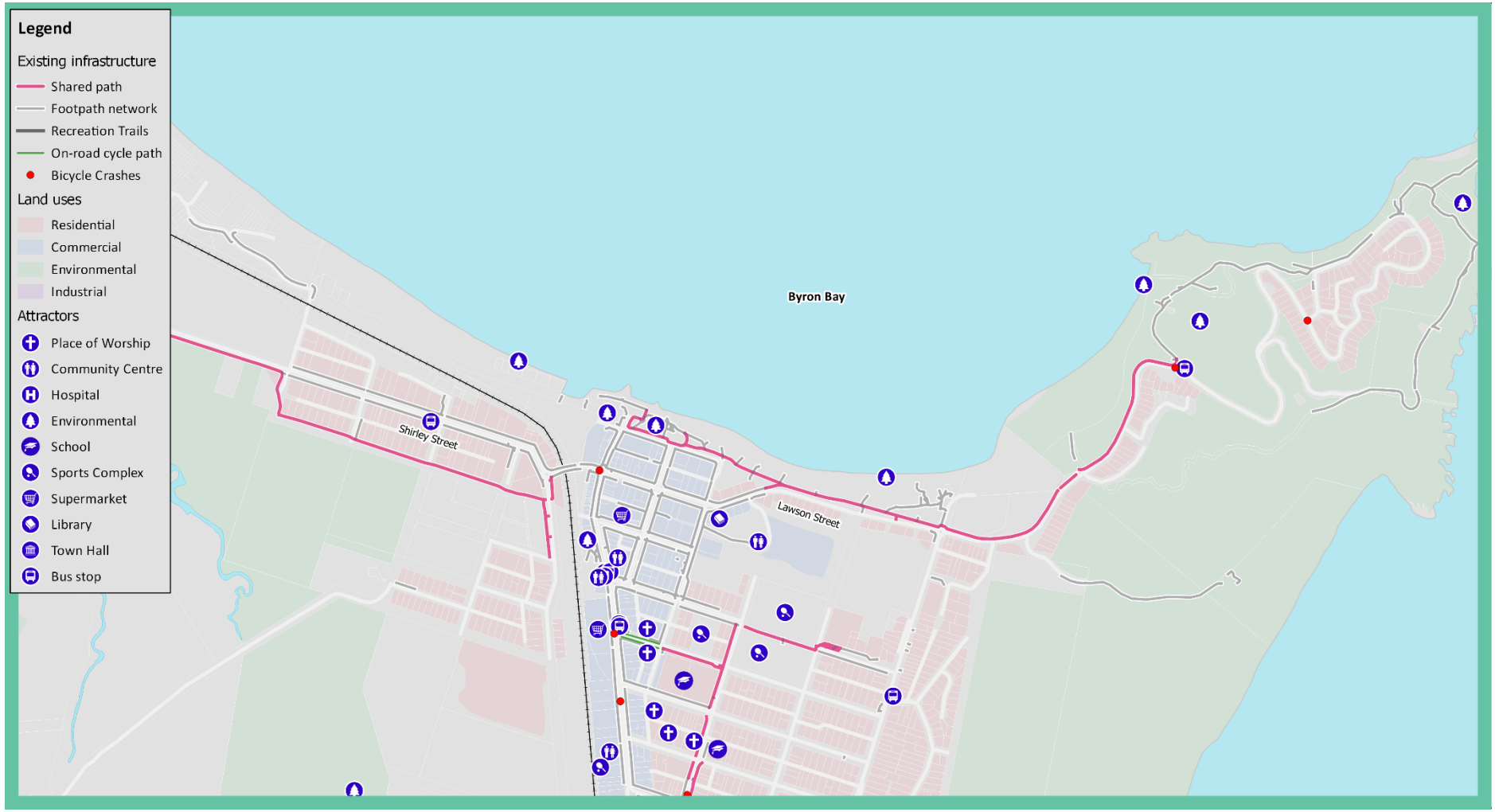

Figure 10: Existing cycle network and cycle crash locations – Byron Bay (Central)

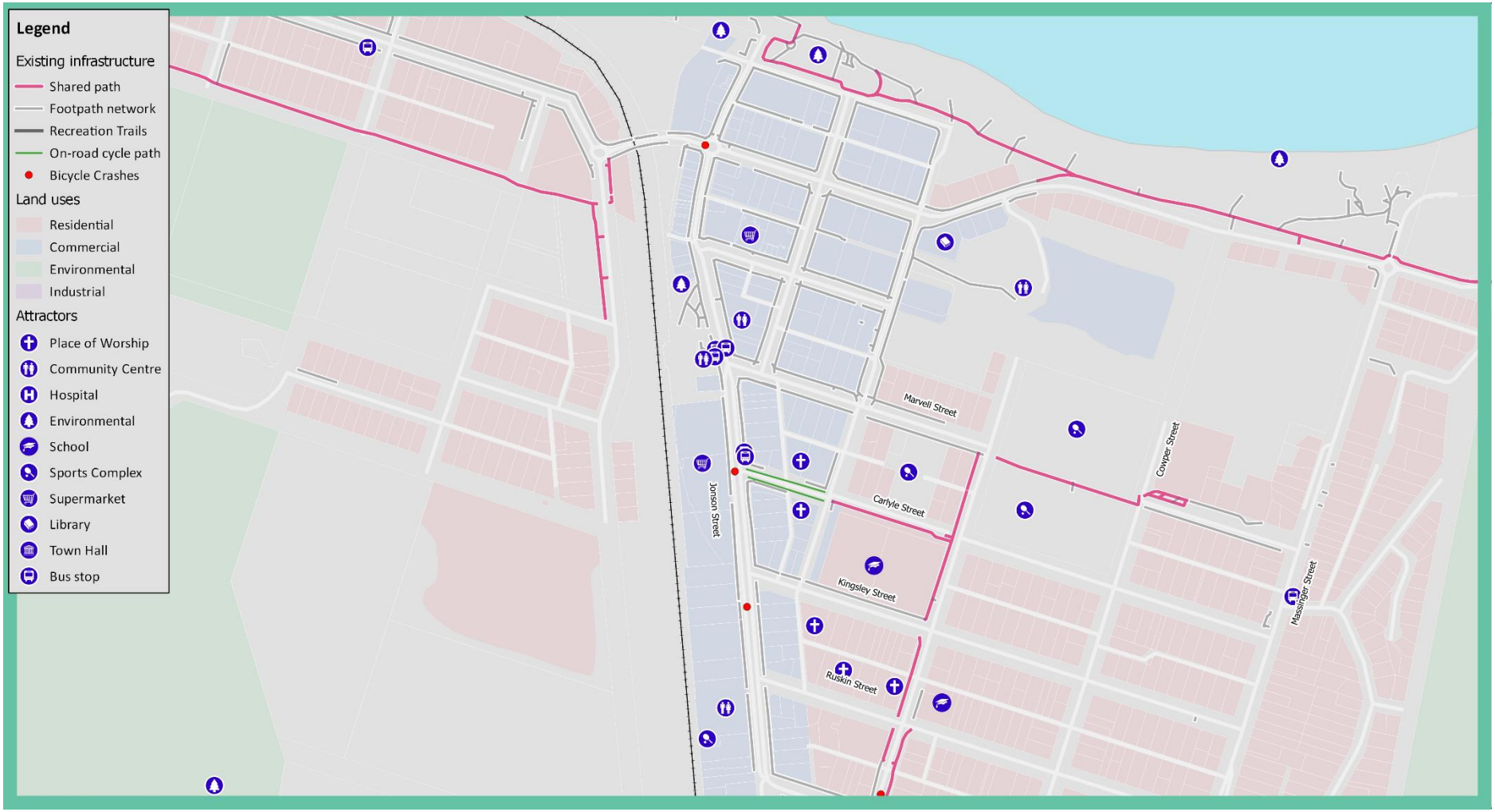

Figure 11: Existing cycle network and cycle crash locations – Byron Bay (Central) Town Centre

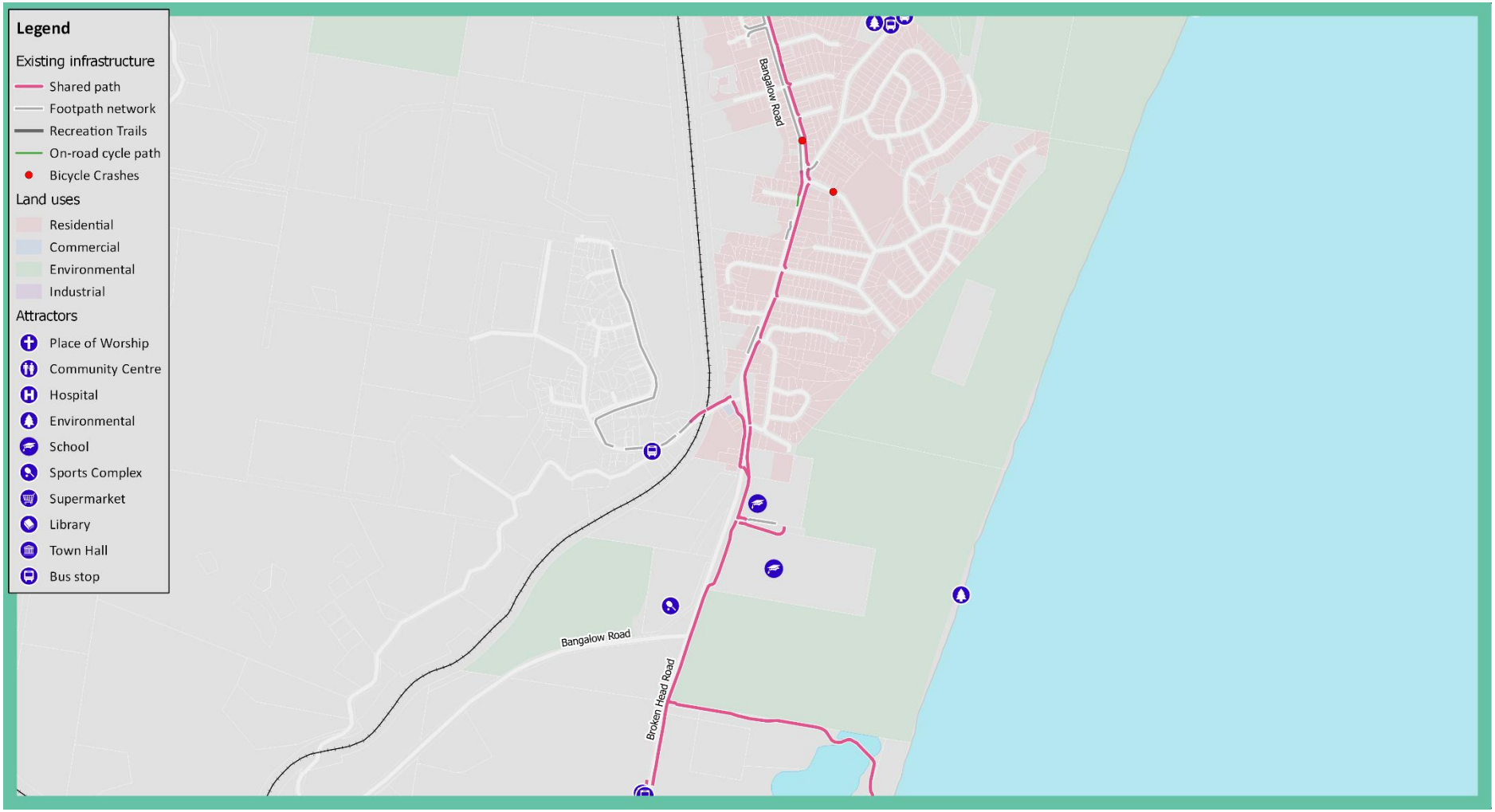

Figure 12: Existing cycle network and cycle crash locations – Byron Bay (South)

2.6 Riding in Suffolk Park

Suffolk Park, located roughly five kilometres south of Byron Bay, is a peaceful and distinct residential area popular with a broad spectrum of residents and holidaymakers. Situated on both sides of Broken Head Road, Suffolk Park provides access to key assets such as Tallow Beach, Tallow Creek and surrounding environmental area, Ti-Tree Lake Aboriginal Area, the Byron Bay Golf Course and a number of sporting facilities. The Bike Plan study area for Suffolk Park is shown in Figure 13 and a snapshot of key community profile statistics is provided below.

Population

3,750

+214 (6.1%) since 2011
11% of Byron Shire population

Median age

40

Regional NSW.....43
NSW.....38
Australia.....38

Largest age category

40 to 44 years (8.8%)

Regional NSW.....6.1%
NSW.....6.7%
Australia.....6.8%

Proportion of residents aged 14 and under

17.1% (642 people)

Regional NSW.....18.1%
NSW.....18.5%
Australia.....18.7%

Proportion of residents aged 65 and over

13.2% (494 people)

Regional NSW.....19.7%
NSW.....16.3%
Australia.....15.7%

Proportion of residents needing assistance with core activities

3.7%

Regional NSW.....6.3%
NSW.....5.4%
Australia.....5.1%

Most popular industry of employment

Accommodation and Food Services (15.3%)

Regional NSW.....7.9%
NSW.....7.1%
Australia.....6.9%

Proportion of employed local residents who cycle to work

3.4% (62 people)

Regional NSW.....0.6%
NSW.....0.7%
Australia.....1.0%

Proportion of households with no registered motor vehicle

2.6%

Regional NSW.....5.8%
NSW.....9.2%
Australia.....7.5%

Source: Australian Bureau of Statistics; ProfileID

2.6.1 Existing cycle network

As can be seen in Figure 13, the existing cycle network in Suffolk Park is currently limited. This is particularly critical along Broken Head Road where a gap in the cycle network between the Byron at Byron and the Beachbreak at Byron resorts significantly impairs the ability to conveniently cycle uninterrupted between Byron Bay and Suffolk Park. Away from Broken Head Road, there are currently only a handful of shared cycle paths and these typically do not provide connections to/from key attractors. Notwithstanding, the local road network in Suffolk Park generally carries a reduced number of vehicles at slower speeds. This provides opportunities for cyclists to mix with vehicular traffic, in lieu of dedicated cycle infrastructure, in order to access residential areas and attractors. The provision of suitable crossing locations will be important in order to provide safe and convenient access across Broken Head Road and to cater for cyclist and pedestrian movements between the key attractors in the east (for example, Tallow Beach) and the predominantly residential areas to the west.

2.6.2 Cyclist crash history

Only one crash involving a cyclist was recorded in the study area between 2012 and 2017 (refer to Figure 13). This crash, which occurred on the existing shared path that runs parallel to Broken Head Road, occurred in 2017 when the cyclist clipped the edge of the path.

2.6.3 Issues and opportunities

SUFFOLK PARK – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES	
Issues	**Opportunities**
• No continuous cycle connectivity to the north • Limited cycle network in existing residential areas • Broken Head Road forms a barrier for access between eastern and western parts of Suffolk Park. Cyclists required to cross road	• Topography generally conducive to cyclist movements for all ages and abilities • Cyclists able to use local (residential) road network due to reduced number of vehicles travelling at slower speeds • Proximity to natural assets (for example, Tallow Beach, Ti-Tree Aboriginal Area) to support recreational cycling

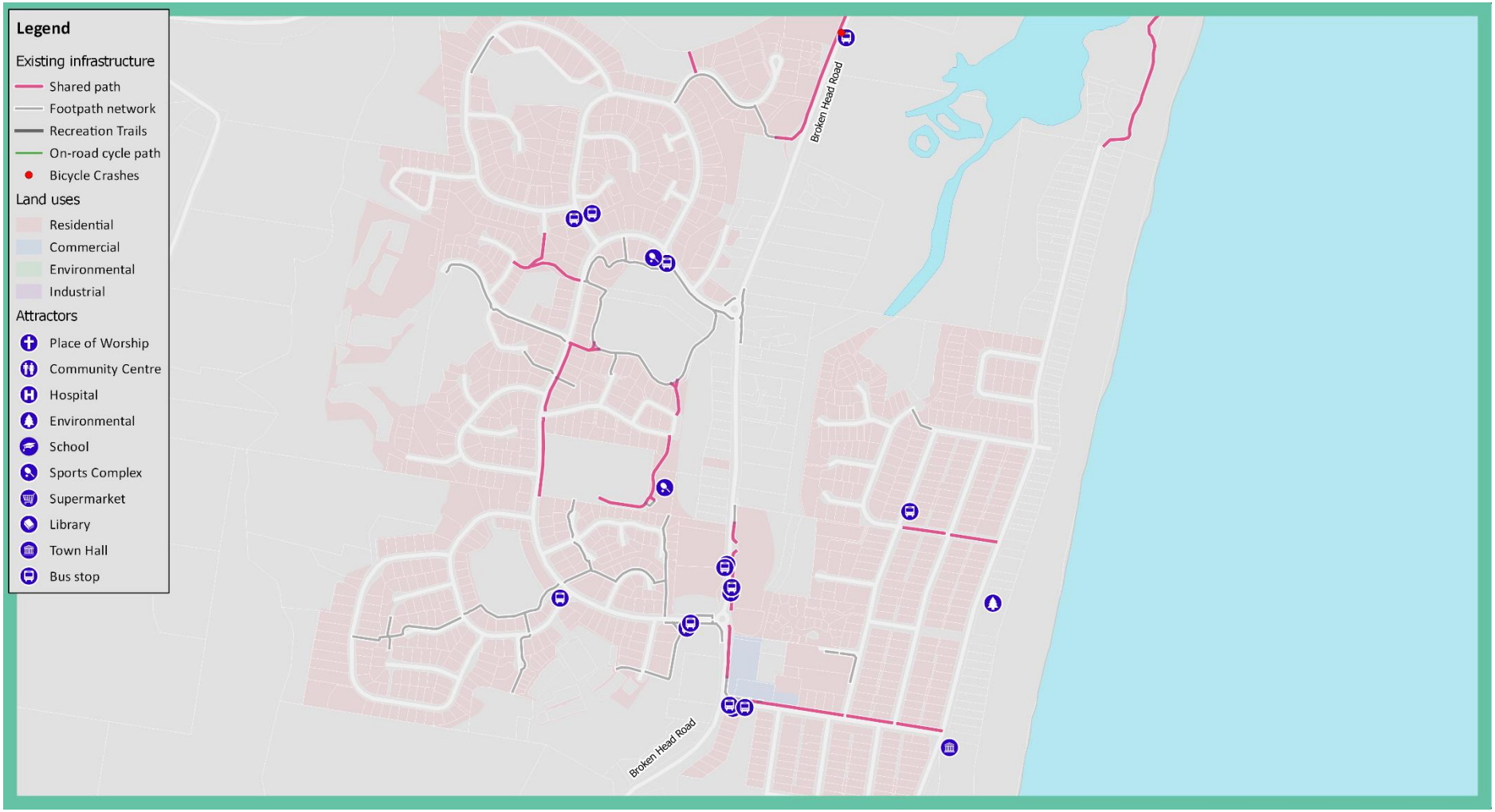

Figure 13: Existing cycle network and cycle crash locations – Suffolk Park

2.7 Riding in Bangalow

Bangalow is a scenic and vibrant rural community located in the south of the Shire. It is positioned close to the Pacific Motorway and Byron Creek and is bisected along an east-west alignment by Bangalow Road and the currently disused Casino to Murwillumbah rail line and along a north-south alignment by Granuaille Road. As an environmentally, culturally and architecturally significant town with a thriving arts and crafts scene, it is a magnet for visitors.

The Bike Plan study area for Bangalow is shown in Figure 14 and a snapshot of key community profile statistics is provided below.

Population

2,021

+197 (11%) since 2011
6.1% of Byron Shire population

Median age

43

Regional NSW.....43
NSW.....38
Australia.....38

Largest age category

40 to 44 years (9.5%)

Regional NSW.....6.1%
NSW.....6.7%
Australia.....6.8%

Proportion of residents aged 14 and under

21.6% (437 people)

Regional NSW.....18.1%
NSW.....18.5%
Australia.....18.7%

Proportion of residents aged 65 and over

15.8% (319 people)

Regional NSW.....19.7%
NSW.....16.3%
Australia.....15.7%

Proportion of residents needing assistance with core activities

4.4%

Regional NSW.....6.3%
NSW.....5.4%
Australia.....5.1%

Most popular industry of employment

Health Care and Social Assistance (16.1%)

Regional NSW.....14.4%
NSW.....12.5%
Australia.....12.6%

Proportion of employed local residents who cycle to work

0.0% (0 people)

Regional NSW.....0.6%
NSW.....0.7%
Australia.....1.0%

Proportion of households with no registered motor vehicle

1.4%

Regional NSW.....5.8%
NSW.....9.2%
Australia.....7.5%

Source: Australian Bureau of Statistics; ProfileID

2.7.1 Existing cycle network

There are currently only a limited number of dedicated cycle paths in Bangalow; namely, along Rankin Drive in the north, around Bangalow sports fields in the east, and along Parrot Tree Place in the west.

As can be seen in Figure 14, there are currently no cycle paths along Bangalow Road in the vicinity of, or connecting to, existing commercial areas and attractors in the centre of town. This is important as it is a key location that is subject to a large amount of activity from pedestrians, parking cars and general traffic.

The current bisection of the town along Bangalow Road and Granuaille Road, which are both heavily trafficked road corridors, further undermines cycle movement and accessibility in Bangalow.

2.7.2 Cyclist crash history

Only one crash involving a cyclist was recorded in the study area between 2012 and 2017. As shown in Figure 18, this crash occurred close to the intersection of Keith Street and Raftons Road. The crash, which resulted in minor injury, occurred in 2016 when a vehicle turned across the path of a cyclist in order to access a driveway.

2.7.3 Issues and opportunities

BANGALOW – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES	
Issues	**Opportunities**
• High volume of pedestrians and vehicles and regular car parking manoeuvres in the town centre • High number of tourists unfamiliar with local area • Limited cycle network outside of the town centre and no current connection to the Pacific Motorway • Bangalow Road forms a barrier for access between residential areas to the north and south. Cyclists required to cross road • Undulating topography across the town may impact on mobility	• Established town centre with residential areas and attractors within close proximity, including Bangalow sports fields • Proximity to disused rail corridor and potential reuse as cycling route

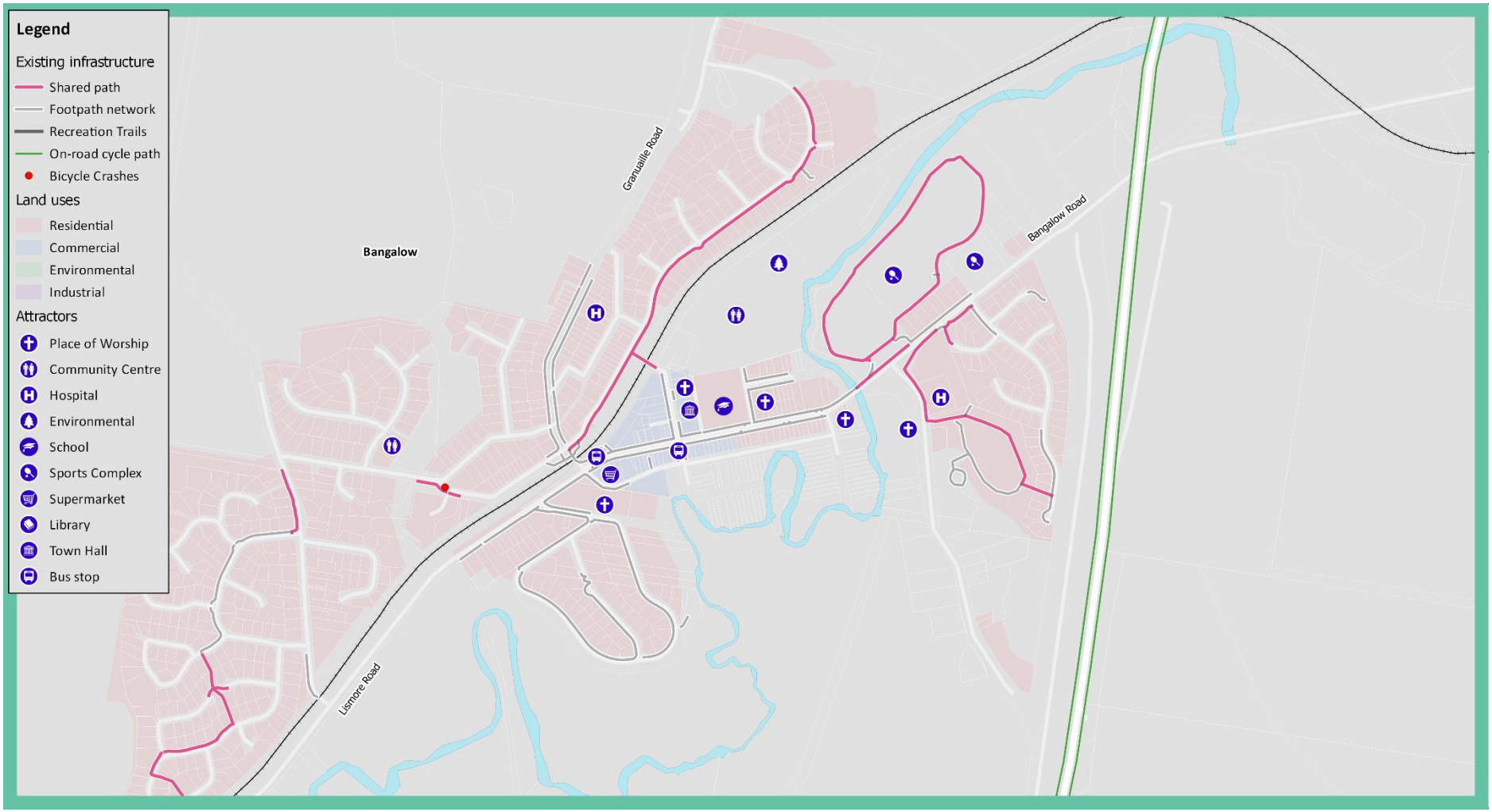

Figure 14: Existing cycle network and cycle crash locations – Bangalow

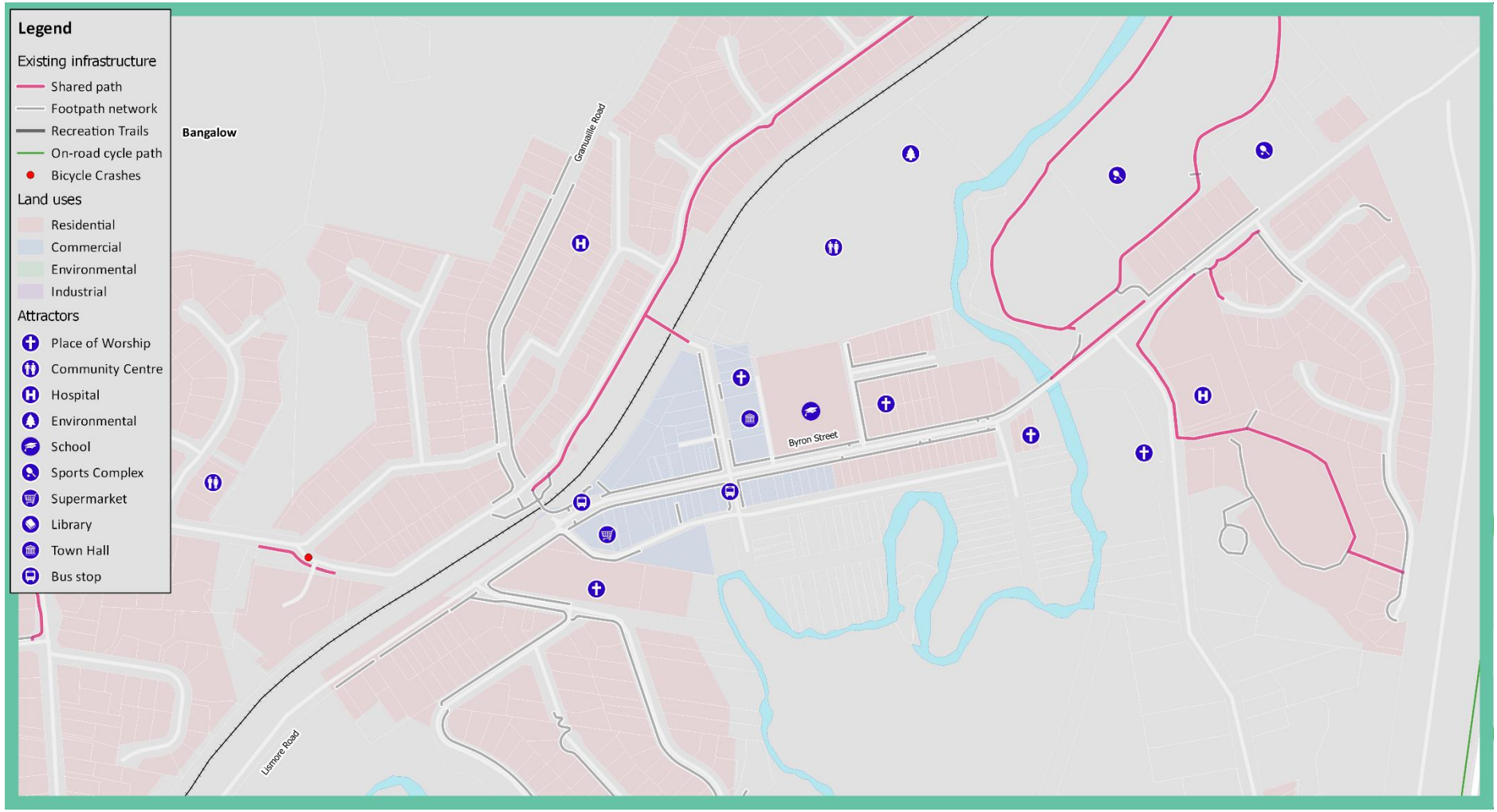

Figure 15: Existing cycle network and cycle crash locations – Bangalow Town Centre

2.8 Riding in Ocean Shores, South Golden Beach, New Brighton and Billinudgel

Ocean Shores, South Golden Beach, New Brighton and Billinudgel are coastal suburbs located to the north of Byron Shire. New Brighton and South Golden Beach are both beachside suburbs while Ocean Shores and Billinudgel are located further inland on either side of the Pacific Motorway.

With the exception of Billinudgel which has a small town centre comprised of a classic Australian country pub and a number of industrial trade outlets, these localities are generally residential in nature with only a limited number of key attractors. The largest concentration of attractors, which includes Ocean Village Shopping Centre, Ocean Shores Medical Centre and Ocean Shores Community Centre, is located along Rajah Road in Ocean Shores. Outside of this area, attractors primarily cater to local needs and include schools and community centres.

The Bike Plan study areas for Ocean Shores, South Golden Beach, New Brighton and Billinudgel are shown in Figure 18 and snapshots of key community profile statistics are shown below.

Ocean Shores, South Golden Beach & New Brighton

Population 6,302 +487 (8.4%) since 2011 19% of Byron Shire population	**Median age** 43 Regional NSW.....43 NSW.....38 Australia.....38	**Largest age category** 60 to 64 years (8.5%) Regional NSW.....6.7% NSW.....5.6% Australia.....5.6%
Proportion of residents aged 14 and under 18.0% (1,136 people) Regional NSW.....18.1% NSW.....18.5% Australia.....18.7%	**Proportion of residents aged 65 and over** 16.4% (1,031 people) Regional NSW.....19.7% NSW.....16.3% Australia.....15.7%	**Proportion of residents needing assistance with core activities** 4.6% Regional NSW.....6.3% NSW.....5.4% Australia.....5.1%
Most popular industry of employment Health Care and Social Assistance (16.8%) Regional NSW.....14.4% NSW.....12.5% Australia.....12.6%	**Proportion of employed local residents who cycle to work** 0.4% (10 people) Regional NSW.....0.6% NSW.....0.7% Australia.....1.0%	**Proportion of households with no registered motor vehicle** 1.0% Regional NSW.....5.8% NSW.....9.2% Australia.....7.5%

Source: Australian Bureau of Statistics; ProfileID

Billinudgel

Population 317 +35 (11%) since 2011 1% of Byron Shire population	**Median age** 47 Regional NSW……43 NSW……38 Australia……38	**Largest age category** 50 to 54 years (11%) Regional NSW…….6.8% NSW……6.5% Australia……6.5%
Proportion of residents aged 14 and under 16.4% (52 people) Regional NSW…..18.1% NSW……18.5% Australia……18.7%	**Proportion of residents aged 65 and over** 15.1% (48 people) Regional NSW…..19.7% NSW……16.3% Australia……15.7%	**Proportion of residents needing assistance with core activities** - Regional NSW…….6.3% NSW……5.4% Australia……5.1%
Most popular industry of employment Higher Education (6.6%) NSW……1.4% Australia……1.5%	**Proportion of employed local residents who cycle to work** 0.0% (0 people) Regional NSW…….0.6% NSW……0.7% Australia……1.0%	**Proportion of households with no registered motor vehicle** 2.5% Regional NSW…….5.8% NSW……9.2% Australia……7.5%

Source: Australian Bureau of Statistics; ProfileID

2.8.1 Existing cycle network

The existing cycle network in Ocean Shores, South Golden Beach, New Brighton and Billinudgel is presented in Figure 18. The network is dominated by the Pacific Motorway and a number of key shared paths that provide cycle access between adjacent suburbs.

Continuous cycle access is currently available between Billinudgel and South Golden Beach via a combination of on-road and shared paths. This connection directly services a number of attractors, including a school. Continuous cycle access is also currently available between South Golden Beach and New Brighton via a shared cycle path.

The cycle network in Ocean Shores is currently limited with on-road cycle paths connecting to Billinudgel along Brunswick Valley Way and a shared path providing a connection south to Brunswick Heads. Cycle access on dedicated paths is currently not available to the concentration of attractors along Rajah Road in Ocean Shores.

As can be seen in Figure 18, the cycle network in Billinudgel is currently limited despite relatively good cycle access to South Golden Beach and Ocean Shores, across the potentially divisive Pacific Motorway. Outside of the township of Billinudgel, there is currently no provision for longer distance cyclist movements to enable connections to nearby towns, villages and rural communities. This is particularly evident along The Pocket Road to the west which is a scenic, though narrow road that currently lacks shoulders and dedicated cycle infrastructure.

2.8.2 Cyclist crash history

There have been a total of three recorded crashes involving cyclists in the study area over the five years between 2012 and 2017. All of these crashes, however, occurred specifically within the suburb of Ocean Shores.

As shown in Figure 18, these crashes have tended to occur within the vicinity of existing paths and/or higher order roads that carry greater quantities of vehicles.

An analysis of all recorded cyclist crashes in the study area over the last five years suggests that crashes involving cyclists have been declining since their peak in 2015 (refer to Figure 16 and Figure 17) and that the primary cause for these crashes can be attributed to either motorist negligence or cyclist error.

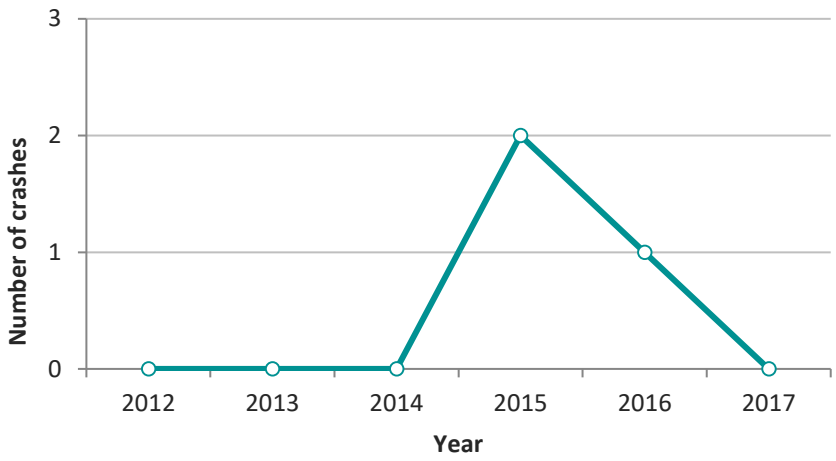

Figure 16: Annual cyclist crashes in Ocean Shores (2012-2017)

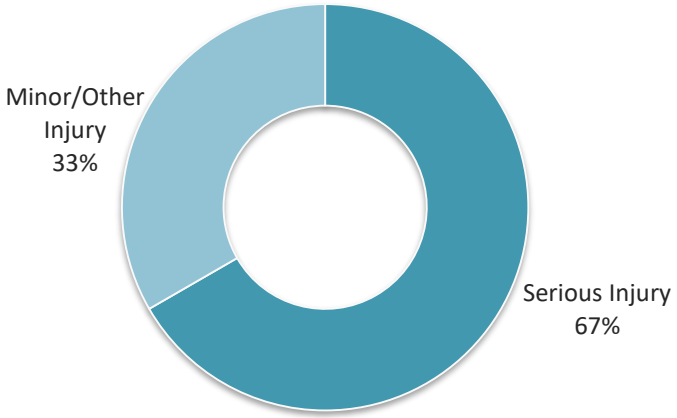

Figure 17: Cyclist crashes by severity in Ocean Shores (2012-2017)

2.8.3 Issues and opportunities

OCEAN SHORES, SOUTH GOLDEN BEACH, NEW BRIGHTON & BILLINUDGEL – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES	
Issues	**Opportunities**
• Many gaps in existing cycle network, particularly in Ocean Shores • Undulating topography, particularly in Ocean Shores, may impact on mobility	• Some existing key cycle routes that link different suburbs. Provides spines from which the cycle network could be expanded • Existing cycle connection south to Brunswick Heads • Good access across the Pacific Motorway to inland areas

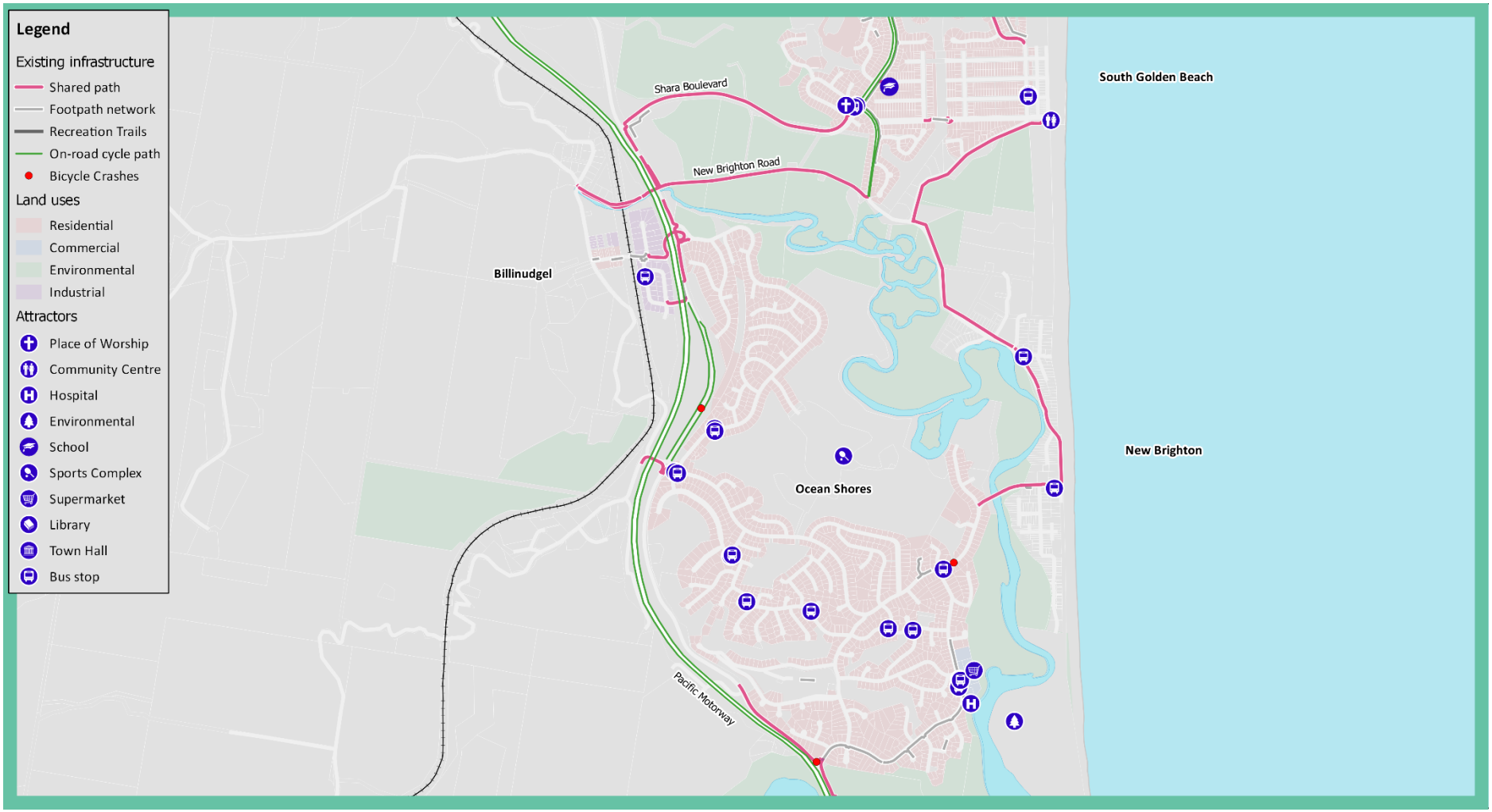

Figure 18: Existing cycle network and cycle crash locations – Ocean Shores, South Golden Beach, New Brighton and Billinudgel

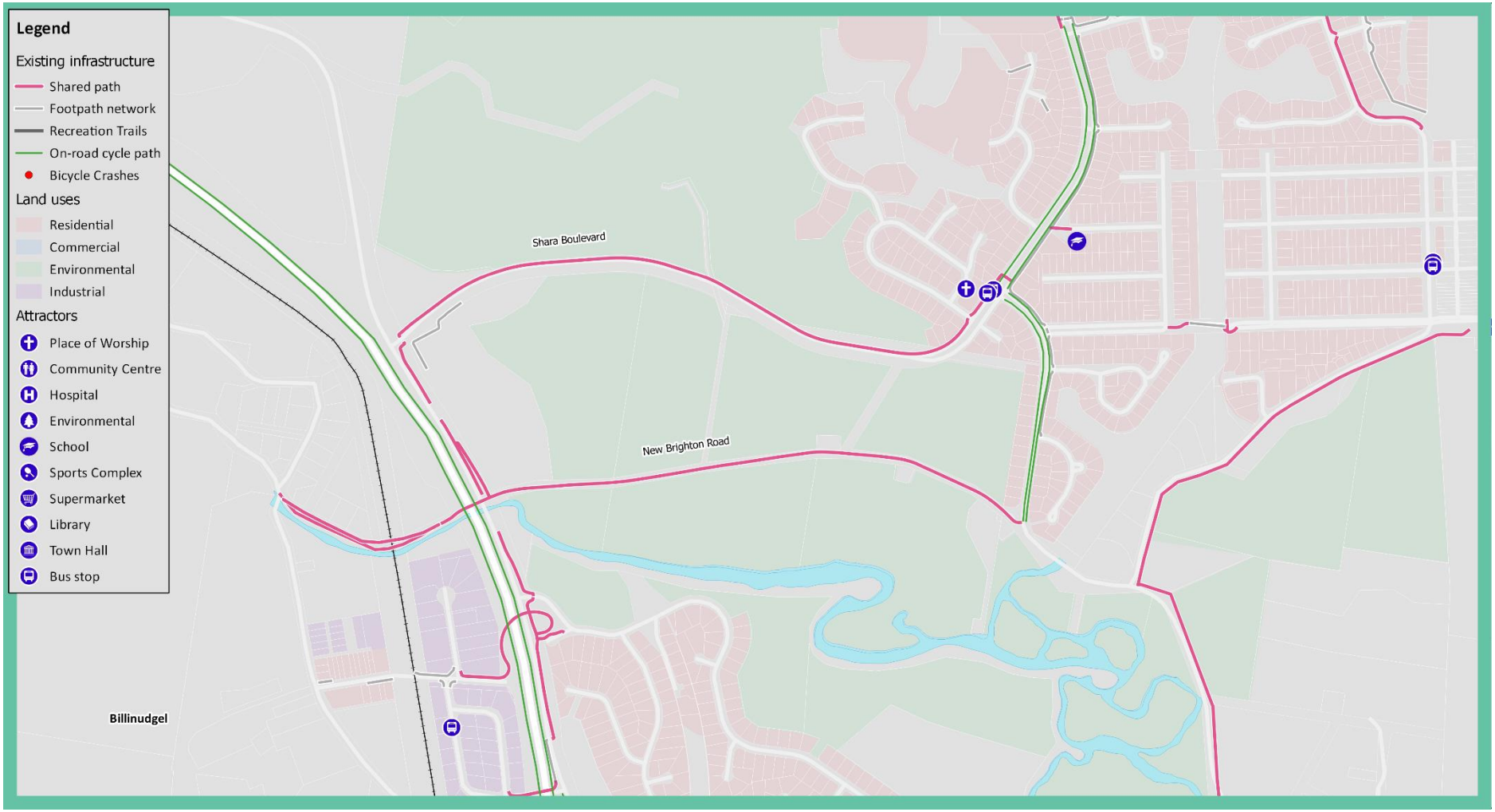

Figure 19: Existing cycle network – South Golden Beach and Billinudgel

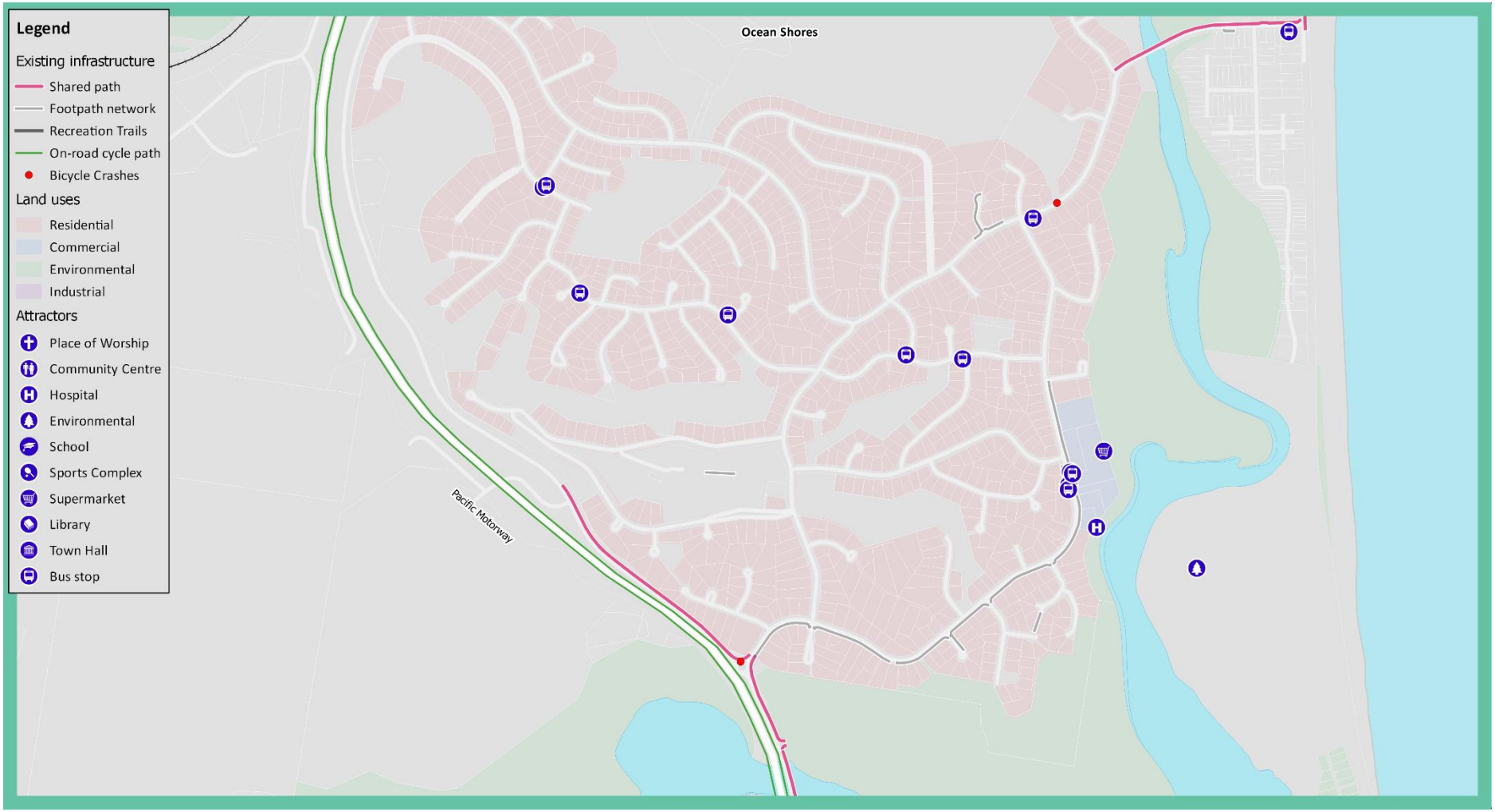

Figure 20: Existing cycle network and cycle crash locations – Ocean Shores and New Brighton

2.9 Riding in Brunswick Heads

Located at the mouth of the Brunswick River, Brunswick Heads – or *Brunz* as it is more affectionately known – is an idyllic town that provides direct access to pristine beaches, waterways and nature reserves. Brunswick Heads exudes a traditional seaside village atmosphere coupled with a town centre that continues to increase in vibrancy and activity at any number of the popular cafes, restaurants, specialty shops and accommodation options. The vibrant local community is passionate about the future of their village and active in its planning and development. As such, as with other towns and villages in the Shire, consultation during detailed planning and design of any proposed infrastructure projects will be integral to ensuring the best possible outcome for the community and Council alike.

The Bike Plan study area for Brunswick Heads is shown in Figure 21 and a snapshot of key community profile statistics is provided below.

Population

1,737

+90 (5.5%) since 2011
5.2% of Byron Shire population

Median age

49

Regional NSW.....43
NSW.....38
Australia.....38

Largest age category

55 to 59 years (9.8%)

Regional NSW.....7.1%
NSW.....6.3%
Australia.....6.2%

Proportion of residents aged 14 and under

13.5% (235 people)

Regional NSW.....18.1%
NSW.....18.5%
Australia.....18.7%

Proportion of residents aged 65 and over

23.1% (402 people)

Regional NSW.....19.7%
NSW.....16.3%
Australia.....15.7%

Proportion of residents needing assistance with core activities

6.3%

Regional NSW.....6.3%
NSW.....5.4%
Australia.....5.1%

Most popular industry of employment

Health Care and Social Assistance (14.8%)

Regional NSW.....14.4%
NSW.....12.5%
Australia.....12.6%

Proportion of employed local residents who cycle to work

2.6% (18 people)

Regional NSW.....0.6%
NSW.....0.7%
Australia.....1.0%

Proportion of households with no registered motor vehicle

8.3%

Regional NSW.....5.8%
NSW.....9.2%
Australia.....7.5%

Source: Australian Bureau of Statistics; ProfileID

2.9.1 Existing cycle network

As can be seen in Figure 21, there are currently a number of cycle paths in the Brunswick Heads study area. The wide shoulders on the Pacific Motorway enables cyclists to travel north to Billinudgel and south to Gulgan Road while the combination of on-road and shared cycle paths along Tweed Street connects the township of Brunswick Heads to a holiday park in the west and to Ocean Shores in the north. Two other shared cycle paths are located within the Brunswick Heads study area; along a portion of the Old Pacific Highway and along Bayside Way in an existing residential area. These paths primarily enable local cycle connections as they currently do not connect to the Pacific Motorway in the west or to the township of Brunswick Heads in the east. Cyclists travelling between these locations are required to travel on-road, either in the traffic lane or in the narrow road shoulder. Although cycle access to the beach and residential areas on the eastern side of Brunswick Heads is permitted, there is currently no dedicated cycle infrastructure to facilitate movement between these areas and the town centre and residential areas to the west.

2.9.2 Cyclist crash history

Only one crash involving a cyclist was recorded in Brunswick Heads between 2012 and 2017. As shown in Figure 21, this crash occurred on the Pacific Motorway (southbound). The crash, which resulted in moderate injury, occurred in 2014 when a vehicle veered into the highway shoulder and collided with a cyclist.

2.9.3 Issues and opportunities

BRUNSWICK HEADS – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES	
Issues	**Opportunities**
• Gaps in existing cycle network, particularly to existing residential areas in the south and the beach in the east • Tweed Street forms a barrier for access between the majority of residential areas to the west and the town centre in the east. Cyclists required to cross road to access the two areas	• Compact town centre with residential areas within close proximity • Easy navigation and legibility due to street grid design • Existing cycle connection north to Ocean Shores • Topography generally conducive to cyclist movements for all ages and abilities • Proximity to key attractors and natural assets (for example, beaches) to support recreational cycling

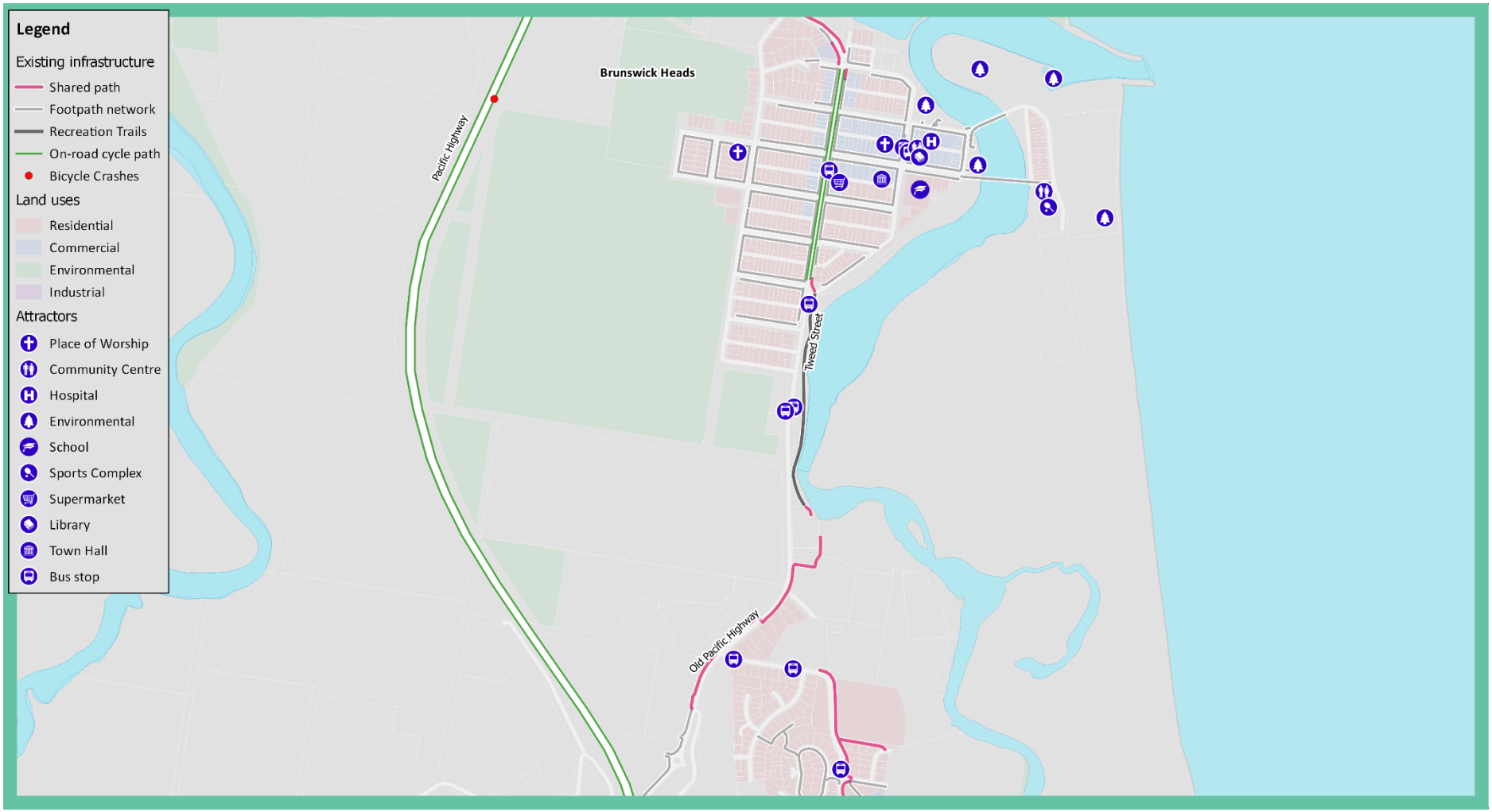

Figure 21: Existing cycle network and cycle crash locations – Brunswick Heads

2.10Riding in Main Arm and Federal

Main Arm, Federal and Eureka are all small inland villages located in the west of the Shire. The villages provide basic facilities for locals and visitors including general stores, community halls and some dining and accommodation.

There are currently no cycle facilities in Main Arm and Federal.

3 Community consultation

The strength of any plan is determined, to no small degree, by how well it reflects the needs and aspirations of those that it affects. In light of this, an extensive three-stage community consultation process was adopted to inform the development of the Bike Plan. These stages included:

- Stage 1 – Online survey
- Stage 2 – Local design workshops
- Stage 3 – Consultation on the Draft Bike Plan.

The first two stages were undertaken to develop the Draft Bike Plan while the third and final stage was undertaken to determine the alignment of the plan with community expectations and to develop the Final Bike Plan.

Throughout the preparation of this Bike Plan, Council was also preparing the Byron Shire Pedestrian Access and Mobility Plan (PAMP). In order to align and integrate these plans as much as possible, the content presented and discussed at each consultation stage was integrated across both plans.

Different consultation methods and mediums were adopted in order to provide the greatest opportunity for meaningful community contribution. Similarly, the timing of each consultation stage was strategically sequenced so that community input directly shaped the development of each of the plans.

The specific methods that were adopted and some of the key findings that were discovered in each of the consultation stages are summarised below.

3.1 Stage 1 consultation – online survey

In October 2018, an online survey questionnaire was launched on Council's website with the aim of gathering important quantitative and qualitative information from the community on the current use of the existing footpath and cycle networks, the motivations and reasons for their use, the community's experiences walking, cycling and rolling (including the use of wheelchairs, mobility scooters and walking frames), and existing challenges and barriers to increased participation. Recognising the need to ensure future networks reflect the needs and aspirations of all residents, parents and carers of dependent children were specifically asked to comment on their children's use and experience of the existing network.

The survey was widely promoted by Council through a range of available channels including eNewsletters, email databases, social media and video interviews. Roughly 700 survey responses were received, providing an excellent sample for analysis and for understanding the current community experience using the existing walk and cycle networks.

Some of the key recurring themes for the Shire that specifically related to cycling and the use of the cycle network included:

- New cycleways are needed
- Connectivity improvements are needed between cycleways within towns and also between towns
- Increased maintenance is needed for cycleways and roads
- Safety improvements are needed (for example, separation of pedestrians, cyclists and motorists, provision of safe crossing points, improved lighting)
- Support for the reuse of the currently disused Casino-Murwillumbah rail line, potentially to include opportunities for cycling.

As the foundation for the Bike Plan, the online survey was also used as a means of identifying those in the community who wished to contribute further to the development of the plan. Approximately 54% – or 380 of the 700 survey respondents – expressed an interest in further engagement, including through ensuing local design workshops.

3.2 Stage 2 consultation – local design workshops

Following on from the online survey, hands-on local design workshops open to the entire community were held in October and November 2018 at four locations across the Shire. These workshops were held at Mullumbimby, Byron Bay, Bangalow and Ocean Shores to encompass major population areas as well as surrounding villages and towns. A further workshop was also held with Byron Shire's community-led *Access Consultative Working Group* (ACWG) to better understand the specific needs and aspirations of those in the community with temporary or permanent mobility impairments. The purpose of these workshops was to identify specific issues and opportunities at the town, regional and shire level and to reach consensus as to which initiatives should be prioritised for implementation.

To achieve this purpose, the following simple three-step process was developed:

- Step 1 – Group identification of issues and opportunities
- Step 2 – Group prioritisation of issues and opportunities
- Step 3 – Individual prioritisation of issues and opportunities.

In the first step, each group was provided with a series of maps and red, yellow and green stickers which were to be used to identify critical issues (for example, infrastructure deficiency, serious safety concern), moderate issues (for example, a narrow or poorly maintained cycleway) and opportunities (for example, a new cycle connection to a school) respectively. Each group was also provided with post-it notes of corresponding colours to provide a commentary and justification of each issue and opportunity.

Using these marked-up maps for the second step, each group was then provided with a limited number of gold stickers to identify the group consensus on which of the issues or opportunities should be prioritised for further investigation. As a limited number of priorities were available, this exercise required a degree of critical thinking to be applied to each of the issues and opportunities and consideration of not only the needs and aspirations of the group but also the benefits and implications of each priority for the broader community.

Following the group prioritisation step, the maps were displayed and each participant was provided with two silver stickers. Each participant was asked to review the issues, opportunities and priorities of other groups and use their stickers to identify the initiatives which they personally believed should be prioritised for further investigation. This allowed for independent peer review and confirmation of issues, opportunities and priorities and, through the adoption of what is in effect a system of 'voting', provided further indication of not only the initiatives to be investigated but also of their importance and required timeframes for implementation.

Some of the key statistics from the local design workshops include:

- Approximately 150 participants across the five design workshops
- 568 comments provided across both plans (202 critical issues, 128 moderate issues and 238 opportunities)
- The greatest number of comments relating to the development of the Bike Plan were provided at the Byron Bay consultation session followed by the Mullumbimby, Ocean Shores, Bangalow and ACWG sessions
- 392 comments relating to the development of the Bike Plan (133 critical issues, 81 moderate issues and 178 opportunities)
- A little over 80% of comments relating to the development of the Bike Plan had direct spatial implications that were able to be mapped.

Following the workshops, all of the recorded comments and feedback were reviewed and analysed. Some of the key themes and findings that emerged from the local design workshops are listed below.

- Repurpose the discussed rail corridor to support pedestrian and cycle movements across the Shire
- Provide new cycleways
- Improve connectivity and safety within and between towns
- More cyclist and driver education and awareness are needed
- Provide mid and end of trip facilities (for example, toilets, drinking fountains).

The review of feedback also helped identify the most commonly mentioned words and phrases as documented by the community. These are shown graphically in a 'word cloud' in Figure 22. The larger the word in Figure 22, the more frequently it was mentioned. In addition to this, community comments with direct spatial implications were mapped using Geographical Information System (GIS) software. This provided the following two key outputs for the development of this Bike Plan:

- Issues and Opportunities map / Priorities map
- Community Consultation Network maps.

The Issues and Opportunities map and the Priorities map are essentially graphical, consolidated summaries of the exercises undertaken in Stage 2 consultation. These maps show the location of issues and opportunities across the Shire identified during the first exercise as well as which of these issues and opportunities were prioritised by the community through the second and third exercise. The Issues and Opportunities map and the Priorities map are presented in Figure 23 and Figure 24 respectively.

The contribution from the community was particularly important at this juncture as the timing of the local design workshops marked the turning point in the development of the plans; transitioning from a review of the existing situation to consideration of the desired future for walking and cycling in the Shire. The contributions directly informed the development of the Bike Plan and provided the basis for initiatives (for example, infrastructure, programs) to be delivered as part of this plan.

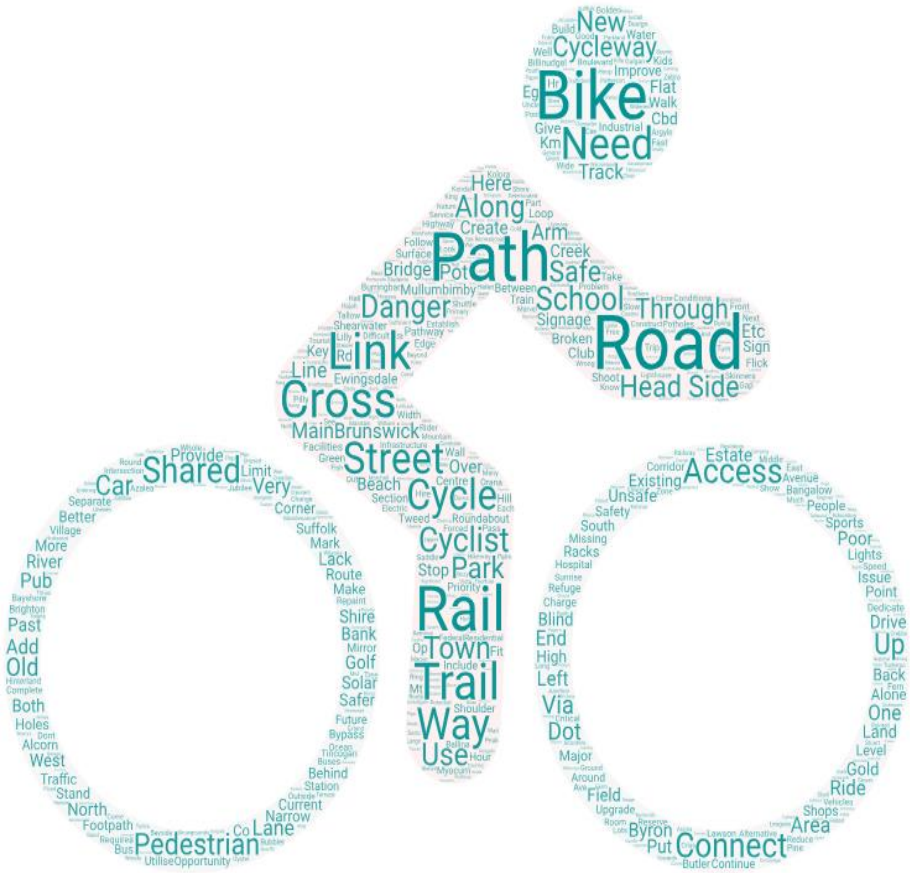

Figure 22: Key words and phrases mentioned by the community during Stage 2 consultation

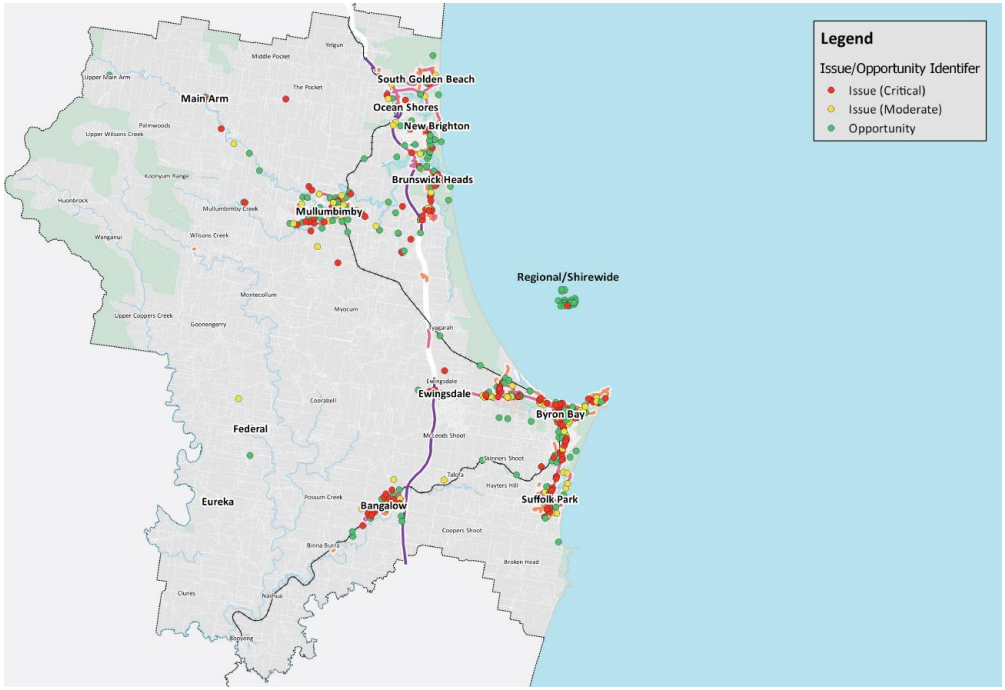

Figure 23: Issues and opportunities identified by the community during Stage 2 consultation

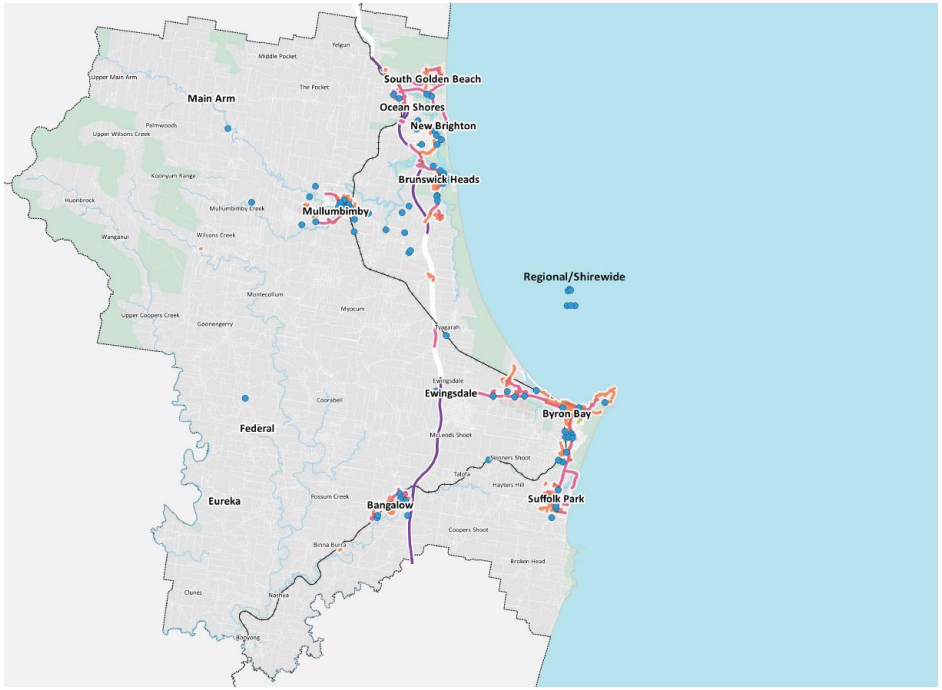

Figure 24: Prioritised issues and opportunities as nominated by the community during Stage 2 consultation

3.3 Stage 3 consultation – consultation on the Draft Bike Plan

The Draft Bike Plan was released in mid-2019 for public exhibition and comment following the development of the future cycle network and supporting Action Plan (refer to Section 4 and 5 respectively). The purpose of this third and final stage of community consultation was to determine the alignment of the plan with community expectations and to refine the Bike Plan prior to finalisation.

Some of the key statistics from the Stage 3 consultation include:

- Public submissions received for all towns and villages identified in the Bike Plan and the PAMP
- 14 different community organisations reviewed and provided submissions on the Bike Plan and the PAMP
- A total of 62 public submissions were received across the Bike Plan and the PAMP. Within these submissions, a total of 212 individual comments had implications for the plans
- Roughly 82% (173 comments) of the 212 total individual comments related to the Bike Plan
- The greatest number of Bike Plan comments related to the cycle network and/or its development ('Network development') as proposed in the Draft Bike Plan, followed by comments identifying possible future routes ('Potential future connectivity') and comments related to the priorities assigned to the proposed network ('Route prioritisation') (refer to Figure 25)
- Roughly 63% (109 comments) of the 173 comments related to the Bike Plan were actioned and incorporated in the Final Bike Plan (refer to Figure 26).

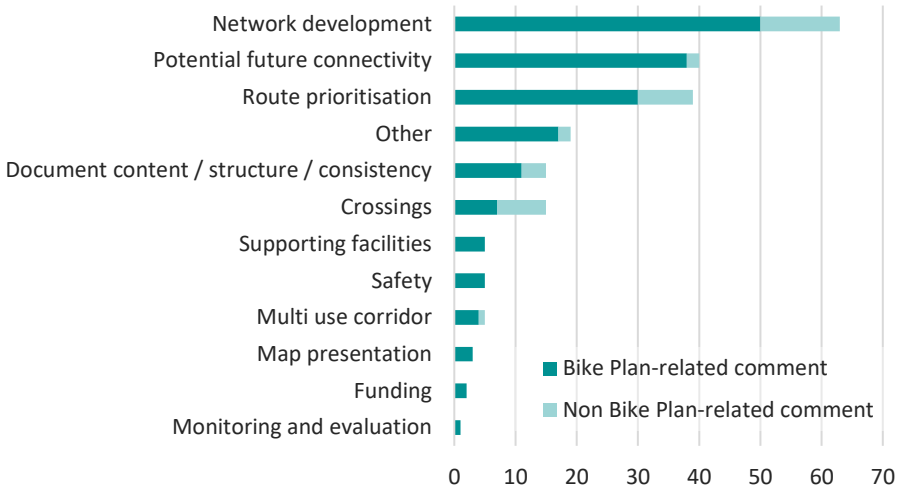

Figure 25: Bike Plan-related comments by comment category

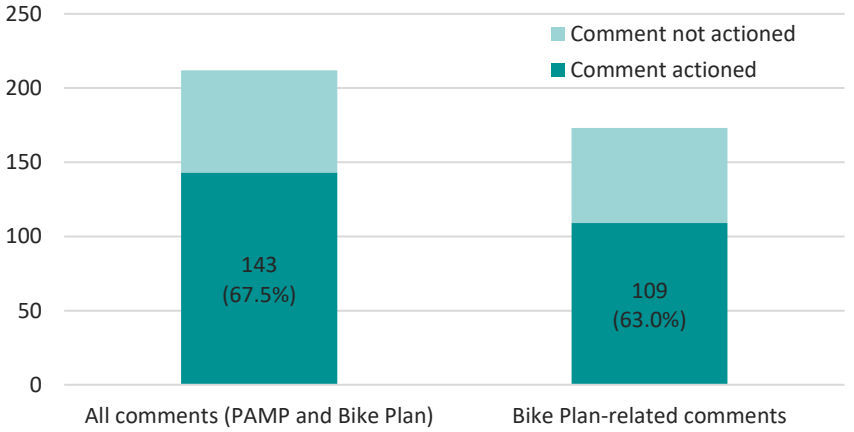

Figure 26: Comments actioned in the Final Bike Plan

4 The future cycle network

The community consultation provided insight into not only on-the-ground experiences and possible initiatives for the cycle network but also the variety of users and the unique characteristics and needs of each. Understanding this is a pre-requisite for developing a future network with routes that are appropriately prioritised and with initiatives that suit user needs.

4.1 Designing for users

In developing the future cycle network, a concerted effort was made to understand and design for the actual users of the network. An overarching design philosophy with more detailed design principles was adopted to ensure consistency not only in the approach to planning the future network but also to inform finer details around the type of infrastructure which could be implemented. The design principles and some of the physical implications for the network are discussed in the relevant sections below.

4.1.1 Design philosophy and principles

The guiding philosophy for developing the future cycle network was to design a cycle environment for the most vulnerable user so that it is suitable for all. This includes consideration of cyclists with impaired mobility, vision and/or hearing and the interaction with other road users (for example, pedestrians, motorists) that may or may not have similar impairments. A set of design principles were adopted to support this philosophy and to help apply it spatially across the Shire. These principles are:

- Provide a convenient, safe and connected network that offers route choice; that links residential areas, key attractors and public transport facilities; that considers the needs of all users; that plans for where cyclists actually want to go rather than where they should go; that addresses existing hazards; and that reduces the need to cross roads
- Provide suitable crossings where the cycle network intersects with the road network that recognise that these locations are the most vulnerable parts of the cycle network
- Promote cycle priority where possible, where contextually appropriate and where the strategic intent of the cycle link is advanced
- Encourage the uptake of cycling across the Shire for residents and visitors by providing a coherent, direct, safe, attractive and comfortable network with sufficient end of trip facilities
- Provide a Shire-wide environment that encourages cycling as a form of transport, recreation and socialisation by promoting the cycle network and educating all road users on the safe use of the road system.

4.1.2 Design typologies

The design philosophy and principles have direct implications for the type of infrastructure (paths and crossings) which could be implemented to complete the proposed future cycle network.

Path typologies

For the path network, the following path types will be implemented:

- Off-road separated cycle paths – for the exclusive use of cyclists. Separated from vehicle and pedestrian traffic and located outside of existing roadways
- On-road separated cycle paths – for the exclusive use of cyclists. Separated from vehicle and pedestrian traffic but located on existing roadways. Separation could include but not be limited to safety strips (for example, paint treatments with flexible bollards), temporary planter boxes or more permanent raised separation (for example, kerbs)
- Shared paths – for the shared use of both pedestrians and cyclists (and other appropriate mobility devices of similar scale and operating characteristics). Separated from vehicle traffic and typically located outside of existing roadways. This type of path requires careful consideration to maintain the safety and comfort of users, particularly those with impaired mobility, vision and/or hearing. Additional information on this path type is provided in Austroads' *Guide to Road Design*. Additionally, potential cycling speeds will be assessed during detailed design and controls to reduce speeds will be introduced where hazards are present.
- On-road cycle lanes – for the exclusive use of cyclists. Located within the existing roadway with minor separation from vehicle traffic, typically through line marking

- Mixed traffic street – for the use of cyclists and motorists with priority given to cyclists. Suitable for application on low speed, low traffic environments such as town centres and laneways. Street redesign may be required in addition to a reduction in posted speed limits. Examples of a mixed traffic street could include shared zones, advisory bicycle lanes and cycle streets.

Examples of these path types are provided in Figure 27.

The path typologies outlined above represent the primary types of paths to be utilised in the development of the proposed cycle network. It should be noted however, that this does not negate the use of lower cost initiatives to improve cyclist safety. As an example, this could include the use of bicycle advisory markings and signage, particularly on minor rural roads or connections with lower priority, as well as the use of temporary facilities.

Additionally, it is also recommended that the needs of cyclists are considered in any future road works. A key opportunity is to seal and/or widen roads during upgrades to provide sufficient width for cyclists, to ensure the condition of existing roads (vehicle and cycle travel lanes) are suitable for cycling and to consider the impact poorly maintained roads have on driver and cyclist behaviour (for example, vehicles encroaching into road shoulders or cycle lanes in order to avoid potholes).

Although the style and dimensions of these path types will vary across the Shire depending on the local context, the intent is to provide paths that satisfy, as a minimum, the dimensions provided in Table 1. The path dimensions presented in Table 1 were developed based on a review and synthesis of relevant national, state, regional and local standards.

Table 1: Path width guide

PATH TYPE	SITUATION	DESIRABLE MINIMUM WIDTH
Off-road separated cycle path	One-way	1.5m
	Two-way	2.5m
On-road separated cycle path[1,2]	One-way	1.5m
	Two-way	2.5m
Shared path	Two-way local access path	2.5m
	Two-way regional path	3.0m
	Two-way recreational path	3.5m
On-road cycle lane[1]	One-way	1.5m

Note:

The path widths presented in Table 1 are provided as a guide only. The exact dimensions to be applied will depend on the local context and will consider user type, volumes and major travel directions, environmental features, and existing constraints. Additional guidance on path widths and implementation is outlined in Austroads' *Guide to Road Design* and *Cycling Aspects of Austroads Guides*.

[1] Based on a posted speed limit of 60km/h in adjacent roadway

[2] Separation width of 1.0m (minimum) is required if path is located adjacent to parallel parked cars, otherwise 0.4m (minimum) is required

Example cross-sections of each of these path typologies are provided in Figure 28 and Figure 29.

Path type: Off-road separated cycle path
Location: Sydney, Australia
Source: PSA Consulting, 2019

Path type: On-road separated cycle path
Location: Santa Monica, USA
Source: PSA Consulting, 2019

Path type: On-road separated cycle path
Location: Melbourne, Australia
Source: TMR, 2015

Path type: Shared path
Location: Brunswick Heads, Australia
Source: PSA Consulting, 2019

Path type: On-road cycle lane
Location: South Golden Beach, Australia
Source: PSA Consulting, 2019

Path type: Mixed traffic – shared zone
Location: New Zealand
Source: Google Images

Path type: Mixed traffic – advisory bicycle lane
Location: Utrecht, Netherlands
Source: Google Street View, 2018

Path type: Mixed traffic – cycle street
Location: Nijmegen, Netherlands
Source: TMR, 2015

Figure 27: Cycle path typology examples

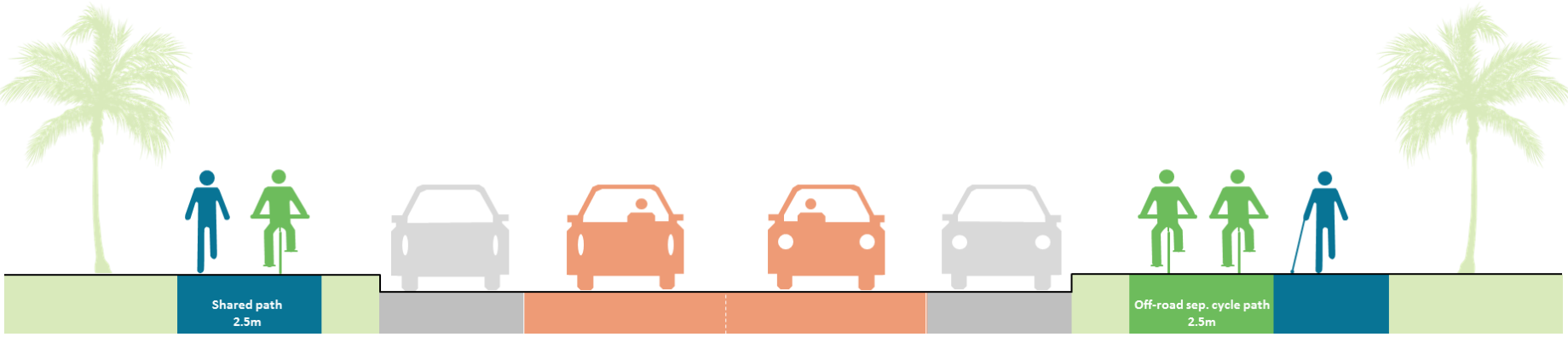

Figure 28: Example cross-sections of a 2.5m shared path and 2.5m off-road separated cycle path

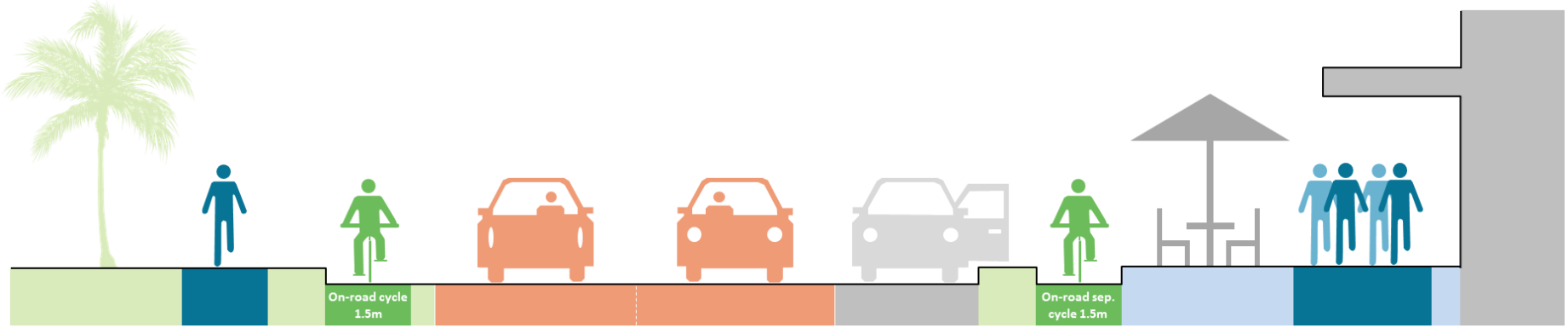

Figure 29: Example cross-sections of a 1.5m on-road cycle lane and 1.5m on-road separated cycle path

Crossing typologies

The suitability and safety of any cycle network is determined as much, or arguably more, by the treatment applied to crossing points as to the type and quality of its paths. These points are the most vulnerable parts of the network as this is where cyclists and vehicles intersect.

As outlined in Section 4.1.1, a key design principle was to develop the network so as to reduce the need for road crossings (as far as possible) from the outset. In practical terms, this could mean providing a consistent path on both rather than one side of a road or providing infrastructure on cycle desire lines to form direct and convenient connections. Although it is unrealistic and impractical to fully design-out the need for cycle crossing points, providing contextually-appropriate crossing treatments at locations that are convenient and safe for cyclists is critical to providing a convenient, connected and safe cycle network that is suitable for all.

Crossing types suitable for implementation in the Shire are listed below with examples presented in Figure 30.

- Pedestrian/cycle refuges
- Zebra crossings
- Raised ('wombat') crossings
- Separated cycle crossing.

When selecting which crossing treatment to apply, consideration will be given to the different types of cyclists and their specific needs and characteristics (especially children), the volume of cyclists and vehicles, the local context, the strategic intent of the path, and the nature of the intersecting road. The exact location and type of proposed crossings will be determined subject to further investigation, detailed design, RMS approval and community consultation.

Pedestrian refuge

Zebra crossing

Raised crossing

Separated pedestrian crossing (Source: Austroads, 2017)

Figure 30: Crossing typology examples

4.2 Supporting facilities

Regardless of the path or crossing selected, the provision of appropriate supporting facilities is important to ensuring the cycle network is accessible, safe and suitable for use by all and is pleasant, inviting and interesting. Some of these facilities include:

- Bicycle service stations
- Bicycle racks
- End-of-trip facilities
- Kerb build-outs
- Kerb ramps
- Lighting
- Path maintenance schedules
- Seating
- Shade, especially from trees
- Signage, wayfinding and maps
- Water fountains.

It is expected that the above listed facilities would be combined as required as part of the future network. As an example, this could include the provision of kerb ramps, signage and appropriate lighting and trees at a crossing to ensure safe, accessible and comfortable movement for all users. This could be further combined with a path maintenance schedule to ensure the path is regularly cleared of debris. This is relevant as much to existing as it is to proposed infrastructure in order to ensure current facilities are appropriate, safe and up to standard. Implementation of these supporting facilities is likely to differ across the Shire and as the local context requires.

4.3 Proposed cycle network

The proposed cycle network is the synthesis of the review of the existing network, the findings from three rounds of community consultation and the application of current, best practice transport planning. The proposed network embodies the stated design philosophy and principles and includes reference to the path typologies.

The proposed cycle network has been prepared for the entire Shire, with a specific focus on the following towns and villages due to their comparatively high levels of local cycle activity:

- Mullumbimby
- Byron Bay
- Suffolk Park
- Bangalow
- Ocean Shores, South Golden Beach, New Brighton and Billinudgel
- Brunswick Heads
- Main Arm.

The future cycle network maps, which have been provided for each of these localities, are provided in Appendix 1. These maps show the existing and proposed future cycle networks in order to provide an indication of future connectivity once the entire network is constructed and also the path typology which could be implemented to achieve the objectives of the Bike Plan (refer to Section 1.3). Details on the exact alignment and type of path and/or crossing to be implemented will be determined during more detailed planning and in line with the findings of more targeted community consultation undertaken as a project progresses. This will help ensure any new or upgraded facility responds to the diverse conditions and challenges of the local context (for example, topography, utilities/services), aligns with the needs and aspirations of the community and the cost is fit for purpose.

5 Action Plan

This section outlines how the future network will be translated into practical, implementable action. This includes reference to a detailed schedule of future works, a discussion on potential funding sources to aid delivery, and the preparation of a monitoring and evaluation framework. This also includes a discussion on potential non-infrastructure actions which could be implemented in conjunction with infrastructure to increase rates of cycling in the Shire.

5.1 Action Plan methodology

The following methodology was adopted to develop this Action Plan:

- Review the proposed future cycle network as presented in Section 4.3 (Appendix 1)
- Identify cycle infrastructure (paths and crossings) that could be packaged and delivered as one project. As outlined in Section 4.3, by providing 'complete links' this will help to provide convenient, connected and safe connections that benefit users even if delivered in stages
- Estimate the cost to deliver each piece of infrastructure, consolidated into appropriate works packages
- Prepare a schedule of future works to outline the extent, description, cost and priority of works to be undertaken over the life of this Bike Plan and beyond
- Identify potential funding sources to deliver the Bike Plan
- Develop a monitoring and evaluation framework to ensure the findings and strategic direction of the Bike Plan remains current and to track the Plan's rate of progress.

5.2 Works prioritisation and packaging

Consideration has been provided to the respective priority of implementing each of the identified paths and crossings as presented in Section 4.3 (Appendix 1).

A description of each priority category is provided in Table 2 while Table 3 demonstrates the different components that make up the priority categories.

Table 2: Implementation priority

PRIORITY CATEGORY	PRIORITY DESCRIPTION
Priority A	Highest priority for implementation. Key criteria for consideration include whether the proposed facility: • addresses an identified and significant safety issue; • significantly improves cycle access or is part of a broader connection that significantly improves cycle access; • connects a diverse number of residential areas and key attractors; • responds to existing/demonstrated high cycle demand; • facilitates significant growth in cycle volumes in the future; • reduces the need to cross roads.
Priority B	Medium priority for implementation Key criteria for consideration include whether the proposed facility: • addresses an identified and moderate safety issue; • moderately improves cycle access or is part of a broader connection that moderately improves cycle access; • connects a variety of residential areas and key attractors; • responds to existing/demonstrated moderate cycle demand; • facilitates moderate growth in cycle volumes in the future.

PRIORITY CATEGORY	PRIORITY DESCRIPTION
Priority C	Low priority for implementation Key criteria for consideration include whether the proposed facility: • addresses an identified safety concern; • improves cycle access; • connects residential areas and attractors; • responds to existing/demonstrated minor cycle demand.

Table 3: Priority components by category

PRIORITY COMPONENT	PRIORITY CATEGORY		
	A	B	C
Safety	• addresses an identified and significant safety issue • reduces the need to cross roads	• addresses an identified and moderate safety issue	• addresses an identified safety concern
Accessibility	• significantly improves cycle access or is a component of a broader connection that significantly improves cycling access	• moderately improves cycling access or is a component of a broader connection that significantly improves cycling access	• improves cycling access
Connectivity	• connects a diverse number of residential areas, key attractors	• connects a variety of residential areas, key attractors	• connects residential areas, key attractors
Demand	• responds to existing/ demonstrated high cycle demand • facilitates significant growth in cycle volumes in the future	• responds to existing/ demonstrated moderate cycle demand • facilitates moderate growth in cycle volumes in the future	• responds to existing/ demonstrated minor cycle demand

Each of the proposed paths and crossings that make up the future cycle network have been assigned a priority categorisation based on the criteria presented in Table 2. The prioritised infrastructure was then grouped into appropriate works packages in order to provide 'complete links' as far as possible, even if the full extent of the connection is not able to be delivered all at once. This will help to maximise the return on any infrastructure investment and, importantly, to ensure that routes that are provided are convenient, connected and safe, even if provided in stages.

While the works packages have been prioritised into three categories, with category A being considered the highest priority, it is important to note that there is opportunity for lower priority works packages to be delivered prior to the delivery of all of the Priority A infrastructure. These priorities are based purely from the perspective of the Bike Plan. As a wholistic local government, Byron Shire Council will implement dynamic prioritisation that is influenced by several other funding, policy and infrastructure considerations. These priority considerations are outlined in Figure 31.

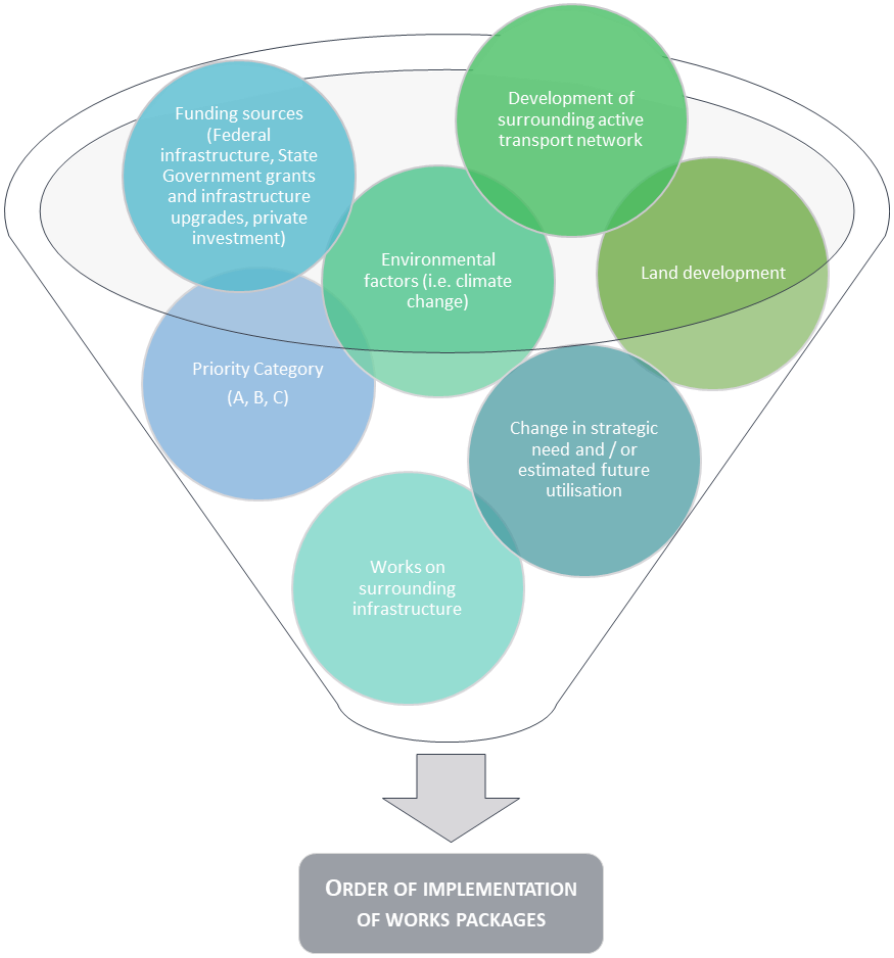

Figure 31: Factors influencing priority implementation

Maps showing the prioritised infrastructure and grouping into appropriate works packages have been prepared for each of the previously identified towns and villages and are included as Appendix 1. These maps are to be viewed in conjunction with the schedule of future works tables which are also included as Appendix 1.

5.3 Schedule of future works

A schedule of future works has been prepared which includes all prioritised works packages. These packages, in turn, are comprised of every cycle facility and treatment across the entire Shire as proposed in this Bike Plan. This schedule, which is to be viewed in conjunction with the prioritised infrastructure maps (refer to Appendix 1), provides a description, cost estimate and priority for each of the 188 works packages proposed across the Shire. The purpose of this section is to summarise the schedule of future works, with a focus on costs, priorities and works packages.

Proposed works were costed using approximate unit rates for various cycle facilities and treatments. These unit rates have been applied solely to provide a high-level indication of the magnitude of the cost for each works package and therefore do not accurately account for the diverse conditions and challenges (for example, topography, utilities/services) unique to each works package.

Based on the approximate unit rates, the total cost to deliver all 188 proposed works packages is estimated at approximately $150.6m. A breakdown of this cost estimate by priority category is shown in Figure 32. An additional graph (Figure 33) has been provided to help provide greater understanding and context around the cost and quantity of works by location across the Shire. Specifically, this graph compares *estimated cost by priority category* against *quantity of proposed works by priority category* at each location.

It should be noted that close to 80% of the works proposed in this Bike Plan, primarily the construction of shared paths and crossings, are also proposed in the PAMP. Despite this, Council recognises that at $150.6m, the estimated cost to deliver all of the identified works in this Bike Plan is significant. In light of this, Council will be seeking opportunities to partner with the State Government, private enterprise and the community to help deliver this infrastructure over the life of this Bike Plan and beyond. This is discussed in greater detail in Section 5.5.

The estimates of cost provided in this section and in Appendix 1 are high-level only and have been presented in order to provide an indication of the potential scale of the works proposed. These costs will be revisited and more accurate estimates prepared when undertaking more detailed planning for the implementation of any future work.

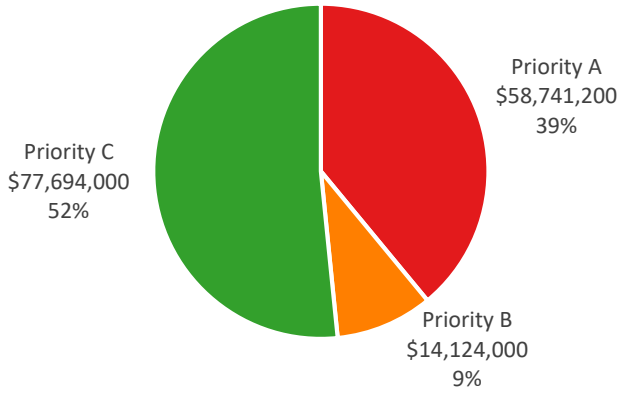

Figure 32: Bike Plan estimated cost by priority category

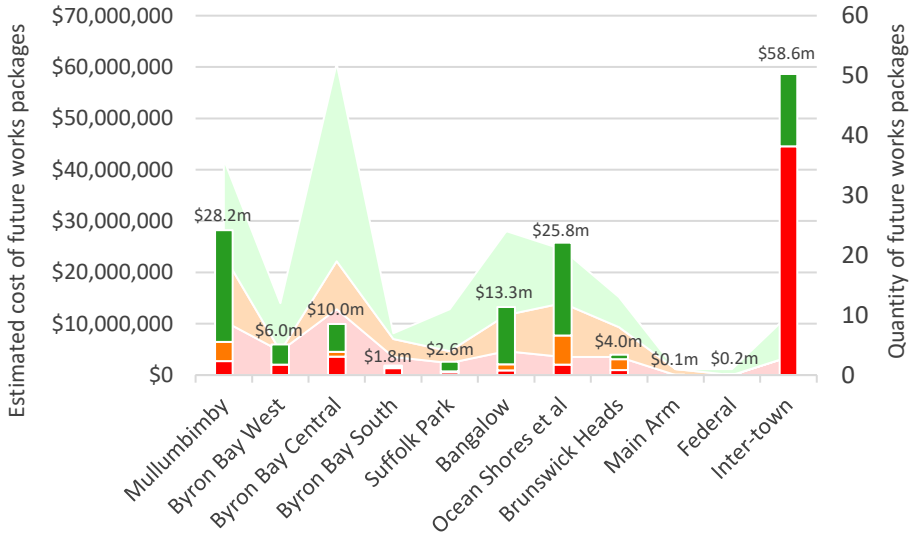

Figure 33: Bike Plan estimated cost and quantity of works packages by priority category and location

5.4 Non-infrastructure actions

While the construction of the proposed infrastructure actions will provide residents of Byron Shire with a safer physical bicycle network, in order to provide a wholly safe system for users, non-infrastructure improvements must be considered. This is primarily undertaken through education, encouragement and enforcement. The aim is to make cycling safer and more convenient and an attractive means of alternative transport.

Austroads *Cycling Aspects of Austroads Guides* states that it is necessary to accompany the development of a network of bicycle routes by:

- Teaching residents to use the network safely and courteously (education)
- Providing materials and activities to promote the network (encouragement). For example, maps, pamphlets, advertising and activities
- Ensuring that relevant laws and regulations are obeyed for the benefit of all road users (enforcement). For example, parking enforcement or passing laws.

In order to achieve the design philosophy of the future cycle network being a convenient, safe and connected network in an environment designed for the most vulnerable user, the following actions are proposed to be implemented by Council in collaboration with other government departments and community groups.

5.4.1 Education

- Support programs that promote cycling skills in schools and promote cycling as a form of transport to and from schools (both primary and secondary)
- Provide courses for inexperienced adult cyclists interested in learning to ride to and from work
- Work with the community to deliver media campaigns on critical cycling safety issues
- Provide opportunities for education of motorists and cyclists to better understand the needs of all road users.

5.4.2 Encouragement

- Review and reduce speed limits (where appropriate) across the Shire, particularly where cyclists and other vulnerable road users share the road with vehicles. This could also include undertaking measures such as streetscaping to ensure the road form better reflects the desired road function and speed
- Implement low-cost initiatives to more rapidly improve on-road safety for cyclists
- Introduce a bicycle fleet in Council's workplace for site visits and meetings
- Promote bicycle fleets in workplaces throughout Byron Shire
- Support and encourage workplaces to introduce marketing campaigns
- Work with the community to promote bicycle hire schemes
- Investigate the introduction of an e-bike hire scheme for both locals and tourists across Byron Shire with linkages to surrounding local governments to access the multi use corridor
- Support community events that promote local bicycle networks and encourage people to ride for transport (including *Ride2Work* day and *Ride2School* day)
- Install bicycle counters on new major infrastructure to aid in the monitoring and evaluation of new infrastructure into the future
- Undertake ongoing social marketing activities to promote the environmental, recreational, social and health benefits for both individuals and the community
- Provide information, maps and signs to guide cyclists to appropriate routes and facilities
- Consider multi-modal travel (for example, walking, rolling and riding) as attractive alternatives to the private motor vehicle when reviewing and setting parking pricing policies.

5.4.3 Enforcement

- Monitor developments and ensure compliance with green travel plans
- Ongoing parking enforcement to ensure that vehicles do not park in marked on-road bicycle lanes
- Collaborate with enforcement agencies to ensure minimum passing distances and speed limits are adhered to
- Investigate the potential to implement a police-in-schools program as part of general traffic safety education, including bicycle safety checks and basic road law.

5.5 Funding

Funding is a key component in the delivery of the works proposed in this Bike Plan, particularly those connections highly valued by the community and identified as of high priority throughout the consultation stages. This includes providing connections between the towns discussed in this Bike Plan and utilising the multi use corridor for walking and cycling. Council will be seeking opportunities to partner with the State Government, private enterprise and the community to help deliver the cycle infrastructure outlined in this Bike Plan, especially those identified as high importance.

5.5.1 Byron Shire Council

Funding from Byron Shire Council may contribute towards the cycle network packages through internal sources including;

- Footpath construction program
- Open space programs
- Major local road projects
- Council road maintenance and upgrade programs
- Streetscaping and master planning programs
- Section 94 and/or 94A contributions.

5.5.2 State and Federal Governments

Grant funding is available for a variety of community-based and cycling/safety programs or projects from key government sources including but not limited to:

- Building Better Regions Fund (Federal)
- Active Transport (Walking and Cycling) Program (NSW)
- Regional Tourism Infrastructure Fund (NSW)
- Local Government Road Safety Program (NSW)
- Regional Growth Fund (NSW)
- NSW Bike Week event funding.

Council will specifically be targeting grant funding from the Federal and State governments in order to deliver the cycle infrastructure outlined in this Bike Plan, with a focus on inter-town connections and the multi use corridor.

Grant funding for non-infrastructure solutions may also be available through:

- Department of Education
- Department of Health

5.5.3 Other sources

Outside of the typical government funding sources the following opportunities may present themselves to better the cycle network or to implement non-infrastructure solutions for the shire:

- Opportunities for partnerships with private investment in public infrastructure either through development or community groups
- Department of Communities - Sport and Recreation Participation Program which provides funding to not-for-profit organisations and local councils for projects designed to increase regular and ongoing participation in sport, recreation or structured physical activity.

5.6 Monitoring and evaluation

Monitoring and evaluation is important to ensure that the proposed future network and the Bike Plan document more broadly continues to reflect the needs, aspirations and vision of the community. Maintaining a current document (i.e. five years or less) also provides a better foundation for securing grant funding from RMS for applicable projects. This eases the financial burden on Byron Shire and means that key projects can be implemented sooner for the benefit of the community.

5.6.1 Network monitoring and evaluation

One or more of the following items could be adopted to effectively monitor and evaluate the proposed network over the life of this Bike Plan:

- Work with the local community to undertake regular on-the-ground audits/inspections of the cycle network with a view to covering the entire Byron Shire every three years. Record and collate all findings in a central database with supporting GIS mapping. This could build on Council's current electronic approach to recording defects and issues with community assets. An opportunity may also exist to leverage and/or integrate with Council's existing transport asset management records and plan to reduce overlap. Developing an accurate and comprehensive database will help to:
    - Provide an accurate understanding of the network, including the types, lengths and qualities of existing paths and cycle lanes
    - Determine the rate of progress towards implementation of the Bike Plan
    - Measure important aspects such as the percentage of the network that is suitable for all ages and abilities. These 'all ages and abilities' routes could be integrated into Mobility Maps and included as part of information available to visitors to the Shire
    - Undertake other measurements such as the number of instances a cyclist is required to stop along a given route or the number of available route options, including those that would be suitable for all users.
    - Inform future planning.
- Undertake surveys (for example, online, intercept) to gain first-hand insights into the suitability and use of the network. Surveys could seek information relating to:
    - The types of cyclists using the network
    - Rates of cycle activity
    - The frequency, days/times and reasons for network use
    - Average journey length and time
    - Origins and destinations
    - Levels of cycle comfort, safety and satisfaction while using the network and supporting facilities.
- Undertake regular cycle counts in key locations to determine the volume and behaviour of cyclists and the change over time.

5.6.2 Bike Plan monitoring and evaluation

This Bike Plan will be formally updated every four years to ensure it remains accurate and reflective of the needs and aspirations of the community. Aside from aligning with the review timeframe for the PAMP document which will help ensure planning is integrated, this timeframe will ensure that any future Bike Plan is current so that the Shire is in the best possible position to receive grant funding from RMS. Additionally, progress on the Bike Plan will be reviewed annually to maintain momentum and focus.

Together, this will help ease the financial burden on Byron Shire while expediting the development of the proposed network for the benefit of the community.

APPENDIX 1 – FUTURE CYCLE NETWORK MAPS, PRIORITISED INFRASTRUCTURE MAPS AND FUTURE SCHEDULE OF WORKS TABLES