

# Byron Shire Pedestrian Access & Mobility Plan

Final

10 December 2019





## FOREWORD

Congratulations to everyone who has been involved in shaping what is our very first 10-year Pedestrian Access and Mobility Plan (PAMP) for the Byron Shire.

The aim of this plan is to look at existing footpath networks and identify and prioritise proposed future walk and roll networks that will improve access, mobility, safety and connectedness for the whole community.

Like many of you, I love to leave the car at home and walk, roll and ride – as often as I can. I love a good footpath and I have many opinions on how we can greatly improve our existing paths and cycle ways across the Shire.

Pedestrian networks are obviously of high value, importance and interest to lots of people in the Byron Shire, which has been reflected in the large quantity of thoughtful responses and helpful input and ideas we received towards the new PAMP.

If you were one of the 700 people who completed our online survey, thank you for taking the time to make a contribution. Your input has enabled Council to get a better understanding of the key issues and specific problems you'd like to see addressed in our pedestrian networks now and in the future.

I extend my gratitude to more than 150 people who took time out of their busy schedules to attend one of the five PAMP design workshops held across the Shire in September and October 2018. Your participation in this process has been invaluable and has enabled Council to gain a more localised and in-depth understanding of where our community's priorities for future pedestrian works lie.

I would also like to 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.



**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)*

With the benefit of all of your ideas and local expertise, the Byron Shire PAMP is a locally-informed, holistic and intelligent document that sets out a plan with real goals and specific actions. It includes a schedule of works that identifies the actions required over the next decade across many of our towns and villages including Mullumbimby, Byron Bay, Suffolk Park, Bangalow, Ocean Shores, South Golden Beach, New Brighton, Billinudgel, Brunswick Heads, Main Arm and Federal.

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

- New footpaths (and exactly where they are needed) that meet accessibility requirements – suitable for walking and rolling;
- Maintenance of existing footpaths;
- Connectivity between footpaths within towns and also between some towns;
- Safety functionality (such as shared paths to separate pedestrians, cyclists and motorists where required, safer crossing points, improved lighting and accessibility features), and;
- Non-infrastructure projects to encourage walking and rolling as healthy and enjoyable transport alternatives.

It is imperative that we invest generously in our footpath infrastructure because it underpins wellbeing and social cohesion for our community.

Through this new Plan, and thanks to the quality of ideas and feedback provided by you all, and the expertise of Council staff and consultants, Council can take a longer-term approach to planning effectively for the different walking, rolling and riding needs of our community.

Byron Shire Acting Mayor, Michael Lyon

## TABLE OF CONTENTS

<b>FOREWORD .....</b>	<b>I</b>
<b>1 INTRODUCTION .....</b>	<b>1</b>
1.1 Background.....	1
1.2 Developing the PAMP .....	1
1.3 Directing the PAMP .....	2
1.4 Structure of the PAMP.....	3
<b>2 EXISTING WALK AND ROLL ENVIRONMENT .....</b>	<b>4</b>
2.1 State plans and policies .....	5
2.2 Local plans and policies .....	6
2.3 Walking and rolling in Byron Shire .....	7
2.4 Walking and rolling in Mullumbimby .....	8
2.4.1 Existing walk and roll network.....	9
2.4.2 Network quality and accessibility.....	9
2.4.3 Pedestrian crash history .....	9
2.4.4 Passenger transport .....	10
2.4.5 Issues and opportunities .....	10
2.5 Walking and rolling in Byron Bay.....	13
2.5.1 Existing walk and roll network.....	13
2.5.2 Network quality and accessibility.....	14
2.5.3 Pedestrian crash history .....	14
2.5.4 Passenger transport .....	15
2.5.5 Issues and opportunities .....	16
2.6 Walking and rolling in Suffolk Park.....	21
2.6.1 Existing walk and roll network.....	21
2.6.2 Network quality and accessibility.....	22
2.6.3 Passenger transport .....	22
2.6.4 Issues and opportunities .....	22
2.7 Walking and rolling in Bangalow .....	24
2.7.1 Existing walk and roll network.....	24
2.7.2 Network quality and accessibility.....	25
2.7.3 Passenger transport .....	25
2.7.4 Issues and opportunities .....	25
2.8 Walking and rolling in Ocean Shores, South Golden Beach, New Brighton and Billinudgel .....	29
2.8.1 Existing walk and roll network.....	30

2.8.2 Network quality and accessibility.....	30
2.8.3 Pedestrian crash history .....	31
2.8.4 Passenger transport .....	31
2.8.5 Issues and opportunities .....	31
2.9 Walking and rolling in Brunswick Heads .....	35
2.9.1 Existing walk and roll network .....	35
2.9.2 Network quality and accessibility.....	36
2.9.3 Pedestrian crash history .....	36
2.9.4 Passenger transport .....	36
2.9.5 Issues and opportunities .....	36
2.10 Walking and rolling in Main Arm and Federal .....	39
<b>3 COMMUNITY CONSULTATION .....</b>	<b>42</b>
3.1 Stage 1 consultation – online survey.....	42
3.2 Stage 2 consultation – local design workshops.....	43
3.3 Stage 3 consultation – consultation on the Draft PAMP .....	46
<b>4 THE FUTURE WALK AND ROLL NETWORK .....</b>	<b>47</b>
4.1 Designing for users .....	47
4.1.1 Design philosophy and principles .....	47
4.1.2 Design typologies .....	47
4.2 Supporting facilities.....	51
4.3 Proposed walk and roll network .....	51
<b>5 ACTION PLAN.....</b>	<b>52</b>
5.1 Action Plan methodology .....	52
5.2 Works prioritisation and packaging.....	52
5.3 Schedule of future works .....	55
5.4 Funding.....	56
5.4.1 Byron Shire Council .....	56
5.4.2 State and Federal Governments.....	56
5.4.3 Other sources .....	56
5.5 Monitoring and evaluation.....	56
5.5.1 Network monitoring and evaluation .....	56
5.5.2 PAMP monitoring and evaluation .....	57

<b>APPENDIX 1 – FUTURE WALK AND ROLL NETWORK MAPS, PRIORITISED INFRASTRUCTURE MAPS AND SCHEDULE OF FUTURE WORKS TABLES .....</b>	<b>58</b>
--	-----------

## LIST OF FIGURES

Figure 1: Byron Shire local government area .....	1
Figure 2: Pedestrian Access and Mobility Plan methodology .....	2
Figure 3: Policy and stakeholder context for developing the PAMP .....	4
Figure 4: Annual pedestrian crashes in Mullumbimby (2012-2017).....	9
Figure 5: Pedestrian crashes by severity in Mullumbimby (2012-2017).....	10
Figure 6: Existing walk and roll network and pedestrian crash locations – Mullumbimby .....	11
Figure 7: Existing walk and roll network and pedestrian crash locations – Mullumbimby Town Centre .....	12
Figure 8: Annual pedestrian crashes in Byron Bay (2012-2017) .....	15
Figure 9: Pedestrian crashes by severity in Byron Bay (2012-2017).....	15
Figure 10: Existing walk and roll network and pedestrian crash locations – Byron Bay (West) .....	17
Figure 11: Existing walk and roll network and pedestrian crash locations – Byron Bay (Central).....	18
Figure 12: Existing walk and roll network and pedestrian crash locations – Byron Bay (Central) Town Centre .....	19
Figure 13: Existing walk and roll network and pedestrian crash locations – Byron Bay (South) .....	20
Figure 14: Existing walk and roll network – Suffolk Park .....	23
Figure 15: Existing walk and roll network – Bangalow .....	27
Figure 16: Existing walk and roll network – Bangalow Town Centre.....	28
Figure 17: Existing walk and roll network and pedestrian crash locations – Ocean Shores, South Golden Beach, New Brighton and Billinudgel .....	32
Figure 18: Existing walk and roll network and pedestrian crash locations – South Golden Beach and Billinudgel.....	33
Figure 19: Existing walk and roll network and pedestrian crash locations – Ocean Shores and New Brighton.....	34
Figure 20: Existing walk and roll network and pedestrian crash locations – Brunswick Heads .....	37
Figure 21: Existing walk and roll network and pedestrian crash locations – Brunswick Heads Town Centre.....	38
Figure 22: Existing walk and roll network – Main Arm .....	40
Figure 23: Existing walk and roll network – Federal .....	41
Figure 24: Key words and phrases mentioned by the community during Stage 2 consultation .....	44

Figure 25: Issues and opportunities identified by the community during Stage 2 consultation .....	45
Figure 26: Prioritised issues and opportunities as nominated by the community during Stage 2 consultation .....	45
Figure 27: PAMP-related comments by comment category .....	46
Figure 28: Comments actioned in the Final PAMP .....	46
Figure 29: Path typology examples.....	48
Figure 30: Example cross-sections of a 1.2m and a 1.5m pedestrian footpath.....	49
Figure 31: Example cross-sections of a 2.5m shared path and a 2.4m pedestrian footpath .....	49
Figure 32: Crossing typology examples .....	50
Figure 33: Factors influencing priority implementation .....	54
Figure 34: PAMP estimated cost by priority category .....	55
Figure 35: PAMP estimated cost and quantity of works packages by priority category and location.....	55

## LIST OF TABLES

Table 1: Path width guide .....	48
Table 2: Implementation priority .....	52
Table 3: Priority components by category.....	53

## LIST OF ACRONYMS

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
PAMP	Pedestrian Access and Mobility Plan
RMS	Roads and Maritime Service
TIAC	Transport and Infrastructure Advisory Committee

# 1 Introduction

## 1.1 Background

Mobility, as experienced by walking or other mobility-enabling devices such as wheelchairs, skateboards and scooters, is a fundamental element of the human experience and one that is critical to the strength of the community and the relationship with surroundings. There are also numerous health, environmental and economic benefits for the individual and the community as a whole that naturally stem from greater focus on such human-scale mobility. For convenience, the overarching term ‘pedestrian’ has been adopted throughout this document to describe this broad, human-scale mobility (excluding cycling).

Despite the importance of pedestrian movements and a substantial amount of existing and planned new infrastructure, Byron Shire Council (Council) has never had a single, consolidated plan to coordinate planning and investment of pedestrian infrastructure across the entire Byron Shire local government area (LGA). In recognition of this, Council has committed to the development of a Pedestrian Access and Mobility Plan (PAMP) for the entire Byron Shire in order to coordinate investment in safe, convenient and connected pedestrian routes. Once complete, the PAMP will provide a framework for developing pedestrian routes and areas that have been identified by the community as important. As the development of a PAMP is a New South Wales Government initiative, local governments are better positioned to receive grant funding for applicable projects if a PAMP exists and is less than five years old. State Government grant funding eases the financial burden on Byron Shire and means that key pedestrian projects can be implemented sooner 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 development of a PAMP that is representative of community needs and aspirations and supports the continual improvement of Byron Shire.

While the PAMP has been prepared for the entire Byron Shire, specific attention has been paid to existing areas of relatively high pedestrian activity. This allows for a more focused prioritisation of projects, a more efficient use of limited funds and resources, and, importantly, the ability to undertake strategic network improvements in order to quickly build momentum and achieve more

widespread improvements throughout the Shire. The Byron Shire LGA, which includes the specific study areas, is shown in Figure 1.

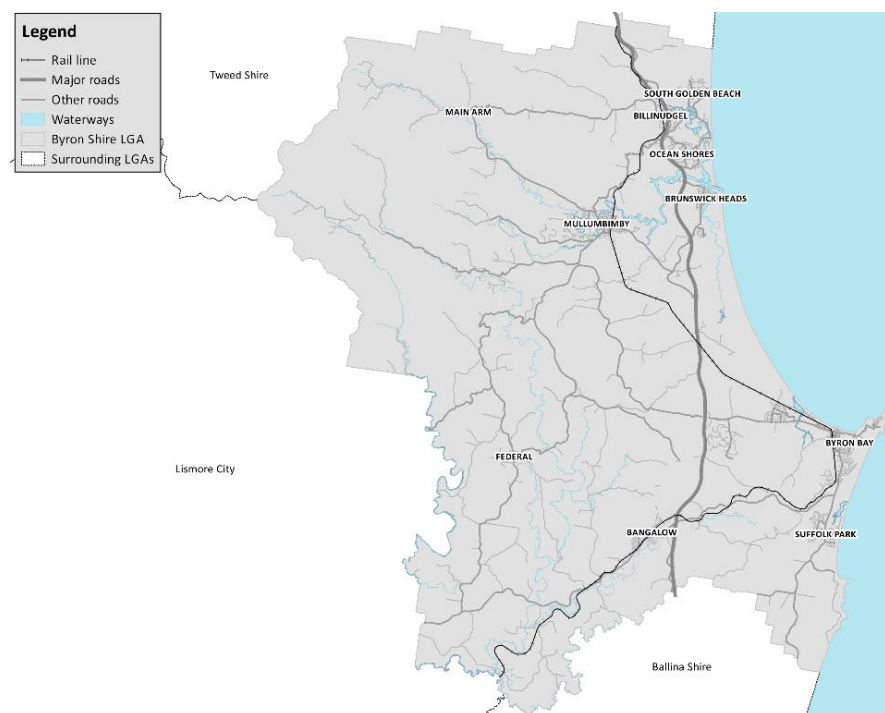


Figure 1: Byron Shire local government area

## 1.2 Developing the PAMP

This PAMP has been prepared in line with the core methodology outlined in the Roads and Maritime Service’s (RMS) *How to Prepare a Pedestrian Access and Mobility Plan* document (refer to Figure 2). Due to the importance of the PAMP, however, and its ability to directly impact on both residents and visitors to Byron Shire, community consultation was identified as a critical element in its development. 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 PAMP and advise how and where Byron Shire’s walk and roll network should evolve in the future.



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

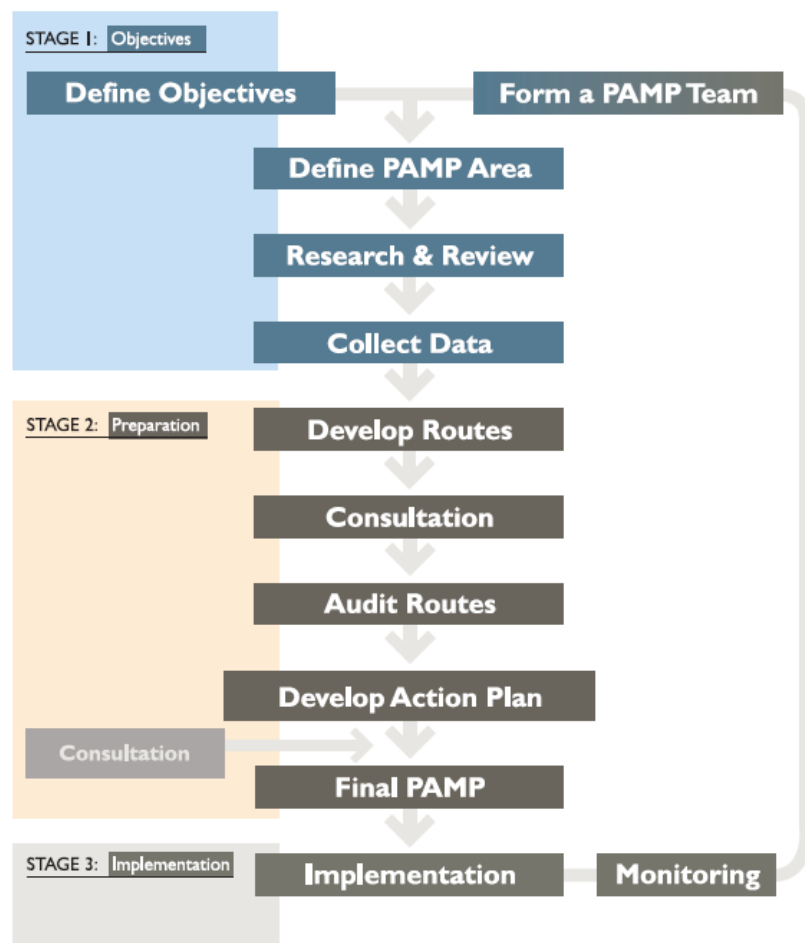


Figure 2: Pedestrian Access and Mobility Plan methodology

## 1.3 Directing the PAMP

The ultimate outcome of the Byron Shire PAMP is to provide a consolidated, clear and representative plan that can be reliably used to coordinate investment in safe, convenient and connected walk and roll routes in the Byron Shire for the benefit of the community and visitors. The following objectives have been developed for this PAMP to help work towards this desired outcome:

- To improve the accessibility and connectivity of all pedestrians within and between residential, commercial and recreational areas and in areas of high pedestrian activity
- To facilitate improvements in the level of personal mobility for pedestrians of all ages, mobility levels and needs through the provision of appropriate pedestrian infrastructure and facilities
- To improve the safety of all pedestrians, particularly in strategic pedestrian activity areas and at identified pedestrian crash clusters
- To plan and design pedestrian facilities that are informed by national and international best practice and technical standards and that reflect the local context
- To ensure pedestrian facility provision integrates with and supports land uses, key natural assets, existing and proposed tourist attractions and other transport modes, where appropriate
- To propose prioritised measures with associated costs that can be realistically implemented over a 10-year period and can inform Council spending
- To develop a program of pedestrian infrastructure works that is integrated with other planning and that may attract funding from the NSW State Government to help increase rates of walking.

Not only do these objectives help inform the development of this PAMP, they also guide how and why pedestrian facilities are provided in Byron Shire as well as providing an accountable basis for monitoring and measuring the success of the PAMP.

## **1.4 Structure of the PAMP**

Beyond this first introductory section, the remainder of the PAMP is divided into the following four sections.

### **Section 2: Existing walk and roll environment**

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

### **Section 3: Community consultation**

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

### **Section 4: The future walk and roll network**

This section presents the proposed walk and roll 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 PAMP.



## 2 Existing walk and roll environment

The existing walk and roll 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 PAMP has been developed to align with and support all relevant plans and policies at all levels of government.

### STATE/NATIONAL

#### Relevant plans, studies and other documents

- How to Prepare a PAMP
- North Coast Regional Plan 2036
- Northern Rivers Regional Transport Plan
- Casino to Murwillumbah Rail Trail Study
- Disability legislation

### LOCAL

#### Relevant plans, studies and other documents

- Byron Shire Council Local Environment Plan
- Byron Shire Council Development Control Plan
- Our Byron Our Future
- Byron Bay Town Centre Masterplan
- Bangalow Village Plan
- Our Mullumbimby Masterplan
- Multi Use Byron Shire Rail Corridor

#### Key stakeholders

- Transport and Infrastructure Advisory Committee
- Representative groups
- Community

Byron Shire Pedestrian  
Access & Mobility Plan

Byron Shire Bike Plan

Figure 3: Policy and stakeholder context for developing the PAMP

## 2.1 State plans and policies

### How to Prepare a PAMP

In 1998, the NSW Government authorised a new program to improve planning for pedestrian mobility. These plans are referred to as a Pedestrian Access and Mobility Plan and are mandatory for all NSW councils to implement with many PAMPs having since been established. The intention of a PAMP is to endorse walking as a preferred transport alternative as opposed to private vehicle usage, whilst conveying a clear strategy for the provision of safe, convenient and connected pedestrian routes. A PAMP should also help facilitate the coordination of local level and state planning instruments, such as:

- Local Environmental Plans (LEPs)
- Development Control Plans (DCPs)
- Councils' requirements under Sections 79c and 94 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

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

The guideline outlines a process (refer to Figure 2) to ensure a PAMP is properly made and that the approach to achieve its aims is coordinated and strategic. This includes the development of a set of objectives and associated actions required in order to accomplish them. This ensures that the PAMP 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 PAMP.

### 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 PAMP, 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 PAMP. 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.

- *Roll out the Walking Communities Program*

This program will deliver state infrastructure investments and contribute to local government initiatives to help boost rates of walking. The NSW Government has outlined their commitment to provide dedicated funding to help local councils improve walking infrastructure within two kilometre catchments of centres and transport interchanges.

- *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).

### **Disability legislation**

There are currently two key pieces of disability legislation that will influence the PAMP. These are the Disability Discrimination Act 1992 (Commonwealth) and the Disability Inclusion Act 2014 (NSW).

The Disability Discrimination Act 1992 makes it unlawful to discriminate against a person, in many areas of public life, including: employment, education, getting or using services, renting or buying a house or unit, and accessing public places, because of their disability. This Act has direct implications for the more detailed design of pedestrian facilities, including but not limited to path widths, crossing points, and sight lines to approaching vehicles.

The second key piece of legislation is the Disability Inclusion Act 2014. Some of the key objectives of this Act are to promote the independence and social and economic inclusion of people with disability and to enable people with disability

to exercise choice and control in the pursuit of their goals and the planning and delivery of their supports and services.

It is critical that Byron Shire's walk and roll network facilitates the movement of pedestrians of all ages and abilities. As such, these are key pieces of legislation and they will both significantly influence the development and eventual delivery of this PAMP.

## **2.2 Local plans and policies**

### **Byron Shire Council Local Environmental Plan**

The Byron 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 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 PAMP, 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 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 PAMP. 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:

- Improve pedestrian priority at intersections
- 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
- 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 walk and roll 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 PAMP as effective integration between active transport and rail transport has the ability to extend the range of pedestrians, provide new destinations and overcome the limitations of providing such facilities over long distances between urban centres and rural areas.

## 2.3 Walking and rolling 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.

In recognition of this diversity, a number of towns and villages in the Shire with comparatively high levels of pedestrian activity have been specifically included in this PAMP. This includes:

- 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 PAMP these areas have not been specifically addressed as they are typically areas with less concentrated pedestrian activity.

## 2.4 Walking and rolling 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 PAMP study area for Mullumbimby is shown in Figure 6 and a snapshot of key community profile statistics is provided below.

<b>Population</b> <b>3,596</b> +274 (8.2%) since 2011 11% of Byron Shire population	<b>Median age</b> <b>46</b> Regional NSW.....43 NSW.....38 Australia.....38	<b>Largest age category</b> <b>45 to 49 years (8.7%)</b> Regional NSW.....6.4% NSW.....6.6% Australia.....6.8%
<b>Proportion of residents aged 14 and under</b> <b>18.3%</b> <b>(653 people)</b> Regional NSW.....18.1% NSW.....18.5% Australia.....18.7%	<b>Proportion of residents aged 65 and over</b> <b>19.8%</b> <b>(704 people)</b> Regional NSW.....19.7% NSW.....16.3% Australia.....15.7%	<b>Proportion of residents needing assistance with core activities</b> <b>6.7%</b> Regional NSW.....6.3% NSW.....5.4% Australia.....5.1%
<b>Most popular industry of employment</b> <b>Health Care and Social Assistance (16.8%)</b> Regional NSW.....14.4% NSW.....12.5% Australia.....12.6%	<b>Proportion of employed local residents who walk to work</b> <b>5.2%</b> <b>(73 people)</b> Regional NSW.....3.5% NSW.....3.9% Australia.....3.5%	<b>Proportion of households with no registered motor vehicle</b> <b>4.7%</b> Regional NSW.....5.8% NSW.....9.2% Australia.....7.5%

Source: Australian Bureau of Statistics; ProfileID

Mullumbimby is generally compact and walkable with an active town centre and a variety of employment opportunities available. This provides fertile conditions for walking and this is reflected in the high proportion of residents currently walking to work.

### 2.4.1 Existing walk and roll network

Mullumbimby's town centre currently has a generally well-connected walk and roll network which provides access to the majority of the core commercial area as well as to surrounding residential areas and key attractors (refer to Figure 6). The existing network extends north to the Brunswick River, east to Mullumbimby Public School and surrounding residential areas across the currently disused Casino to Murwillumbah rail line, and south and west to residential areas and schools. Despite this extent, there are a number of areas in Mullumbimby with limited footpath infrastructure and connectivity to the existing network. This is particularly evident to the east and north-west of the town.

The existing walk and roll network is largely located adjacent to existing roads and as such there are currently limited opportunities for dedicated recreational walks on more formalised and connected paths. Two separate paths located on the eastern banks of Mullumbimby Creek and Brunswick River currently provide access to these key natural assets and could form the basis for a future and more connected recreational walk.

### 2.4.2 Network quality and accessibility

There is currently room for improvement in the quality of the existing walk and roll network in Mullumbimby. In particular, there are issues including narrow paths; poor quality surfaces; dirt and other debris; short gaps in the established network; lack of kerb ramps and other supporting infrastructure (for example, tactile ground surface indicators for visually impaired users); unsuitable or missing crossing facilities; mixing of cyclists and pedestrians in inappropriate locations without suitable infrastructure (for example, wide paths, signs); and parked cars restricting pedestrian movements. Overall, this results in a low level of service for pedestrians and, importantly for children, the elderly and those with visual/mobility impairments, has direct implications for the accessibility of the network.

The severity of these issues is compounded further in light of the demand for accessible infrastructure due to the ageing population and the comparatively high proportion of residents needing assistance with core activities.

Addressing these existing accessibility issues will be a key driver for this PAMP.

### 2.4.3 Pedestrian crash history

A total of five crashes involving pedestrians were recorded between 2012 and 2017 in Mullumbimby. As shown in Figure 6, four crashes occurred in the town centre within close proximity to roadways and existing footpaths. The intersection of Burringbar Street and Stuart Street is of particular interest as three of the five recorded crashes occurred at this location. Outside of the town centre, one pedestrian crash occurred on Jubilee Avenue outside of Mullumbimby High School.

An analysis of all recorded pedestrian crashes in Mullumbimby over the last five years suggests that no more than two crashes were recorded in a given year and that none of the crashes resulted in a fatality (refer to Figure 4 and Figure 5). The analysis did not suggest any consistent reason or issue behind the crashes; however, pedestrian error was cited as the reason for two of the five crashes.

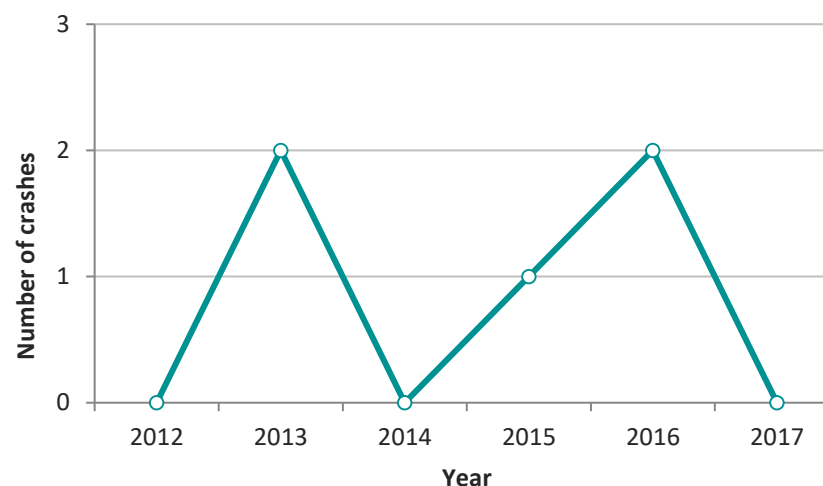


Figure 4: Annual pedestrian crashes in Mullumbimby (2012-2017)

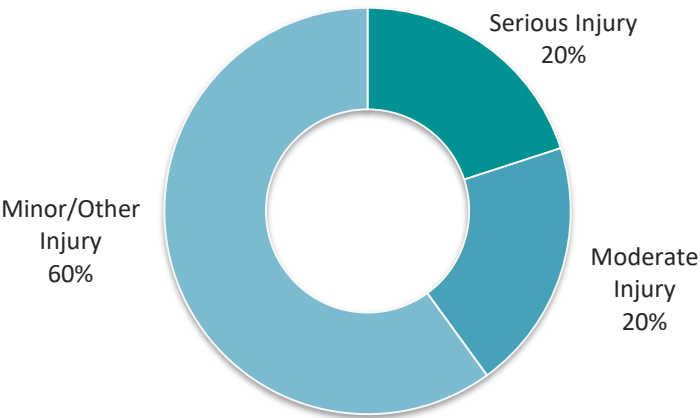


Figure 5: Pedestrian crashes by severity in Mullumbimby (2012-2017)

2.4.4 Passenger transport

There are currently four public bus routes which service Mullumbimby and surrounds. These are:

- **610:** Byron Bay to Lismore
- **635:** Lismore to Mullumbimby and Brunswick Heads
- **640:** Mullumbimby to Ballina via Byron Bay, Suffolk Park and Lennox Head (alignment varies for northbound and southbound)
- **645:** Ocean Shores to Byron Bay.

These services stop at different locations across Mullumbimby, though the amount and type of infrastructure available to support boarding and alighting bus passengers varies. Providing appropriate pedestrian facilities to enable residents and visitors to access the bus network is important as it improves safety, practicality and the integration of different transport modes. This has the potential to improve the overall attractiveness of public transport use to, from and within Mullumbimby and to provide further transport alternatives in order to reduce reliance on private vehicle use.

In addition to these local services, longer distance regional coach services extend along the east coast from Brisbane to Grafton and inland from Byron Bay and Ballina West to Casino, servicing Mullumbimby.

The passenger transport network is also comprised of one taxi operator which services the Mullumbimby area. Contrary to buses which have fixed stops, taxis pick-up and drop-off where required. The primary challenge, therefore, is largely around the provision of pedestrian facilities (e.g. paths) in locations that enable users to access taxis safely and conveniently.

2.4.5 Issues and opportunities

MULLUMBIMBY – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES	
Issues	Opportunities
<ul style="list-style-type: none"><li>• High volume of vehicles in close proximity to pedestrians and areas of high pedestrian activity</li><li>• High number of tourists unfamiliar with local area</li><li>• Limited walk and roll network in some locations outside of the town centre</li><li>• Generally poor network quality with low level of accessibility for vulnerable users</li><li>• Large number of residential streets currently lack footpaths and kerb and channel</li><li>• Large residential lots to the west affect walkability</li></ul>	<ul style="list-style-type: none"><li>• Existing compact and walkable town centre with residential areas and attractors within close proximity</li><li>• Existing high rates of pedestrian activity concentrated in the town centre</li><li>• Existing wide streets and paths</li><li>• Topography generally conducive to pedestrian movements for all ages and abilities</li><li>• Proximity to key attractors and natural assets (for example, rivers and parks) to support recreational walks</li><li>• Established culture of walking with above average proportion of residents who walk to work</li></ul>

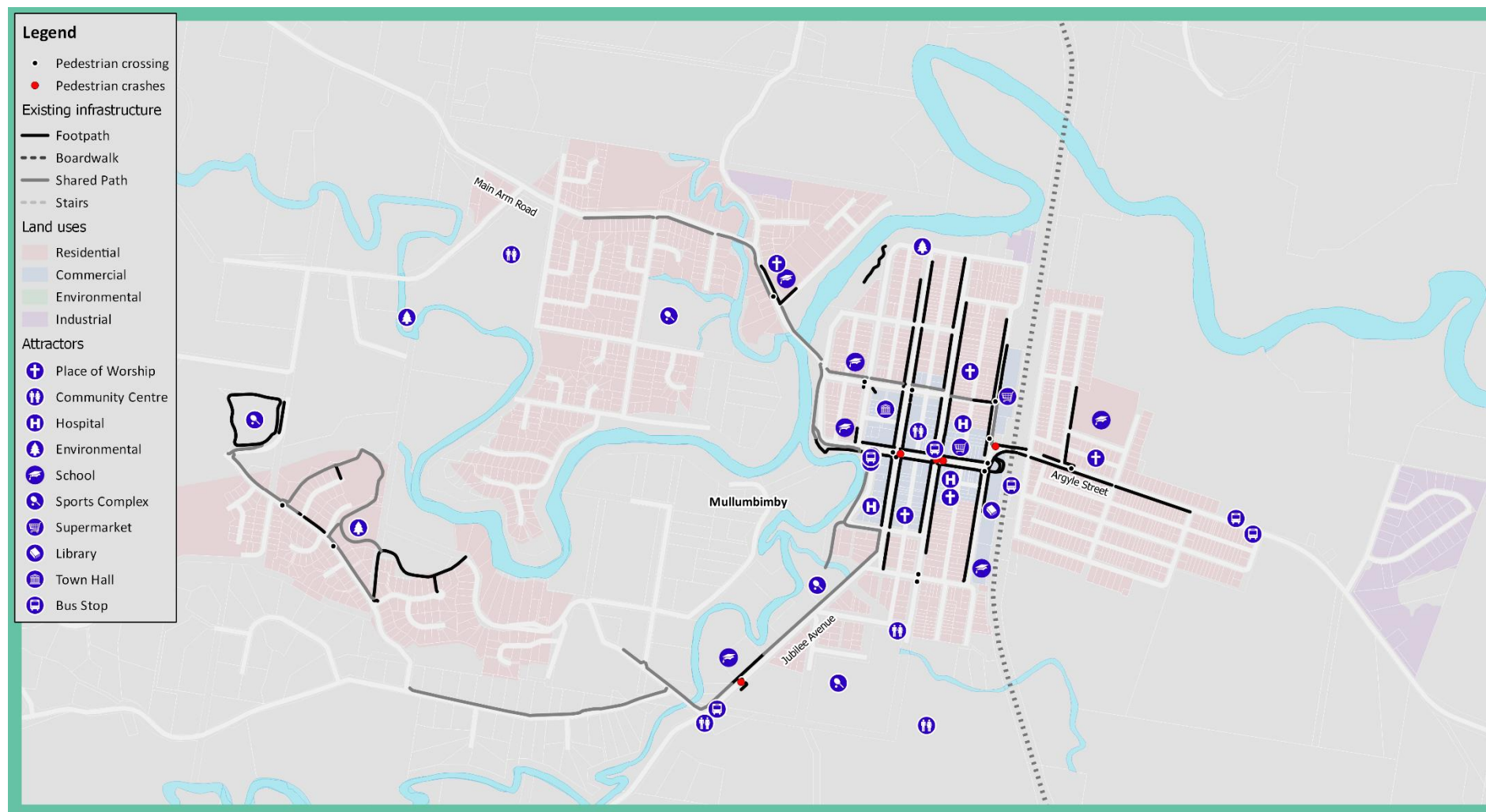


Figure 6: Existing walk and roll network and pedestrian crash locations – Mullumbimby



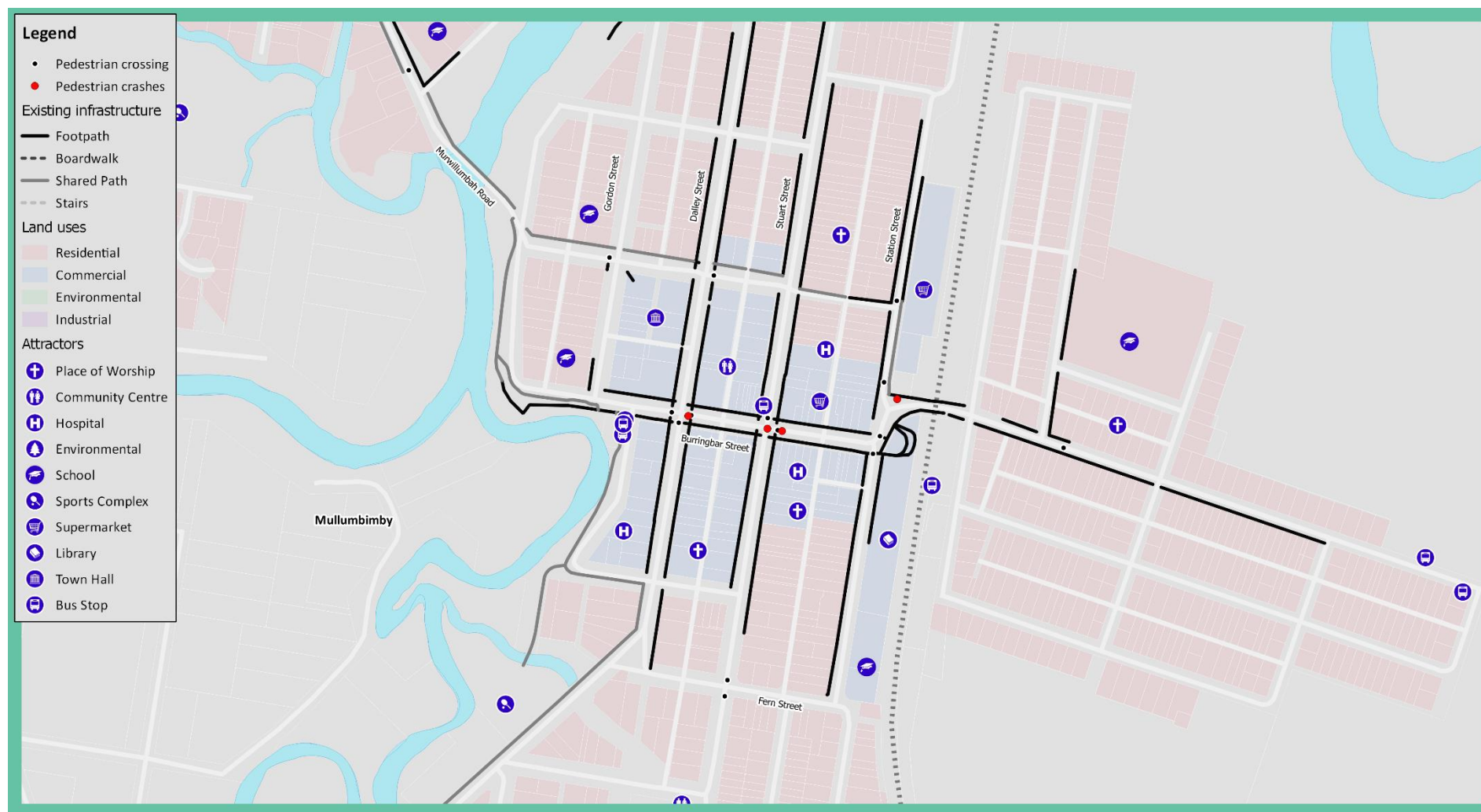


Figure 7: Existing walk and roll network and pedestrian crash locations – Mullumbimby Town Centre

## 2.5 Walking and rolling 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 PAMP study area for Byron Bay includes the town's western, central and southern areas as shown in Figure 10, Figure 11 and Figure 13 respectively. A snapshot of key community profile statistics for Byron Bay, including these three areas, is provided below.

<b>Population</b> <b>5,521</b> +401 (7.8%) since 2011 17% of Byron Shire population	<b>Median age</b> <b>42</b> Regional NSW.....43 NSW.....38 Australia.....38	<b>Largest age category</b> <b>25 to 29 year (9.6%)</b> Regional NSW.....5.5% NSW.....7.0% Australia.....7.1%
<b>Proportion of residents aged 14 and under</b> <b>12.3%</b> <b>(678 people)</b> Regional NSW.....18.1% NSW.....18.5% Australia.....18.7%	<b>Proportion of residents aged 65 and over</b> <b>17.2%</b> <b>(950 people)</b> Regional NSW.....19.7% NSW.....16.3% Australia.....15.7%	<b>Proportion of residents needing assistance with core activities</b> <b>4.2%</b> 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 walk to work

**8.2%**  
**(194 people)**

Regional NSW.....3.5%  
NSW.....3.9%  
Australia.....3.5%

### 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

The compact and walkable nature of Byron Bay, particularly in the more densely populated central area, and the variety of employment opportunities are key reasons that the proportion of residents walking to work is roughly double the regional, state and national average. This already high preference for walking is a key opportunity as it helps provide a more comprehensive understanding of the different needs of a range of users and provides an excellent basis for further increasing use of the walk and roll network.

### 2.5.1 Existing walk and roll network

The existing walk and roll network in the western, central and southern areas of Byron Bay is presented in Figure 10, Figure 11 and Figure 13 respectively. These maps provide an indication as to the current extent of the network, the level of connectivity linking typical trip origins (for example, residential areas) and destinations (for example, commercial areas and major attractors), and the suitability of the path type in the context of the surrounding area. These maps also show the location of crashes involving pedestrians, but this is discussed in greater detail in Section 2.5.3.

The dominant path to the west of Byron Bay is the existing shared cycle/pedestrian path that connects Myocum Road near 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 footpath 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 walk and roll network.

As can be seen in Figure 11, Byron Bay's town centre generally has a well-connected walk and roll network which provides access to the core commercial areas and to a number of key attractors such as local beaches, schools and sporting facilities. Outside of the town centre, the network provides access to a selection of surrounding residential areas and to longer distance and typically more recreational routes such as the Cape Byron Walking Track and the Bangalow Road/Broken Head Road connection to Suffolk Park. 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 walk and roll network.

The shared cycle/pedestrian path that partially connects Byron Bay's town centre in the north with Suffolk Park in the south is the dominant path in the southern portion of Byron Bay. This forms the main north-south spine of the network from which there are currently only limited intersecting paths to surrounding residential areas. Despite a lack of full connectivity between Byron Bay and Suffolk Park, this path provides pedestrian access between residential areas in Byron Bay and Suffolk Park to St Finbarr's Catholic Primary School and Byron Bay High School.

## **2.5.2 Network quality and accessibility**

Perhaps somewhat reflective of the current level of connectivity in Byron Bay, the quality and accessibility of the walk and roll network could be improved. Some of the key issues affecting the quality and accessibility of the existing network include poor quality surfaces; tree roots, dirt and other debris; lack of pedestrian access between residential, industrial, commercial and recreational areas; lack of kerb ramps and other supporting infrastructure; unsuitable or missing crossing facilities; mixing of cyclists and pedestrians in inappropriate locations without suitable infrastructure (for example, wide paths, signs); and parked cars restricting pedestrian movements. As with Mullumbimby, this results in a low level of service for pedestrians and negatively affects the experience and use of the network for vulnerable users. Addressing these existing accessibility issues will be a key driver for this PAMP.

## **2.5.3 Pedestrian crash history**

There have been a total of 30 recorded crashes involving pedestrians in Byron Bay over the five years between 2012 and 2017. As shown in Figure 10, Figure 11 and Figure 13, these crashes have tended to occur in areas of higher pedestrian activity within close proximity to roadways and existing footpaths. In particular, a cluster of pedestrian crashes were recorded at the intersection of Ewingsdale Road and Sunrise Boulevard in West Byron Bay and along Jonson Street in central Byron Bay.

An analysis of all recorded pedestrian crashes in Byron Bay over the last five years suggests that crashes involving pedestrians have been declining since 2014 (refer to Figure 8 and Figure 9) and that there were a number of common reasons for pedestrian crashes in Byron Bay. Some of these reasons include:

- Poor visibility between motorists and pedestrians
- Motorists' limited awareness of pedestrians during vehicle parking manoeuvres
- Jaywalking and lack of adherence to defined road crossing points
- Pedestrians walking alongside and within close proximity to roadways
- General motorist and pedestrian error.

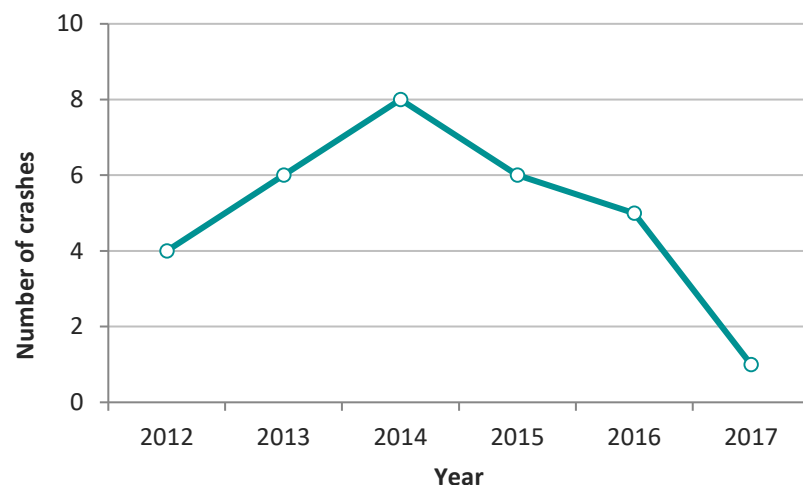


Figure 8: Annual pedestrian crashes in Byron Bay (2012-2017)

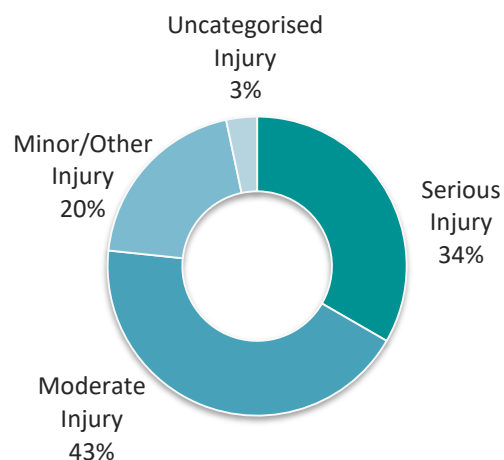


Figure 9: Pedestrian crashes by severity in Byron Bay (2012-2017)

## 2.5.4 Passenger transport

There are currently six public bus routes which service Byron Bay and surrounds. These are:

- **610:** Byron Bay to Lismore
- **637B:** Byron Bay to Byron Hills via Suffolk Park and Baywood Chase.
- **637S:** Byron Bay to Sunrise Beach via Arts and Industry Estate (loop service)
- **640:** Mullumbimby to Ballina via Byron Bay, Suffolk Park and Lennox Head (alignment varies for northbound and southbound)
- **641:** Byron Bay to Ballina via Bangalow (alignment varies for northbound and southbound)
- **645:** Ocean Shores to Byron Bay.

Although these services provide access to different parts of Byron Bay, each service stops at the existing bus interchange located on the western side of the Jonson Street/Marvell Street intersection. This area currently serves as both a hub for bus movements to/from Byron Bay and a main pedestrian meeting point and thoroughfare. Providing appropriate pedestrian facilities to enable residents and visitors to access the bus network at this location and at other stops across Byron Bay is critical. This is particularly relevant given the large number of visitors to Byron Shire every year and the current role of Byron Bay specifically as the main point of arrival and departure for visitors. This will be an important consideration when planning pedestrian facilities to service new bus infrastructure, such as the new bus interchange which is currently proposed between Butler Street and the rail line, south of Somerset Street.

In addition to these local services, longer distance regional coach services extend along the east coast from Brisbane to Grafton and inland from Byron Bay and Ballina West to Casino, servicing Byron Bay.



The passenger transport network is also comprised of one transport operator which provides community transport services between Byron Bay, Ballina and Tweed, one taxi operator which services the Byron Bay area, one car hire provider within Byron Bay and an airport bus service which operates shuttles between Byron Bay and Gold Coast and Ballina airports.

## 2.5.5 Issues and opportunities

### BYRON BAY – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES

Issues	Opportunities
<ul style="list-style-type: none"> <li>• High volume of vehicles in close proximity to pedestrians and areas of high pedestrian activity</li> <li>• High number of tourists unfamiliar with local area</li> <li>• Gaps in existing walk and roll network, especially along key routes and to, from and within residential and industrial areas</li> <li>• Generally poor network quality with low level of accessibility for vulnerable users</li> </ul>	<ul style="list-style-type: none"> <li>• Existing compact and walkable town centre with residential areas within close proximity</li> <li>• Existing high rates of pedestrian activity and established culture of walking with above average proportion of residents who walk to work</li> <li>• Topography generally conducive to pedestrian movements for all ages and abilities</li> <li>• Proximity to key attractors and natural assets (for example, beaches) to support recreational walks</li> </ul>

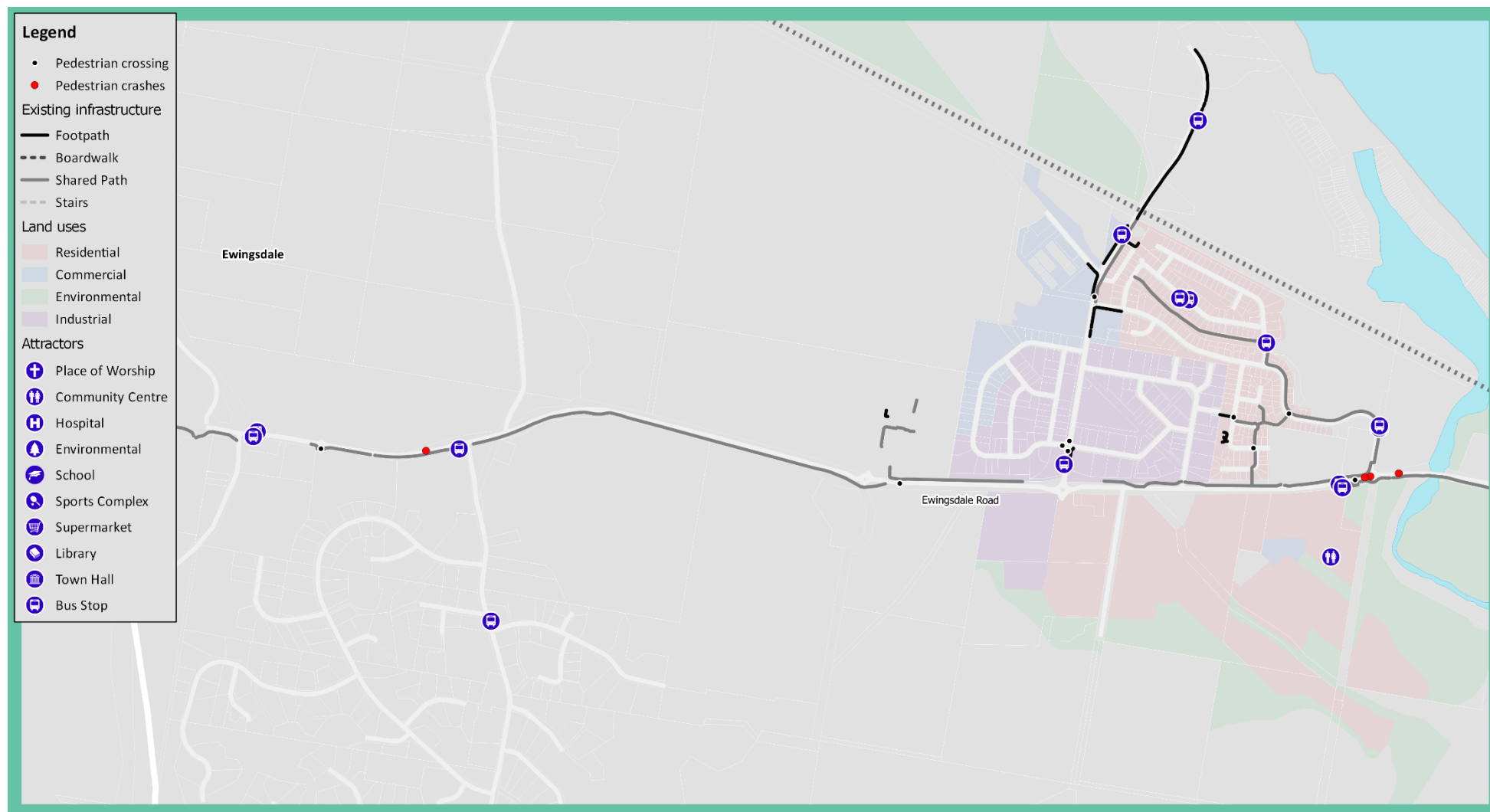


Figure 10: Existing walk and roll network and pedestrian crash locations – Byron Bay (West)

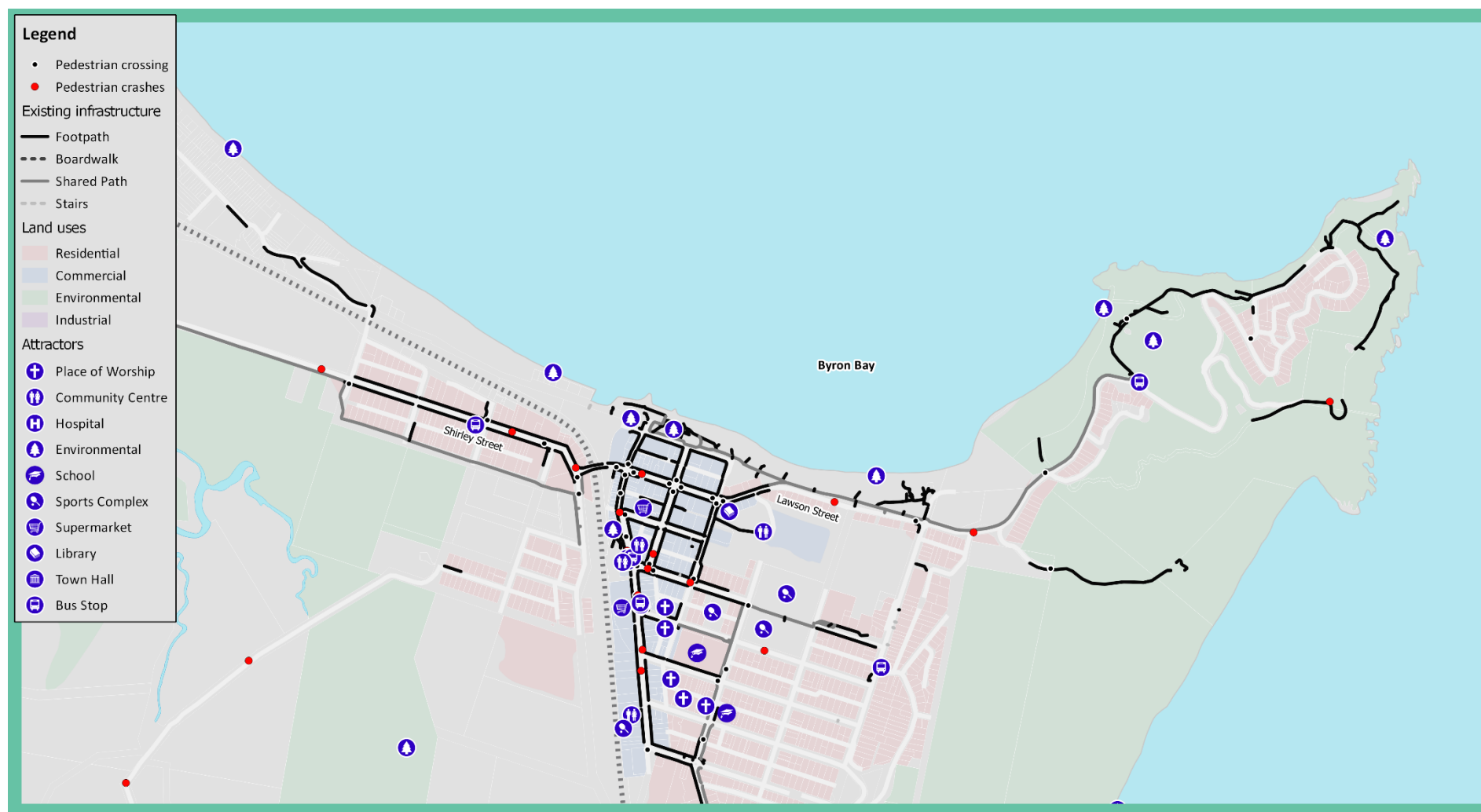


Figure 11: Existing walk and roll network and pedestrian crash locations – Byron Bay (Central)

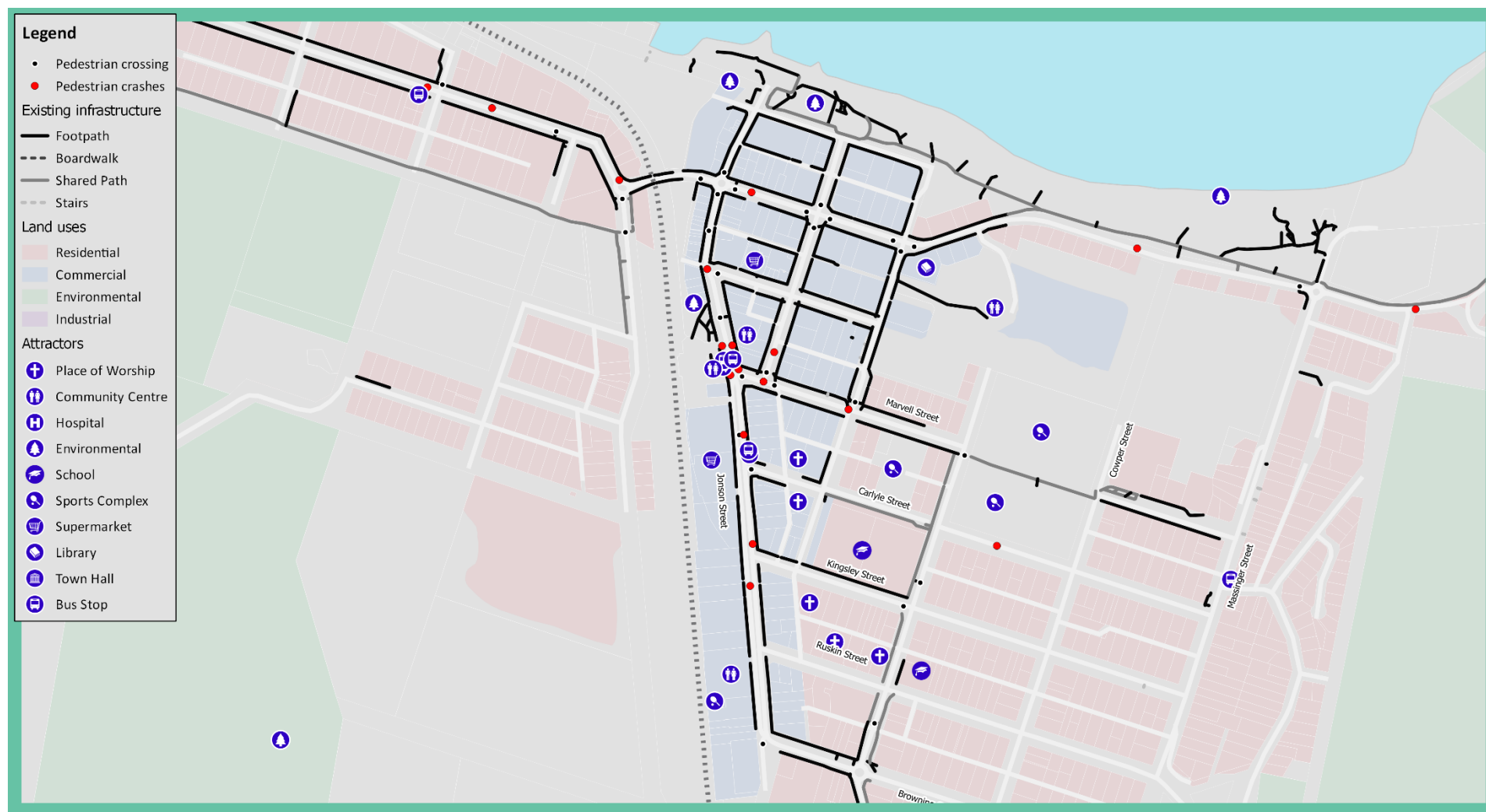


Figure 12: Existing walk and roll network and pedestrian crash locations – Byron Bay (Central) Town Centre



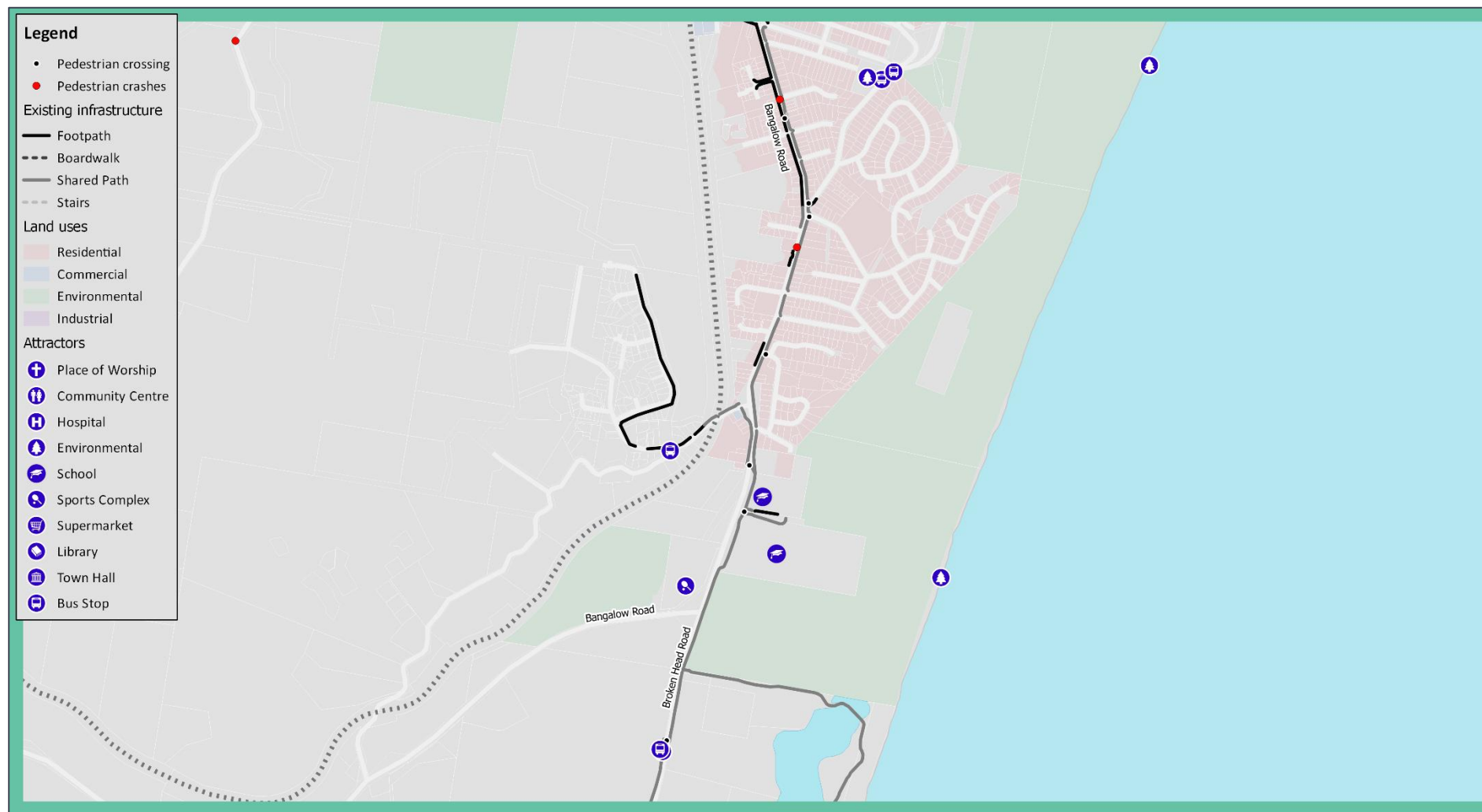


Figure 13: Existing walk and roll network and pedestrian crash locations – Byron Bay (South)

## 2.6 Walking and rolling 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 PAMP study area for Suffolk Park is shown in Figure 14 and a snapshot of key community profile statistics is provided below.

<b>Population</b>  <b>3,750</b>  +214 (6.1%) since 2011 11% of Byron Shire population	<b>Median age</b>  <b>40</b>  Regional NSW.....43 NSW.....38 Australia.....38	<b>Largest age category</b>  <b>40 to 44 years (8.8%)</b>  Regional NSW.....6.1% NSW.....6.7% Australia.....6.8%
<b>Proportion of residents aged 14 and under</b>  <b>17.1%</b> <b>(642 people)</b> Regional NSW.....18.1% NSW.....18.5% Australia.....18.7%	<b>Proportion of residents aged 65 and over</b>  <b>13.2%</b> <b>(494 people)</b> Regional NSW.....19.7% NSW.....16.3% Australia.....15.7%	<b>Proportion of residents needing assistance with core activities</b>  <b>3.7%</b> 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 walk to work

**2.1%**  
**(40 people)**

Regional NSW.....3.5%  
NSW.....3.9%  
Australia.....3.5%

### 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

A low proportion of Suffolk Park residents currently walk to work when compared against the regional, state and national average. This is likely a result of the limited employment opportunities available within Suffolk Park and the location of opportunities in other parts of the Shire beyond reasonable walking distance. As a result of this and in light of the close proximity to natural assets, pedestrian trips in Suffolk Park are expected to be largely for recreational purposes.

### 2.6.1 Existing walk and roll network

As can be seen in Figure 14, the existing walk and roll network in Suffolk Park provides generally uninterrupted pedestrian access between Tallow Beach at the eastern end of Clifford Street and the residential area west of Broken Head Road. This connection also provides access to the commercial heart of Suffolk Park on the corner of Clifford Street and Broken Head Road.

The network in the residential area to the east of Broken Head Road is currently very limited with access north to Tallow Creek and the surrounding environmental area currently only available via the existing road network and adjacent grassed verges. The walk and roll network in the residential area to the west of Broken Head Road is comparatively more extensive with pedestrian connections along a number of residential streets, particularly partially along and within the Beech Drive loop. Despite these existing connections, less than 50% of the residential area in Suffolk Park currently has access to a connected network of footpaths and, critically, Suffolk Park is currently not connected to the existing north-south shared cycle/pedestrian path that provides a generally uninterrupted connection to Byron Bay.

Between 2012 and 2017, no pedestrian related crashes were recorded in Suffolk Park. This is despite gaps in the existing walk and roll network and largely residential areas.

## 2.6.2 Network quality and accessibility

As a comparatively newer development area, particularly west of Broken Head Road, the existing walk and roll network in Suffolk Park is generally of a higher standard in terms of both path surface quality and accessibility for more vulnerable users. This is undermined, however, by the lack of paths forming a connected network, as discussed in Section 2.6.1 and shown in Figure 14.

Overall, this results in a fair level of service for pedestrians and provides some accessibility for the more vulnerable users. Building upon the existing network and enhancing the level of service and accessibility for all users (for example, by providing new or upgraded crossings and paths) is a key consideration for the future walk and roll network in Suffolk Park.

## 2.6.3 Passenger transport

There are currently three public bus routes which service Suffolk Park and surrounds. These are:

- **637B:** Byron Bay to Byron Hills via Suffolk Park and Baywood Chase
- **640:** Mullumbimby to Ballina via Byron Bay, Suffolk Park and Lennox Head (alignment varies for northbound and southbound)
- **640X:** Byron Bay to Lismore via Lennox Head and Ballina (alignment varies for northbound and southbound).

Longer distance regional coach services extend along the east coast from Brisbane to Grafton and inland at Byron Bay and Ballina West to Casino, servicing Suffolk Park.

Due to its proximity, the passenger transport network in Suffolk Park is comprised of the same providers and services as Byron Bay (refer to Section 2.5.4).

## 2.6.4 Issues and opportunities

### SUFFOLK PARK – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES

Issues	Opportunities
<ul style="list-style-type: none"> <li>• No formal connectivity to key footpaths to the north</li> <li>• Limited walk and roll network in existing residential areas, negatively affecting accessibility</li> <li>• Broken Head Road forms a barrier for access between eastern and western parts of Suffolk Park. Pedestrians required to cross road</li> </ul>	<ul style="list-style-type: none"> <li>• Topography generally conducive to pedestrian movements for all ages and abilities</li> <li>• Proximity to natural assets (for example, Tallow Beach, Ti-Tree Aboriginal Area) to support recreational walks</li> <li>• Footpaths currently provided to/from existing sport facilities and the commercial area along Clifford Street</li> <li>• Existing paths generally of higher quality and more accessible</li> <li>• Existing residential population to enable increase in walking</li> </ul>

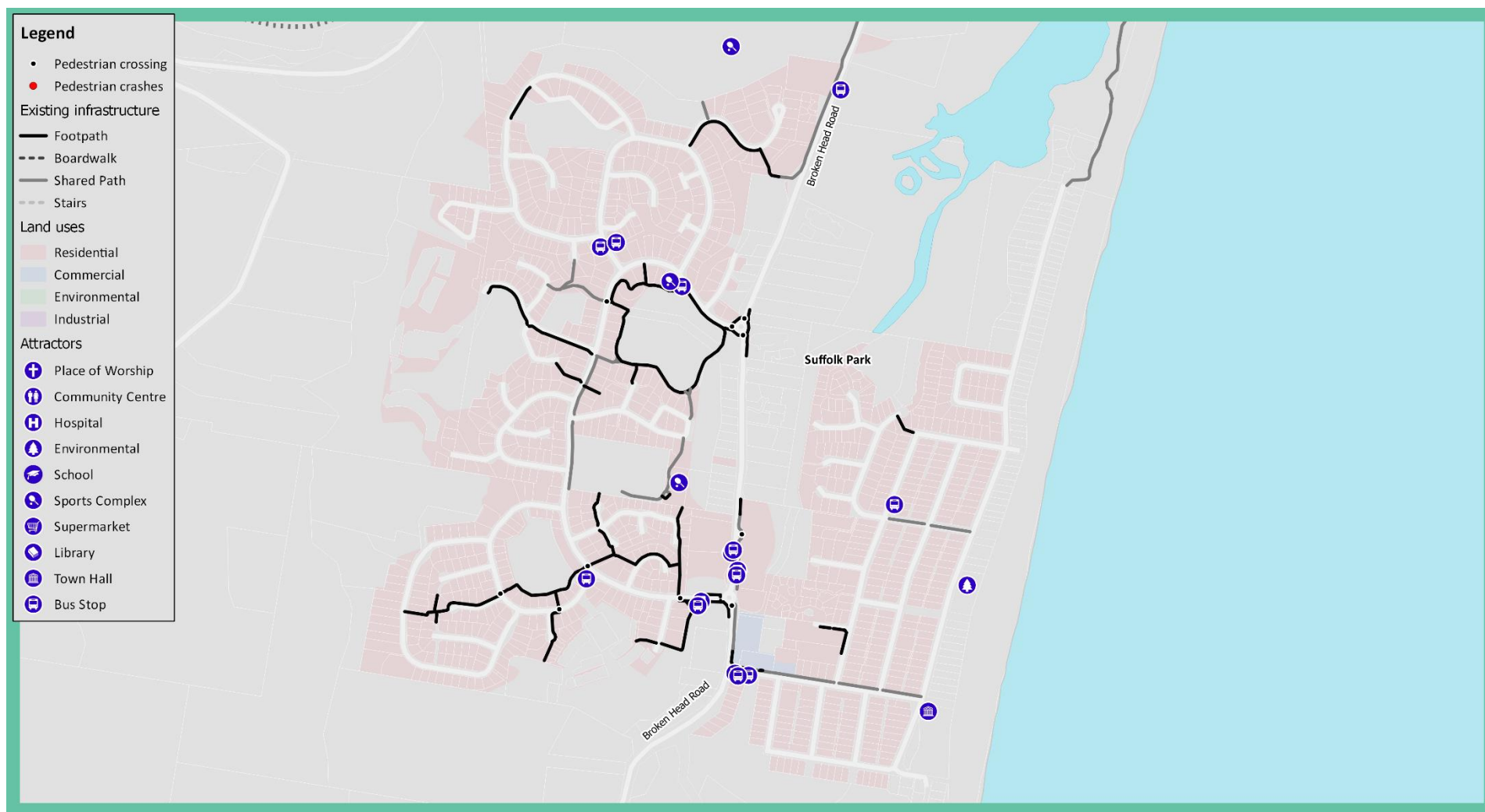


Figure 14: Existing walk and roll network – Suffolk Park

## 2.7 Walking and rolling 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 PAMP study area for Bangalow is shown in Figure 15 and a snapshot of key community profile statistics is provided below.

<b>Population</b> <b>2,021</b> +197 (11%) since 2011 6.1% of Byron Shire population	<b>Median age</b> <b>43</b> Regional NSW.....43 NSW.....38 Australia.....38	<b>Largest age category</b> <b>40 to 44 years (9.5%)</b> Regional NSW.....6.1% NSW.....6.7% Australia.....6.8%
<b>Proportion of residents aged 14 and under</b> <b>21.6%</b> <b>(437 people)</b> Regional NSW.....18.1% NSW.....18.5% Australia.....18.7%	<b>Proportion of residents aged 65 and over</b> <b>15.8%</b> <b>(319 people)</b> Regional NSW.....19.7% NSW.....16.3% Australia.....15.7%	<b>Proportion of residents needing assistance with core activities</b> <b>4.4%</b> 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 walk to work

**5.7%**  
**(56 people)**

Regional NSW.....3.5%  
NSW.....3.9%  
Australia.....3.5%

### 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

A high proportion of Bangalow residents currently walk to work when compared against the regional, state and national average. Similar to Byron Bay and Mullumbimby, this is likely to be a result of Bangalow's active and walkable town centre within close proximity to residential areas and the variety of employment opportunities available locally.

### 2.7.1 Existing walk and roll network

The existing walk and roll network in Bangalow (refer to Figure 15) is currently concentrated around areas of high pedestrian activity such as the town centre along Bangalow Road. From the centre, a network of connected paths currently extends immediately north, east and south to primarily service existing residential areas.

The connection to the north, across the rail line and on both sides of Granuaille Road, currently forms a pedestrian spine providing uninterrupted access to the town centre. However, as only a limited number of paths currently intersect with this spine, formal access to nearby residential areas is limited. The connection to the east provides important access to existing sports facilities and the connection to the south provides access to residential areas on the southern side of Bangalow Road. Although there is currently infrastructure provision within some residential areas in the west of Bangalow, these areas are currently not connected to the remainder of the walk and roll network.

Between 2012 and 2017, no pedestrian related crashes were recorded in Bangalow. This is despite gaps in the existing walk and roll network, particularly those connecting the town centre with residential areas further west.



## 2.7.2 Network quality and accessibility

One of Bangalow's strengths – its varied topography which offers sweeping views over the surrounding countryside – is also one of its key constraints for accessibility. This places a greater emphasis on providing a network of paths that enable pedestrian route choice and that help those with mobility impairments avoid large variances in elevation, as well as on enhancing the quality of existing paths that are already appropriate for use by more vulnerable users.

Bangalow includes a mix of both newer and more established residential areas and the path quality and level of accessibility generally reflects this dichotomy. Paths in the newer areas are generally wider and have a higher quality surface while paths in the more established residential areas are typically narrower with worn and, in some places, uneven surfaces. This is particularly evident and critical along Granuaille Road, Byron Street between Station Lane and Byron Creek, and along Market Street adjacent Bangalow Public School. Despite the variation in path quality across Bangalow, the presence of kerb ramps on most paths as they intersect with roads significantly improves the level of service and accessibility. This could be improved further with the provision of new and/or upgraded crossings appropriate to the needs of more vulnerable users. This is particularly important along Bangalow Road and Granuaille Road as they are heavily trafficked road corridors that impact on pedestrian movement and accessibility in Bangalow.

As with Suffolk Park and elsewhere across the Shire, the level of service and accessibility in Bangalow is undermined by the current gaps in the walk and roll network. This will be an important consideration for the future walk and roll network in Bangalow.

## 2.7.3 Passenger transport

There are currently four public bus routes which service Bangalow and surrounds. These are:

- **610:** Byron Bay to Lismore
- **635:** Lismore to Mullumbimby and Brunswick Head
- **641:** Byron Bay to Ballina via Bangalow (alignment varies for northbound and southbound)
- **641X:** Byron Bay to Lismore via Bangalow, Clunes and Bexhill.

Each of these services stop at the existing on-road bus stop on Station Street, south of Byron Street. This is a central location close to shops, restaurants and other facilities along Byron Street, which is directly serviced by existing pedestrian paths and crossings. It is important that any future bus stops, such as those proposed along Byron Street close to the public school (refer to the Bangalow Village Plan in Section 2.2), are integrated with the path network, supported by other pedestrian facilities (for example, crossings), and of sufficient width to allow safe and efficient movement of pedestrians and boarding/alighting bus passengers.

In addition to these local services, longer distance regional coach services extend along the east coast from Brisbane to Grafton and inland from Byron Bay and Ballina West to Casino, servicing Bangalow.

The passenger transport network is also comprised of one transport operator which provides a shuttle between Bangalow, Brisbane Airport and Casino.

## 2.7.4 Issues and opportunities

### BANGALOW – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES

Issues	Opportunities
<ul style="list-style-type: none"> <li>• Bangalow Road forms a barrier for access between residential areas to the north and south. Pedestrians required to cross road</li> <li>• High volume of vehicles in close proximity to pedestrians and areas of high pedestrian activity, particularly on Bangalow Road</li> <li>• High number of tourists unfamiliar with local area</li> </ul>	<ul style="list-style-type: none"> <li>• Established town centre with high pedestrian activity and connected walk and roll network</li> <li>• A number of existing attractors are located within walking distance of the town centre</li> <li>• Proximity to disused rail corridor and potential reuse as walking route</li> <li>• Established culture of walking with above average proportion of residents who walk to work</li> </ul>

<ul style="list-style-type: none"><li>• Some gaps in existing walk and roll network, particularly to the west</li><li>• Undulating topography across the town may impact on mobility</li><li>• Paths in more established areas generally poorer quality and less accessible</li><li>• Visibility of pedestrians restricted by parallel parked cars in the town centre (along Bangalow Road)</li></ul>	<ul style="list-style-type: none"><li>• Newer residential areas generally have higher quality and more accessible paths</li><li>• Kerb ramps located on most crossings and intersections</li></ul>
---	--

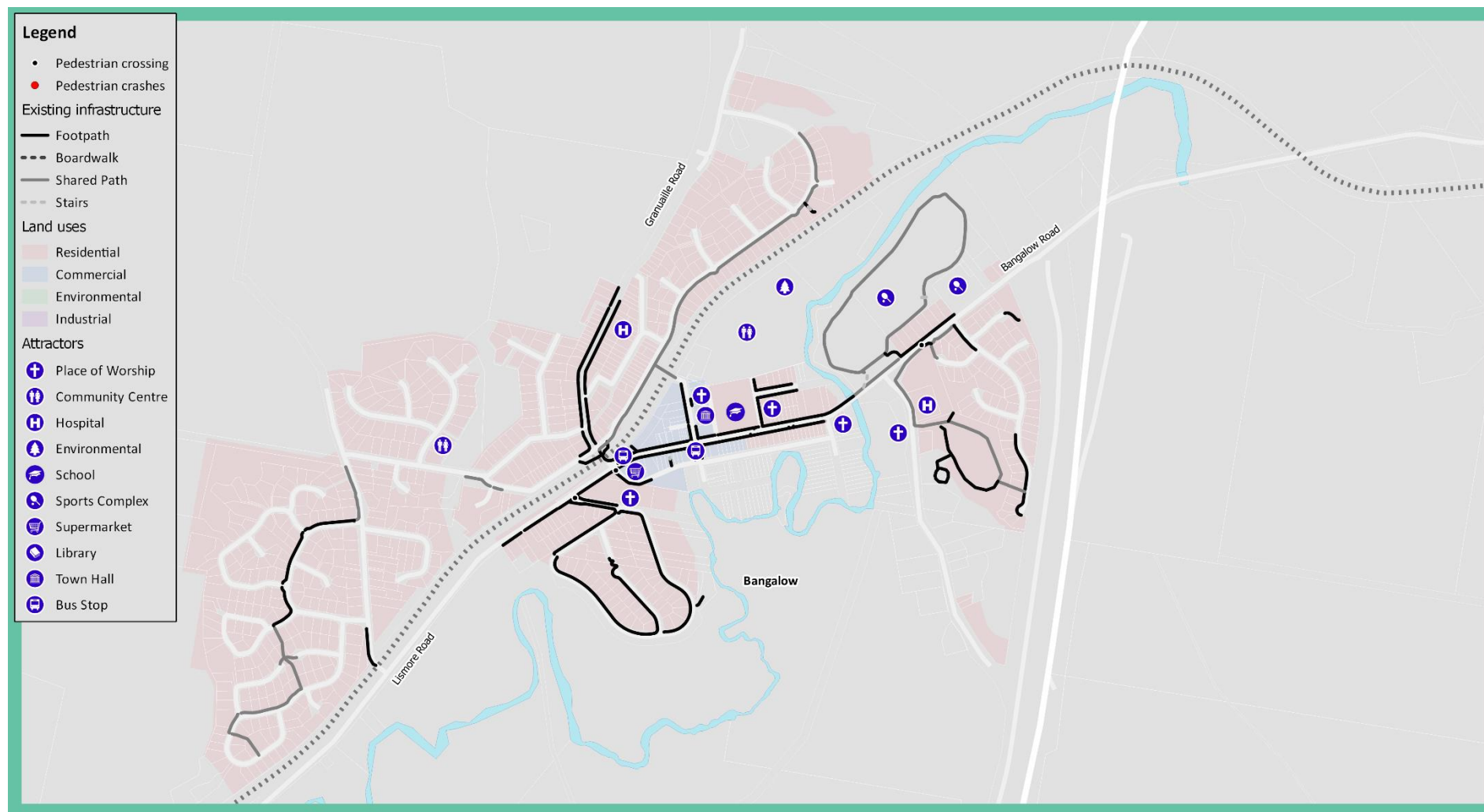


Figure 15: Existing walk and roll network – Bangalow

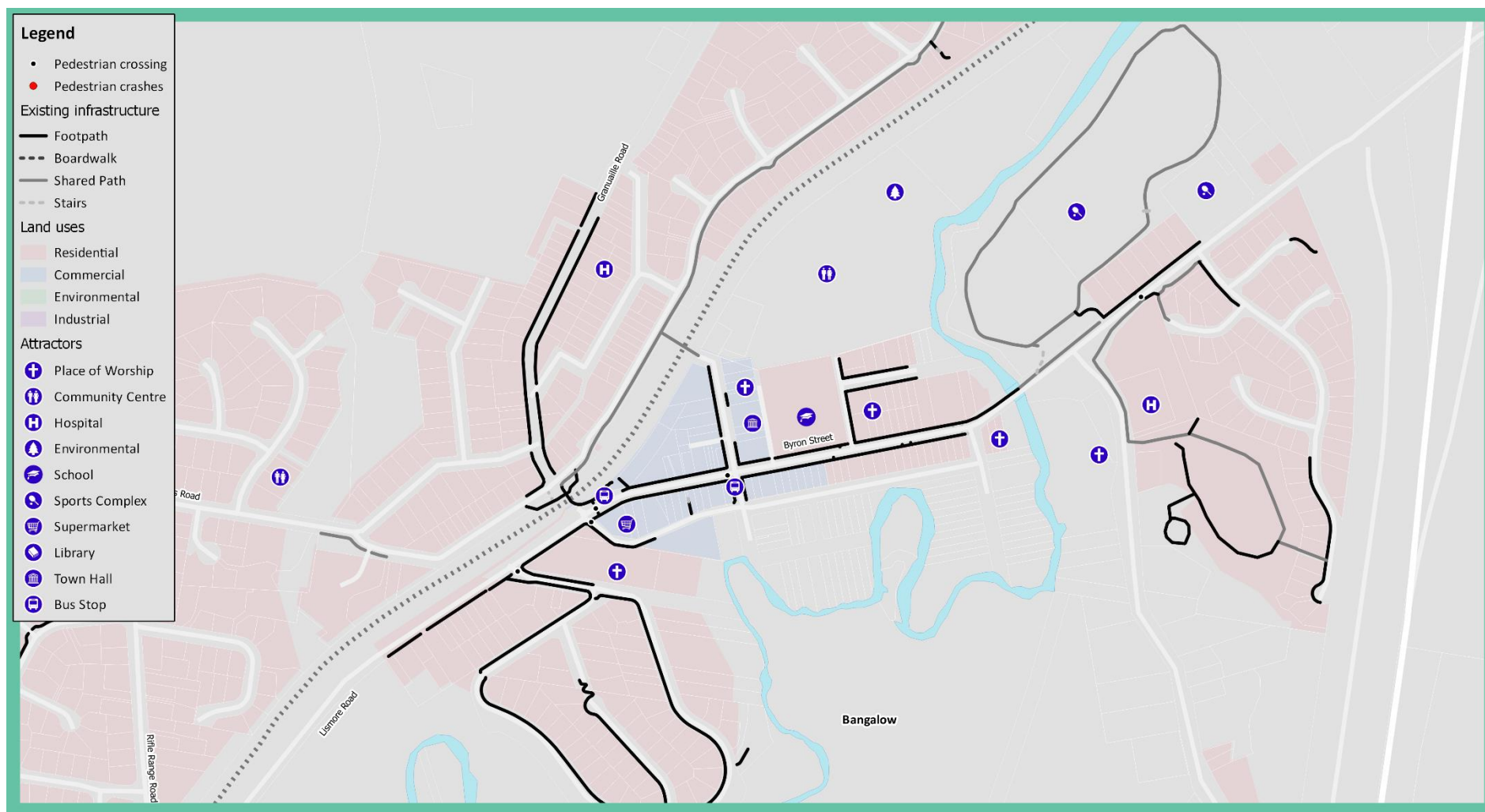


Figure 16: Existing walk and roll network – Bangalow Town Centre

## 2.8 Walking and rolling 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 PAMP study areas for Ocean Shores, South Golden Beach, New Brighton and Billinudgel are shown in Figure 17 and snapshots of key community profile statistics are shown below.

### Ocean Shores, South Golden Beach & New Brighton

Population	Median age	Largest age category
<b>6,302</b>	<b>43</b>	<b>60 to 64 years (8.5%)</b>
+487 (8.4%) since 2011 19% of Byron Shire population	Regional NSW.....43 NSW.....38 Australia.....38	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 walk to work**  
**1.2%**  
**(33 people)**  
Regional NSW.....3.5%  
NSW.....3.9%  
Australia.....3.5%

**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

The percentage of walk to work in the combined area of Ocean Shores, South Golden Beach and New Brighton is lower than the regional, state and national average. It is possible that this is due to the older age category, the inclusion of a number of rural areas in the data and the limited local employment opportunities.



## Billinudgel

<b>Population</b>  <b>317</b>  +35 (11%) since 2011 1% of Byron Shire population	<b>Median age</b>  <b>47</b>  Regional NSW.....43 NSW.....38 Australia.....38	<b>Largest age category</b>  <b>50 to 54 years (11%)</b>  Regional NSW.....6.8% NSW.....6.5% Australia.....6.5%
<b>Proportion of residents aged 14 and under</b>  <b>16.4%</b> <b>(52 people)</b> Regional NSW.....18.1% NSW.....18.5% Australia.....18.7%	<b>Proportion of residents aged 65 and over</b>  <b>15.1%</b> <b>(48 people)</b> Regional NSW.....19.7% NSW.....16.3% Australia.....15.7%	<b>Proportion of residents needing assistance with core activities</b>  <b>—</b>  Regional NSW.....6.3% NSW.....5.4% Australia.....5.1%
<b>Most popular industry of employment</b>  <b>Higher Education (6.6%)</b>  NSW.....1.4% Australia.....1.5%	<b>Proportion of employed local residents who walk to work</b>  <b>3.2%</b> <b>(3 people)</b> Regional NSW.....3.5% NSW.....3.9% Australia.....3.5%	<b>Proportion of households with no registered motor vehicle</b>  <b>2.5%</b>  Regional NSW.....5.8% NSW.....9.2% Australia.....7.5%

Source: Australian Bureau of Statistics; ProfileID

## 2.8.1 Existing walk and roll network

The existing walk and roll network in Ocean Shores, South Golden Beach, New Brighton and Billinudgel is presented in Figure 17. The network in this study area consists of a number of key pedestrian links, some of which provide access between different suburbs.

As can be seen in Figure 17, the walk and roll network in Ocean Shores is currently limited with a footpath connecting existing attractors along Rajah Road to Brunswick Valley Way and a shared cycle/pedestrian path providing a connection south to Brunswick Heads.

In South Golden Beach, there are currently three key routes comprised of a number of pedestrian paths and shared cycle paths. The first of these routes connects the north-east of South Golden Beach to Brunswick Valley Way in the west via a school. The second route connects the south of South Golden Beach to Brunswick Valley Way. This route, however, is currently not connected to the remainder of the network in South Golden Beach. These routes continue on to Billinudgel and Ocean Shores though with some existing gaps in the network. The third route connects the south-east of South Golden Beach to New Brighton in the south.

The majority of the existing walk and roll network in Billinudgel is located along Wilfred Street which is the main east-west connection in the town. However, there are currently a number of gaps in path provision along this street as well as in the remainder of the town.

## 2.8.2 Network quality and accessibility

Ocean Shores is a comparatively new development area though the walk and roll network is currently limited and, for the most part, narrow. Despite this, the paths that do exist have good quality surfaces with kerb ramps located along each road intersection to improve the level of service for mobility impaired users. Providing a more extensive and higher quality walk and roll network in Ocean Shores will go some way towards improving the overall level of service and accessibility. However, the undulating topography that provides such spectacular views may undermine broader network accessibility for mobility impaired users.

Although limited, the existing walk and roll network in South Golden Beach is currently of a high quality with wide paths, smooth and even surfaces and kerb ramps. Expanding this network to complete missing links and better connect residential areas (for example, along Beach Avenue, Helen Street, Kolora Way and New Brighton Road) will significantly help to improve the level of service and accessibility in the future.

The existing shared cycle/pedestrian path that currently bisects New Brighton (refer to Figure 17) provides a fair level of service for more vulnerable users as the path is generally wide and the surface quality is good. Path quality is reduced in select locations, however, due to the presence of leaf litter and sand. This is particularly evident along New Brighton Road between Redgate Road and Byron Street (leaf litter) and along The Esplanade, north of Strand Avenue (sand). Undertaking regular maintenance will help to ensure the path is suitable for all users.

Accessibility in Billinudgel is currently poor despite the presence of a wide shared path along one part of Wilfred Street. This low level of service is largely due to the discontinuity of the network and general lack of paths. Addressing these existing accessibility issues will be a key driver for this PAMP.

### 2.8.3 Pedestrian crash history

Only one crash involving a pedestrian was recorded across these four locations between 2012 and 2017. As shown in Figure 17, this crash occurred at the Rajah Road and Brunswick Valley Road roundabout. The crash, which resulted in serious injury, occurred in 2015 when a pedestrian was attempting to cross Brunswick Valley Way.

### 2.8.4 Passenger transport

There is currently one public bus route which services Ocean Shores, South Golden Beach, New Brighton and Billinudgel, namely:

- **645:** Ocean Shores to Byron Bay.

This bus service stops at multiple locations across Ocean Shores, South Golden Beach, New Brighton and Billinudgel, often with limited infrastructure available (bus stops, waiting areas, paths, crossings, etc.) to support boarding and alighting bus passengers. As mentioned earlier, providing appropriate pedestrian facilities to enable residents and visitors to access the bus network is important as it improves safety, practicality and the integration of different transport modes.

This has the potential to improve the overall attractiveness of public transport use and to provide further transport alternatives in order to reduce reliance on private vehicle use. This is particularly relevant in Ocean Shores where the hilly topography could affect rates of walking and rolling.

In addition to these local services, longer distance regional coach services extend along the east coast from Brisbane to Grafton and inland from Byron Bay and Ballina West to Casino, servicing Ocean Shores and Billinudgel.

The passenger transport network is also comprised of one transport operator which provides a shuttle between Brisbane Airport and Casino.

### 2.8.5 Issues and opportunities

#### OCEAN SHORES, SOUTH GOLDEN BEACH, NEW BRIGHTON & BILLINUDGEL – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES

Issues	Opportunities
<ul style="list-style-type: none"> <li>• Many gaps in existing walk and roll network</li> <li>• Low proportion of residents who walk to work</li> <li>• Undulating topography, particularly in Ocean Shores, may impact on mobility</li> <li>• Paths in Billinudgel generally poorer quality and less accessible</li> <li>• The Pacific Motorway forms a barrier for pedestrian access between beachside and inland localities</li> </ul>	<ul style="list-style-type: none"> <li>• Some existing key pedestrian routes that link different suburbs. Provides spines from which the walk and roll network could be expanded</li> <li>• Newer residential areas generally have higher quality and more accessible paths</li> <li>• Existing co-location of major attractors (shopping centre, medical centre and community centre) in Ocean Shores</li> </ul>

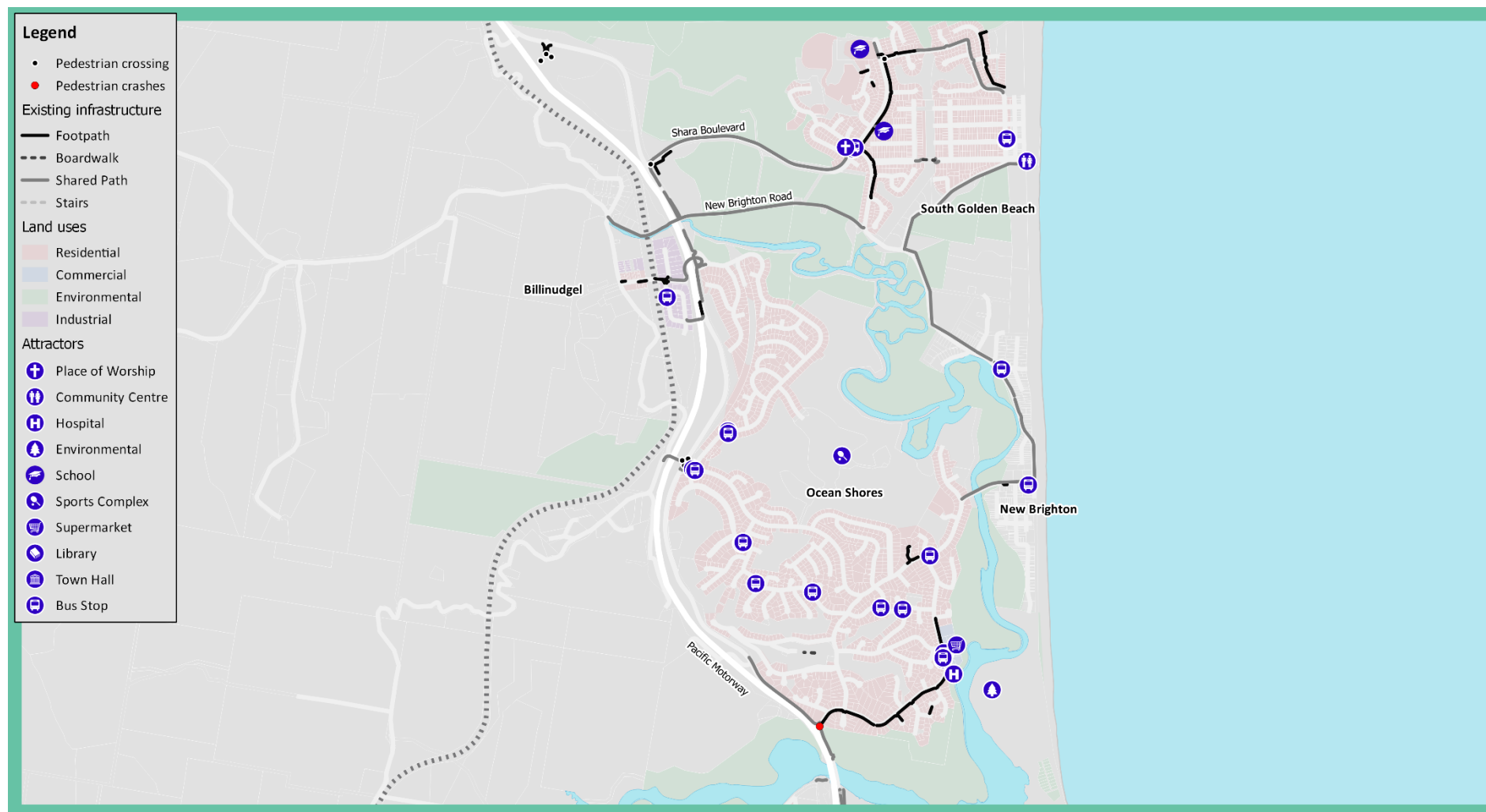


Figure 17: Existing walk and roll network and pedestrian crash locations – Ocean Shores, South Golden Beach, New Brighton and Billinudgel

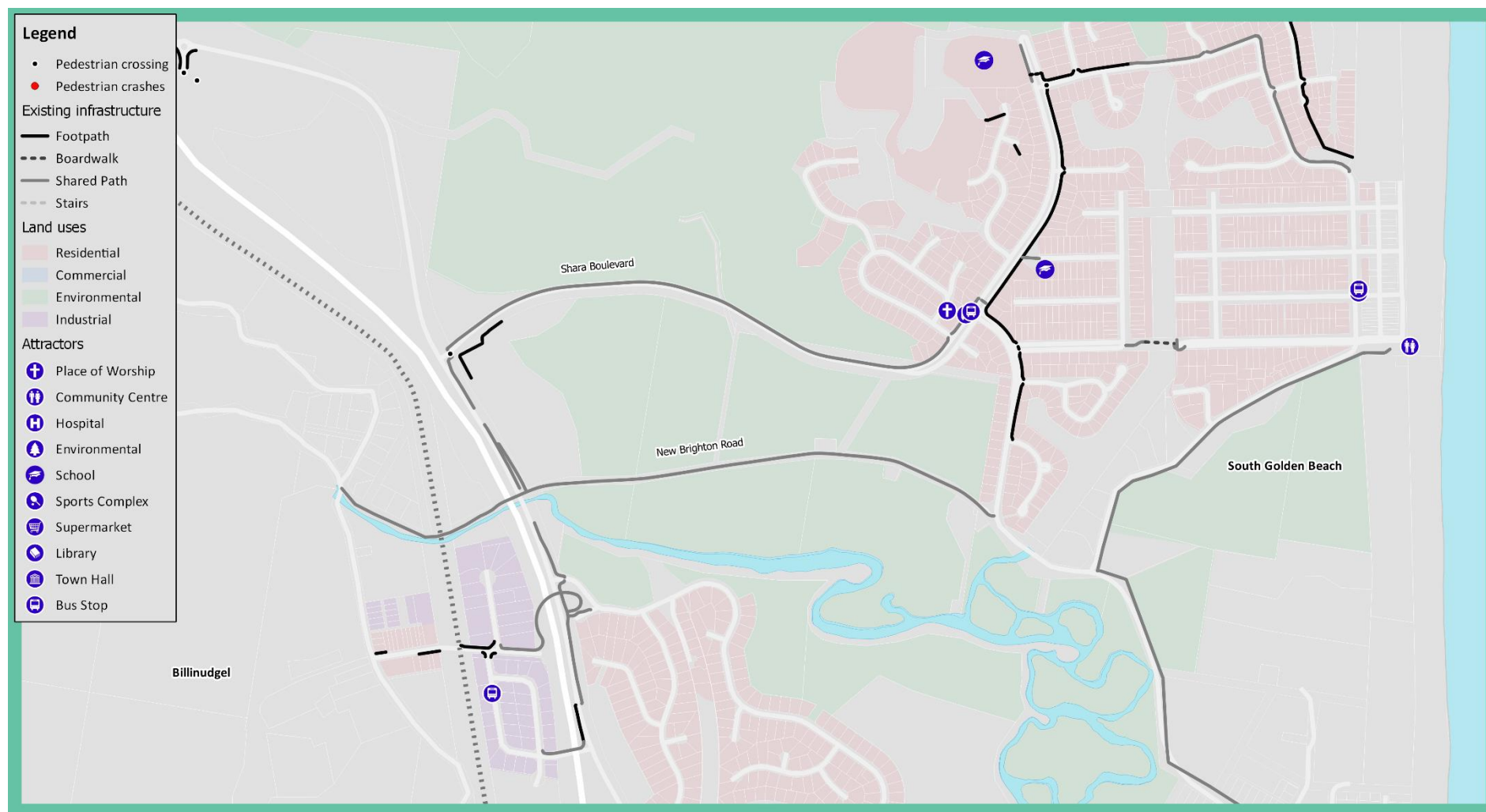


Figure 18: Existing walk and roll network and pedestrian crash locations – South Golden Beach and Billinudgel

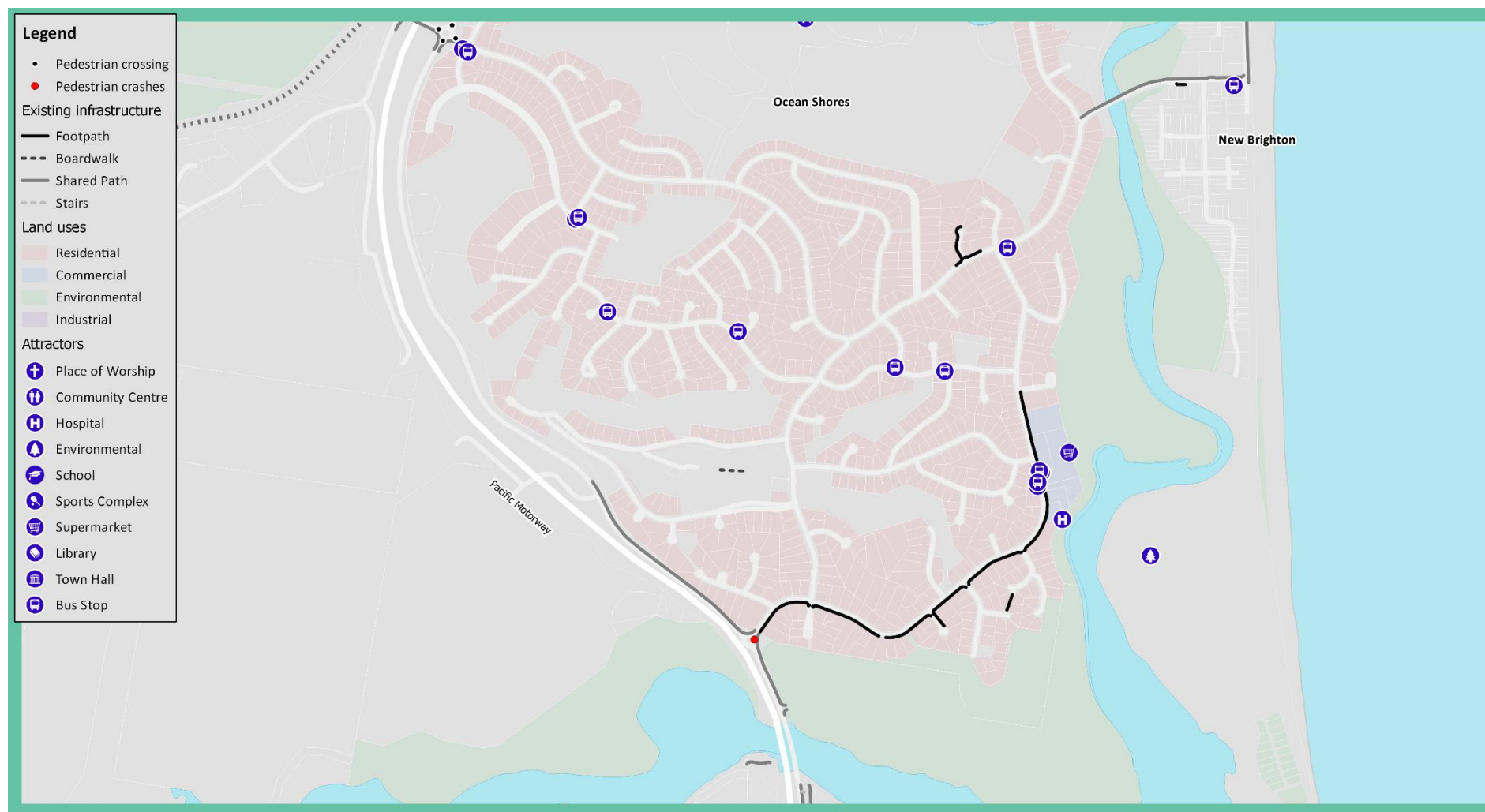


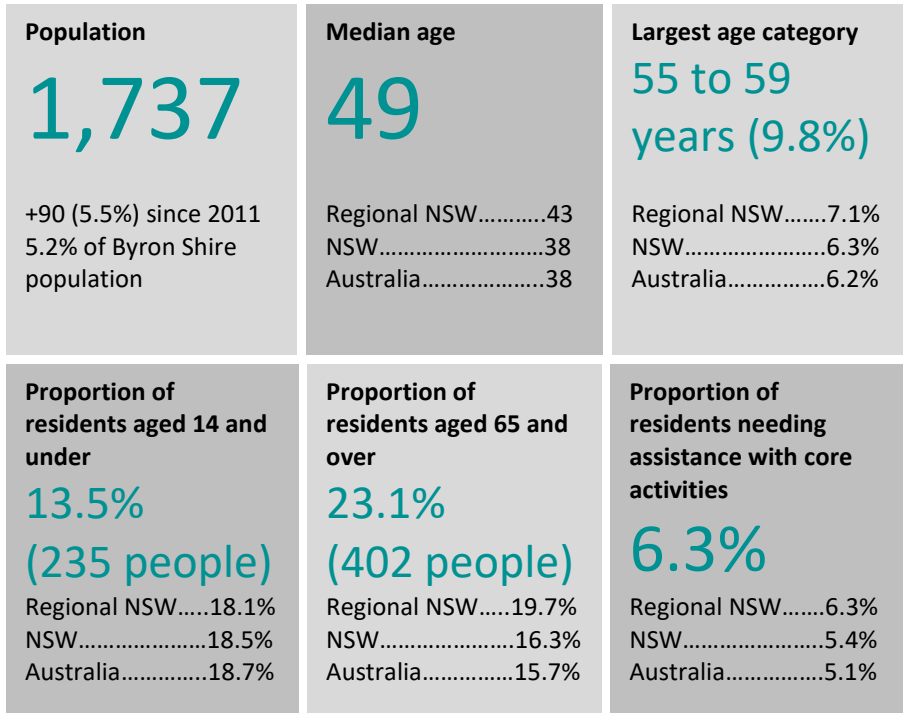
Figure 19: Existing walk and roll network and pedestrian crash locations – Ocean Shores and New Brighton



## 2.9 Walking and rolling 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 PAMP study area for Brunswick Heads is shown in Figure 20 and a snapshot of key community profile statistics is provided below.



Source: Australian Bureau of Statistics; ProfileID

As with a number of towns and villages in Byron Shire, a high proportion of Brunswick Heads residents currently walk to work when compared against the regional, state and national average. This is likely to be a result of the town’s active and walkable town centre within close proximity to residential areas, the variety of employment opportunities available locally and the extent of the existing footpath network.

### 2.9.1 Existing walk and roll network

As can be seen in Figure 20, the existing walk and roll network in Brunswick Heads is extensive with the majority of the gridded road network currently lined with some form of path infrastructure. This enables dedicated pedestrian connections to almost all commercial areas and key attractors as well as to the majority of the residential areas in Brunswick Heads. The quality and width of existing footpaths varies across the town, however, existing paths in residential areas are generally narrow (1m approx.) and showing signs of age.

Two pedestrian connections are currently available to the beach and residential areas on the eastern side of Brunswick Heads. The first of these paths, located on the South Beach Road vehicle bridge, is narrow and pedestrian paths are currently not provided on the eastern terminus to ensure continuous and more formalised pedestrian access to the beach. The second is a dedicated pedestrian bridge located at the eastern end of Fingal Street adjacent to Terrace Park which intersects with South Beach Road and provides access to the beach.

## 2.9.2 Network quality and accessibility

Despite an extensive walk and roll network, the quality of existing paths and the level of service and accessibility for more vulnerable users could be improved. Some of the key issues include narrow or variable path widths; poor quality surfaces; gaps in the network; lack of kerb ramps and other supporting infrastructure; and unsuitable or missing crossing facilities.

Considering the ageing population, the comparatively high proportion of residents needing assistance with core activities and the large number of tourists that visit Brunswick Heads every year, addressing these existing accessibility issues will be a key driver for this PAMP.

## 2.9.3 Pedestrian crash history

Only one crash involving a pedestrian was recorded in Brunswick Heads between 2012 and 2017. As shown in Figure 20, this crash occurred on Tweed Street, west of Newberry Parade. The crash, which resulted in minor injury, occurred in 2016 when a pedestrian was attempting to cross Tweed Street.

## 2.9.4 Passenger transport

There are currently three public bus routes which service Brunswick Heads and surrounds. These are:

- **610:** Byron Bay to Lismore
- **635:** Lismore to Mullumbimby and Brunswick Heads
- **645:** Ocean Shores to Byron Bay.

Longer distance regional coach services extend along the east coast from Brisbane to Grafton and inland from Byron Bay and Ballina West to Casino, servicing Brunswick Heads.

Each of these services stop in the centre of Brunswick Heads at an existing on-road bus stop on Park Street, north of Fingal Street. This is located close to shops, restaurants and other facilities and is directly serviced by a network of existing pedestrian paths. In addition, one bus service (Route 645) also stops on Old Pacific Highway, south of the town centre. Dedicated pedestrian facilities to support boarding and lighting bus passengers in this location are currently limited. It is important that existing and planned bus stops in Brunswick Heads are integrated with and supported by the path network and any other pedestrian

facilities (for example, crossings). Outside of the public bus service, passenger transport options in Brunswick Heads are currently limited.

## 2.9.5 Issues and opportunities

### BRUNSWICK HEADS – SUMMARY OF EXISTING ISSUES AND OPPORTUNITIES

Issues	Opportunities
<ul style="list-style-type: none"> <li>• Some gaps in existing walk and roll network, particularly to provide access to beach</li> <li>• Variable path width, poor surface quality and lack of kerb ramps negatively affects accessibility</li> <li>• Tweed Street forms a barrier for access between residential areas to the west and the town centre in the east. Pedestrians required to cross road at limited formal locations to access the two areas</li> </ul>	<ul style="list-style-type: none"> <li>• Existing compact and walkable town centre with residential areas within close proximity</li> <li>• Easy navigation and legibility due to street grid design</li> <li>• Existing high rates of pedestrian activity and established culture of walking with above average proportion of residents who walk to work</li> <li>• Topography generally conducive to pedestrian movements for all ages and abilities</li> <li>• Proximity to key attractors and natural assets (for example, beaches) to support recreational walks</li> <li>• Several existing attractors are located within walking distance of the town centre</li> </ul>

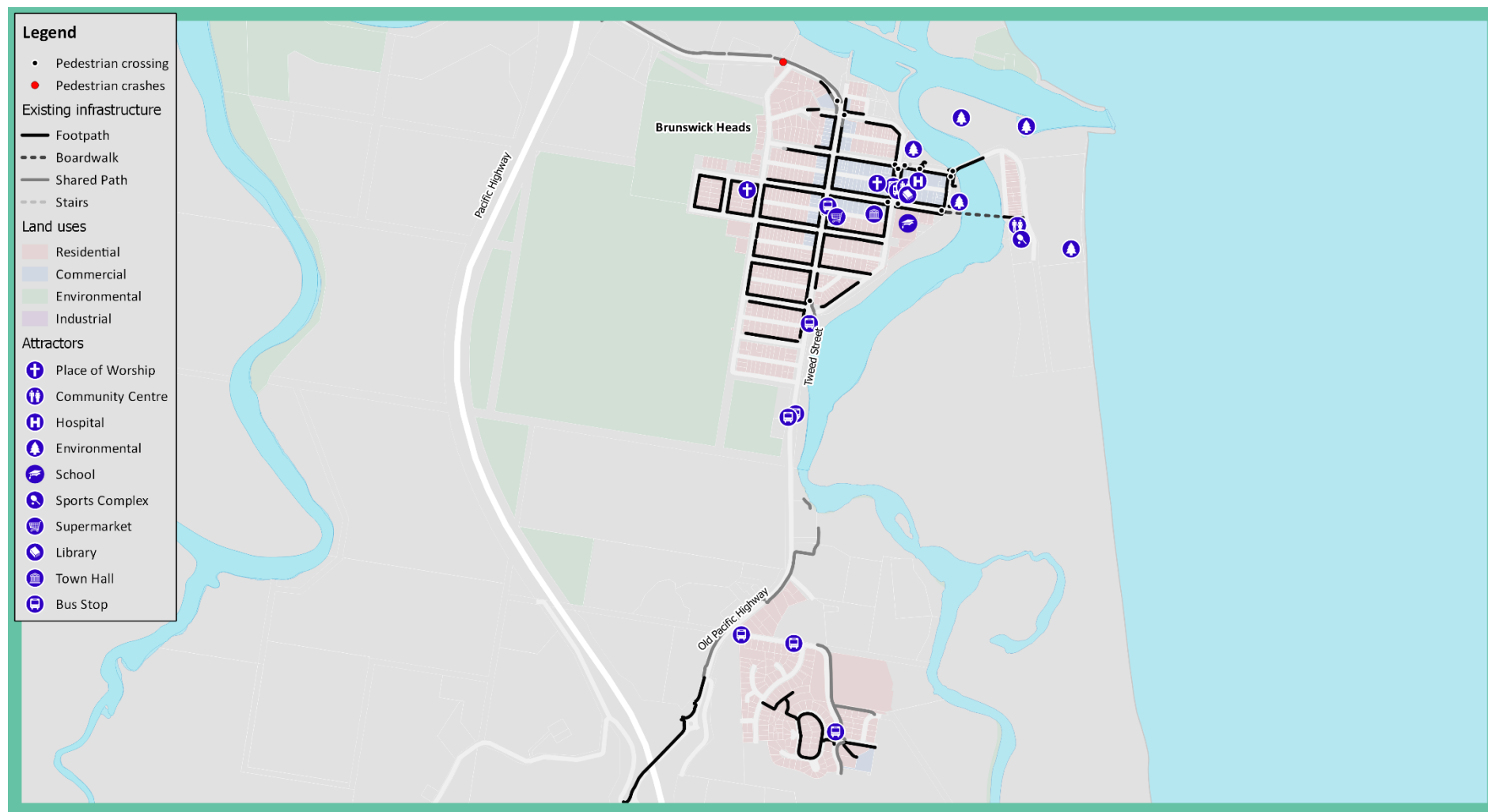


Figure 20: Existing walk and roll network and pedestrian crash locations – Brunswick Heads

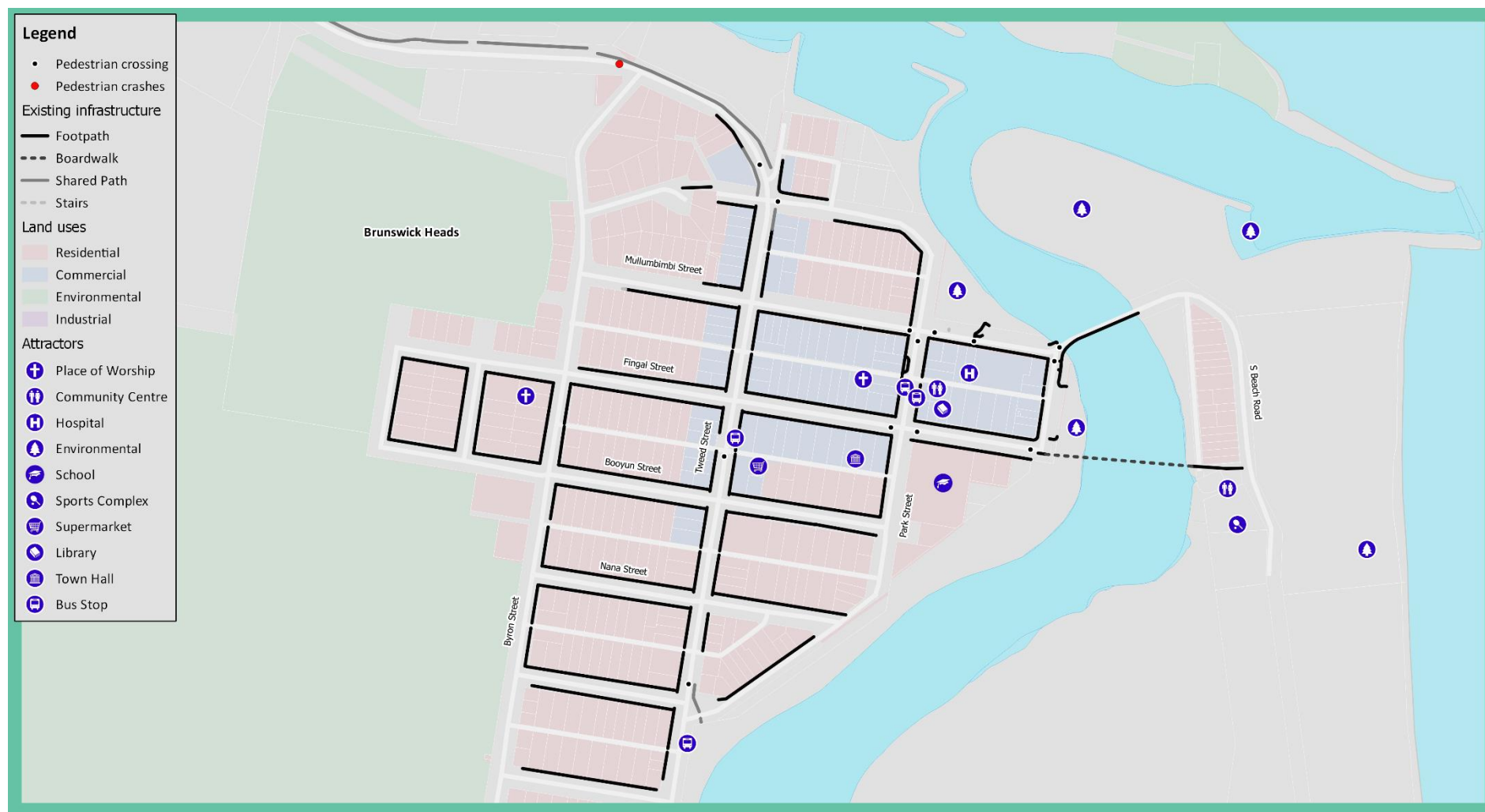


Figure 21: Existing walk and roll network and pedestrian crash locations – Brunswick Heads Town Centre

## **2.10 Walking and rolling in Main Arm and Federal**

Main Arm and Federal 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.

As can be seen in Figure 22 and Figure 23, the existing walk and roll network in Main Arm and Federal is limited. This negatively affects the ability of pedestrians, particularly those with mobility impairments, to safely and effectively walk and roll in each of these villages.



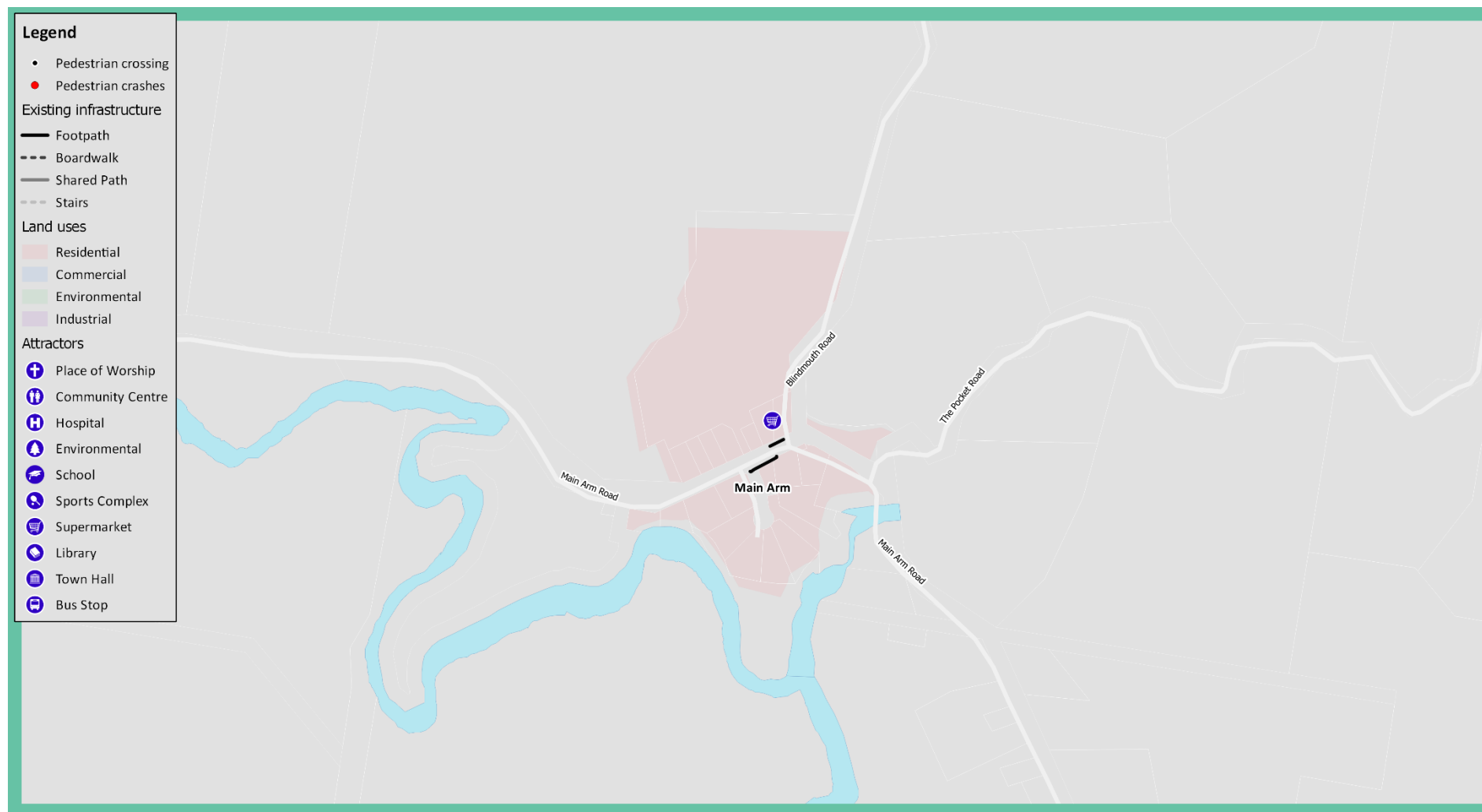


Figure 22: Existing walk and roll network – Main Arm

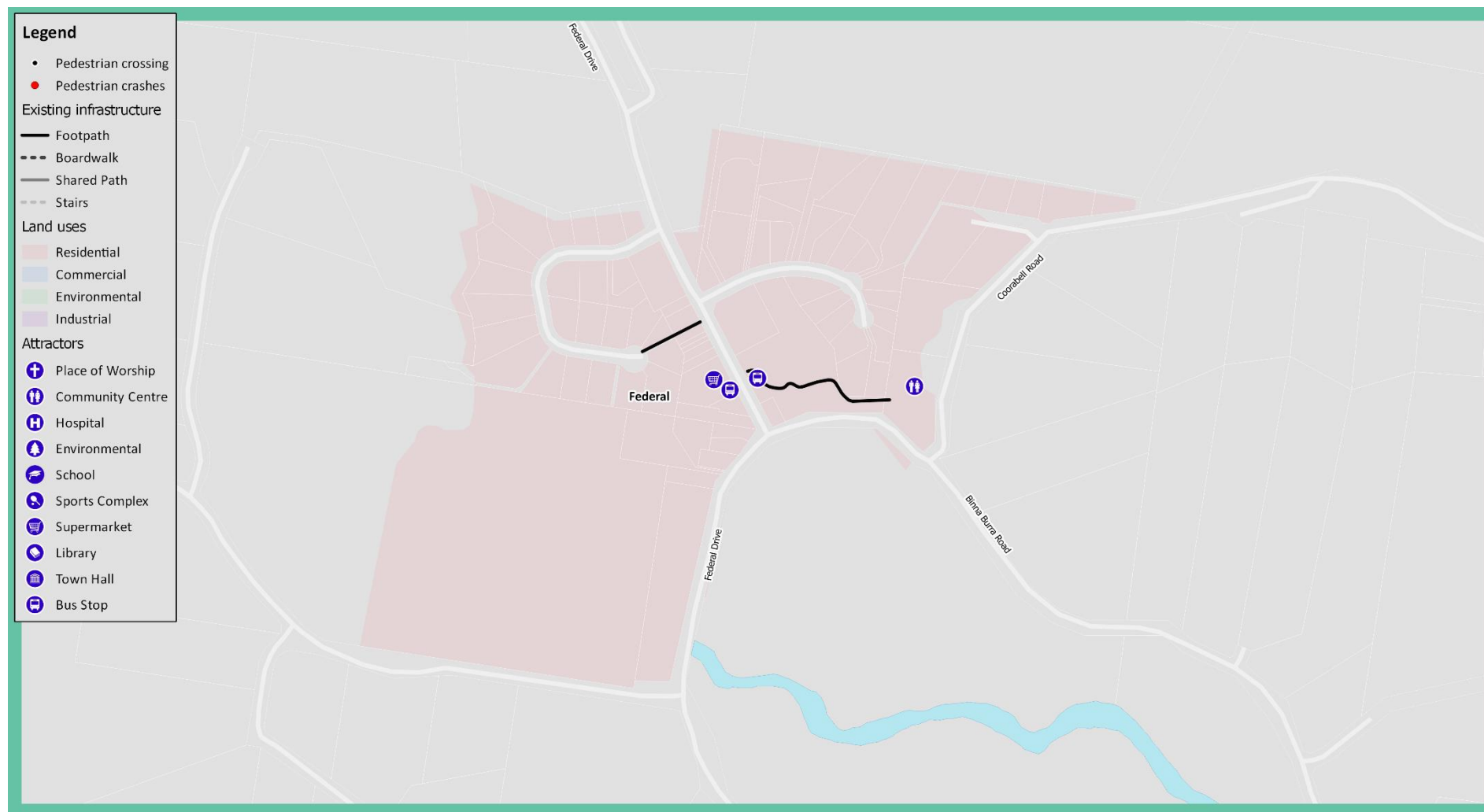


Figure 23: Existing walk and roll network – Federal

## 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 PAMP. These stages included:

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

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

Throughout the preparation of this PAMP, Council was also preparing the Byron Shire Bike Plan. 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 walking, rolling and the use of the footpath network included:

- New footpaths are needed
- Connectivity improvements are needed between footpaths within towns and also between towns
- Increased maintenance is needed for footpaths 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 walking and rolling.

As the foundation for the PAMP, 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 worn footpath) and opportunities (for example, a new footpath 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 PAMP were provided at the Byron Bay consultation session followed by the Ocean Shores, Mullumbimby, Bangalow and ACWG sessions
- 277 comments relating to the development of the PAMP (99 critical issues, 63 moderate issues and 115 opportunities)
- Roughly 70% of comments relating to the development of the PAMP 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.





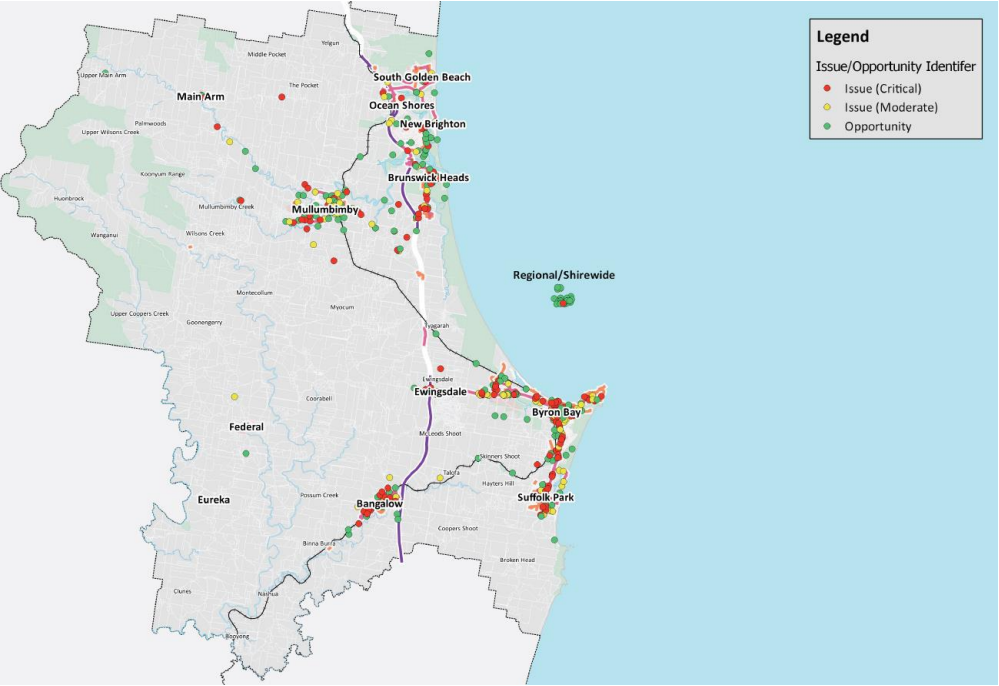


Figure 25: Issues and opportunities identified by the community during Stage 2 consultation

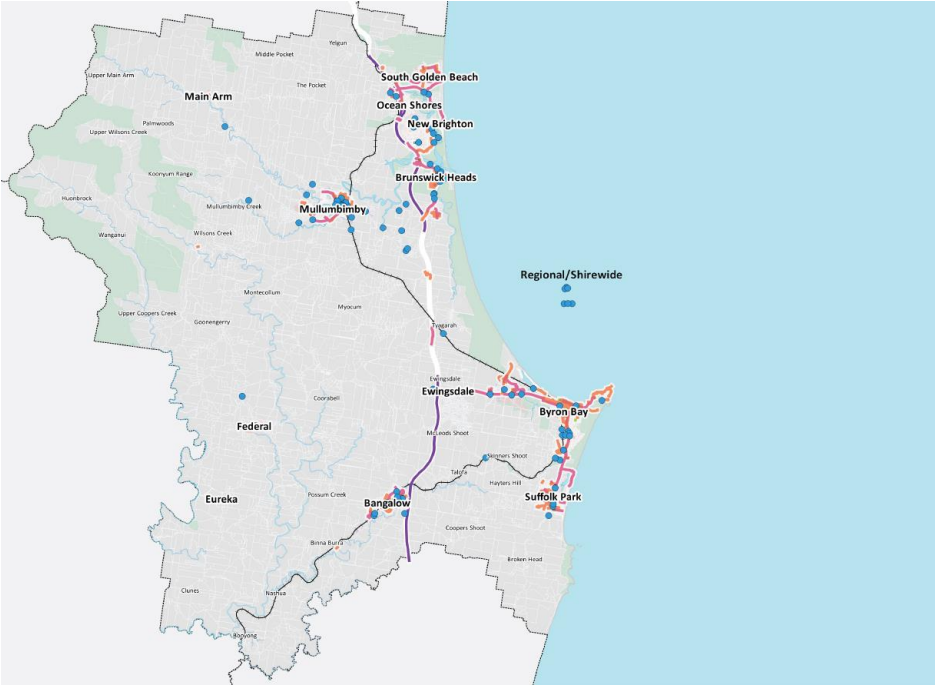


Figure 26: Prioritised issues and opportunities as nominated by the community during Stage 2 consultation

### 3.3 Stage 3 consultation – consultation on the Draft PAMP

The Draft PAMP was released in mid-2019 for public exhibition and comment following the development of the future walk and roll 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 PAMP 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 PAMP and the Bike Plan
- 14 different community organisations reviewed and provided submissions on the PAMP and the Bike Plan
- A total of 62 public submissions were received across the PAMP and the Bike Plan. Within these submissions, a total of 212 individual comments had implications for the plans
- Roughly 68% (144 comments) of the 212 total individual comments related to the PAMP
- The greatest number of PAMP comments related to the walk and roll network and/or its development ('Network development') as proposed in the Draft PAMP, followed by comments related to the priorities assigned to the proposed network ('Route prioritisation') and comments on the location and/or type of crossings proposed ('Crossings') (refer to Figure 27)
- Roughly 70% (101 comments) of the 144 comments related to the PAMP were actioned and incorporated in the Final PAMP (refer to Figure 28).

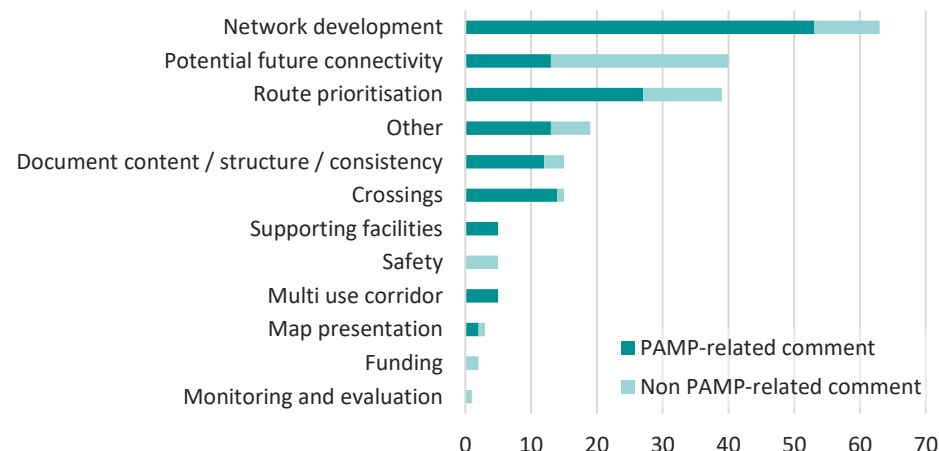


Figure 27: PAMP-related comments by comment category

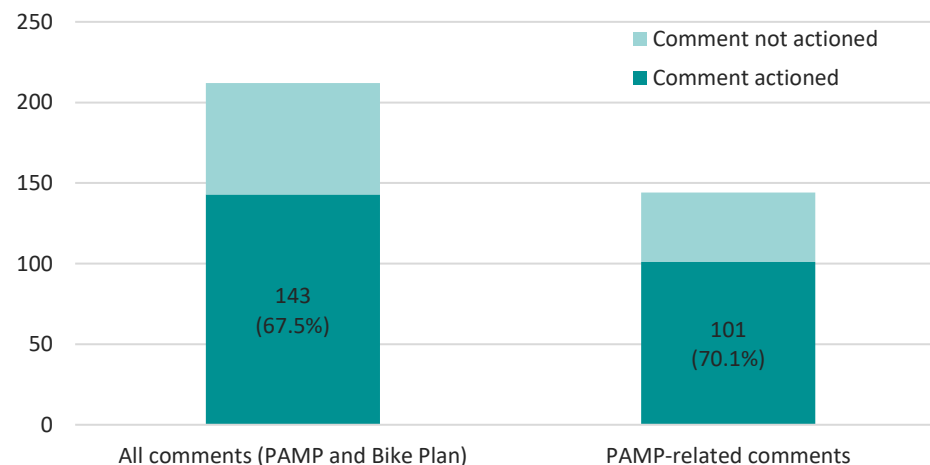


Figure 28: Comments actioned in the Final PAMP

## 4 The future walk and roll network

The community consultation provided insight into not only on-the-ground experiences and possible initiatives for the walk and roll 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 walk and roll 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 walk and roll network was to design a walk and roll environment for the most vulnerable user so that it is suitable for all. This especially includes users with impaired mobility, vision and/or hearing. A set of design principles were adopted to support the design 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 formalises existing pedestrian paths; that addresses existing hazards; and that reduces the need to cross roads.
- Provide pedestrian crossings where the walk and roll network intersects with the road network that recognise that these locations are the most vulnerable parts of the pedestrian network.
- Promote pedestrian priority where possible, where contextually appropriate and where the strategic intent of the pedestrian link is advanced.

#### 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 walk and roll network.

##### Path typologies

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

- Footpaths – for the exclusive use of pedestrians. It should be noted that any paths within Crown Lands Parks and Reserves are subject to the relevant Plan of Management
- Shared paths – for the shared use of both pedestrians and cyclists (and other appropriate mobility devices of similar scale and operating characteristics). 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.
- Mixed traffic street – for the shared use of pedestrians, cyclists and motorists with priority given to pedestrians. Suitable for application on low speed, low traffic, high pedestrian environments such as town centres and laneways. Street redesign is required in addition to a reduction in posted speed limits. Examples of a mixed traffic street could include shared zones, pedestrian malls and 'talking streets'.

Examples of these path types are provided in Figure 29.

Footpaths and shared paths are considered to be 'off-road' as they are not contained within existing roadways and are therefore separate from vehicle traffic. Although the style and dimensions of these two 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
Footpath	Low pedestrian volumes (for example, a typical residential street)	1.2m <sup>1</sup>
	Moderate pedestrian volumes (for example, between key origins and destinations)	1.5m <sup>2</sup>
	High pedestrian volumes (for example, a commercial area or town centre)	2.4m
	Wheelchair users passing one another	1.8m
Shared path	Two-way local access path	2.5m
	Two-way regional path	3.0m
	Two-way recreational path	3.5m

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*.

<sup>1</sup> According to Austroads *Guide to Road Design*, a footpath width of 1.2m is sufficient to accommodate a wheelchair user while a width of 1.8m is required to allow two wheelchair users to comfortably pass. Where a path is less than 1.5m wide, footpaths should be widened at regular intervals to provide opportunities for wheelchair users to pass.

<sup>2</sup> Footpath widths of 1.5m are proposed along routes likely to experience moderate pedestrian volumes in order to allow a wheelchair user and a pram to comfortably pass.

Example cross-sections of each of these path typologies are provided in Figure 30 and Figure 31.



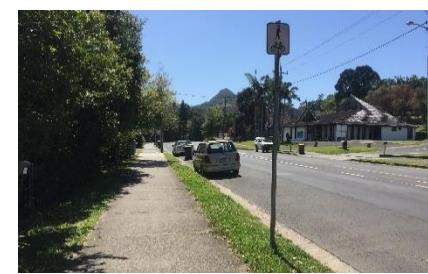
*Path type: Footpath (town centre)*  
*Location: Bangalow, Australia*  
*Source: PSA Consulting, 2019*



*Path type: Footpath*  
*Location: Bangalow, Australia*  
*Source: PSA Consulting, 2019*



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



*Path type: Shared path*  
*Location: Mullumbimby, Australia*  
*Source: PSA Consulting, 2019*



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



*Path type: Mixed traffic – pedestrian mall*  
*Location: Melbourne, Australia*  
*Source: Google Images*

**Figure 29: Path typology examples**

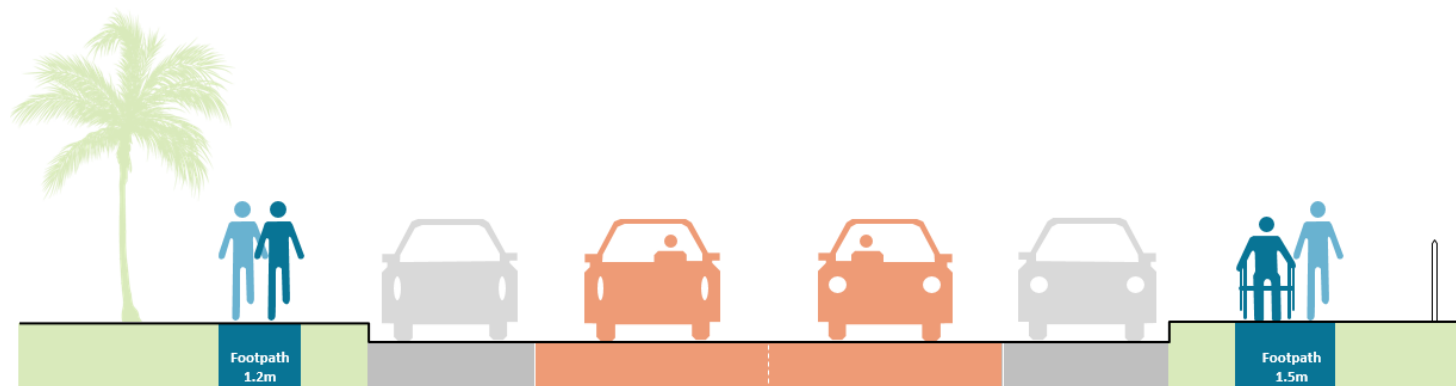


Figure 30: Example cross-sections of a 1.2m and a 1.5m pedestrian footpath

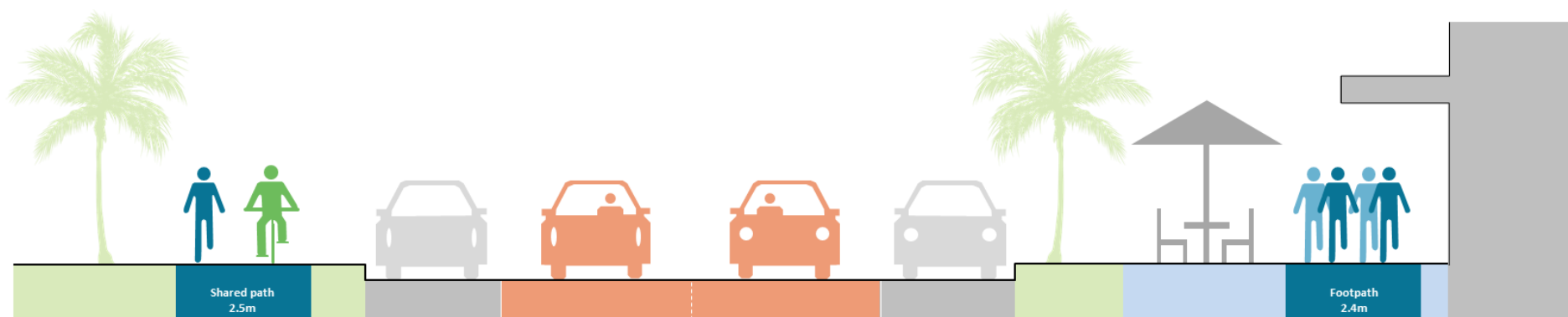


Figure 31: Example cross-sections of a 2.5m shared path and a 2.4m pedestrian footpath



## Crossing typologies

The suitability and safety of any walk and roll network is determined as much, or arguably more, by the treatment applied to pedestrian 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 pedestrians 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 identifying pedestrian desire lines and formalising this with appropriate infrastructure. As it is unrealistic and impractical to fully design-out the need for pedestrian crossing points, providing contextually-appropriate crossing treatments at locations that are convenient and safe for pedestrians is critical to providing a convenient, connected and safe walk and roll network that is suitable for all.

Crossing types suitable for implementation in the Shire are listed below with examples presented in Figure 32.

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

When selecting which crossing treatment to apply, consideration will be given to the different types of pedestrians and their specific needs and characteristics (especially children and those with mobility impairments), the volume of pedestrians 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 32: 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 walk and roll network is accessible, safe and suitable for use by all and is pleasant, inviting and interesting. Some of these facilities include:

- Kerb build-outs
- Kerb ramps
- Lighting
- Path maintenance schedules
- Seating
- Shade, especially from trees
- Signage, wayfinding and maps
- Tactical ground surface indicators
- 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 tactical ground surface indicators, kerb ramps, signage and appropriate lighting and trees at a pedestrian crossing to ensure safe and accessible 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 walk and roll network

The proposed walk and roll 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 walk and roll 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 pedestrian activity:

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

The future walk and roll network maps, which have been provided for each of these localities, are provided in Appendix 1. These maps show the existing and proposed future walk and roll 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 PAMP (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) and aligns with the needs and aspirations of the community.

## 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.

### 5.1 Action Plan methodology

The following methodology was adopted to develop this Action Plan:

- Review the proposed future walk and roll network as presented in Section 4.3 (Appendix 1)
- Identify pedestrian 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 PAMP and beyond
- Identify potential funding sources to deliver the PAMP
- Develop a monitoring and evaluation framework to ensure the findings and strategic direction of the PAMP 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	<p>Highest priority for implementation.</p> <p>Key criteria for consideration include whether the proposed facility:</p> <ul style="list-style-type: none"> <li>• addresses an identified and significant safety issue;</li> <li>• significantly improves pedestrian access and mobility or is part of a broader connection that significantly improves pedestrian access and mobility;</li> <li>• connects a diverse number of residential areas, key attractors and/or public transport facilities;</li> <li>• responds to existing/demonstrated high pedestrian demand;</li> <li>• facilitates significant growth in pedestrian volumes in the future;</li> <li>• reduces the need to cross roads.</li> </ul>
Priority B	<p>Medium priority for implementation</p> <p>Key criteria for consideration include whether the proposed facility:</p> <ul style="list-style-type: none"> <li>• addresses an identified and moderate safety issue;</li> <li>• moderately improves pedestrian access and mobility or is part of a broader connection that moderately improves pedestrian access and mobility;</li> <li>• connects a variety of residential areas, key attractors and/or public transport facilities;</li> <li>• responds to existing/demonstrated moderate pedestrian demand;</li> <li>• facilitates moderate growth in pedestrian volumes in the future.</li> </ul>

PRIORITY CATEGORY	PRIORITY DESCRIPTION
Priority C	<p>Low priority for implementation</p> <p>Key criteria for consideration include whether the proposed facility:</p> <ul style="list-style-type: none"> <li>addresses an identified safety concern;</li> <li>improves pedestrian access and mobility;</li> <li>connects residential areas, attractors and/or public transport facilities;</li> <li>responds to existing/demonstrated minor pedestrian demand.</li> </ul>

**Table 3: Priority components by category**

PRIORITY COMPONENT	PRIORITY CATEGORY		
	A	B	C
Safety	<ul style="list-style-type: none"> <li>addresses an identified and significant safety issue</li> <li>reduces the need to cross roads</li> </ul>	<ul style="list-style-type: none"> <li>addresses an identified and moderate safety issue</li> </ul>	<ul style="list-style-type: none"> <li>addresses an identified safety concern</li> </ul>
Accessibility	<ul style="list-style-type: none"> <li>significantly improves pedestrian access and mobility or is a component of a broader connection that significantly</li> </ul>	<ul style="list-style-type: none"> <li>moderately improves pedestrian access and mobility or is a component of a broader connection that significantly improves</li> </ul>	<ul style="list-style-type: none"> <li>improves pedestrian access and mobility</li> </ul>

PRIORITY COMPONENT	PRIORITY CATEGORY		
	A	B	C
	improves pedestrian access and mobility	pedestrian access and mobility	
Connectivity	<ul style="list-style-type: none"> <li>connects a diverse number of residential areas, key attractors and/or public transport facilities</li> </ul>	<ul style="list-style-type: none"> <li>connects a variety of residential areas, key attractors and/or public transport facilities</li> </ul>	<ul style="list-style-type: none"> <li>connects residential areas, key attractors and/or public transport facilities</li> </ul>
Demand	<ul style="list-style-type: none"> <li>responds to existing/demonstrated high pedestrian demand</li> <li>facilitates significant growth in pedestrian volumes in the future</li> </ul>	<ul style="list-style-type: none"> <li>responds to existing/demonstrated moderate pedestrian demand</li> <li>facilitates moderate growth in pedestrian volumes in the future</li> </ul>	<ul style="list-style-type: none"> <li>responds to existing/demonstrated minor pedestrian demand</li> </ul>

Each of the proposed paths and crossings that make up the future walk and roll 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 PAMP. 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 33.

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.

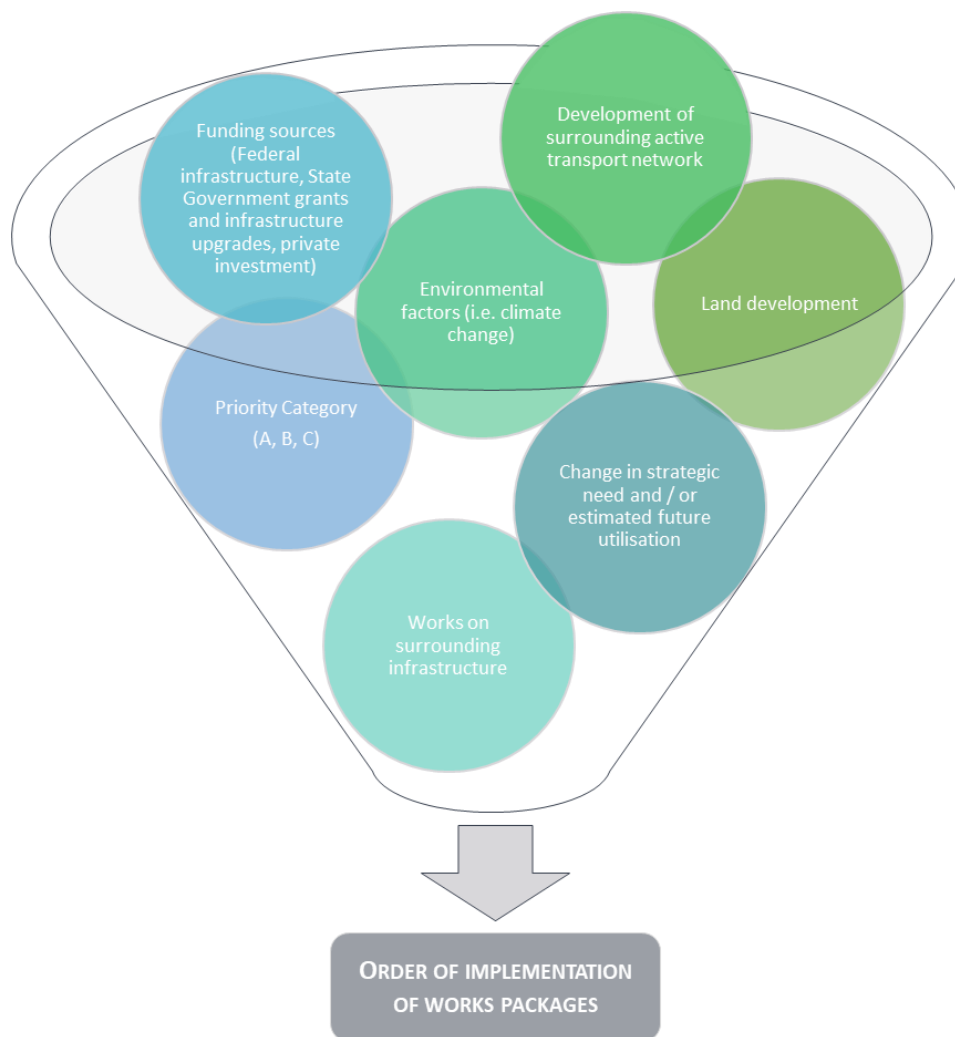


Figure 33: Factors influencing priority implementation



## 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 individual pedestrian facility and treatment across the entire Shire as proposed in this PAMP. 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 218 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 pedestrian 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 218 proposed works packages is estimated at approximately \$137.3m. A breakdown of this cost estimate by priority category is shown in Figure 34. An additional graph (Figure 35) 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 roughly 70% of the works proposed in this PAMP, primarily the construction of shared paths and crossings, are also proposed in the Bike Plan. Despite this, Council recognises that at \$137.3m, the estimated cost to deliver all of the identified works in this PAMP 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 PAMP and beyond. This is discussed in greater detail in Section 5.4.

The estimates of cost presented in this section and in Appendix 1 are high-level only and have been presented in order to provide an indication of the potential magnitude 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.

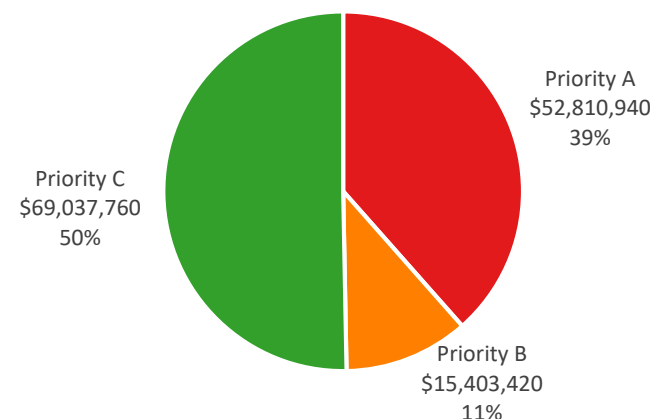


Figure 34: PAMP estimated cost by priority category

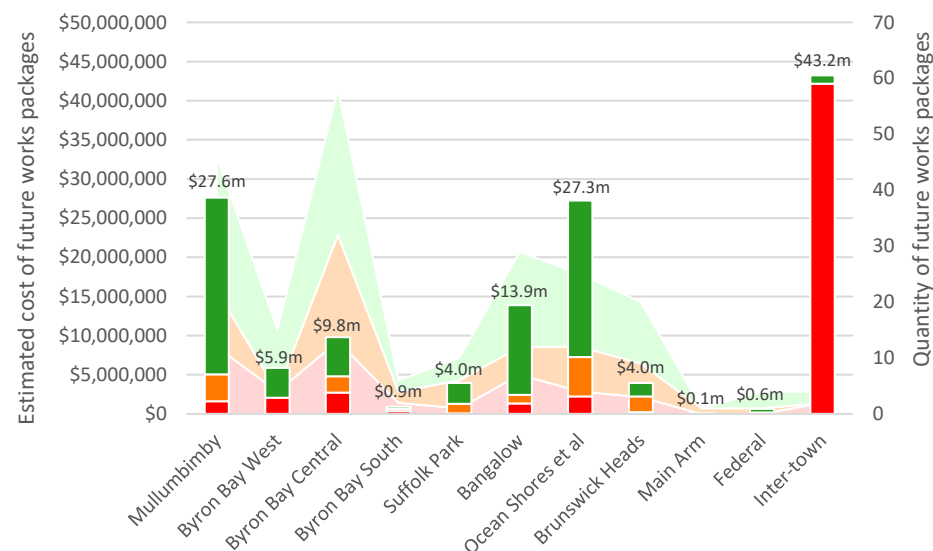


Figure 35: PAMP estimated cost and quantity of works packages by priority category and location

## 5.4 Funding

Funding is a key component in the delivery of the works proposed in this PAMP, 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 PAMP and utilising the multi use corridor for walking, rolling and cycling. Council will be seeking opportunities to partner with the State Government, private enterprise and the community to help deliver the walk and roll infrastructure outlined in this PAMP, especially those identified as being of high importance.

### 5.4.1 Byron Shire Council

Funding from Byron Shire Council may contribute towards the walk and roll network packages through internal sources including:

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

### 5.4.2 State and Federal Governments

Grant funding is available for a variety of community-based and pedestrian/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).

Council will specifically be targeting grant funding from the Federal and State governments in order to deliver the walk and roll infrastructure outlined in this PAMP, 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.

### 5.4.3 Other sources

Outside of the typical government funding sources the following opportunities may present themselves to better the walk and roll 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.

## 5.5 Monitoring and evaluation

Monitoring and evaluation is important to ensure that the proposed future network and the PAMP 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.

### 5.5.1 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 PAMP:

- Work with the local community to undertake regular on-the-ground audits/inspections of the walk and roll 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
- Determine the rate of progress towards implementation of the PAMP
- 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 determining the percentage of bus stops serviced by connected and accessible pedestrian infrastructure
- Inform future planning.
- Consult with ACWG on progress and relevance of the PAMP.
- 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 pedestrians using the network
  - Rates of pedestrian activity
  - The frequency, days/times and reasons for network use
  - Average journey length and time
  - Origins and destinations
  - Levels of pedestrian comfort, safety and satisfaction while using the network and supporting facilities.
- Undertake regular pedestrian counts in key locations to determine the volume and behaviour of pedestrians and the change over time. This information could then be used to measure the success of any amendment to the pedestrian environment and to help to identify areas

where interventions (for example, new crossings, kerb build outs) may be required.

### 5.5.2 PAMP monitoring and evaluation

This PAMP will be 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 Bike Plan document which will help ensure planning is integrated, this timeframe will ensure that any future PAMP is current so that the Shire is in the best possible position to receive grant funding from RMS. Additionally, progress on the PAMP 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 WALK AND ROLL NETWORK MAPS, PRIORITISED INFRASTRUCTURE MAPS AND SCHEDULE OF FUTURE WORKS TABLES**