



Ballina Shire Council

» Pedestrian Access and Mobility Plan 2018/19 - 2026/27

September 2017

ballina
shire council

DRAFT



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Mayor's Message

Welcome to the 2017 Ballina Shire Council's Pedestrian Access and Mobility Plan (PAMP); the fourth PAMP Council has produced. This PAMP builds on the achievements of past PAMPs, and set new goals.

We are all pedestrians at some point in our day, and the personal, social, health, environmental, transport and economic benefits of walking are recognised by Ballina Shire Council in the development of this plan.

Ballina Shire Council is responsible for approximately 100 kilometres of footpath and 21 kilometres of shared path. In the last five years, approximately 22 kilometres of new footpaths and shared paths have been constructed.

Council recognises the need to further develop this network of footpaths. There is also a need to maintain the existing footpaths. An investment in footpaths is an investment in the connectedness and social health of the communities in our Shire.

In response to this, Council has developed this new PAMP which functions as a strategic plan for identifying and prioritising pedestrian facility works to improve access, mobility and safety for the community.

Pedestrian networks are also of high value to the communities in our Shire, and this is reflected in the significant community response and input to this plan. Thank you to everyone who, through their contributions, has helped Council to prepare the 2017 PAMP.



Cr David Wright
Mayor

Glossary

The following term definitions have been derived from *Road Rules 2014* (NSW) legislation, and from the *Austroads Glossary of Terms* (2015 Edition), *Disability Inclusion Act 2014* (NSW).

Attractor

A location that pedestrians travel to many times, and can be a gathering point for pedestrians.

Crash

Any unplanned event involving a road vehicle on a road that results in death, injury or towed vehicle and is reported to the police.

Crash Location

A location where a limited range of crash types occur repeatedly, suggesting that there are common causes, rather than the accidents being the result of mere chance.

Crash Type

The codified description of road user movements occurring in a crash. During the coding of information from the crash report form, each crash is given a code (usually known as a DCA code in Australia) indicating the movements the involved road users were making when the crash occurred.

Disability

In relation to a person, includes a long-term physical, psychiatric, intellectual or sensory impairment that, in interaction with various barriers, may hinder the person's full and effective participation in the community on an equal basis with others. (*Disability Inclusion Act 2014* No. 41, NSW)

Facility User Group

The age profile of pedestrians irrespective of impairments. The groupings are Pre-School, Infants, Primary, Secondary, Young Adults, Adults and Elderly.

Fatality

A person who dies within 30 days from injuries received in a road traffic crash.

Footpath

A public way reserved for the movement of pedestrians, motorised wheelchairs and personal mobility devices as a matter of right or custom.

Footpath (Kerb) Extension

A local widening of the footpath, which results in a reduced width of roadway to be crossed by pedestrians, reduced speeds and improved delineation. This treatment is a common feature of local streetscape works, particularly in shopping strips where pedestrian-focussed solutions are encouraged.

Generator

A location that pedestrians travel from many times, and can be a gathering point for pedestrians.

Kerb

A raised border of rigid material at the edge of a carriageway, pavement or bridge.

Kerb Ramp/Ramp

Carriageway within an intersection providing for travel between two arms (legs) of intersecting roads.

Kerb Extension/Blister

A local widening of the footpath, which results in a reduced width of roadway to be crossed by pedestrians, reduced speeds and improved delineation. This treatment is a common feature of local streetscape works, particularly in shopping strips where pedestrian-focussed solutions are encouraged.

Level of Service

A qualitative index for ranking operating conditions on roads as well as pedestrian and cycling facilities based on factors such as speed, flow rate, travel time, freedom to manoeuvre, interruptions, comfort, safety and convenience.

Local Government Area/LGA

The local government area where the crash occurred.

Median

A strip of road, not normally intended for use by traffic, which separates carriageways for traffic in opposite directions. Usually formed by painted lines, kerbed and paved areas, grassed areas, etc.

Mobility Impaired Person

A person who is unable to walk, or who is able to walk only short distances, because of loss of the use of one or both legs or other severe medical or physical handicap.

PAMP

A Pedestrian Access and Mobility Plan that provides a comprehensive and integrated framework for developing coordinated, convenient and safe pedestrian networks

Pedestrian

A person walking, and including people in wheelchairs, on roller skates or riding vehicles such as skate boards or other vehicles, other than a bicycle, powered by effort or a motor and with a maximum speed of 10 km/h.

Pedestrian Crossing

A specially marked area giving legal rights to pedestrians crossing the road.

Pedestrian Crash Cluster

Any location up to 100 metres long with three or more pedestrian crashes over five years.

Pedestrian Refuge

A median island, or a section of median, on wide or heavily trafficked roads, provided as a staging area for pedestrians crossing the road.

Pedestrian Route Hierarchy

The grading of pedestrian paths according to the increasing or decreasing importance of their pedestrian-carrying or other function.

Road Hierarchy

The grading of roads according to the increasing or decreasing importance of their traffic-carrying or other function.

Road User Movement Code (RUM code)

The road user movement or RUM code describing the first impact for the crash.

Safe System

The Safe System approach emphasises the way different elements of the road transport system combine and interact with human behaviour to produce an overall effect on road trauma. The key components of the system are safer roads and roadsides (infrastructure), safer speeds and safer vehicles. The Safe System approach is the current philosophy behind the approach to road safety in Australia. The approach accepts that humans will make errors and so crashes are likely to occur. What is required is a road system that takes account of these errors and of the physical tolerances of humans in such circumstances, allowing road users to survive and avoid serious injury in the event of a crash.

Shared Path

A paved area particularly designed (with appropriate dimensions, alignment and signing) for the movement of cyclists and pedestrians.

Shared Responsibility

Previously the majority of road safety responsibility rested with the individual road user. Within a Safe System all have an individual and shared role in road safety. Road users remain responsible for complying with all road rules such as speed limits, using restraints and protective equipment, driving unimpaired and purchasing vehicles with good safety features. System designers are responsible for planning, designing and influencing the operation of a Safe System.

Tactile Treatments

Low bumps, buttons, bars, grooves or strips closely spaced across or immediately adjacent to a street or path that draw attention to a feature or hazard, and can have a vibratory and/or audible effect when travelled over.

Thermoplastic Road Markers/Marking

Roadmarking where the material, which consists of binder, pigment, aggregate, glass beads and extenders, is applied to the road in a heat-softened state, which then hardens on cooling.

Towards Zero

A conceptual framework and process of going towards zero fatalities and injuries in the planning and operation of the road transport system.

Vpd

Vehicles per day

Vision Impaired Person

A person who is unable to see, or who has limited sight, because of loss of the use of one or both eyes or other severe sight based disability.

Warrant

A criterion, usually numerical, used to determine whether the construction of a traffic facility or the installation of a traffic control device may be justified.

Wombat Crossing

A flat-topped raised area of road similar to a raised table but with the top surface marked as a designated pedestrian crossing to give priority to pedestrians; sometimes referred to as a marked flat-top road hump.

Executive Summary

What is a PAMP?

The Ballina Shire Council Pedestrian Access and Mobility Plan (PAMP), delivered in consultation with the community, provides a comprehensive and integrated framework for developing coordinated, convenient and safe pedestrian networks within Ballina Shire.

A PAMP improves the functionality of existing pedestrian networks by investigating pedestrian areas and user behaviour.

The 2017 PAMP has been developed into a 10 Year Delivery Plan, which provides the community with a clear indication of Council's budget of works over this time period.

Purpose of the PAMP

The PAMP functions as a comprehensive strategic and delivery plan to build pedestrian facilities.

The PAMP provides a framework for developing pedestrian routes or areas identified by the community as important for enhanced, sustainable safety, convenience and mobility.

Development of the PAMP

The PAMP is developed through partnership between the NSW State Government, the Ballina Shire Council, and the communities of Ballina Shire.

To develop the PAMP, Ballina Shire Council adopted the process recommended by the Roads and Maritime Service (2002). This process included:

- Monitoring of the performance of the existing Ballina Shire PAMP
- Definition of the PAMP study area
- Review of relevant planning policies and pedestrian research
- Collection of pedestrian crash data within the PAMP study area
- Community consultation
- Audit of proposed routes to determine the type and scale of work required and
- Development of a Delivery Plan.

Findings of the Ballina Shire PAMP

- The Ballina community profile highlights a growing population, and an ageing population with special pedestrian needs. Ballina Shire also has a significant level of social and economic disadvantage.
- In the last five years, there have been 36 pedestrian crashes within the PAMP study areas.
- No pedestrian crash clusters were identified.
- Over 280 community submissions were received for the PAMP.
- Community concern was focused on pedestrian safety and connections to important areas of community activity, business, education, and recreation.
- Facilities near schools, retail and services areas, sporting and community facilities, and aged care facilities featured prominently in community responses.
- The 2017 PAMP 10 Year Delivery Plan registers 86 pedestrian infrastructure works incorporating path upgrades, new footpaths, pedestrian crossing treatments, and ramps.

Use of the PAMP

The Ballina Shire PAMP will be used to guide investment in safe, convenient and connected pedestrian infrastructure. It is the key instrument for planning and building needed pedestrian infrastructure in a prioritised manner.

The PAMP sets Council's Delivery Plan for footpath connections and pedestrian refuges for the next ten years. The PAMP Delivery Plan is linked to the recurrent budget allocation for footpaths and shared paths in the capital works program.

This will identify pedestrian works for 2017/18 to 2026/2027, and will dovetail with the existing program.

Actions from the PAMP may be included in other planning documents, such as social plans, Local Environment Plans, and Development Control Plans.

The PAMP is also essential in supporting all major pedestrian funding requests directed through the Roads and Maritime Service through the use of the prioritised Delivery Plan. This ensures that all available funding sources are being used effectively to improve the pedestrian network.

Pedestrian infrastructure also underwrites an environmentally sustainable form of transport, and promotes health and social well-being.

Resourcing of the PAMP

Council currently spends around \$460 000 each year on new pedestrian capital works, with additional funding available through grants on a 50/50 funding basis. Council spends about \$157 000 annually in maintaining the existing footpaths and shared paths in addition to the construction of new footpaths throughout the Shire.

Council funds maintenance works and appropriately sources funds from government departments that include the Roads and Maritime Services, the Department of Planning, Department of Industry and Investment, Australian Transport Safety Bureau, Transport for NSW, and NSW State and Regional Development.

Ballina Shire Council's Development Contribution Plan and development application provisions through the private sector are other potential sources of funds for pedestrian facilities.

Introduction

The Pedestrian Access and Mobility Plan (PAMP) is a joint initiative between Ballina Shire Council and the NSW Roads and Maritime Service (RMS).

Council's first PAMP was adopted in 2004. In 2010 a new PAMP was developed and adopted. In 2013, the PAMP was reviewed, and a revised priority delivery program was adopted.

As the current PAMP was adopted four years ago, it was considered appropriate to develop a new PAMP report and priority delivery program. The new PAMP takes into account existing planned works and new community submissions, and allows for potential changes in priorities.

Pedestrian networks and infrastructure are important as they facilitate access, safety and recreation for a wide range of pedestrians. It supplies a framework for Council to meet sustainable planning practices and meets community expectations on how to meet future pedestrian needs.

The PAMP also provides wide transportation, environmental and social benefits to the community, such as:

- More appropriate pedestrian facilities
- Improved access for mobility impaired groups, including older persons
- Improved safety for vulnerable pedestrian user groups
- Safe and convenient crossing opportunities on major roads
- Reduced injuries to pedestrians
- Reduced pedestrian fatalities
- Links with other transport services to achieve an integrated land use and transport facilities network and
- Links to other road user plans, such as bike plans and maintenance programs.

Conceptual Framework of the PAMP

Two key conceptual frameworks have been considered in the development of the PAMP: Towards Zero and Safe System.

Towards Zero poses a challenge to all road authorities, stakeholders and road users to operate the road transport system without anyone being killed or seriously injured. Towards Zero is recognised as a process of going towards the goal of zero fatalities and injuries, and involves the whole community (Austroads 2016a).

In order to achieve Towards Zero, New South Wales has adopted the Safe System approach to planning.

The Safe System approach originated in Sweden and the Netherlands and was officially endorsed by the Australian Transport Council (ATC) in 2003. This approach now guides road safety policy in all jurisdictions across Australia and internationally.

Central to the Safe System is an acknowledgement of our limited ability as humans to tolerate physical force. It also recognises human error in the system is inevitable no matter how educated and compliant we are in obeying traffic laws.

The Safe System approach is underpinned by these principles:

- People are human and sometimes make mistakes – a simple mistake should not cost anyone their life.
- Roads, roadsides and vehicles need to be designed to minimise crashes or reduce forces if a crash happens.
- Road safety is a shared responsibility – everyone needs to make safe decisions on and around the road to prioritise safety.

The goal is to manage the forces that injure people in a crash to a level that the human body can tolerate without serious injury or deaths.

The Safe System approach argues that for as long as mistakes are likely, all road users need to be protected, and this protection is best provided by four elements:

- safer roads and roadsides
- safer speeds
- safer vehicles and
- safer road users and people.

Pedestrians (within the group of safer road users) and footpaths (within safer roads and roadsides) are directly addressed by this PAMP.

It should be noted that the PAMP is one instrument used by Ballina Shire Council to respond to the needs of pedestrians, but it does not exist in isolation. Towards Zero and Safe System principles are integrated into a range of pedestrian services provided by Ballina Shire Council. These include:

- Traffic engineering and infrastructure planning based on analysis of crash data
- Footpath Renewal Program
- Access Reference Group
- Aboriginal Community Committee
- Local Traffic Committee
- Promotional and Interpretive Signage Taskforce
- Safety and access projects, such as ramp audits
- Community education through the Road Safety Officer position and
- Liaison with the Roads and Maritime Service regarding road speeds.

The PAMP is a tool for Ballina Shire Council to develop pedestrian policies and build pedestrian facilities. It is informed by the planning context of local, state and federal governments. A review of relevant local, state and national policies and plan is included in Appendix A.

Objectives of the 2016/2017 PAMP

The PAMP study aims to coordinate investment in safe, convenient and connected pedestrian routes to enhance the overall pedestrian network. It provides Ballina Shire Council with a framework and a prioritised works program for developing pedestrian routes or areas identified by the community as important for improved, sustainable safety, convenience and mobility.

The overarching values of the PAMP are to improve the pedestrian networks:

- Coherence and Connectivity
- Safety
- Equity of Access
- Directness
- Comfort
- Attractiveness/ Amenity

The objectives of the 2016/17 PAMP have been determined through monitoring of the 2004 and 2010 PAMP, and its subsequent review in 2013. The objectives for the 2017 PAMP study are listed below.

1. To facilitate improvements in the level of pedestrian access and priority, particularly in areas of pedestrian concentration.
2. To reduce pedestrian access severance and enhance safe and convenient crossing opportunities on major roads.
3. To identify and resolve pedestrian crash clusters.
4. To facilitate improvements in the level of personal mobility and safety for all pedestrians, and particularly for people with disabilities, older people and school students through the provision of pedestrian infrastructure and facilities which cater for the needs of all pedestrians.
5. To provide links with other transport services to achieve an integrated land use and transport network of facilities that comply with best technical standards.
6. To ensure pedestrian facilities are employed in a consistent and appropriate manner.
7. To link existing vulnerable road user plans in a coordinated manner (e.g. Bike Plan, Footpath Maintenance Program, Safe Travel to School Plans, and accessible public transport).
8. To ensure that pedestrian facilities remain appropriate and relevant to the surrounding land use and pedestrian user groups.
9. To meet obligations under the Commonwealth Disability Discrimination Act 1992, and Disability Inclusion Act 2014 (NSW).
10. To develop a Delivery Plan relating to pedestrian facilities and infrastructure for the Ballina Shire, subject to budget limitations.

The effectiveness of the PAMP in meeting its objectives was assessed through internal scoring of the performance of the PAMP by a range of Council departments including Operations, Engineering, Natural Resource Planning, Strategic Planning and Social Planning. Scores of low, medium and high were allocated to the achievement of the 2010 and 2013 PAMP objectives by the nominated departments. Using a scale of one to ten, each PAMP objective was rated from 'not meeting the objective' to 'meeting the objective'.

As a result of this process, the Ballina Shire existing PAMP scored 82.6. This indicates moderate performance of the PAMP with some key improvements required (in accordance with RMS score interpretation, RTA 2002). A key area needing improvement that emerged from this process was the way the PAMP accommodated special events needs of pedestrians.

Subsequent to this finding it was determined that the PAMP, as a long term priority pedestrian infrastructure planning tool, was largely ineffective in addressing the special events needs of pedestrians. These interests are currently accommodated through Traffic Management Plans that are developed and tailored for special events as they occur periodically and irregularly throughout the year, and through applications to the Local Traffic Committee. For this reason, this objective was removed from the 2017 PAMP.

Methodology of the 2016/2017 PAMP

The Ballina Shire PAMP has been prepared using the core methodology recommended by the RMS PAMP Guidelines (RTA 2002) (Figure 1).

The steps, as specified by the RMS, include:

- Definition of the PAMP study area
- Review of existing research into pedestrian activities and facility planning
- Collection of pedestrian crash data (including mapping of pedestrian crashes)
- Community consultation
- Field audit of proposed pedestrian infrastructure and
- Prioritisation of works and development of a Delivery Plan.

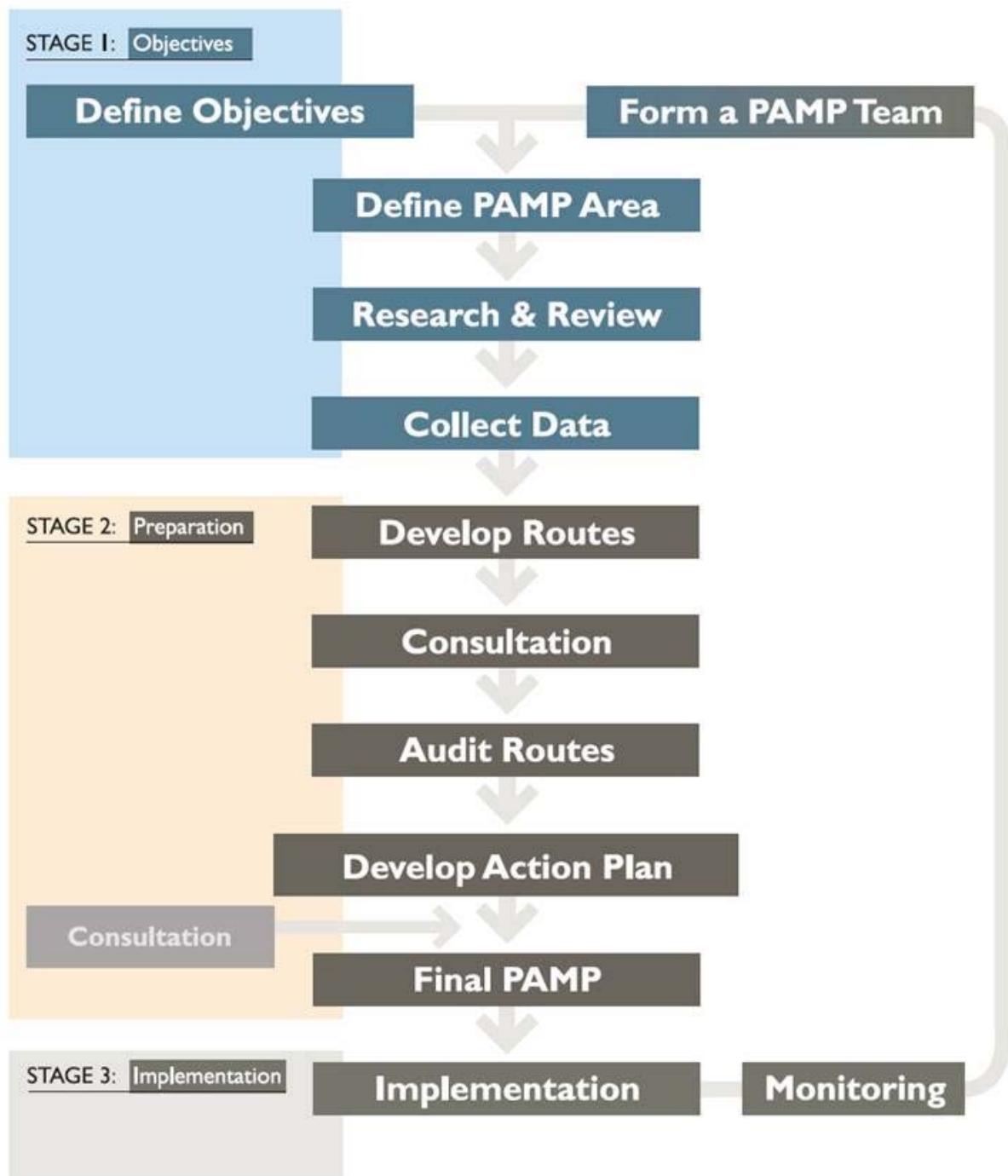


Figure 1 RMS PAMP Methodology

Prior to commencement of the 2016/2017 PAMP study, an assessment of the PAMP methodology was performed as part of the continuous improvement process and to determine the effectiveness of the PAMP in meeting its objectives.

The Ballina Shire Council PAMP methodology was assessed using a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis. The analysis is included below.

Table 1 - SWOT Analysis for Ballina Shire Council PAMP 2010/2013 Review Methodology

STRENGTHS and OPPORTUNITIES		WEAKNESSES and THREATS	
Strengths		Weaknesses	
<ul style="list-style-type: none"> Community and local government act as partners Delivery Plan is the key instrument for planning and implementation Delivery Plan from PAMP used to track work progress Delivery Plan is responsive Reduction in number of pedestrian crashes Resolution of pedestrian crash clusters Strong focus on linkages, access and mobility Reliable costings due to itemization, per unit costings, based on existing, current or similar work Displays strong local knowledge Good community consultation and opportunities, including identified vulnerable groups 		<ul style="list-style-type: none"> RMS weighted criteria scoring system does not acknowledge existing footpaths on opposite side of street (duplicated infrastructure) RMS weighting system does not allow for ranking of location of generators (e.g.. aged care facilities at critical locations vs those at less critical locations) 	
Opportunities		Threats	
<ul style="list-style-type: none"> Ongoing access and road safety audits conducted by Council Strong Council and community commitment to safety and accessibility Other planning instruments within Council working outside the PAMP priority Assessment and prioritising criteria allows for equitable review of emerging proposals Opportunities for funding outside annual budget for capital works 		<ul style="list-style-type: none"> Possible changes to funding for implementation Other planning instruments within Council working outside the PAMP priority 	

The methodology for the 2016/2017 PAMP was adjusted to address weaknesses identified in the previous PAMP methodologies. Importantly, this included corrections to RMS weighting criteria realised through local knowledge and expertise during the on-foot audit.

The PAMP Study Area

Scope

Ballina Shire Council is seeking to improve equity, health and the environment by developing the 2017 PAMP study. A forward planning approach to the development of pedestrian facilities will ensure a more cost effective outcome. The purpose of such an approach is to enable Council to prioritise the improvement of each network accordingly throughout Ballina Shire.

The primary objective of the Ballina Shire Council 2016/2017 PAMP study may be summarised as:

An assessment of pedestrian infrastructure needs for the next 10 years in the key pedestrian activity centres of Ballina Shire.

Pedestrian Road Users

Everyone is a pedestrian at some time. In this PAMP, 'pedestrians' are defined as including:

- Any person walking – all ages, ably or with an impairment,
- A person pushing a pram, shopping trolley or wheelchair,
- A person using a wheelchair,
- A person using a motorised wheelchair or mobility scooter (that is limited to 10km/h),
- A person using a wheeled recreational device or wheeled toy (such as a skateboard, roller-skates and roller blades), and
- A child under 12 years of age riding a bicycle, and an adult accompanying a rider under 12 years of age.

Pedestrians represent the largest single road user group because everyone is a pedestrian at some point in their daily journeys. There are three types of pedestrian travel:

- Walking for travel to get to work, school or local shops (A-to-B trips)
- Walking to access public or private transport (A-to-B-to-C trips) and
- Walking for pleasure and recreation (loop trips) (GTA Consultants, 2011; BITRE, 2015)

Pedestrians are considered vulnerable road users as they have little or no protection if they are involved in a crash. Crashes involving pedestrians often have very severe outcomes (Transport for NSW, 2014). As a vehicle's speed increases, so does the risk of injury or death to pedestrians hit in a crash. In vehicle-pedestrian crashes, the probability of survival for the pedestrian decreases significantly at impact speeds above 30km/h: 90% of pedestrians survive being hit by a car at speeds of 30km/h, but less than 20% survive at speeds over 50km/h (Austroads, 2013).

In the context of the pedestrian environment, there are a number of facility user groups with specific needs or who are considered vulnerable. This includes:

- Pre-school aged children (0-4 years old)
- Primary school aged children (5-12 years old)
- Secondary school aged children (13-17 years old)
- Young adults (18-25 years old)

- Adults (26-59 years old)
- Elderly (60-70 + years old)
- A person who requires assistance with walking (such as using a guide dog, cane, walking frame, crutches, or assistance from another person)
- A person using a manual wheelchair
- A person pushing a pram, shopping trolley, wheelchair, or wheelie walker
- A person using a motorised wheelchair or mobility scooter (that is limited to 10km/h)
- Learner and child cyclists.

In the Ballina Shire PAMP study areas, pedestrian facility user groups with high vulnerability include pre-school and school aged children (0-17 years), and older people (60–70+ years), people with disabilities, and people with vision or hearing impairments.

Children

Children are vulnerable pedestrians for a number of reasons. Children are sometimes unpredictable in the road environment, are small in size and sometimes difficult to see. Designing for the safety of children is important as they form a large proportion of the pedestrian and cycling population.

Elderly

Changes that occur to our health as we age require pedestrian facilities, particularly where there are concentrations of persons over 60 years of age, to take account of specific needs. These can include:

- Reduced capacity to take evasive action/ slower reaction times
- Changes to sight and hearing
- Changes to perception and judgement
- Changes to balance and freedom of movement.

People with Disabilities

The development of an adequate network of footpaths is important for the mobility, access, safety, and equity of people with disabilities. Footpaths that are level and stable, free of obstructions, non-slippery, and meet the recommended dimensions and path surface are important.

Vision or Hearing Impaired

Consideration for people with vision or hearing impairments is important when planning pedestrian facilities. Tactile indicators and thermoplastic paint at kerb ramps and crossings can assist pedestrians with vision or hearing impairments.

This PAMP employs a Towards Zero and Safe System approach, and recognises that road users (pedestrians and vehicles) can make mistakes, and that pedestrians and identified facility user groups are vulnerable road users. (It is recognised that pedestrian safety is influenced by many risk factors, such as alcohol, car speed, and pedestrian distraction. However, these behavioural factors are outside the parameters of the PAMP.).

Pedestrian Trends and Safety in Australia

In Australia, walking for exercise is the most popular physical recreational activity (ABS, 2015).

Walking has range of physical, economic, environmental and social benefits:

- Substitution of pedestrian trips for short car trips decreases road congestion, reduces vehicle operating costs, and avoids infrastructure costs (PricewaterhouseCoopers, 2010).
- Walking contributes to environmental benefits such as improved air quality, and reduced consumption of non-renewable energy sources (PricewaterhouseCoopers, 2010).
- Reduced mortality (death) (PricewaterhouseCoopers, 2010).
- Reduced morbidity (such as illness or disease) (PricewaterhouseCoopers, 2010).
- Social capital benefits (improved liveability of communities, mental health benefits) (PricewaterhouseCoopers, 2011).
- Walking contributes to economic development with increased consumer expenditure on local businesses (PricewaterhouseCoopers, 2011).
- Making streets more pedestrian (and cycling) friendly will increase retail rents, increase pedestrian activity, generate business for the local economy, and attract visitors to areas (Tolley, 2011).
- Walking may help increase the mobility and accessibility of disadvantaged people (PricewaterhouseCoopers, 2011)
- Streets that are pedestrian-friendly are correlated with community perceptions of increased safety (Tolley, 2011)

The Ballina Shire PAMP Study Areas

Geographically, the study was conducted within the Ballina Shire Local Government Area that covers an area of 48,488 hectares. Ballina Shire is located on the north coast of New South Wales and is 770km north of Sydney and 190 km south of Brisbane. The Ballina Shire is a rural-coastal locality and is considered an emerging regional centre (Ballina Major Regional Centre Strategy 2015-2035, 2016).

The PAMP focuses on twelve town and village centres within the Ballina Shire that have high levels of pedestrian activity (Figure 2).

- Alstonville
- East Ballina
- Ballina Island
- North Ballina
- Ballina West
- Ballina Heights
- Skennars Head
- Lennox Head North
- Lennox Head South
- Tintenbar and Newrybar
- Wardell
- Wollongbar

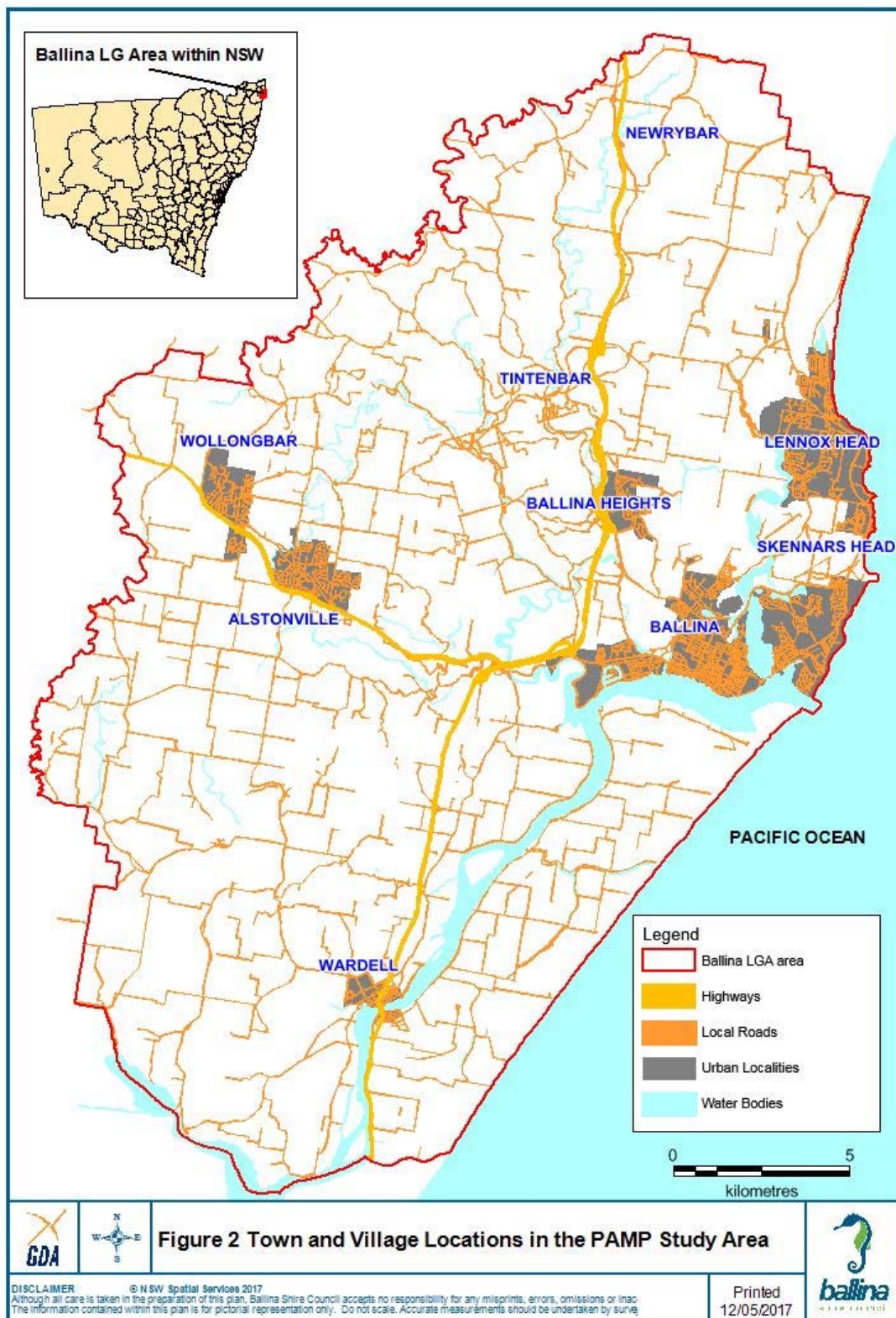


Figure 2 - Town and Village Locations in PAMP

A social and economic snapshot of the region based on Australian Bureau of Statistics (Census 2011), and the Ballina Shire Community Profile (Ballina Community Profile, 2015) is provided below.

- The estimated population of Ballina Shire in 2016 was 42,556 with a population density of 0.88 persons per hectare. The projected population for the Shire in 2036 is 51,307.
- 3.1% of the population identify as Aboriginal and Torres Strait Islander.
- Approximately 84% identify as Australian born, and 3.3% speak a language other than English at home.
- 2274 people (5.8% of the Shire population) in 2011 reported needed help in their day to day lives due to disability. This was equivalent to the proportion of people in Regional NSW requiring assistance for core activities.
- In 2011, Ballina Shire had a labour force participation rate of 54.9%. 40.6% of the population were not in the labour force. Of those in the labour force, 51.2% were employed full-time, and 40.5% were employed part-time.
- 76.3% of the population live and work in the area. A significant proportion of people (23.7%) work in the area but travel from outside the Shire (notably Lismore and Byron Bay).
- In 2011, the dominant mode of transport to work was by private car (65.4%). 3.9% of the population walked to work and 1.5% of the population rode a bicycle to work.
- Ballina Shire is a popular holiday destination with 620,000 visitors per annum. The main reasons for visiting the area (80%) include holidays, and visiting friends and relatives (Destination NSW, 2015). The Shire has approximately 32.7 km of direct coastal frontage making the beaches one of the most popular attractions for recreational activities.
- Analysis of the service age groups of Ballina Shire in 2011 compared to Regional NSW shows that there was a lower proportion of people in the younger age groups (0 to 17 years) and a higher proportion of people in the older age groups (60+ years). Overall, 21.9% of the population was aged between 0 and 17, and 28.8% were aged 60 years and over, compared with 23.6% and 24.5% respectively for Regional NSW.
- In the year 2015 to 2016, 91,634 community transport trips were provided in the Tweed, Byron and Ballina region to help older people, people with a disability and transport disadvantaged people to access recreational, shopping, medical care, community services and social activities (Tweed, Byron & Ballina Community Transport, 2016).
- Referring to the SEIFA Index of Disadvantage, Ballina Shire has a significant level of disadvantage (measured in terms of income and educational levels, unemployment and unskilled occupations).

This snapshot highlights the growing importance of having quality pedestrian infrastructure, linking people to employment, service and recreational opportunities. The age profile and proportion of the population requiring assistance for core activities means that infrastructure needs to cater for changing walking needs, including wheelie-walkers, motorised scooters and wheelchairs.

Attractors and Generators in the PAMP Study Area

The PAMP focuses on major pedestrian attractors and generators within the Ballina Shire.

An attractor is a destination (built or natural) that attracts people, such as a shop, shopping centre, school, service, workplace, beach or park. Below is a list of types of attractors that are found in Ballina Shire:

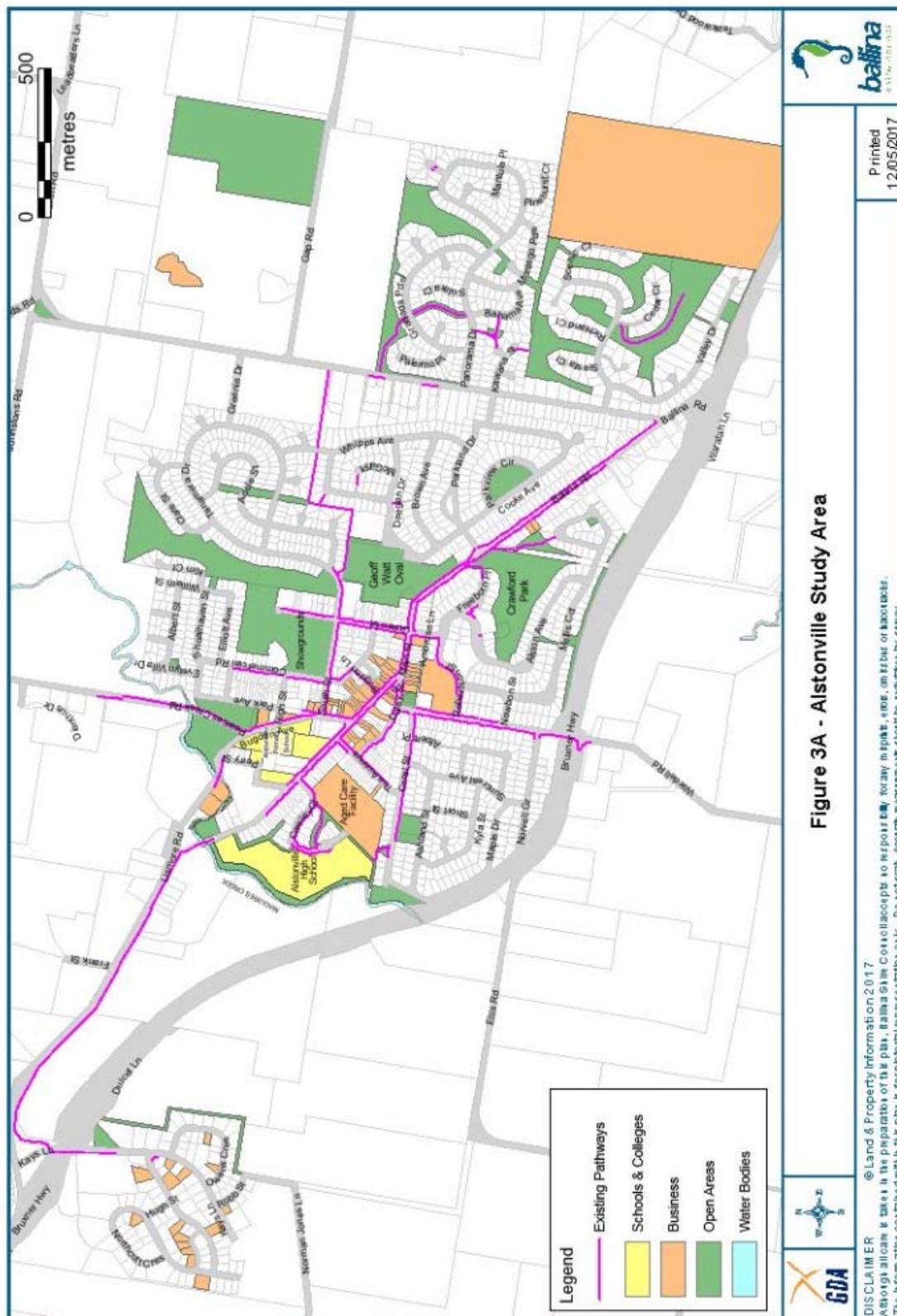
- Retail/ commercial attractors: including shopping centres (such as Ballina Fair, Ballina Central, Ballina home centre, Alstonville Plaza shopping centre, Wollongbar shopping centre), town centres (such as Alstonville, Lennox Head, and Ballina CBD), shopping strips (such as the Aldi shopping area), and village centres and local shops (such as East and West Ballina shopping centres).
- Commercial/ industrial attractors: including offices, banks, smash repairs, business parks, and industrial areas (such as Alstonville industrial estate, Ballina industrial estates).
- Recreational attractors: including beaches and lakes; sporting ovals and fields (Kingsford Smith Park, Missingham Bridge Park); local parks and reserves; golf courses; aquatic centres and swimming pools; walking/ cycling paths (such as Kerry Saxby Walk, North Wall, Pat Morton Lookout).
- Educational facilities: including day care centres, preschools, primary schools, secondary schools, tertiary education facilities (such as Ballina TAFE and Wollongbar TAFE).
- Community facilities: including libraries, Council offices, community health centres, disability services (such as Autism Spectrum Australia and Biala Support Services), community youth centres, and community gardens.
- Health and medical facilities: including doctor's surgeries, dentists, alternative health practitioners, medical centres and specialists, hospitals.
- Public transport stops: including bus stops and interchanges, taxi ranks, and community transport vehicle stops.

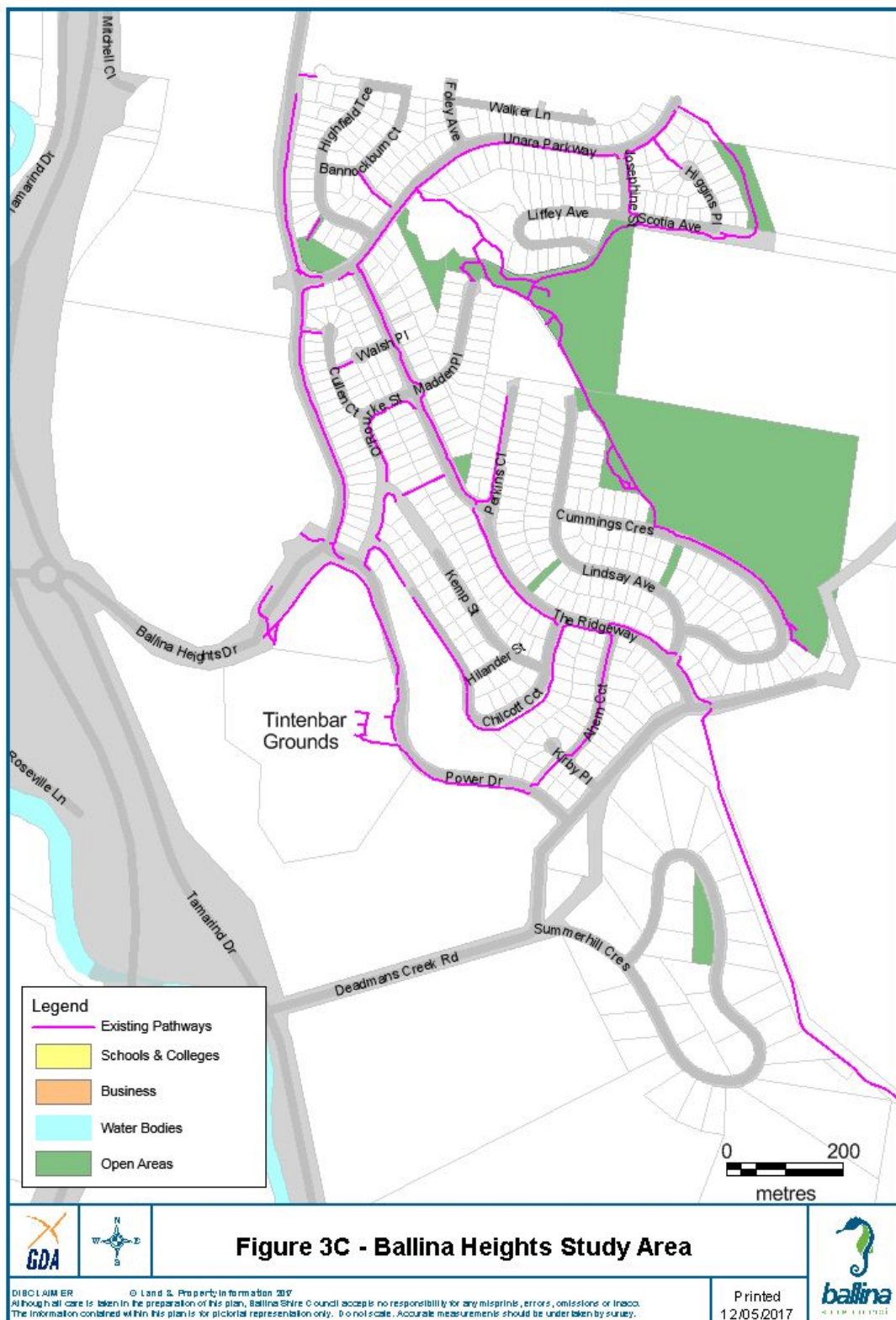
A generator is where people live, and from where they commence their trips. Generators are largely residential areas which can be classified as:

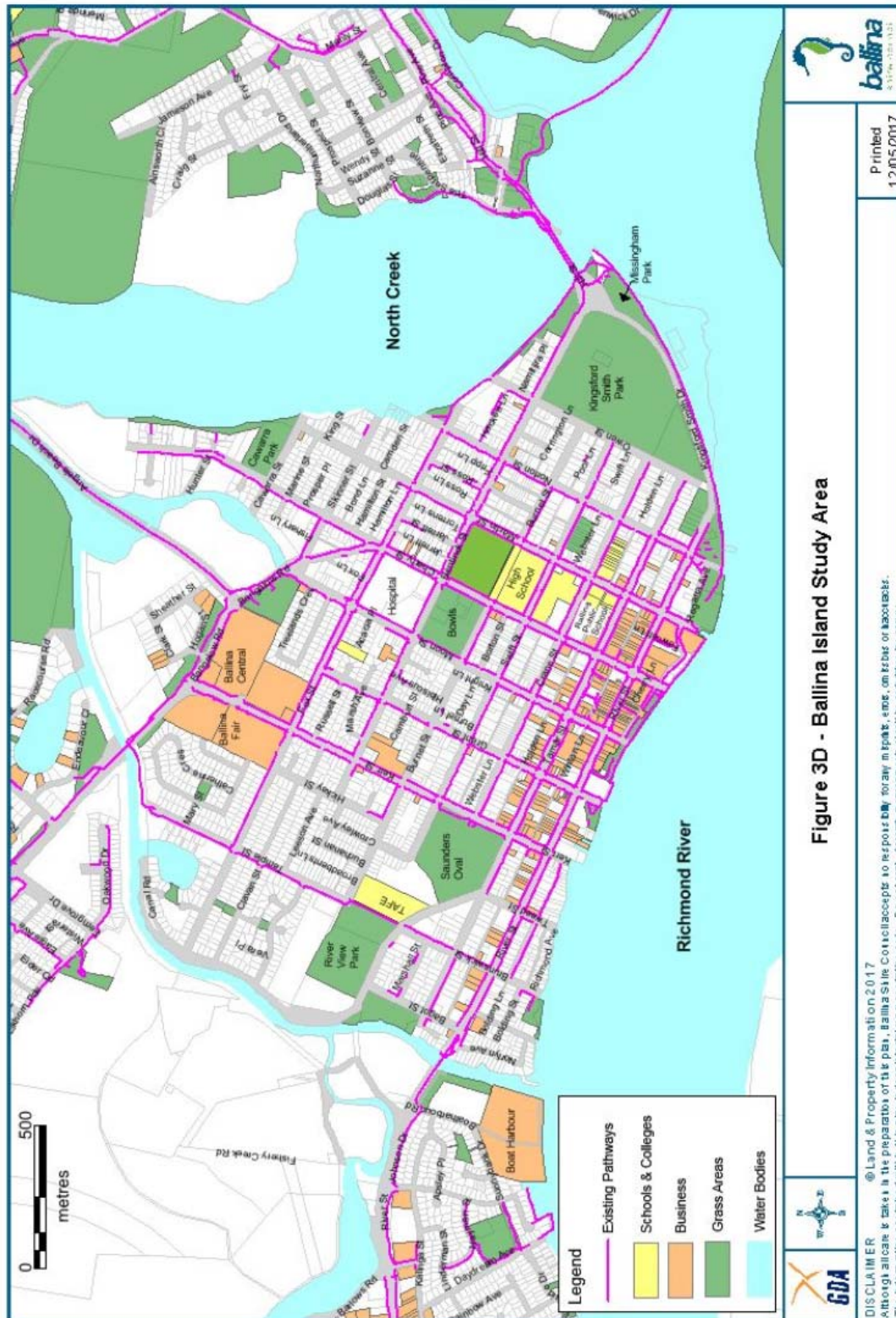
- Low density housing: including detached houses and semi-detached houses
- Medium density housing: villas, townhouses.
- High density housing: apartment blocks, flats, units.
- Aged care facilities: nursing homes, retirement villages, self-care or assisted care units (such as Crowley, RSL Life Care, Palm Lake Resort, Riverbend, Maranoa Village, Sanctuary Village) and cover a broad range of care needs and mobility abilities.
- Accessible housing: these residences allow for semi-independent living for people with some form of developmental disability.
- Public transport stops: considered both pedestrian attractors and generators because they provide transport linkages for people moving within the Shire and from outside the Shire.

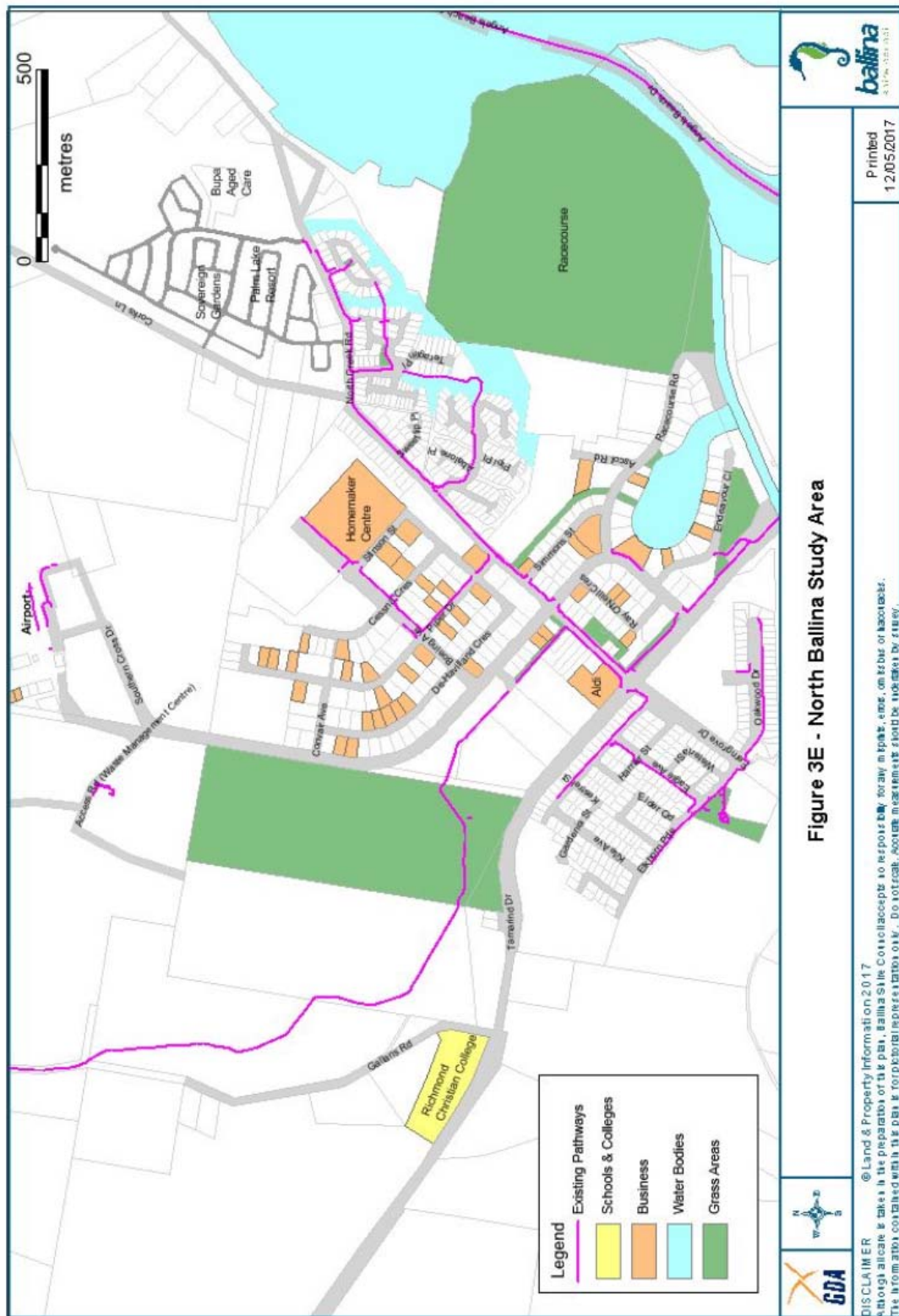
An audit of existing pathways in the twelve towns and villages of the PAMP study area was undertaken. (Path data is routinely updated through asset management provided through site visits and maintenance by Council's footpath maintenance team.). The following maps indicate the existing pathways and connections in each PAMP study area.

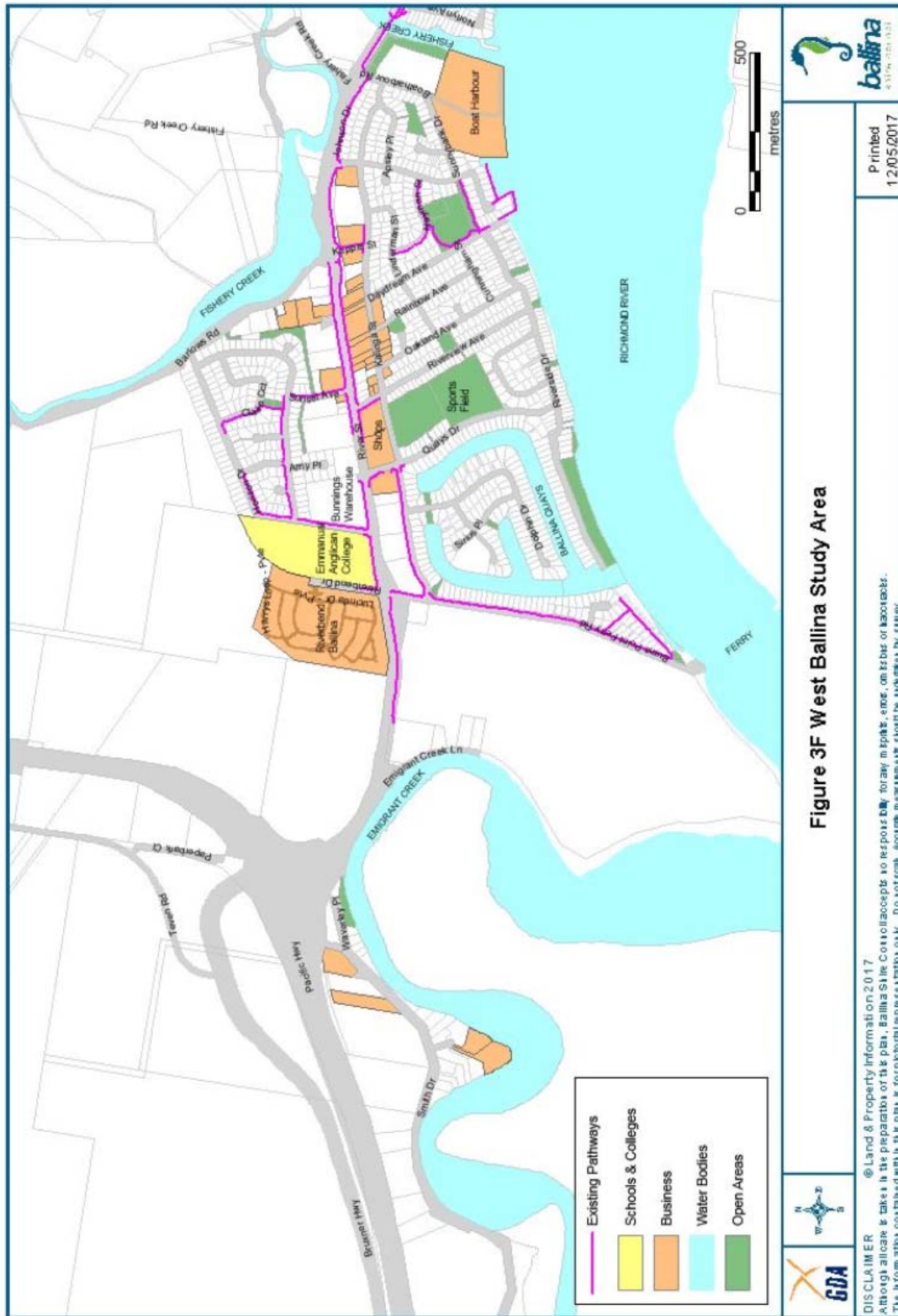
Figure 3A	Alstonville
Figure 3B	East Ballina
Figure 3C	Ballina Heights
Figure 3D	Ballina Island
Figure 3E	Ballina North
Figure 3F	West Ballina
Figure 3G	Lennox Head North
Figure 3H	Lennox Head South
Figure 3I	Skennars Head
Figure 3J	Tintenbar and Newrybar
Figure 3K	Wardell
Figure 3L	Wollongbar

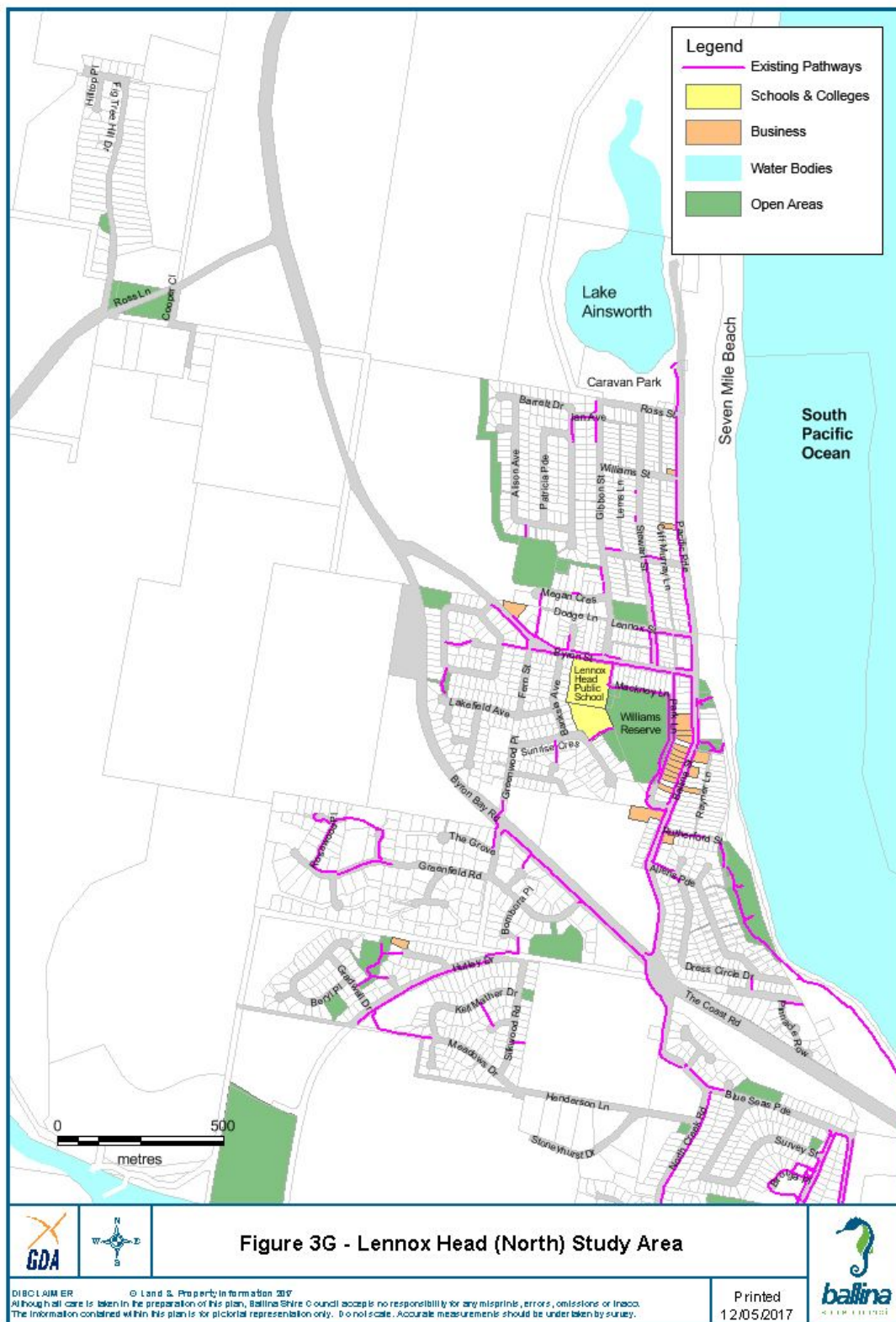


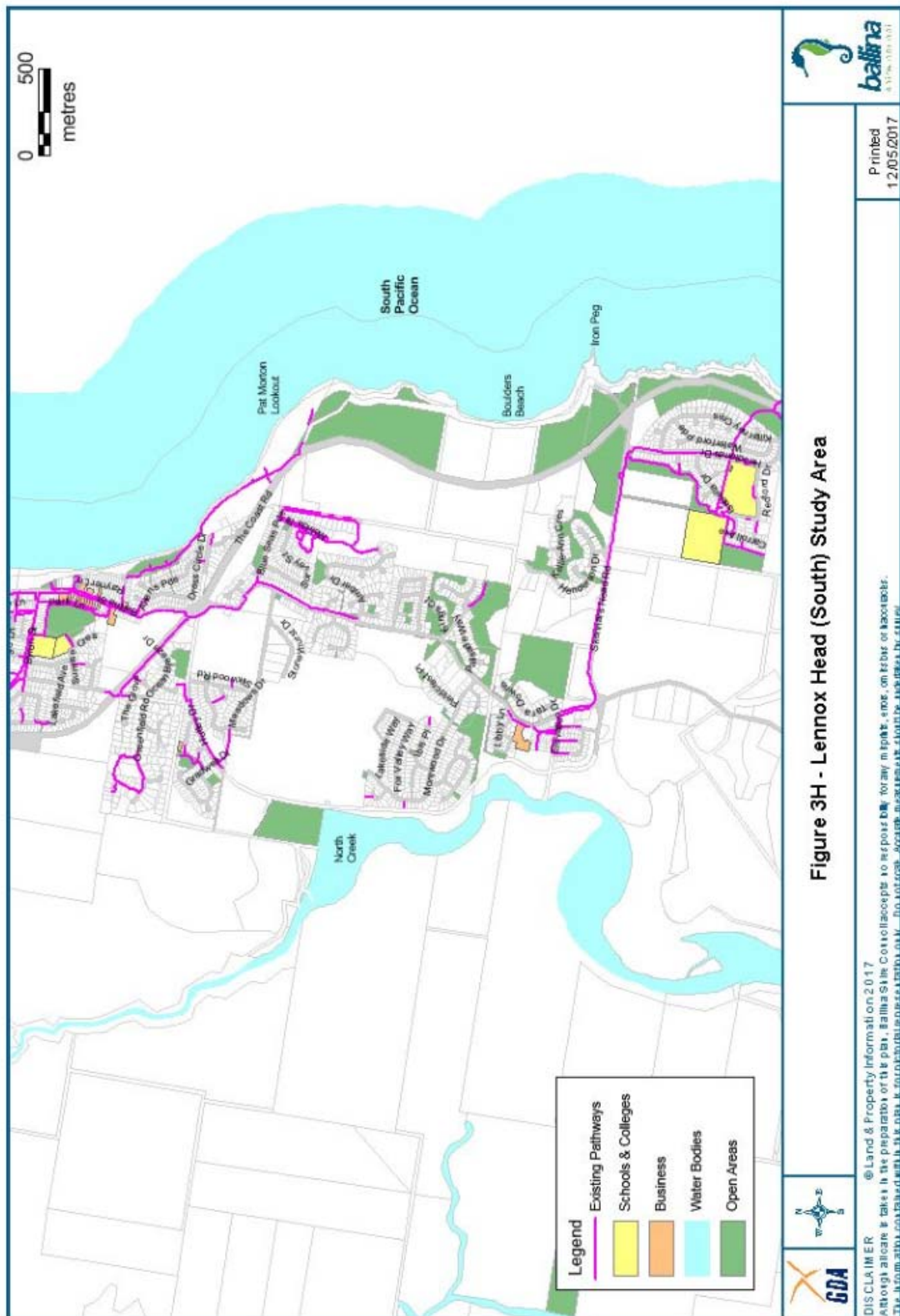


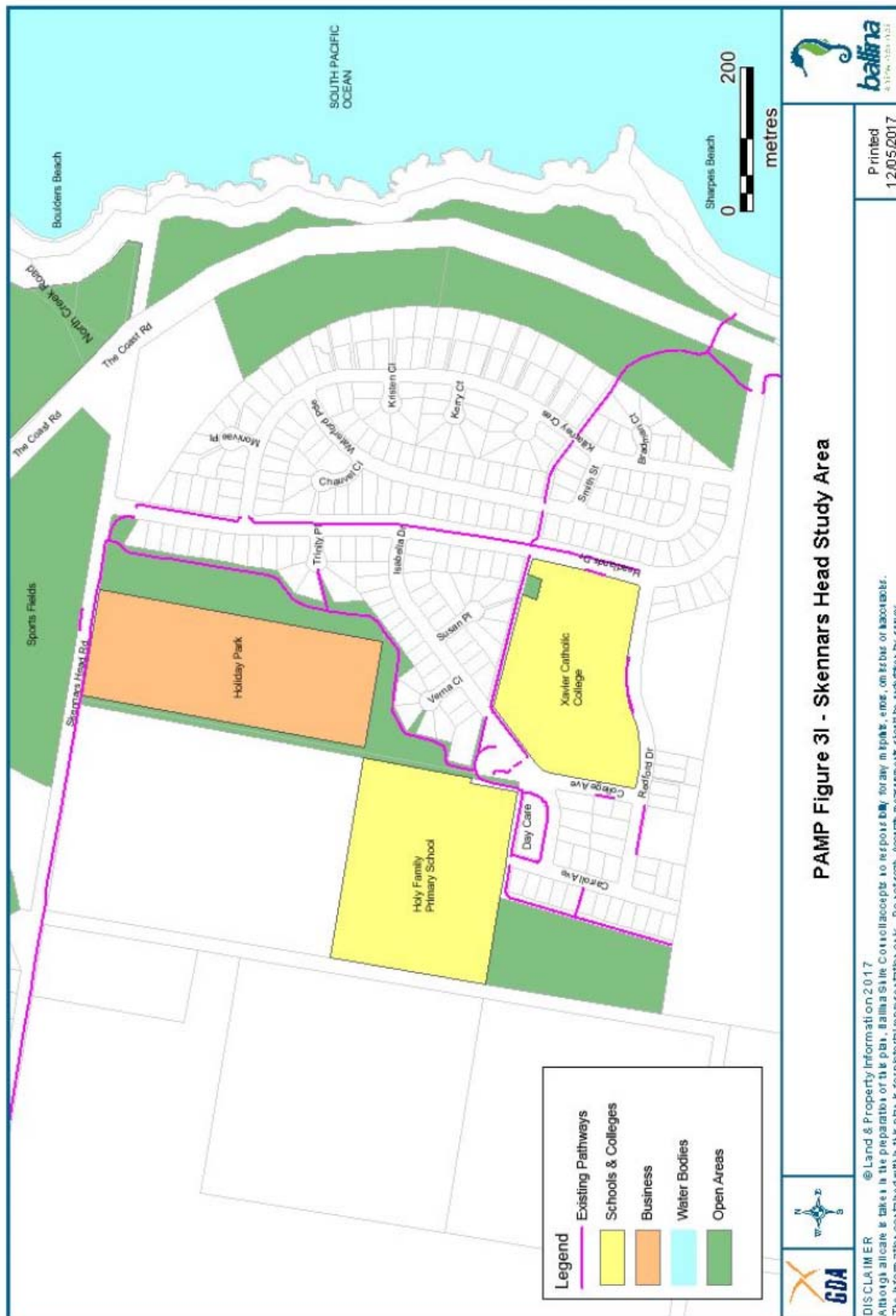


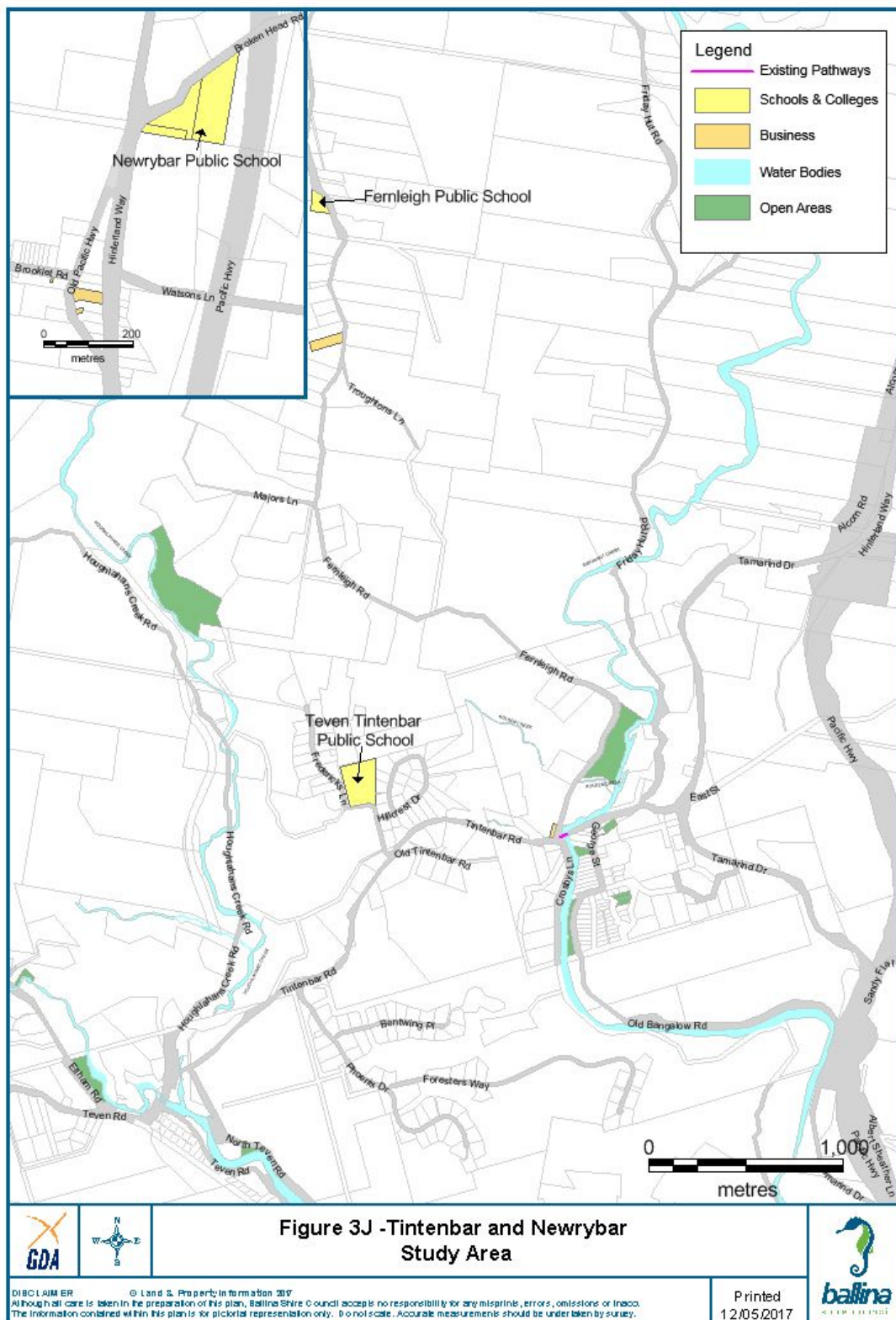


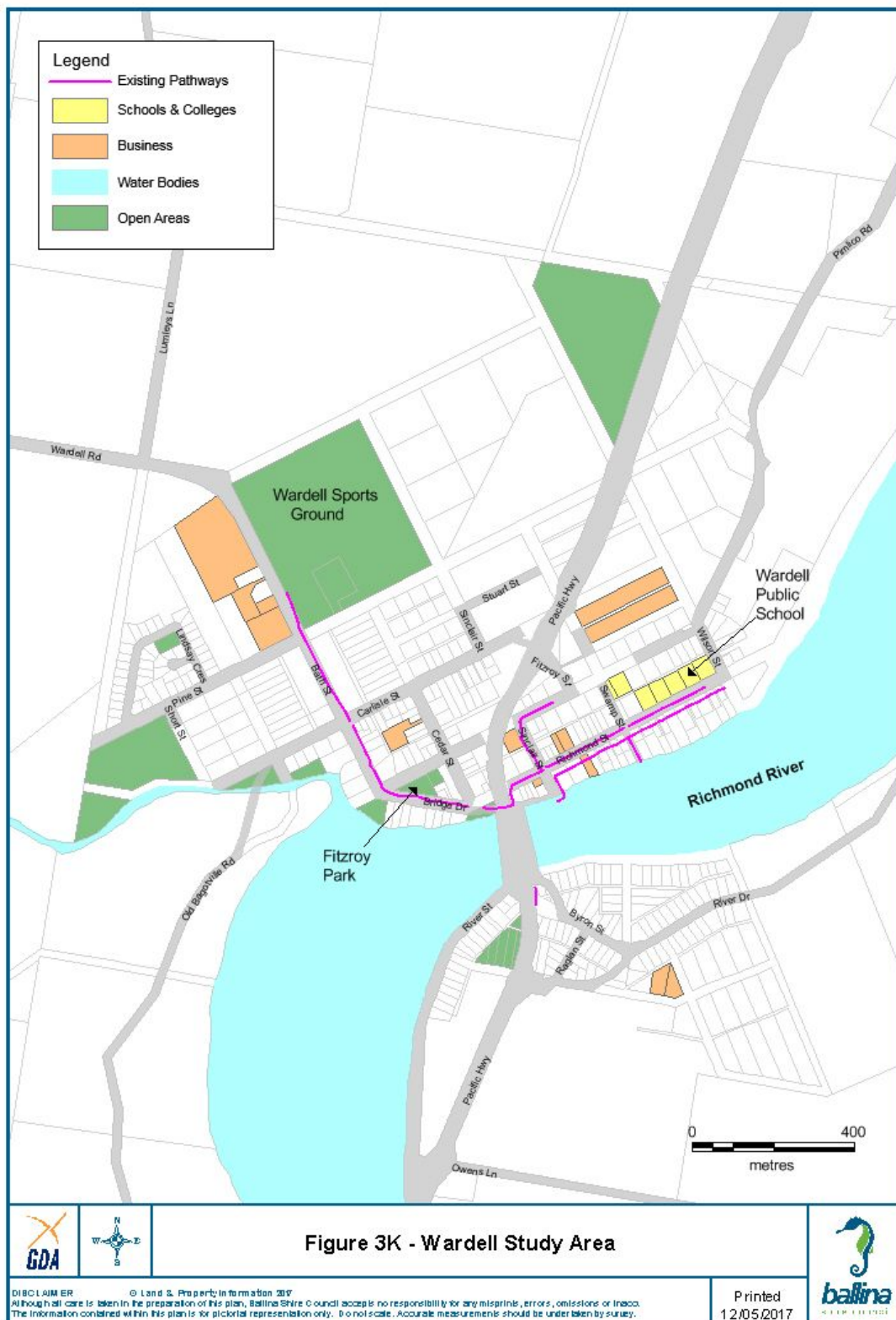


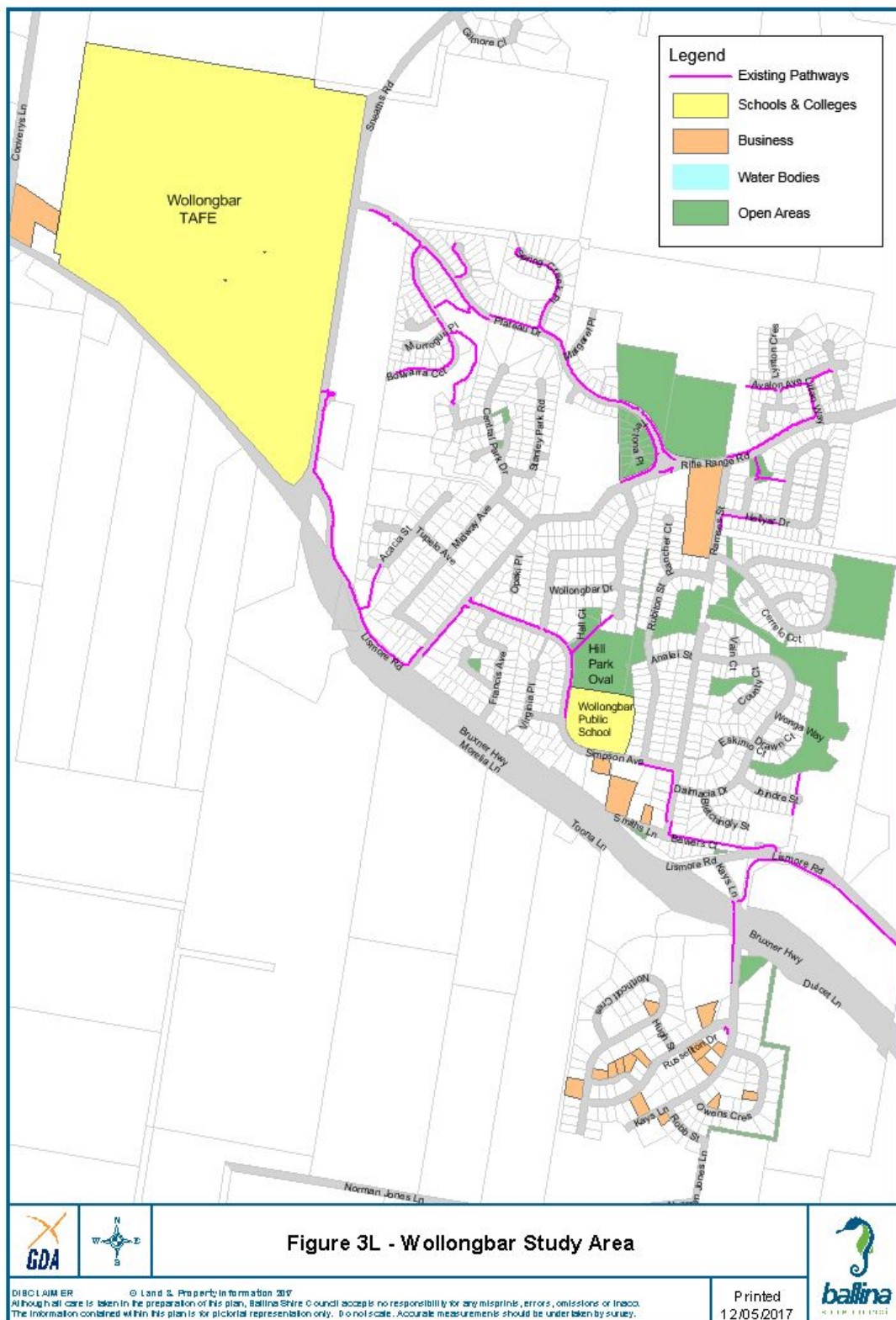












Pedestrian Facilities Standards

Actions identified through the PAMP must comply with pedestrian facilities standards. A general facilities standard has been developed based on the 2004 PAMP, the 2010 and 2013 PAMP Reviews, and the following resources:

- Austroads Guide to Traffic Management
- Australian Standard 1428 series
- Austroads (2013), *Guide Information for Pedestrian Facilities*
- Austroads (2016b), *Safe System Roads for Local Government*
- Austroads (2009), *Guide to Road Design Part 6A Pedestrian & Cyclist Paths* (Expected update 2017)
- NSW Bicycle Guidelines
- Roads and Maritime Supplements to Austroads Guides
- Roads and Maritime Australian Standards Traffic Supplements
- Roads and Maritime Traffic Signal Design Guide
- Roads and Maritime Delineation Manual
- Roads and Maritime Standard Drawings
- Roads and Maritime Technical Directions
- NSW Road Rules
- Roads and Maritime Safety Barrier Acceptance Documents

Path Provision

A basic requirement to the street system is to provide easily negotiated routes for all peoples, most commonly provided by footpaths along streets and roads. Path surface and dimensions are outlined in standards and guidelines (above).

According to Austroads, all roads (with the exception of an Access Place) should have some type of walking facility out of the path of vehicles.

Table 2 - Street Type Footpath Requirements

Street Type	Footpath Requirement
Access Place Less than 300 vpd	No path required
Access Street Between 300 vpd and 3000 vpd	Path required on a least one side of the road with the provision for a footpath on the other side of the road if required in the future
Collector Street Between 3000 vpd and 6000 vpd	Path required on both sides of the road
Trunk Collector Street More than 6000 vpd	Path required on both sides of the road only If connected with the pedestrian network

The building edge should be kept clear of any obstructions such as outdoor dining areas, retail activities, and other structures for safety reasons. For locations where obstruction is necessary, the clear width of the remaining footpath should meet the minimum standard. Footpath dining in River Street is an example where this guideline should be applied.

The requirements for height dimensions are a minimum clearance of 2.0 metres above the path surface. This includes overhanging obstructions or objects (such as trees or signs). Path widths and their height requirements are included below.

Table 3 - Path Width and Height Requirements

Type of Use	Required Width
General minimum width	1.2m
Absolute minimum	0.9m
High pedestrian volumes Or greater depending on demand	2.4m
For wheelchairs to pass	1.8m
Absolute minimum	1.5m
For people with disabilities	1.0m to 1.8m
For shared paths (pedestrians/ bicycle use)	
Cyclists passing in opposite direction	2.0m
2-way cyclists, minimal pedestrians (a common occurrence)	2.5m
2-way cyclists and pedestrians (a common occurrence)	3.0m

Tactile Ground Surface Indicators (TGSi)

According to AS 1428.4, TGSi can be used to 'alert people who are blind or vision impaired to pending obstacles or hazards on, or changes in direction and location points of, the continuous accessible path of travel, where those hazards or changes could not reasonably be expected or anticipated using existing tactile and environmental cues'. Tactile tiles or grooving should be provided at road crossings to indicate the edge of the roadway to pedestrians with sight impairments.

Crossing Facilities

At all road crossings, kerb ramps should be provided for pedestrians to gain access to the roadway with minimum impediment. They are also essential for people in wheelchairs and other pedestrians with wheeled mobility aids.

Selection of the appropriate crossing facility is dependent on pedestrian and traffic volumes (numerical warrant) as well as the nature of the surrounding area and road environment. AS1742.10 indicates that there is a reduced warrant for sites used predominantly by children and by aged or impaired pedestrians.

Future Road Developments

Future road and planning developments are expected to impact upon pedestrian needs through increased demand and change in traffic flows. The following future developments have been taken into consideration in the development of this PAMP during the audit and prioritisation stage.

West Ballina Arterial

The West Ballina Arterial is a proposed new arterial standard road (approximately 1.8km in length) connecting River Street (near Brampton Avenue), West Ballina with the Southern Cross Industrial Estate (at Tamarind Drive and North Creek intersection), North Ballina. This road is needed in order to cope with growth in travel demand predicted to arise from population and employment growth within Ballina Shire.

Southern Cross and Airport Boulevard

This proposal includes construction of a two lane road linking North Creek Road to the Ballina Byron Gateway Airport including three roundabouts at the intersections with North Creek Road, Boeing Avenue and the connection into the airport. The proposal also includes extensions to Boeing Avenue and the realignment of Corks Lane, site filling, vegetation removal and associated works.

Hutley Drive (northern extension) – North Creek Road and Reservoir Hill Deviation

A link is required to facilitate the roundabout junction of North Creek Road and Hutley Drive to serve urban growth areas south of Lennox Head.

Hutley Drive (southern extension)

This is the missing link between EPIQ and Elevations Estates in the southern area of Lennox Head.

CURA A and B Development Sites

The Cumbalum Urban Release Area (CURA) is situated approximately 7.5 kilometres northwest of Ballina and 5.5 kilometres west of Lennox Head.

That part of the release area known as Cumbalum Urban Release Area A (CURA-A) is situated between the Pacific Highway to the west, Cumbalum Urban Release Area Precinct B (CURA-B) to the north, and Ballina Heights Estate to the south. It has a development area of approximately 228 hectares.

The CURA-A area currently has a rural character, and land has been rezoned to allow, with consent, residential development. It is likely that this area will accommodate about 820 new residential dwellings on 77 developable hectares of land, possibly developed over three stages.

The CURA-B area is located between the new Pacific Highway alignment to the west, Sandy Flat to the south, Ballina Nature Reserve to the east and Ross Lane to the north. It has a development area of approximately 470 hectares.

Stage 1 of CURA-B urban subdivision proposal comprises a total of 191 allotments and includes road construction and intersection works at Ross Lane, extensive earthworks, stormwater management, infrastructure works, vegetation removal and other associated subdivision works.

Infrastructure will be needed to support the future urban development in CURA-A and CURA-B, including roads, intersections, open space, recreation facilities and community facilities. Current daily traffic volumes for Ross Lane are 6163 vehicles per day (eastern end of Ross Lane, Byron Bay Road intersection) and 5498 vehicles per day (western end of Ross Lane, Pacific Highway interchange). Estimated daily volumes for the year 2036 for the fully developed CURA are estimated at 12,000 vehicles per day at the eastern end of Ross Lane and estimated 11,000 vehicles per day at the western end of Ross Lane.

Internal roads, footpaths and shared path infrastructure will be conditioned to be provided by the developer in any approved development consent.

Pedestrian Data Collection and Review

Collection of pedestrian crash data was undertaken for the PAMP to help identify specific locations with distinct pedestrian crash clusters, to identify the relationship between land use and pedestrian crash clusters, and to identify pedestrian crashes involving particular pedestrian facility user groups.

RMS data indicates that, in the five years between 2011 to 2015, pedestrian fatalities constituted around 10% of the NSW road toll. Approximately 1522 pedestrians are hit in NSW roads each year (Centre for Road Safety, 2017).

The presence of pedestrian facilities, the physical characteristics of the road environment, motor vehicle volumes and travelling speeds, and the behaviour of drivers and pedestrians impact on the safety of pedestrians.

For the current PAMP, pedestrian crash data from 2006 to 2009 was compared with pedestrian crash data from 2010 to 2015 to determine crash patterns and trends in the Ballina Shire PAMP study areas.

Data and Limitations

The data presented in this report is derived from Traffic Crash Data provided by the Centre for Road Safety at Transport for NSW. The data is provided on a quarterly basis. The statistics recorded by the Centre for Road Safety are confined to those crashes which conform to the national guidelines for reporting and classifying road vehicle crashes. The guidelines include crashes that meet all of the criteria below:

- Were reported to the police
- Occurred on a road open to the public
- Involved at least one moving road vehicle
- Involved at least one person being killed or injured or at least one motor vehicle being towed away.

Reports for some crashes are not received until well into the following year and after the annual crash database has been finalised. These amount to less than one percent of recorded crashes and are counted in the following reporting year statistics.

A change in injury recording practice from the middle of 2010 to the end of 2011 resulted in a slightly higher number of recorded injuries in this time period. This means that there could be some inconsistencies in the data presented in this report for the 2010 to 2015 period.

Pedestrian Crashes 2006 to 2009

From 2005 to 2009, there were 46 pedestrian crashes in Ballina Shire.

The majority of crashes (95%) were injury crashes. Two of the crashes were fatal crashes: one on the River Street and Keppel Street (West Ballina) and the near the Bruxner Highway near McLeans Ridge Road (Wollongbar).

Table 4 - Pedestrian Crash Locations within the PAMP Study area, 2005 to 2009.

Town/ Village	Location	No. of Crashes 2005 to 2009
Alstonville	Near Bruxner Hwy	6
	Ellis Rd	1
	Parkland Dr	1
Ballina Island	Near Pacific Hwy	5
	Bentinck St	3
	Brunswick St	1
	Cherry St	4
	Fox St	2
	Moon St	1
	Tamar St	1
	River St	3
East Ballina	Bonview St	1
	Hill St	2
West Ballina	Hayman St	2
	River Street	3
North Ballina	Southern Cross Dr	2
Ballina Heights		0
Broken Head		0
Lennox Head	The Coast Rd	1
	Cliff Murray Lane	1
	Ocean Breeze Dr	1
Newrybar		0
Skennars Head		0
Teven	Teven Rd	1
Tintenbar	George St	1
Uralba	Near Bruxner Hwy	1
Lynwood		0
Wollongbar	Near Bruxner Hwy	2

Pedestrian Crashes 2010 to 2015

There were 36 pedestrian crashes in the Ballina Local Government Area from 2010 to 2015. This represents a decrease of approximately 21% (ten) from the 46 pedestrian crashes recorded for 2005 to 2009.

The majority of crashes (approximately 85%) were injury crashes. Five of the crashes were fatal crashes and were respectively located at Broken Head, Pine Street East Ballina, Links Avenue East Ballina, Pacific Highway Knockrow, and The Coast Road (near Ross Lane) Lennox Head.

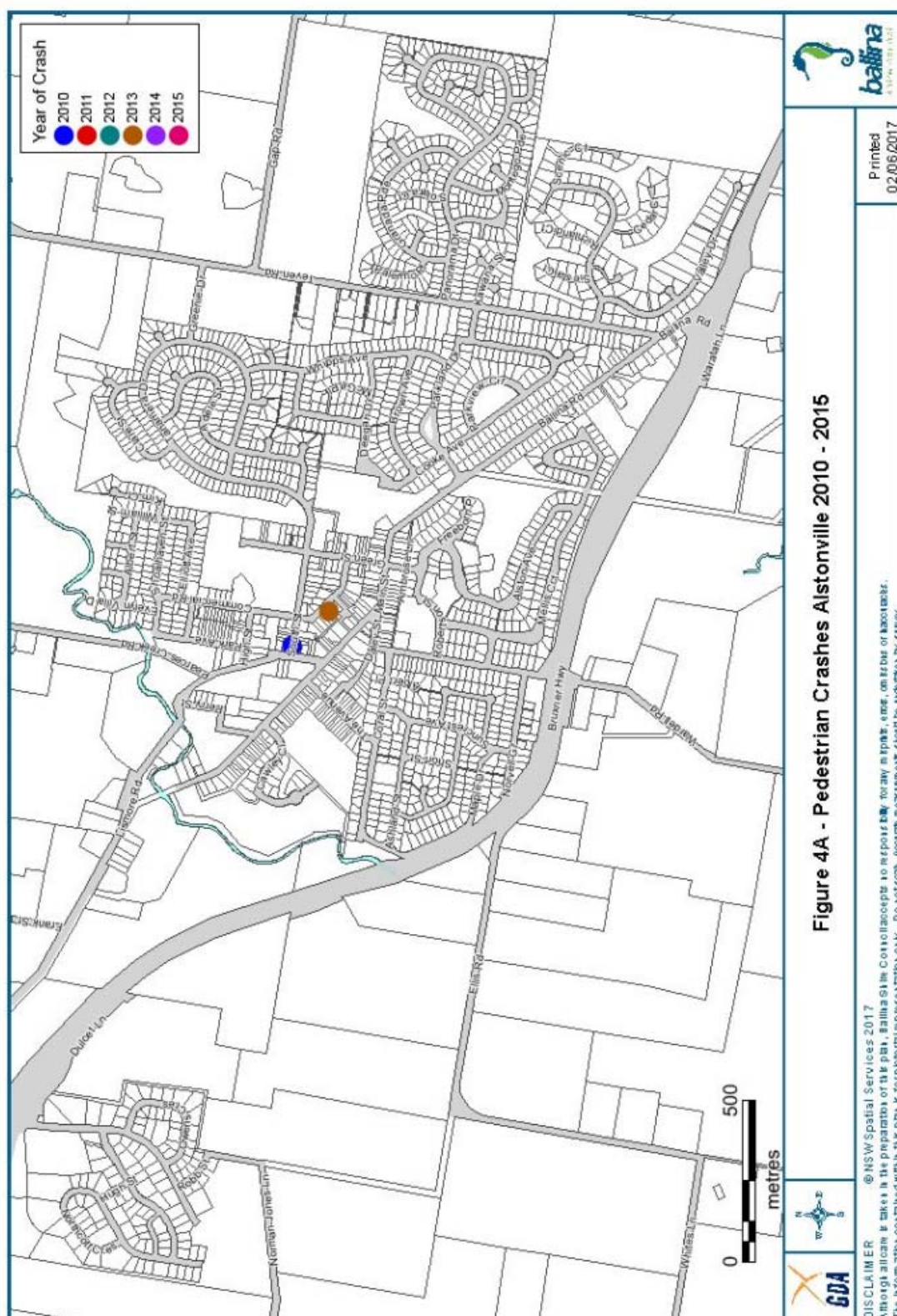
Although the total number of pedestrian crashes has decreased, the number of fatal crashes increased.

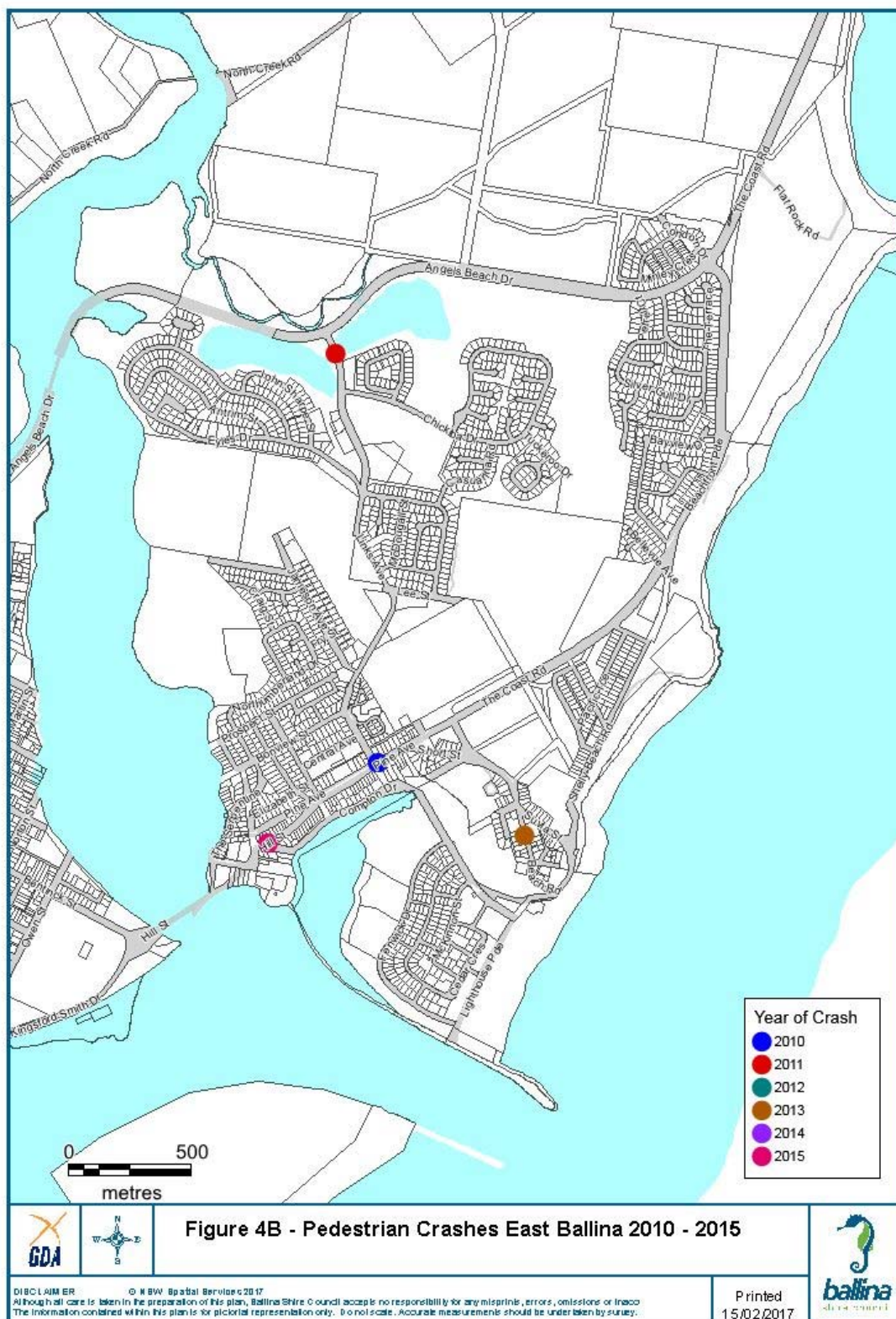
Table - 5 Pedestrian Crash Locations within the PAMP Study area, 2010 to 2015

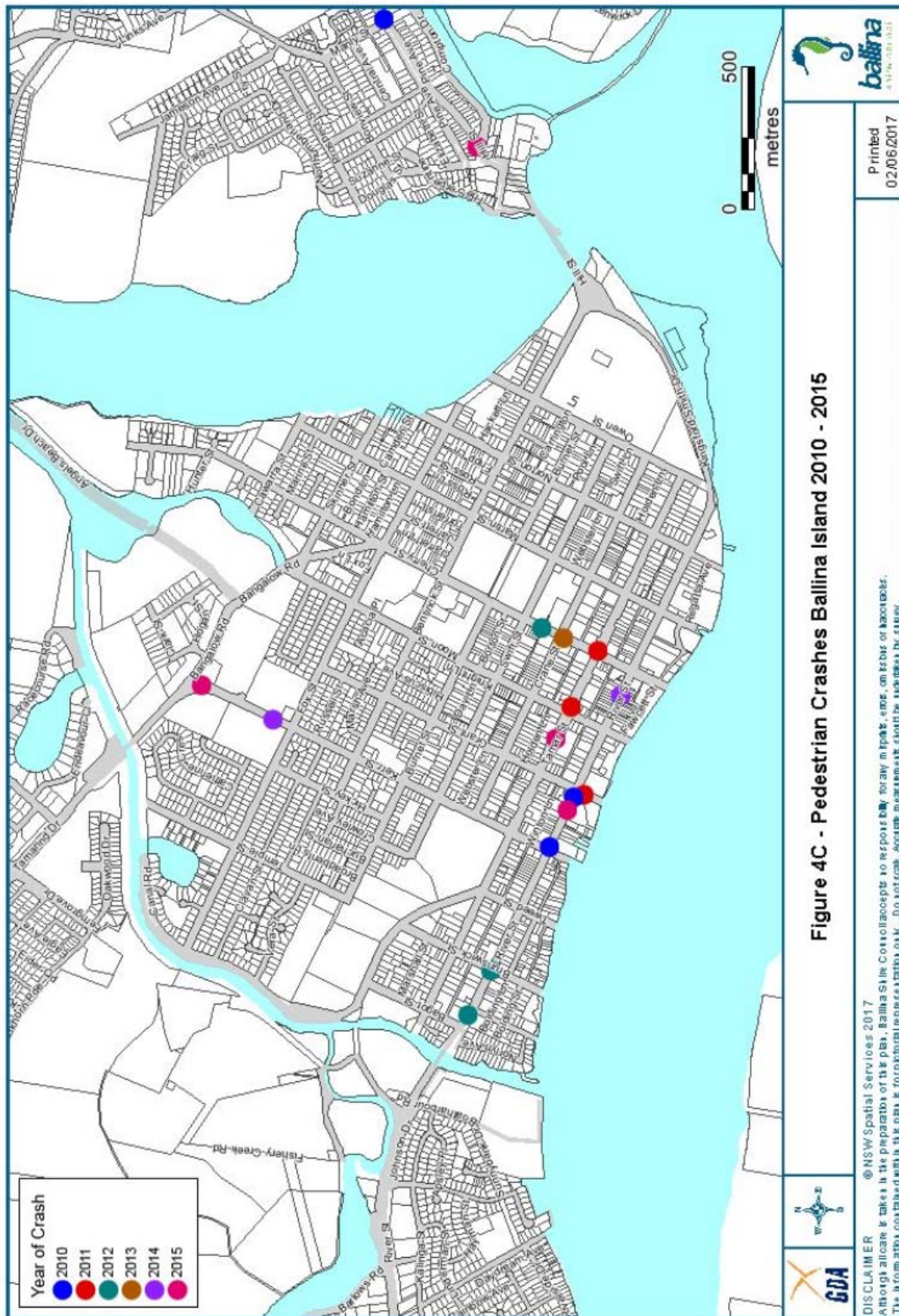
Town/ Village	Location	No. of Crashes 2010 to 2015
Alstonville	Bugden Lane	1
	Near Bruxner Hwy	1
	South Street	1
Ballina Island	Brunswick Street	1
	Cherry Street	2
	Grant Street	1
	Kerr Street	2
	River Street	5
	Tamar	3
East Ballina	Grandview Street	1
	Links Avenue	1
	Hill Street	1
	Pine Avenue	1
West Ballina	River Street	2
Ballina Heights		0
Broken Head	The Coast Road	1
Lennox Head	Ballina Street	1
	Byron Street	2
	The Coast Road	3
	Ross Lane	1
Skennars Head		0
Teven		0
Tintenbar	Tintenbar Road	1
Uralba		0
Lynwood	Wardell Rd	1
Wollongbar	Lismore Road	1
Knockrow	Newrybar Swamp Rd	1
	Near Pacific Hwy	1

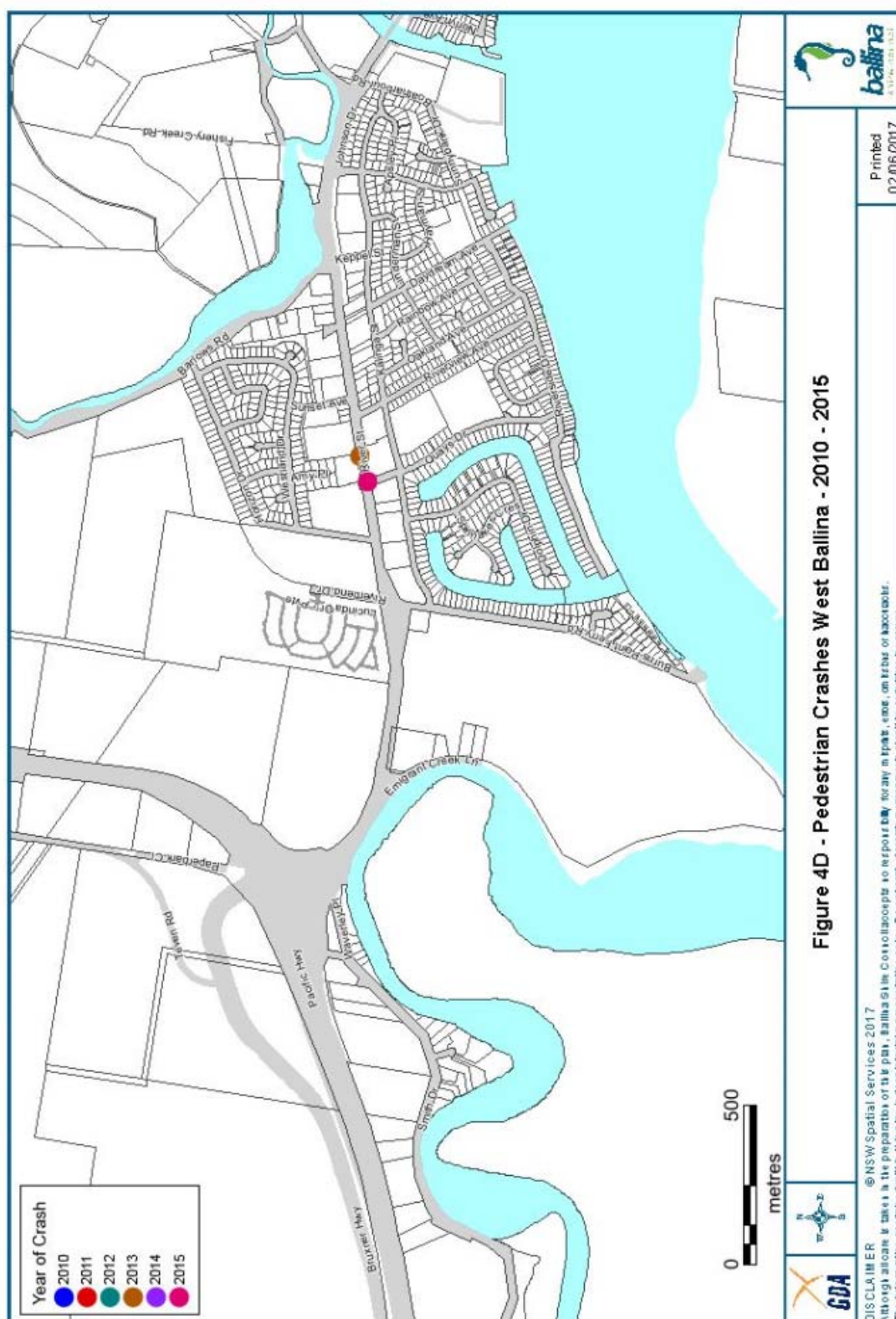
Pedestrian crashes across the PAMP study areas have been mapped to show locations. There were no recorded pedestrian crashes in Ballina Heights, North Ballina, Skennars Head, or Wardell between 2010 and 2015.

- Figure 4A Alstonville
- Figure 4B East Ballina
- Figure 4C Ballina Island
- Figure 4D Ballina West
- Figure 4E Lennox Head North
- Figure 4F Lennox Head South
- Figure 4G Tintenbar and Newrybar
- Figure 4H Wollongbar

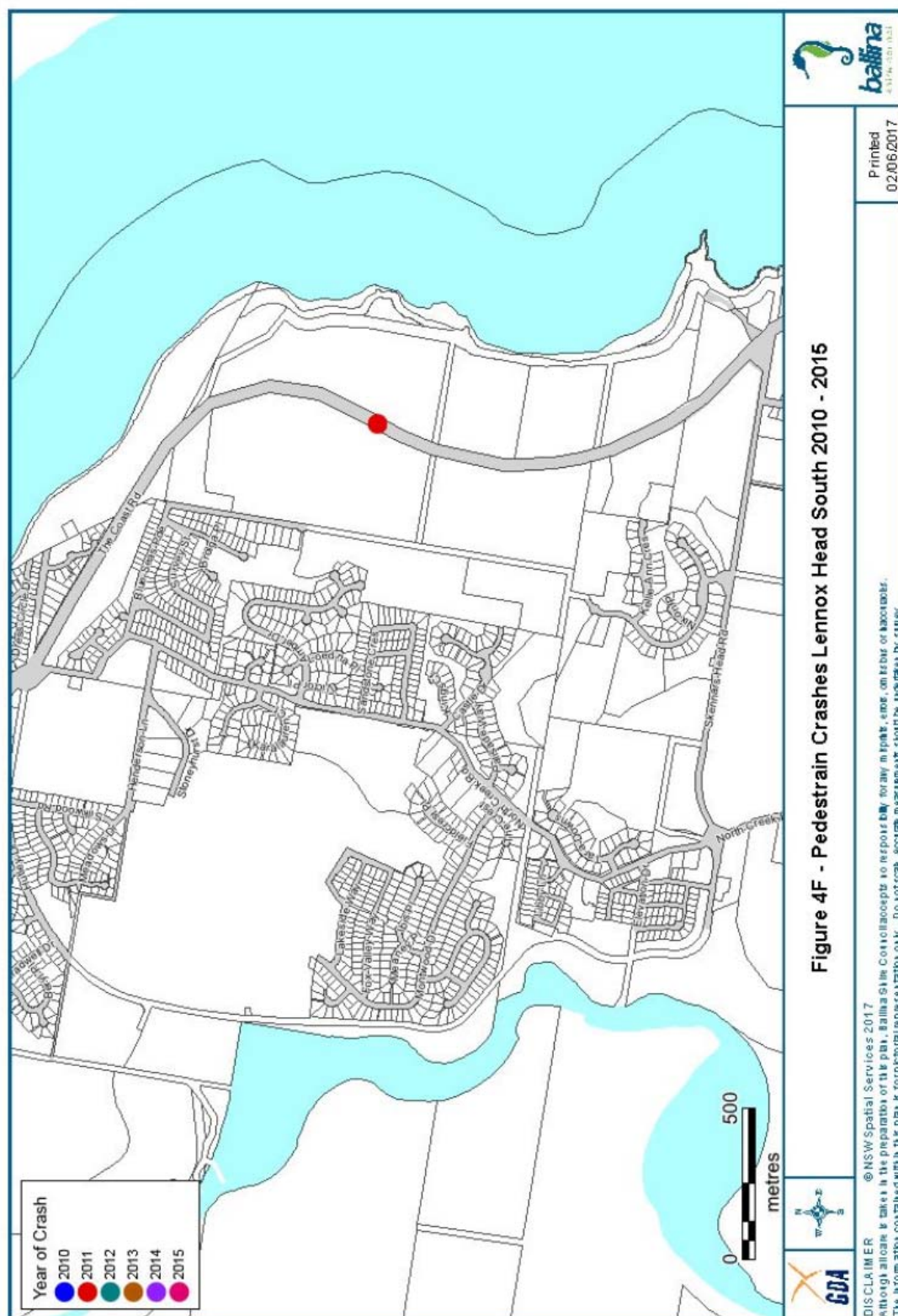


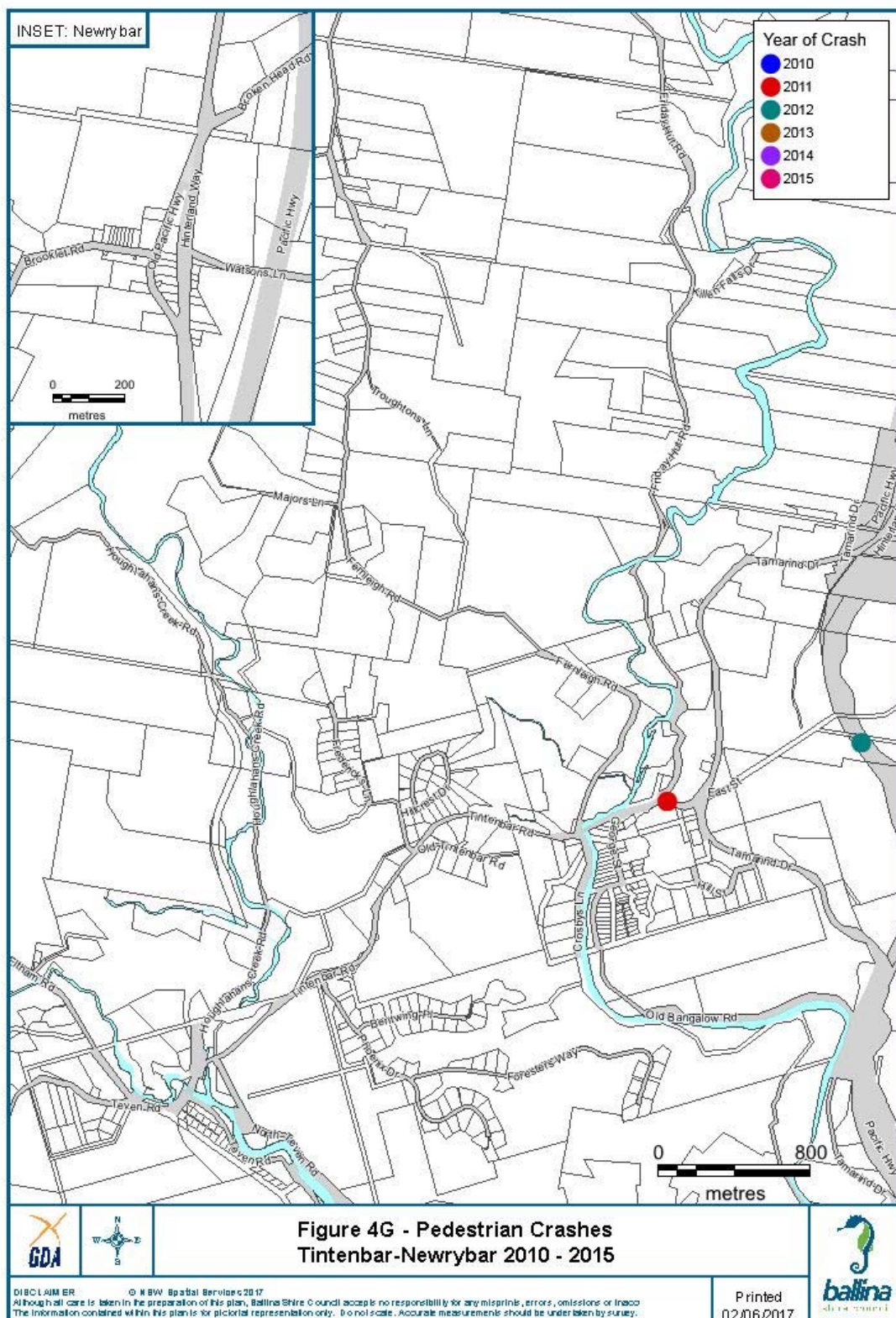














Sex

The majority of persons involved in pedestrian crashes were male (72%, or 26 of the crashes).

Age

In the 2010 PAMP review, 39% of pedestrians were aged between 4 and 18, and 30% of pedestrians were aged 60 years and older.

A review of pedestrian crash data between 2010 and 2015 shows a change in these trends. From 2010 to 2015, there were only four crashes (11%) for pedestrians aged between 4 and 18 years. However, 50% of pedestrians (18) were aged between 40 to 70 years. Seven pedestrian crashes involved persons in the 60 to 69 age group.

Weather

77% (28) of the pedestrian crashes occurred in fine weather conditions. The remaining eight crashes occurred in rain or overcast conditions.

Time of Day

In the 2010 PAMP review, 61% of crashes occurred out of daylight hours.

In contrast, crash data from 2010 to 2015 shows that 68% of crashes occurred during daylight hours. Most crashes (58% or 21 crashes) occurred between 6am and 2pm. The time period 8pm to 10pm also showed a peak in pedestrian crashes with 15% (five crashes) occurring during this time.

Road Tier


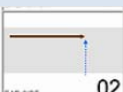

The data used for this analysis focuses on roads under the responsibility of Ballina Shire Council (local and regional roads). Two crashes that occurred near state owned roads were included as potential indicators of attractor and generators.

Road User Movements

Road User Movements (RUM) codes are the primary codes for recording crash types in NSW. The codes describe the first impact of the crash and help in assessing severity factors.

The most common RUM code pedestrian crashes in the Ballina LGA between 2010 and 2015 are indicated below.

Table 6 - Pedestrian Crash RUM Codes, Ballina LGA 2010 to 2015

RUM Code	RUM Code Descriptor	Crash Type	Number of Crashes
0	 00	Pedestrian near side	11
2	 02	Pedestrian far side	7
6	 06	Pedestrian on footpath	5

'Pedestrian near side' crashes occur as pedestrians step from footpaths and contact with vehicles travelling on the nearest side of this footpath.

'Pedestrian far side' crashes occur as pedestrians cross from an opposite road side and contact with vehicles in the far side lane.

'Pedestrian on footpath' crashes occur as vehicles mount footpaths or median strips and contact with pedestrians.

Pedestrian Crash Cluster

The Roads and Maritime Service defines a Pedestrian Crash Cluster as any location up to 100 metres long with three or more pedestrian crashes over five years.

In the 2010 PAMP, three pedestrian crash clusters were identified:

1. The intersection of River Street and Cherry Street and the zone between Moon Street and Martin Street on Ballina Island,
2. Cherry Street on Ballina Island, and
3. The section of Bruxner Highway travelling through the main street of Alstonville.

For the current PAMP, pedestrian crash data for 2010 to 2015 was analysed for pedestrian crash clusters. The crash clusters identified in the 2010 PAMP do not re-appear in the 2010 to 2015 data. This may be attributed to works undertaken through the PAMP process such as the construction of the Alstonville bypass, the River Street CBD upgrade, and improvements to intersections (such as the 2014/2015 redevelopment of the Tamar Street and Cherry Street intersection as a roundabout with pedestrian refuges).

In the last five years, Ballina Island recorded 13 pedestrian crashes. These crashes occurred in high trip generator areas (Kerr Street shopping centre precinct, and River Street, Cherry Street, and Tamar Street retail and service areas). However, none of these constituted a pedestrian crash cluster.

Crash Data Results

The key findings from analysis of the crash data are that males and people in older age groups are overrepresented in pedestrian crash incidents, and are vulnerable facility user groups in Ballina Shire.

Community Consultation

Consultation Methodology

Qualitative social research tools were used for the community consultation component of the PAMP. This included:

- a semi-structured survey to community target groups and the broader community
- unstructured interviews through pop-up street stalls and
- focus groups with specific interest groups (where requested).

This approach was selected as it allows for open expression of views and for the collection of descriptive data. The semi-structured survey tool asked people to nominate the following information:

- general category of interest group being represented in the response (educational, commercial/ retail, recreational, aged care or community living, tourism or other including residential)
- proposed location of the pedestrian treatment
- main issues of concern
- predicted usage of proposed facility (where possible) and
- suggested pedestrian facility (such as footpath, pedestrian refuge, traffic calming and so on).

Respondents were also provided with an opportunity to provide further comment and description in an open-ended section of the survey tool. This permitted the collection of additional detail on the perceived pedestrian concern (such as particular facility user groups, community need, identification of access and safety concerns, and behavioural observations), and placed the response in the social context of the local and regional community and its aspirational values (such as improved walkability of areas).

The limitations of this relatively unstructured approach include the possibility of collection of 'off-topic' data (for example, issues relating to other Council business rather than the specific pedestrian needs assessment). A small number of submissions received were classified as not pertaining to the Pedestrian Access and Mobility Plan and were subsequently referred to appropriate sections within Council for response and action.

Responses collected during face-to-face semi-structured interviews at pop-up street stalls and during focus groups were not subject to the above difficulties and permitted improved clarification of local and on-site concerns.

The Study

Three months of community consultation (September to December 2016) was undertaken by Ballina Shire Council. This involved:

- Provision of maps showing current footpath networks in the PAMP study areas (Figures 3A to 3L above)
- Targeted letters inviting input from community groups and organisations
- Pop-up information stalls in Ballina (CDB and Ballina Fair), Alstonville, and Lennox Head
- Advertisements and promotion in Ballina Shire Council's newsletter, 'Community Connect'

- Newspaper advertisements and media releases (at monthly intervals during the three month submission period)
- Advertising on community radio and
- Open community submissions.

Submissions to the PAMP were able to be made through the Ballina Shire Council website, as well as through paper forms, email and telephone submissions.

Community Target Groups

Around 340 community groups and organisations were contacted as part of the targeted letter component of the PAMP. The target letter was sent by mail and email to the following types of community groups and organisations:

- Local Government Area Residents and Progress Associations
- Caravan parks and tourism operators
- Aged care facilities
- Schools and tertiary education organisations
- Disability services and advocates
- Sports and activity groups
- Transport providers
- Aboriginal services and community groups
- Shopping centres and major retailers
- Health services
- Charities and churches
- Tourist accommodation providers and
- Environmental groups.

Focus Groups

A PAMP focus group was offered to the Ballina Shire Council's Access Reference Group, and Aboriginal Community Committee. These groups were selected for focus groups in recognition of the specific pedestrian needs arising from their physical, social, economic and cultural characteristics, and in order to allow for improved description of access and safety issues.

A PAMP focus group was conducted at the request of the Access Reference Group. This consultation included review of pedestrian issues from previous Access Reference Group meetings as well as nomination of new items.

Community Feedback

Approximately 280 community suggestions (written and verbal) were received during the public consultation phase of the PAMP. Submissions were received for all PAMP study areas except Ballina Heights and Teven-Tintenbar.

Suggestions focused on paths between business and residential areas (such as access to schools, retirement and aged care residences, and shopping centres), as well as community facilities and recreational areas (such as cemeteries, scenic walks, beaches, and sports grounds). Major issues for the community were safety, access and improving the walkability of Ballina Shire.

- Twelve of the submissions corresponded with pedestrian crash locations from the 2010 to 2015 data.
- Approximately 140 submissions (about half of all community submissions) were duplicates (they were nominated multiple times).
- 16 submissions corresponded to ten outstanding projects from the existing 2010 PAMP.
- Approximately ten of the community submissions were requests for some form of maintenance. These submissions were conveyed to Council's Works Project Engineer for attention.
- Some submissions were not requests for infrastructure treatments. These submissions have been referred to the Road Safety Officer for behavioural countermeasures (such as community education and awareness).
- Where relevant, a number of submissions were referred to the Tosha Falls Management Plan, Pop Denison Park Upgrade process, and Lennox Head CBD Upgrade.
- Approximately five submissions were issues pertaining to private land owned and managed by shopping centres and, thus, fall outside the management authority of Ballina Shire Council.

The remaining community submissions were subject to field audit and prioritisation.

Field Audit and Prioritisation of Projects

On-foot route field audits were conducted to determine the type and scale of the work required along nominated pedestrian routes, and to organise nominated works into priority order. PAMP works are prioritised because of budget and resource constraints. The costing and prioritising of works facilitates the development, funding and planning of PAMP projects for both Council and the RMS.

The audit was undertaken by footpath maintenance personnel with expertise in footpath design for access and mobility. This work was conducted from March to May 2017.

The audit included all roads and paths nominated through the community public submission process in the PAMP study areas. Issues considered by the audit included the following:

Table 7 - Factors Considered by Field Audit

Issue	Considerations
Path of Travel	Gradient Width of paved path Crossing at side streets (kerb ramps) Conditions of walking surfaces Vertical clearance Obstructions Barriers and grates
Pedestrian Crossings	Crossing type Signage and line marking Audible/ tactile facilities at signals Raised threshold Kerb ramp and tactile indicators Crossing specific lighting Facility User Groups and Levels of Service New crossing opportunities and possible treatments
Lighting	Design Location
Fixtures	Signage, bus shelters, seating, bins, water fountains, outdoor seating, shop advertisements (A-frame boards) Design, colour contrast Location Disability-specific issues, such as access path, height of facilities, design Maintenance required

In order to develop a prioritised PAMP Delivery Plan, all community submissions were evaluated to identify high, medium and low priority pedestrian routes, and to link these routes to attractors and generators.

All submissions were rated using the following criteria:

- Linkages to pedestrian crash sites
- Analysis of Facility User groups (including predicted usage and popularity of suggested routes, and usage by vulnerable pedestrian groups)
- Feasibility and
- The RMS weighted scoring criteria system (Table 8).

Table 8 - Weighted Criteria Scoring System for PAMP Works Prioritisation

Category	Criteria	Performance Conditions	Score
Land Use	Number of attractors/ generators (locations)	More than 5 locations	➤ 10
		3-5 locations	➤ 8
		1-2 locations	➤ 5
		0 locations	➤ 0
	Land use type	Schools	➤ 10
		Commercial/ retail	➤ 8
		Residential	➤ 5
		Other	➤ 0
	Proximity to generators/ attractors	Less than 250 metres	➤ 10
		>250-500 metres	➤ 8
		>500-1000 metres	➤ 5
		>1000 metres	➤ 0
	Future development with attractors/ generators	High	➤ 5
		Medium	➤ 3
		Low	➤ 1
Traffic Impact	Road hierarchy	State road	➤ 15
		Regional road	➤ 10
		Local road	➤ 8
		Special use	➤ 5
		Other	➤ 0
Safety	Identified hazardous area (from consultation)	High	➤ 10
		Medium	➤ 8
		Low	➤ 5
		None	➤ 0
	Identified pedestrian crashes (reported to police or local knowledge) as a 3 year average	>3 reported crashes per year	➤ 15
		3 reported crashes per year	➤ 10
		2 reported crashes per year	➤ 8
		1 reported crash per year	➤ 5
		0 reported crashes per year	➤ 0
Facility Benefits	Demonstrated path	High usage	➤ 10
		Medium usage	➤ 8
		Low usage	➤ 5
		Not demonstrated	➤ 0
Continuity of routes	Addition to existing facility	Link up footpath	➤ 10
		Extension of footpath	➤ 8
		Add to devices	➤ 5
		Other	➤ 0
Priority	Pedestrian route hierarchy	High	➤ 5
		Medium	➤ 3
		Low	➤ 1

Findings

The results of the audit did not identify any major land use changes within the PAMP study areas.

At the end of the rating process, 86 items have been included in a 10 Year Delivery Plan based on a conservative capital works allocation of \$460,000 annually. The total value of included projects is approximately \$4.6 million.

While all community submissions were carefully considered, not all suggestions have been included as part of the 2016/17 PAMP. Some generated a low priority score according to the RMS weighting criteria, were not technically feasible, or were requests for enhancements, extensions or additions to facilities that already provided adequate level of service. Some submissions were encompassed by other planned connections deemed safer options.

A number of submissions were received regarding pedestrian access around Wollongbar Public School. These submissions were evaluated as part of the PAMP, but existing infrastructure was assessed as adequate. However, in response to significant community interest in this issue, the area was subject to an additional Road Safety Audit conducted by independent assessors. The results of this Audit are to be referred to the Local Traffic Committee for additional review external to the PAMP process.

Opportunities

The 2016/2017 PAMP results provide an opportunity to recognise and encourage the healthy benefits of pedestrian activities, and complement alternative modes of transport such as cycling and public transport. Physical works included will support pedestrian connections to popular recreational areas and services, and will increase the walkability of Ballina Shire towns and villages.

Crossing facilities and pedestrian safety will also be enhanced through refuges, kerb ramps, safety railings and bollards.

Constraints

Major roads with large volumes of traffic can restrict the efficiency of the pedestrian network. Pedestrian access across River Street in West Ballina is an example of this type of constraint.

Kerb ramps and path width represent major constraints for wheelchair (manual and motorised) access to major attractors. In recognition of this, Ballina Shire Council is currently undertaking a separate audit of kerb ramps with a view to upgrading these facilities as funding is available.

Roundabout design may also have an effect on the perceived safety of pedestrians. Negotiating traffic from a number of directions and speed of vehicles can hinder the effectiveness of a pedestrian network. A number of roundabouts (such as the River Street-Quays Drive roundabout in West Ballina) were identified in the PAMP community consultation as posing constraints to existing pedestrian networks.

The current warrant system for pedestrian lights and pedestrian crossings also constrains options for crossing facilities in the Ballina PAMP.

Cost Estimates for Actions

Capital works projects were costed using a generic spreadsheet of costs for various pedestrian facilities and treatments. The majority of capital works include the installation of standard footpaths, ramps, and pedestrian refuges.

Delivery Plan

The attached Delivery Plan has been organised to reflect the assessed priority scoring of pedestrian actions, listed in order from highest to lowest scoring (out of a total possible score of 77).

Ballina Shire Council has an annual capital works budget of \$460 000 per annum. For this reason, PAMP works were also organised into financial years in accordance with the annual limit.

The Delivery Plan (reported by order of Priority, by PAMP Study Area and with corresponding maps) outlines the PAMP Works identifier, project priority, location, description of the proposed pedestrian treatment, cost estimate, indicative financial year of delivery, and submission identifier.

PAMP Delivery Plan (by Order of Priority)

PAMP Works ID	Total Value	PAMP Study Area	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
BCW1	77	Ballina Island	Bentinck St	Construct new 2 x kerb ramps & a centre median refuge	\$5,000	2018-2019	267BC
BWW2	77	Ballina West	River St	Construct new 123m path (incl. across roundabout entrance/ exit at Bunnings)	\$24,240	2018-2019	96BW
BNW3	72	Ballina North	Southern Cross Dr	Construct new 400m path, 3 x ramps & 2 x medians	\$63,100	2018-2019	238BN
BCW4	72	Ballina Island	Crane St	Replace 1 existing ramps and construct new ramp & centre median refuge	\$5,000	2018-2019	103BC
BWW5	72	Ballina West	Kalinga St	Construct new 570m path, 1 x ramp, 1 x centre refuge	\$106,600	2018-2019	39BW
EBW6	71	Ballina East	Links Ave	Construct new 182m path	\$24,570	2018-2019	14EB
BWW7	71	Ballina West	River St	Combine River St projects to affect 2 good crossings 30m path, 2 ramps & a centre refuge (incl. crossing at Keppel St)	\$11,500	2018-2019	46BW
BWW7	70	Ballina West	River St	Combine River St projects to affect 2 good crossings 30m path, 2 ramps & a centre refuge (incl. crossing at Keppel St)	\$17,000	2018-2019	47BW
BWW7	67	Ballina West	River St	Combine River St projects to affect 2 good crossings 30m path, 2 ramps & a centre refuge (incl. crossing at Keppel St)	\$14,000	2018-2019	274BW
BWW7	56	Ballina West	River St	Combine River St projects to affect 2 good crossings 30m path, 2 ramps & a centre refuge (incl. crossing at Keppel St)	\$15,500	2018-2019	45BW
BCW8	70	Ballina Island	Moon & Tamar Sts	20m path, 1 X widen existing ramp & 1 x median	\$6,000	2018-2019	104BC
BCW8	63	Ballina Island	Moon St	Replace existing ramp	\$3,000	2018-2019	105BC
BCW9	69	Ballina Island	Angels Beach Drive	Replace existing ramp & widen centre median refuge	\$5,000	2018-2019	70BC

PAMP Works ID	Total Value	PAMP Study Area	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
BCW10	69	Ballina Island	Corner of Tamar St & Kerr St	Pedestrian fence needs to be painted to make more defined	\$3,000	2018-2019	4BC
EBW11	69	Ballina East	Pine Ave, Short St	Construct new 332m path, 4 ramps & 2 centre medians	\$73,960	2018-2019	5EB
BCW12	69	Ballina Island	Crane St	Construct new 20m path, 2X kerb ramps and a centre median	\$11,000	2018-2019	119BC
BCW13	68	Ballina Island	Bentinck St	Construct new 182 m path	\$24,570	2018-2019	117BC
BCW14	67	Ballina Island	Bangalow Rd	Reconstruct new concrete median to increase the width of refuge area	\$3,000	2018-2019	58BC
EBW15	69	Ballina East	Suvla St, Shelly Beach Rd	Construct new 553m path, 4 ramps & 2 centre medians	\$113,740	2019-2020	5EB
ACW16	66	Alstonville	Freeborn Pl	Construct new 193m path	\$26,055	2019-2020	118AC
BCW17	64	Ballina Island	River St	Construct new 140m path	\$18,900	2019-2020	190BC
ACW18	63	Alstonville	Wardell Rd	Reconstruct two kerb ramps and 30m path	\$8,000	2019-2020	114AC
BCW19	63	Ballina Island	Martin St	Modify centre median	\$3,000	2019-2020	34BC
ACW20	62	Alstonville	Robinson St	Construct new 116m, 3 x ramps and 2 medians	\$32,200	2019-2020	157AC
EBW21	62	Ballina East	Eyles Dr, John Sharpe St & Links Ave	Construct new 610m path	\$109,800	2019-2020	193EB
BWW22	62	Ballina West	Barlows Road	Construct new path 555m on eastern side of road, 2 crossings on either end, River St end to connect with existing path.	\$105,300	2019-2020	27BW
BCW23	62	Ballina Island	Kerr St	Construct new 20m path, median refuge and 2 kerb ramps	\$11,000	2020-2021	180BC
BCW24	61	Ballina Island	Owen St	Construct 680m path, 2 ramps and centre median refuge	\$96,800	2020-2021	262BC

PAMP Works ID	Total Value	PAMP Study Area	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
BCW25	61	Ballina Island	Bagot St, Canal Rd	Construct new 1105m, 1 x ramp & 1 median	\$153,175	2020-2021	81BC
BNW26	61	Ballina North	Tamarind Drive	Reconstruct 40m existing path	\$7,200	2020-2021	73BN
NW27	60	Newrybar	Old Pacific Highway	Construct 450m of new path	\$64,200	2020-2021	17N
EBW28	60	Ballina East	Grandview St	Construct new 320m path, 8 x ramps & 3 x medians	\$71,600	2020-2021	186EB
EBW29	60	Ballina East	Manly St	Construct new 50m path	\$21,000	2020-2021	172EB
BCW30	60	Ballina Island	Moon St	Replace 6 kerb ramps	\$12,000	2020-2021	72BC
LHNW31	59	Lennox Head	Greenwood Pl, Sunrise Cr	Construct 392m new path and 2 kerb ramps	\$57,720	2021-2022	12LHN
BCW32	59	Ballina Island	Kerr St	Reconstruct 20 kerb ramps along Kerr St	\$20,000	2021-2022	106BC
BNW33	58	Ballina North	North Ck Rd	Construct new ramp and refuge	\$10,000	2021-2022	99BN
BCW34	58	Ballina Island	Fox St	Construct new 385 m path and 3 centre medians	\$54,975	2021-2022	81BC
BCW35	58	Ballina Island	Tamar St	Construct new 208m path	\$32,980	2021-2022	95BC
ACW36	57	Alstonville	Coral St	Reconstruct existing kerb ramps	\$5,000	2021-2022	154AC
BCW37	57	Ballina Island	Cawarra St	Construct new 240m path and kerb ramp	\$36,400	2021-2022	265BC
WBW38	57	Wollongbar	Rifle Range Rd	Construct new 645m path and 4 kerb ramps	\$96,675	2021-2022	122WB
BCW39	56	Ballina Island	Burnet St	Construct new 216m path and kerb ramp	\$30,160	2021-2022	65BC
BCW40	56	Ballina Island	Owen St	Modify path	\$5,000	2021-2022	50BC
BCW40	53	Ballina Island	Bentinck St	Construct new 30m path, 2 ramps and island refuge	\$17,000	2021-2022	50BC

PAMP Works ID	Total Value	PAMP Study Area	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
SHW41	56	Skennars Head	Skennars Head Road	Construct new refuge and kerb ramp on southern side	\$15,700	2021-2022	86SH
BWW42	55	Ballina West	Westland Dr	Construct new kerb ramp	\$2,250	2021-2022	88BW
ACW43	55	Alstonville	Green St	Modify ramp	\$11,000	2021-2022	125AC
ACW43	48	Alstonville	Green St	Alter path	\$1,950	2021-2022	156AC
BCW44	55	Ballina Island	Martin St	Construct new path 455m and install 7 kerb ramps	\$74,690	2021-2022	260BC
EBW45	54	Ballina East	Jameson Ave	Construct new 662m path, 2 ramps & a median	\$97,170	2022-2023	16EB
EBW46	53	Ballina East	Chickiba Dr	Construct new 305m path & 2 kerb ramps	\$57,600	2022-2023	17 Previous PAMP
LHNW47	52	Lennox Head	Banksia Ave	Construct new 245m path	\$33,075	2022-2023	56LHN
BCW48	52	Ballina Island	Canal Rd	Reconstruct /redirect 210m existing path	\$37,800	2022-2023	109BC
LHSW49	52	Lennox Head South	Montwood Dr	Reconstruct new 48m path and a kerb ramp	\$10,480	2022-2023	60LHS
LHSW49	52	Lennox Head South	Montwood Dr	Reconstruct new 1085m path and a kerb ramp	\$185,875	2022-2023	3LHS
EBW50	52	Ballina East	Anderson St	Reconstruct existing ramp	\$1,000	2022-2023	71EB
LHNW51	51	Lennox Head	Stewart St	Construct new 442m Path	\$66,670	2022-2023	49LHN
BCW52	50	Ballina Island	Martin/Fox Sts	Construct new refuge	\$5,000	2022-2023	261BC
BWW53	50	Ballina West	Horizon Drive	Construct new 392m path & 4 kerb ramps	\$79,460	2023-2024	33BW
ACW54	50	Alstonville	Mellis Cct	Construct new 670m path	\$93,250	2023-2024	92AC
BWW55	50	Ballina West	Westland Dr	Construct new 396m path & 2 x kerb ramps	\$73,280	2023-2024	89BW

PAMP Works ID	Total Value	PAMP Study Area	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
ACW56	50	Alstonville	Peaces Creek Road	Reconstruct /widen existing 535m path	\$96,300	2023-2024	9AC
BCW57	50	Ballina Island	Moon St	replace existing ramps	\$14,000	2023-2024	68BC
WDW58	50	Wardell	Cedar St	Construct new 310m path	\$43,950	2023-2024	248WD
EBW59	50	Ballina East	Shelly Beach Rd	Construct 2 x new kerb ramps	\$5,000	2023-2024	19EB
EBW60	48	Ballina East	Bonview St	Construct new 510m path, 10 x kerb ramps & centre median	\$83,950	2023-2024	111EB
ACW61	48	Alstonville	Coral St/ Ashland St	Construct new 80m path	\$10,800	2023-2024	237AC
ACW62	48	Alstonville	Parkland Dr	Footpath east side Cooke Ave to Bruxner Hwy	\$9,720	2023-2024	15 Previous PAMP
ACW62	37	Alstonville	Parkland Dr	Construct new 1159m path	\$109,700	2024-2025	127AC
EBW63	47	Ballina East	Eyles Dr	Reconstruct existing kerb ramp	\$1,000	2024-2025	74EB
ACW64	46	Alstonville	Tanamera Dr	Construct new 865m path, 10 kerb ramps & 2 centre medians	\$146,075	2024-2025	128AC
ACW65	45	Alstonville	Deegan Dr & Parklands Dr	Construct new 380m path	\$53,400	2024-2025	131AC
LHNW66	45	Lennox Head	Gibbon St	Construct new 167m path	\$23,945	2024-2025	37LHN
EBW67	45	Ballina East	Northumberland Dr	Construct new 985m path and 5 kerb ramps	\$144,975	2024-2025	26EB
BCW68	43	Ballina Island	Canal Rd	Construct new 520m path and a kerb ramp	\$71,200	2024-2025	196BC
ACW69	43	Alstonville	Teven Rd	Construct new 546m path	\$101,780	2025-2026	6AC
ACW70	43	Alstonville	Whipps Ave/ Parkland Dr	Construct new 556m path	\$97,008	2025-2026	137AC
BCW71	43	Ballina Island	Jarrett St	Construct new 140m path	\$19,900	2025-2026	98BC
WBW72	40	Wollongbar	Rubiton St	Construct new 295m path and a kerb ramp	\$40,825	2025-2026	228WB
WDW73	40	Wardell	Carlisle St	Construct new 180m path	\$24,300	2025-2026	247WD

PAMP Works ID	Total Value	PAMP Study Area	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
ACW74	40	Alstonville	Coral St	Construct new 110m path and a kerb ramp	\$15,850	2025-2026	113AC
BCW75	40	Ballina Island	Brunswick St	Reconstruct/widen existing path	\$42,525	2025-2026	43BC
WDW76	37	Wardell	Lindsay Cres & Pine St	Construct new 935m path and 4 x kerb ramps	\$133,725	2025-2026	252WD
LHSW77	37	Lennox Head	Greenfield Rd	Construct new 70m path, 3 x kerb ramps & centre median	\$16,199	2025-2026	21 Previous PAMP
WBW78	35	Wollongbar	Queens Park Ct, Central Park Dr, Midway Ave	Construct new 482m and 6 kerb ramps	\$76,670	2025-2026	229WB
ACW79	35	Alstonville	Ballina Rd	Construct new 198m path and 1 kerb ramp	\$59,830	2026-2027	135AC
BWW80	35	Ballina West	River St	Construct new 530m path	\$71,550	2026-2027	277BW
WBW81	35	Wollongbar	Smith Ln	Construct new 320m path and 3 kerb ramps	\$52,000	2026-2027	5 Previous PAMP
ACW82	33	Teven	Gap Road	Construct new 1250m path and 2 x kerb ramps	\$259,800	2026-2027	10AC
EBW83	33	Ballina East	Prospect St	Construct new 175m path and 2 kerb ramps	\$27,625	2026-2027	54EB
ACW84	32	Alstonville	Greenie Dr	Construct new 230m path	\$31,050	2026-2027	130AC
EBW85	31	Ballina East	Coast Rd	Construct new kerb ramp	\$1,000	2026-2027	38EB
WDW86	30	Ballina South	River Drive	Construct new 320m path	\$41,200	2026-2027	251WD
				TOTAL COST	\$4,409,022		

PAMP Delivery Plan (by Study Area) - Alstonville

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
ACW16	66	Freeborn Pl	Construct new 193m path	\$26,055	2019-2020	118AC
ACW18	63	Wardell Rd	Reconstruct two kerb ramps and 30m path	\$8,000	2019-2020	114AC
ACW20	62	Robinson St	Construct new 116m, 3 x ramps and 2 medians	\$32,200	2019-2020	157AC
ACW36	57	Coral St	Reconstruct existing kerb ramps	\$5,000	2021-2022	154AC
ACW43	55	Green St	Modify ramp	\$11,000	2021-2022	125AC
ACW43	48	Green St	Alter path	\$1,950	2021-2022	156AC
ACW54	50	Mellis Cct	Construct new 670m path	\$93,250	2023-2024	92AC
ACW56	50	Peaces Creek Road	Reconstruct /widen existing 535m path	\$96,300	2023-2024	9AC
ACW61	48	Coral St/ Ashland St	Construct new 80m path	\$10,800	2023-2024	237AC
ACW62	48	Parkland Dr	Footpath east side Cooke Ave to Bruxner Hwy	\$9,720	2023-2024	15 Previous PAMP
ACW62	37	Parkland Dr	Construct new 1159m path	\$109,700	2024-2025	127AC
ACW64	46	Tanamera Dr	Construct new 865m path, 10 kerb ramps & 2 centre medians	\$146,075	2024-2025	128AC
ACW65	45	Deegan Dr & Parklands Dr	Construct new 380m path	\$53,400	2024-2025	131AC
ACW69	43	Teven Rd	Construct new 546m path	\$101,780	2025-2026	6AC
ACW70	43	Whipps Ave/ Parkland Dr	Construct new 556m path	\$97,008	2025-2026	137AC
ACW74	40	Coral St	Construct new 110m path and a kerb ramp	\$15,850	2025-2026	113AC
ACW79	35	Ballina Rd	Construct new 198m path and 1 kerb ramp	\$59,830	2026-2027	135AC
ACW82	33	Gap Road	Construct new 1250m path and 2 x kerb ramps	\$259,800	2026-2027	10AC
ACW84	32	Greenie Dr	Construct new 230m path	\$31,050	2026-2027	130AC
TOTAL COST				\$1, 165 ,768		

PAMP Delivery Plan (by Study Area) – East Ballina

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
EBW6	71	Links Ave	Construct new 182m path	\$24,570	2018-2019	14EB
EBW11	69	Pine Ave, Short St,	Construct new 332m path, 4 ramps & 2 centre medians	\$73,960	2018-2019	5EB
EBW15	69	Suvla St, Shelly Beach Rd	Construct new 553m path, 4 ramps & 2 centre medians	\$113,740	2019-2020	5EB
EBW21	62	Eyles Dr, John Sharpe St & Links Ave	Construct new 610m path	\$109,800	2019-2020	193EB
EBW28	60	Grandview St	Construct new 320m path, 8 x ramps & 3 x medians	\$71,600	2020-2021	186EB
EBW29	60	Manly St	Construct new 50m path	\$21,000	2020-2021	172EB
EBW45	54	Jameson Ave	Construct new 662m path, 2 ramps & a median	\$97,170	2022-2023	16EB
EBW46	53	Chickiba Dr	Construct new 305m path & 2 kerb ramps	\$57,600	2022-2023	17 Previous PAMP
EBW50	52	Anderson St	Reconstruct existing ramp	\$1,000	2022-2023	71EB
EBW59	50	Shelly Beach Rd	Construct 2 x new kerb ramps	\$5,000	2023-2024	19EB
EBW60	48	Bonview St	Construct new 510m path, 10 x kerb ramps & centre median	\$83,950	2023-2024	111EB
EBW63	47	Eyles Dr	Reconstruct existing kerb ramp	\$1,000	2024-2025	74EB
EBW67	45	Northumberland Dr	Construct new 985m path and 5 kerb ramps	\$144,975	2024-2025	26EB
EBW83	33	Prospect St	Construct new 175m path and 2 kerb ramps	\$27,625	2026-2027	54EB
EBW85	31	Coast Rd	Construct new kerb ramp	\$1,000	2026-2027	38EB
TOTAL COST				\$833,990		

PAMP Delivery Plan (by Study Area) – Ballina Island

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
BCW1	77	Bentinck St	Construct new 2 x kerb ramps & a centre median refuge	\$5,000	2018-2019	267BC
BCW4	72	Crane St	Replace 1 existing ramps and construct new ramp & centre median refuge	\$5,000	2018-2019	103BC
BCW8	70	Moon & Tamar Sts	20m path, 1 X widen existing ramp & 1 x median	\$6,000	2018-2019	104BC
BCW8	63	Moon St	Replace existing ramp	\$3,000	2018-2019	105BC
BCW9	69	Angels Beach Drive	Replace existing ramp & widen centre median refuge	\$5,000	2018-2019	70BC
BCW10	69	Corner of Tamar St & Kerr St	Pedestrian fence needs to be painted to make more defined	\$3,000	2018-2019	4BC
BCW12	69	Crane St	Construct new 20m path, 2X kerb ramps and a centre median	\$11,000	2018-2019	119BC
BCW13	68	Bentinck St	Construct new 182 m path	\$24,570	2018-2019	117BC
BCW14	67	Bangalow Rd	Reconstruct new concrete median to increase the width of refuge area	\$3,000	2018-2019	58BC
BCW17	64	River St	Construct new 140m path	\$18,900	2019-2020	190BC
BCW19	63	Martin St	Modify centre median	\$3,000	2019-2020	34BC
BCW23	62	Kerr St	Construct new 20m path, median refuge and 2 kerb ramps	\$11,000	2020-2021	180BC
BCW24	61	Owen St	Construct 680m path, 2 ramps and centre median refuge	\$96,800	2020-2021	262BC
BCW25	61	Bagot St, Canal Rd	Construct new 1105m, 1 x ramp & 1 median	\$153,175	2020-2021	81BC
BCW30	60	Moon St	Replace 6 kerb ramps	\$12,000	2020-2021	72BC
BCW32	59	Kerr St	Reconstruct 20 kerb ramps along Kerr St	\$20,000	2021-2022	106BC
BCW34	58	Fox St	Construct new 385 m path and 3 centre medians	\$54,975	2021-2022	81BC
BCW35	58	Tamar St	Construct new 208m path	\$32,980	2021-2022	95BC
BCW37	57	Cawarra St	Construct new 240m path and kerb ramp	\$36,400	2021-2022	265BC
BCW39	56	Burnet St	Construct new 216m path and kerb ramp	\$30,160	2021-2022	65BC
BCW40	56	Owen St	Modify path	\$5,000	2021-2022	50BC
BCW40	53	Bentinck St	Construct new 30m path, 2 ramps and island refuge	\$17,000	2021-2022	50BC

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
BCW44	55	Martin St	Construct new path 455m and install 7 kerb ramps	\$74,690	2021-2022	260BC
BCW48	52	Canal Rd	Reconstruct /redirect 210m existing path	\$37,800	2022-2023	109BC
BCW52	50	Martin/Fox Sts	Construct new refuge	\$5,000	2022-2023	261BC
BCW57	50	Moon St	replace existing ramps	\$14,000	2023-2024	68BC
BCW68	43	Canal Rd	Construct new 520m path and a kerb ramp	\$71,200	2024-2025	196BC
BCW71	43	Jarrett St	Construct new 140m path	\$19,900	2025-2026	98BC
BCW75	40	Brunswick St	Reconstruct/widen existing path	\$42,525	2025-2026	43BC
			TOTAL COST	\$822,075		

PAMP Delivery Plan (by Study Area) – Ballina North

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
BNW3	72	Southern Cross Dr	Construct new 400m path, 3 x ramps & 2 x medians	\$63,100	2018-2019	238BN
BNW26	61	Tamarind Drive	Reconstruct 40m existing path	\$7,200	2020-2021	73BN
BNW33	58	North Ck Rd	Construct new ramp and refuge	\$10,000	2021-2022	99BN
			TOTAL COST	\$80,300		

PAMP Delivery Plan (by Study Area) – Ballina West

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
BWW2	77	River St	Construct new 123m path (incl. across roundabout entrance/ exit at Bunnings)	\$24,240	2018-2019	96BW
BWW5	72	Kalinga St	Construct new 570m path, 1 x ramp, 1 x centre refuge	\$106,600	2018-2019	39BW
BWW7	71	River St	Combine River St projects to affect 2 good crossings 30m path, 2 ramps & a centre refuge (incl. crossing at Keppel St)	\$11,500	2018-2019	46BW
BWW7	70	River St	Combine River St projects to affect 2 good crossings 30m path, 2 ramps & a centre refuge (incl. crossing at Keppel St)	\$17,000	2018-2019	47BW
BWW7	67	River St	Combine River St projects to affect 2 good crossings 30m path, 2 ramps & a centre refuge (incl. crossing at Keppel St)	\$14,000	2018-2019	274BW
BWW7	56	River St	Combine River St projects to affect 2 good crossings 30m path, 2 ramps & a centre refuge (incl. crossing at Keppel St)	\$15,500	2018-2019	45BW
BWW22	62	Barlows Road	Construct new path 555m on eastern side of road, 2 crossings on either end, River St end to connect with existing path.	\$105,300	2019-2020	27BW
BWW42	55	Westland Dr	Construct new kerb ramp	\$2,250	2021-2022	88BW
BWW53	50	Horizon Drive	Construct new 392m path & 4 kerb ramps	\$79,460	2023-2024	33BW
BWW55	50	Westland Dr	Construct new 396m path & 2 x kerb ramps	\$73,280	2023-2024	89BW
BWW80	35	River St	Construct new 530m path	\$71,550	2026-2027	277BW
TOTAL COST				\$520,680		

PAMP Delivery Plan (by Study Area) – Skennars Head

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
SHW41	56	Skennars Head Road	Construct new refuge and kerb ramp on southern side	\$15,700	2021-2022	86SH
			TOTAL COST	\$15,700		

PAMP Delivery Plan (by Study Area) – Lennox Head North

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
LHNW31	59	Greenwood Pl, Sunrise Cr	Construct 392m new path and 2 kerb ramps	\$57,720	2021-2022	12LHN
LHNW47	52	Banksia Ave	Construct new 245m path	\$33,075	2022-2023	56LHN
LHNW51	51	Stewart St	Construct new 442m Path	\$66,670	2022-2023	49LHN
LHNW66	45	Gibbon St	Construct new 167m path	\$23,945	2024-2025	37LHN
LHSW77	37	Greenfield Rd	Construct new 70m path, 3 x kerb ramps & centre median	\$16,199	2025-2026	21 Previous PAMP
			TOTAL COST	\$197,609		

PAMP Delivery Plan (by Study Area) – Lennox Head South

PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
LHSW49	52	Montwood Dr	Reconstruct new 48m path and a kerb ramp	\$10,480	2022-2023	60LHS
LHSW49	52	Montwood Dr	Reconstruct new 1085m path and a kerb ramp	\$185,875	2022-2023	3LHS
			TOTAL COST	\$196,355		

PAMP Delivery Plan (by Study Area) – Tintenbar/Newrybar

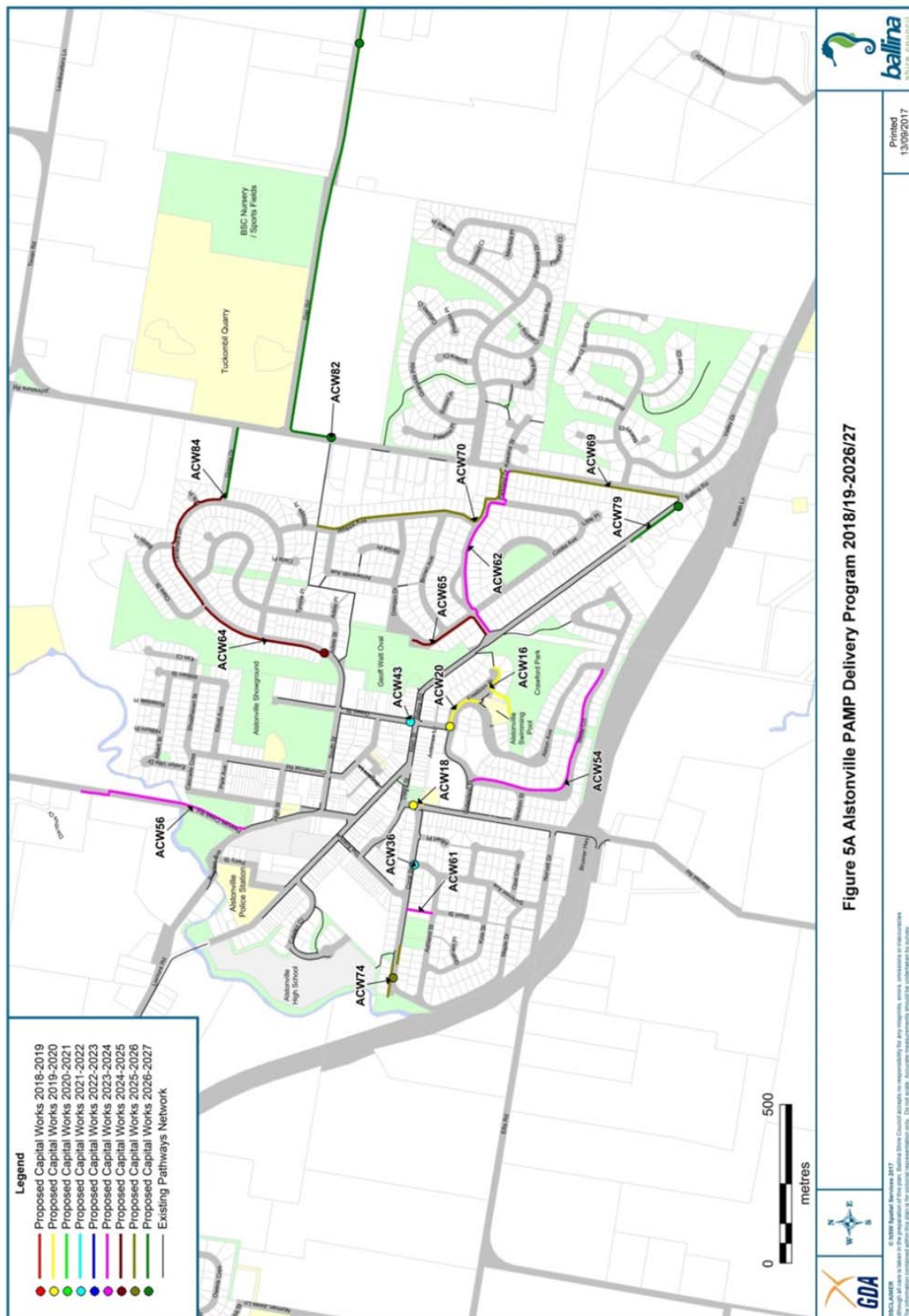
PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
NW27	60	Old Pacific Highway	Construct 450m of new path	\$64,200	2020-2021	17N
			TOTAL COST	\$64,200		

PAMP Delivery Plan (by Study Area) – Wardell

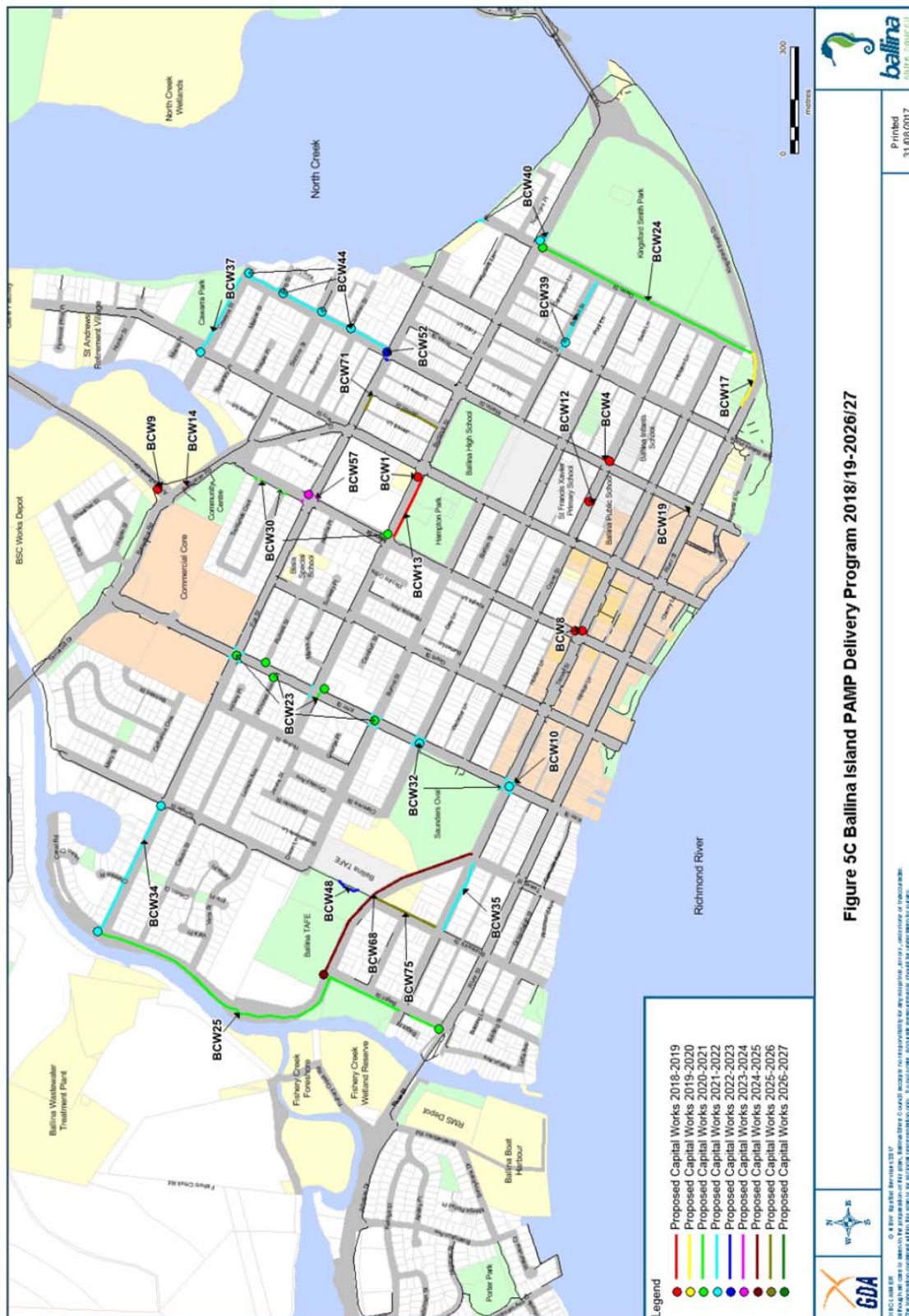
PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
WDW58	50	Cedar St	Construct new 310m path	\$43,950	2023-2024	248WD
WDW73	40	Carlisle St	Construct new 180m path	\$24,300	2025-2026	247WD
WDW76	37	Lindsay Cres & Pine St	Construct new 935m path and 4 x kerb ramps	\$133,725	2025-2026	252WD
WDW86	30	River Drive	Construct new 320m path	\$41,200	2026-2027	251WD
			TOTAL COST	\$243,175		

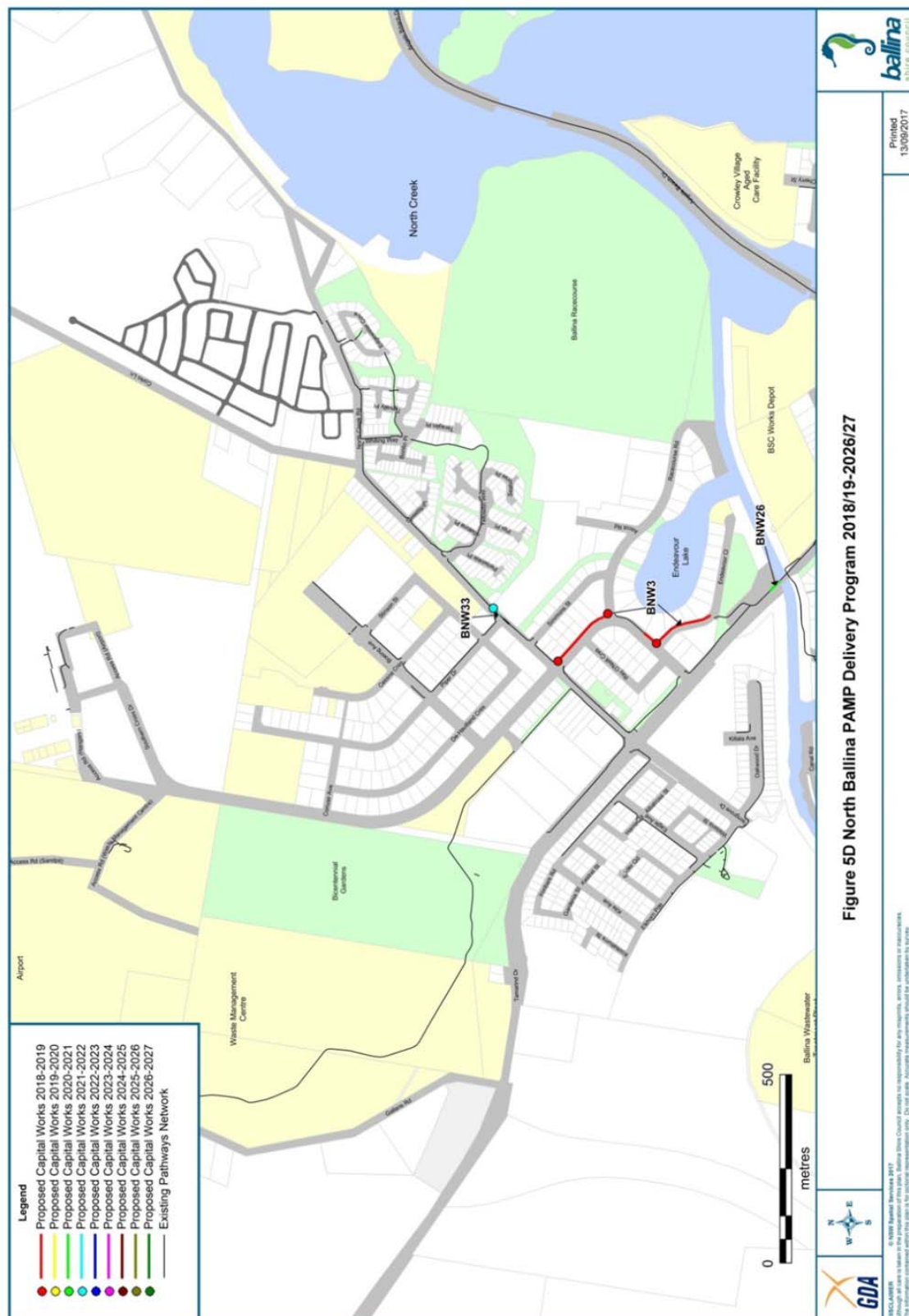
PAMP Delivery Plan (by Study Area) – Wollongbar

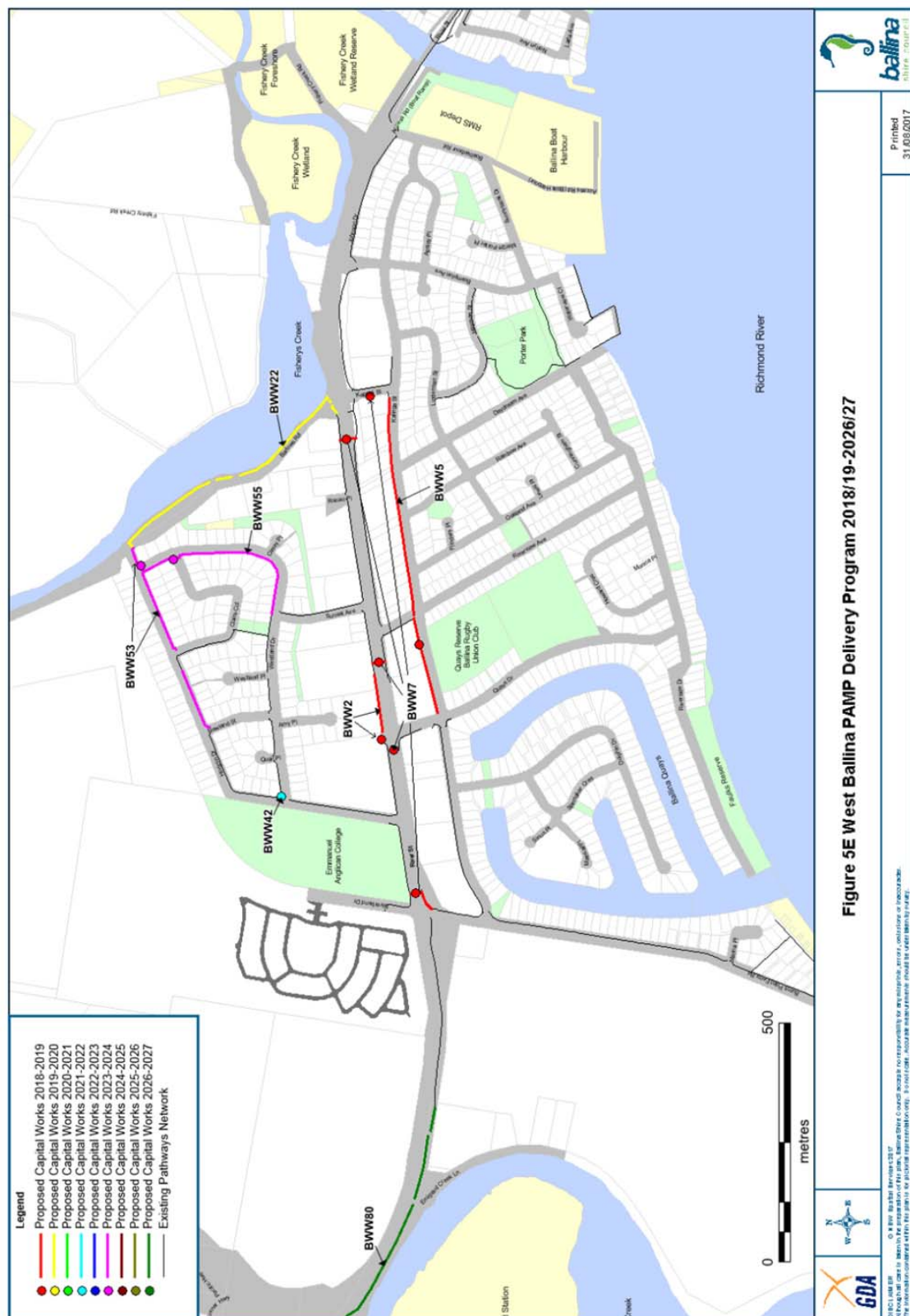
PAMP Works ID	Total Value	Road Name	Project	Total Cost Footpath Project	Budget Years	PAMP Submission ID
WBW38	57	Rifle Range Rd	Construct new 645m path and 4 kerb ramps	\$96,675	2021-2022	122WB
WBW72	40	Rubiton St	Construct new 295m path and a kerb ramp	\$40,825	2025-2026	228WB
WBW78	35	Queens Park Ct, Central Park Dr, Midway Ave	Construct new 482m and 6 kerb ramps	\$76,670	2025-2026	229WB
WBW81	35	Smith Ln	Construct new 320m path and 3 kerb ramps	\$52,000	2026-2027	5 Previous PAMP
			TOTAL COST	\$266,170		



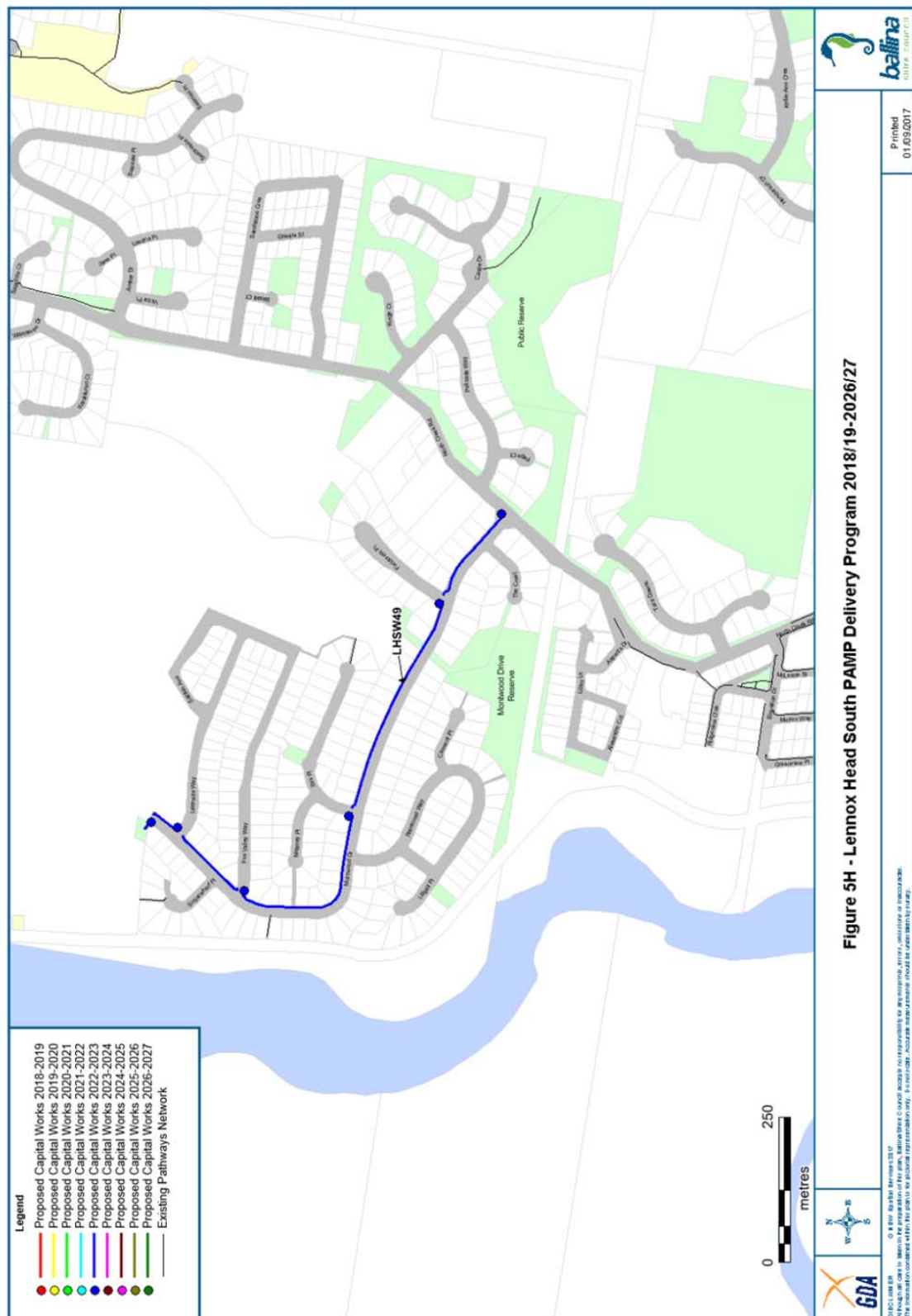




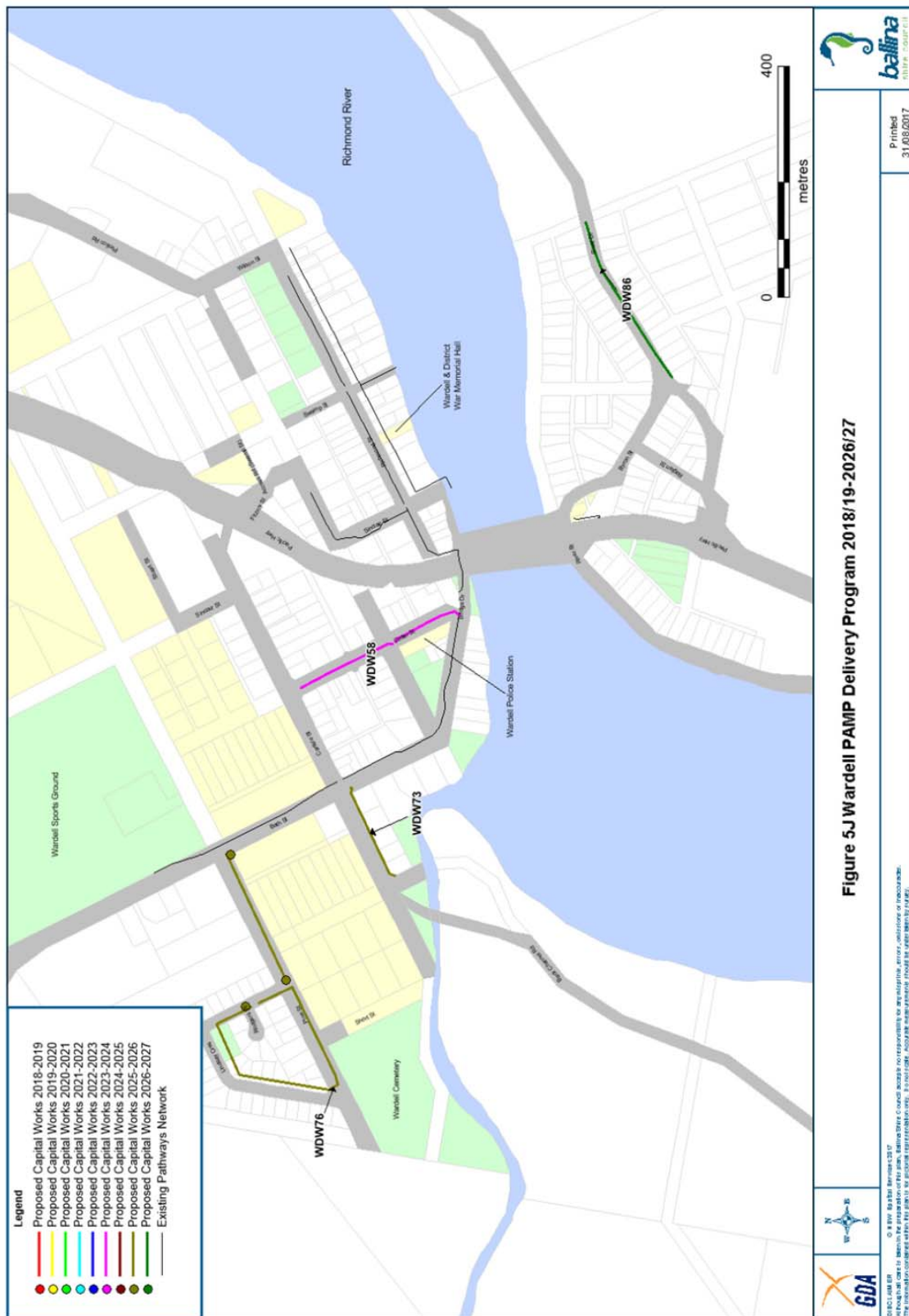














Monitoring Program

The following strategies are in place to monitor the implementation of the Ballina Shire PAMP:

- Periodic update of the PAMP
- A database for monitoring the progress of priority works and updating as items are completed
- Continuation of Council's Pathway Maintenance Program
- Regular review of RMS pedestrian and crash data as it becomes available
- Collection of data for monitoring the PAMP such as origin-destination data, pedestrian counts and user surveys
- Feedback from the community and
- SWOT analysis on PAMP methodology

Updating of the works program, pathway maintenance, review of crash and pedestrian data, and feedback from the community are ongoing and proactive measures integrated into Council's customer service.

Recommendation for Future Studies: SWOT Analysis of 2016/2017 PAMP Methodology

A SWOT analysis was undertaken of the 2016/2017 PAMP methodology. This is included below and can be used in the development and methodology design of the next PAMP (2020).

Table 9 - SWOT Analysis for Ballina Shire Council PAMP 2016/2017 Methodology

STRENGTHS and OPPORTUNITIES		WEAKNESSES and THREATS	
Strengths		Weaknesses	
<ul style="list-style-type: none"> Community and local government act as partners Delivery Plan is the key instrument for planning and implementation Delivery Plan completed from prioritising used to track work progress Delivery Plan is responsive Strong focus on linkages, access and mobility Developed in consideration of forward planning projects and works Consistency in assessment and prioritising of submissions through tasking of field audit to single staff member Evidence based approach to countermeasures Pedestrian treatments selected in accordance with RMS guidelines Reliable costings due to itemization, per unit costings, based on existing, current or similar work Displays strong local knowledge On-foot field audit allows for correction of RMS weighting system where it does not allow for ranking of location of generators (e.g. aged care facilities at critical locations vs those at less critical locations) Good community consultation and opportunities, including identified vulnerable groups Qualitative data are descriptive and rich in detail Findings emergent and exploratory Methodology accommodates multiple perspectives and knowledge Requests for pedestrian treatments received between PAMPs can be assessed and prioritised using established PAMP criteria to determine scope and nature of issue 		<ul style="list-style-type: none"> Low community response to public consultation from Ballina Heights and Teven/ Tintenbar Limited response from Aboriginal community sectors Pedestrian crash data does not elicit causation (e.g. driver/ pedestrian behaviour as opposed to infrastructure design) Audit process undertaken by single staff member can be lengthy Element of interpretation where electronic submissions found to be unclear during field audit RMS guidelines for pedestrian treatments quantitatively focused (e.g. warrants for pedestrian crossings) and limits consideration of special facility user groups RMS weighted criteria scoring system does not include presence of existing footpaths on opposite side of street and must be corrected during on-foot field audit 	
Opportunities		Threats	
<ul style="list-style-type: none"> Ongoing access and road safety audits conducted by Council Strong Council and community commitment to safety and accessibility Other planning instruments within Council working outside the PAMP priority Assessment and prioritising criteria allows for equitable review of emerging proposals Some opportunities for funding outside annual budget for capital works 		<ul style="list-style-type: none"> Possible changes to funding for implementation 	

Appendix A - Planning Context of the PAMP

Local Strategic Planning

Our Community...Our Future, 2012 Ballina Shire Council, Community Strategic Plan 2013-2023

The Community Strategic Plan outlines the main priorities and aspirations for future of the Shire. The Plan has four key collective objectives are: Connected Community, Prosperous Economy, Healthy Environment, and Engaged Leadership.

The 'Connected Community' objective is relevant to the PAMP and aims for the following outcomes: We feel safe; We feel connected to the community; There are services, facilities and transport.

Ballina Major Regional Centre Strategy 2015-2035

The Ballina Major Regional Centre Strategy is a long term strategic planning framework that identifies key planning issues for the Shire for the next 20 years.

The following Strategic Actions are relevant to the PAMP:

- Open Space & Healthy Living
 - A1.4 Extend the shared pathway network
 - A1.5 Embellish the shared pathway network
- Character, Culture & Amenity
 - C1.4 Encourage activity by people with impaired mobility through appropriate accessible infrastructure

Road Safety Strategy 2014/15-2023/24, 2013, Ballina Shire Council

Road Safety Strategy outlines Council's commitment to reducing road trauma over ten years. The Strategy focuses on the application of Safe System principles and delivering best practice interventions to reduce road trauma.

The priority of Safer Roads and Roadsides (SRR) includes improving the safety of vulnerable road users (SSR3). 'Delivery and monitoring of the PAMP' is an identified action (SRR3.3) to achieve this priority.

Ballina Shire Bike Plan 2017, Ballina Shire Council

The Ballina Shire Bike Plan is the primary strategic document that outlines Council's direction and framework to establish a bicycle friendly environment within the Shire over the next ten years. Shared paths identified within the Plan are for cyclists and pedestrians, and contribute to the pedestrian network within Ballina Shire.

Active Ageing Strategy, 2015, Ballina Shire Council

The Active Ageing Strategy acknowledges that, compared to NSW, Ballina Shire has a higher proportion of people needing assistance with core activities. Ballina also has a larger percentage of people 55 years to 85 years old. This number is also increasing. The Strategy states that good physical access is important for older and less mobile people. Public facilities and infrastructure are, therefore, critical in facilitating active lifestyles and social interactions. Footpaths and pathways must be able to accommodate increased usage by people with mobility aids. Signage and infrastructure, such as seating, tables, and bus shelters, can support active ageing.

Disability Inclusion Action Plan 2017-2021, 2017, Ballina Shire Council

In 2011, 5.8% (2274 people) of the Ballina Shire population needed help in their day to day lives due to disability. Action 2.3 of the Plan commits to the construction and repair of a network of Continuous Accessible Paths of Travel, towards the objective of universal access.

Delivery Program and Operational Plan 2017/2018, 2017, Ballina Shire Council

The combined Delivery Program and Operational Plan supports the Community Strategic Plan. The Program and Plan identify Strategies and Actions to implement the Community Strategic Plan, and includes an outline of capital expenditure on specific footpath and shared paths for forward financial planning. The Delivery Program and Operational Plan is monitored through performance indicators, and is subject to annual review.

Resourcing Strategy 2017/18, 2017, Ballina Shire Council

The Resource Strategy details long term funding commitments and resourcing, and has three components: Long Term Financial Planning, Workforce Management Planning, and Asset Management Planning.

The Asset Management Planning includes Asset Management Policy, Asset Management Strategy (2013) and Asset Management Plans. These documents define the way Council manages its assets. The type and condition of road and transport assets and the manner and frequency in which they are maintained will have a direct impact on achieving further road safety gains into the future.

Council plans, structure plans, masterplans, policies and strategies

Other Council planning documents influence the PAMP, including Development Control Plans, Ballina Shire Growth Management Strategy (2012), CBD Concept Masterplan and various precinct masterplans, structure plans and land use plans (e.g. West Ballina Structure Plan and Lennox Head Structure Plan), policies such as the Footpath and Cycleway Inspection, Evaluation and Maintenance Policy and road maintenance procedures.

State Plans

NSW Making It Happen, NSW Government

The Premier has identified 30 priorities for NSW. The Safe Communities priority aims to reduce road fatalities by 30% by 2021 through funding to roads and road safety.

NSW Long Term Transport Master Plan, Transport for NSW

This plan identifies solutions and actions that integrate, modernise and manage the transport system in NSW over the next 20 years, bringing together all modes of transport, and connecting communities across all regions of the State.

NSW Road Safety Strategy 2012-2021, Transport for NSW

This strategy aims to reduce the NSW road toll by 30 per cent by 2020.

Pedestrian Safety Action Plan 2014-2016, Transport for NSW

To achieve the NSW Road Safety Strategy, Transport for NSW identified the need for the development of a specific action plan to address pedestrian safety. It outlines actions addressing speed, road condition, vehicles, and safer people to improve pedestrian safety.

NSW Aboriginal Road Safety Action Plan 2014-2017, Transport for NSW

The Action Plan recognises that Aboriginal people are over-represented in road trauma in NSW, and experience transport disadvantage. With regard to the latter, many Aboriginal people and communities lack access to travel options, which can lead to unsafe transport decisions such as walking on highways. The Plan supports targeted road safety improvements to make the roads in and around Aboriginal communities safer, including upgrading footpaths, pedestrian facilities and street lighting.

NSW Cycling Safety Action Plan 2014-2016, Transport for NSW

The NSW Bike Plan outlines how the NSW Government will work in partnership with local councils, communities and businesses to develop bicycle riding and ensure safer cycling over ten years.

North Coast Regional Plan 2036 2017, Department of Planning and Environment

The North Coast Regional Plan 2036 will guide the NSW Government's land use planning priorities and decisions to 2036. It will also be required to be considered when councils prepare planning proposals and local growth management strategies.

The Plan outlines priorities for Ballina Shire Council that are relevant to the PAMP. This includes Goal 3: Vibrant and engaged communities; Direction 15: Develop healthy, safe, socially engaged and well-connected communities.

The Plan specifically identifies the role of PAMPs in mapping and prioritising pedestrian (and cycling) networks. It acknowledges that the North Coast has an extensive and expanding pedestrian and cycling network focused on centres and access to waterways.

The design of the network needs to consider equal access, shade, landscaping, seating, water bubblers, rest points, signage, changes in surface treatments and facilities.

Transport for NSW, in partnership with councils, has created a number of programs to increase opportunities for people to be more active and healthier. These programs focus on:

- Prioritising infrastructure improvements for two-kilometre footpaths and five-kilometre cycling/ walking tracks that lead to town centres, as well as improving access to transport interchanges, and
- Using information and events to promote walking as a form of transport.

The Plan also indicates that beyond supporting communities, well-designed pedestrian should also be pursued to value-add and support the tourism industry by linking tourism areas, or to capitalise on emerging tourism opportunities.

Northern Rivers Regional Transport Plan (Regional Strategy of Long Term Transport Master Plan) 2013, Transport for NSW

This plan supports the NSW Long Term Master Plan and outlines specific actions to address the unique challenges of the Northern Rivers Region, including provision for walking and cycling.

NSW Ageing Strategy 2016-2020, NSW Government

The NSW Ageing Strategy reports that people over 65 years of age are the fastest growing population group in NSW. A priority issue for older people in NSW is being able to get around on a daily basis for as long as possible. It is estimated that 2 million community transport trips are provided each year to help older people access recreational, shopping, medical care, community services and social activities in NSW.

The Strategy also recognises that older pedestrians are overrepresented in pedestrian crashes in NSW.

National Plans

National Road Safety Strategy 2011-2020, Australian Transport Council (ATC)

The strategy is based on Safe System principles. The strategy presents a ten year plan to reduce the annual numbers of both deaths and serious injuries on Australian roads by at least 30 per cent.

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