



## Bicycle Plan

2015

Grafton  
South Grafton  
Yamba  
Maclean  
Iluka  
Woombah  
Ulmarra  
Lawrence

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## SUMMARY

Clarence Valley Council is committed to providing long term planning for pedestrian and cycling access and mobility. This is with the aim of promoting walking and cycling as sustainable modes of active transport for short trip destinations and thus also contributing to improving equity, health and the environment within the community.

The development of the Pedestrian Access and Mobility Plan and Bicycle Plan, and the subsequent construction of infrastructure, aim to meet the following contained within Council's "Our Community Plan":

Objective 2.2 - We will have town streets, footpaths and cycleways that are adequate, interconnected and maintained

Strategy 2.2.3 - Facilitate the enhancement and expansion of accessible walking and cycling networks where strategically identified and interconnect them with other transport and recreation

In 2008 Clarence Valley Council engaged QED Pty Ltd to prepare an initial Bike Plan and Pedestrian Access and Mobility Plan (PAMP) for the towns of Grafton, South Grafton, Yamba and Maclean in the Clarence Valley Council area.

In 2011 Clarence Valley Council prepared a second Bike Plan and Pedestrian Access and Mobility Plan (PAMP) for the towns of Iluka, Woombah, Lawrence, and Ulmarra.

In 2015, Council has reviewed these documents, with the view of improving their readability and relevance. Hence, the Bike Plan has been separated from the Pedestrian Access and Mobility Plan (PAMP), creating two stand alone documents:

- Clarence Valley Council Bicycle Plan
- Clarence Valley Council Pedestrian Access and Mobility Plan

Initially both documents include the following places within the Clarence Valley Council Area:

- Grafton
- South Grafton
- Yamba
- Maclean
- Iluka
- Woombah
- Ulmarra
- Lawrence

These documents are intended to be reviewed and updated regularly. Additionally there is scope to expand both documents to include other areas, for example Wooli, Brooms Head, Angourie, Coutts Crossing, Harwood, Junction Hill etc.

The Bike Plan is a comprehensive strategic approach to identifying cycling networks throughout the Council region. The Bike Plan will reflect the changes in the context for walking and cycling and lead to a consistent approach to these modes throughout the Council area. The towns included in the study area are not only the more populated towns in the area, but are also local centres attracting people from less populated regions and, in the cases of Yamba, Wooli, and Brooms Head in particular, significant numbers of tourists. The areas are well suited to increased walking and cycling due to their relatively moderate topography and clement climate.

It is envisaged that the principles, guidelines and criteria established through the Bike Plan will be applicable across the entire Council area and that both Plans will become guiding documents suitable for Council and developers.

These principles include (in no particular order):

- Providing the highest quality cycling facilities in the most-used areas, to create usable cycling networks
- Allow the bike and pedestrian networks to complement each other (both existing and planned)
- Separating walking from cycling where high pedestrian levels would lead to conflict with cyclists, providing shared (pedestrian / bicycle) use facilities where appropriate, but also recognising that children under the age of 12 are legally allowed to cycle on footpaths
- Reduce the number of bike and pedestrian accidents including trips, motor vehicles, bicycles and other wheeled forms of transport
- Providing on-street cycle lanes where appropriate. On-street lanes are a cost- effective type of facility with good safety performance, enabling a more extensive network to be provided with limited funds than achievable with the widespread use of off-road paths
- Identifying performance criteria for different types of routes, with different roles. Applying these to all works in the future will enable high quality facilities to develop over time, in addition to the works identified for funding in this Bike Plan and PAMP.
- Balancing the different usage patterns and needs for cycling routes, by identifying different types of routes e.g. those used for commuting or accessing shops, compared to those used for exercise and recreation.
- Reduce the number of missing links and severance within the bike network
- Improve connectivity with other transport modes primarily bus, car and train
- Link with Safer Routes to Schools projects
- Meet obligations under the Commonwealth Disability Discrimination Act (1996) and Disability Standards for Accessible Public Transport

## INTRODUCTION

Together with the Roads and Maritime Services of New South Wales (RMS), all local councils in NSW have a responsibility to provide safe, convenient and connected pedestrian and cycling routes, which will encourage people to use active transport modes, rather than use their cars.

There is a need for Council to reconcile the different levels of walking and cycling provision in its area and to adopt a standard approach to providing new facilities. In developing its approach to new facilities the PAMP must cater for current and future demands and needs of the community. This is achieved in part by identifying routes in terms of a route hierarchy. The PAMP uses a weighting system to prioritise routes and facilities.

It is intended that the approach contained in the Bike Plan will also be applicable to other towns and villages in the council area. Also relevant is the NSW Coastline Cycleway project. A map of the local government area, and routes for the NSW Coastline Cycleway, are shown below.

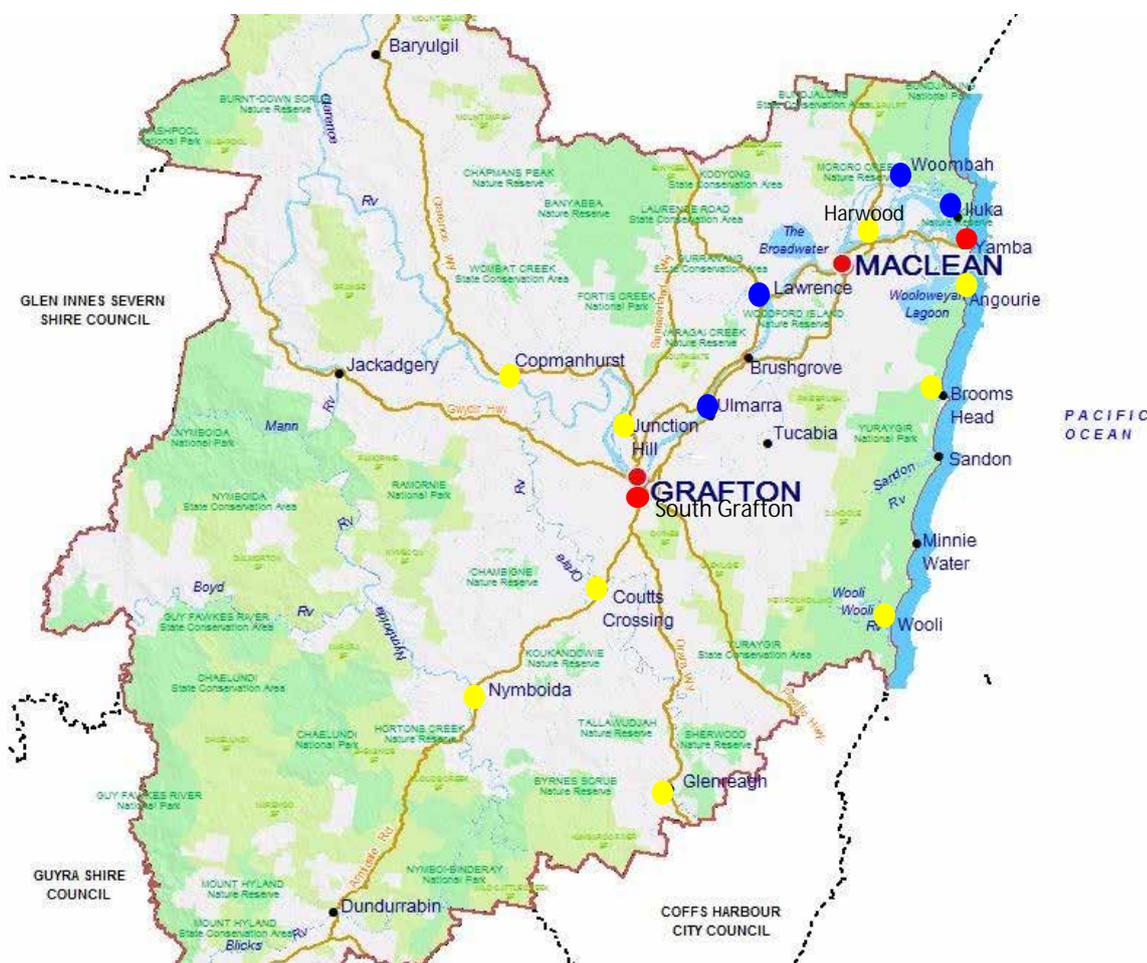


Figure 1. Clarence Valley Council area.

## THE COASTLINE CYCLEWAY

The Coastline Cycleway project aims to create a continuous cycling route along the NSW coast from the Queensland border to the Victorian border. In so doing, it also aims to provide for local cycling along the route. This project is managed through the Department of Planning, with grant funding made available to relevant coastal councils annually and on a dollar-for-dollar basis. At present, there is no publicly available map of the Coastline Cycleway route. This is due to the potential that cyclists might attempt to cycle the route and encounter unexpected conditions where

sections have not yet been created. In some locations, the envisaged route is also impassable, although alternative cycling routes arguably exist.

COASTLINE CYCLEWAY ROUTE

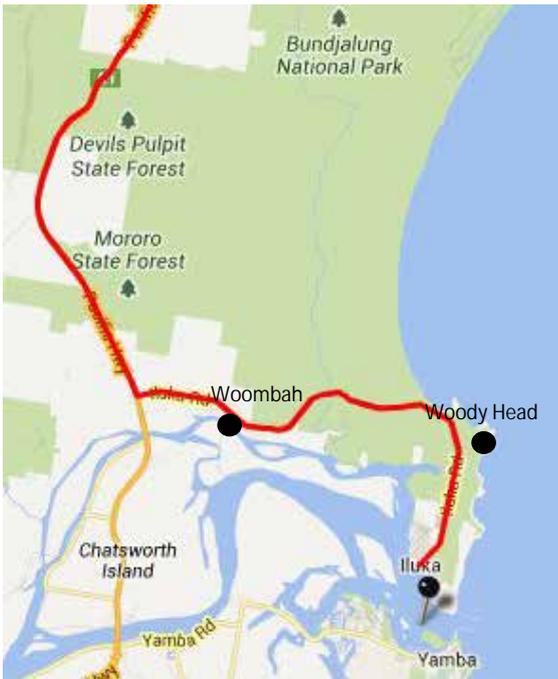


Figure 2. Evans Head to Iluka



Figure 3. Tynedale to Woolli

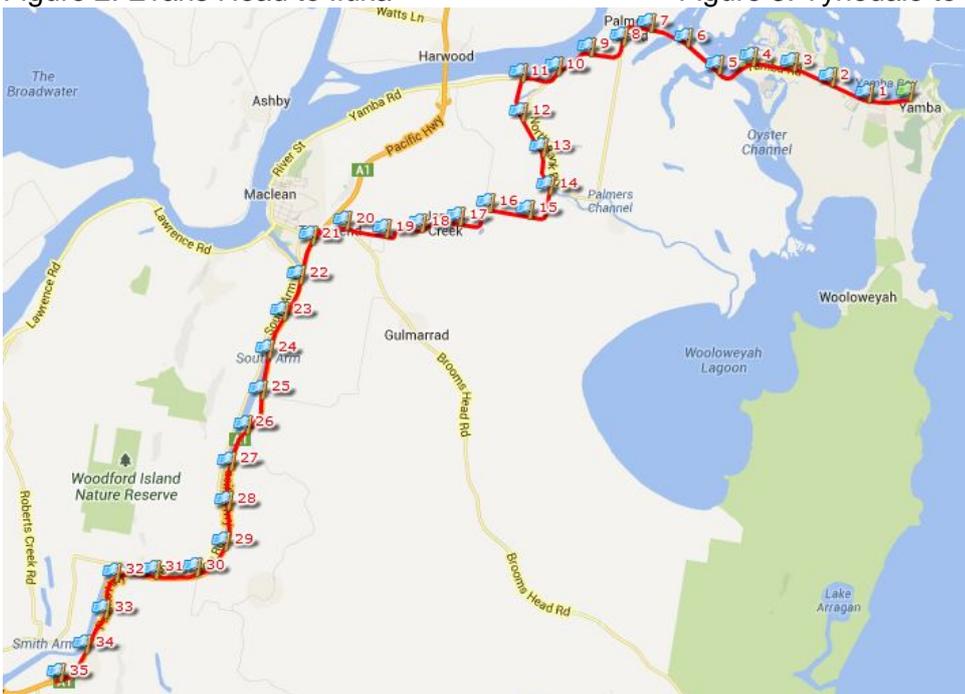


Figure 4. Yamba to Tynedale

This Plan has been developed in accordance with the following guidelines outlined by the RMS and the relevant state and national policy and design guidelines.

- RMS NSW How to Prepare a Bike Plan – an easy three stage guide
- RTA NSW How to Prepare a Pedestrian Access and Mobility Plan – an easy three stage guide
- RTA NSW Bicycle Guidelines
- Planning Guidelines for Walking and Cycling – December 2004, NSW Government
- Action for Bikes – Bike Plan 2010, NSW
- Austroads Part 6A Pedestrians and Cyclist Paths

It should also be kept in mind that providing infrastructure or providing programs and services aimed at improving accessibility and achieving mobility are not goals in themselves, although they can be indicators of how well access and mobility is being provided. Instead, Council's intent is to support and enhance people's lifestyles and quality of life. Above and beyond basic concepts of accessibility and mobility and duty of care, risk management and the like, which are associated with the provision of infrastructure in particular, is another concept: - that in providing for accessibility and mobility, independent access for the community can be achieved. This includes for children, people with disabilities, the frail elderly, people pushing strollers or carrying loads, teenagers, and other members of the community going about their daily activities. The concept of independent access relates to transport as a social good rather than as a demand derived from other activities, and is an aspirational goal for Clarence Valley Council. This Bike Plan aims to assist the Council in delivering this to its constituency.

## **BACKGROUND**

### **THE CLARENCE VALLEY AREA**

The Clarence Valley Council area is located in the Northern Rivers region of New South Wales, about 600 kilometres north of Sydney and 300 kilometres south of Brisbane. The Council area is bounded by the Kyogle and Richmond Valley Council areas in the north, the Pacific Ocean in the east, Armidale-Dumaresq, Coffs Harbour City and Bellingen Shire in the south and Glen Innes Severn Council area, Guyra Shire and Tenterfield Shire in the west. The area is serviced by the Pacific Highway and the North Coast railway with a station at Grafton.

Clarence Valley Council covers a total land area of 10,440 square kilometres, of which a significant proportion is National Park, State Forest and nature reserves, including beaches, rainforests, mountains and rivers.

The area has a diverse population of approximately 52,000 people living in 44 towns, villages and city environs, and like many coastal areas Clarence Valley has experienced growth in both its resident and tourist populations and has an increasing ageing population.

The Clarence Valley is part of the vibrant Northern Rivers region of NSW. The Northern Rivers has become Australia's premier lifestyle region. The region's appeal and success is a result of its natural beauty, relaxed country charm, service delivery and business innovation. CVC now represents an estimated 50% of the landmass of the northern rivers region.

Much of the rural area is used for forestry, agriculture and grazing, including beef cattle and sugarcane growing. Fishing is also an important industry. In more recent years tourism has become a major industry, especially along the coast.

The climate is largely warm ranging from subtropical on the coast to temperate on the tablelands, with an annual rainfall of up to 1500mm in some centres. The Clarence Council area encompasses a diverse set of environmental features, cultures, traditions, communities and industries. This diversity represents a significant opportunity now and in the future for Council, the community and commercial enterprise.

The Clarence River is the area's most significant natural feature. The river system is the east coast's largest waterway and drains close to 23,000 square kilometres of land. Its catchment area extends approximately 380 kilometres from Iluka and Yamba to the Queensland border districts; and to the edge of Great Dividing Range and deep into the Dorrigo Plateau. More than 100 islands form part of the Clarence River system.

## GRAFTON

Grafton is a regional town renowned for its jacaranda trees, graceful old buildings, wide streets, sporting and cultural facilities, and its location on the banks of the Clarence River. It is the thriving commercial hub of the Clarence Valley. At the 2011 census Grafton had a population of 10038.

The Clarence River is a dominant feature in Grafton's landscape and lifestyle. Many of Grafton's buildings have been classified by the National Trust, including the Christ Church Cathedral, the Grafton Gaol, and some fine historic homes.

Grafton has wide road reserves laid out on a very regular grid pattern, with streets spaced to produce 200m by 200m blocks. The grid runs at about 45 degrees to a north-south orientation and is reinforced by mature street plantings along one or both sides of most streets. The grid extends from the Clarence River to North Street.

Although the road reserves are wide, the streets themselves are less so, with the remaining road reserve forming angled parking and/ or wide setbacks to the property boundaries. This also provides the verge width for street trees. Minor laneways provide additional connectivity in a number of locations.

This grid pattern is interrupted to the north-west by the racecourse and golf course and to a lesser extent closer to the CBD, in the area occupied by the showground, tennis courts, skate park, Ellem Oval, Fisher Park and the synthetic hockey fields.

The other major interruption to the grid pattern is caused by the Clarence River, which is bridged by the Grafton Bridge. This has a unique two storey construction with the railway and pedestrian paths running underneath the road and links Grafton with South Grafton. Along the river edge, Grafton's street grid tends to be augmented by additional streets and laneways, and has smaller block sizes as a result.

While the railway line runs along the north-eastern side of the CBD, this rarely severs connections at road level, as the line is elevated.

From North Street, there are only three major routes providing longer-distance connectivity: Great Marlow Road / Back Lane, Summerland Way, and Queen Street / Lawrence Road.

The main commercial district (CBD) extends from Pound Street to the waterfront and from Queen Street to Clarence Street, extending another two blocks along Prince Street, to Oliver Street. Hotels and small shops are dispersed about the rest of Grafton, but generally in isolation rather than in sufficient concentration to form mainstreet areas.

The schools are located about an axis aligned mid-way between a north-south alignment and the 45 degree grid alignment. This does not appear to be an intentional alignment, and partly reflects the way in which schools occupy blocks.

There is a school located at the southern end of this alignment – Clarence Valley Anglican School – fronting Victoria Street and abutting the Clarence River, close to the CBD. The Grafton TAFE is located about a block to the north-east.

The two largest schools are located on the opposite side of the CBD. Grafton Public School is located about a block to the north-west of the CBD, and Grafton High School in the block diagonally opposite and to the north-west of Grafton Public School.

Westlawn Public School is located between North Street, Hoof Street, Cranworth Street and Cassia Street, a block distant from the racecourse and golf course. There is also an infants school about two blocks to the south-east of Westlawn Public School. St Mary's Primary School is also located near the racecourse in Turf Street.

There are numerous parks in Grafton. The skate park, at Oliver Street/ Prince Street, is well used by skaters and children on bicycles.

The area occupied by the racecourse and golf course (and greyhound club) is the largest open space in the town. Although accessible from adjoining streets, there are no pathways across this area.

The Grafton Hospital is located on the block between Arthur, Crown, Mary and Queen Streets, about a block away from North Street and to the west of the CBD.

There is no signalised traffic control for traffic or pedestrians in Grafton. The most common traffic engineering device apart from give way and stop controls is the roundabout, which varies in scale from small one-lane roundabouts to large two-lane roundabouts.

Generally, with a well-connected grid, traffic volumes on most streets are relatively moderate (i.e. below 3,000 vehicles a day) as there are numerous alternative routes from most origins to destinations.

Most streets have only one lane of traffic in each direction, with some having turning lanes at T-junctions or four-way intersections. Exceptions are on the approaches to roundabouts and some intersections, and more generally along:

- Craig Street, Clarence Street to Villiers Street
- Fitzroy Street, Villiers Street to Prince Street
- Prince Street, south of Dobie Street
- Villiers Street, Fitzroy to Pound Street.

Grafton is basically flat, except close to the river on the south side of the town, where the river bank drops off dramatically. This is due in part to the construction of levees along the river bank to protect the town against flooding.

The Grafton Bridge forms a local topographical feature, being a railway bridge on the lower deck and road bridge on the higher deck. Pathways are provided either side of the railway bridge, which are accessed from Grafton via ramps up to path level. These are quite steep and would not meet disability standards. There is no pathway on the higher level.

Maclean is 45 km and Yamba 75 km north east of Grafton.

## **SOUTH GRAFTON**

At the 2011 census South Grafton had a population of 6193.

The street pattern of South Grafton is basically radial, centred on the Bent Street/ Charles Street/ Ryan Street intersection. The radials are mainly major traffic routes, collecting traffic as they approach the town centre. The Pacific Highway forms two radial routes, one north-easterly and one south-easterly. These meet at Charles Street, just east of the main intersection.

Each of these radials provides a route to an onward destination. The Gwydir Highway leads to Waterview Heights, Copmanhurst, Jackadgery, and Washpool and Gibraltar Range National Parks. (It also leads to Glen Innes and is significant for the annual Grafton / Inverell Road Cycle Race.) The Pacific Highway continues in the north-easterly direction to Ulmarra, Maclean, Yamba and ultimately Brisbane, and in the south-easterly direction to Clarence Valley Regional Airport and Coffs Harbour. Armidale Road leads to Coutts Crossing, Nymboida and Armidale. Link roads (Orara Way) from the Armidale Road lead to Glenreagh and Coffs Harbour. Rushforth Road also leads to Coutts Crossing, as a 'back road' alternative to Armidale Road. Bent Street connects to Grafton via the Grafton Bridge.

Just south of the main intersection, Bent Street joins Ryan Street at a T-junction and forms a supplementary radial to the local area. As an east-west route connecting the Armidale Road, Skinner Street and Bent Street radials, Tyson Street is also locally important. Cambridge Street performs the same function closer to the main intersection but seems less busy, possibly due to the fewer land uses along it. Vere Street similarly links these radials, but at a distance of only one block from the main intersection and with an alignment parallel to the Gwydir Highway. Unlike Cambridge or Tyson Streets, Vere Street does not continue east of Armidale Road.

The remaining street system has a grid base from the Clarence River south to Tyson Street, after which the local street system follows more of a cul-de-sac pattern. At least one area, around Bimble Avenue, is a Radburn style development. (This is a development style that originated in the USA, which features houses fronting onto a pedestrian pathway through public open space, with no vehicular access through the open space or to the house frontages. Vehicular access occurs at the rear.)

Further development on the east side of South Grafton is not close to the township but more of a parallel development area. This is Clarenza and is based around Centenary Drive, which is a north-south running road that links the two legs of the Pacific Highway. Centenary Drive is crossed by Duncans Lane / Washpool Road, which provides additional connectivity to the Pacific Highway. There are no other road connections between Clarenza and South Grafton. The highest density development in Clarenza is at Merton Mews, which has a limited cul-de-sac form. Further developments have been approved in this area.

Clarence Valley Regional Airport is located to the south east of South Grafton. Rex Airlines has flights directly accessing the Clarence Valley.

The traditional commercial centre of South Grafton is centred along Skinner Street, north of its intersection with Ryan Street/ the Gwydir Highway. This is essentially a main street area over the two blocks of Skinner Street and spilling over to the east for a block along Through Street and Spring Street. A Masterplan for Skinner Street has been prepared and its implementation has commenced.

A supermarket and shopping centre are located in the block bounded by Bent Street north of the main intersection, Ryan Street west of the main intersection, and Spring and Bligh Streets. Further development has occurred on the eastern side of Bent Street, extending a further block north to the rail station. This is bounded to the east by the railway line, which rises from ground level at the station to an elevated line as elsewhere, with more commercial development on the western side

around Iolanthe Street and the Pacific Highway. Further development has occurred to the east of Bent Street and Iolanthe Street, with the provision of fast food outlets and other retail businesses.

Industrial estates are located about 1.5km south of the main intersection, between Armidale Road and the Pacific Highway and bounded by the railway line, which runs between these roads.

There is also a small group of shops on the eastern side of Armidale Road, between Cambridge Street and Norrie Street.

West of Skinner Street, Through Street runs along the Clarence River, but views over the river are prevented by a levee wall. A narrow pedestrian walkway is provided on this.

The schools are not clustered or located close to the main commercial areas. Instead, most are located at a considerable distance from the centre of the township. In particular, Catherine McAuley College, St Andrews Christian Community School and Clarence Valley Anglican School (formerly Cathedral High School) are located in Clarenza.

Silver Jubilee Park occupies the south-eastern corner of the main intersection and houses the bus interchange near its southern edge.

Other parks are located mainly on the western side of Armidale Road, and most west of Bent Street.

As with Grafton, there is no signalised traffic control for traffic or pedestrians in South Grafton. Roundabouts are less prevalent in South Grafton than Grafton.

Most streets have only one lane of traffic in each direction, with some having turning lanes at T-junctions or four-way intersections. The main exception is Bent Street, between the main intersection and the Grafton Bridge. Lengths of turn lanes are provided at the Pacific Highway and Charles Street, near the intersection of these streets and Iolanthe Street. The south-eastern leg of the Pacific Highway becomes two lanes south-east bound at a point past Tyson Street, and has turn lanes on the approach to Centenary Drive and Tyson Street.

At Bent Street, Spring Street is left turn only from both east and west sides, with turns prevented by a central median. Vehicles heading to Grafton from Spring Street east of Bent Street instead use Crisp Avenue and Through Street to turn right at the Through Street/ Bent Street intersection. At the eastern Through Street approach to Bent Street, left turns are limited from 8:00am to 9:00am.

Through Street is one way westbound from Skinner Street to Cowan Street and Cowan Street is one way to Spring Street.

Speed limits within the township are generally 50km/h for local streets, and 60km/h for the major arterial roads. The Pacific Highway changes from a speed limit of 60km/h within the township to 80km/h east of its nominal intersection with Through Street, roughly in line with the rear of the Bunnings site.

Unlike Grafton, median islands at intersections are uncommon. Also unlike Grafton, the railway line forms a barrier in some locations.

The topography is defined by a mixture of floodplains and, south of Vere Street, a hill rising from Rushforth Street to a ridge along Bent Street.

At the Grafton Bridge, the bank of the Clarence River is higher than on the Grafton side. The railway line runs to the east of an embankment, with road access from Bent Street to the western area alongside the bridge descending from Bent Street. Access from this embankment descends further via Riverside Drive, to the general floodplain level. This becomes the level of the commercial area

located around Skinner Street and is essentially maintained west of Skinner Street / Rushforth Road, at least within the township. To protect against floods, a levee has been constructed along the Clarence River in this area.

Streets ascend from a floodplain level at Skinner Street to Bent Street, with most of the climb occurring close to Bent Street. This starts north of Ryan Street, but becomes more marked south of Vere Street, and is particularly obvious along Tyson Street and Roberts Drive.

Streets around Roberts Drive variously climb and undulate, with streets most directly linking Rushforth Road to Bent Street tending to have steep climbs while other streets curving around the local rise. Roberts Drive itself climbs steeply from Rushforth Road, while Bent Street undulates in this area.

The local rise drops back to floodplain level east of the railway line, but there are few streets in this area. Only Tyson Street crosses the railway line, to link the area west of the railway line with that east of the railway line.

## YAMBA

Yamba is the Clarence Valley's major growth area and principal coastal resort. It is situated at the mouth of the Clarence River on the southern side and is surrounded by Yuraygir National Park, the Clarence River, Pacific Ocean and rural land. Opposite, on the northern side of the river mouth is Iluka.

The Port of Yamba is one of five deep water ports in NSW and used for sea freight and recreational voyaging as well as the harbouring of the fishing fleets.

At the 2011 census Yamba had a population of 6087, however during the holiday season, this population more than doubles. Yamba was named as NSW's most popular sea change location in 2006.

Past a development area at its western end, Yamba Road is located close to and south of the Clarence River. The eastern edge of Yamba is provided by the sea and beaches along this.

The street pattern for Yamba is of Yamba Road forming a main arterial spine, with distributor roads as ribs leading off this. These ribs may be long distance connections to other areas, such as Angourie, or pockets of local development.

The arterial spine ends at the historic township of Yamba, which has a relatively dense grid network of streets aligned at roughly 45° to compass north. Blocks are about 105 metres in width, measured in the north-west / south-east direction, and 230 metres in length, measured in the north-east / south-west direction. There are three main north-west / south-east running streets:

- River Street forms the western edge of the main historic Yamba township
- Yamba Street runs down the centre of the main historic Yamba township
- Clarence Street forms the eastern edge of the historic Yamba township

In a north-east / south-west direction, streets are generally larger every two block widths, with minor streets in between these providing local access to houses. This pattern is somewhat interrupted by double-width blocks on the south-western side of Yamba Street, and the pattern ceases south of Church Street, where roads start to curve to reflect the alignment of Pippi Beach, which provides an edge to the historic township.

With a relatively self-contained historic township, further development has been on available land to the west. Areas to the south of Yamba Road have been nominated for further land release to cater for future development, including the West Yamba release area on Carrs Drive.

There are two main developed areas, being the historic Yamba township and a newer area at the western end of the study area, north of Yamba Road.

The main Yamba CBD is located in the historic township, at the north-western end. This roughly runs between Convent Lane and Harbour Street, and River Street and the eastern side of Yamba Street, with some development along Clarence Street. Extension of the CBD further east to join with Clarence Street is constrained by the topography at this point, which will be discussed later. The CBD is increasingly servicing the tourist market.

A major shopping centre is located on Treelands Drive, not far off Yamba Road. This appears to be acting as a catalyst for other services to locate in this area. A seniors village has been constructed nearby and is also proposed for Oyster Cove. Further development south of Yamba Road is likely to reinforce use of this secondary commercial area, which is becoming the main area for utility shopping for Yamba residents. The distance along Yamba Road from River Street to Treelands Drive is a little over 3km.

A privately operated non-vehicular ferry, located at the end of River Street, connects Yamba with Iluka, which is a smaller settlement that also has high visitation levels.

The eastern edge of Yamba is defined by a series of beaches, with Clarence Street and Pacific Parade providing the main vehicular access adjacent to these beaches. These streets run in a northwest/southeast direction and northeast/ southwest direction respectively, with two short street areas running off Clarence Street on the beach side, being Pilot Street at its mid to north-western end; and a short section of Queen Street plus a crescent formed by Ritz Street/ Ocean Street/ Point Street at its south-eastern end. Due to the topography, there is generally no development directly fronting the beach, that is, between the streets running along the beaches and the beaches themselves. The exceptions to this are Pilot Street and a small area of development on Ocean Street.

Clarence Street and Pacific Parade have been subject to significant residential development in recent years, including multi-storey units fronting the streets and a large single-storey residential area centred on River Street, between Pacific Parade and the golf course.

The two schools are relatively isolated from the main development areas.

- Yamba Primary School is located on the eastern side of Angourie Road, about 450 metres south of Yamba Road, with the rear of the site located across a stream from Mulgi Street – the western-most street connection to the historic Yamba township. (Mulgi Street becomes Coldstream Street past Claude Street.)
- St James Catholic School is located on Carrs Drive, about 650 metres east of Treelands Drive and 2km west of Angourie Road, on the northern side of the alignment for Miles Lane. There is no appreciable development nearby as yet, although this is planned.

The Yamba Sporting Complex / Stadium, including a heated indoor pool, and sporting fields is located on the western side of Angourie Road, about 300 metres south of Yamba Primary School.

There is one bicycle shop located in Yamba. Xtreme Cycle and Skate is located in the Yamba CBD.

A skate park has recently been constructed on the west side of River Street, near Yamba Oval. Ford Park hosts a monthly market.

Traffic conditions vary greatly with season, with visitor numbers greatly increasing the population during holiday periods. Nonetheless, given the basic road network, the main traffic flows are along Yamba Road, which becomes Wooli Street in the historic township, and (to a lesser extent) Treelands Drive and Angourie Road.

Traffic speeds are posted at 50km/h along the main roads but traffic speeds are usually under 40km/h in the Yamba CBD and local streets. Generally, speed shows a correlation with road environment.

The historic Yamba township features a number of road calming measures, notably a high pedestrian activity area (40km/h) for the CBD.

Yamba is mainly flat, with the notable exception of its eastern edge, where it rises over heads to the sea in the north-east. Streets east of Yamba Street, and particularly at the northern end, rise steeply from Yamba Street to Clarence Street, which itself climbs steeply from Harbour Street. Yamba Street and Clarence Street also undulate from north-west to south-east. There is a slight gradient down from Wooli Street to the waterfront.

There are a few local streams that form minor barriers, but the largest impacts on access are channels into the Clarence River estuary, located west of the study area.

## MACLEAN

Maclean is promoted as 'Australia's first Scottish town'. At the 2011 census Maclean had a population of 2612. However the population swells, during the Easter weekend, for the Highland Gathering held at the Maclean Showground.

The town is located on the side of a large hill adjacent to the Pacific Highway, at the confluence of the southern and northern arms of the Clarence River. The Clarence River is a major source of Australia's seafood, with a thriving prawn trawling industry.

Maclean is also the southern gateway of the sugar industry. Here, Harwood Island Sugar Mill, the oldest continuous working mill in Australia, has been crushing cane since 1874.

To some extent, Maclean has a similar layout to Yamba in terms of having a main spine with ribs of access into the local area from side streets. The main street is River Street in the north, becoming Cameron Street in the south.

In this case, however, virtually all access ribs are to the east, with the main spine running adjacent to the Clarence River and then down South Arm, which is a stream running into the Clarence River and spanned by the McFarlane Bridge. There are also many more side streets, and instead of the spine linking the CBD with other areas of development as at Yamba, the spine wraps around the CBD and main residential area, only providing longer distance access to Townsend, Gulmarrad and Grafton once the main township has been passed. The exception is the McFarlane Bridge, although even here this access is past the CBD and in an area where the number of side streets reduces.

The main commercial area runs along River Street, with the main development occurring between Union Street and Taloumbi Street.

The hospital is located on Union Street, east of McLachlan Street. Nearby development includes aged accommodation. The remainder of the large block occupied by the hospital is mainly car parking, a helipad, and open space (some of this area is earmarked for an extension to the car park).

The area east of Rannoch Street and north of Central Avenue is occupied by the Wherrett Park Sporting Complex / Stadium, which also features a skate park. The western side of Rannoch Street, between this street and McLachlan Street, houses squash courts and indoor cricket at its southern end, basketball/ volleyball/ gymnastics north of this, and aged accommodation at its northern end.

A sports / recreation theme is continued along McLachlan Street, with tennis courts located between Union and John Streets, the Maclean Swimming Pool, Maclean Bowling Club, and Cameron Park are in a block bounded by McLachlan Street to its east, Alexander and Stanley Streets to its south, Centenary Drive on its north-western side and Argyle Street on its north- eastern side.

Maclean Public School and St Joseph's Primary School are located close to the eastern edge of the township, and centrally in a north-south direction.

The showgrounds, Maclean High School and TAFE (and rowing club) are located south of Cameron Street.

Townsend features Pacific Valley Christian School, a mixed business service station, and an industrial estate, while another primary school is located in Gulmarrad.

With the Pacific Highway bypassing Maclean, traffic is mainly destination traffic (rather than through traffic) and volumes are moderate

Once the Pacific Highway re-alignment and duplication has been completed, access to Maclean will be via a new interchange.

As with the other towns of the Clarence Valley, there is no signal controlled intersections, but two pedestrian crossings are located on River Street within the CBD.

No streets have more than one lane in each direction, although lane widths can be wide with the provision for on-street parking.

River Street is a street-scaped main commercial area, with parallel parking on both sides of the street provided on a contrasting pavement. The central section of River Street is a high pedestrian area, with a 40km/h speed limit.

A roundabout has been constructed at the Stanley Street / River Street intersection.

Maclean is reasonably flat near the Clarence River, but is essentially built on the side of a steep hill. As a consequence, streets undulate in both north-west and south-west directions and can be reasonably steep along their lengths, climbing sharply at their eastern edge.

Wharf Street runs along a ridge, while Clarence Street is north of a local valley.

## **ILUKA**

Iluka is located 17 km off the Pacific Highway, 60 km north of Grafton and 76 km south of Ballina and is surrounded by Bundjalung National Park; World Heritage listed Rainforest, the Clarence River and the South Pacific Ocean.

Iluka was proclaimed a township in 1885 and is a lifestyle and holiday destination centred on water based activities and bushwalking. At the 2011 census Iluka had a population of 1700.

Iluka has seaside (littoral) rainforest which is accessed via a gentle, well defined walking track through the forest and facilitates access for the disabled.

Iluka has visitor accommodation, a local pub and clubs, general commercial businesses and a school.

Iluka has an existing on road cycle way from Iluka to the Woody Head camp ground to the north along Iluka Road.

The road reserves are generally wide with the notable exception of the Marandowie Drive/Duke Street intersection. Due to the proximity to the waterfront and other limiting factors CVC has proposed a route to the community which deviates from the desirable route along the waterfront as considerable and expensive engineering works will be required at this location to enable adequate width to be achieved for pathway construction.

## **WOOMBAH**

Woombah is a small bushland village in the north eastern region of the Clarence Valley Council Local Government Area. This hamlet is located to the south of the World Heritage Listed Bundjalung National Park, between the coastal town of Iluka and the Pacific Highway.

It is home to a pottery gallery and one of the world's southernmost coffee plantations. There is a significant aboriginal site at Woombah one of five in the Yamba area. There are also two caravan parks, one of these also incorporates the local general store.

At the 2011 census the Woombah area had a population of 746 people.

There are existing footpath assets in the village of Woombah, some recently constructed and some requiring reconstruction. These have been identified in this plan.

## **ULMARRA**

Ulmarra is a small town on the south bank of the Clarence River approximately 15km north of Grafton on the Pacific Highway. At the 2011 census, Ulmarra had a population of 434 people.

The Ulmarra Ferry is a vehicular cable ferry, which crosses the Clarence River from a point about 1 kilometre north of Ulmarra, to Southgate on the north bank.

Ulmarra is home to a primary school located on the Pacific Highway as well as an aged care facility, numerous local shops, a hotel, the Clarence Valley office of the Rural Fire Service, parks and tennis courts.

There are no existing cycle lanes or bicycle paths in Ulmarra.

## **LAWRENCE**

Lawrence is a small town located 13km from Maclean. It is accessed by the Lawrence car ferry from Woodford Island or by travelling 30 kilometres north from Grafton. At the 2011 census, Lawrence had a population of 737 people.

Lawrence has a number of sporting facilities including, a cricket field and soccer fields, a golf course and tennis courts. Lawrence has a school, a general store and a nursery.

At present there are no footpaths, cycle lanes or bicycle paths in the township of Lawrence.

## **PUBLIC TRANSPORT**

The CountryLink Rail and Coach network provides services through the Clarence Valley area. The north coast railway line operated between Brisbane and Sydney and the train station in the area is located in South Grafton.

Countrylink buses also link with this rail network to extend the service to Maclean, Yamba and Iluka. The Countrylink transport network is then extended locally by a number of existing local bus networks which, together with local school buses, service the Clarence Valley area and link the major centres of Grafton, Iluka, Maclean and Yamba and surrounding villages.

Bus services operated by locally based bus companies are available in Grafton, South Grafton, Yamba, Maclean, Iluka, Woombah, Lawrence and Ulmarra.

Community transport services serve people with disabilities, however these services have limited funding and therefore a lower frequency of services than standard bus services.

Local community bus services – related to bowling clubs, golf clubs, etc – while limited to localised areas, are becoming increasingly wheelchair accessible.

There are a number of ferry services operating across the Clarence River, between Yamba and Iluka (non-vehicular), Lawrence and Woodford Island (vehicular) and north of Ulmarra to Southgate (vehicular)

While accessible taxis operate in the Clarence Valley Council area, these can be difficult to secure and are most feasibly used for residents of Grafton and South Grafton. Currently there are no taxi services available in Iluka, Woombah, Lawrence or Ulmarra.

The Disability Standards for Accessible Public Transport sets timeframes at which public transport services must comply with the standards contained within it. For local government, this is most relevant in terms of bus stops, though other areas in which these standards would be relevant would be taxi stands, access paths to train stations and community transport.

For bus stops, the standards relate to:

- access paths
- manoeuvring areas
- passing areas
- ramps
- waiting areas
- boarding
- allocated space
- handrails and grabrails
- stairs
- symbols
- signs
- tactile ground surface indicators
- lighting
- street furniture

## **A SUMMARY OF WORK UNDERTAKEN**

### **BACKGROUND INFORMATION REVIEW**

Background information reviewed to identify issues regarding walking and cycling in the area comprised a:

Review of previous Council reports, including:

- Bike Plan and PAMP 2008 – Grafton, South Grafton, Yamba, and Maclean
- PAMP 2011 – Iluka, Woombah, Lawrence, and Ulmarra
- Open Space Strategic Plan 2012
- Our Community Plan 2015
- Design Specifications and Standard Drawings

Review of relevant State Government reports, including:

- How to Prepare a PAMP
- How to Prepare a Bike Plan
- Planning Guidelines for Walking and Cycling
- NSW Bicycle Guidelines
- Action for Bikes – Bike Plan 2010
- Guide to Road Design – 6A Pedestrian and Cycle Paths

The review also included an analysis of traffic volumes and speeds and crash statistics for the period 2005 to 2013, provided by RMS.

## **BIKE PLAN APPROACH**

### **APPROACH OVERVIEW**

A consistent approach to cycling facilities and their prioritisation across all of the Clarence Valley area is desirable and would enable Council to use the same principles in all towns and villages. Overall, pedestrian and cycling routes are proposed to provide linkages within the entire walking and cycling network, but with acknowledgement of the limited budget of Council.

To achieve a consistent approach the following three concepts will be applied:

- Heirarchy of Routes
- Performance Standard
- Prioritisation of Works

## **HIERARCHY OF ROUTES**

A Route Hierarchy was developed to identify the importance of network linkages between primary and secondary destinations, general access routes, which acknowledges benefits to the community.

### **Primary Destination Zones**

These zones represent the most frequent destinations, or combination of destinations, located in a single area. Streets associated with primary destination zones will generally have high vehicular traffic volumes, with the traffic usually destination traffic rather than through traffic. Primary destination zones are the highest pedestrian interaction areas, and are usually concentrated around the commercial areas and schools.

### **Secondary Destination Zones**

These zones tend to “frame” primary destination zones, or are areas that focus on individual land uses, concentrated around particular times of the day, or events. Streets associated with secondary destination zones will generally have above average vehicular traffic volumes, split between destination traffic and through traffic. Secondary destination zones can be high pedestrian interaction areas, and are usually concentrated around beaches, skate parks, sporting fields, showgrounds, and local shopping precincts.

### **General Access Routes**

These provide for the basic level of access between residential areas and destination zones in the towns. They are also used to link aged care facilities and retirement facilities to the general walking network, where the pedestrian generation is not peaked as it is around schools or employment nodes, and the residents will need dedicated facilities to access the general walking network.

## THE CYCLING NETWORK

A network has been devised, for each town, that recognises the infrastructure that currently exists (identified with boxes below) and the need for Council to prioritise proposed works (identified with numbers), in each township. The identifying numbers do NOT necessarily represent the future priority of works. This network is the first step for each town where it is envisaged to eventually have footpaths on all streets and with all streets suited to cycling.

### GRAFTON

Grafton has a high potential as a cycling city, with bicycle suitability on all streets and cut-throughs for those few locations where the grid street network is interrupted or incomplete.

The grid street network that helps to make Grafton an ideal cycling city also make it a difficult town for which to determine an appropriate pedestrian and cycling network, within an obvious hierarchy. Its grid pattern produces a high degree of choice and permeability, with most streets having reasonably moderate traffic volumes. Meanwhile, the (general) block sizes are quite large, hence omission of any one street from a network potentially leads to an inconvenient detour. These factors in combination make it difficult to identify a natural network for walking in particular, apart from the commercial area.

Networks have not been identified for new development areas. For relatively small development areas, destination zones will generally not be required, but general and/ or local access routes should be defined to produce a grid pattern for pedestrian and cyclist access.

#### PRIMARY DESTINATION ZONES

The designated zone extends along the highest use streets, on both sides of the street. These comprise:

- Prince Street, north side of Oliver Street to the Clarence River.
- East-west running streets that intersect with the Prince Street section of the primary destination zone, from about half way to Queen Street in the west to Duke Street in the east. This comprises Oliver Street, Bacon Street, Pound Street, Fitzroy Street and Victoria Street.
- Pound Street, from above section west to Queen Street.
- Duke Street, Pound Street to Fitzroy Street.

#### SECONDARY DESTINATION ZONES

High pedestrian routes framing the primary destination zone

- Victoria Street, Duke Street to Villiers Street, south side
- Victoria Street, Queen Street to primary destination zone, north side
- Queen Street, Bacon Street to Fitzroy Street, east side
- Fitzroy Street/ Craig Street, Duke Street to Clarence Street, north side
- Fitzroy Street, primary destination zone to Queen Street, both sides
- Pound Street, primary destination zone to Villiers Street, south side
- Duke Street, Victoria Street to Fitzroy Street, west side

Schools near the primary destination zone

For schools, secondary destination zones are generally designated from main entry points. In Grafton, however, the proximity of schools with each other and the primary destination zone warrants a level of connectivity using secondary destination zones for those schools in the south of the town. (Dots represent constructed footpaths, numbers represent those proposed for construction).

1. Mary Street, Bacon to Oliver Streets, partial east side
  - Mary Street, Oliver to Fry Streets, both sides
  - Mary Street, Bacon to Oliver Streets, west side
  - Oliver Street, Prince to Mary Streets, south side
  - Oliver Street, Mary to Matheson Streets, north side
2. Oliver Street, Mary Street to Turf Street, south side
  - Victoria Street, Villiers Street to Clarence street, south side
  - Queen Street, Bacon Street to Oliver Street, both sides
  - Queen Street, Oliver Street to Dobie Street, east side
3. Alice Street, Oliver Street to Fry Street, east side (on-road cycle lanes)
  - Clarence Street, Victoria Street to Fitzroy Street, east side
  - Bacon Street, primary destination zone to Queen Street, north side
  - Prince Street, primary destination zone to Fry Street, west side

#### Other school and land use frontages

- North Street, Cranworth Street to Cassia Street, south side
- 4. Hoof Street, Cassia Street to Cranworth Street, partial north side
- 5. Cranworth Street, Hoof Street to North Street, east side
- 6. Cassia Street, North Street to Hoof Street, partial west side
  - Turf Street, school frontage north of Hoof Street to Hoof Street, west side
  - Queen Street, Crown Street to Arthur Street, west side (outside the Grafton hospital).

#### CYCLING ROUTES

It should be noted that signage and road markings require auditing for potential sign replacement and / or road marking reinstatement.

- Queen Street, Bacon Street to North Street, both sides, and out of the study area (the route continues as other types of routes south along Queen Street.)
- 1. Marlow Street, North Street to Baker Street and out of the study area.
- 2. North Street, Marlow Street to Cranworth Street.
  - North Street, Cranworth Street to Turf Street.
- 3. North Street, Turf Street to Queen Street.
  - Fitzroy Street/ Clarence Street, Victoria Street to Grafton Bridge turn off. (The Grafton Bridge is not conducive to use as a cycling route and signage is required to direct cyclists onto the shared use path to pass over the bridge.)
  - Oliver Street, Cranworth Street to Kent Street, both sides.
  - Hoof Street, Turf Street to Clarence Street, both sides.
  - Cranworth Street, Oliver Street to North Street, both sides.
  - Alice Street, Oliver Street to Hoof Street, both sides.
  - Mary Street, Victoria Street to Fry Street, both sides.
  - Fry Street, Alice Street to Mary Street, both sides.
  - Clarence Street, Victoria Street to Fitzroy Street, both sides.
  - Kent Street, Fitzroy Street to Bacon Street, both sides.
- 4. Kemp Street, Prince Street to Queen Street, both sides.
- 5. Queen Street, Kemp Street to Victoria Street, both sides.
- 6. Victoria Street, Queen Street to Mary Street, both sides.
- 7. Clarence Street, Oliver Street to Hoof Street, both sides.

## SOUTH GRAFTON

South Grafton is distinctive as a focus for long-distance routes. There is also a real opportunity for the Skinner Street commercial area to be better connected to the Clarence River foreshore – an opportunity that does not currently exist in Grafton.

The networks for South Grafton are concentrated on the western side of the railway line, which is currently the area with the most residential development. As Clarenza develops, internal networks for this area will be formed and should be connected to the existing development areas. In the absence of a structure plan for Clarenza, only a few possible routes have been identified for this area. The exact amount, location and phasing for routes in Clarenza will depend on development patterns.

Although South Grafton has a reasonable (and growing) amount of commercial development, it is distributed and most access would be via off-street car parks.

### Primary destination zones

- Skinner Street commercial area.

This is the main commercial area in the older part of South Grafton. A masterplan has been prepared for Skinner Street, featuring a wide kerbside lane treatment for cyclists.

- Bent Street commercial area

This is designated within the property boundary of a shopping centre located between Spring Street and Ryan Street, on the western side of Bent Street. As this shopping centre features a large off-street car park, the destination traffic related to this is not focused on the footpath along Bent Street but on the access footpaths within the shopping centre, which are also used for outdoor dining in some locations. The local bus service stops at the shopping centre, although the location is unknown. An accessible parking space is provided within the car park, with a linkage to the shopping centre.

Council has a limited ability to be able to alter the existing footpath design and the shopping centre is relatively new, but this is still designated as a primary destination zone for consideration in any future upgrade proposal of the shopping centre or change of use of the neighbouring land use (currently a car wash). It might also be possible for Council to work with the shopping centre owners/ management to reconfigure certain elements of the car park to better provide for the destination uses, such as by offering to install bicycle parking rails and/ or landscaping if a suitable location can be identified, or identifying/ providing an accessible route from the footpath to the shopping centre.

### Secondary destination zones

Areas framing the primary destination zones. (Dots represent constructed footpaths, numbers represent those proposed for construction).

- Bent Street, Spring Street to Ryan Street, both sides. A number of businesses are located along this section of Bent Street, with patronage of the shopping centre appearing to assist in supporting this local trade.
- Skinner Street, primary destination zone to Ryan Street, both sides
- Through Street, Skinner Street to Crisp Ave, both sides.
- Spring Street, Skinner Street to Bent Street, both sides, consideration should be given to linking both sides to Crisp Ave.
- Vere Street, Bligh Street to Bent Street, both sides.
- Hyde Street, school frontage to Bent Street, north side.
- 1. Hyde Street, school frontage to Bent Street, south side.

- Tyson Street, school frontage to Bent Street, north side. This connects to a pedestrian refuge crossing located in Bent Street.
- 2. Tyson Street, Bent Street to Armidale Road, north side. This linkage should be considered as it provides access to the local shops and the gym / pool complex.
- Armidale Street, Vere Street to Cambridge Street, west side.
- Armidale Road, Cambridge Street to Norrie Street, east side.
- 3. Armidale Road, Cambridge Street to Norrie Street, west side.
- 4. Access to McAuley Catholic College via the Pacific Highway, from Iolanthe Street to Hennessy Drive, south side.
- 5. Access road to Cathedral High School from Centenary Drive, north side.

## CYCLING ROUTES

All major roads form regional cycling routes for South Grafton. These have been shown as being inter-connected to emphasise the need for continuity of routes, but bicycle lanes are not proposed within the Ryan Street / Bent Street / Charles Street roundabout. (Such bicycle lanes are dangerous and hence not used in Australia). As these provide regional cycling routes, most extend outside the study area.

These routes are:

1. Ryan Street / Gwydir Highway, from Ryan Street / Bent Street roundabout west. There is an existing shared use path along this route, to Waterview Heights.
2. Pacific Highway, from Ryan Street/ Bent Street roundabout north-east and south-east – Centenary Drive is nominated as the highest priority in the first instance. Cyclists may ride further, but this provides access to and forms a cycling loop with Centenary Drive. This also coincides with the practical limits of the study area. The route to the south-east is the nominated route of the Coastline Cycleway. RMS have indicated they intend to construct a cycleway on Charles Street and Iolanthe Street as part of the new Grafton Bridge project. This route could be reviewed once the Pacific Highway realignment has been constructed.
3. Armidale Street – south from the existing shared use path in Ryan Street. This route is identified in the Lonely Planet's Cycling Australia guide, for the route from the Gold Coast to Melbourne. The sealed shoulder has potential to be converted to an on-road cycleway as far as George St by painting cycle symbols on the bitumen.
- Shared use path, from the Grafton Bridge to Armidale Street/ Armidale Road. This is also shown as a regional cycling route due to its importance as a link to Grafton and as a nominated part of the Coastline Cycleway. The designation as both regional cycling route and recreational / off-road route is not intended to indicate a need for replication of facilities or a separate parallel route.
- Bent Street, Ryan Street to Norrie Street, both sides.
- Through Street, Wharf Street to Riverside Drive, both sides.
4. Bent Street, Norrie Street to Hyde Street, both sides.
5. Riverside Drive, Bent Street, to Through Street, both sides. However a shared use path has been proposed, and if constructed, would negate the need for an on-road cycleway.

## YAMBA

Yamba has much more of a coastal atmosphere than the other towns in the study area. It also has a high potential as a leisure / recreational area, with walking and cycling facilities that are already well used. With the addition of good connections from the ferry terminal, Yamba can also service Iluka's resident and visitor populations.

There are a number of changes to the road network planned in response to future development. These have not been addressed in the pedestrian and bicycle networks due to uncertainty in their timing and exact future forms. An assessment of the role of future links for walking and cycling will need to be made as part of identifying the design requirements for new roads, when they are built. This should include the need for crossings, etc.

### PRIMARY DESTINATION ZONES

These zones are mainly a formalisation of the existing high pedestrian activity areas.

- a) Harbour Street, b) Wooli Street, c) Coldstream Street and d) Beach Street, from about half-way between River Street and Yamba Street, to a short distance east of Yamba Street
- Yamba Street, Beach Street to Harbour Street. Western end
- Treelands Drive, Yamba Road to Roberts Close

### SECONDARY DESTINATION ZONES

A number of short sections of secondary destination zones are designated adjacent to the primary destination zones, providing a transition from these higher activity zones to lower activity areas.

- a) Harbour, b) Wooli, c) Coldstream and d) Beach Streets, primary destination zone to River Street, both sides; and e) Yamba Street, primary destination zone to Campbells Lane, both sides
- River Street, Coldstream Street to Beach Street, east side
- Treelands Drive, primary pedestrian zone to Osprey Drive, both sides

A section of secondary destination zone is designated in Treelands Drive as a transition from the primary destination zone. This is north of the main traffic area of Treelands Drive, which is associated with the shopping centre. Given indications of other services locating in the area, sufficient space should be allocated for this to be upgraded to a primary destination zone in the future, however this should not be constructed prior to need (i.e. high pedestrian levels, interaction), to ensure that environmental cues associated with such designation are consistent.

- Yamba Road, shared use path from the Historic township to west of Treelands Drive.

This designation of secondary destination zone reflects the presence of an existing route along most of the north side of Yamba Road, and the strategic importance of linking the historic township to the new growth area at Treelands Drive. This route should also be provided as a continuously accessible route for people with disabilities. The route joins to the shared use path along the waterfront rather than following Yamba Road as Wooli Street into the historic centre, as the shared use path is more direct, more pleasant and an existing facility. It also services the ferry terminal.

### School frontages and other land uses

1. Carrs Road, school frontage (to Miles Lane), east side. (Unconstructed).
  - Angourie Road, school frontage, east side (Shared Path)
  - River Street, car park opposite Campbells Lane to Coldstream Street.

- A route from the ferry terminal to Harbour Street – and thus the primary destination zone via the secondary destination zone on Harbour Street (north side).

This route is designated as part of forming a continuously accessible route for people with disabilities, in particular to improve access to services for people from Iluka. It also assists users of the Coastline Cycleway to travel to / from the CBD of the historic township

## CYCLING ROUTES

- Angourie Road

This route extends from Yamba Road to Angourie. The facilities currently located on this are discussed in the site survey report. For regional cycling, the current facilities start south of Deering Street and their form is as a two-way cycle lane located on the west side of the road. One-way bicycle lanes or sealed shoulder treatments on either side of Angourie Road, to Yamba Road, are preferable.

As the trafficable pavement does not extend into the existing cycle lane, space from this lane cannot be reallocated across the road width to create a shoulder on the eastern side. Instead, the existing shoulder area will need to be left unchanged and shoulder sealing to create a bicycle lane will need to be undertaken on the eastern side. This is not an expensive procedure, and has the advantages that pavement damage from scrubbing line marking does not occur, the extra road width ensures that crumbling or grass infiltration of the pavement edge does not reduce the overall width of the usable cycling area, and the extended pavement width has benefits for motorist safety.

- Yamba Road, western extent of study area to waterfront shared use path
1. From Yamba, Yamba Road is part of the Coastline Cycleway route to Maclean. Again, bicycle lanes or shoulders on both sides of the road are the desirable treatment. The extension of this treatment to Maclean would require at least shoulder sealing. Given cost and potential use, this would have a relatively low priority.

However, the existing bridge at Oyster Channel features a shared use path on its southern side that is also used by local residents. A sealed shoulder on the southern side, linking to this path, and improved connections on the western side of the path linking to Oyster Channel Road and to Yamba Road, would capitalise on this existing facility for the benefit of both longer distance cyclists and local residents.

- Waterfront shared use path, Yamba Road to ferry terminal

The Coastline Cycleway connects to Iluka via the ferry, hence this section of shared use path is identified as part of a regional cycling route.

- Claude Street, Woolli Street to Coldstream Street, both sides.
2. Lakes Boulevard, Angourie Road to Wood Street, both sides.

## MACLEAN

(Refer Figure 5, overleaf.)

Maclean is distinctive for its treatment of footpaths within the commercial area, and its Scottish heritage. It also has a degree of severance caused or perhaps exacerbated by the Pacific Highway in a way not true of the other towns. Although the Pacific Highway has originally been a bypass of Maclean, growth is changing the population balance and the highway now forms a barrier between Maclean and Townsend (and hence Gulmarrad).

### PRIMARY DESTINATION ZONE

- River Street commercial area, Short Street/ Wharf Street to John Street
- Stanley Street, River Street to Short Street, both sides
- Centenary Drive, Stanley Street to Car Park, east side. This is designated due to the high levels of use associated with parking and access to the primary destination zone via pedestrian arcades.

These are essentially a formalisation of the existing high pedestrian activity area.

### SECONDARY DESTINATION ZONES

Short sections of secondary destination zones support for the primary destination zones, providing a transition from this higher activity zone to lower activity areas. These are:

- River Street, Short Street/ Wharf Street to Taloumbi Street, both sides.

This provides access to the primary destination zone at the southern end. A shared use path exists on the eastern side.

- River Street, primary destination zone to Howard Street, east side.

This provides access to the primary destination zone at the northern end. Activity on the western side is limited due to the lack of land uses and this side is not included as part of the secondary destination zone.

- John Street, River Street to Clyde Street, about halfway, south side.
- Argyle Street, River Street to Clyde Street, north side.
- Woodford Street, Alexander Street / Clarence Street to McIntyres Lane, east side. The section of Woodford Street designated as a secondary destination zone is quite long, both reflecting the actual school frontage and in recognition of the extra width required due to the topography – cyclists required additional width when travelling uphill.
- Clarence Street, Alexander Street east to end of school frontage, south side.
- 1. McIntyres Lane, Grafton Street to end of school frontage to the west, south side.
- Woombah Street, Maclean High School to Cameron Street, west side; and extension of the route to the Pedestrian Crossing.
- 2. Cameron St, School Crossing to Showgrounds, west side.

Given the location, and role as a connector between Maclean High School and the Showground, the route should be provided as an off-road shared use path rather than as a footpath with adjacent bicycle lane.

- School / TAFE frontage (east of Woombah Street), north side.

### Townsend commercial area

- Jubilee Street, Schwonberg Street to Scullin Street, north side. 75m short of Schwonberg St (June 2015).

The McFarlane Bridge.

Given the low density of land uses on the western side of the bridge, usage levels do not support designation of this bridge as a general access route. It nonetheless remains as the only access to Woodford Island from Maclean. This is a hazardous location for pedestrians in particular, for whom joining the traffic stream is not appropriate (unlike cyclists). Similarly, children and inexperienced cyclists would find the McFarlane Bridge intimidating, despite recent safety improvements.

The methods to address this hazard will depend on cost and the design life of the bridge. As a wooden bridge, it is likely that cantilevering a path on one side of the bridge would be a significant exercise, especially as the bridge is some 600 metres long. It is noted that a major pipeline is provided on the northern side of the bridge; it is possible (though not likely) that the supports for this would also support a footpath or shared use path. A path hung beneath the bridge would have less clearance in the event of a flood, even if the bridge structure has sufficient capacity to carry the additional load.

Traffic management techniques to regulate traffic flow to enable pedestrians and cyclists to cross safely – such as installing signals to replace the current 'give way' provision and providing a phase for pedestrians and cyclists – would also have a high cost.

One suggestion is to provide another bridge upstream along the South Arm. By reducing the crossing distance, the cost of a bridge could be reduced, although additional abutments would be required at any location that does not use the current bridge abutments. On the basis of river width, the best location for a new bridge would be near Goodwood Road, where the water crossing distance is reduced to some 350 metres. However, this represents a detour distance that would be untenable for pedestrians from Maclean, while most cyclists would elect to continue using the existing bridge to avoid the detour. This location would therefore only be realistic if it were used to provide a new vehicle bridge, to enable the McFarlane Bridge to be closed to traffic and used for pedestrian and cyclist access only. While this would have obvious benefits for pedestrians and cyclists, the cost of a vehicular bridge would be far higher than that of a pedestrian / cyclist bridge and this option would be difficult to justify for the small volumes of traffic that currently use the McFarlane Bridge. However, this assessment changes if there were strategic reasons to provide a new bridge, e.g. the McFarlane Bridge were close to the end of its design life, or traffic volumes were high for the current traffic management on the bridge (where a vehicle has to stop and give way to an oncoming vehicle). Unfortunately, both design life and traffic volumes are unknown.

Overall, the most cost-effective solution is probably to build a new, separate footbridge for the use of pedestrians and cyclists. If not supporting motorised vehicles, this could be light-weight and relatively inexpensive (i.e. compared to vehicular bridges, but not in an absolute sense). In this case, care needs to be taken to enable cyclists to safely leave and join the two-directional flow of traffic, to access a new path / bridge provided (most likely) on one side only of the existing bridge.

If this solution can be justified, it should be noted that the new facility would also provide for cyclists using the Coastline Cycleway.

#### Regional cycling routes

1. River Street, north of Howard Street. This ultimately continues to Yamba, along the Coastline Cycleway route. While shoulder widening would be required between Maclean and Yamba, there should be sufficient space for at least an advisory treatment north of Bakers Lane. This would provide a lead-in to Maclean and should be continued as far north as possible.
2. The McFarlane Bridge. This bridge is a hazardous location for pedestrians and cyclists. The bridge has recently been the subject of works that improve conditions for cyclists, namely filling gaps between the planks. This has improved safety for longer distance and sports

training cyclists who are used to cycling with traffic and the bridge is therefore included as a regional cycling route.

3. Jubilee Street. This provides access to (and through) Townsend from Cameron Street, but has a significant gradient cresting at Hillcrest Road in conjunction with a squeeze point in the street. Overall, there is limited opportunity to provide additional facilities west of the underpass of the Pacific Highway, using existing road and road reserve width. However, the impending Pacific Highway upgrade may render this link obsolete.
4. Maclean to Townsend Connection. It is envisioned that a shared path be incorporated into the local road alignment at the proposed Maclean Interchange of the Pacific Highway Upgrade. Potentially this route would link up to a connection from Cameron Street.
  - Brooms Head Road. An off road shared path provides access from Pine Avenue to Gulmarrad.
5. From Maclean, Yamba Road is part of the Coastline Cycleway route to Yamba. Again, bicycle lanes or shoulders on both sides of the road are the desirable treatment. The extension of this treatment to Yamba would require at least shoulder sealing. Given cost and potential use, this would have a relatively low priority.

## ILUKA

The town of Iluka has good potential as a cycle friendly town, with good coastal views and flat topography.

A network has been designated in recognition of the limited infrastructure that currently exists and the need for Council to prioritise new works. The designated network should be regarded as a first step towards further asset construction.

The area of the intersection of Duke Street and Marandowie Drive represents an area where a “squeeze point” in the road, due to the close proximity of the foreshore on one side and private residences on the other. This squeeze point leaves pedestrians with little space to transit this area safely and the limitations mentioned allow no room to construct adequate pathways, as can be seen in Appendix D1. With this in mind Clarence Valley Council staff determined an alternate route from Duke Street to Marandowie Drive and presented this alternate route to a public meeting. After much discussion the alternate route was endorsed by those present. The alternate route can be seen overleaf.

### Primary destination zones

- Commercial Area
- Charles Street between Owen/Denne, both sides of the street.
- Southern corner of the intersection of Young/Charles Street.
- Western corner of the intersection of Spencer/Young Street.
- Queen Street between Crown/Iluka Streets.

### Secondary destination zones

- Attractor/Generator near primary destination zone
- Marandowie Drive north of Melville Street
- Micalo Street (SE side) between Duke/Elizabeth Streets.
- Owen Street between Duke/Spencer Streets
- Young/Queen Streets bounded by Charles/Owen Streets.
- Spencer Street at Iluka Bowls Club.
- Crown Street at Sedgers Reef Hotel.
- Eastern corner Crown/Charles Street intersection.

### School near primary destination zone

- Spencer & Charles between Micalo/Young Streets.

### Cycling Routes

- Iluka Road, Duke Street to Woody Head.
  - Micalo Street, Duke Street to Charles Street, both sides.
  - Queen Street to Main Beach. A shared use path is to commence construction in late 2015 / early 2016, with works being staged over consecutive financial years.
1. From Iluka, Iluka Road is part of the Coastline Cycleway route to Woombah. Again, bicycle lanes or shoulders on both sides of the road are the desirable treatment. The extension of this treatment to Woombah would require at least shoulder sealing. Given cost and potential use, this would have a relatively low priority.

## WOOMBAH

Woombah village has very limited existing pedestrian attractors/generators consisting primarily of caravan parks, general store and a coffee shop. There are no schools in the Woombah village.

Some new and aged footpath assets exist with the older assets requiring reconstruction in some instances.

### Primary destination zones

#### Commercial Area

- Iluka Road between North/Ibis (caravan park/general store)
- Western corner of the intersection of Iluka Road/Wharf Street (coffee shop).
- A concrete 2 metre wide path has recently been constructed along Iluka Road between Ibis Close and West Street which services the Bimbimbi Caravan Park and General Store

### Secondary destination zones

#### Park/Sportsground

- The public reserve at the corner of West Street and Middle Street is identified as a secondary destination zone.

There are no facilities for parking of bicycles identified in the Woombah area.

### Cycling routes

- The shared use path is currently the only cycleway in Woombah.
- 1. From Woombah, Iluka Road is part of the Coastline Cycleway route to Iluka, and further north. Again, bicycle lanes or shoulders on both sides of the road are the desirable treatment. The extension of this treatment to Iluka, and the Pacific Highway would require at least shoulder sealing. Given cost and potential use, this would have a relatively low priority.

## ULMARRA

Ulmarra has some existing footpaths in varying states of repair and widths. These existing assets are located;

- River Street between Lynhaven/Belmore Street
- Coldstream Street between River St/Hospital Ln
- Belmore Street
- Pacific Highway from Coldstream Street to just north of the school.

The Pacific Highway separates the main street shopping area from the school and residential areas. This separation presents a number of potential challenges to safely enable passage across the highway and will require co-ordination/input with RTA as this is a state road.

Currently there is only a pedestrian crossing across the Pacific Highway at the school, this is manned by a safety officer during school drop off/pick up times.

Consultation with the Grafton Access Committee identified the need for kerb ramps to be constructed in all new and exiting footpaths. This need was identified predominantly but not exclusively in the areas of River Street and Coldstream Street.

### Primary destination zones

- Coldstream Street between River St/Pacific Highway (shops)
- Lynhaven Crescent (Aged care facility)
- Pacific Highway at Ulmarra Public School

### Secondary destination zones

- River Street north of Coldstream Street (Hotel/pool/park/NSW Police/palliative care)
- Coldstream Road east of Small Street (Pacific Highway) (park/sportsground)

### Cycling routes

- Currently there are no cycleway routes constructed or proposed for Ulmarra.

## LAWRENCE

The village of Lawrence has no constructed footpaths or cycle ways despite road reserves, for the most part, of a width more than adequate to accommodate off road concrete paths.

The area in the vicinity of the intersection of Rutland and High Streets has been identified through consultation and site visit as an area of concern for pedestrians due to the potential for conflict with vehicles due to the embankments on both sides of the road in close proximity to travel lanes.

### Primary destination zones

- Eastern corner Cook/High Street intersection (Lawrence Public School)
- Corner Richmond/Bridge Streets intersection (General Store/park)

### Secondary destination zones

- Bridge Street (tavern)
- Rutland Street at Post Office / Police Station
- Richmond Street at nursery

### Cycling routes

- Currently there are no cycleway routes constructed or proposed for Lawrence.

## PERFORMANCE STANDARD

The route hierarchy, in conjunction with the volume of pedestrians / cyclists, determines the standard that the footpath / cycleway will be constructed to.

The performance standards developed for Clarence Valley Council are provided in the following table. As none of the townships in the council area currently use traffic signals these have not been included in the performance criteria.

In these standards, the term CAPT refers to a Continuous Accessible Path of Travel.

The performance criteria specify setbacks, which should be constructed as unpaved shoulders graded to form a firm, level surface. These provide clearance to property lines, traffic and potential obstacles, to help ensure that the effective width is maintained for pedestrians; and can also be suitable for cyclists to pass pedestrians.

These design concepts do not include concepts for crossing facilities, such as kerb ramps. These should be provided in accordance with the relevant Australian Standards, guidelines and legislation, and RTA standards and guidelines.

Table 1 – Performance Standards

	Primary destination zone	Secondary destination zone	General route
Footpath requirements		Shared use path if no on-street treatment	
Location	Both sides	On side with activity	None in cul-de-sac <50m long and servicing <10 residential allotments; both sides if traffic volumes above 3000vpd; one side otherwise
Desirable general width of CAPT	3.0m	2.5m for shared use, 2.0m otherwise	1.8m within 250m of primary pedestrian zone (take to nearest intersection); otherwise 1.5m if on one side, 1.2m if on both sides
Minimum width, for short distances (can provide passing bays)	1.8m	2.0m for shared use, 2.0m otherwise	1.2m
Maximum length of minimum width	8.0m	8.0m	n/a
Minimum distance between repeated sections of minimum width	8.0m	8.0m	n/a
Minimum width at squeeze points	1.5m	1.2m	0.9m
Maximum length of squeeze point	2.0m	2.0m	1.0m
Minimum setback of route from kerb (to	0.6m	0.6m	0.6m

allow for street furniture)

Minimum setback of route from building line	0.0m	0.6m	0.3m
Directional tactile ground surface indicators	Where distance of paved surface between property line and crossing exceeds 3.0m; may also be required for way finding		
Timeframes for compliance contained in DDA(transport)	31-Dec-07 for 25% of infrastructure	31-Dec-07 for 25% of infrastructure	31-Dec-12
Consider additional connections to:	Bus stops, through car parking areas, through road closures, across creek lines, across bridges		

#### On road bicycle treatment

Shared with/separated from traffic	Low speed shared, or separated	Low speed shared, or separated	If traffic vols exceed 3000vpd then low speed shared/separated/advisory; shared otherwise
Acceptable traffic speed environment (with support of RTA for speed zones)	30-40 kph	30-40kph in peak pedestrian periods; 40-50kph otherwise	30-60kph depending on road; acceptability of 60-80kph depends on location

#### Exclusive bike lanes

Desirable width	1.5m	1.5m	1.5m for speeds up to 60kph
Acceptable width	1.2m-2.5m	1.2m-2.5m	1.2m for speeds up to 50kph; to 2.5m for speeds up to 80kph
Squeeze points	1.0m	1.0m	1.0m for speeds up to 60kph

#### Shared bike/car/parking lanes (includes traffic lane)

Desirable width	4.2m
Acceptable width	3.7-4.5m

#### Advisory treatments \*

Desirable width	3.7m
Acceptable width	3.0m where parking demand is high; 3.3m otherwise

\*\*These are treatments to indicate or advise road users of the potential presence of cyclists and of the locations where cyclists may be expected to ride on the road. They consist of pavement markings and otherwise only warning and guide signs, and as such have no regulatory function." (GTEP, Part 14, 1999, p.30).

There are generally four types of these:

- (1). The advisory treatment with edge line will be generally preferred on roads with a higher traffic volume, with a minimum width of 3.3m, but width up to a bicycle / car park lane (3.7m) is preferred.
- (2). A bicycle shoulder lane is adopted where there is space of 3.4m. This is preferred if the speed environment is less than or equal to 50kph. (See RTA NSW Bicycle Guidelines, 2004, Section 5.1.2.)
- (3). An advisory treatment with logo where car parking demand is high has a minimum width of 3m, but width up to advisory treatment with edge line is preferred.

(4). An advisory treatment with logo where car parking demand is low has a width of 3.7m, including the travel lane. This is essentially a wide kerbside lane.

Shared use paths			
General use	Undesirable	Desirable	Separated path preferred to bypass squeeze points
Desirable width	n/a	2.5m	n/a
Acceptable width	n/a	2.0m – 2.5m	n/a
Width at squeeze points	n/a	2.0m	n/a
Crossing requirements			
Types	Refuge, wombat where zebra or wombat warranted and on the continuously accessible route	Refuge, zebra where warranted	Refuge, zebra where warranted
Location	At 100m-150m intervals	To service main entries; at route linkages	At 150m-200m intervals
Width at intersection and crossing points	2.0m-3.0m	1.5m-2.4m	1.5m-2.4m
Footpaths continued as same material over driveways	Yes and no new driveways permitted	Yes and no new driveways permitted	Yes within 250m of primary destination zone; maximum driveway crossfall 1:40 otherwise
Path crossing of side street	Continuous paths	Generally n/a; otherwise as for secondary route	Continuous footpaths or kerb extensions desirable
Street furniture (locate outside the path of travel)			
Weather protection	Building verandas, canopies, street trees	Building verandas, street trees	Street trees; can use build outs to provide
Street trees	At 6m, 9m, 12m or 15m spacings depending on local environment, or to suit existing plantings; use build outs or in parking lane where required		
Other landscaping	Species that grow into large shrubs should not be planted as these will impede sight distance; low vegetation (grasses etc) or tall trees are preferred		
Lighting (supplemental to street lights; light paths from back of street lighting where appropriate)	Along paths to achieve standards; spill light from feature lighting may be desirable	Along paths to achieve standards	At intersections
Weather protection at stops	Bus shelter or building verandas	Bus shelter or building verandas	Bus shelter
Seating (general)	Require public access to outside dining; midway between bus stop otherwise; and at	At high use bus stops (additional to shelters); at the entry to parks and reserves	Midway between bus stops; at the entry to parks and reserves and other high amenity locations

	high use bus stops (additional to shelters)	
Additional seating (desirable)	§ Within 125m of aged care, aged housing, disability or medical services: at 60m intervals	
	§ Between 125m and 500m of aged care, aged housing, disability or medical services: at 120m intervals	
	§ As otherwise determined to be appropriate	
Bicycle parking	§ As per Austroads Pt14	
	§ Cages or lockers at commuter and employment nodes	
	§ Free standing rails in clusters of 3 to 5 at destinations	
	§ Rails located on street poles can be used for more widespread parking provision, along streets where freestanding rails cannot easily be provided outside the path of travel	

Signage (poles should be located with at least 0.3m clearance to the route)

Directional (either standard street sign format, or larger route-specific signage)	Signage of the continuously accessible route	§ Signage to major land uses (commercial area, parks) and major tourist destinations at intersections between secondary routes
Regulatory/behavioural	High pedestrian activity signage at start of zones	§ Shared path signage and end shared path signage at ends of path
		§ Shared path signs repeated at 500m intervals (max)

## PRIORITISATION OF WORKS

To prioritise works effectively, scores are allocated against different assessment criteria. Network linkages with the higher scores are assigned a higher priority.

To ensure the networks are developed in a logical and cost effective manner, requests for paths and other works forming the routes need to be evaluated and prioritised. The priority system used involves the allocation of scores to different criteria to arrive at a total score. Project assessed using this system can be ordered by score to produce a priority listing of routes to be constructed, and works for these then detailed and costed.

Table 2 – Route Priority Criteria

Category	Criteria	Performance Conditions	Score
Land Use	Number of attractors/generators	Multiple locations	10
		Single location	5
		0 locations	0
	Land use types	School / Hospital / Aged Care Facility	10
		Commercial/retail	8
		Sporting Fields / Recreational Facility	5
		Residential	5
		Other	0
		Proximity to non-residential generators/attractors	Immediate vicinity
	Proximity to non-residential generators/attractors	Adjacent nearby	8
		Reasonably close	5
		Distant	0
		Future development with attractors/generators	High
Future development with attractors/generators	Medium	3	
	Low	1	
	Traffic impact	Road Hierarchy	State road
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	>3 crashes reported/year	15
		3 crashes/year	10

	knowledge) as a 3 year average	2 crashes/year	8
		1 crash/year	5
		0 crashes/year	0
Continuity of routes	Addition to existing facility	Link up bicycle facilities	10
		Extension of bicycle facilities	8
		Other	0

An assessment of the proposed pedestrian routes has been made against the priority criteria and is shown for each town, in Tables 4 to 8.

This assessment is presented by town and by route hierarchy with ID numbers as per the listing of routes in Section 5.

The value ranges against which assessments of degree of priority (“very high”, “high” etc) have been made are presented in Table 3. The range for towns varies reflecting a different township structure (distribution of land uses, status of roads in the hierarchy, etc). Overall the ranges have been selected with the aim that building the same priority of infrastructure in each town would produce similar levels of walkability in each town, in terms of access to shops and services, safety, etc.

Table 3 – Priority Ratings

Priority	Score
Very high	42+
High	31-41
Medium	19-30
Low	18-

Table 4 - Action priorities, by town and route type (Grafton)

				Land Use				Traffic Impact	Safety		Continuity of Routes	Score	Priority
				Number of Attractors / Generators	Land Use Types	Proximity to Attractor / Generator	Future Development	Road Hierarchy	Identified Hazardous Area	Identified Pedestrian Crashes	Addition to Existing Facility		
ID	Street	Street Portion	Side	<b>Bicycle Routes</b>									
1	Marlow Street	North Street to Baker Street		0	5	0	1	8	0	0	0	14	Low
2	North Street	Marlow Street to Cranworth Street		5	10	8	5	8	0	0	8	44	Very High
3	North Street	Turf Street to Queen Street		5	10	8	5	8	0	0	8	44	Very High
4	Kemp Street	Prince Street to Queen Street		10	8	10	1	8	0	0	0	37	High
5	Queen Street	Kemp Street to Victoria Street		10	8	10	1	8	0	0	0	37	High
6	Victoria Street	Queen Street to Mary Street		10	8	10	1	8	0	0	0	37	High
7	Clarence Street	Oliver Street to Hoof Street		5	5	5	1	8	0	0	10	34	High

Table 5 - Action priorities, by town and route type (South Grafton)

				Land Use				Traffic Impact	Safety		Continuity of Routes	Score	Priority
				Number of Attractors / Generators	Land Use Types	Proximity to Attractor / Generator	Future Development	Road Hierarchy	Identified Hazardous Area	Identified Pedestrian Crashes	Addition to Existing Facility		
ID	Street	Street Portion	Side	<b>Bicycle Routes</b>									
1	Ryan Street	Bent Street to Waterview Heights		5	5	0	5	8	0	0	0	23	Medium
2	Pacific Highway	Centenary Drive (north) to Centenary Drive (south)		10	8	0	3	15	0	0	0	36	High
3	Armidale Street	South of Ryan Street		10	8	8	1	10	0	0	0	37	High
4	Bent Street	Norrie Street to Hyde Street		10	10	8	1	8	0	0	8	45	Very High
5	Riverside Drive	Bent Street to Through Street		10	8	8	1	8	0	0	10	45	Very High

Table 6 - Action priorities, by town and route type (Yamba)

				Land Use				Traffic Impact	Safety		Continuity of Routes	Score	Priority
ID	Street	Street Portion	Side	Number of Attractors / Generators	Land Use Types	Proximity to Attractor / Generator	Future Development	Road Hierarchy	Identified Hazardous Area	Identified Pedestrian Crashes	Addition to Existing Facility		
<b>Bicycle Routes</b>													
1	Yamba Road	Yamba to Maclean		5	10	5	3	10	0	5	0	38	High
2	Lakes Boulevard	Angourie Road to Wood Street		5	5	8	3	8	0	0	0	29	Medium

Table 7 - Action priorities, by town and route type (Maclean)

				Land Use				Traffic Impact	Safety		Continuity of Routes		
				Number of Attractors / Generators	Land Use Types	Proximity to Attractor / Generator	Future Development	Road Hierarchy	Identified Hazardous Area	Identified Pedestrian Crashes	Addition to Existing Facility	Score	Priority
ID	Street	Street Portion	Side										
<b>Bicycle Routes</b>													
1	River Street	North of Howard Street		5	10	10	1	8	0	0	0	34	High
2	McFarlane Bridge			5	5	10	3	8	0	0	0	31	High
3	Jubilee Street	Cameron Street to Townsend		10	10	8	1	8	0	0	0	37	High
4	Maclean to Townsend	Highway Upgrade		10	10	10	5	10	0	0	0	45	Very High
5	Yamba Road	Maclean to Yamba		5	10	5	3	10	0	5	0	38	High

**Table 8 - Action priorities, by town and route type (Iluka)**

				Land Use				Traffic Impact	Safety		Continuity of Routes	Score	Priority
ID	Street	Street Portion	Side	Number of Attractors / Generators	Land Use Types	Proximity to Attractor / Generator	Future Development	Road Hierarchy	Identified Hazardous Area	Identified Pedestrian Crashes	Addition to Existing Facility		
<b>Bicycle Routes</b>													
1	Iluka Road	Iluka, through Woombah, to the Pacific Highway		5	0	5	1	10	0	0	0	21	Medium



# Cycleway - Grafton

## Legend

### Existing Path

Existing Footpath / Shared Use Path

### Primary Destination Zone

Footpath required (inside Primary Zone)

CBD

Park / Garden

### Secondary Destination Zone

Footpath required (to General Zone)

Footpath required (inside Secondary Zone)

Beach

Park / Recreation / Sporting

Commercial Area

School / Hospital / Aged Care Facility etc

Sporting - Special use

Jail

### General Destination Zone

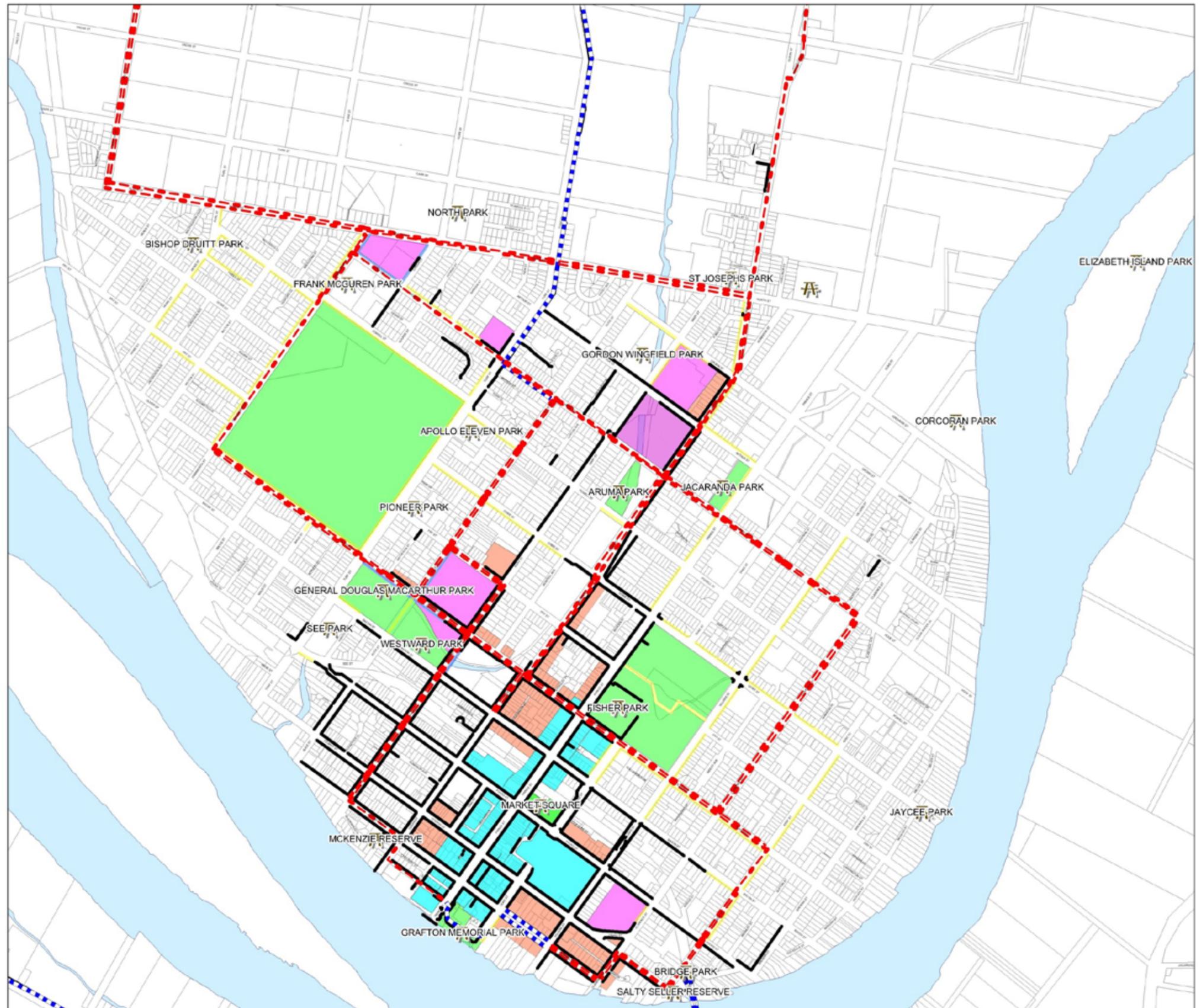
Footpath required

Park / Recreation

### Cycleway

Cycleway off road

Cycleway on road



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0 250 500 Metres

Projection: GCA 1994  
MGA Zone 56

Scale: 1:14,000 @ A3 Landscape





# Cycleways - Sth Grafton

## Legend

### Existing Path

Existing Footpath / Shared Use Path

### Primary Destination Zone

- Footpath required (inside Primary Zone)
- CBD
- Park / Garden

### Secondary Destination Zone

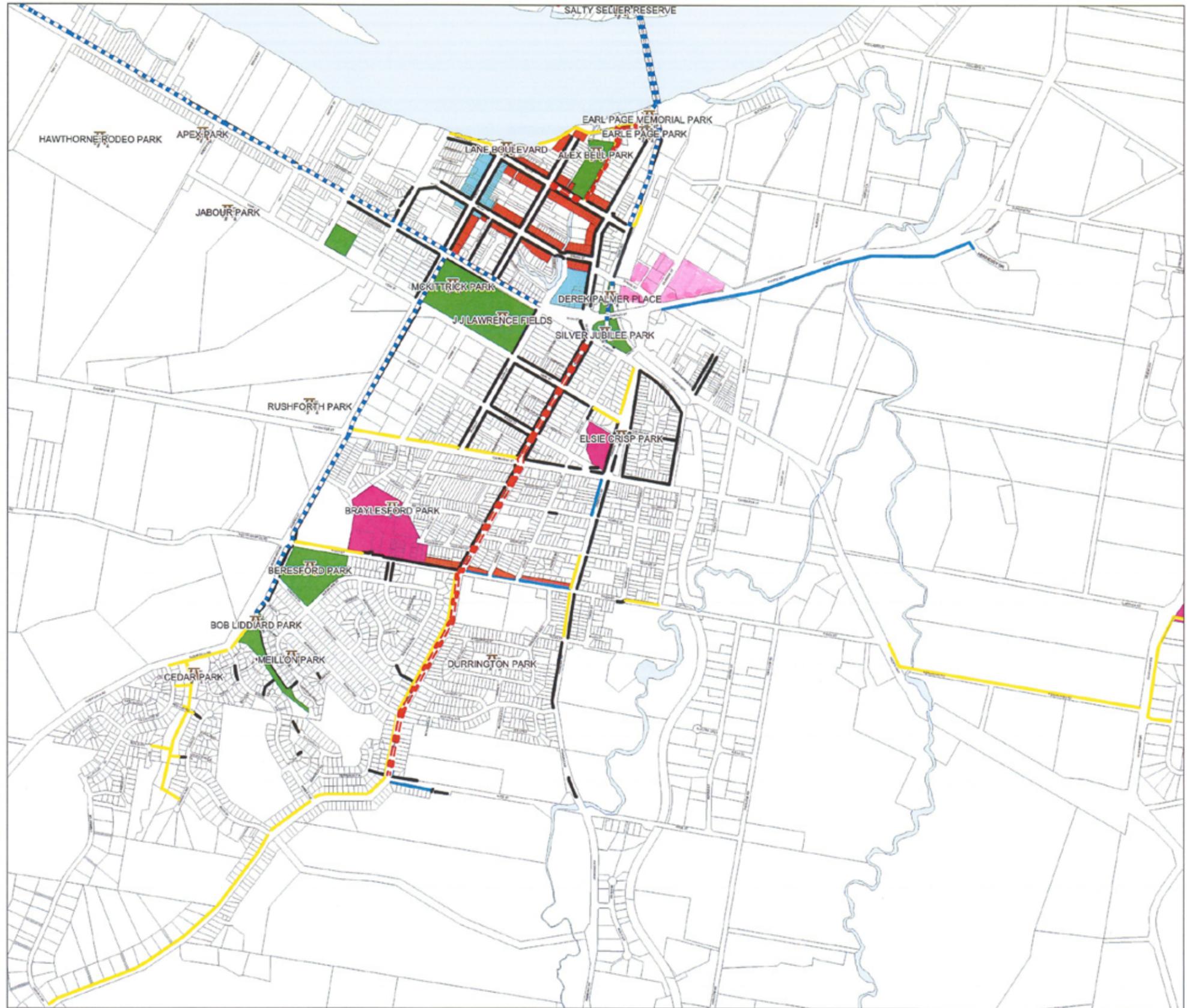
- Footpath required (to General Zone)
- Footpath required (inside Secondary Zone)
- Beach
- Park / Recreation / Sporting
- Commercial Area
- School / Hospital / Aged Care Facility etc
- Sporting - Special use
- Jail

### General Destination Zone

- Footpath required
- Park / Recreation

### Cycleway

- Cycleway off road
- Cycleway on road



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# Cycleway - Yamba

## Legend

### Existing Path

Existing Footpath / Shared Use Path

### Primary Destination Zone

Footpath required (inside Primary Zone)

CBD

Park / Garden

### Secondary Destination Zone

Footpath required (to General Zone)

Footpath required (inside Secondary Zone)

Beach

Park / Recreation / Sporting

Commercial Area

School / Hospital / Aged Care Facility etc

Sporting - Special use

Jail

### General Destination Zone

Footpath required

Park / Recreation

### Cycleway

Cycleway off road

Cycleway on road



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0 250 500Metres

Projection: GDA 1994  
MGA Zone 56

Scale: 1:15,000 @ A3 Landscape





# Cycleway - Maclean

## Legend

### Existing Path

Existing Footpath / Shared Use Path

### Primary Destination Zone

Footpath required (inside Primary Zone)

CBD

Park / Garden

### Secondary Destination Zone

Footpath required (to General Zone)

Footpath required (inside Secondary Zone)

Beach

Park / Recreation / Sporting

Commercial Area

School / Hospital / Aged Care Facility etc

Sporting - Special use

Jail

### General Destination Zone

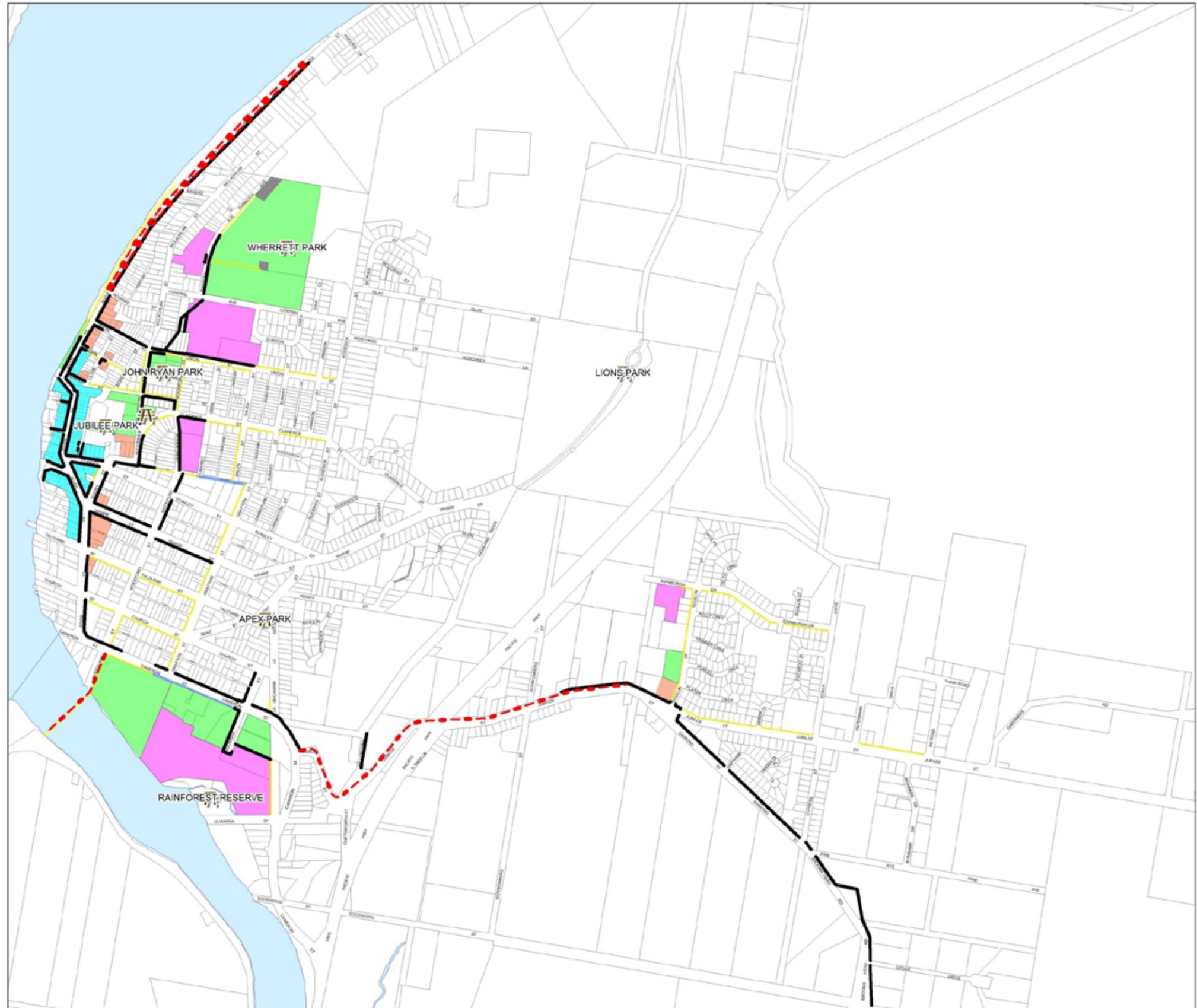
Footpath required

Park / Recreation

### Cycleway

Cycleway off road

Cycleway on road



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0 200 400Metres

Projection: GDA 1994  
MGA Zone 56

Scale: 1:12,000 @ A3 Landscape





# Cycleway - Iluka

## Legend

### Existing Path

Existing Footpath / Shared Use Path

### Primary Destination Zone

Footpath required (inside Primary Zone)

CBD

Park / Garden

### Secondary Destination Zone

Footpath required (to General Zone)

Footpath required (inside Secondary Zone)

Beach

Park / Recreation / Sporting

Commercial Area

School / Hospital / Aged Care Facility etc

Sporting - Special use

Jail

### General Destination Zone

Footpath required

Park / Recreation

### Cycleway

Cycleway off road

Cycleway on road



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0 250 500Metres

Scale: 1:14,000 @ A3 Landscape

