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1 Introduction

A bicycle network is a defined set of routes, both on and off-road, that make it possible to travel around a region by bike in a safe and connected manner.

The Port Macquarie-Hastings Bike Plan is a strategic document to assist in the coordinated approach to delivering cycling infrastructure. It establishes cycling objectives for the region and identifies the actions needed to achieve these objectives. The overarching aim is to increase safe cycling levels in our community, for both transport and recreation.

Bikeplans were prepared in the late 1990s for the main urban areas of Port Macquarie-Hastings and for regional connectivity between these areas. These have guided ongoing cycleway construction. The region now has a network of on and off-road cycleways but at this stage the network lacks connectivity.

The new bike plan will provide revised action plans to continue the ongoing development of the bicycle network both within and linking the main urban areas of the region.

The Bike Plan will align with Port Macquarie-Hastings Council’s key principles and objectives identified in the Towards 2030 Community Strategic Plan, the Urban Growth Management Strategy and the Transport Strategy.

The Bike Plan will also align with the NSW Long Term Transport Master Plan 2012, the Mid North Coast Regional Transport Plan 2013 and the National Cycling Strategy 2011-2016.

Whenever I see an adult on a bicycle, I have hope for the human race.

HG Wells
2 Bike Plan Objectives

The main aim of the Port Macquarie-Hastings Bike Plan is to address barriers to cycling related to infrastructure by providing a better and more connected bicycle network.

The Port Macquarie-Hastings Bike Plan will be used to:

- Provide a planning framework for the necessary infrastructure to provide for a safer and more comfortable cycling environment.
- Increase the proportion of all trips - by residents, workers and visitors - that are undertaken by bike.
- Increase general health and fitness, reduce car dependency, improve air quality and decrease greenhouse gas emissions.
- Identify and improve bicycle tourism opportunities.
- Identify the short and longer term actions capable of being financed within agreed timeframes that will result in positive benefits to the local and regional community.
- Provide a focus to advocate the lobbying of State and Federal Government for funding assistance.

16% of Port Macquarie-Hastings residents ride in a typical week.
3 Background and Context

3.1 Data Collection and Analysis
The Port-Macquarie-Hastings bike network continues to be improved and expanded. New or upgraded main roads generally include shoulder bike lanes and occasionally shared paths within the road reserve, but most roads do not have such facilities. Off-road shared paths have been constructed in some new land release areas, along some main roads and along creek and coastal corridors.

Council and Roads & Maritime Services (RMS) undertake regular counts of vehicular traffic but these do not include bicycle traffic. It is therefore difficult to gain accurate data on current cycling levels in the Port Macquarie-Hastings area.

Data from the 2011 Census shows that approximately 150 people cycle to work on a typical day in the Port Macquarie-Hastings Local Government Area (LGA). This compares to over 20,000 people who use a car for the same trip purpose. The number of people cycling to work equates to 0.6% of all workers which is slightly less than the NSW average of 0.8%. However, the Port Macquarie figure is significantly lower than for similar towns such as Coffs Harbour, Ballina and Grafton.

Anecdotal evidence suggests there are a high number of regular sporting cyclists in the region. The majority of these ride in groups outside of core business hours. Events such as Ironman also contribute to significant numbers of sporting cyclists.

Anecdotal evidence suggests that the level of children cycling to school has dropped significantly over the last twenty years. In the 1990s some of the region’s schools had up to 50 children regularly cycling to school but today this figure has dropped to less than 10 children.

The 2013 National Cycling Participation Survey (Austroads, 2013) suggests that 16% of regional NSW residents ride a bicycle in a typical week. Three-quarters of these trips are for recreation/exercise and the remainder for transport. The participation rate for males is much higher than for females, with 20% of males riding in a typical week compared to 12% of females. Participation rates are also much higher among children than adults. Half of the households in NSW have at least one bike.

Over the last five years there was an average of nine reported crashes each year involving cyclists in the LGA. However, it should also be noted that cycling crashes are significantly under-reported, particularly cyclist-only crashes, therefore the actual number of crashes involving cyclists would be considerably higher than the reported values. The data suggests that cycling crash levels in the LGA are consistent with state averages for regional areas.

3.2 Bike Plan Context

Community aspirations
The Towards 2030 Community Strategic Plan details Council’s long-term vision and aspirations of the community, taking into consideration the issues and challenges of the local area. Through this plan, we as a community have said we want to achieve:

- a healthy and active community that is supported by recreational infrastructure,
- a natural environment that can be accessed by a network of footpaths, cycleways, coastal and hinterland walkways,
an environmentally harmonious and prosperous tourism industry, and
infrastructure provision and maintenance that respects community expectations and needs.

These aspirations are delivered through the work Council carries out as detailed in the Four Year Delivery Program and Annual Operational Plan. These plans have a number of key directions relating to cycling. The Port Macquarie-Hastings Bike Plan is one of a number of strategies that together form Council’s strategy for integrated transport.

**National and State strategies**

The Bike Plan also has a national and state context. The federal government does not typically contribute direct funding to bicycle network infrastructure but assists other levels of government and stakeholders in meeting the objectives of the National Cycling Strategy 2011-2016. The strategy, which aims to double participation in cycling by Australians between 2011 and 2016, includes the following key priorities:

- **Cycling promotion**: Promote cycling as both a viable and safe mode of transport and an enjoyable recreational activity.
- **Infrastructure and facilities**: Create a comprehensive and continuous network of safe and attractive routes to cycle and end-of-trip facilities.
- **Integrated planning**: Consider and address cycling needs in all relevant transport and land use planning activities.
- **Safety**: Enable people to cycle safely.
- **Monitoring and evaluation**: Improve monitoring and evaluation of cycling programs and develop a national decision-making process for investment in cycling.
- **Guidance and best practice**: Support the development of nationally consistent guidance for stakeholders to use and share best practice across jurisdictions.

The NSW Government recently published the NSW Long Term Transport Master Plan and the Mid North Coast Regional Transport Plan. These plans seek to integrate land use and transport planning, covering both freight and passenger movements. They contain actions for all modes of transport including road, rail, bus, ferries, light rail, walking and cycling. Key measures related to cycling are:

- Enhanced cycling routes in regional centres to increase the number of people who cycle.
- Improved access to user-friendly, bike trip information.
- A long term NSW Cycling Investment Program to improve the planning, management and delivery of cycleway capital programs, supported by design solutions and standards to reflect customer needs.
- A program to increase and improve bike parking at public transport interchanges.
Responsibilities

The planning, design, implementation, maintenance and funding of bike network infrastructure is the responsibility of Council, except for facilities on State roads such as the Pacific Highway. Some facilities may attract state government funding, usually in the form of co-funding arrangements.

3.3 Cycling for Everyday Transport and Recreation

The aim of the Bike Plan is to enable cycling for everyday transport and recreation, for a wide spectrum of cyclist ability and trip purpose as summarised in Table 1.

Table 1 Categories of cyclists and their characteristics

<table>
<thead>
<tr>
<th>Category</th>
<th>Rider characteristics</th>
<th>Riding environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-cyclists and potential cyclists</td>
<td>Do not currently ride; have potential to ride with effective encouragement.</td>
<td>Generally would begin with off-road paths, footpaths (where permitted) or very low volume residential streets.</td>
</tr>
<tr>
<td>Primary school children</td>
<td>Cognitive skills not developed, little knowledge of road rules, require supervision.</td>
<td>Off-road paths, footpaths (where permitted) or very low volume residential streets.</td>
</tr>
<tr>
<td>Secondary school children</td>
<td>Skill varies, developing confidence.</td>
<td>Generally use on-road facilities or off-road paths where available.</td>
</tr>
<tr>
<td>Recreational</td>
<td>Experience, age, skill vary greatly.</td>
<td>Desire off-road paths and quiet local streets, avoid heavily trafficked routes, more experienced will prefer to use road system for long journeys.</td>
</tr>
<tr>
<td>Commuter</td>
<td>Vary in age, skill and fitness, some highly skilled and able to handle a variety of traffic conditions.</td>
<td>Some prefer paths or low stress roads, willing to take longer to get to destination, others want quick trip regardless of traffic conditions, primarily require space to ride and smooth riding surface, speed maintenance.</td>
</tr>
<tr>
<td>Utility</td>
<td>Ride for specific purposes (e.g. shopping), short length trips, routes unpredictable.</td>
<td>Not on highly trafficked roads, needs include comprehensive, low stress routes, appropriate end of trip facilities.</td>
</tr>
<tr>
<td>Touring</td>
<td>Long distance journeys, may be heavily equipped, some travelling in groups.</td>
<td>Often route is similar to that of other tourists.</td>
</tr>
<tr>
<td>Sporting</td>
<td>Often in groups, two abreast occupying left lane, similar needs to commuters.</td>
<td>Travel long distances in training on arterials, may include challenging terrain in outer urban or rural areas, generally do not use off-road because of their high speed and conflict with other users.</td>
</tr>
</tbody>
</table>

The primary aim of the bike plan is to increase the proportion of trips under 5km or 30 minutes in length that are undertaken by bicycle. The focus is therefore on trips within the main towns and villages of the Port Macquarie-Hastings LGA. The majority of trips fall within this 5km length although trips between Port Macquarie CBD and the outlying suburbs such as Thrumster and Lighthouse Beach will be longer than 5km.

Trips between towns and villages are only likely to be undertaken by some of the categories of cyclists listed in Table 1 and therefore are of a lower priority than trips within urban areas.

A bicycle network must therefore enable cyclists of a wide range of abilities and experience to move safely. The basis of a bicycle network is the road network, augmented by special on-road facilities together with dedicated infrastructure such as off-road paths, and wide footpaths where permitted. Table 2 lists key features of a good bicycle network.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Bicycle network features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Route Feature</strong></td>
<td><strong>Comments</strong></td>
</tr>
<tr>
<td>Safety</td>
<td>Minimal risk of traffic related injury, low perceived danger, space to ride, minimum conflict with vehicles.</td>
</tr>
<tr>
<td>Coherence</td>
<td>Infrastructure should form a coherent entity, link major trip origins and destinations, have connectivity, be continuous, signed, consistent in quality, easy to follow, have route options.</td>
</tr>
<tr>
<td>Directness</td>
<td>Route should be direct, based on desire lines, have low delay through routes for commuting, avoids detours, efficient operating speeds.</td>
</tr>
<tr>
<td>Attractiveness</td>
<td>Lighting, personal safety, aesthetics, integration with surrounding area, access to different activities.</td>
</tr>
<tr>
<td>Comfort</td>
<td>Smooth skid resistant riding surface, gentle gradients, avoid complicated manoeuvres, reduced need to stop, minimum obstruction from vehicles.</td>
</tr>
</tbody>
</table>

4 Community Engagement

4.1 Community Workshops
A series of community workshops were held in March 2014 to discuss all forms of transport including cycling. Feedback was also obtained through an online survey and written submissions. Typical questions asked of respondents included:

- How can safe cycling as a recognised mode of transport be improved?
- How can cycling best be encouraged?
- What are the primary reasons you don’t cycle?
  - Perceived/actual safety concerns
  - Lack of adequate paths/lanes
  - Lack of adequate end of trip facilities
  - Other transport modes are more convenient
  - Negative image associated with cycling
  - Don’t own/have access to a bike
  - Lack of time
  - Can’t ride
  - Weather
- What is the main reason you ride a bike?
  - Recreation
  - Fitness
  - Commuting (including taking the kids to school)
  - Utility (e.g. shopping)
  - Touring
- What improvements would you like to see that would encourage you to cycle more frequently or at all?

4.2 Public Exhibition of Draft and Final Draft Bike Plan
The Draft Port Macquarie-Hastings Bike Plan was publicly exhibited between 17 April and 19 May 2014, and the Draft Final Port Macquarie-Hastings Bike Plan was publicly exhibited between 19 January and 20 February 2015.

The community engagement process was used by Council staff to make minor changes to the report and bicycle route network maps.

4.3 Barriers to Cycling
The community engagement, in combination with a review of relevant literature, highlighted that there are a range of barriers to cycling in our local area, including:

- Car-based culture: The local area, like most regional areas, has an entrenched car-based culture where the car is the default mode of transport for the majority of trips, even when alternative transport modes are available. There are few disincentives to driving.
Cars and petrol are relatively cheap, car parking is abundant and free, and there is little traffic congestion.

- **Dangers involved with cycling:** Cycling on roads is perceived by many to be unsafe, particularly on roads with high traffic volumes or high traffic speeds.

- **Unconnected infrastructure:** Sections of a safe bicycle network exist but often there are ‘missing links’ to prevent the completion of a continuous and safe trip.

- **Negative image of cyclists:** Many non-cyclists have a strongly negative attitude towards cyclists, predominantly affected by their experiences as drivers and pedestrians. Commuter cycling is often not perceived as a legitimate form of transport.

- **Cycling is considered inconvenient:** Driving the car to work or to take children to school is often seen as the most convenient mode, even if the distances involved are very short. Multi-trips involving various stops and multiple trip purposes may be less convenient by bike. Carrying clothes or work-related material is often perceived to be an inconvenience. Extreme heat, rain or darkness can be a barrier to cycling.

- **End-of-trip facilities:** A lack of secure lock-up facilities for bikes is a barrier to cycling. Showers and change rooms are often not provided at workplaces.
5 Bicycle Route Network

5.1 Types of Bicycle Facility

The main type of bicycle facilities that can be implemented in our region are listed in Table 3. These are supported by appropriate intersection treatments. Further information is provided in the relevant design standards:

- RMS, NSW Bicycle Guidelines
- Austroads, Guide to Traffic Management and Guide to Road Design series
- AUS-SPEC design specifications

Bicycle facilities aim to cater for a range of different rider characteristics (refer to Table 1), desirable riding environment and local conditions. The Bike Plan aims to provide a balance between costly off-road facilities and potentially lower cost on-road facilities, noting that each facility type caters for different rider categories. A good bike plan must therefore provide an appropriate mix between on and off-road facilities.

A future action will be to review and improve existing bicycle facilities, both on and off-road, in terms of suitability of treatment, condition, signage and linemarking.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Types of Bicycle Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off-road / On-road</td>
<td>Description</td>
</tr>
<tr>
<td>Off-road</td>
<td>Shared path</td>
</tr>
<tr>
<td>Off-road / On-road</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>On-road</td>
<td>Road shoulder</td>
</tr>
<tr>
<td>Mixed traffic</td>
<td></td>
</tr>
</tbody>
</table>
5.2 Complementary Actions

The bicycle network should be complemented by other facilities and actions, subject to funding limitations, including:

- Localised intersection treatments
- Wayfinding signage
- Network maps
- Secure bike parking
- Maintenance of on-road and off-road facilities
- End of trip facilities such as showers, lockers and changing rooms
- Education, encouragement and promotion programs
- Bicycle handling skills training programs

5.3 Bicycle Route Network Maps

The existing and proposed bicycle route network for each of the region’s main towns are shown in a series of five maps, with key inter-town routes shown on a further two maps:

1. Port Macquarie Bicycle Network
2. Wauchope Bicycle Network
3. Lake Cathie - Bonny Hills Bicycle Network
4. Camden Haven Bicycle Network
5. Kendall - Lakewood Bicycle Network
6. Inter-Town Bicycle Network - North
7. Inter-Town Bicycle Network - South
Port Macquarie Bicycle Network

Port Macquarie has a number of good quality bicycle facilities and the priority is to connect these together to form a cohesive network.

Key strategic future routes include:

- A combination of shared paths and road shoulders along the Oxley Highway, Hastings River Drive and Ocean Drive corridors.
- A shared path between Port Macquarie town centre, the Base Hospital Precinct and proposed Charles Sturt University campus at Lake Innes.
- Ongoing shared path network along the Kooloonbung Creek corridor, including the Googik Track to connect to the southern suburbs.
- Improvements to the Town Beach Foreshore - Coastal Walkway to form a complete off-road network between Settlement City and Tacking Point.

Wauchope Bicycle Network

Wauchope currently has a series of disconnected bicycle facilities, with the most significant being the river foreshore shared path and the Beechwood Road shared path.

Key strategic future routes include:

- A north-south shared path on Cameron Street from the Hastings River to Blackbutt Drive.
- A shared path on High Street west of Blackbutt Drive to connect to the existing Allan Road on-road route.
- A shared path connecting Timbertown Estate and Yippin Creek to the town centre.

Lake Cathie - Bonny Hills Bicycle Network

The Lake Cathie - Bonny Hills area currently has road shoulders on sections of Ocean Drive and some short sections of shared path in residential areas.

Key strategic future routes include:

- Completion of road shoulders along the entire length of Ocean Drive.
- A north-south shared path network via a combination of the Ocean Drive corridor and through the Rainbow Beach land release area, including connections to the Lake Cathie School.

Camden Haven Bicycle Network

The spine of the Camden Haven network is the existing shared path connecting Laurieton to North Haven along the river foreshore. This is a popular path used for commuting, recreation and tourism.

Key strategic future routes include:

- A shared path along Ocean Drive between Laurieton and Kew.
- Completion of the new Stingray Creek bridge with associated shared paths.
An extension of the North Haven - Laurieton foreshore shared path to Camden Head via Dunbogan.

Kendall - Lakewood Bicycle Network
The main existing facility in Kendall is a shared path on a section of Comboyne Street whilst in Lakewood sections of Ocean Drive have road shoulders.

Key strategic future routes include:
- A shared path along Kendall Road between Kendall and Kew.
- A shared path along Ocean Drive between Laurieton and Kew, including a connection to Camden Haven High School.
- A new path network associated with the land release area in Kew/Lakewood north of Ocean Drive.

Inter-Town Bicycle Network
Inter-town bicycle routes are primarily along roads that provide connectivity between urban areas, and involve a combination of state, regional and local roads.

Key strategic future routes include:
- Road shoulders on the Oxley Highway between Port Macquarie and Wauchope.
- Road shoulders on the entire length of Hastings River Drive and Ocean Drive.
- Road shoulders on Houston Mitchell Drive.
- A long term vision of a coastal shared path connecting Port Macquarie, Lake Cathie, Bonny Hills and North Haven.
6 Where to From Here?

The process to finalise and implement the Bike Plan is illustrated below. Each of the actions included in the bicycle route network maps will be prioritised. Actions may either be incorporated into other projects (e.g. road upgrade, traffic signals, routine maintenance etc) or included as standalone items in future Delivery Programs and Operational Plans. Construction of any works identified in the Bike Plan will be subject to the availability of funding.
7 Bicycle Route Network Maps